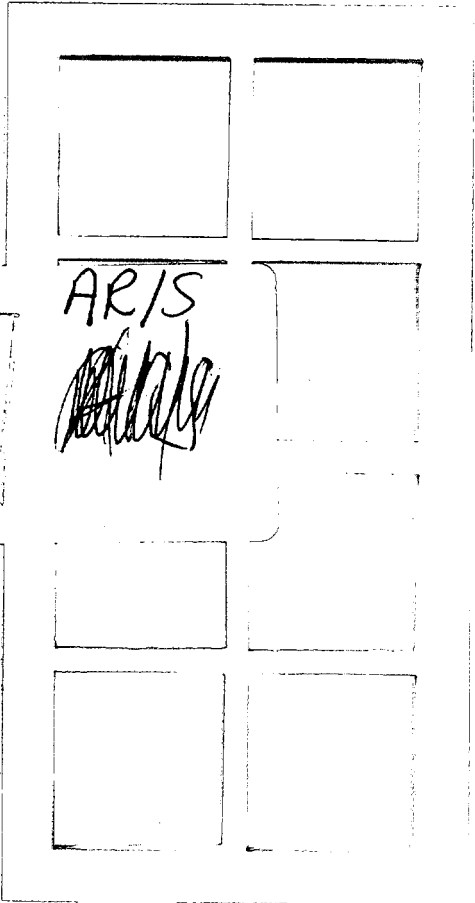
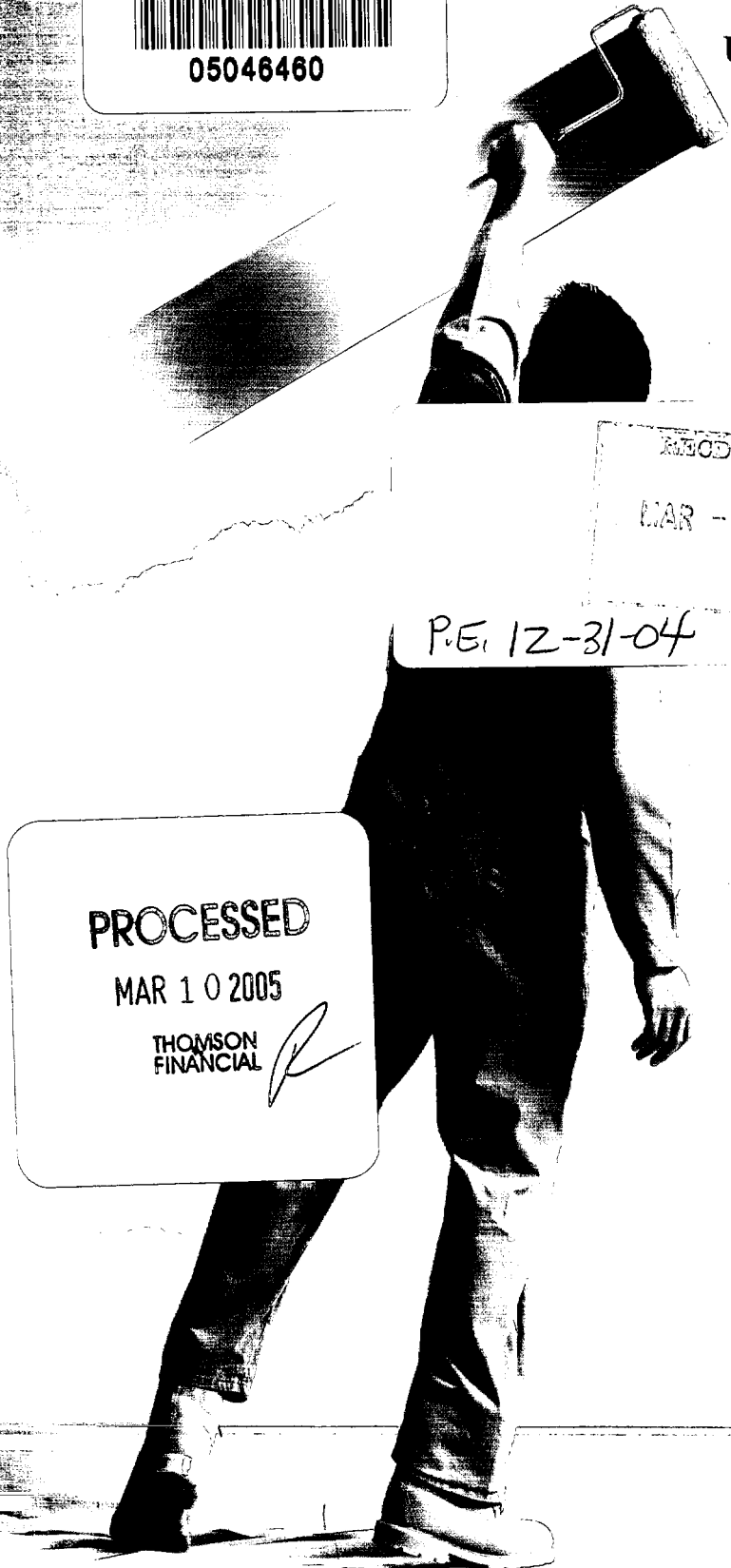




# Unlocking Potential



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2004 ANNUAL REPORT AND FORM 10-K  
PPG INDUSTRIES, INC.



Our performance in 2004 was nothing less than impressive. Net income was up more than 35 percent, sales reached a record high and we enjoyed volume growth in all regions of the world. Our coatings segment generated record sales and earnings. Our flat glass and chlor-alkali plants, meanwhile, saw their operating rates climb throughout the year. And we generated more than \$1 billion in cash from operations.

Our success in 2004 is a direct result of our actions to unlock the vast potential of PPG and its people, enabling us to make the most of the improved global economy. And the proof is in our results.

**Raymond W. LeBoeuf**, seated,  
chairman and chief executive officer, and  
**Charles E. Bunch**, president and chief  
operating officer.



**ARCHITECTURAL COATINGS** in the United States is a market worth more than \$7 billion, with significant growth opportunities for PPG as a result of industry consolidation. With a presence in all three distribution channels — company-owned stores, home centers and independent dealers — PPG has approximately a 10-percent share with plenty of room for growth. PPG has driven growth by building the market's third-largest company-owned store network, with more than 300 locations focused on serving professional painters with multiple regional brands they prefer over national brands. Expansion of company-owned stores and growth in home centers, which cater to do-it-yourself consumers, are expected to drive continued growth.

We recorded net income of \$683 million, or \$3.95 a share, on sales of \$9.5 billion. Our results benefited from higher volumes in all our businesses, higher selling prices in our chlor-alkali business and strong manufacturing efficiencies, producing higher operating margins despite significantly higher raw material and energy costs. In 2003 we recorded net income of \$494 million, or \$2.89 a share, on sales of \$8.8 billion.

#### **CASH FLOW, COST REDUCTIONS REMAIN COMPANY HALLMARKS**

Once again in 2004 we delivered strong cash flow, and once again we used our cash position to benefit shareholders.

We repurchased \$100 million of our shares in 2004, and announced plans in early 2005 to purchase up to \$500 million of shares by year-end. Since the mid-1980s, we have reduced outstanding shares by more than a third.

Also in 2004 we increased the dividend payment, now at an annual rate of \$1.80. This marked the 33rd consecutive year of increased shareholder payments.

Other uses of cash in 2004 included the prudent funding of our businesses, with capital spending, including acquisitions, totaling about \$300 million. Acquisitions in optical products and architectural and industrial coatings continue to interest us, though we do not anticipate any large transactions in the near term.

Also in 2004 we reduced debt by more than \$300 million, lowering our debt-to-total capital ratio to 27 percent from 36 percent in 2003. In addition, we made voluntary contributions to our pension plans in 2004. Given all these payments, we still ended the year with \$700 million of cash on hand.

An important and continuing source of cash at PPG is our relentless quest to reduce costs. In 2004 we generated more than \$150 million in manufacturing efficiencies, which was a contributing factor in our 10-percent improvement in productivity. During the past six years, manufacturing efficiencies have reduced costs by more than \$500 million, driven by our continuing commitment to our Quality Process.



Regional expansion is a driving force in the growth of **INDUSTRIAL COATINGS** as customers shift operations to low-cost regions, especially Asia. Since 2002, PPG's operating income in Asia has more than doubled, with industrial coatings playing a significant role in that growth, serving markets ranging from consumer electronics and appliances to agricultural and construction equipment. To generate additional growth, PPG's industrial coatings business is leveraging its expertise in electrodeposition coatings to expand its presence further in Asia. PPG is also targeting central and eastern Europe for growth as manufacturing in those regions continues to expand. With about half of the \$16-billion global industrial coatings market served by small, regional companies, PPG has the ability to continue growing as industry consolidation continues.

Our hallmarks of generating cash and reducing costs form the foundation upon which rests our three-point plan to increase earnings growth and consistency. Those strategies are to:

- Build A Better Mix Of Businesses
- Create Breakthrough Products
- Improve Our Customers' Results

#### **BUILD A BETTER MIX OF BUSINESSES**

We have invested \$3.2 billion in our coatings segment during the past eight years, two-thirds in the form of acquisitions. Combined with the 1998 divestiture of European flat and automotive glass, one of our most cyclical businesses, we have reduced our capital intensity, or fixed assets as a percent of sales, to 26 percent in 2004 from 37 percent in 1997, better enabling us to manage the ups and downs of the economy.

This better mix of businesses has also significantly improved our cash flow. In the recession of 2001, we actually increased cash from operations. And in the three years since, we have generated more than \$3 billion in cash from operations, a

more than 40-percent improvement over the three years after the 1991 recession. While providing growth today, our acquisitions have created a foundation from which we can generate further growth. Some of those businesses are featured on these pages. Meanwhile, the businesses we targeted for cash generation — such as flat glass, automotive OEM glass and chlor-alkali and derivatives — are producing strong results thanks to improvements they have made in efficiency and productivity.

#### **CREATE BREAKTHROUGH PRODUCTS**

Technology has been the backbone of our company since the day it was founded, and in recent years we have expanded our collaborations with universities, national labs and other companies throughout the world, successfully accelerating our ability to bring new products to market. A perfect example is Trivex lens material, the first and only to feature all three highly desirable attributes for eyewear: excellent optics, impact resistance and light weight. We teamed with a company that created a lightweight, bullet-resistant material for eyeshields in military



Improving the results of **AUTOMOTIVE REFINISH** customers is a critical element in PPG's growth strategy. In addition to manufacturing paints for the automotive aftermarket, PPG created and manages the *CertifiedFirst* alliance of collision shops, which meet high standards for quality and customer satisfaction as determined by independent third parties. Insurance companies, the largest buyers of auto body repair, can be assured of professionalism and courtesy, critical elements of policyholder satisfaction. Car owners, meanwhile, can be assured of high quality, guaranteed repairs. And PPG benefits by increasing demand for its products sold through *CertifiedFirst* participating shops. Automotive refinish is also growing its presence in the light industrial and fleet markets while expanding its reach in Asia along with central and eastern Europe.

applications, and in less than two years, developed an award-winning product that is taking share from competitive technologies.

Our quest to form technical collaborations extends in all directions, even across our own company. Researchers at our coatings labs in Allison Park, Pa., and their counterparts at our chemical labs in Monroeville, Pa., worked together in developing a breakthrough process for bringing the power of the photochromic technology in *Transitions* lenses to the fastest-growing lens substrates in the world — polycarbonate, high index and *Trivex* monomers. As a direct result of our research and development collaborations, PPG's optical products business is positioned to generate continued growth.

#### **IMPROVE OUR CUSTOMERS' RESULTS**

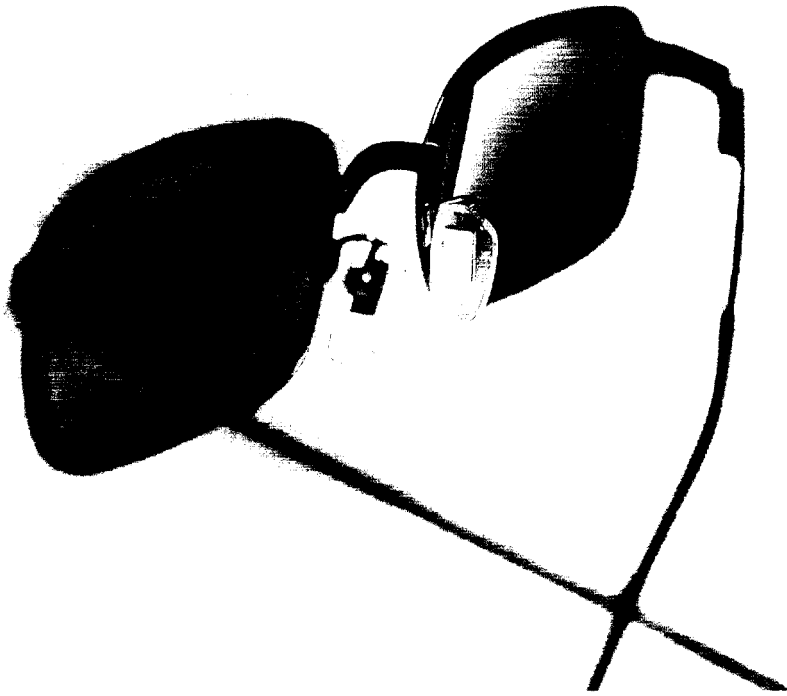
The purpose of building a better mix of businesses and creating breakthrough products is to improve our customers' results. Whether it's our coated glass products that can help reduce heating and cooling costs by as much as 30 percent or more, or the automotive refinish primer that reduces application

and cure time from one hour to 10 minutes, or any of our products and services, we continuously apply technology and innovation so that we can meet and anticipate customer requirements.

Our success in building a better mix of businesses, creating breakthrough products and improving our customers' results has not only improved our performance but positioned us to generate further growth. During the past four economic cycles, dating to 1968, we have grown earnings per share at a rate of 9 percent per year, surpassing the S&P 500 by three points.

#### **PPG PEOPLE VITAL TO OUR SUCCESS**

Our performance in 2004 is a direct reflection on PPG employees throughout the world. Their hard work and commitment to continuous improvement played a vital role in our success. Among their accomplishments in 2004 was a 15-percent reduction in our company's injury and illness rate. Although I'm pleased with this improvement, one injury, one illness, either on the job or away from work, is one too many.



**OPTICAL PRODUCTS** is a continuing source of growth by bringing technical innovation to the marketplace, backed by marketing, education and strong relationships throughout the value chain. Leading the way is *Transitions* lenses, the undisputed leader in photochromic plastic lenses. The fifth generation of this product, debuting in early 2005, grows darker than previous editions and fades back to clear even faster. To support strong ties with eyecare professionals, *Transitions Optical*, PPG's 51-percent-owned joint venture with Essilor International, promotes consumer education about the importance of healthy vision and the role eyecare professionals and *Transitions* lenses play in achieving it. In monomers, meanwhile, retail sales continue to grow for *Trivex* lens material, the first and only to feature all three highly desirable attributes for eyewear: excellent optics, impact resistance and light weight.

Retiring from our board of directors in April will be Allen J. Krowe. Since 1987 he has provided PPG with leadership and counsel, which have contributed significantly to our company's growth and success.

Sadly, we lost a key member of the PPG family in 2004 when Mike Ludlow, senior vice president, OEM coatings, died in November. He was an outstanding leader, a good friend and an inspiration throughout his courageous, year-long struggle against leukemia.

#### **CONTINUED GROWTH LIKELY IN 2005**

We believe global economic expansion will continue in 2005, although probably at a slower pace. As the new year unfolds, we face the challenge of higher raw material costs in our coatings segment as a result of increased industrial activity, supply-demand imbalances and increased supplier costs. These same forces should benefit our chlor-alkali business through at least the first half of 2005.

Nonetheless, we are better positioned to face variations in the global economy than we were five or 10 years ago — and we're better positioned than many of our peers — largely because of our better business mix.

Regardless of economic conditions, we remain committed to generating cash, driving down costs and generating profitable growth. I'm convinced that with your ongoing support we can continue to unlock the potential of this organization for the benefit of customers, employees and shareholders, delivering meaningful and long-term value.

**RAYMOND W. LeBOEUF**  
Chairman and Chief Executive Officer



From left: Victoria F. Haynes, Erroll B. Davis Jr., Allen J. Krowe, Charles E. Bunch, Raymond W. LeBoeuf, David R. Whitwam, Michele J. Hooper, Thomas J. Usher, James G. Berges, Robert Mehrabian, Robert Ripp.

#### JAMES G. BERGES

James G. Berges, 57, is president of Emerson Electric Co., a global manufacturer providing products, systems and services for industrial automation; process control; heating, ventilating and air conditioning; electronics and communications; and appliances and tools. A PPG director since 2000, he is also a director of Emerson Electric and MKS Instruments, Inc.

- *Audit Committee*
- *Nominating and Governance Committee*

#### CHARLES E. BUNCH

Charles E. Bunch, 55, is president and chief operating officer of PPG Industries. A PPG director since 2002, he is also a director of H.J. Heinz Company and a director and deputy chairman of the Federal Reserve Bank of Cleveland.

#### ERROLL B. DAVIS JR.

Erroll B. Davis Jr., 60, is chairman of the board and chief executive officer of Alliant Energy Corporation, an energy service provider focused primarily on supplying regulated electricity and natural gas service in the Midwestern United States. A PPG director since 1994, he is also a director of Alliant Energy, BP plc and Union Pacific Corp.

- *Audit Committee*
- *Investment Committee*

#### VICTORIA F. HAYNES

Victoria F. Haynes, 57, is president and chief executive officer of Research Triangle Institute, which performs scientific research and development in advanced technologies, public policy, environmental protection, and health and medicine. A PPG director since 2003, she is also a director of Lubrizol Corporation, Nucor Corporation, and Ziptronix, Inc.

- *Nominating and Governance Committee*
- *Investment Committee*

#### MICHELE J. HOOPER

Michele J. Hooper, 53, is former president and chief executive officer of Voyager Expanded Learning, a developer and provider of learning programs and teacher training for public schools. A PPG director since 1995, she is also a director of AstraZeneca plc, DaVita, Inc., and Target Corporation.

- *Audit Committee*
- *Nominating and Governance Committee*

#### ALLEN J. KROWE

Allen J. Krowe, 72, is retired director and vice chairman of Texaco Inc., an international petroleum company. He has been a PPG director since 1987.

- *Nominating and Governance Committee*
- *Investment Committee*

#### RAYMOND W. LeBOEUF

Raymond W. LeBoeuf, 58, is chairman of the board and chief executive officer of PPG Industries. A PPG director since 1995, he is also a director of Praxair, Inc., and ITT Industries, Inc.

#### ROBERT MEHRABIAN

Robert Mehrabian, 63, is chairman of the board, president and chief executive officer of Teledyne Technologies Inc., a provider of sophisticated electronic components, instruments and communication products; systems engineering solutions; aerospace engines and components; and on-site gas and power generation systems. A PPG director since 1992, he is also a director of Teledyne Technologies and Mellon Financial Corporation.

- *Audit Committee*
- *Officers-Directors Compensation Committee*

#### ROBERT RIPP

Robert Ripp, 63, is chairman of Lightpath Technologies, Inc., a manufacturer of optical lens and module assemblies for the telecommunications sector, and former chairman and chief executive officer of AMP Incorporated, an electrical products company. A PPG director since 2003, he is also a director of ACE Limited and Safeguard Scientific, Inc.

- *Audit Committee*
- *Officers-Directors Compensation Committee*

#### THOMAS J. USHER

Thomas J. Usher, 62, is chairman of the board of United States Steel Corporation, a major producer of metal products. A PPG director since 1996, he is also a director of United States Steel, Marathon Oil Corporation, PNC Financial Services Group, Inc. and H.J. Heinz Company.

- *Officers-Directors Compensation Committee*
- *Investment Committee*

#### DAVID R. WHITWAM

David R. Whitwam, 63, is retired chairman of the board and chief executive officer of Whirlpool Corporation, a manufacturer and distributor of household appliances and related products. A director of PPG since 1991, he is also a director of Convergys Corporation.

- *Nominating and Governance Committee*
- *Officers-Directors Compensation Committee*

#### EXECUTIVE COMMITTEE

**Raymond W. LeBoeuf**  
Chairman and Chief Executive Officer

**Charles E. Bunch**  
President and Chief Operating Officer

**James C. Diggs**  
Senior Vice President, General Counsel and Secretary

**William H. Hernandez**  
Senior Vice President, Finance

#### OTHER OFFICERS

**J. Rich Alexander**  
Vice President, Industrial Coatings

**Douglas B. Atkinson**  
Vice President, Investor Relations

**Werner Baer**  
Vice President, Information Technology

**Richard A. Beuke**  
Vice President, Architectural Coatings

**Richard C. Elias**  
Vice President, Optical Products

**Aziz S. Giga**  
Vice President, Strategic Planning

**Garry A. Goudy**  
Vice President, Automotive Aftermarket

**Victoria M. Holt**  
Vice President, Fiber Glass

**Dennis A. Kovalsky**  
Vice President, Automotive Coatings

**Susan M. Kreh**  
Treasurer

**Michael H. McGarry**  
Vice President, Chlor-Alkali and Derivatives

**Barry J. McGee**  
Vice President, Automotive OEM Glass

**Kathleen A. McGuire**  
Vice President, Purchasing and Distribution

**David P. Morris**  
Vice President, Aerospace

**David B. Navikas**  
Vice President and Controller

**Mark J. Orcutt**  
Vice President, Flat Glass

**Maurice V. Peconi**  
Vice President, Corporate Development

**Lynne D. Schmidt**  
Vice President, Government and Community Affairs

**David E. Sharick**  
Vice President, Automotive Replacement Glass

**Kevin F. Sullivan**  
Vice President, Chemicals

**Marc P. Talman**  
Vice President, Packaging Coatings

**James A. Trainham**  
Vice President, Science and Technology

**Donna Lee Walker**  
Vice President, Tax Administration

**Charles W. Wise**  
Vice President, Human Resources

**William A. Wulfsohn**  
Vice President, Coatings, Europe, and Managing Director, PPG Europe



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

FORM 10-K  
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2004

Commission File Number 1-1687

**PPG INDUSTRIES, INC.**

(Exact name of registrant as specified in its charter)

Pennsylvania (State or other jurisdiction of incorporation or organization)	25-0730780 (I.R.S. Employer Identification No.)
One PPG Place, Pittsburgh, Pennsylvania (Address of principal executive offices)	15272 (Zip code)
Registrant's telephone number, including area code:	412-434-3131

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock – Par Value \$1.66⅔	New York Stock Exchange Pacific Stock Exchange Philadelphia Stock Exchange
Preferred Share Purchase Rights	New York Stock Exchange Pacific Stock Exchange Philadelphia Stock Exchange

Securities Registered Pursuant to Section 12(g) of the Act: None

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. YES  NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the Registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). YES  NO

The aggregate market value of common stock held by non-affiliates as of June 30, 2004, was \$10,710 million.

As of January 31, 2005, 172,176,411 shares of the Registrant's common stock, with a par value of \$1.66⅔ per share, were outstanding. As of that date, the aggregate market value of common stock held by non-affiliates was \$11,815 million.

DOCUMENTS INCORPORATED BY REFERENCE

Document	Incorporated By Reference In Part No.
Portions of PPG Industries, Inc. Proxy Statement for its 2005 Annual Meeting of Shareholders .....	III

**PPG INDUSTRIES, INC.  
AND CONSOLIDATED SUBSIDIARIES**

As used in this report, the terms “PPG,” “Company,” and “Registrant” mean PPG Industries, Inc. and its subsidiaries, taken as a whole, unless the context indicates otherwise.

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**Note on Incorporation by Reference**

Throughout this report, various information and data are incorporated by reference to the Company’s 2004 Annual Report (hereinafter referred to as “the Annual Report”). Any reference in this report to disclosures in the Annual Report shall constitute incorporation by reference only of that specific information and data into this Form 10-K.

## Part I

### Item 1. Business

PPG Industries, Inc., incorporated in Pennsylvania in 1883, is comprised of three basic business segments: coatings, glass and chemicals. Within these business segments, PPG has focused resources on industrial, aerospace, packaging, architectural, automotive original and refinish coatings; flat glass, automotive original and replacement glass, and continuous-strand fiber glass; and chlor-alkali and specialty chemicals. Each of the businesses in which PPG is engaged is highly competitive. However, the diversification of product lines and worldwide markets served tend to minimize the impact on PPG's total sales and earnings of changes in demand for a particular product line or in a particular geographic area. Reference is made to Note 22, "Business Segment Information," under Item 8 of this Form 10-K for financial information relating to business segments.

#### *Coatings*

PPG is a major supplier of protective and decorative coatings. The coatings business involves the supply of protective and decorative finishes for industrial equipment, appliances and packaging; factory-finished aluminum extrusions and coils; aircraft; automotive original equipment; and other industrial and consumer products. In addition to supplying finishes to the automotive original equipment market, PPG supplies automotive refinishes to the aftermarket. PPG is also using its product knowledge and experience to provide services to certain of its customers that extend beyond the sale of PPG products. PPG revenues from these service solutions, excluding the related sale of PPG products, were small in 2004 but are expected to be a source of future growth. The coatings industry is highly competitive and consists of a few large firms with global presence and many smaller firms serving local or regional markets. PPG competes in its primary markets with the world's largest coatings companies, most of which have global operations, and many smaller regional coatings companies. Product development, innovation, quality and technical and customer service have been stressed by PPG and have been significant factors in developing an important supplier position by PPG's coatings business.

In the industrial and automotive original equipment portions of the coatings business, PPG sells directly to a variety of manufacturing companies. Industrial and automotive original equipment coatings are formulated specifically for the customer's needs and application methods. PPG also supplies adhesives and sealants for the automotive industry and metal pretreatments and related chemicals for industrial and automotive applications. The packaging portion of the coatings business supplies finishes for aerosol, food and beverage containers for consumer products. The automotive refinish business produces coatings products for automotive repair and

refurbishing and specialty coatings for sign and fleet markets. Its products are sold primarily through distributors. Product performance, technology, quality and technical and customer service are major competitive factors in these coatings businesses.

The architectural finishes business consists primarily of coatings used by painting and maintenance contractors and by consumers for decoration and maintenance. PPG's products are sold through company-owned stores, home centers, mass merchandisers, paint dealers, independent distributors, and directly to customers. Price, quality, distribution and brand recognition are key competitive factors in the architectural finishes market.

The aerospace business primarily supplies coatings, sealants and cockpit transparencies for commercial, military, regional jet and general aviation aircraft, as well as sealants for architectural insulating glass units. The aerospace business distributes products directly to aircraft manufacturers, maintenance and aftermarket customers around the world.

The coatings businesses operate production facilities around the world. North American production facilities consist of 23 plants in the United States, two in Canada and one in Mexico. The three largest facilities in the United States are the Delaware, Ohio, plant, which primarily produces automotive refinishes and certain automotive original and industrial coatings; the Oak Creek, Wis., plant, which primarily produces industrial coatings and certain automotive original coatings; and the Cleveland, Ohio, plant, which primarily produces automotive original coatings. Outside North America, PPG operates five plants in Italy, three plants each in China, Germany and Spain, two plants each in Brazil, England and France, and one plant each in Argentina, Australia, Malaysia, the Netherlands, Thailand and Turkey. PPG owns equity interests in operations in Canada, India, South Korea and Japan. Additionally, the automotive coatings business operates seven service centers in the United States, two each in Mexico and Poland, and one each in Argentina, Canada, France and Portugal to provide just-in-time delivery and service to selected automotive assembly plants. Thirteen training centers in the United States, 15 in Europe, 10 in Asia, three in South America, two in Canada, and one in Mexico are in operation. These centers provide training for automotive aftermarket refinish customers. The aerospace business operates a global network of 14 application support centers strategically located close to our customers around the world that provide technical support and just-in time delivery of customized solutions to improve customer efficiency and productivity. Also, four automotive original coatings application centers throughout the world that provide testing facilities for customer paint processes and new products are in operation. The average number of persons employed by the coatings segment during 2004 was 15,700.

## Glass

PPG is one of the major producers of flat glass, fabricated glass and continuous-strand fiber glass in the world. PPG's major markets are residential and commercial construction, the furniture and electronics industries, automotive original equipment, automotive replacement and other markets. Most glass products are sold directly to manufacturing and construction companies, although in many instances products are sold directly to independent distributors and through PPG distribution outlets. PPG manufactures flat glass by the float process and fiber glass by the continuous-strand process. PPG also provides claims processing services to the insurance and vehicle fleet segments.

The bases for competition are price, quality, technology and customer service. The Company competes with six major producers of flat glass, six major producers of fabricated glass and three major producers of fiber glass throughout the world. In certain glass and fiber glass markets, there is increasing competition from other producers in low labor cost countries.

PPG's principal glass production facilities are in North America and Europe. Fourteen plants operate in the United States, of which six produce automotive original and replacement glass products, five produce flat glass, and three produce fiber glass products. There are three plants in Canada, two of which produce automotive original and replacement glass products and one produces flat glass. One plant each in England and the Netherlands produces fiber glass. PPG owns equity interests in operations in China, Mexico, Taiwan, the United States and Venezuela and a majority interest in a glass distribution company in Japan. Additionally, there are three satellite operations each in the United States and Canada and one in Mexico that provide limited fabricating or assembly and just-in-time product delivery to selected automotive customer locations, one satellite coating facility in the United States for flat glass products and one satellite tempering and fabrication facility in the United States for flat glass products. There are also three claims management centers. The average number of persons employed by the glass segment during 2004 was 10,500.

## Chemicals

PPG is a major producer and marketer of chlor-alkali chemicals and a supplier of specialty chemicals. The primary chlor-alkali products are chlorine, caustic soda, vinyl chloride monomer, chlorinated solvents, chlorinated benzenes and calcium hypochlorite. Most of these products are sold directly to manufacturing companies in the chemical processing, rubber and plastics, paper, minerals, metals, and water treatment industries. The primary products of PPG's specialty chemicals businesses are *Transitions*<sup>®</sup> lenses; optical monomers; amorphous precipitated silicas for tire, battery separator, and other end-use markets and *Teslin*<sup>®</sup> synthetic printing sheet used

in such applications as waterproof labels and identification cards; advanced intermediates and bulk active ingredients for the pharmaceutical industry; and phosgene derivatives used in plastics, agricultural, pharmaceutical and other industries. *Transitions*<sup>®</sup> lenses are manufactured and distributed by PPG's 51%-owned joint venture with Essilor International.

PPG competes with six other major producers of chlor-alkali products. Price, product availability, product quality and customer service are the key competitive factors. In the specialty chemicals area, PPG's market share varies greatly by business; product quality and performance and technical service are the most critical competitive factors.

The chemicals businesses operate production facilities around the world including five plants in the United States and one each in Canada and Mexico. The two largest facilities, located in Lake Charles, La., and Natrium, W. Va., primarily produce chlor-alkali products. Outside North America, PPG operates two plants in France and one each in Australia, Brazil, Ireland, the Netherlands, Taiwan and the Philippines. PPG owns equity interests in operations in the United States. The average number of persons employed by the chemicals segment during 2004 was 4,400.

## Raw Materials and Energy

The effective management of raw materials and energy is important to PPG's continued success. The Company's most significant raw materials are titanium dioxide and epoxy and other resins in the coatings segment; and sand, soda ash and polyvinyl butyral in the glass segment. Energy is a significant production cost in the chemicals and glass segments. Most of the raw materials and energy used in production are purchased from outside sources, and the Company has made, and plans to continue to make, supply arrangements to meet the planned operating requirements for the future. Supply of critical raw materials and energy is managed by establishing contracts, multiple sources, and identifying alternative materials or technology, whenever possible.

## Research and Development

Research and development costs, including depreciation of research facilities, during 2004, 2003 and 2002 were \$321 million, \$306 million and \$289 million, respectively. PPG owns and operates several research and development facilities to conduct research and development involving new and improved products and processes. Additional process and product research and development work is also undertaken at many of the Company's manufacturing plants.

## Patents

PPG considers patent protection to be important. The Company's business segments are not materially dependent upon any single patent or group of related patents. PPG received \$40 million in 2004, \$29 million in

2003 and \$26 million in 2002 from royalties and the sale of technical know-how.

### **Backlog**

In general, PPG does not manufacture its products against a backlog of orders. Production and inventory levels are geared primarily to projections of future demand and the level of incoming orders.

### **Non-U.S. Operations**

Although PPG has a significant investment in non-U.S. operations, based upon the magnitude and location of investments, management believes that the risk associated with its international operations is not significantly greater than that of its domestic operations.

### **Employee Relations**

The average number of persons employed worldwide by PPG during 2004 was 31,800. The Company has numerous collective bargaining agreements throughout the world and believes it will be able to renegotiate such agreements on satisfactory terms. The Company believes it has good relationships with its employees.

### **Environmental Matters**

Like other companies, PPG is subject to the existing and evolving standards relating to the protection of the environment. Capital expenditures for environmental control projects were \$11 million, \$9 million and \$8 million in 2004, 2003 and 2002, respectively. It is expected that expenditures for such projects in 2005 will approximate \$12 million. Although future capital expenditures are difficult to estimate accurately because of constantly changing regulatory standards and policies, it can be anticipated that environmental control standards will become increasingly stringent and costly. Additionally, about 20% of our chlor-alkali production capacity currently utilizes mercury cell technology. These cells are operated in accordance with applicable laws and regulations and are reviewed at least annually by state authorities. The U.S. Environmental Protection Agency ("USEPA") has issued new regulations imposing significantly more stringent requirements on mercury emissions. These new rules are scheduled to take effect in December 2006. In order to meet the USEPA's new air quality standards, we will need to either invest in air emissions equipment or replace this capacity with newer, non-mercury based technology. We are evaluating our options and believe that either choice can be accomplished within the required timeframe and within the range of PPG's normal capital spending.

PPG is negotiating with various U.S. government agencies concerning 91 current and former manufacturing sites, and offsite waste disposal locations, including 22 sites on the National Priority List. The number of sites is comparable with the prior year. While PPG is not generally a major contributor of wastes to these offsite waste disposal locations, each potentially responsible

party may face governmental agency assertions of joint and several liability. Generally, however, a final allocation of costs is made based on relative contributions of wastes to the site. There is a wide range of cost estimates for cleanup of these sites, due largely to uncertainties as to the nature and extent of their condition and the methods that may have to be employed for their remediation. The Company has established reserves for those sites where it is probable that a liability has been incurred and the amount can be reasonably estimated. As of Dec. 31, 2004 and 2003, PPG had reserves for environmental contingencies totaling \$81 million and \$92 million, respectively. Pretax charges against income for environmental remediation costs in 2004, 2003 and 2002 totaled \$15 million, \$21 million and \$15 million, respectively.

The Company's experience to date regarding environmental matters leads PPG to believe that it will have continuing expenditures for compliance with provisions regulating the protection of the environment and for present and future remediation efforts at waste and plant sites. Management anticipates that such expenditures will occur over an extended period of time. Over the past 10 years the pretax charges against income have ranged between \$10 million and \$49 million per year. We anticipate that charges against income in 2005 will be within that range. It is possible, however, that technological, regulatory and enforcement developments, the results of environmental studies and other factors could alter this expectation. In management's opinion, the Company operates in an environmentally sound manner, is well positioned, relative to environmental matters, within the industries in which it operates, and the outcome of these environmental contingencies will not have a material adverse effect on PPG's financial position or liquidity. See Note 13, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K for additional information related to environmental matters.

### **Internet Access**

The website address for the Company is [www.ppg.com](http://www.ppg.com). The Company's recent filings on Forms 10-K, 10-Q and 8-K and any amendments to those documents can be accessed without charge on that website under Financial, SEC Filings.

### **Item 2. Properties**

See "Item 1. Business" for information on PPG's production and fabrication facilities.

Generally, the Company's plants are suitable and adequate for the purposes for which they are intended, and overall have sufficient capacity to conduct business in the upcoming year.

### **Item 3. Legal Proceedings**

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are

sought. These lawsuits and claims, the most significant of which are described below, relate to product liability, contract, patent, environmental, antitrust and other matters arising out of the conduct of PPG's business. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage with respect to some of the asbestos claims if the settlement is not implemented. PPG's lawsuits and claims against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The result of any future litigation of such lawsuits and claims is inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the settlement described below does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

The Company has been named as a defendant, along with various co-defendants, in a number of antitrust lawsuits filed in federal and state courts. These suits allege PPG acted with competitors to fix prices and allocate markets in the flat glass and automotive refinish industries.

Twenty-nine glass antitrust cases were filed in federal courts, all of which have been consolidated in the U.S. District Court for the Western District of Pennsylvania located in Pittsburgh, Pa. The Court has ruled that the case may proceed as a class action. Similar state court actions are inactive pending resolution of the federal proceedings. All of the initial defendants in the glass class action antitrust case, other than PPG, have entered into settlement agreements with the plaintiffs. On May 29, 2003, the Court granted PPG's motion for summary judgment dismissing the claims against PPG in the glass class action antitrust case. The plaintiffs in that case appealed that order to the U.S. Third Circuit Court of Appeals. On Sept. 30, 2004, the U.S. Third Circuit Court of Appeals affirmed in part and reversed in part the dismissal of PPG and remanded the case for further proceedings. PPG has since petitioned the U.S. Supreme Court for permission to appeal the decision of the U.S. Third Circuit Court of Appeals. If the U.S. Supreme Court rejects PPG's petition for review, the case will likely proceed to trial in 2006.

In addition, approximately 60 cases alleging antitrust violations in the automotive refinish industry have been filed in various state and federal jurisdictions. The approximately 55 federal cases have been consolidated as a class action in the U.S. District Court for the Eastern District of Pennsylvania located in Philadelphia, Pa. Certain of the defendants in the federal automotive refinish case have settled. This case is still at an early stage and discovery is continuing with the remaining defendants. Except for a case in California and a recently filed case in Vermont, the state automotive refinish cases have either been stayed pending resolution of the federal proceedings or have been dismissed.

The plaintiffs in these various antitrust cases are seeking economic and treble damages as well as injunctive relief. PPG believes it has meritorious defenses in these antitrust lawsuits.

The Company has been a defendant since April 1994 in a suit filed by Marvin Windows and Doors ("Marvin") alleging numerous claims, including breach of warranty. All of the plaintiff's claims, other than breach of warranty, were dismissed. However, on Feb. 14, 2002, a federal jury awarded Marvin \$136 million on the remaining claim. Subsequently, the court added \$20 million for pre-judgment interest bringing the total judgment to \$156 million. PPG has appealed that judgment. The appeals court heard the parties' arguments on June 9, 2003, but has not yet rendered its decision. Interest will be added to the \$156 million judgment against PPG during the appeals process. As of Dec. 31, 2004, the amount of the total judgment against PPG, including interest, was approximately \$166 million. PPG believes it has meritorious defenses to the plaintiff's claims and has reasonable prospects of prevailing on appeal.

For over thirty years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. For a description of asbestos litigation affecting the Company and the terms and status of the proposed PPG Settlement Arrangement announced May 14, 2002, see Note 13, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K.

Over the past several years, the Company and others have been named as defendants in several cases in various jurisdictions claiming damages related to exposure to lead and remediation of lead-based coatings applications. PPG has been dismissed as a defendant from most of these lawsuits and has never been found liable in any of these cases.

#### **Item 4. Submission of Matters to a Vote of Security Holders**

None.

## Part II

### Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The information required by Item 5 regarding market information, including stock exchange listings and quarterly stock market prices, dividends and holders of common stock is included in Exhibit 99.1 filed with this Form 10-K and is incorporated herein by reference. This information is also included in the PPG Shareholder Information on page 65 of this Annual Report.

Directors who are not also Officers of the Company receive Common Stock Equivalents pursuant to the PPG Industries, Inc. Deferred Compensation Plan for Directors ("PPG Deferred Compensation Plan for Directors") and, through 2002, the PPG Industries, Inc. Directors' Common Stock Plan ("PPG Directors' Common Stock Plan"). Common Stock Equivalents are hypothetical shares of Common Stock having a value on any given date equal to the value of a share of Common Stock. Common Stock Equivalents earn dividend equivalents that are converted into additional Common Stock Equivalents but carry no voting rights or other rights afforded to a holder of Common Stock. The Common Stock Equivalents credited to Directors under both plans are exempt from registration under Section 4(2) of the Securities Act of 1933 as private offerings made only to Directors of the Company in accordance with the provisions of the plans.

Under the PPG Deferred Compensation Plan for Directors, each Director may elect to defer the receipt of all or any portion of the compensation paid to such Director for serving as a PPG Director. All deferred payments are held in the form of Common Stock Equivalents. Payments out of the deferred accounts are made in the form of Common Stock of the Company (and cash as to any fractional Common Stock Equivalent). The Directors, as a group, were credited with 12,877; 10,607 and 8,217 Common Stock Equivalents in 2004, 2003 and 2002, respectively, under this plan. The values of the Common Stock Equivalents, when credited, ranged from \$57.69 to \$65.09 in 2004, \$43.47 to \$64.02 in 2003 and \$44.70 to \$57.68 in 2002.

Under the PPG Directors' Common Stock Plan, each Director who neither is, nor was, an employee of the Company was credited with Common Stock Equivalents worth one-half of the Director's basic annual retainer. Effective Jan. 1, 2003, active Directors no longer participate in the PPG Directors' Common Stock Plan. On that date, the Common Stock Equivalents held in each active Directors' account in the PPG Directors' Common Stock Plan were transferred to their accounts in the PPG Deferred Compensation Plan for Directors. On Dec. 31, 2004, there were only two retired Directors with accounts remaining in the PPG Directors' Common Stock Plan. For one retired Director, the Common Stock Equivalents are converted to cash at the fair market value of the common

stock and paid in cash. For the other retired Director, the Common Stock Equivalents are converted into and paid in Common Stock of the Company (and cash as to any fractional Common Stock Equivalent). The Directors, as a group, received 93; 141 and 3,325 Common Stock Equivalents in 2004, 2003 and 2002, respectively, under this plan. The values of those Common Stock Equivalents, when credited, ranged from \$57.69 to \$65.09 in 2004, \$43.47 to \$62.74 in 2003 and \$48.73 to \$57.68 in 2002.

#### Issuer Purchases of Equity Securities

The following table summarizes the Company's stock repurchase activity for the three months ended Dec. 31, 2004:

Month	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Maximum Number of Shares that May Yet Be Purchased Under the Programs <sup>(1)</sup>
October 2004				
Repurchase program	50,000	\$62.09	50,000	10,737,115
Other transactions <sup>(2)</sup>	319,367	62.06	—	—
November 2004				
Repurchase program	514,700	66.53	514,700	10,222,415
Other transactions <sup>(2)</sup>	87,416	65.98	—	—
December 2004				
Repurchase program	816,500	67.21	816,500	9,405,915
Other transactions <sup>(2)</sup>	42,143	67.82	—	—
Total quarter ended Dec. 31, 2004				
Repurchase program	1,381,200	\$66.77	1,381,200	9,405,915
Other transactions <sup>(2)</sup>	448,926	\$63.37	—	—

(1) During the fourth quarter of 2004, the Company repurchased the remaining shares available under a 10 million share repurchase program initiated in November 1998 and began repurchasing shares available under a 10 million share repurchase program approved by PPG's Board of Directors in October 2000. In January 2005, the Company announced plans to purchase up to \$500 million of PPG common stock by year end 2005 under the October 2000 share repurchase program.

(2) Includes shares withheld or certified to in satisfaction of the exercise price and/or tax withholding obligation by holders of employee stock options who exercised options granted under the PPG Industries, Inc. Stock Plan.

The plans described in the footnotes below and included as Exhibits to this Form 10-K are incorporated herein by reference in their entirety. The following table provides information as of Dec. 31, 2004, regarding the number of shares of PPG Common Stock that may be issued under PPG's equity compensation plans.

### Equity Compensation Plan Information

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders <sup>(1)</sup>	11,529,714	\$55.88	12,540,296
Equity compensation plans not approved by security holders <sup>(2)</sup>	2,759,718	70.00	154,169
<b>Total<sup>(4)</sup></b>	<b>14,289,432<sup>(3)</sup></b>	<b>\$58.14</b>	<b>12,694,465</b>

(1) Included in this information are the following plans and related number of securities available for future issuance under these plans: PPG Industries, Inc. Stock Plan (10,214,750 shares – see Note 18, “Stock-Based Compensation,” under Item 8 of this Form 10-K), PPG Industries, Inc. Executive Officers' Long Term Incentive Plan (899,553 shares), PPG Industries, Inc. Long Term Incentive Plan (1,325,993 shares) and PPG Industries, Inc. Executive Officers' Annual Incentive Compensation Plan (100,000 shares).

(2) Plans not approved by security holders include the following:

**Incentive Compensation and Management Award Plans** – both annual bonus plans. The PPG Industries, Inc. Incentive Compensation and Deferred Income Plan for Key Employees (the “Incentive Compensation Plan”) applies to approved senior Company managers. The PPG Industries, Inc. Management Award and Deferred Income Plan (the “Management Award Plan”) covers additional approved managers who do not participate in the Incentive Compensation Plan. A participant may receive a bonus under the applicable plan based on individual performance and business unit and corporate financial performance. Bonuses can be paid in cash or shares of PPG stock or a combination of both. The Incentive Compensation Plan was approved by shareholders in 1980. The Management Award Plan has not been approved by shareholders. One pool of shares is available for issuance to pay awards under both Plans. As of Dec. 31, 2004, there were 80,245 shares available for future issuance under both plans.

**PPG Industries, Inc. Deferred Compensation Plan** – allows employees who participate in certain long-term incentive plans and annual bonus plans to defer the receipt of their awards under those plans as well as up to 50% of their salary. Deferrals are credited to phantom investment accounts, which include a phantom PPG stock account, selected by the participant, which are similar to investments available under the PPG Industries, Inc. Employee Savings Plan, which is a 401(k) plan. Amounts credited to the PPG stock account are held as Common Stock Equivalents that have the same characteristics as those described above for the PPG Deferred Compensation Plan for Directors.

Payments from the phantom PPG stock account are made in the form of PPG Common Stock (and cash as to any fractional Common Stock Equivalent). As of Dec. 31, 2004, there were 9,584 shares available for future issuance under this plan.

**PPG Industries, Inc. Challenge 2000 Stock Plan** – a broad-based stock option plan under which on July 1, 1998, the Company granted to substantially all active employees of the Company and its majority owned subsidiaries the option to purchase 100 shares of common stock at its then fair market value of \$70 per share. Options became exercisable on July 1, 2003, and expire on June 30, 2008.

**Employee Recognition Program** – provides a method to recognize and reward employees for special efforts or innovative actions. Officers and directors may not receive awards under this program. Awards can be made in the form of cash or stock. The Board of Directors has authorized a pool of shares of Common Stock, which can be used for awards under the program. As of Dec. 31, 2004, there were 14,340 shares available for future issuance under the program.

**Employee Recruiting Program** – allows the Officers-Directors Compensation Committee of the Board of Directors or the Company's Compensation and Employee Benefits Committee to grant awards of shares of PPG Common Stock or cash, or a combination of both, to persons in order to attract them to work for the Company. The Board of Directors has authorized a pool of shares of Common Stock, which can be used for awards under the program. As of Dec. 31, 2004, there were 50,000 shares available for future issuance under the program.

(3) This total includes 13,724,114 options outstanding under the PPG Industries, Inc. Stock Plan and PPG Industries, Inc. Challenge 2000 Stock Plan (see Note 18, “Stock-Based Compensation,” under Item 8 of this Form 10-K) and 565,318 shares under other equity compensation plans not approved by security holders.

(4) The total number of shares to be issued under the PPG Industries, Inc. Deferred Compensation Plan and the PPG Deferred Compensation Plan for Directors was 563,671 and the total number of shares available for future issuance under those plans was 9,584.



## Item 6. Selected Financial Data

The information required by Item 6 regarding the selected financial data for the five years ended Dec. 31, 2004 is included in Exhibit 99.2 filed with this Form 10-K and is incorporated herein by reference. This information is also reported in the Eleven-Year Digest on page 64 of the Annual Report under the captions net sales, income (loss) before accounting changes, cumulative effect of accounting changes, net income (loss), earnings (loss) per common share before accounting changes, cumulative effect of accounting changes on earnings (loss) per common share, earnings (loss) per common share, earnings (loss) per common share – assuming dilution, dividends per share, total assets and long-term debt for the years 2000 through 2004.

## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

### Performance in 2004 Compared with 2003

#### Overall Performance

Our sales increased 9% to \$9.5 billion in 2004 from \$8.8 billion in 2003. Sales increased 7% due to improved volumes across all of our business segments and 3% due to the positive effects of foreign currency translation, primarily from our European operations. These sales increases were offset by a 1% decline due to lower selling prices.

Gross profit increased \$279 million while the gross profit percentage remained steady at 36.9% in 2004 and 2003. The sales volume increase, favorable impact of currency, improved manufacturing efficiencies, higher selling prices in our chemicals segment and lower pension and other postretirement benefit costs across all of our business segments increased our gross profit. Lower selling prices in our glass and coatings segments and higher natural gas, energy, raw material and labor costs lowered our gross profit.

Selling, general and administrative expense, depreciation and research and development costs declined slightly as a percentage of sales to 25% despite increasing \$142 million in 2004. These costs increased in part to support sales volume growth in 2004 and also because of the impact of foreign currency, inflation and our decision to begin expensing stock options in 2004.

Interest expense was \$17 million less in 2004 than in 2003 reflecting the year over year reduction in debt of \$316 million. Other charges declined \$30 million in 2004 due to a combination of lower environmental remediation, legal and workers compensation expenses and the absence of certain 2003 charges. Other earnings were \$28 million higher in 2004 due primarily to higher earnings from our equity affiliates.

The effective tax rate for 2004 was 30.29% compared to 34.76% for the full year 2003. The reduction in the rate for 2004 reflects the benefit of the subsidy offered

pursuant to the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (the "Medicare Act"), not being subject to tax, the continued improvement in the geographical mix of non-U.S. earnings and the favorable resolution during 2004 of matters related to two open U.S. federal income tax years.

Net income in 2004 totaled \$683 million, an increase of \$189 million over 2003, and earnings per share – diluted increased \$1.06 to \$3.95 per share.

### Results of Business Segments

(Millions)	Net sales		Operating income	
	2004	2003	2004	2003 <sup>(1)</sup>
Coatings	\$5,275	\$4,835	\$777	\$719
Glass	2,204	2,150	169	71
Chemicals	2,034	1,771	291	228

(1) Operating income by segment for 2003 has been revised to reflect a change in the allocation method for certain pension and other postretirement benefit costs in 2004 (See Note 22 under Item 8 of this Form 10-K).

Coatings sales increased \$440 million or 9% in 2004. Sales increased 6% from improved volumes across all our coatings businesses and 4% due to the positive effects of foreign currency translation, primarily from our European operations. Sales declined 1% due to lower selling prices, principally in our automotive business. Operating income increased \$58 million in 2004. Factors increasing operating income were the higher sales volume (\$135 million) and the favorable effects of currency translation described above and improved manufacturing efficiencies of \$20 million. Factors decreasing operating income were inflationary cost increases of \$82 million and lower selling prices.

Glass sales increased \$54 million or 3% in 2004. Sales increased 6% from improved volumes primarily from our flat glass, fiber glass, and automotive original equipment businesses net of lower volumes in our automotive replacement glass business. Sales also increased 2% due to the positive effects of foreign currency translation, primarily from our European fiber glass operations. Sales declined 5% due to lower selling prices across all our glass businesses. Operating income in 2004 increased \$98 million. Factors increasing operating income were improved manufacturing efficiencies of \$110 million, higher sales volume (\$53 million) described above, higher equity earnings and the gains on the sale/leaseback of precious metals of \$19 million. The principal factor decreasing operating income was lower selling prices. Fiber Glass volumes were up 15% for the year, although pricing declined. With the shift of electronic printed wiring board production to Asia and the volume and pricing gains there, equity earnings from our joint venture serving that region grew in 2004. These factors combined with focused cost reductions and manufacturing efficiencies to improve the operating performance of this business, as we continue to position it for future growth in profitability.

# Management's Discussion and Analysis

Chemicals sales increased \$263 million or 15% in 2004. Sales increased 10% from improved volumes in our commodity and specialty businesses and 4% due to higher selling prices for our commodity products. Sales also increased 1% due to the positive effects of foreign currency translation, primarily from our European operations. Operating income increased \$63 million in 2004. Factors increasing operating income were the higher selling prices for our commodity products and the higher sales volume (\$73 million) described above, improved manufacturing efficiencies of \$25 million and lower environmental expenses. Factors decreasing 2004 operating income were inflationary cost increases of \$40 million and higher energy costs of \$79 million. Market influences, such as fewer new drug approvals and increasing share of generic drugs, are putting pressure on the pharmaceutical industry resulting in a challenging environment for our fine chemicals business in the near-term that includes significantly lower pricing.

## *Other Significant Factors*

The Company's pension and other postretirement benefit costs for 2004 were \$45 million lower than in 2003. This decrease reflects the market driven growth in pension plan assets that occurred in 2003, the impact of the \$140 million in cash contributed to the pension plans by the Company in 2004 and the benefit of the subsidy offered pursuant to the Medicare Act, as discussed in Note 12 under Item 8 of this Form 10-K.

In October 2004, the American Jobs Creation Act of 2004 ("AJCA 2004") was signed into law. Among its many provisions, the AJCA 2004 provides a limited opportunity in 2005 to repatriate the undistributed earnings of our non-U.S. subsidiaries at a U.S. tax cost that may be lower than the normal tax cost on such distributions. We are in the process of evaluating the impact of this provision on PPG and are awaiting final guidance from the Internal Revenue Service to complete that evaluation; however, our current estimate is that the tax cost of any dividends we decide to pay in 2005 will not increase our effective tax rate significantly. We have included the estimated net impact of the remaining provisions of the AJCA 2004, including the U.S. manufacturing deduction, in our current estimate of the effective tax rate for 2005 of 31.5%.

## *Outlook*

In 2004, the U.S. economy continued to gain momentum from the expansion that began in late 2003. Consumer confidence has been strong and has been buoyed by low interest rates, employment growth and improved U.S. equity markets that reached their highest level in nearly three years. Industrial production, which grew at a rate of 7% at the beginning of 2004, slowed in the second half of the year, but still achieved a solid 4.5% growth rate for the year. Industrial production is the economic metric that most positively correlates with our volume growth

because it reflects activity in PPG's broad end-use markets. The commercial construction sector grew at a 2% rate for the year but showed signs of further improvement during the second half of the year. For the full year, North American sales of light vehicles were up slightly as were European automotive sales.

As the new year begins, most economists expect that the U.S. economy will continue to perform well in 2005 though growth may perhaps be at a slower pace. Inflation is expected to remain relatively low, despite rising energy costs and raw material prices, because of increasing productivity. Interest rates should remain at relatively low levels.

The healthy U.S. economy should help to support overall global economic growth in 2005. Global competition combined with productivity improvements will keep overall inflation in check and sustain worldwide economic growth. Growth in the European economy will likely be adversely impacted by the strength of the Euro, which at the end of 2004 was near its all-time high against the U.S. dollar. However, the strengthening economy of Eastern Europe may be a mitigating factor.

The Asian economies are expected to continue to record relatively high growth rates, especially in China. This growth remains strong, yet tempered due to a variety of government efforts aimed at preventing the economy from overheating. China's infrastructure growth is expected to continue to impact the overall global economy via increased demand for basic goods and commodities. Additionally, China and other low labor cost countries will continue to put downward pressure on worldwide pricing of consumer goods. As was the case in 2004, we expect China's expansion to benefit our coatings, fiber glass and optical businesses, while requiring our glass and commodity chemicals businesses to continue their ongoing focus on reducing costs.

In 2005, we will remain committed to our PPG Blueprint values of serving our customers, introducing new technologies and achieving operational excellence through our continuing focus on reducing costs. The prospect of favorable global economic conditions this year lead us to expect continued sales growth in 2005. Important cost issues in 2005 will continue to include pensions, other postretirement benefits, natural gas and raw materials.

While we have consistently focused on reducing our costs, we continue to be challenged by higher costs for employee benefits, particularly pensions and medical. Prior to 2001, our pension income more than offset other postretirement benefit costs. In 2004, pension expense combined with other postretirement benefit costs were nearly \$250 million. This cost increase translates to over \$1.05 per share in lower earnings in 2004 compared with 2000. This increase in costs results from a combination of the decline in the market value of the Company's pension plans assets, due primarily to negative investment returns

# Management's Discussion and Analysis

in the equity markets during 2000-2002, a reduction in our expected future rate of return on pension plan assets, lower discount rate assumption and rising retiree medical costs, particularly for prescription drugs. The current low interest rate environment has continued and, in fact, the discount rate at Dec. 31, 2004, was approximately 25 basis points lower than at Dec. 31, 2003. This raises the present value of future benefit obligations and expense. Offsetting the negative impact of lower discount rates were the strong actual return on our U.S. plan assets of over 25% in 2003 and over 12% in 2004. Additionally, the benefit of the subsidy available under the Medicare Act reduced our accumulated postretirement benefit obligation and resulted in a reduction of our other postretirement benefit cost in 2004 of \$19 million. This benefit is expected to be approximately \$25 million in 2005. Based on current estimates, including the benefit of this subsidy, our pension and other postretirement benefit costs for 2005 are expected to rise only slightly from the 2004 level.

High natural gas costs in North America continue to be a drag on earnings. Changes in natural gas prices have a significant impact on the operating performance of our chemicals and glass segments. Each one-dollar change in the price of natural gas per mmbtu (million British thermal units) would have a direct impact of approximately \$60 million to \$70 million on our annual operating costs. It is difficult to predict future natural gas prices, which continue to be high and volatile. In order to reduce the risks associated with volatile prices, we use a number of techniques, which include reducing consumption through improved manufacturing processes, switching to alternative fuels and hedging. We currently estimate our average cost for natural gas in the first quarter of 2005 will be approximately \$6.30 per mmbtu, including the impact of hedges we have in place on approximately one-third of our expected first quarter natural gas consumption. This estimate represents an increase of 12% over our first quarter 2004 cost of natural gas.

In the second half of 2004, we began to see increases in the prices for raw materials used in our coatings businesses, as a result of the industrial expansion, supply/demand imbalance and increases in supplier costs for oil and other inputs. Year-over-year coatings raw material costs will rise at least \$50 million in the first quarter of 2005 and are likely to continue to be higher for the remainder of 2005. We plan to combat the impact of these rising costs by seeking alternate supply sources, reformulating our products, improving our production processes and yields and raising our selling prices.

These same factors, along with high capacity utilization, resulted in tighter supplies of chlor-alkali products. This led to a sharp increase in ECU prices in the second half of 2004 which benefited our commodity chemicals business. ECU prices in the fourth quarter 2004 were up 31% versus the fourth quarter of 2003. We

expect these tight supply/demand conditions in the market to continue at least through the first half of 2005.

Our focus on our Blueprint values has enabled us to continue along our track of strong cash generation, as evidenced by the \$3 billion in cash from operating activities over the 2002-2004 time period. We have continued to fund our portfolio of businesses and prudently manage capital spending while at the same time continuing our trend of increasing dividend payments to shareholders for 33 consecutive years and reducing our debt by over \$1 billion over the past three years. Additionally, we repurchased \$100 million of PPG common stock in 2004 and have announced plans to repurchase up to \$500 million in PPG common stock by the end of 2005.

We remain confident that PPG is well positioned to benefit from the expected worldwide economic growth in 2005.

## *Accounting Standard Adopted in 2004*

Effective Jan. 1, 2004, we adopted the fair value method of recording stock-based compensation, as defined in Statement of Financial Accounting Standards ("SFAS") No. 123, "Accounting for Stock-Based Compensation," for stock options awarded to employees after the date of adoption and for previously issued stock options that were not vested as of Jan. 1, 2004 using the modified prospective transition method. The adoption increased "Selling, general and administrative" expense by \$20 million (\$13 million, aftertax, or \$0.07 per share) for the year ended Dec. 31, 2004. This impact reflects the fact that beginning in 2004 stock option grants under the PPG Stock Plan will vest three years after the date of grant. Previously, original grants of stock options under this plan vested after one year. Additionally, under the modified prospective transition method we recorded a deferred tax asset of \$8 million and a corresponding increase to additional paid-in capital equal to the deferred tax benefit that would have been recognized in 2003 had compensation expense been recorded under the fair value provisions of SFAS No. 123 for options outstanding at the date of adoption but not fully vested.

## *Accounting Standards to be Adopted in Future Years*

In November 2004, the Financial Accounting Standards Board ("FASB") issued SFAS No. 151, "Inventory Costs, an Amendment of ARB No. 43, Chapter 4." SFAS No. 151 requires the exclusion of certain costs from inventories and the allocation of fixed production overheads to inventories to be based on the normal capacity of the production facilities. The provisions of this Statement are effective for costs incurred after Dec. 31, 2005. We are currently in the process of evaluating the effect the adoption of this standard will have on PPG; however we do not expect it to have a material effect on PPG's consolidated results of operations or financial position.

In December 2004, the FASB issued a revision to SFAS No. 123, "Share-Based Payments" which now

# Management's Discussion and Analysis

requires that stock options be expensed based on their fair value. As discussed above, PPG began expensing stock options effective Jan. 1, 2004, and consequently our adoption of this revised Statement in 2005 is not expected to have a material impact on the Company's results of operations or financial position.

## Performance in 2003 Compared with 2002

### Overall Performance

Our sales increased 9% to \$8.8 billion in 2003 from \$8.1 billion in 2002. Sales increased 4% due to the positive effects of foreign currency translation, primarily from our European operations, 3% due to improved volumes across all of our business segments and 2% due to higher selling prices, primarily in our chemicals segment.

The gross profit percentage decreased slightly to 36.9% in 2003 from 37.2% in 2002. Higher pension and postretirement medical costs across all of our business segments, higher energy costs in our glass and chemicals segments and inflationary cost increases were offset by higher selling prices in our chemicals segment and the benefits realized from improved manufacturing efficiencies in our coatings and glass segments.

Net income (loss) and earnings (loss) per share – diluted for 2003 and 2002 are presented in the following table along with the more significant charges that were included in those amounts.

	2003		2002	
	Net income	Earnings per share – diluted	Net (loss) income	(Loss) earnings per share – diluted
As reported	\$494	\$2.89	\$(69)	\$(0.41)
Included in net income (loss) are the following significant charges, net of tax:				
Asbestos settlement – net (See Note 13)	23	0.14	484	2.85
Restructuring and other related activities (See Note 2)	2	0.01	52	0.31
Cumulative effect of accounting change (See Note 1)	6	0.03	9	0.05

The notes referenced in the above table are found under Item 8 of this Form 10-K.

Net income for 2003 compared to 2002 was \$563 million higher. The significant charges in the table above account for \$514 million of this change. The remaining \$49 million increase in net income was due to a combination of factors. The factors causing 2003 net income to be higher were higher selling prices in our chemicals segment, higher sales volumes across all of our business segments, the favorable effects of foreign currency translation, primarily from our European operations, improved manufacturing efficiencies and lower overhead costs in our coatings and glass segments, the gain on the sale of certain non-strategic assets, including marketable securities, and lower interest expense due to lower debt levels in 2003. Higher pension and postretirement medical costs across all of our business segments, higher

energy costs in our glass and chemicals segments and the negative effects of inflation were factors reducing 2003 net income.

### Results of Business Segments

(Millions)	Net sales		Operating income <sup>(1)</sup>	
	2003	2002	2003	2002
Coatings	\$4,835	\$4,482	\$719	\$609
Glass	2,150	2,071	71	145
Chemicals	1,771	1,514	228	124

(1) Operating income by segment has been revised to reflect a change in the allocation method for certain pension and other postretirement benefit costs in 2004 (See Note 22 under Item 8 of this Form 10-K).

Coatings sales increased \$353 million or 8% in 2003. Sales increased 6% due to the positive effects of foreign currency translation, primarily from our European operations and 2% from improved volumes primarily from our aerospace, architectural, automotive and industrial businesses. Lower pricing in our automotive business offset higher pricing in our other coatings businesses. Operating income increased \$110 million in 2003. Operating income in 2003 and 2002 included pretax restructuring and other related costs of \$2 million and \$73 million, respectively. Factors increasing operating income were lower restructuring costs in 2003, the higher sales volumes described above, improved manufacturing efficiencies, the favorable effects of foreign currency translation and lower overhead costs. Factors decreasing operating income were inflationary cost increases and higher pension and postretirement medical costs.

Glass sales increased \$79 million or 4% in 2003. Sales increased 4% from improved volumes primarily from our automotive original equipment, automotive replacement glass and flat glass businesses, net of lower volumes from our fiber glass business. Sales also increased 3% due to the positive effects of foreign currency translation, primarily from our European fiber glass operations. These sales increases were offset by a 3% decline due to lower selling prices from our automotive original equipment, automotive replacement glass and fiber glass businesses. Operating income decreased \$74 million in 2003. Operating income in 2003 and 2002 included pretax restructuring and other related costs of \$2 million and \$1 million, respectively. Factors decreasing operating income were lower selling prices of \$68 million, higher pension and postretirement medical costs of \$67 million and higher energy costs of \$30 million. Factors increasing operating income in 2003 by \$91 million were the improved manufacturing efficiencies, lower overhead costs, the higher sales volumes described above and the favorable effects of foreign currency translation. Our fiber glass business continued to experience significant sales and earnings declines principally as a result of global industry overcapacity, which has led to substantially lower pricing.

Chemicals sales increased \$257 million or 17% in 2003. Sales increased 13% from higher selling prices for

# Management's Discussion and Analysis

our commodity products. Sales also increased 3% due to the positive effects of foreign currency translation, primarily from our European operations and 1% from higher optical, fine and silicas products volumes, net of lower commodity volumes. Operating income increased \$104 million in 2003. Operating income in 2002 included pretax restructuring and other related costs of \$1 million. Higher commodity product pricing in 2003 increased operating earnings by \$200 million while higher energy and pension and postretirement medical costs decreased operating earnings by \$70 million and \$22 million, respectively.

## *Other Significant Factors*

The Company's pretax earnings in 2003 included net periodic pension expense of \$176 million compared to \$54 million in 2002. The increase in pension costs is due primarily to a decrease in the market value of pension plan assets through the end of 2002, a reduction in the expected return on plan assets assumption for 2003 and the amortization of accumulated actuarial losses. In addition, the cost of other postretirement benefits in 2003 was \$115 million compared to \$91 million in 2002. On a combined basis, the increase in net periodic benefit cost of \$146 million was \$44 million for the coatings segment, \$67 million for the glass segment, \$22 million for the chemicals segment and \$13 million for corporate.

Although the majority of the Company's defined benefit plans continued to be underfunded on an accumulated benefit obligation ("ABO") basis as of Dec. 31, 2003, the underfunded amount was lower, which resulted in an increase in shareholders' equity through a decrease in the accumulated other comprehensive income of \$147 million, aftertax. See Note 12, "Pensions and Other Postretirement Benefits," under Item 8 of this Form 10-K for additional information.

The effective tax rate for 2003 was 34.76%.

## **Commitments and Contingent Liabilities, including Environmental Matters**

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. In a suit filed by Marvin Windows and Doors, PPG has appealed the unfavorable judgment awarded by a federal jury. The appeals court heard the parties' arguments on June 9, 2003, but has not yet rendered its decision. PPG believes it has meritorious defenses to the plaintiff's claims and has reasonable prospects of prevailing on appeal. See Item 3, "Legal Proceedings" of this Form 10-K and Note 13, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K for an expanded description of this case and certain other lawsuits, including the proposed PPG Settlement Arrangement for asbestos claims announced on May 14, 2002. As discussed in Item 3 and Note 13, although the result of any future litigation of such lawsuits and claims

is inherently unpredictable, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the PPG Settlement Arrangement described in Note 13 does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, any such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

It is PPG's policy to accrue expenses for environmental contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Reserves for environmental contingencies are exclusive of claims against third parties and are generally not discounted. As of Dec. 31, 2004 and 2003, PPG had reserves for environmental contingencies totaling \$81 million and \$92 million, respectively. Pretax charges against income for environmental remediation costs in 2004, 2003 and 2002 totaled \$15 million, \$21 million and \$15 million, respectively, and are included in "Other charges" in the accompanying statement of income. Cash outlays related to such environmental remediation aggregated \$26 million, \$16 million and \$22 million in 2004, 2003 and 2002, respectively. In addition to the amounts currently reserved, the Company may be subject to loss contingencies related to environmental matters estimated to be as much as \$200 million to \$400 million, which range is unchanged from the prior year end. Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence. Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time. Over the past 10 years the pretax charges against income have ranged between \$10 million and \$49 million per year. We anticipate that charges against income in 2005 will be within that range. It is possible, however, that technological, regulatory and enforcement developments, the results of environmental studies and other factors could alter this expectation. See Note 13, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K for an expanded description of certain of these environmental contingencies. In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity.

In June 2003, our partner in a fiber glass joint venture in South America filed for bankruptcy. Upon resolution of the bankruptcy proceedings, the partner's ownership interest may transfer to one of its senior secured creditors or be sold. While PPG expects operations at the joint venture to continue, the Company is currently evaluating its options with respect to this venture, which may include the sale or liquidation of the venture. Should liquidation occur, PPG's exposure to loss would be

# Management's Discussion and Analysis

limited to \$12 million, which includes a combination of the Company's investment, outstanding receivables and a loan guarantee related to this venture.

## Impact of Inflation

In 2004, the combined impact of lower overall selling prices and higher production costs, due to the negative effects of inflation, including the impact of higher raw material and labor costs across all our segments and higher energy costs in our glass and chemicals segments, was only partially offset through improved manufacturing efficiencies. In 2003, the increase in production costs due to the negative effects of inflation, including the impact of higher energy costs in our glass and chemicals segments, was offset by the impact of higher selling prices in our chemicals segment and the improved manufacturing efficiencies in our coatings and glass segments. In 2002, the decline in selling prices and the negative effects of inflation on our production costs were not fully recovered through improved manufacturing efficiencies across all of our businesses and lower raw material and natural gas costs.

We expect the negative impact of inflation on our production costs to be more significant in 2005 than in 2004, primarily because of the expected increases in our coatings raw material costs. We anticipate that the combination of continuing improvements in manufacturing efficiencies and an overall increase in our selling prices in 2005 will offset the negative impact of inflation, but achieving that result will be a challenge.

## Liquidity and Capital Resources

During the past three years, we had sufficient financial resources to meet our operating requirements, to fund our capital spending, share repurchases and pension plans and to pay increasing dividends to our shareholders.

Cash from operating activities was \$1,018 million, \$1,123 million and \$872 million in 2004, 2003 and 2002, respectively. Capital spending was \$311 million, \$220 million and \$260 million in 2004, 2003 and 2002, respectively. This spending related to modernization and productivity improvements, expansion of existing businesses, environmental control projects and business acquisitions, which amounted to \$67 million, \$3 million and \$22 million in 2004, 2003 and 2002, respectively. Capital spending, excluding acquisitions, is expected to be approximately \$350 million during 2005.

We periodically review our array of businesses in relation to our overall strategic and performance objectives. As part of this review, we may acquire or divest of certain businesses or enter into joint ventures with other companies. During 2005, we anticipate that any acquisitions would be funded through a combination of cash generated from operations or from the sale of

other businesses and, to a lesser extent, external funding sources or the issuance of stock.

Dividends paid to shareholders totaled \$307 million, \$294 million and \$287 million in 2004, 2003 and 2002, respectively. PPG has paid uninterrupted dividends since 1899, and 2004 marked the 33rd consecutive year of increased dividend payments to shareholders. Over time, our goal is to sustain our dividends at approximately one-third of our earnings per share.

During 2004, the Company repurchased 1.5 million shares of PPG common stock at a cost of \$100 million under previously authorized share repurchase programs. During 2003 and 2002, the Company did not repurchase any shares of its common stock. At Dec. 31, 2004, there are 9.4 million shares of common stock authorized for repurchase remaining under a program approved in October 2000. In January 2005, the Company announced plans to repurchase up to \$500 million of PPG common stock by year end 2005 under this program.

While we have had no mandatory funding contribution required under Pension Benefit Guarantee Corporation or Internal Revenue Service ("IRS") regulations for our U.S. pension plans, we chose to make voluntary contributions of \$100 million in 2004 and \$22 million in 2003. These pension contributions will allow the Company more flexibility in determining both the timing and amounts of future mandatory contributions under the complex ERISA and IRS pension funding regulations. Based on our current estimate under existing U.S. pension funding regulations, with available funding credits, there will be no mandatory pension funding requirement until 2008 at the earliest even if our plan assets remain at December 2004 levels. During 2004, 2003 and 2002, we made contributions to our non-U.S. pension plans totaling \$40 million, \$41 million and \$20 million, respectively. We expect to make mandatory contributions to our non-U.S. plans in 2005 of approximately \$20 million.

During 2004, after funding the matters described above, we were able to repay over \$350 million of debt. Consequently, the ratio of total debt, including capital leases, to total debt and equity declined to 27% at Dec. 31, 2004 from 36% at Dec. 31, 2003. We were also able to increase our cash by about \$200 million in 2004. The Company has invested this cash on a short-term basis in high credit quality cash equivalents.

Cash from operations and the Company's debt capacity are expected to continue to be sufficient to fund capital spending, share repurchases, dividend payments, contributions to pension plans, amounts due under the proposed asbestos settlement and operating requirements, including PPG's significant contractual obligations, which

# Management's Discussion and Analysis

are presented in the following table along with amounts due under the proposed asbestos settlement:

(Millions)	Total	Obligations Due In:			
		2005	2006-2007	2008-2009	Thereafter
<b>Contractual Obligations</b>					
Long-term debt	\$1,311	\$130	\$165	\$298	\$ 718
Capital lease obligations	4	1	2	1	—
Operating leases	267	75	103	55	34
Unconditional purchase obligations	807	165	154	85	403
<b>Total</b>	<b>\$2,389</b>	<b>\$371</b>	<b>\$424</b>	<b>\$439</b>	<b>\$1,155</b>
<b>Asbestos Settlement<sup>(1)</sup></b>					
Aggregate cash payments	\$ 998	\$264	\$158	\$ 66	\$ 510
PPG stock and other	140	140	—	—	—
<b>Total</b>	<b>\$1,138</b>	<b>\$404</b>	<b>\$158</b>	<b>\$ 66</b>	<b>\$ 510</b>

(1) We have recorded an obligation equal to the net present value of the aggregate cash payments, along with the PPG stock and other assets to be contributed to the Asbestos Settlement Trust. However, PPG has no obligation to pay any amounts under this settlement until the Effective Date, as more fully discussed in Note 13, "Commitments and Contingent Liabilities" under Item 8 of this Form 10-K.

The unconditional purchase commitments are principally take-or-pay obligations related to the purchase of certain materials, including industrial gases and natural gas, consistent with customary industry practice. These also include PPG's commitment to purchase electricity and steam from the RS Cogen joint venture discussed in Note 5, "Investments," under Item 8 of this Form 10-K.

See Note 7, "Debt and Bank Credit Agreements and Leases," under Item 8 of this Form 10-K for details regarding the use and availability of committed and uncommitted lines of credit, letters of credit, guarantees, and debt covenants.

In addition to the amounts available under the lines of credit, the Company may issue up to \$500 million aggregate principal amount of debt securities under a shelf registration statement filed with the Securities and Exchange Commission in July 1999.

## Off-Balance Sheet Arrangements

The Company's off-balance sheet arrangements include the operating leases and unconditional purchase obligations disclosed in the "Liquidity and Capital Resources" section in the contractual obligations table as well as letters of credit and guarantees as discussed in Note 7, "Debt and Bank Credit Arrangements and Leases," under Item 8 of this Form 10-K.

## Critical Accounting Estimates

Management has evaluated the accounting policies used in the preparation of the financial statements and related notes presented under Item 8 of this Form 10-K and believes those policies to be reasonable and appropriate. We believe that the most critical accounting estimates used in the preparation of our financial statements relate to accounting for contingencies, under which we accrue a

loss when it is probable that a liability has been incurred and the amount can be reasonably estimated, and to accounting for pensions, other postretirement benefits, goodwill and other identifiable intangible assets with indefinite lives because of the importance of management judgment in making the estimates necessary to apply these policies.

Contingencies, by their nature, relate to uncertainties that require management to exercise judgment both in assessing the likelihood that a liability has been incurred as well as in estimating the amount of potential loss. The most important contingencies impacting our financial statements are those related to the collectibility of accounts receivable, environmental remediation, pending litigation against the Company and the resolution of matters related to open tax years. For more information on these matters, see Note 3, "Working Capital Detail," Note 11, "Income Taxes" and Note 13, "Commitments and Contingent Liabilities" under Item 8 of this Form 10-K.

Accounting for pensions and other postretirement benefits involves estimating the cost of benefits to be provided well into the future and attributing that cost over the time period each employee works. To accomplish this, extensive use is made of assumptions about inflation, investment returns, mortality, turnover, medical costs and discount rates. These assumptions are reviewed annually. See Note 12, "Pensions and Other Postretirement Benefits," under Item 8 of this Form 10-K for information on these plans and the assumptions used.

The discount rate used in accounting for pensions and other postretirement benefits is determined by considering the timing and amount of projected future benefit payments, evaluating market interest rate indices and using an outside advisor to determine the yield on a diversified portfolio of available high quality fixed income securities that matches our projected future benefit payments. The discount rate assumption for 2005 is 6.0% for our U.S. defined benefit pension and other postretirement benefit plans. A reduction in the discount rate of 50 basis points, with all other assumptions held constant, would increase 2005 net periodic benefit expense for our defined benefit pension and other postretirement benefit plans by approximately \$9 million and \$6 million, respectively.

The expected return on plan assets assumption used in accounting for our pension plans is determined by evaluating the mix of investments that comprise plan assets and external forecasts of future long-term investment returns. For 2004, the return on plan assets assumption for our U.S. defined benefit pension plans was 8.5%. We expect to use the same assumption for 2005. A reduction in the rate of return of 50 basis points, with other assumptions held constant, would increase 2005 net periodic pension expense by approximately \$11 million.

As discussed in Note 1, "Summary of Significant Accounting Policies," under Item 8 of this Form 10-K, the

# Management's Discussion and Analysis

Company tests goodwill and identifiable intangible assets with indefinite lives for impairment at least annually by comparing the fair value of the reporting units to their carrying values. Fair values are estimated using discounted cash flow methodologies that are based on projections of the amounts and timing of future revenues and cash flows. Based on this testing, none of our goodwill was impaired as of Dec. 31, 2004; however the fair value of our fine chemicals business declined during 2004. As a result, some or all of the related goodwill of \$28 million is at risk in 2005 for impairment should our projected growth in the business not occur. The excess of the fair value over the carrying value of our fiber glass business grew during 2004.

As part of our ongoing financial reporting process, a collaborative effort is undertaken involving PPG managers with functional responsibility for financial, credit, environmental, legal, tax and benefit matters and outside advisors such as consultants, engineers, lawyers and actuaries. The results of this effort provide management with the necessary information on which to base their judgments on these contingencies and to develop the estimates and assumptions used to prepare the financial statements.

We believe that the amounts recorded in the financial statements under Item 8 of this Form 10-K related to these contingencies, pensions, other postretirement benefits, goodwill and other identifiable intangible assets with indefinite lives are based on the best estimates and judgments of the appropriate PPG management, although actual outcomes could differ from our estimates.

## Currency

During 2004 and 2003, the U.S. dollar weakened against the currencies of most of the countries in which PPG operates, most notably against the euro, the British pound sterling and the Canadian dollar. The effects of translating the net assets of our operations denominated in non-U.S. currencies to the U.S. dollar increased consolidated net assets by \$180 million and \$328 million for the years ended Dec. 31, 2004 and 2003, respectively. In addition, the weaker U.S. dollar had a favorable impact on 2004 and 2003 pretax earnings of approximately \$35 million and \$50 million, respectively.

The euro and the British pound sterling strengthened against the U.S. dollar by 18% and 11%, respectively, during 2002. The effects of translating the net assets and net earnings of our operations denominated in these currencies to the U.S. dollar increased consolidated net assets by approximately \$140 million but did not have a significant impact on the results of operations. This was offset, in part, by the continued devaluation of the Argentine peso, which reduced our net investment in Argentina by \$39 million.

## Research and Development

Innovation and technology have been a hallmark of our Company's success throughout its history. Research and development costs totaled over 3% of sales in each of the past three years, representing a level of expenditure that we expect to continue in 2005. These costs include technology-driven improvements to our manufacturing processes and customer technical service, as well as the costs of developing new products. Because of our broad array of products and customers, we are not materially dependent upon any single technology platform.

## Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 provides a safe harbor for forward-looking statements made by or on behalf of the Company. Management's Discussion and Analysis and other sections of this Annual Report contain forward-looking statements that reflect the Company's current views with respect to future events and financial performance.

Forward-looking statements are identified by the use of the words "aim," "believe," "expect," "anticipate," "intend," "estimate" and other expressions that indicate future events and trends. Any forward-looking statement speaks only as of the date on which such statement is made and the Company undertakes no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our reports to the Securities and Exchange Commission. Also, note the following cautionary statements.

Many factors could cause actual results to differ materially from the Company's forward-looking statements. Such factors include increasing price and product competition by foreign and domestic competitors, fluctuations in cost and availability of raw materials, the ability to maintain favorable supplier relationships and arrangements, economic and political conditions in international markets, the ability to penetrate existing, developing and emerging foreign and domestic markets, which also depends on economic and political conditions, foreign exchange rates and fluctuations in such rates, and the unpredictability of existing and possible future litigation, including litigation that could result if PPG's Settlement Agreement for asbestos claims does not become effective. However, it is not possible to predict or identify all such factors. Consequently, while the list of factors presented here is considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements.



Consequences of material differences in the results compared with those anticipated in the forward-looking statements could include, among other things, business disruption, operational problems, financial loss, legal liability to third parties and similar risks, any of which could have a material adverse effect on the Company's consolidated financial condition, operations or liquidity.

#### **Item 7a. Quantitative and Qualitative Disclosures About Market Risk**

PPG is exposed to market risks related to changes in foreign currency exchange rates, interest rates, natural gas prices and PPG's stock price arising from transactions that are entered into in the normal course of business. The Company may enter into derivative financial instrument transactions in order to manage or reduce this market risk. A detailed description of these exposures and the Company's risk management policies are provided in Note 9, "Derivative Financial Instruments," under Item 8 of this Form 10-K.

The following disclosures summarize PPG's exposure to market risks and information regarding the use of and fair value of derivatives employed to manage our exposure to such risks. Quantitative sensitivity analyses have been provided to reflect how reasonable, unfavorable changes in market rates can impact PPG's financial results, cash flows and financial condition.

Foreign currency forward and option contracts outstanding during 2004 and 2003 were used to hedge PPG's exposure to foreign currency transaction and translation risk. The fair value of these contracts as of Dec. 31, 2004 and 2003 was not material. The potential reduction in PPG's earnings resulting from the impact of adverse changes in exchange rates on the fair value of its outstanding foreign currency hedge contracts of 10% for European currencies and 20% for Asian and South American currencies would also not have been material.

PPG had non-U.S. dollar-denominated debt of \$44 million and \$28 million outstanding as of Dec. 31, 2004 and 2003, respectively. A weakening of the U.S. dollar by 10% against European currencies and by 20% against

Asian and South American currencies would have resulted in unrealized translation losses of approximately \$11 million and \$7 million as of Dec. 31, 2004 and 2003, respectively.

Interest rate swaps are used to manage a portion of PPG's interest rate risk and, as of Dec. 31, 2004 and 2003, the fair value of the interest rate swaps in place was an asset of \$4 million and \$9 million, respectively. The fair value of these swaps would have decreased by \$9 million and \$10 million as of Dec. 31, 2004 and 2003, respectively, if variable interest rates increased by 10%. A 10% increase in interest rates in the U.S., Canada, Mexico and Europe and a 20% increase in interest rates in Asia and South America would have affected PPG's variable rate debt obligations by increasing interest expense by approximately \$2 million and \$1 million as of Dec. 31, 2004 and 2003, respectively. Further, a 10% reduction in interest rates would have increased the present value of the Company's fixed rate debt by approximately \$36 million and \$40 million as of Dec. 31, 2004 and 2003, respectively. Such changes would not have had a material effect on PPG's annual earnings or cash flows.

The fair value of natural gas swap contracts in place was a liability of \$2 million and an asset of \$3 million as of Dec. 31, 2004 and 2003, respectively. These contracts were entered into to reduce PPG's exposure to rising prices of natural gas. A 10% reduction in the price of natural gas would result in a loss in the fair value of the underlying natural gas swap contracts outstanding as of Dec. 31, 2004 and 2003 of approximately \$1 million and \$3 million, respectively.

An equity forward arrangement was entered into to hedge the Company's exposure to changes in fair value of its future obligation to contribute PPG stock into an asbestos settlement trust (see Note 9, "Derivative Financial Instruments" and Note 13, "Commitments and Contingent Liabilities," under Item 8 of this Form 10-K). The fair value of this instrument as of Dec. 31, 2004 and 2003 was an asset of \$19 million and \$15 million, respectively. A 10% decrease in PPG's stock price would have reduced the value of this instrument by \$6 million, as of Dec. 31, 2004 and 2003.

# Financial and Operating Review

## Item 8. Financial Statements and Supplementary Data

### Internal Controls – Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of PPG Industries, Inc.:

We have audited management's assessment, included in the accompanying Management Statement, that PPG Industries, Inc. and subsidiaries (the "Company") maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on management's assessment and an opinion on the effectiveness of the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and

directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with policies or procedures may deteriorate.

In our opinion, management's assessment that the Company maintained effective internal control over financial reporting as of December 31, 2004, is fairly stated, in all material respects, based on the criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on the criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedule as of and for the year ended December 31, 2004 of the Company and our report dated February 17, 2005 expressed an unqualified opinion on those financial statements and financial statement schedule.

*Deloitte & Touche LLP*

**Deloitte & Touche LLP**  
Pittsburgh, Pennsylvania  
February 17, 2005

## Financial Statements – Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of PPG Industries, Inc.:

We have audited the accompanying consolidated balance sheets of PPG Industries, Inc. and subsidiaries (the “Company”) as of December 31, 2004 and 2003, and the related consolidated statements of income, shareholders’ equity, comprehensive income and cash flows for each of the three years in the period ended December 31, 2004. Our audits also included the financial statement schedule listed in Item 15(b). These financial statements and the financial statement schedule are the responsibility of the Company’s management. Our responsibility is to express an opinion on the financial statements and the financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of PPG Industries, Inc. and subsidiaries as of December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2004 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of the Company’s internal control over financial reporting as of December 31, 2004, based on the criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 17, 2005 expressed an unqualified opinion on management’s assessment of the effectiveness of the Company’s internal control over financial reporting and an unqualified opinion on the effectiveness of the Company’s internal control over financial reporting.

**Deloitte & Touche LLP**  
Pittsburgh, Pennsylvania  
February 17, 2005

## Management Statement

*Responsibility for Preparation of the Financial Statements and Establishing and Maintaining Adequate Internal Control Over Financial Reporting*

We are responsible for the preparation of the financial statements included in this Annual Report. The financial statements were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on the best estimates and judgments of management. The other financial information contained in this Annual Report is consistent with the financial statements.

We are also responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control system is designed to provide reasonable assurance concerning the reliability of the financial data used in the preparation of PPG’s financial statements, as well as to safeguard the Company’s assets from unauthorized use or disposition.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement presentation.

We conducted an evaluation of the effectiveness of the Company’s internal control over financial reporting as of Dec. 31, 2004. In making this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control - Integrated Framework*. Our evaluation included reviewing the documentation of our controls, evaluating the design effectiveness of our controls and testing their operating effectiveness. Based on this evaluation we believe that, as of Dec. 31, 2004, the Company’s internal controls over financial reporting were effective and provide reasonable assurance that the accompanying financial statements do not contain any material misstatement.

Deloitte & Touche LLP, an independent registered public accounting firm, has issued their report on our evaluation of PPG’s internal control over financial reporting. Their report appears on page 26 of this Annual Report.

**Raymond W. LeBoeuf**  
Chairman of the Board  
and Chief Executive Officer

**William H. Hernandez**  
Senior Vice President, Finance

February 17, 2005

# Statement of Income

(Millions, except per share amounts)	For the Year		
	2004	2003	2002
Net sales	\$9,513	\$8,756	\$8,067
Cost of sales	5,999	5,521	5,066
<b>Gross profit</b>	<b>3,514</b>	<b>3,235</b>	<b>3,001</b>
Other expenses (earnings)			
Selling, general and administrative	1,715	1,578	1,419
Depreciation	357	365	366
Research and development - net (See Note 20)	303	290	273
Interest	90	107	128
Amortization (See Note 6)	31	29	32
Asbestos settlement - net (See Notes 9 and 13)	32	38	755
Business restructuring (See Note 2)	—	4	77
Other charges	54	84	74
Other earnings (See Note 17)	(131)	(103)	(95)
<b>Total other expenses - net</b>	<b>2,451</b>	<b>2,392</b>	<b>3,029</b>
Income (loss) before income taxes, minority interest and cumulative effect of accounting change	1,063	843	(28)
Income tax expense (benefit) (See Note 11)	322	293	(7)
Minority interest	58	50	39
Income (loss) before cumulative effect of accounting change	683	500	(60)
Cumulative effect of accounting change, net of tax (See Note 1)	—	(6)	(9)
<b>Net income (loss)</b>	<b>\$ 683</b>	<b>\$ 494</b>	<b>\$ (69)</b>
<b>Earnings (loss) per common share (See Note 10)</b>			
Income (loss) before cumulative effect of accounting change	\$ 3.98	\$ 2.94	\$(0.36)
Cumulative effect of accounting change, net of tax	—	(0.03)	(0.05)
<b>Earnings (loss) per common share</b>	<b>\$ 3.98</b>	<b>\$ 2.91</b>	<b>\$(0.41)</b>
<b>Earnings (loss) per common share - assuming dilution (See Note 10)</b>			
Income (loss) before cumulative effect of accounting change	\$ 3.95	\$ 2.92	\$(0.36)
Cumulative effect of accounting change, net of tax	—	(0.03)	(0.05)
<b>Earnings (loss) per common share - assuming dilution</b>	<b>\$ 3.95</b>	<b>\$ 2.89</b>	<b>\$(0.41)</b>

The accompanying notes to the financial statements are an integral part of this consolidated statement.

# Balance Sheet

(Millions)	December 31	
	2004	2003
<b>Assets</b>		
Current assets		
Cash and cash equivalents	\$ 709	\$ 499
Receivables (See Note 3)	1,797	1,631
Inventories (See Note 3)	1,076	997
Deferred income taxes (See Note 11)	306	254
Other	166	156
<b>Total current assets</b>	<b>4,054</b>	<b>3,537</b>
Property (See Note 4)	7,855	7,620
Less accumulated depreciation	5,384	5,054
<b>Property - net</b>	<b>2,471</b>	<b>2,566</b>
Investments (See Note 5)	298	265
Goodwill (See Notes 1 and 6)	1,216	1,157
Identifiable intangible assets (See Notes 1 and 6)	497	495
Other assets (See Note 12)	396	404
<b>Total</b>	<b>\$ 8,932</b>	<b>\$ 8,424</b>
<b>Liabilities and Shareholders' Equity</b>		
Current liabilities		
Short-term debt and current portion of long-term debt (See Note 7)	\$ 166	\$ 327
Asbestos settlement (See Note 13)	404	308
Accounts payable and accrued liabilities (See Note 3)	1,651	1,504
<b>Total current liabilities</b>	<b>2,221</b>	<b>2,139</b>
Long-term debt (See Note 7)	1,184	1,339
Asbestos settlement (See Note 13)	440	500
Deferred income taxes (See Note 11)	145	88
Accrued pensions (See Note 12)	337	394
Other postretirement benefits (See Note 12)	556	532
Other liabilities (See Note 12)	381	384
<b>Total liabilities</b>	<b>5,264</b>	<b>5,376</b>
Commitments and contingent liabilities (See Note 13)		
Minority interest	96	137
Shareholders' equity (See Note 14)		
Common stock	484	484
Additional paid-in capital	249	158
Retained earnings	6,776	6,399
Treasury stock, at cost	(3,455)	(3,428)
Unearned compensation (See Note 16)	(47)	(60)
Accumulated other comprehensive loss (See Note 15)	(435)	(642)
<b>Total shareholders' equity</b>	<b>3,572</b>	<b>2,911</b>
<b>Total</b>	<b>\$ 8,932</b>	<b>\$ 8,424</b>

Shares outstanding were 172,001,795 and 170,926,639 as of Dec. 31, 2004 and 2003, respectively.  
The accompanying notes to the financial statements are an integral part of this consolidated statement.

## Statement of Shareholders' Equity

(Millions)	Common Stock	Additional Paid-In Capital	Retained Earnings	Treasury Stock	Unearned Compensation (See Note 16)	Accumulated Other	Total
						Comprehensive (Loss) Income (See Note 15)	
Balance, Jan. 1, 2002	\$484	\$109	\$6,551	\$(3,496)	\$(108)	\$ (460)	\$3,080
Net loss	—	—	(69)	—	—	—	(69)
Other comprehensive loss, net of tax	—	—	—	—	—	(641)	(641)
Cash dividends	—	—	(287)	—	—	—	(287)
Issuance of treasury stock	—	17	—	25	—	—	42
Repayment of loans by ESOP	—	—	—	—	23	—	23
Other	—	—	2	—	—	—	2
Balance, Dec. 31, 2002	484	126	6,197	(3,471)	(85)	(1,101)	2,150
Net income	—	—	494	—	—	—	494
Other comprehensive income, net of tax	—	—	—	—	—	459	459
Cash dividends	—	—	(294)	—	—	—	(294)
Issuance of treasury stock	—	32	—	43	—	—	75
Repayment of loans by ESOP	—	—	—	—	25	—	25
Other	—	—	2	—	—	—	2
Balance, Dec. 31, 2003	484	158	6,399	(3,428)	(60)	(642)	2,911
Net income	—	—	683	—	—	—	683
Other comprehensive income, net of tax	—	—	—	—	—	207	207
Cash dividends	—	—	(307)	—	—	—	(307)
Purchase of treasury stock	—	—	—	(100)	—	—	(100)
Issuance of treasury stock	—	63	—	73	—	—	136
Grant of stock options	—	28	—	—	—	—	28
Repayment of loans by ESOP	—	—	—	—	13	—	13
Other	—	—	1	—	—	—	1
<b>Balance, Dec. 31, 2004</b>	<b>\$484</b>	<b>\$249</b>	<b>\$6,776</b>	<b>\$(3,455)</b>	<b>\$ (47)</b>	<b>\$ (435)</b>	<b>\$3,572</b>

## Statement of Comprehensive Income

(Millions)	For the Year		
	2004	2003	2002
Net income (loss)	\$683	\$494	\$ (69)
Other comprehensive income (loss), net of tax (See Note 15)			
Unrealized currency translation adjustment	180	328	73
Minimum pension liability adjustment (See Note 12)	33	147	(726)
Unrealized (losses) gains on marketable equity securities	(3)	6	(5)
Reclassification adjustment – marketable equity securities	—	(9)	—
Net change – derivatives (See Note 9)	(3)	(13)	17
Other comprehensive income (loss), net of tax	207	459	(641)
<b>Comprehensive income (loss)</b>	<b>\$890</b>	<b>\$953</b>	<b>\$(710)</b>

The accompanying notes to the financial statements are an integral part of these consolidated statements.

# Statement of Cash Flows

(Millions)	For the Year		
	2004	2003	2002
<b>Operating activities</b>			
Net income (loss)	\$ 683	\$ 494	\$ (69)
Adjustments to reconcile to cash from operations			
Cumulative effect of accounting change (See Note 1)	—	6	9
Asbestos settlement, net of tax	19	23	484
Depreciation and amortization	388	394	398
Business restructuring	—	4	77
Restructuring cash spending	(3)	(33)	(63)
Bad debt expense	9	13	24
Equity affiliate (earnings) loss net of dividends	(14)	7	7
Reclassification adjustment – marketable equity securities	—	(9)	—
(Decrease) increase in net accrued pension benefit costs	(10)	102	27
Increase in receivables	(134)	(58)	(36)
(Increase) decrease in inventories	(45)	11	(9)
(Increase) decrease in other current assets	(25)	2	(44)
Increase in accounts payable and accrued liabilities	111	66	69
(Increase) decrease in noncurrent assets	(2)	39	9
Increase (decrease) in noncurrent liabilities	50	49	(34)
Other	(9)	13	23
<b>Cash from operating activities</b>	<b>1,018</b>	<b>1,123</b>	<b>872</b>
<b>Investing activities</b>			
Capital spending			
Additions to property and investments	(244)	(217)	(238)
Business acquisitions, net of cash balances acquired	(67)	(3)	(22)
Reductions of other property and investments	51	54	48
<b>Cash used for investing activities</b>	<b>(260)</b>	<b>(166)</b>	<b>(212)</b>
<b>Financing activities</b>			
Net change in borrowings with maturities of three months or less	11	(252)	(287)
Proceeds from other short-term debt	27	10	62
Repayment of other short-term debt	(18)	(77)	(65)
Proceeds from long-term debt	7	3	6
Repayment of long-term debt	(339)	(69)	(139)
Repayment of loans by employee stock ownership plan	13	25	23
Purchase of treasury stock	(100)	—	—
Issuance of treasury stock	121	61	32
Dividends paid	(307)	(294)	(287)
<b>Cash used for financing activities</b>	<b>(585)</b>	<b>(593)</b>	<b>(655)</b>
Effect of currency exchange rate changes on cash and cash equivalents	37	18	4
Net increase in cash and cash equivalents	210	382	9
Cash and cash equivalents, beginning of year	499	117	108
<b>Cash and cash equivalents, end of year</b>	<b>\$ 709</b>	<b>\$ 499</b>	<b>\$ 117</b>

The accompanying notes to the financial statements are an integral part of this consolidated statement.

# Notes to the Financial Statements

## 1. Summary of Significant Accounting Policies

### *Principles of consolidation*

The accompanying consolidated financial statements include the accounts of PPG Industries, Inc. ("PPG" or the "Company"), and all subsidiaries, both U.S. and non-U.S., that we control. We own more than 50% of the voting stock of the subsidiaries that we control. Investments in companies in which we own 20% to 50% of the voting stock and have the ability to exercise significant influence over operating and financial policies of the investee are accounted for using the equity method of accounting. As a result, our share of the earnings or losses of such equity affiliates is included in the accompanying statement of income and our share of these companies' shareholders' equity is included in the accompanying balance sheet. Transactions between PPG and its subsidiaries are eliminated in consolidation.

### *Use of estimates in the preparation of financial statements*

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of income and expenses during the reporting period. Actual outcomes could differ from those estimates.

### *Revenue recognition*

Revenue from sales is recognized by all business segments when goods are shipped and title to inventory and risk of loss passes to the customer or when services have been rendered.

### *Shipping and handling costs*

Amounts billed to customers for shipping and handling are recorded in "Net sales" in the accompanying statement of income. Shipping and handling costs incurred by the Company for the delivery of goods to customers are included in "Cost of sales" in the accompanying statement of income.

### *Selling, general and administrative costs*

Amounts presented as "Selling, general and administrative" in the accompanying statement of income are comprised of selling, customer service, distribution and advertising costs, as well as the costs of providing corporate-wide functional support in such areas as finance, law, human resources, and planning. Distribution costs pertain to the movement and storage of finished goods inventory at company-owned and leased warehouses, terminals and other distribution facilities. Certain of these costs may be included in cost of sales by other companies, resulting in a lack of comparability between our gross profit and that of other companies.

### *Foreign currency translation*

For all significant non-U.S. operations, the functional currency is their local currency. Assets and liabilities of

those operations are translated into U.S. dollars using year end exchange rates; income and expenses are translated using the average exchange rates for the reporting period. Unrealized currency translation adjustments are deferred in accumulated other comprehensive income (loss), a separate component of shareholders' equity.

### *Cash equivalents*

Cash equivalents are highly liquid investments (valued at cost, which approximates fair value) acquired with an original maturity of three months or less.

### *Inventories*

Most U.S. inventories are stated at cost, using the last-in, first-out ("LIFO") method, which does not exceed market. All other inventories are stated at cost, using the first-in, first-out ("FIFO") method, which does not exceed market. We determine cost using either average or standard factory costs, which approximate actual costs, excluding certain fixed costs such as depreciation and property taxes.

### *Marketable equity securities*

The Company's investment in marketable equity securities is recorded at fair market value in "Investments" in the accompanying balance sheet with changes in fair market value recorded in income for those securities designated as trading securities and in other comprehensive income, net of tax, for those designated as available for sale securities.

### *Property*

Property is recorded at cost. We compute depreciation by the straight-line method based on the estimated useful lives of depreciable assets. Additional expense is recorded when facilities or equipment are subject to abnormal economic conditions or obsolescence. Significant improvements that add to productive capacity or extend the lives of properties are capitalized. Costs for repairs and maintenance are charged to expense as incurred. When property is retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any related gains or losses are included in income. Amortization of the cost of capitalized leased assets is included in depreciation expense. Property and other long-lived assets are reviewed for impairment whenever events or circumstances indicate that their carrying amount may not be recoverable.

### *Goodwill and identifiable intangible assets*

Goodwill represents the excess of the cost over the fair value of net tangible and identifiable intangible assets of acquired businesses. Identifiable intangible assets acquired in business combinations are recorded based upon their fair value at the date of acquisition.

Effective Jan. 1, 2002, PPG adopted the provisions of Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets." This standard changed the accounting for goodwill and certain



## Notes to the Financial Statements

other intangible assets from an amortization method to an impairment only approach. The standard also requires a reassessment of the useful lives of identifiable intangible assets other than goodwill and at least an annual test for impairment of goodwill and intangibles with indefinite lives. Note 6 provides additional information concerning goodwill and other identifiable intangible assets.

In accordance with the requirements of SFAS No. 142, the Company tested the goodwill attributable to each of our reporting units for impairment as of Jan. 1, 2002, and concluded that none of its goodwill was impaired. The Company's reporting units are the major product lines comprising our reportable business segments. Fair value was estimated using discounted cash flow methodologies and market comparable information. The Company tests goodwill of each of our reporting units for impairment at least annually in connection with our strategic planning process in the third quarter.

In addition, the Company reassessed the useful lives of its identifiable intangible assets and determined that the lives were appropriate other than for the Company's acquired trademarks, which were concluded to have indefinite useful lives. As a result, the Company ceased amortization of the cost of these trademarks as of Jan. 1, 2002. Also, in accordance with the requirements of SFAS No. 142, the Company tested each of these trademarks for impairment by comparing the fair value of each trademark to its carrying value as of Jan. 1, 2002. Fair value was estimated by using the relief from royalty method (a discounted cash flow methodology). Based on these impairment tests, PPG recognized an adjustment of \$14 million (\$9 million or \$0.05 per share, net of tax) in the first quarter of 2002 to reduce the carrying value of certain trademarks within our coatings segment to their estimated fair value as the level of future cash flows from sales of certain brands was expected to be less than originally anticipated. Under SFAS No. 142, this impairment adjustment was reported as the cumulative effect of an accounting change in our first quarter 2002 income statement. The Company tests the carrying value of these trademarks for impairment at least annually in the third quarter.

Identifiable intangible assets with finite lives continue to be amortized on a straight-line basis over their estimated useful lives (3 to 25 years) and are reviewed for impairment whenever events or circumstances indicate that their carrying amount may not be recoverable.

### *Stock-based compensation*

Effective Jan. 1, 2004, PPG adopted the fair value method of recording stock-based compensation, as defined in SFAS No. 123, "Accounting for Stock-Based Compensation," for stock options awarded to employees after the date of adoption and for previously issued stock options that were not vested as of Jan. 1, 2004, using the modified prospective transition method. The adoption increased "Selling, general and administrative" expense by

\$20 million (\$13 million, aftertax, or \$0.07 per share) for the year ended Dec. 31, 2004. This impact reflects the fact that beginning in 2004 stock option grants under the PPG Stock Plan will vest three years after the date of grant. Previously, original grants of stock options under this plan vested after one year. Additionally, under the modified prospective transition method we recorded a deferred tax asset of \$8 million and a corresponding increase to additional paid-in capital equal to the deferred tax benefit that would have been recognized in 2003 had compensation expense been recorded under the fair value provisions of SFAS No. 123 for options outstanding at the date of adoption but not fully vested.

Prior to Jan. 1, 2004, we applied Accounting Principles Board Opinion ("APB") No. 25, "Accounting for Stock Issued to Employees" and related interpretations in accounting for our stock options and other stock-based compensation. APB No. 25 required the use of the intrinsic value method, which measured compensation cost as the excess, if any, of the quoted market price of the stock at the measurement date over the amount an employee must pay to acquire the stock. The Company made disclosures of pro forma net earnings and earnings per share as if the fair-value-based method of accounting had been applied as required by SFAS No. 123, and as amended by SFAS No. 148, "Accounting for Stock-Based Compensation – Transition and Disclosure" (see Note 18).

### *Employee Stock Ownership Plan*

We account for our employee stock ownership plan ("ESOP") in accordance with Statement of Position ("SOP") No. 93-6 for PPG common stock purchased after Dec. 31, 1992 ("new ESOP shares"). As permitted by SOP No. 93-6, shares purchased prior to Dec. 31, 1992 ("old ESOP shares") continue to be accounted for in accordance with SOP No. 76-3. ESOP shares are released for future allocation to participants based on the ratio of debt service paid during the year on loans used by the ESOP to purchase the shares to the remaining debt service on these loans. These loans are a combination of borrowings guaranteed by PPG and borrowings by the ESOP directly from PPG. The ESOP's borrowings from third parties are included in debt in our balance sheet (see Note 7). Unearned compensation, reflected as a reduction of shareholders' equity, principally represents the unpaid balance of all of the ESOP's loans. Dividends received by the ESOP are primarily used to pay debt service.

For old ESOP shares, compensation expense is equal to cash contributed to the ESOP by the Company less the appreciation on the allocated old ESOP shares. Cash contributions to the ESOP were reduced by \$18 million, \$26 million, and \$20 million for the years ended Dec. 31, 2004, 2003 and 2002, respectively, for the appreciation on the old shares allocated to participants' accounts. By Dec. 31, 2008, all old shares are expected to be allocated, after which all unallocated shares will be accounted for under the provisions of SOP No. 93-6. Dividends on old

# Notes to the Financial Statements

ESOP shares are deducted from retained earnings. Old ESOP shares are considered to be outstanding in computing earnings per common share. For new ESOP shares, compensation expense is equal to the Company's matching contribution (see Note 16). Dividends on released new ESOP shares are deducted from retained earnings, and dividends on unreleased shares are reported as a reduction of debt or accrued interest. Only new ESOP shares that have been released are considered outstanding in computing earnings per common share.

## *Derivative financial instruments*

The Company recognizes all derivative instruments as either assets or liabilities at fair value on the balance sheet. The accounting for changes in the fair value of a derivative depends on the use of the derivative. To the extent that a derivative is effective as a cash flow hedge of an exposure to future changes in value, the change in fair value of the derivative is deferred in other comprehensive income. Any portion considered to be ineffective will be reported in earnings immediately. To the extent that a derivative is effective as a hedge of an exposure to future changes in fair value, the change in the derivative's fair value will be offset in the statement of income by the change in fair value of the item being hedged.

## *Product warranties*

The Company accrues for product warranties at the time the products are sold based on historical claims experience. As of Dec. 31, 2004 and 2003, the reserve for product warranties was \$3 million. Pretax charges against income for product warranties in 2004, 2003 and 2002 totaled \$4 million, \$5 million and \$3 million, respectively. Cash outlays related to product warranties were \$4 million, \$5 million and \$3 million in 2004, 2003 and 2002, respectively.

## *Asset Retirement Obligations*

Effective Jan. 1, 2003, PPG adopted the provisions of SFAS No. 143, "Accounting for Asset Retirement Obligations." An asset retirement obligation represents a legal obligation associated with the retirement of a tangible long-lived asset that is incurred upon the acquisition, construction, development or normal operation of that long-lived asset. This standard requires the Company to recognize asset retirement obligations in the period in which they are incurred, if a reasonable estimate of fair value can be made. The asset retirement obligation is subsequently adjusted for changes in fair value. The associated estimated asset retirement costs are capitalized as part of the carrying amount of the long-lived asset and depreciated over its useful life. PPG's asset retirement obligations are primarily associated with closure of certain assets used in the chemicals manufacturing process.

Adoption of this standard on Jan. 1, 2003 resulted in an increase in noncurrent assets, current liabilities and noncurrent liabilities of \$4 million, \$1 million and \$9 million, respectively, and a cumulative effect adjustment reducing net income by \$6 million aftertax, or \$0.03 a share – assuming dilution. The change in the asset retirement obligation during 2004 was not material and the change during 2003 was approximately \$1 million.

## *Other new accounting standards*

In January 2003, the FASB issued Interpretation No. 46, "Consolidation of Variable Interest Entities." Interpretation No. 46 requires unconsolidated variable interest entities to be consolidated by their primary beneficiaries if the entities do not effectively disperse the risks and rewards of ownership among their owners and other parties involved. The provisions of Interpretation No. 46 were applicable immediately to all variable interest entities created after Jan. 31, 2003, and variable interest entities in which an enterprise obtains an interest after that date. For variable interest entities created before this date, the provisions were initially effective July 1, 2003. PPG's adoption of this interpretation in the third quarter of 2003 did not have a material effect on the Company's results of operations or financial condition. In December 2003, the FASB issued a revision to Interpretation No. 46; however, it had no impact on PPG's adoption.

In November 2004, the FASB issued SFAS No. 151, "Inventory Costs, an Amendment of ARB No. 43, Chapter 4." SFAS No. 151 requires the exclusion of certain costs from inventories and the allocation of fixed production overheads to inventories to be based on the normal capacity of the production facilities. The provisions of this Statement are effective for costs incurred after Dec. 31, 2005. We are currently in the process of evaluating the effect the adoption of this standard will have on PPG; however we do not expect it to have a material effect on PPG's consolidated results of operations or financial position.

In December 2004, the FASB issued a revision to SFAS No. 123, "Share-Based Payments" which now requires that stock options be expensed based on their fair value. As discussed above, PPG began expensing stock options effective Jan. 1, 2004, and consequently our adoption of this revised Statement in 2005 is not expected to have a material impact on the Company's results of operations or financial position.

## *Reclassifications*

Certain amounts in the 2003 and 2002 financial statements have been reclassified to be consistent with the 2004 presentation.

# Notes to the Financial Statements

## 2. Acquisitions and Business Restructuring

During 2004, 2003, and 2002, the Company made acquisitions at a cost totaling \$67 million, \$3 million, and \$22 million, respectively. The amount in 2004 relates primarily to the acquisition in the first quarter of the remaining one-third interest in PPG Iberica, S.A., a Spanish automotive and industrial coatings producer, for \$61 million. The purchase price allocation resulted in an excess of purchase price over the fair value of net assets acquired, which has been reflected as an addition to goodwill.

In 2003, the Company recorded a charge of \$6 million for restructuring actions related to our coatings and glass segments. This charge was for severance benefits for 93 employees. These actions were completed in 2004. Also in 2003, \$2 million of the initial \$81 million restructuring charge from 2002 described below, primarily related to the coatings segment, was reversed to income.

In 2002, the Company recorded a charge of \$81 million for restructuring and other related activities comprised of \$66 million for severance and other costs and \$15 million for asset dispositions. The workforce reductions covered by this charge are complete; however, as of Dec. 31, 2004, \$9 million of this reserve remained to be spent. This reserve relates to a group of approximately 75 employees in Europe, whose terminations have been concluded under a different social plan than was assumed when the reserve was recorded.

Under the terms of this social plan, severance payments will be paid to these 75 individuals through 2008. The details of this 2002 charge were as follows:

(Millions, except no. of employees)	Severance and Other Costs	Asset Dispositions	Total Charge	Employees Covered
Coatings	\$ 62	\$ 15	\$ 77	1,004
Glass	1	—	1	22
Chemicals	1	—	1	20
Corporate	2	—	2	20
<b>Total</b>	<b>\$ 66</b>	<b>\$ 15</b>	<b>\$ 81</b>	<b>1,066</b>
Activity	(57)	(15)	(72)	(1,066)
<b>Balance as of Dec. 31, 2004</b>	<b>\$ 9</b>	<b>\$ —</b>	<b>\$ 9</b>	<b>—</b>

During 2002 we paid \$33 million for severance costs related to the pre-tax charge of \$101 million taken in 2001 for restructuring actions and reversed to income \$4 million of this charge. These actions were complete as of Dec. 31, 2002. Additionally, during 2003 and 2002, we paid \$3 million and \$2 million, respectively, related to remaining lease and other exit costs reserved in 2000 and 1999.

## 3. Working Capital Detail

(Millions)	2004	2003
<b>Receivables</b>		
Customers	\$1,675	\$1,524
Other	161	152
Allowance for doubtful accounts	(39)	(45)
<b>Total</b>	<b>\$1,797</b>	<b>\$1,631</b>
<b>Inventories<sup>(1)</sup></b>		
Finished products	\$ 635	\$ 601
Work in process	118	111
Raw materials	192	157
Supplies	131	128
<b>Total</b>	<b>\$1,076</b>	<b>\$ 997</b>
<b>Accounts payable and accrued liabilities</b>		
Trade creditors	\$ 874	\$ 745
Accrued payroll	300	264
Other postretirement and pension benefits	97	100
Income taxes	36	50
Other	344	345
<b>Total</b>	<b>\$1,651</b>	<b>\$1,504</b>

(1) Inventories valued using the LIFO method comprised 55% and 59% of total gross inventory values as of Dec. 31, 2004 and 2003, respectively. If the first-in, first-out method of inventory valuation had been used, inventories would have been \$167 million and \$172 million higher as of Dec. 31, 2004 and 2003, respectively. During the years ended Dec. 31, 2004 and 2003, certain inventories accounted for on the LIFO method of accounting were reduced, which resulted in the liquidation of certain quantities carried at costs prevailing in prior years. The net effect on earnings of these liquidations was not material.

## 4. Property

(Millions)	Useful Lives (years)	2004	2003
Land and land improvements	10-30	\$ 346	\$ 332
Buildings	20-50	1,224	1,189
Machinery and equipment	5-25	5,707	5,572
Other	3-20	468	453
Construction in progress		110	74
<b>Total<sup>(1)</sup></b>		<b>\$7,855</b>	<b>\$7,620</b>

(1) Interest capitalized in both 2004 and 2003 was \$3 million, and in 2002 was \$5 million.

# Notes to the Financial Statements

## 5. Investments

(Millions)	2004	2003
Investments in equity affiliates	\$171	\$154
Marketable equity securities		
Trading (See Note 12)	76	68
Available for sale	7	9
Other	44	34
<b>Total</b>	<b>\$298</b>	<b>\$265</b>

The Company's investments in equity affiliates are comprised principally of fifty-percent ownership interests in a number of joint ventures that manufacture and sell coatings, glass and chemicals products, the most significant of which are located in Asia.

In addition, we have a fifty-percent ownership interest in RS Cogen, L.L.C., which in December 2002 commenced toll production of electricity and steam primarily for PPG and its joint venture partner. The joint venture was formed with a wholly owned subsidiary of Entergy Corporation in 2000 for the construction and operation of a \$300 million process steam, natural gas-fired cogeneration facility in Lake Charles, La., the majority of which was financed by a syndicate of banks. PPG's future commitment to purchase electricity and steam from the joint venture approximates \$24 million per year subject to contractually defined inflation adjustments for the next eighteen years. The purchases for the years ended Dec. 31, 2004 and 2003 were \$25 million and \$27 million, respectively.

Summarized financial information of our equity affiliates on a 100 percent basis is as follows:

(Millions)	2004	2003
Working capital	\$ 146	\$ 135
Property, net	673	685
Short-term debt	(85)	(101)
Long-term debt	(352)	(364)
Other, net	12	4
<b>Net assets</b>	<b>\$ 394</b>	<b>\$ 359</b>

(Millions)	2004	2003	2002
Revenues	\$622	\$ 632	\$ 580
Net earnings (loss)	\$ 42	\$ (8)	\$ (2)

PPG's share of undistributed net earnings of equity affiliates was \$77 million and \$63 million as of Dec. 31,

2004 and 2003, respectively. Dividends received from equity affiliates were \$6 million, \$3 million and \$6 million in 2004, 2003 and 2002, respectively.

As of Dec. 31, 2004, there were unrealized losses of \$2 million and as of Dec. 31, 2003 and 2002, there were unrealized gains of \$3 million and \$10 million, respectively, recorded in "Accumulated other comprehensive loss" in the accompanying balance sheet related to marketable securities available for sale.

During 2004, PPG sold certain of these investments resulting in recognition of pretax gains of \$0.3 million and proceeds of \$2 million. During 2003, PPG sold certain of these investments resulting in the recognition of pretax gains of \$15 million and proceeds of \$22 million.

## 6. Goodwill and Other Identifiable Intangible Assets

The change in the carrying amount of goodwill attributable to each business segment for the years ended Dec. 31, 2004 and 2003 was as follows:

(Millions)	Coatings	Glass	Chemicals	Total
Balance, Jan. 1, 2003	\$ 948	\$75	\$24	\$1,047
Currency translation	97	9	4	110
Balance, Dec. 31, 2003	1,045	84	28	1,157
Goodwill from acquisitions	9	—	—	9
Currency translation	43	5	2	50
<b>Balance, Dec. 31, 2004</b>	<b>\$1,097</b>	<b>\$89</b>	<b>\$30</b>	<b>\$1,216</b>

The carrying amount of acquired trademarks with indefinite lives as of Dec. 31, 2004 and 2003 totaled \$144 million.

The Company's identifiable intangible assets with finite lives are being amortized over their estimated useful lives and are detailed below.

(Millions)	Dec. 31, 2004			Dec. 31, 2003		
	Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Acquired technology	\$353	\$(123)	\$230	\$352	\$(104)	\$248
Other	216	(93)	123	179	(76)	103
<b>Balance</b>	<b>\$569</b>	<b>\$(216)</b>	<b>\$353</b>	<b>\$531</b>	<b>\$(180)</b>	<b>\$351</b>

Aggregate amortization expense was \$31 million, \$29 million and \$32 million in 2004, 2003 and 2002, respectively. The estimated future amortization expense of identifiable intangible assets during the next five years is (in millions) \$31 in 2005, \$29 in 2006, \$29 in 2007, \$25 in 2008 and \$24 in 2009.

# Notes to the Financial Statements

## 7. Debt and Bank Credit Agreements and Leases

(Millions)	2004	2003
6¾% non-callable notes, due 2004	\$ —	\$ 300
6⅞% non-callable debentures, due 2005 <sup>(1)</sup>	100	100
6½% notes, due 2007 <sup>(1)</sup>	150	150
7.05% notes, due 2009 <sup>(1)</sup>	292	298
6⅞% notes, due 2012 <sup>(1)</sup>	100	100
7⅞% notes, due 2016	146	149
6⅞% notes, due 2017	74	74
7.4% notes, due 2019	198	199
9% non-callable debentures, due 2021	148	148
Impact of derivatives on debt <sup>(1)</sup>	19	28
ESOP notes <sup>(2)</sup>		
Fixed-rate notes, weighted average 8.5%	21	26
Variable-rate notes, weighted average 1.9% as of Dec. 31, 2004	19	26
Various other U.S. debt, weighted average 2.1% as of Dec. 31, 2004	34	37
Various other non-U.S. debt, weighted average 6.0% as of Dec. 31, 2004	10	16
Capital lease obligations	4	1
<b>Total</b>	<b>1,315</b>	<b>1,652</b>
Less payments due within one year	131	313
<b>Long-term debt</b>	<b>\$1,184</b>	<b>\$1,339</b>

(1) PPG entered into several interest rate swaps which have the effect of converting \$643 million and \$650 million as of Dec. 31, 2004 and 2003, respectively, of these fixed rate notes to variable rates, based on either the three-month or the six-month London Interbank Offered Rate (LIBOR). The weighted average effective interest rate for these borrowings, including the effects of the outstanding swaps was 3.9% and 4.2% for the years ended Dec. 31, 2004 and 2003, respectively. Refer to Notes 1 and 9 for additional information.

(2) See Note 1 for discussion of ESOP borrowings. The fixed- and variable-rate notes mature in 2009 and require annual principal payments from 2005 to 2008.

Aggregate maturities during the next five years are (in millions) \$131 in 2005, \$10 in 2006, \$157 in 2007, \$6 in 2008 and \$293 in 2009.

In May 2004, the Company renegotiated its U.S. credit agreements. The new facility is a \$1 billion revolving credit facility that expires in 2009. The annual facility fee payable on the committed amount is 7½ basis points. This facility is available for general corporate purposes and also to support PPG's commercial paper programs in the U.S. and Europe. There also exists an \$18 million revolving credit line, relating to a U.S. subsidiary of the Company, that expires in June 2005 and requires payment of annual fees equal to 10 basis points on the unused portion of the line. As of Dec. 31, 2004, no amounts were outstanding under any of these credit lines.

Our non-U.S. operations have other uncommitted lines of credit totaling \$250 million of which \$32 million was used as of Dec. 31, 2004. These uncommitted lines of credit are subject to cancellation at any time and are not subject to any commitment fees.

PPG is in compliance with the restrictive covenants under its various credit agreements, loan agreements and indentures. The Company's revolving credit agreements, under which there are currently no borrowings, and a portion of PPG's ESOP Notes, include financial ratio covenants. The most restrictive of these covenants requires that the amount of long-term senior debt outstanding not exceed 55% of the Company's tangible net assets. As of Dec. 31, 2004, long-term senior debt was 23.7% of the Company's tangible net assets. In the event of a breach of this covenant, each holder of the ESOP notes would have the right to require the Company to redeem the notes. Additionally, substantially all of our debt agreements contain customary cross-default provisions. Those provisions state that a default on a debt service payment of \$10 million or more for longer than the grace period provided (usually 10 days) under one agreement may constitute an event of default of other agreements.

None of our primary debt obligations are secured or guaranteed by our affiliates.

As of Dec. 31, 2004 and 2003, the caption "Short-term debt and current portion of long-term debt" includes \$35 million and \$14 million, respectively, of other short-term borrowings. The weighted-average interest rates of short-term borrowings as of Dec. 31, 2004 and 2003, were 5.6% and 2.2%, respectively.

Interest payments in 2004, 2003 and 2002 totaled \$101 million, \$109 million and \$137 million, respectively.

Rental expense for operating leases was \$125 million, \$134 million and \$121 million in 2004, 2003 and 2002, respectively. Minimum lease commitments for operating leases that have initial or remaining lease terms in excess of one year as of Dec. 31, 2004, are (in millions) \$75 in 2005, \$60 in 2006, \$43 in 2007, \$32 in 2008, \$23 in 2009 and \$34 thereafter, which includes rent of approximately \$12 million, per year, through 2010, and \$6 million in 2011, related to the July 1999 sale-leaseback of our Pittsburgh headquarters complex.

The Company had outstanding letters of credit of \$90 million and guarantees of \$46 million as of Dec. 31, 2004. The letters of credit secure the Company's performance to third parties under certain self-insurance programs and other commitments made in the ordinary course of business. The guarantees relate primarily to debt of certain entities in which PPG has an ownership interest and selected customers of certain of our businesses of which a portion is secured by the assets of the related entity. The Company does not believe any loss related to these letters of credit or guarantees is likely.

# Notes to the Financial Statements

## 8. Financial Instruments, Excluding Derivative Financial Instruments

Included in PPG's financial instrument portfolio are cash and cash equivalents, marketable equity securities, company-owned life insurance and short- and long-term debt instruments. The most significant instrument, long-term debt (excluding capital lease obligations), had carrying and fair values totaling \$1,311 million and \$1,441 million, respectively, as of Dec. 31, 2004. The corresponding amounts as of Dec. 31, 2003, were \$1,651 million and \$1,767 million, respectively. The fair values of the other financial instruments approximated their carrying values, in the aggregate.

The fair values of the debt instruments were based on discounted cash flows and interest rates available to the Company for instruments of the same remaining maturities.

## 9. Derivative Financial Instruments

PPG's policies do not permit speculative use of derivative financial instruments. PPG uses derivative instruments to manage its exposure to fluctuating natural gas prices through the use of natural gas swap contracts. PPG also uses forward currency and option contracts as hedges against its exposure to variability in exchange rates on short-term intercompany borrowings and cash flows denominated in foreign currencies and to translation risk. Interest rate swaps are used to manage the Company's exposure to changing interest rates. We also use an equity forward arrangement to hedge a portion of our exposure to changes in the fair value of PPG stock that is to be contributed to the asbestos settlement trust as discussed in Note 13.

PPG enters into derivative financial instruments with high credit quality counterparties and diversifies its positions among such counterparties in order to reduce its exposure to credit losses. The Company has not experienced any credit losses on derivatives during the three-year period ended Dec. 31, 2004.

PPG manages its foreign currency transaction risk to minimize the volatility of cash flows caused by currency fluctuations by forecasting foreign currency-denominated cash flows of each subsidiary for a 12-month period and aggregating these cash inflows and outflows in each currency to determine the overall net transaction exposures. Decisions on whether to use derivative financial instruments to hedge the net transaction exposures are made based on the amount of those exposures, by currency, and an assessment of the near-term outlook for each currency. The Company's policy permits the use of foreign currency forward and option contracts to hedge up to 70% of its anticipated net foreign currency cash flows over the next 12-month period. These contracts do not qualify for hedge accounting under the provisions of SFAS No. 133; therefore, the change in the fair value of these instruments is recorded in "Other charges" in the accompanying statement of income in the

period of change. The amounts recorded in earnings for the years ended Dec. 31, 2004, 2003 and 2002 were losses of \$1 million, \$5 million and \$3 million, respectively. The fair value of these contracts was not material as of Dec. 31, 2004 and 2003.

The sales, costs, assets and liabilities of our non-U.S. operations must be reported in U.S. dollars in order to prepare consolidated financial statements which gives rise to translation risk. The Company monitors its exposure to translation risk and enters into derivative foreign currency contracts to hedge its exposure, as deemed appropriate. This risk management strategy does not qualify for hedge accounting under the provisions of SFAS No. 133; therefore, changes in the fair value of these instruments are recorded in "Other charges" in the accompanying statement of income in the period of change. No derivative instruments were acquired to hedge translation risk during 2004 or 2002. A loss of \$1 million was recorded for the year ended Dec. 31, 2003.

In 2004, the Company entered into a foreign currency contract to hedge a portion of a net investment in a foreign operation. An unrealized currency translation adjustment of \$5 million from the deferred loss on this contract is recorded in accumulated other comprehensive income.

PPG designates forward currency contracts as hedges against the Company's exposure to variability in exchange rates on short-term intercompany borrowings denominated in foreign currencies. To the extent effective, changes in the fair value of these instruments are deferred in accumulated other comprehensive income and subsequently reclassified to "Other charges" in the accompanying statement of income as foreign exchange gains and losses are recognized on the related intercompany borrowings. The portion of the change in fair value considered to be ineffective is recognized in "Other charges" in the accompanying statement of income. The amounts recorded in earnings for the years ended Dec. 31, 2004, 2003 and 2002, were losses of \$5 million, \$4 million and \$2 million, respectively. The fair value of these contracts was an asset of \$2 million and \$1 million as of Dec. 31, 2004 and 2003, respectively.

The Company manages its interest rate risk by balancing its exposure to fixed and variable rates while attempting to minimize its interest costs. Generally, the Company maintains variable interest rate debt at a level of 25% to 50% of total borrowings. PPG principally manages its fixed and variable interest rate risk by retiring and issuing debt from time to time. PPG also manages its interest rate risk through the use of interest rate swaps. Currently, these swaps convert \$643 million of fixed rate debt to variable rate debt and are designated as fair value hedges. As such, the swaps are carried at fair value. Changes in the fair value of these swaps and that of the related debt are recorded in "Interest expense" in the accompanying statement of income, the net of which is zero. The fair value of these contracts was an asset of \$4 million and \$9 million as of Dec. 31, 2004 and 2003, respectively.

## Notes to the Financial Statements

The Company uses derivative instruments to manage its exposure to fluctuating natural gas prices through the use of natural gas swap contracts. These instruments mature over the next twelve months. To the extent that these instruments are effective in hedging PPG's exposure to price changes, changes in the fair values of the hedge contracts are deferred in accumulated other comprehensive income and reclassified to cost of sales as the natural gas is purchased. The amount of ineffectiveness, which is reported in "Cost of sales" in the accompanying statement of income for the year ended Dec. 31, 2004, was \$1 million of expense and for the years ended Dec. 31, 2003 and 2002 was \$1 million of income. The fair value of these contracts was a liability of \$2 million and an asset of \$3 million as of Dec. 31, 2004 and 2003, respectively.

In November 2002, PPG entered into a one-year renewable equity forward arrangement with a bank in order to partially mitigate the impact of changes in the fair value of PPG stock that is to be contributed to the asbestos settlement trust as discussed in Note 13. This instrument, which has been renewed, is recorded at fair value as an asset or liability and changes in the fair value of this instrument are reflected in "Asbestos settlement - net" in the accompanying statement of income. As of Dec. 31, 2004 and 2003, PPG had recorded a current asset of \$19 million and \$15 million, respectively, and recognized income of \$4 million, \$14 million and \$1 million for the years ended Dec. 31, 2004, 2003 and 2002, respectively.

In accordance with the terms of this instrument the bank had purchased 504,900 shares of PPG stock on the open market at a cost of \$24 million through Dec. 31, 2002, and during the first quarter of 2003 the bank purchased an additional 400,000 shares at a cost of \$19 million, for a total principal amount of \$43 million. PPG will pay to the bank interest based on the principal amount and the bank will pay to PPG an amount equal to the dividends paid on these shares during the period this instrument is outstanding. The difference between the principal amount, and any amounts related to unpaid interest or dividends, and the current market price for these shares will represent the fair value of the instrument as well as the amount that PPG would pay or receive if the bank chose to net settle the instrument. Alternatively, the bank may, at its option, require PPG to purchase the shares covered by the arrangement at the market price on the date of settlement.

No derivative instrument initially designated as a hedge instrument was undesignated or discontinued as a hedging instrument during 2004 or 2003. For the year ended Dec. 31, 2004, other comprehensive income included a net loss due to derivatives of \$3 million, net of

tax. This loss was comprised of realized gains of \$5 million and unrealized gains of \$2 million. The realized gains related to the settlement during the period of natural gas and foreign currency contracts offset in part by the settlement of interest rate swaps owned by one of the Company's investees accounted for under the equity method of accounting. The unrealized gains related to these same instruments. For the year ended Dec. 31, 2003, other comprehensive income included a net loss of \$13 million, net of tax. This loss was comprised of realized gains of \$28 million and unrealized gains of \$15 million. The realized gains related to the settlement during the period of natural gas and foreign currency contracts. The unrealized gains during the period related primarily to the change in fair value of the natural gas contracts.

The fair values of all outstanding derivative instruments were determined using quoted market prices.

### 10. Earnings Per Common Share

The earnings (loss) per common share calculations for the three years ended Dec. 31, 2004 are as follows:

<i>(Millions, except per share amounts)</i>	2004	2003	2002
<b><i>Earnings (loss) per common share</i></b>			
Net income (loss)	\$ 683	\$ 494	\$ (69)
Weighted average common shares outstanding	171.7	169.9	169.1
<b><i>Earnings (loss) per common share</i></b>	<b>\$ 3.98</b>	<b>\$ 2.91</b>	<b>\$(0.41)</b>
<b><i>Earnings (loss) per common share - assuming dilution</i></b>			
Net income (loss)	\$ 683	\$ 494	\$ (69)
Weighted average common shares outstanding	171.7	169.9	169.1
Effect of dilutive securities			
Stock options	0.7	0.2	0.2
Other stock compensation plans	0.6	0.8	0.6
Potentially dilutive common shares	1.3	1.0	0.8
Adjusted weighted average common shares outstanding	173.0	170.9	169.9
<b><i>Earnings (loss) per common share - assuming dilution</i></b>	<b>\$ 3.95</b>	<b>\$ 2.89</b>	<b>\$(0.41)</b>

There were 4.7 million, 8.7 million and 9.3 million stock options excluded in 2004, 2003 and 2002, respectively, from the computation of diluted earnings per common share due to their anti-dilutive effect.

# Notes to the Financial Statements

## 11. Income Taxes

The following table presents a reconciliation of the statutory U.S. corporate federal income tax rate to our effective income tax rate:

(Percent of Pretax Income)	2004	2003	2002
U.S. federal income tax rate	35.00%	35.00%	35.00%
Changes in rate due to:			
State and local taxes – U.S.	1.23	1.10	2.09
Taxes on non-U.S. earnings	(3.56)	(1.44)	(1.08)
ESOP dividends	(1.08)	(1.45)	(1.73)
Other	(1.30)	1.55	2.03
<b>Effective income tax rate<sup>(1)</sup></b>	<b>30.29%</b>	<b>34.76%</b>	<b>36.31%</b>

(1) For 2002, the reconciliation is based on amounts that exclude the asbestos settlement charge of \$755 million and the related tax benefit of \$271 million in order to present information that is consistent with the amounts for 2004 and 2003. The 2002 effective tax rate including the impact of the asbestos settlement charge was (25.00)%.

Since 2002, the trend of our effective income tax rate has been downward reflecting an improvement in the geographical mix of non-U.S. earnings combined with declining non-U.S. statutory income tax rates. Additionally, the reduction in the rate in 2004 reflects the benefit of the subsidy offered pursuant to the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (see Note 12) not being subject to tax and the favorable resolution during 2004 of matters related to two open U.S. federal income tax years, which impacts are presented as “other” in the rate reconciliation above.

Income before income taxes of our non-U.S. operations for 2004, 2003 and 2002 was \$382 million, \$327 million and \$199 million, respectively.

The following table gives details of income tax expense (benefit) reported in the accompanying statement of income.

(Millions)	2004	2003	2002
<b>Current income taxes</b>			
U.S. federal	\$ 193	\$ 178	\$ 182
Non-U.S.	114	105	73
State and local – U.S.	34	28	19
<b>Total current</b>	<b>341</b>	<b>311</b>	<b>274</b>
<b>Deferred income taxes</b>			
U.S. federal	(16)	(19)	(264)
Non-U.S.	2	8	(8)
State and local – U.S.	(5)	(7)	(9)
<b>Total deferred</b>	<b>(19)</b>	<b>(18)</b>	<b>(281)</b>
<b>Total</b>	<b>\$ 322</b>	<b>\$ 293</b>	<b>\$ (7)</b>

Income tax payments in 2004, 2003 and 2002 totaled \$326 million, \$289 million and \$276 million, respectively.

Net deferred income tax assets and liabilities as of Dec. 31, 2004 and 2003, are as follows:

(Millions)	2004	2003
<b>Deferred income tax assets related to</b>		
Employee benefits	\$431	\$432
Contingent and accrued liabilities	391	378
Operating loss and other carryforwards	92	78
Inventories	16	19
Property	18	20
Other	40	43
Valuation allowance	(63)	(59)
<b>Total</b>	<b>925</b>	<b>911</b>
<b>Deferred income tax liabilities related to</b>		
Property	429	422
Intangibles	185	162
Employee benefits	51	45
Other	46	39
<b>Total</b>	<b>711</b>	<b>668</b>
<b>Deferred income tax assets – net</b>	<b>\$214</b>	<b>\$243</b>

As of Dec. 31, 2004, subsidiaries of the Company had available net operating loss carryforwards of approximately \$216 million for income tax purposes, of which approximately \$192 million has an indefinite expiration. The remaining \$24 million expires between the years 2005 and 2021. A valuation allowance has been established for carry-forwards where the ability to utilize them is not likely.

No deferred U.S. income taxes have been provided on certain undistributed earnings of non-U.S. subsidiaries, which amounted to \$1,601 million as of Dec. 31, 2004 and \$1,259 million as of Dec. 31, 2003. These earnings are considered to be reinvested for an indefinite period of time or will be repatriated when it is tax effective to do so. It is not practicable to determine the deferred tax liability on these undistributed earnings. We are in the process of evaluating the impact of the provisions of the American Jobs Creation Act of 2004 dealing with the limited opportunity in 2005 to repatriate some of these undistributed earnings at a U.S. tax cost that may be lower than the normal tax cost on such distributions. We are awaiting final guidance from the Internal Revenue Service (“IRS”) to complete that evaluation, which may result in our decision to remit a portion of these undistributed earnings in 2005; however, we cannot currently estimate the amount of such distribution that may be reasonably possible.

The determination of annual income tax expense takes into consideration amounts which may be needed to cover exposures for open tax years. In 2004, the Company resolved all matters with the IRS related to its federal income tax returns for the years 1999 and 2000. In 2002, the Company resolved all matters with the IRS related to its federal income tax returns for the years 1994 to 1998,



## Notes to the Financial Statements

including matters that were on appeal related to the 1994 to 1996 tax returns. In connection with the resolution of these matters, the Company surrendered in July 2002 certain company-owned life insurance policies and received proceeds of \$32 million, which are included in "Reductions of other property and investments" in the investing activities section in the accompanying statement of cash flows. The Company does not expect any material impact on earnings to result from the resolution of matters related to open tax years, however, actual settlements may differ from amounts accrued.

### 12. Pensions and Other Postretirement Benefits

We have defined benefit pension plans that cover certain employees worldwide. PPG also sponsors defined benefit plans that provide postretirement medical and life insurance benefits for certain U.S. and Canadian employees and their dependents. These programs require retiree contributions based on retiree-selected coverage levels for certain retirees and their dependents and provide for sharing of future benefit cost increases between PPG and participants based on management discretion. The Company has the right to modify or terminate certain of these defined benefit plans in the future. Salaried and certain hourly employees hired on or after Oct. 1, 2004, are not eligible for postretirement medical benefits.

On Dec. 8, 2003, the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (the "Medicare Act") was signed into law. The Medicare Act introduces a prescription drug benefit under Medicare ("Medicare Part D") that provides several options for Medicare eligible participants and employers, including a federal subsidy payable to companies that elect to provide a retiree prescription drug benefit which is at least actuarially equivalent to Medicare Part D. During the third quarter of 2004, PPG concluded its evaluation of the provisions of the Medicare Act and decided to maintain its retiree prescription drug program and to take the subsidy available under the Medicare Act. The impact of the Medicare Act was accounted for in accordance with FASB Staff Position No. 106-2, "Accounting and Disclosure Requirements Related to the Medicare Prescription Drug, Improvement and Modernization Act of 2003" effective Jan. 1, 2004. In addition, the plan was amended Sept. 1, 2004, to provide that PPG will determine the extent to which future increases in the cost of its retiree medical and prescription drug programs will be shared by certain retirees. These changes resulted in a reduction in the accumulated postretirement benefit obligation of \$140 million and net periodic other postretirement benefit cost of \$19 million, or \$0.11 a share, for the year ended Dec. 31, 2004. The service cost, interest cost, amortization of actuarial losses and amortization of prior service cost components of net periodic other postretirement benefit cost were reduced by \$3 million, \$7 million, \$7 million and \$2 million, respectively, for the year ended Dec. 31, 2004.

The following table sets forth the changes in projected benefit obligations (as calculated by our actuaries as of Dec. 31), plan assets, the funded status and the amounts recognized in our balance sheet for our defined benefit pension and other postretirement benefit plans:

(Millions)	Pensions		Other Postretirement Benefits	
	2004	2003	2004	2003
Projected benefit obligation, Jan. 1	\$ 3,065	\$ 2,719	\$ 1,135	\$ 993
Service cost	65	60	22	23
Interest cost	182	173	62	65
Plan amendments	2	11	(60)	(37)
Actuarial losses (gains)	122	180	(2)	174
Benefits paid	(178)	(170)	(89)	(93)
Foreign currency translation adjustments	57	94	5	10
Other	3	(2)	—	—
<b>Projected benefit obligation, Dec. 31</b>	<b>\$ 3,318</b>	<b>\$ 3,065</b>	<b>\$ 1,073</b>	<b>\$ 1,135</b>
Market value of plan assets, Jan. 1	\$ 2,480	\$ 2,030		
Actual return on plan assets	286	480		
Company contributions	140	63		
Participant contributions	2	1		
Benefits paid	(167)	(158)		
Plan expenses and other – net	(3)	(3)		
Foreign currency translation adjustments	44	67		
<b>Market value of plan assets, Dec. 31</b>	<b>\$ 2,782</b>	<b>\$ 2,480</b>		
Funded status	\$ (536)	\$ (585)	\$(1,073)	\$(1,135)
Accumulated unrecognized:				
Actuarial losses	1,263	1,275	499	527
Prior service cost	81	97	(70)	(16)
Additional pension liability	(1,017)	(1,095)	—	—
<b>Net accrued benefit cost</b>	<b>\$ (209)</b>	<b>\$ (308)</b>	<b>\$ (644)</b>	<b>\$ (624)</b>

In 2004 and 2003, we made voluntary contributions to our U.S. defined benefit pension plans of \$100 million and \$22 million, respectively, and contributions to our non-U.S. defined benefit pension plans of \$40 million and \$41 million, respectively, some of which were required by local funding requirements. Despite the underfunded status of our U.S. defined benefit pension plans our current forecast under existing U.S. pension funding regulations is that with available funding credits, there will be no required contribution to the U.S. plans until 2008, at the earliest, even if our plan assets remain at December 2004 levels. However, we may make voluntary contributions to our U.S. plans and we expect to make mandatory contributions to our non-U.S. plans in 2005 of approximately \$20 million.

The estimated pension benefits to be paid under our defined benefit pension plans during the next five years

## Notes to the Financial Statements

are (in millions) \$179 in 2005, \$180 in 2006, \$180 in 2007, \$185 in 2008 and \$188 in 2009 and are expected to aggregate \$1,027 million for the five years thereafter. The estimated other postretirement benefits to be paid during the next five years are (in millions) \$89 in 2005, \$87 in 2006, \$79 in 2007, \$79 in 2008 and \$80 in 2009 and are expected to aggregate \$411 million for the five years thereafter. These amounts are net of the expected subsidy to be received under the Medicare Act beginning in 2007 which will be approximately \$9 million per year.

The accumulated unrecognized actuarial losses for pensions relate primarily to the actual return on plan assets being less than the expected return on plan assets and the decline in the discount rate. The accumulated unrecognized actuarial losses for other postretirement benefits relate primarily to actual healthcare costs increasing at a higher rate than assumed and the decline in the discount rate. The increase in the accumulated unrecognized actuarial losses for both pension and other postretirement benefits have occurred primarily since 2001. Since the accumulated unrecognized actuarial losses exceed 10% of the higher of the market value of plan assets or the projected benefit obligation ("PBO") at the beginning of the year, amortization of such excess over a period of 6 to 13 years has been included in net periodic benefit costs for pension and other postretirement benefits in each of the last three years.

The following summarizes the current and noncurrent assets and liabilities recognized in the accompanying balance sheet for these plans:

(Millions)	Pensions		Other Postretirement Benefits	
	2004	2003	2004	2003
Prepaid benefit cost	\$ 129	\$ 87	\$ —	\$ —
Accrued benefit cost	(338)	(395)	(644)	(624)
<b>Net accrued benefit cost</b>	<b>\$(209)</b>	<b>\$(308)</b>	<b>\$(644)</b>	<b>\$(624)</b>

The PBO is the actuarial present value of benefits attributable to employee service rendered to date, including the effects of estimated future pay increases. The accumulated benefit obligation ("ABO") also reflects the actuarial present value of benefits attributable to employee service rendered to date, but does not include the effects of estimated future pay increases. In order to measure the funded status for financial accounting purposes, the ABO is compared to the market value of plan assets and amounts accrued for such benefits in the balance sheet.

The ABO as of Dec. 31, 2004 and 2003 was \$3,082 million and \$2,844 million, respectively. The following summarizes the funded status of those pension plans that were under-funded on an ABO basis as of Dec. 31, 2004 and 2003:

(Millions)	2004	2003
PBO	\$3,074	\$2,810
ABO	2,851	2,620
Market value of plan assets	2,532	2,245

The ABO exceeds the market value of plan assets for these plans as of Dec. 31, 2004 and 2003 by \$319 million and \$375 million, respectively. After considering amounts already accrued for these plans, the minimum pension liability, which is included in "Accrued pensions" in the accompanying balance sheet, was \$181 million and \$255 million as of Dec. 31, 2004 and 2003, respectively.

The following reflects the balance sheet impact of the 2004 minimum pension liability adjustment:

(Millions)	2004	2004 Adjustment	2003
Other assets	\$ 70	\$(24)	\$ 94
Accumulated other comprehensive loss	595	(33)	628
Deferred income taxes	352	(21)	373
Prepaid benefit cost	(836)	4	(840)
<b>Minimum pension liability</b>	<b>\$(181)</b>	<b>\$ 74</b>	<b>\$(255)</b>

"Accrued pensions" in the accompanying balance sheet includes \$8 million and \$7 million, as of Dec. 31, 2004 and 2003, respectively, for defined contribution plans.

Net periodic benefit cost for the three years ended Dec. 31, 2004, includes the following:

(Millions)	Pensions			Other Postretirement Benefits		
	2004	2003	2002	2004	2003	2002
Service cost	\$ 65	\$ 60	\$ 54	\$ 22	\$ 23	\$ 17
Interest cost	182	173	165	62	65	58
Expected return on plan assets	(208)	(173)	(224)	—	—	—
Amortization of transition assets	—	—	(4)	—	—	—
Amortization of prior service cost	20	18	18	(6)	1	3
Amortization of actuarial losses	81	98	45	28	26	13
<b>Net periodic benefit cost</b>	<b>\$ 140</b>	<b>\$ 176</b>	<b>\$ 54</b>	<b>\$ 106</b>	<b>\$ 115</b>	<b>\$ 91</b>

Net periodic benefit cost is included in "Cost of sales," "Selling, general and administrative" and "Research and development" in the accompanying statement of income.

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In determining net periodic benefit cost, unrecognized prior service costs are amortized over periods ranging from 6 to 13 years.

The following weighted average assumptions were used to determine the benefit obligations for our defined benefit pension and other postretirement plans as of Dec. 31, 2004 and 2003:

	2004	2003
Discount rate	5.9%	6.1%
Rate of compensation increase	4.0%	4.0%

The following weighted average assumptions were used to determine the net periodic benefit cost for our defined benefit pension and other postretirement benefit plans for the three years ended Dec. 31, 2004:

	2004	2003	2002
Discount rate	6.1%	6.5%	7.0%
Expected return on assets	8.4%	8.4%	9.5%
Rate of compensation increase	4.0%	4.1%	4.1%

These assumptions are reviewed on an annual basis. In determining the expected return on plan asset assumption, the Company evaluates the mix of investments that comprise plan assets and external forecasts of future long-term investment returns. The expected return on plan assets assumption to be used in determining 2005 net periodic pension expense will be 8.50% for the U.S. plans.

The following summarizes the target pension plan asset allocation as of Dec. 31, 2004, and the actual pension plan asset allocations as of Dec. 31, 2004 and 2003:

Asset Category	Target Asset Allocation as of Dec. 31, 2004	Percentage of Plan Assets	
		2004	2003
Equity securities	50-75%	69%	73%
Debt securities	25-50%	27%	25%
Real estate	0-5%	4%	2%

The pension plan assets are invested with the objective of maximizing long-term returns while minimizing material losses in order to meet future benefit obligations when they come due.

The weighted-average medical healthcare cost trend rate used was 12.0% for 2004 declining to 4.5% in the year 2008. For 2005, the weighted-average medical healthcare cost trend rate used will be 10.5% declining to 4.75% in the year 2010. These assumptions are reviewed on an annual basis. In selecting rates for current and long-term health care assumptions, the Company takes into consideration a number of factors including the Company's actual health care cost increases, the design of the Company's benefit programs, the demographics of the Company's active and retiree populations and expectations of future medical cost inflation rates. If these 2005 trend rates were increased or

decreased by one percentage point per year, such increases or decreases would have the following effects:

(Millions)	One-Percentage Point	
	Increase	Decrease
Increase (decrease) in the aggregate of service and interest cost components	\$ 9	\$ (7)
Increase (decrease) in the benefit obligation	\$82	\$(74)

The Company also incurred costs for multi-employer pension plans of \$1 million, \$2 million, and \$1 million in 2004, 2003 and 2002, respectively. Multi-employer healthcare costs totaled \$1 million in each of the years 2004, 2003 and 2002.

The Company has a deferred compensation plan for certain key managers which allows them to defer a portion of their compensation in a phantom PPG stock account or other phantom investment accounts. The amount deferred earns a return based on the investment options selected by the participant. The amount owed to participants is an unfunded and unsecured general obligation of the Company. Upon retirement, death, disability or termination of employment, the compensation deferred and related accumulated earnings are distributed in accordance with the participant's election in cash or in PPG stock, based on the accounts selected by the participant.

The plan provides participants with investment alternatives and the ability to transfer amounts between the phantom non-PPG stock investment accounts. To mitigate the impact on compensation expense of changes in the market value of the liability, the Company purchased a portfolio of marketable securities that mirror the phantom non-PPG stock investment accounts selected by the participants except the money market accounts. The changes in market value of these securities are also included in earnings. Trading will occur in this portfolio to align the securities held with the participant's phantom non-PPG stock investment accounts except the money market accounts.

The cost of the deferred compensation plan, comprised of dividend equivalents accrued on the phantom PPG stock account, investment income and the change in market value of the liability, was expense in 2004 and 2003 of \$8 million and \$13 million, respectively, and income of \$9 million in 2002. These amounts are included in "Selling, general and administrative" in the accompanying statement of income. The change in market value of the investment portfolio in 2004 and 2003 was income of \$8 million and \$13 million, respectively, and expense of \$10 million in 2002 and is also included in "Selling, general and administrative."

The Company's obligations under this plan, which are included in "Other liabilities" in the accompanying balance sheet, were \$109 million and \$100 million as of Dec. 31, 2004 and 2003, respectively, and the investments in marketable securities, which are included in "Investments" in the accompanying balance sheet, were

# Notes to the Financial Statements

\$76 million and \$68 million as of Dec. 31, 2004 and 2003, respectively.

## 13. Commitments and Contingent Liabilities

PPG is involved in a number of lawsuits and claims, both actual and potential, including some that it has asserted against others, in which substantial monetary damages are sought. These lawsuits and claims, the most significant of which are described below, relate to product liability, contract, patent, environmental, antitrust and other matters arising out of the conduct of PPG's business. To the extent that these lawsuits and claims involve personal injury and property damage, PPG believes it has adequate insurance; however, certain of PPG's insurers are contesting coverage with respect to some of these claims, and other insurers, as they had prior to the asbestos settlement described below, may contest coverage with respect to some of the asbestos claims if the settlement is not implemented. PPG's lawsuits and claims against others include claims against insurers and other third parties with respect to actual and contingent losses related to environmental, asbestos and other matters.

The result of any future litigation of such lawsuits and claims is inherently unpredictable. However, management believes that, in the aggregate, the outcome of all lawsuits and claims involving PPG, including asbestos-related claims in the event the settlement described below does not become effective, will not have a material effect on PPG's consolidated financial position or liquidity; however, such outcome may be material to the results of operations of any particular period in which costs, if any, are recognized.

The Company has been named as a defendant, along with various other co-defendants, in a number of antitrust lawsuits filed in federal and state courts. These suits allege that PPG acted with competitors to fix prices and allocate markets in the flat glass and automotive refinish industries.

Twenty-nine glass antitrust cases were filed in federal courts, all of which have been consolidated in the U.S. District Court for the Western District of Pennsylvania located in Pittsburgh, Pa. The Court has ruled that the case may proceed as a class action. Similar state court actions are inactive pending resolution of the federal proceedings. All of the initial defendants in the glass class action antitrust case, other than PPG, have entered into settlement agreements with the plaintiffs. On May 29, 2003, the Court granted PPG's motion for summary judgment dismissing the claims against PPG in the glass class action antitrust case. The plaintiffs in that case appealed that order to the U.S. Third Circuit Court of Appeals. On Sept. 30, 2004, the U.S. Third Circuit Court of Appeals affirmed in part and reversed in part the dismissal of PPG and remanded the case for further proceedings. PPG has since petitioned the U.S. Supreme Court for permission to appeal the decision of the U.S. Third Circuit Court of Appeals. If the U.S. Supreme Court

rejects PPG's petition for review, the case will likely proceed to trial in 2006.

In addition, approximately 60 cases alleging antitrust violations in the automotive refinish industry have been filed in various state and federal jurisdictions. The approximately 55 federal cases have been consolidated as a class action in the U.S. District Court for the Eastern District of Pennsylvania located in Philadelphia, Pa. Certain of the defendants in the federal automotive refinish case have settled. This case is still at an early stage and discovery is continuing with the remaining defendants. Except for a case in California and a recently filed case in Vermont, the state automotive refinish cases have either been stayed pending resolution of the federal proceedings or have been dismissed.

The plaintiffs in these various antitrust cases are seeking economic and treble damages as well as injunctive relief. PPG believes it has meritorious defenses in these antitrust lawsuits.

The Company has been a defendant since April 1994 in a suit filed by Marvin Windows and Doors ("Marvin") alleging numerous claims, including breach of warranty. All of the plaintiff's claims, other than breach of warranty, were dismissed. However, on Feb. 14, 2002, a federal jury awarded Marvin \$136 million on the remaining claim. Subsequently, the court added \$20 million for pre-judgment interest bringing the total judgment to \$156 million. PPG has appealed that judgment. The appeals court heard the parties' arguments on June 9, 2003, but has not yet rendered its decision. Interest will be added to the \$156 million judgment against PPG during the appeals process. As of Dec. 31, 2004, the amount of the total judgment against PPG, including interest, was approximately \$166 million. PPG believes it has meritorious defenses to the plaintiff's claims and has reasonable prospects of prevailing on appeal.

For over thirty years, PPG has been a defendant in lawsuits involving claims alleging personal injury from exposure to asbestos. As of Dec. 31, 2004, PPG was one of many defendants in numerous asbestos-related lawsuits involving approximately 116,000 claims. Most of PPG's potential exposure relates to allegations by plaintiffs that PPG should be liable for injuries involving asbestos-containing thermal insulation products manufactured and distributed by Pittsburgh Corning Corporation ("PC"). PPG and Corning Incorporated are each 50% shareholders of PC. PPG has denied responsibility for, and has defended, all claims for any injuries caused by PC products.

On April 16, 2000, PC filed for Chapter 11 Bankruptcy in the U.S. Bankruptcy Court for the Western District of Pennsylvania located in Pittsburgh, Pa. Accordingly, in the first quarter of 2000, PPG recorded an aftertax charge of \$35 million for the write-off of all of its investment in PC. As a consequence of the bankruptcy filing and various motions and orders in that proceeding, the asbestos litigation against PPG (as well as against PC) has been

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stayed and the filing of additional asbestos suits against them has been enjoined, until thirty days after the effective date of a confirmed plan of reorganization for PC substantially in accordance with the settlement arrangement among PPG and several other parties discussed below. The stay may be terminated if the Bankruptcy Court determines that such a plan will not be confirmed, or the settlement arrangement set forth below is not likely to be consummated.

On May 14, 2002, PPG announced that it had agreed with several other parties, including certain of its insurance carriers, the official committee representing asbestos claimants in the PC bankruptcy, and the legal representatives of future asbestos claimants appointed in the PC bankruptcy, on the terms of a settlement arrangement relating to asbestos claims against PPG and PC (the "PPG Settlement Arrangement").

On March 28, 2003, Corning Incorporated announced that it had separately reached its own arrangement with the representatives of asbestos claimants for the settlement of certain asbestos claims that might arise from PC products or operations (the "Corning Settlement Arrangement").

The terms of the PPG Settlement Arrangement and the Corning Settlement Arrangement have been incorporated into a bankruptcy reorganization plan for PC along with a disclosure statement describing the plan, which PC filed with the Bankruptcy Court on April 30, 2003. Amendments to the plan and disclosure statement were filed on Aug. 18 and Nov. 20, 2003. Creditors and other parties with an interest in the bankruptcy proceeding were entitled to file objections to the disclosure statement and the plan of reorganization, and a few parties filed objections. On Nov. 26, 2003, after considering objections to the second amended disclosure statement and plan of reorganization, the Bankruptcy Court entered an order approving such disclosure statement and directing that it be sent to creditors, including asbestos claimants, for voting. The Bankruptcy Court established March 2, 2004 as the deadline for receipt of votes. In order to approve the plan, at least two-thirds in amount and more than one-half in number of the allowed creditors in a given class must vote in favor of the plan, and for a plan to contain a channeling injunction for present and future asbestos claims under §524(g) of the Bankruptcy Code, as described below, seventy-five percent of the asbestos claimants voting must vote in favor of the plan. On March 16, 2004, notice was received that the plan of reorganization received the required votes to approve the plan with a channeling injunction. From May 3-7, 2004, the Bankruptcy Court judge conducted a hearing regarding the fairness of the settlement, including whether the plan would be fair with respect to present and future claimants, whether such claimants would be treated in substantially the same manner, and whether the protection provided to PPG and its participating insurers would be fair in view of the assets they would convey to

the asbestos settlement trust (the "Trust") to be established as part of the plan. At that hearing, certain creditors and other parties in interest raised objections to the PC plan of reorganization. Following that hearing, the Bankruptcy Court set deadlines for the parties to develop agreed-upon and contested Findings of Fact and Conclusions of Law and scheduled oral argument for contested items on Nov. 9, 2004. Subsequently, the Bankruptcy Court rescheduled such oral argument for Nov. 17, 2004.

The Bankruptcy Court heard oral arguments on the contested items on Nov. 17-18, 2004. At the conclusion of the hearing, the Bankruptcy Court agreed to consider certain post-hearing written submissions. In a further development, on February 2, 2005, the Bankruptcy Court established a briefing schedule to address whether certain aspects of a decision of the U.S. Third Circuit Court of Appeals in an unrelated case have any applicability to the PC plan of reorganization. The Bankruptcy Court set oral arguments on the briefs for March 16, 2005. PPG currently believes the Third Circuit Court of Appeals' decision should not adversely affect the confirmability of the PC plan of reorganization incorporating the terms of the PPG Settlement Arrangement. If the Bankruptcy Court ultimately determines that all requirements to confirm a plan of reorganization for PC have been satisfied, the Bankruptcy Court would enter a confirmation order of the PC plan of reorganization. That order may be appealed to the U.S. District Court located in Pittsburgh, Pa. Assuming that the District Court approves the confirmation order following any such appeal, interested parties could further appeal the District Court's order to the U.S. Third Circuit Court of Appeals and subsequently seek review of any decision of the Third Circuit Court of Appeals by the U. S. Supreme Court. The PPG Settlement Arrangement will not become effective until 30 days after the PC plan of reorganization is finally approved by an appropriate court order that is no longer subject to appellate review (the "Effective Date").

If the PC plan of reorganization incorporating the terms of the PPG Settlement Arrangement and the Corning Settlement Arrangement is approved by the Bankruptcy Court, the Court would enter a channeling injunction under §524(g) and other provisions of the Bankruptcy Code prohibiting present and future claimants from asserting bodily injury claims after the Effective Date against PPG or its subsidiaries or PC relating to the manufacture, distribution or sale of asbestos-containing products by PC or PPG or its subsidiaries. The injunction would also prohibit co-defendants in those cases from asserting claims against PPG for contribution, indemnification or other recovery. All such claims would be filed with the Trust and only paid from the assets of the Trust.

The channeling injunction would not extend to claims against PPG alleging injury caused by asbestos on premises owned, leased or occupied by PPG (so called

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“premises claims”), or claims alleging property damage resulting from asbestos. Approximately 9,000 of the 116,000 claims pending against PPG and its subsidiaries are premises claims. Many of PPG’s premises claims have been resolved without payment from PPG. To date, PPG has paid about \$7 million to settle approximately 1,100 premises claims, virtually all of which has been covered by PPG’s insurers. There are no property damage claims pending against PPG or its subsidiaries. PPG believes that it has adequate insurance for the asbestos claims that would not be covered by any channeling injunction and that any financial exposure resulting from such claims will not have a material effect on PPG’s consolidated financial position, liquidity or results of operations.

PPG has no obligation to pay any amounts under the PPG Settlement Arrangement until the Effective Date. PPG and certain of its insurers (along with PC) would then make payments to the Trust, which would provide the sole source of payment for all present and future asbestos bodily injury claims against PPG, its subsidiaries or PC alleged to be caused by the manufacture, distribution or sale of asbestos products by these companies. PPG would convey the following assets to the Trust. First, PPG would convey the stock it owns in PC and Pittsburgh Corning Europe. Second, PPG would transfer 1,388,889 shares of PPG’s common stock. Third, PPG would make aggregate cash payments to the Trust of approximately \$998 million, payable according to a fixed payment schedule over 21 years, beginning on June 30, 2003, or, if later, the Effective Date. PPG would have the right, in its sole discretion, to prepay these cash payments to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. Under the payment schedule, the amount due June 30, 2003 was \$75 million. In addition to the conveyance of these assets, PPG would pay \$30 million in legal fees and expenses on behalf of the Trust to recover proceeds from certain historical insurance assets, including policies issued by certain insurance carriers that are not participating in the settlement, the rights to which would be assigned to the Trust by PPG.

PPG’s participating historical insurance carriers would make cash payments to the Trust of approximately \$1.7 billion between the Effective Date and 2023. These payments could also be prepaid to the Trust at any time at a discount rate of 5.5% per annum as of the prepayment date. In addition, as referenced above, PPG would assign to the Trust its rights, insofar as they relate to the asbestos claims to be resolved by the Trust, to the proceeds of policies issued by certain insurance carriers that are not participating in the PPG Settlement Arrangement and from the estates of insolvent insurers and state insurance guaranty funds.

PPG would grant asbestos releases to all participating insurers, subject to a coverage-in-place agreement with certain insurers for the continuing coverage of premises claims (discussed above). PPG would grant certain participating insurers full policy releases on primary

policies and full product liability releases on excess coverage policies. PPG would also grant certain other participating excess insurers credit against their product liability coverage limits.

The following table summarizes the impact on our financial statements resulting from the initial charge in the second quarter of 2002 for the estimated cost of the PPG Settlement Arrangement which included the net present value as of Dec. 31, 2002, using a discount rate of 5.5%, of the aggregate cash payments of approximately \$998 million to be made by PPG to the Trust. That amount also included the carrying value of PPG’s stock in Pittsburgh Corning Europe, the fair value as of June 30, 2002 of 1,388,889 shares of PPG common stock and \$30 million in legal fees of the Trust to be paid by PPG, which together with the first payment originally scheduled to be made to the Trust on June 30, 2003, were reflected in the current liability for PPG’s asbestos settlement in the balance sheet as of June 30, 2002. The net present value of the remaining payments of \$566 million was recorded in the noncurrent liability for asbestos settlement. The table also presents the impact of the subsequent changes in the estimated cost of the settlement due to the change in fair value of the stock to be transferred to the asbestos settlement trust and the equity forward instrument (see Note 9) and the increase in the net present value of the future payments to be made to the Trust.

	Balance Sheet			
	Asbestos Settlement Liability		Equity	Pretax
	Current	Long-term	Forward (Asset)	
(Millions)				Charge
Initial asbestos settlement charge	\$206	\$566	\$ —	\$772
Change in fair value:				
PPG stock	(16)	—	—	(16)
Equity forward instrument	—	—	(1)	(1)
<i>Balance as of and Activity for the year ended Dec. 31, 2002</i>	190	566	(1)	\$755
Change in fair value:				
PPG stock	20	—	—	20
Equity forward instrument	—	—	(14)	(14)
Accretion of asbestos liability	—	32	—	32
Reclassification	98	(98)	—	—
<i>Balance as of and Activity for the year ended Dec. 31, 2003</i>	308	500	(15)	\$ 38
Change in fair value:				
PPG stock	6	—	—	6
Equity forward instrument	—	—	(4)	(4)
Accretion of asbestos liability	—	30	—	30
Reclassification	90	(90)	—	—
<i>Balance as of and Activity for the year ended Dec. 31, 2004</i>	\$404	\$440	\$(19)	\$ 32

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The fair value of the equity forward instrument is included as an other current asset as of Dec. 31, 2004 and Dec. 31, 2003 in the accompanying balance sheet. The amount due June 30, 2006, of \$82 million and the net present value of the remaining payments is included in the long-term asbestos settlement liability in the accompanying balance sheet. For 2005 accretion expense associated with the asbestos liability will be approximately \$7 million per quarter.

Because the filing of asbestos claims against the Company has been enjoined since April 2000, a significant number of additional claims may be filed against the Company if the Bankruptcy Court stay were to expire. If the PPG Settlement Arrangement is not implemented, for any reason, and the Bankruptcy Court stay expires, the Company intends to vigorously defend the pending and any future asbestos claims against it and its subsidiaries. The Company believes that it is not responsible for any injuries caused by PC products, which represent the preponderance of the pending bodily injury claims against it. Prior to 2000, PPG had never been found liable for any such claims, in numerous cases PPG had been dismissed on motions prior to trial, and aggregate settlements by PPG to date have been immaterial. In January 2000, in a trial in a state court in Texas involving six plaintiffs, the jury found PPG not liable. However, a week later in a separate trial also in a state court in Texas, another jury found PPG, for the first time, partly responsible for injuries to five plaintiffs alleged to be caused by PC products. PPG intends to appeal the adverse verdict in the event the settlement does not become effective. Although PPG has successfully defended asbestos claims brought against it in the past, in view of the number of claims, and the questionable verdicts and awards that other companies have experienced in asbestos litigation, the result of any future litigation of such claims is inherently unpredictable.

It is PPG's policy to accrue expenses for environmental contingencies when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Reserves for environmental contingencies are exclusive of claims against third parties and are generally not discounted. As of Dec. 31, 2004 and 2003, PPG had reserves for environmental contingencies totaling \$81 million and \$92 million, respectively. Pretax charges against income for environmental remediation costs in 2004, 2003 and 2002 totaled \$15 million, \$21 million and \$15 million, respectively, and are included in "Other charges" in the accompanying statement of income. Cash outlays related to such environmental remediation aggregated \$26 million, \$16 million and \$22 million in 2004, 2003 and 2002, respectively.

Management anticipates that the resolution of the Company's environmental contingencies will occur over an extended period of time. Over the past 10 years the pretax charges against income have ranged between \$10

million and \$49 million per year. We anticipate that charges against income in 2005 will be within that range. It is possible, however, that technological, regulatory and enforcement developments, the results of environmental studies and other factors could alter this expectation. In management's opinion, the Company operates in an environmentally sound manner and the outcome of the Company's environmental contingencies will not have a material effect on PPG's financial position or liquidity.

In addition to the amounts currently reserved, the Company may be subject to loss contingencies related to environmental matters estimated to be as much as \$200 million to \$400 million, which range is unchanged from the prior year end. Such unreserved losses are reasonably possible but are not currently considered to be probable of occurrence. The Company's environmental contingencies are expected to be resolved over an extended period of time.

Although the unreserved exposure to future loss relates to all sites, a significant portion of such exposure involves three operating plant sites in our chemicals segment. Initial remedial actions are occurring at these sites. Studies to determine the nature of the contamination are reaching completion and the need for additional remedial actions, if any, is presently being evaluated. The loss contingencies related to the remaining portion of such unreserved exposure include significant unresolved issues such as the nature and extent of contamination, if any, at these other sites and the methods that may have to be employed should remediation be required. The most significant of these sites is the Calcasieu River estuary, near our Lake Charles, La. chemicals plant. The U.S. Environmental Protection Agency has completed investigation of contamination levels in the Calcasieu River estuary and issued a Final Remedial Investigation Report in September 2003, which incorporates the Human Health and Ecological Risk Assessments, indicating that elevated levels of risk exist in the estuary. PPG and other potentially responsible parties are performing a feasibility study under the authority of the Louisiana Department of Environmental Quality. Current activity is focused on the development of preliminary remedial action goals, which are expected to be submitted in the first quarter of 2005 for agency approval. These goals will more fully define the nature and extent of any potentially required remedial actions. Based upon the results of the feasibility study, an evaluation will be made to determine, what, if any, role PPG would have with respect to future potential remedial actions.

With respect to certain waste sites, the financial condition of any other potentially responsible parties also contributes to the uncertainty of estimating PPG's final costs. Although contributors of waste to sites involving other potentially responsible parties may face governmental agency assertions of joint and several

# Notes to the Financial Statements

liability, in general, final allocations of costs are made based on the relative contributions of wastes to such sites. PPG is generally not a major contributor to such sites.

The impact of evolving programs, such as natural resource damage claims, industrial site reuse initiatives and state remediation programs, also adds to the present uncertainties with regard to the ultimate resolution of this unreserved exposure to future loss. The Company's assessment of the potential impact of these environmental contingencies is subject to considerable uncertainty due to the complex, ongoing and evolving process of investigation and remediation, if necessary, of such environmental contingencies, and the potential for technological and regulatory developments including a recently undertaken formal review by the New Jersey Department of Environmental Protection of its chromium cleanup guidelines, which may potentially impact PPG's ongoing chrome remediation activities.

In June 2003, our partner in a fiber glass joint venture in South America filed for bankruptcy. Upon resolution of the bankruptcy proceedings, the partner's ownership interest may transfer to one of its senior secured creditors or be sold. While PPG expects operations at the joint venture to continue, the Company is currently evaluating its options with respect to this venture, which may include the sale or liquidation of the venture. Should liquidation occur, PPG's exposure to loss would be limited to \$12 million, which includes a combination of the Company's investment, outstanding receivables and a loan guarantee related to this venture.

## 14. Shareholders' Equity

A class of 10 million shares of preferred stock, without par value, is authorized but unissued. Common stock has a par value of \$1.66⅔ per share; 600 million shares are authorized.

The following table summarizes the shares outstanding for the three years ended Dec. 31, 2004:

	Common Stock	Treasury Stock	ESOP Shares	Shares Outstanding
Balance, Jan. 1, 2002	290,573,068	(121,859,854)	(224,958)	168,488,256
Issuances/releases	—	871,725	82,212	953,937
Balance, Dec. 31, 2002	290,573,068	(120,988,129)	(142,746)	169,442,193
Issuances/releases	—	1,479,576	4,870	1,484,446
Balance, Dec. 31, 2003	290,573,068	(119,508,553)	(137,876)	170,926,639
Purchases	—	(1,507,400)	—	(1,507,400)
Issuances/releases	—	2,577,392	5,164	2,582,556
<b>Balance, Dec. 31, 2004</b>	<b>290,573,068</b>	<b>(118,438,561)</b>	<b>(132,712)</b>	<b>172,001,795</b>

ESOP shares represent the unreleased new shares held by the ESOP that are not considered outstanding under SOP 93-6 (see Notes 1 and 16). The number of ESOP shares changes as a result of the purchases of new shares and releases of shares to participant accounts by the ESOP.

PPG has a Shareholders' Rights Plan, under which each share of the Company's outstanding common stock has an associated preferred share purchase right. The rights are exercisable only under certain circumstances

and allow holders of such rights to purchase common stock of PPG or an acquiring company at a discounted price, which would generally be 50% of the respective stocks' current fair market value.

Per share cash dividends paid were \$1.79 in 2004, \$1.73 in 2003 and \$1.70 in 2002.

## 15. Accumulated Other Comprehensive Loss

(Millions)	Unrealized Currency Translation Adjustment	Minimum Pension Liability Adjustment	Unrealized Gain (Loss) on Marketable Securities	Unrealized Gain (Loss) on Derivatives	Accumulated Other Comprehensive Loss
Balance, Jan. 1, 2002	\$(413)	\$ (49)	\$10	\$ (8)	\$ (460)
Net change	73	(726)	(5)	17	(641)
Balance, Dec. 31, 2002	(340)	(775)	5	9	(1,101)
Net change	328	147	(3)	(13)	459
Balance, Dec. 31, 2003	(12)	(628)	2	(4)	(642)
Net change	180	33	(3)	(3)	207
<b>Balance, Dec. 31, 2004</b>	<b>\$ 168</b>	<b>\$(595)</b>	<b>\$ (1)</b>	<b>\$ (7)</b>	<b>\$ (435)</b>

Unrealized currency translation adjustments exclude income tax expense (benefit) given that the earnings of non-U.S. subsidiaries are deemed to be reinvested for an indefinite period of time. The tax benefit (cost) related to changes in the minimum pension liability for the years ended Dec. 31, 2004, 2003 and 2002 was \$(21) million, \$(69) million and \$416 million, respectively. The tax benefit related to the change in the unrealized gain (loss) on marketable securities for the years ended Dec. 31, 2004, 2003 and 2002 was \$2 million, \$2 million and \$3 million, respectively. The tax benefit (cost) related to change in the unrealized gain (loss) on derivatives for the years ended Dec. 31, 2004, 2003 and 2002 was \$2 million, \$8 million and \$(10) million, respectively.

The 2003 net change in unrealized gain (loss) on marketable securities includes the reclassification to "Other earnings" in the accompanying statement of income for realized gains of \$15 million, \$9 million net of tax, related to the sale of these marketable securities.

## 16. Employee Stock Ownership Plan

Our ESOP covers substantially all U.S. employees. The Company makes matching contributions to the ESOP based upon participants' savings, subject to certain limitations, the matching percentage being based upon our return on average capital for the previous year.

Compensation expense (benefit) related to the ESOP for 2004, 2003 and 2002 totaled \$11 million, \$(0.3) million and \$(2) million, respectively. Cash contributions to the ESOP for 2004, 2003 and 2002 totaled \$13 million, \$3 million and \$2 million, respectively. The increase in compensation expense and cash contributions to the ESOP in 2004 was due principally to the increase in the Company's matching percentage and the decrease in the annual debt service. Interest expense totaled \$3 million, \$3 million and \$4 million for 2004, 2003 and 2002,



## Notes to the Financial Statements

respectively. The tax deductible dividends on PPG shares held by the ESOP were \$36 million, \$39 million and \$42 million for 2004, 2003 and 2002, respectively.

Shares held by the ESOP as of Dec. 31, 2004 and 2003, are as follows:

	2004		2003	
	Old Shares	New Shares	Old Shares	New Shares
Allocated shares	11,996,386	3,841,734	11,529,265	3,836,570
Unreleased shares	1,403,948	132,712	1,871,069	137,876
<b>Total</b>	<b>13,400,334</b>	<b>3,974,446</b>	<b>13,400,334</b>	<b>3,974,446</b>

The fair value of unreleased new ESOP shares was \$9 million as of Dec. 31, 2004 and 2003. The average cost of the unreleased old ESOP shares was \$21 per share.

### 17. Other Earnings

(Millions)	2004	2003	2002
Interest income	\$ 12	\$ 10	\$ 9
Royalty income	40	29	26
Share of net earnings (loss) of equity affiliates (See Note 5)	21	(4)	(1)
Other	58	68	61
<b>Total</b>	<b>\$ 131</b>	<b>\$ 103</b>	<b>\$ 95</b>

### 18. Stock-Based Compensation

A portion of the amounts paid under the Company's long-term incentive plan and its incentive compensation and management award plans may be paid in PPG common stock. Total compensation cost recognized as expense related to these plans was \$69 million, \$60 million and \$45 million in 2004, 2003 and 2002, respectively.

PPG has two stock option plans, the PPG Industries, Inc. Stock Plan ("PPG Stock Plan") and the PPG Industries, Inc. Challenge 2000 Stock Plan ("PPG Challenge 2000 Stock Plan"). Prior to Jan. 1, 2004, PPG applied APB Opinion No. 25 in accounting for stock options. Effective Jan. 1, 2004, PPG adopted the fair value method of recording compensation associated with stock options in accordance with SFAS No. 123 for stock options awarded to employees after the date of adoption and for previously issued stock options that were not vested as of Jan. 1, 2004 using the modified prospective transition method. The adoption increased "Selling, general and administrative" expense by \$20 million (\$13 million after tax, or \$0.07 a share) for the year ended Dec. 31, 2004. Additionally, as required under the modified prospective method, PPG has recorded a deferred tax asset of \$8 million and a corresponding increase to additional paid-in capital equal to the deferred tax benefit that would have been recognized had compensation expense been recorded for options outstanding at the date of adoption but not fully vested. The PPG Stock Plan was amended effective Jan. 1, 2004, to change the vesting period for stock options granted after that date from one year to three years. Adoption of the fair value provisions

of SFAS No. 123 did not have an impact on the accounting for PPG's other stock-based compensation.

Under the PPG Stock Plan, certain employees of the Company have been granted options to purchase shares of common stock at prices equal to the fair market value of the shares on the date the options were granted. The options are generally exercisable beginning from six to 36 months after being granted and have a maximum term of 10 years. Shares available for future grants under this plan were 10,214,750 and 11,953,100 as of Dec. 31, 2004 and 2003, respectively.

On July 1, 1998, the Company granted to substantially all active employees of the Company and its majority owned subsidiaries the option to purchase 100 shares of common stock at its then fair market value of \$70 per share under the PPG Challenge 2000 Stock Plan. The options became exercisable on July 1, 2003 and expire on June 30, 2008.

In accordance with APB No. 25, no compensation cost for the PPG Stock Plan and PPG Challenge 2000 Stock Plan had been recognized in the accompanying financial statements for the years ended Dec. 31, 2003 and 2002. Had compensation cost for these PPG stock option plans been determined based upon the estimated fair value at the grant date consistent with the methodology prescribed in SFAS No. 123, net income (loss), earnings (loss) per common share and earnings (loss) per common share – assuming dilution for 2003 and 2002 would have been as follows:

(Millions, except per share amounts)	2003	2002
<b>Net income (loss)</b>		
Reported net income (loss)	\$ 494	\$ (69)
Impact of expensing stock options	(18)	(24)
<b>Pro forma net income (loss)</b>	<b>\$ 476</b>	<b>\$ (93)</b>
<b>Earnings (loss) per common share</b>		
Reported earnings (loss)	\$ 2.91	\$(0.41)
Impact of expensing stock options	(0.11)	(0.14)
<b>Pro forma earnings (loss) per common share</b>	<b>\$ 2.80</b>	<b>\$(0.55)</b>
<b>Earnings (loss) per common share – assuming dilution</b>		
Reported earnings (loss)	\$ 2.89	\$(0.41)
Impact of expensing stock options	(0.11)	(0.14)
<b>Pro forma earnings (loss) per common share – assuming dilution</b>	<b>\$ 2.78</b>	<b>\$(0.55)</b>

# Notes to the Financial Statements

The fair value of stock options issued to employees is measured on the date of grant and, beginning Jan. 1, 2004, is recognized over the vesting period. PPG estimates the fair value of stock options using the Black-Scholes option pricing model with the following weighted average assumptions:

	2004	2003	2002
Risk-free interest rate	3.2%	3.0%	4.1%
Expected life of option in years	4.6	4.8	4.3
Expected dividend yield	3.2%	3.0%	2.8%
Expected volatility	30.5%	32.0%	32.4%

The weighted average fair value of options granted was \$13.26 per share in 2004, \$11.57 per share in 2003 and \$12.40 per share in 2002.

The following table summarizes stock option activity under all plans for the three years ended Dec. 31, 2004:

Stock option activity	Number of shares subject to options	Weighted average exercise price per share
Outstanding, Jan. 1, 2002	14,510,679	\$58.09
Granted	2,613,972	50.91
Exercised	(1,225,031)	49.14
Terminated	(1,093,835)	62.29
Outstanding, Dec. 31, 2002	14,805,785	57.25
Granted	2,525,637	49.33
Exercised	(1,810,489)	49.06
Terminated	(831,970)	60.65
Outstanding, Dec. 31, 2003	14,688,963	56.71
Granted	2,792,387	59.74
Exercised	(3,312,822)	52.27
Terminated	(444,414)	64.61
<b>Outstanding, Dec. 31, 2004</b>	<b>13,724,114</b>	<b>\$58.14</b>

The following table summarizes information about stock options outstanding and exercisable as of Dec. 31, 2004:

Range of exercise price per share	Options outstanding		Options exercisable	
	Number of shares	Weighted average contractual life (years)	Number of shares	Weighted average exercise price per share
\$37.50-\$49.99	2,378,687	7.27	2,378,687	\$47.91
\$50.00-\$59.99	6,235,040	6.02	4,366,075	\$53.77
\$60.00-\$76.31	5,110,387	3.30	4,644,878	\$66.75
	<b>13,724,114</b>	<b>5.22</b>	<b>11,389,640</b>	<b>\$57.84</b>

As of Dec. 31, 2003, options were exercisable for 12.2 million shares at a weighted average exercise price of \$58.20 per common share. The corresponding amounts as of Dec. 31, 2002, were 10.4 million and \$55.96 per common share, respectively.

## 19. Advertising Costs

Advertising costs are expensed as incurred and totaled \$91 million, \$81 million and \$74 million in 2004, 2003 and 2002, respectively.

## 20. Research and Development

(Millions)	2004	2003	2002
Research and development – total	\$ 321	\$ 306	\$ 289
Less depreciation on research facilities	18	16	16
<b>Research and development – net</b>	<b>\$ 303</b>	<b>\$ 290</b>	<b>\$ 273</b>

## 21. Quarterly Financial Information (unaudited)

	Net Sales (Millions)	Gross Profit (Millions)	Net Income (Millions)	Earnings Per Common Share	Earnings Per Common Share – Assuming Dilution
<b>2004 quarter ended</b>					
March 31 <sup>(1)</sup>	\$2,264	\$ 826	\$119	\$.69	\$.69
June 30 <sup>(1)</sup>	2,429	910	187	1.09	1.08
September 30	2,409	893	194	1.13	1.12
December 31	2,411	885	183	1.07	1.06
<b>Total</b>	<b>\$9,513</b>	<b>\$3,514</b>	<b>\$683</b>	<b>\$3.98</b>	<b>\$3.95</b>
<b>2003 quarter ended</b>					
March 31 <sup>(2)</sup>	\$2,071	\$ 729	\$ 78	\$.46	\$.46
June 30 <sup>(3)</sup>	2,304	859	152	.90	.89
September 30	2,206	836	142	.83	.83
December 31	2,175	811	122	.72	.71
<b>Total</b>	<b>\$8,756</b>	<b>\$3,235</b>	<b>\$494</b>	<b>\$2.91</b>	<b>\$2.89</b>

- (1) In the third quarter 2004, a decision was made to take the subsidy available under the Medicare Act (see Note 12). The benefit of this decision was applied retroactively to January 1, 2004. As a result, the first and second quarter 2004 amounts of net income and earnings per share have been increased by \$4 million and \$0.02 per share, respectively, from the amounts previously reported.
- (2) First quarter 2003 earnings were reduced by a cumulative effect of accounting change of \$6 million, net of tax, or \$0.03 a share. Income before cumulative effect of accounting change and related earnings per common share – assuming dilution were \$84 million and \$0.49 a share, respectively. First quarter 2003 earnings were also reduced by a pretax charge of \$1 million for restructuring actions initiated in 2003.
- (3) Second quarter 2003 earnings were reduced by a pretax charge of \$5 million for restructuring actions initiated in 2003 and increased due to the reversal of \$2 million of the restructuring reserve originally recorded in 2002.

# Notes to the Financial Statements

## 22. Business Segment Information

### *Segment Organization and Products*

PPG is a multinational manufacturer with three reportable segments: coatings, glass and chemicals. The Company's segments are organized based on differences in products. The glass and fiber glass operations have been aggregated into a single reportable segment. The coatings segment primarily supplies a variety of protective and decorative coatings and finishes along with adhesives, sealants and metal pretreatment products for aerospace, industrial, packaging, architectural, automotive original equipment and aftermarket refinish applications. The glass segment primarily supplies flat glass, fabricated glass and continuous-strand fiber glass for residential and commercial construction, automotive original and replacement markets and industrial applications. The chemicals segment primarily supplies chlor-alkali and specialty chemicals products. The primary chlor-alkali products are chlorine, caustic soda, vinyl chloride monomer, chlorinated solvents, chlorinated benzenes and calcium hypochlorite. The primary specialty chemicals products are Transitions® lenses, optical monomers, amorphous precipitated silica products and fine chemicals. Transitions® lenses are manufactured and distributed by PPG's 51%-owned joint venture with Essilor International. Production facilities and markets

for the coatings, glass and chemicals segments are predominantly in North America and Europe. Our businesses are also pursuing opportunities to further develop markets in Asia and South America. Each of the businesses in which PPG is engaged is highly competitive. However, the diversification of product lines and worldwide markets served tends to minimize the impact on PPG's total sales and earnings of changes in demand for a particular product line or in a particular geographic area.

The accounting policies of the segments are the same as those described in the summary of significant accounting policies. The Company allocates resources to segments and evaluates the performance of segments based upon reported segment income before interest expense – net, income taxes and minority interest. Substantially all corporate administrative expenses are allocated to the segments. The portion not allocated to the segments represents the unallocated cost of certain insurance and employee benefit programs and gains and losses related to the disposal of corporate assets and is included in "Other unallocated corporate expense – net." Net periodic pension income and expense is allocated to the segments. Intersegment sales and transfers are recorded at selling prices that approximate market prices.

# Notes to the Financial Statements

(Millions)					Consolidated
<b>Segments</b>	Coatings <sup>(1)</sup>	Glass <sup>(2)</sup>	Chemicals <sup>(3)</sup>	Corporate <sup>(4)</sup>	Totals
<b>2004</b>					
Net sales to external customers	\$5,275	\$2,204	\$2,034	\$ —	\$9,513
Intersegment net sales	1	1	14	(16)	—
<b>Total net sales</b>	<b>\$5,276</b>	<b>\$2,205</b>	<b>\$2,048</b>	<b>\$ (16)</b>	<b>\$9,513</b>
Operating income (loss)	\$ 777	\$ 169	\$ 291	\$ (44)	\$1,193
Asbestos settlement – net (see Note 13)					(32)
Interest – net					(78)
Compensation cost associated with stock options (See Note 18)					(20)
<b>Income before income taxes, minority interest and cumulative effect of accounting change</b>					<b>\$1,063</b>
Depreciation and amortization (See Note 1)	\$ 162	\$ 121	\$ 84	\$ 21	\$ 388
Share of net earnings (loss) of equity affiliates	\$ 4	\$ 23	\$ (6)	\$ —	\$ 21
Segment assets <sup>(5)</sup>	\$4,587	\$1,569	\$1,133	\$1,643	\$8,932
Investments in equity affiliates	\$ 30	\$ 124	\$ 2	\$ 15	\$ 171
Expenditures for long-lived assets	\$ 128	\$ 79	\$ 64	\$ 15	\$ 286
<b>2003</b>					
Net sales to external customers	\$4,835	\$2,150	\$1,771	\$ —	\$8,756
Intersegment net sales	1	1	11	(13)	—
<b>Total net sales</b>	<b>\$4,836</b>	<b>\$2,151</b>	<b>\$1,782</b>	<b>\$ (13)</b>	<b>\$8,756</b>
Operating income (loss) <sup>(6)</sup>	\$ 719	\$ 71	\$ 228	\$ (40)	\$ 978
Asbestos settlement – net (See Note 13)					(38)
Interest – net					(97)
<b>Income before income taxes, minority interest and cumulative effect of accounting change</b>					<b>\$ 843</b>
Depreciation and amortization (See Note 1)	\$ 155	\$ 125	\$ 93	\$ 21	\$ 394
Share of net (loss) earnings of equity affiliates	\$ 1	\$ (1)	\$ (4)	\$ —	\$ (4)
Segment assets <sup>(5)</sup>	\$4,385	\$1,583	\$1,065	\$1,391	\$8,424
Investments in equity affiliates	\$ 23	\$ 108	\$ 8	\$ 15	\$ 154
Expenditures for long-lived assets	\$ 79	\$ 71	\$ 48	\$ 7	\$ 205
<b>2002</b>					
Net sales to external customers	\$4,482	\$2,071	\$1,514	\$ —	\$8,067
Intersegment net sales	1	24	6	(31)	—
<b>Total net sales</b>	<b>\$4,483</b>	<b>\$2,095</b>	<b>\$1,520</b>	<b>\$ (31)</b>	<b>\$8,067</b>
Operating income (loss) <sup>(6)</sup>	\$ 609	\$ 145	\$ 124	\$ (32)	\$ 846
Asbestos settlement – net (See Note 13)					(755)
Interest – net					(119)
<b>Loss before income taxes, minority interest and cumulative effect of accounting change</b>					<b>\$ (28)</b>
Depreciation and amortization (See Note 1)	\$ 156	\$ 124	\$ 97	\$ 21	\$ 398
Share of net (loss) earnings of equity affiliates	\$ (3)	\$ —	\$ (1)	\$ 3	\$ (1)
Segment assets <sup>(5)</sup>	\$4,140	\$1,601	\$1,098	\$1,024	\$7,863
Investments in equity affiliates	\$ 23	\$ 91	\$ 28	\$ 15	\$ 157
Expenditures for long-lived assets	\$ 95	\$ 92	\$ 42	\$ 21	\$ 250

(continued on next page)

# Notes to the Financial Statements

(continued)

(Millions)

<b>Geographic Information</b>	2004	2003	2002
<b>Net sales<sup>(7)</sup></b>			
United States	\$6,029	\$5,587	\$5,298
Europe	2,050	1,879	1,603
Canada	623	583	528
Other	811	707	638
<b>Total.</b>	<b>\$9,513</b>	<b>\$8,756</b>	<b>\$8,067</b>
<b>Operating income</b>			
United States <sup>(8)</sup>	\$ 847	\$ 668	\$ 666
Europe <sup>(9)</sup>	210	226	120
Canada <sup>(10)</sup>	57	43	37
Other <sup>(11)</sup>	123	81	55
<b>Total<sup>(12)</sup></b>	<b>\$1,237</b>	<b>\$1,018</b>	<b>\$ 878</b>
Interest – net	(78)	(97)	(119)
Asbestos settlement – net (See Note 13)	(32)	(38)	(755)
Compensation cost associated with stock options (See Note 18)	(20)	—	—
Other unallocated corporate expense – net	(44)	(40)	(32)
<b>Income (loss) before income taxes, minority interest and cumulative effect of accounting change</b>	<b>\$1,063</b>	<b>\$ 843</b>	<b>\$ (28)</b>
<b>Long-lived assets<sup>(13)</sup></b>			
United States	\$2,512	\$2,645	\$2,799
Europe	1,263	1,203	1,034
Canada	272	219	193
Other	445	438	411
<b>Total</b>	<b>\$4,492</b>	<b>\$4,505</b>	<b>\$4,437</b>
<b>Identifiable assets</b>			
United States <sup>(14)</sup>	\$5,399	\$5,158	\$4,943
Europe	2,145	2,032	1,798
Canada	429	368	321
Other	959	866	801
<b>Total</b>	<b>\$8,932</b>	<b>\$8,424</b>	<b>\$7,863</b>

(1) Coatings segment income in 2003 and 2002 includes pretax charges of \$2 million and \$73 million, respectively, for restructuring and other related activities.

(2) Glass segment income in 2003 and 2002 includes pretax charges of \$2 million and \$1 million, respectively, for restructuring and other related activities.

(3) Chemicals segment income in 2002 includes pretax charges of \$1 million for restructuring and other related activities.

(4) Corporate intersegment net sales represent intersegment net sales eliminations. Corporate income (loss) represents unallocated corporate income and expenses. The corporate loss in 2002 includes pretax charges of \$2 million for restructuring and other related activities.

(5) Segment assets are the total assets used in the operation of each segment. Corporate assets are principally cash and cash equivalents and deferred tax assets.

(6) Prior to 2004, the pension and other postretirement benefit costs for U.S. salaried retirees were allocated to businesses based on their active U.S. salaried payroll dollars. In 2004, the Company revised its allocation method to more appropriately reflect these costs by business based on the salaried retiree's work location at retirement. For comparative purposes, segment operating income for 2003 and 2002 in the above table has been revised to reflect this change in allocation method, which for 2003 resulted in an increase in our coatings segment operating income of approximately \$12 million, a reduction in our chemicals segment operating income of approximately \$4 million and an increase in other unallocated corporate expense – net of approximately \$8 million and for 2002 resulted in an increase in our coatings and glass segments operating income of approximately \$4 million and \$2 million, respectively, and an increase in other unallocated corporate expense – net of approximately \$6 million.

(7) Net sales to external customers are attributed to individual countries based upon the location of the operating unit shipping the product.

(8) Operating income in 2003 and 2002 includes pretax charges of \$2 million and \$28 million, respectively, for restructuring and other related activities.

(9) Operating income in 2003 and 2002 includes pretax charges of \$2 million and \$44 million, respectively, for restructuring and other related activities.

(10) Operating income in 2002 includes pretax charges of \$3 million for restructuring and other related activities.

(11) Operating income in 2002 includes pretax charges of \$2 million for restructuring and other related activities.

(12) Operating income in 2003 and 2002 includes pretax charges of \$4 million and \$77 million, respectively, for restructuring and other related activities.

(13) Long-lived assets include property, goodwill and identifiable intangible assets, net of accumulated depreciation and amortization, and other assets except for non-current trade and notes receivable and deferred tax assets.

(14) Includes corporate assets which are principally cash and cash equivalents and deferred tax assets.

**Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure**

None.

**Item 9a. Controls and Procedures**

(a) *Evaluation of disclosure controls and procedures.* Based on their evaluation as of the end of the period covered by this Form 10-K, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms.

(b) *Changes in internal control.* There were no significant changes in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

See Management Statement on page 27 for management's annual report on internal control over financial reporting. See Report of Independent Registered Public Accounting Firm on page 26 for Deloitte & Touche LLP's attestation report on management's assessment of internal control over financial reporting.

**Item 9b. Other Information**

None.

## Part III

### Item 10. Directors and Executive Officers of the Registrant

The information required by Item 10 and not otherwise set forth below is contained under the caption "Election of Directors" in the Registrant's definitive Proxy Statement for its 2005 Annual Meeting of Shareholders (the "Proxy Statement"), which will be filed with the Securities and Exchange Commission, pursuant to Regulation 14A, not later than 120 days after the end of the fiscal year, and is incorporated herein by reference.

The executive officers of the Company are elected annually in April by the Board of Directors. The business experience during the past five years of each Executive Officer as required by Item 10 is set forth below.

<u>Name</u>	<u>Age</u>	<u>Title</u>
Raymond W. LeBoeuf	58	Chairman of the Board and Chief Executive Officer since November 1997
Charles E. Bunch (a)	55	President and Chief Operating Officer since July 2002
James C. Diggs	56	Senior Vice President and General Counsel since July 1997 and Secretary since September 2004
William H. Hernandez	56	Senior Vice President, Finance since January 1995

(a) Mr. Bunch was Executive Vice President and Senior Vice President, Strategic Planning and Corporate Services prior to his present position.

The information required by Item 405 of Regulation S-K is included in the Proxy Statement under the caption "Miscellaneous – Section 16(a) Beneficial Ownership Reporting Compliance" and is incorporated herein by reference.

The Board of Directors has determined that most members of the Audit Committee, including the Chair of the Audit Committee, Michele J. Hooper, are "audit committee financial experts" within the meaning of Item 401(h) of Regulation S-K. Each member of the Audit Committee is "independent" as that term is used in Item 7(d)(3)(iv) of Schedule 14A under the Exchange Act.

Since 1988, the Company has maintained a Global Code of Ethics applicable to all our employees. The Company has also adopted a Code of Ethics for Senior Financial Officers that is applicable to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A copy of our Global Code of Ethics and our Code of Ethics for Senior Financial Officers, as well as the Company's Corporate Governance Guidelines and the committee charters for each of the committees of the Board of Directors, can be obtained from our Internet website at [www.ppg.com](http://www.ppg.com) and will be made available to any shareholder upon request. The Company intends to disclose any waivers from, or amendments to, the Code of Ethics for Senior Financial Officers by posting a description of such waiver or amendment on our Internet website. However, the Company has never granted a waiver from either the Global Code of Ethics or the Code of Ethics for Senior Financial Officers.

### Item 11. Executive Compensation

The information required by Item 11 is contained in the Proxy Statement under the captions "Compensation of Executive Officers" and "Election of Directors – Compensation of Directors" and is incorporated herein by reference.

### Item 12. Security Ownership of Certain Beneficial Owners and Management

The information required by Item 12 is contained in Item 5 of this Form 10-K and in the Proxy Statement under the caption "Voting Securities" and is incorporated herein by reference.

### Item 13. Certain Relationships and Related Transactions

The information required by Item 13 is contained in the Proxy Statement under the caption "Election of Directors – Other Transactions" and is incorporated herein by reference.

### Item 14. Principal Accountant Fees and Services

The information required by Item 14 is contained in the Proxy Statement under the caption "Auditors" and is incorporated herein by reference.

## Part IV

### Item 15. Exhibits and Financial Statement Schedules

- (a) Financial Statements and Reports of Independent Registered Public Accounting Firm (see Part II, Item 8 of this Form 10-K).

The following information is filed as part of this Form 10-K:

	<u>Page</u>
Internal Controls – Report of Independent Registered Public Accounting Firm .....	26
Financial Statements – Report of Independent Registered Public Accounting Firm .....	27
Management Statement .....	27
Statement of Income for the Years Ended December 31, 2004, 2003 and 2002 .....	28
Balance Sheet as of December 31, 2004 and 2003 .....	29
Statement of Shareholders' Equity for the Years Ended December 31, 2004, 2003 and 2002 .....	30
Statement of Comprehensive Income for the Years Ended December 31, 2004, 2003 and 2002 .....	30
Statement of Cash Flows for the Years Ended December 31, 2004, 2003 and 2002 .....	31
Notes to the Financial Statements .....	32

- (b) Financial Statement Schedule for years ended December 31, 2004, 2003 and 2002.  
The following should be read in conjunction with the previously referenced financial statements:

**Schedule II – Valuation and Qualifying Accounts  
For the Years Ended December 31, 2004, 2003  
and 2002**

(Millions)	Balance at Beginning of Year	Charged to Costs and Expenses	Deductions(1)	Balance at End of Year
Allowance for doubtful accounts:				
2004	\$45	\$ 9	\$(15)	\$39
2003	\$48	\$13	\$(16)	\$45
2002	\$44	\$24	\$(20)	\$48

(1) Notes and accounts receivable written off as uncollectible, net of recoveries, and changes attributable to foreign currency translation.

All other schedules are omitted because they are not applicable.

- (c) Exhibits. The following exhibits are filed as a part of, or incorporated by reference into, this Form 10-K.

- 3 The Restated Articles of Incorporation, as amended, were filed as Exhibit 3 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 1995.
- 3.1 Statement with Respect to Shares, amending the Restated Articles of Incorporation effective April 21, 1998, was filed as Exhibit 3.1 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 1998.
- 3.2 The Bylaws, as amended on December 11, 2003, were filed as Exhibit 3.2 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2003.
- 4 The Shareholders' Rights Plan was filed as Exhibit 4 to the Registrant's Current Report on Form 8-K dated February 19, 1998.
- 4.1 Indenture, dated as of August 1, 1982, was filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.2 First Supplemental Indenture, dated as of April 1, 1986, was filed as Exhibit 4.2 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.3 Second Supplemental Indenture, dated as of October 1, 1989, was filed as Exhibit 4.3 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- 4.4 Third Supplemental Indenture, dated as of November 1, 1995, was filed as Exhibit 4.4 to the Registrant's Registration Statement on Form S-3 (No. 333-44397) dated January 16, 1998.
- \*10 PPG Industries, Inc. Nonqualified Retirement Plan dated as of January 1, 1989, as amended February 21, 2002, was filed as Exhibit 10.1 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2001.
- \*10.1 The Supplemental Executive Retirement Plan II, as amended, was filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 1995.
- \*10.2 Form of Change in Control Employment Agreement was filed as Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 1995.



- \*10.3 PPG Industries, Inc. Directors' Common Stock Plan, as amended February 20, 2002, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2003.
- \*10.4 PPG Industries, Inc. Deferred Compensation Plan for Directors was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 1997.
- \*10.5 PPG Industries, Inc. Deferred Compensation Plan, as amended effective July 14, 2004, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2004.
- \*10.6 PPG Industries, Inc. Executive Officers' Long Term Incentive Plan was filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2004.
- \*10.7 PPG Industries, Inc. Long Term Incentive Plan was filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2004.
- \*10.8 Form of TSR Share Award Agreement was filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
- \*10.9 Form of Restricted Stock Unit Award Agreement was filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
- \*10.10 PPG Industries, Inc. Executive Officers' Annual Incentive Compensation Plan, as amended effective February 18, 2004, was filed as Exhibit 10.1 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2003.
- \*10.11 PPG Industries, Inc. Incentive Compensation and Deferred Income Plan for Key Employees, as amended, was filed as Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2000.
- \*10.12 PPG Industries, Inc. Management Award and Deferred Income Plan was filed as Exhibit 10.1 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2002.
- \*10.13 PPG Industries, Inc. Stock Plan, dated as of April 17, 1997, as amended April 18, 2002, was filed as Exhibit 10.3 to the Registrant's Annual Report on Form 10-K for the period ended December 31, 2001.
- \*10.14 Form of Non-Qualified Option Agreement was filed as Exhibit 10.3 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
- \*10.15 Form of Non-Qualified Option Agreement for Directors was filed as Exhibit 10.4 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
- \*10.16 Summary of Non-Employee Director Compensation and Benefits was filed as Exhibit 10.5 to the Registrant's Current Report on Form 8-K dated February 15, 2005.
- \*10.17 PPG Industries, Inc. Challenge 2000 Stock Plan was filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q for the period ended March 31, 2003.
- †12 Computation of Ratio of Earnings to Fixed Charges for the Five Years Ended December 31, 2004.
- †21 Subsidiaries of the Registrant.
- †23 Consent of Independent Registered Public Accounting Firm.
- †24 Powers of Attorney.
- †31.1 Certification of Principal Executive Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- †31.2 Certification of Principal Financial Officer Pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- †32.1 Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- †32.2 Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- †99.1 Market Information, Dividends and Holders of Common Stock.
- †99.2 Selected Financial Data for the Five Years Ended December 31, 2004.
- † Filed herewith.
- \* Management contracts, compensatory plans or arrangements required to be filed as an exhibit hereto pursuant to Item 601 of Regulation S-K.

# Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized on February 17, 2005.

PPG INDUSTRIES, INC.  
(Registrant)

By *William H. Hernandez*  
W. H. Hernandez, Senior Vice President, Finance

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities indicated on February 17, 2005.

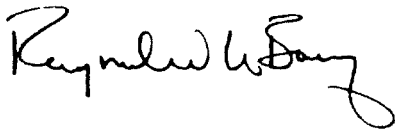
<u>Signature.</u>	<u>Capacity</u>	
<u><i>Raymond W. LeBoeuf</i></u>	Director, Chairman of the Board and Chief Executive Officer	
R. W. LeBoeuf		
<u><i>William H. Hernandez</i></u>	Senior Vice President, Finance (Principal Financial and Accounting Officer)	
W. H. Hernandez		
J.G. Berges	Director	} By <u><i>William H. Hernandez</i></u> W. H. Hernandez, Attorney-in-Fact
C. E. Bunch	Director	
E. B. Davis, Jr.	Director	
V. F. Haynes	Director	
M. J. Hooper	Director	
A. J. Krowe	Director	
R. Mehrabian	Director	
R. Ripp	Director	
T. J. Usher	Director	
D. R. Whitwam	Director	

# Certifications

## PRINCIPAL EXECUTIVE OFFICER CERTIFICATION

I, Raymond W. LeBoeuf, certify that:

1. I have reviewed this annual report on Form 10-K of PPG Industries, Inc. ("PPG");
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of PPG as of, and for, the periods presented in this annual report;
4. PPG's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for PPG and have:
  - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to PPG, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) evaluated the effectiveness of PPG's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and
  - (d) disclosed in this annual report any change in PPG's internal control over financial reporting that occurred during PPG's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, PPG's internal control over financial reporting; and
5. PPG's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to PPG's auditors and the audit committee of PPG's Board of Directors:
  - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect PPG's ability to record, process, summarize and report financial information; and
  - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in PPG's internal control over financial reporting.



**Raymond W. LeBoeuf**

Chairman of the Board and Chief Executive Officer

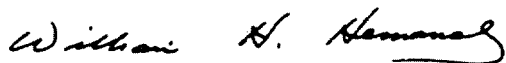
February 17, 2005

# Certifications

## PRINCIPAL FINANCIAL OFFICER CERTIFICATION

I, William H. Hernandez, certify that:

1. I have reviewed this annual report on Form 10-K of PPG Industries, Inc. ("PPG");
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of PPG as of, and for, the periods presented in this annual report;
4. PPG's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for PPG and have:
  - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to PPG, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) evaluated the effectiveness of PPG's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this annual report based on such evaluation; and
  - (d) disclosed in this annual report any change in PPG's internal control over financial reporting that occurred during PPG's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, PPG's internal control over financial reporting; and
5. PPG's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to PPG's auditors and the audit committee of PPG's Board of Directors:
  - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect PPG's ability to record, process, summarize and report financial information; and
  - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in PPG's internal control over financial reporting.



**William H. Hernandez**

Senior Vice President, Finance (Principal Financial and Accounting Officer)

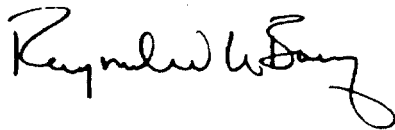
February 17, 2005

## Certifications

### **CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report on Form 10-K of PPG Industries, Inc. for the period ended December 31, 2004 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Raymond W. LeBoeuf, Chief Executive Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.

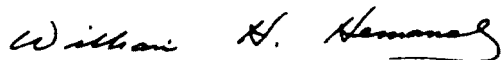


**Raymond W. LeBoeuf**  
Chairman of the Board and Chief Executive Officer  
February 17, 2005

### **CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report on Form 10-K of PPG Industries, Inc. for the period ended December 31, 2004 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, William H. Hernandez, Chief Financial Officer of PPG Industries, Inc., certify to the best of my knowledge, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of PPG Industries, Inc.



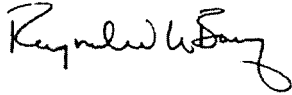
**William H. Hernandez**  
Senior Vice President, Finance (Principal Financial and Accounting Officer)  
February 17, 2005

# Stock Exchange Certifications

Pursuant to the listing requirements of the New York, Philadelphia and Pacific Stock Exchanges, each listed company's chief executive officer must annually certify that they are not aware of any violation by the company of the applicable stock exchange's corporate governance listing standards. These certifications are required to be disclosed in the company's annual report and are presented below.

## **NEW YORK STOCK EXCHANGE ANNUAL CEO CERTIFICATION (Section 303A.12(a))**

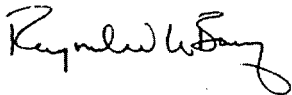
As the Chief Executive Officer of PPG Industries, Inc., and as required by Section 303A.12(a) of the New York Stock Exchange Listed Company Manual, I hereby certify that as of the date hereof I am not aware of any violation by the Company of NYSE's Corporate Governance listing standards, other than has been notified to the Exchange pursuant to Section 303A.12(b) and disclosed as an attachment hereto.



**Raymond W. LeBoeuf**  
Chairman of the Board and  
Chief Executive Officer  
May 11, 2004

## **PHILADELPHIA STOCK EXCHANGE ANNUAL CEO CERTIFICATION PURSUANT TO PHLX RULE 867.12(a)**

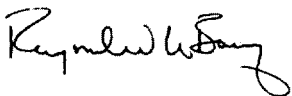
As the Chief Executive Officer of PPG Industries, Inc., and as required by Philadelphia Stock Exchange ("Phlx") Rule 867.12(a), I hereby certify that as of the date hereof I am not aware of any violation by the Company of Phlx's corporate governance listing standards.



**Raymond W. LeBoeuf**  
Chairman of the Board and  
Chief Executive Officer  
October 20, 2004

## **PACIFIC STOCK EXCHANGE ANNUAL CEO CERTIFICATION PURSUANT TO PACIFIC STOCK EXCHANGE RULE 5.3(m)**

As the Chief Executive Officer of PPG Industries, Inc., (the "Company") and as required by Rule 5.3(m) of PCX Equities, Inc. (the "Exchange"), I hereby certify to the Exchange that as of the date hereof I am not aware of any violation by the Company of the Exchange's corporate governance listing standards.



**Raymond W. LeBoeuf**  
Chairman of the Board and  
Chief Executive Officer  
November 30, 2004

## Officer Changes

The following are officer changes since March 2004:

Michael A. Ludlow, senior vice president, OEM coatings, died Nov. 16, 2004, after a yearlong battle with leukemia. He had 30 years of service with PPG.

Jeffrey R. Gilbert, vice president, government and community affairs, retired July 1, 2004, after serving PPG for more than 38 years. Lynne D. Schmidt, director of government affairs, was named to succeed Gilbert effective July 1, 2004.

Gerald W. Gruber, vice president, science and technology, announced plans to retire March 1, 2005, after nearly 34 years with PPG. James A. Trainham, formerly chief technology officer at Invista, Inc., formerly DuPont Textiles and Interiors, was appointed to succeed Gruber effective Jan. 10, 2005.

Michael C. Hanzel, secretary and corporate counsel, retired Nov. 1, 2004, after serving PPG for 23 years. James C. Diggs, senior vice president and general counsel, assumed the responsibility of secretary.

David C. Cannon Jr., vice president, environment, health and safety, left the company March 31, 2004. Reginald J. Norton, director of global manufacturing and supply chain, refinish, was named global director of environment, health and safety, effective April 1, 2004.

## Trademarks

*Responsible Care* is a trademark of the American Chemistry Council. *Coatings Care* is a trademark of the National Paint & Coatings Association.

*Lucite*, which is used under license by PPG, is a trademark of E.I. du Pont de Nemours & Co.

*Transitions* is a trademark of Transitions Optical, Inc.

*LYNX Services* is a service mark of LYNX Services, L.L.C.

These trademarks of PPG are used in this report:

*CertifiedFirst*, *CR39*, *Monarch*, *Olympic*, *Pittsburgh*, *Porter*, *PPG HPC*, *PPG logo*, *PPG PROSTARS*, *Teslin*, *Trivex*.

Copyright ©2005 PPG Industries, Inc.

# Eleven-Year Digest

	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
<b>Statement of Income</b>											
Net sales	9,513	8,756	8,067	8,169	8,629	7,995	7,751	7,631	7,466	7,311	6,570
Gross profit (%)	36.9	36.9	37.2	37.1	38.2	38.0	39.1	39.1	38.5	38.9	37.5
Income (loss) before income taxes <sup>(1)</sup>	1,005	793	(67)	634	989	945	1,267	1,149	1,215	1,248	840
Income tax expense (benefit)	322	293	(7)	247	369	377	466	435	471	480	325
Income (loss) before accounting changes <sup>(1)</sup>	683	500	(60)	387	620	568	801	714	744	768	515
Cumulative effect of accounting changes <sup>(2)</sup>	—	(6)	(9)	—	—	—	—	—	—	—	—
Net income (loss) <sup>(1)</sup>	683	494	(69)	387	620	568	801	714	744	768	515
Return on average capital (%) <sup>(3)(4)</sup>	15.7	12.9/13.0	2/3	8.4	12.1	12.7	19.6	19.1	20.3	21.6	15.3
Return on average equity (%) <sup>(3)(5)</sup>	21.6	20.2/20.4	(2.5)/(2.2)	12.6	19.7	19.3	29.4	28.8	29.5	28.8	20.1
Earnings (loss) per common share before accounting changes <sup>(1)</sup>	3.98	2.94	(0.36)	2.30	3.60	3.27	4.52	3.97	3.96	3.80	2.43
Cumulative effect of accounting changes on earnings (loss) per common share	—	(0.03)	(0.05)	—	—	—	—	—	—	—	—
Earnings (loss) per common share <sup>(1)</sup>	3.98	2.91	(0.41)	2.30	3.60	3.27	4.52	3.97	3.96	3.80	2.43
Average number of common shares	171.7	169.9	169.1	168.3	172.3	173.8	177.0	179.8	187.8	202.0	211.9
Earnings (loss) per common share - assuming dilution <sup>(1)</sup>	3.95	2.89	(0.41)	2.29	3.57	3.23	4.48	3.94	3.93	3.78	2.42
Dividends	307	294	287	283	276	264	252	239	237	239	238
Per share	1.79	1.73	1.70	1.68	1.60	1.52	1.42	1.33	1.26	1.18	1.12
<b>Balance Sheet</b>											
Current assets	4,054	3,537	2,945	2,703	3,093	3,062	2,660	2,584	2,296	2,275	2,168
Current liabilities	2,221	2,139	1,920	1,955	2,543	2,384	1,912	1,662	1,769	1,629	1,425
Working capital	1,833	1,398	1,025	748	550	678	748	922	527	646	743
Property (net)	2,471	2,566	2,632	2,752	2,941	2,933	2,905	2,855	2,913	2,835	2,742
Total assets	8,932	8,424	7,863	8,452	9,125	8,914	7,387	6,868	6,441	6,194	5,894
Long-term debt	1,184	1,339	1,699	1,699	1,810	1,836	1,081	1,257	834	736	773
Shareholders' equity	3,572	2,911	2,150	3,080	3,097	3,106	2,880	2,509	2,483	2,569	2,557
Per share	20.77	17.03	12.69	18.28	18.41	17.86	16.46	14.11	13.57	13.23	12.35
<b>Other Data</b>											
Capital spending <sup>(5)</sup>	311	220	260	301	676	1,833	877	829	489	454	356
Depreciation expense	357	365	366	375	374	366	354	348	340	332	318
Quoted market price											
High	68.79	64.42	62.84	59.75	65.06	70.75	76.63	67.50	62.25	47.88	42.13
Low	54.81	42.61	41.41	38.99	36.00	47.94	49.13	48.63	42.88	34.88	33.75
Year end	68.16	64.02	50.15	51.72	46.31	62.56	58.19	57.13	56.13	45.75	37.13
Price/earnings ratio <sup>(6)</sup>											
High	17	22	25	26	18	22	17	17	16	13	17
Low	14	14	17	17	10	15	11	12	11	9	14
Average number of employees	31,800	32,900	34,100	34,900	36,000	33,800	32,500	31,900	31,300	31,200	30,800

All amounts are in millions of dollars except per share data and number of employees.

- (1) Includes in 2002 an aftertax charge of \$484 million, or \$2.85 a share, representing the estimated cost of the asbestos settlement.
- (2) The 2003 change in the method of accounting relates to the adoption of SFAS No. 143, "Accounting for Asset Retirement Obligations." The 2002 change in the method of accounting relates to the adoption of SFAS No. 142, "Goodwill and Other Intangible Assets." Net income and earnings per share prior to the adoption of SFAS No. 142 on Jan. 1, 2002, included amortization of goodwill and trademarks with indefinite lives which, net of tax, was (in millions) \$32, \$32, \$29 and \$14 for 2001, 2000, 1999 and 1998, respectively. Excluding these amounts, net income would have been \$419 million, \$652 million, \$597 million and \$815 million and earnings per share would have been \$2.49, \$3.77, \$3.40 and \$4.55 for 2001, 2000, 1999 and 1998, respectively. Amounts for such amortization in periods prior to 1998 were not material.
- (3) Return on average capital and return on average equity for 2003 and 2002 were calculated and presented inclusive and exclusive of the cumulative effect of the accounting changes.
- (4) Return on average capital is calculated using pre-interest, aftertax earnings and average debt and equity during the year.
- (5) Includes the cost of businesses acquired.
- (6) Price/earnings ratios were calculated based on high and low market prices during the year and the respective year's earnings per common share. The 2003 and 2002 ratios were calculated and presented exclusive of the cumulative effect of the accounting changes. The 2002 ratio also excludes an aftertax charge of \$484 million representing the estimated cost of the asbestos settlement.



# PPG Shareholder Information

## World Headquarters

One PPG Place  
Pittsburgh, PA 15272, U.S.A.  
Phone (412) 434-3131  
Internet: [www.ppg.com](http://www.ppg.com)

## Annual Meeting of Shareholders

Thursday, April 21, 2005, 11:00 A.M.  
Sheraton Station Square  
300 West Station Square Drive  
Pittsburgh, PA

## Transfer Agent & Registrar

Mellon Investor Services LLC  
Overpeck Center  
85 Challenger Road  
Ridgefield Park, NJ 07660-2108

PPG-dedicated phone 1-800-648-8160  
Email inquiries: [shrrelations@mellon.com](mailto:shrrelations@mellon.com)

As a convenience to our shareholders, by logging on to Investor Service Direct at [www.melloninvestor.com/isd](http://www.melloninvestor.com/isd), individuals can access their account information, view 1099-DIVs, buy or sell shares pursuant to the company's plan, update an address and more.

Specific questions regarding the transfer or replacement of stock certificates, dividend check replacement, or dividend tax information should be made to Mellon Investor Services directly at 1-800-648-8160.

## Investor Relations

General PPG shareholder information may be obtained from Douglas B. Atkinson, Vice President, Investor Relations, or Vince Morales, Director, Investor Relations, by calling (412) 434-3318, or by writing PPG Industries, Investor Relations, One PPG Place, 40E, Pittsburgh, PA 15272.

## Publications Available to Shareholders

Copies of the following publications will be furnished without charge upon written request to Corporate Communications, 7W, PPG Industries, One PPG Place, Pittsburgh, PA 15272.

**PPG Industries Blueprint** – a booklet summarizing PPG's vision, values, strategies and outcomes.

**PPG's Global Code of Ethics** – an employee guide to corporate conduct policies, including those concerning personal and business conduct, relationships with customers, suppliers and competitors, protection of corporate assets, responsibilities to the public, and PPG as a global organization.

**PPG's Code of Ethics for Senior Financial Officers** – a supplement to PPG's Global Code of Ethics that is applicable to PPG's principal executive officer, principal financial officer, principal accounting officer or controller, and persons performing similar functions.

**PPG's Environment, Health and Safety Policy** – a statement describing the Company's commitment, worldwide, to manufacturing, selling and distributing products in a manner that is safe and healthful for its employees, neighbors and customers, and that protects the environment.

**PPG's Environment, Health and Safety Progress Report** – a report of progress during the year with respect to the Company's environment, health and safety commitment.

## Dividend Information

PPG has paid uninterrupted dividends since 1899. The latest quarterly dividend of 45 cents per share, voted by the board of directors on Jan. 20, 2005, results in an annual dividend rate of \$1.80 per share.

## Stock Exchange Listings

PPG common stock is traded on the New York, Pacific and Philadelphia stock exchanges (symbol: PPG).

## Direct Purchase Plan with Dividend Reinvestment Option

This plan is offered as a service and convenience to shareholders. It allows purchase of shares of PPG stock directly through the plan, as well as dividend reinvestment, direct deposit of dividends, and safekeeping of PPG stock certificates.

For more information, call Mellon Investor Services at 1-800-648-8160.

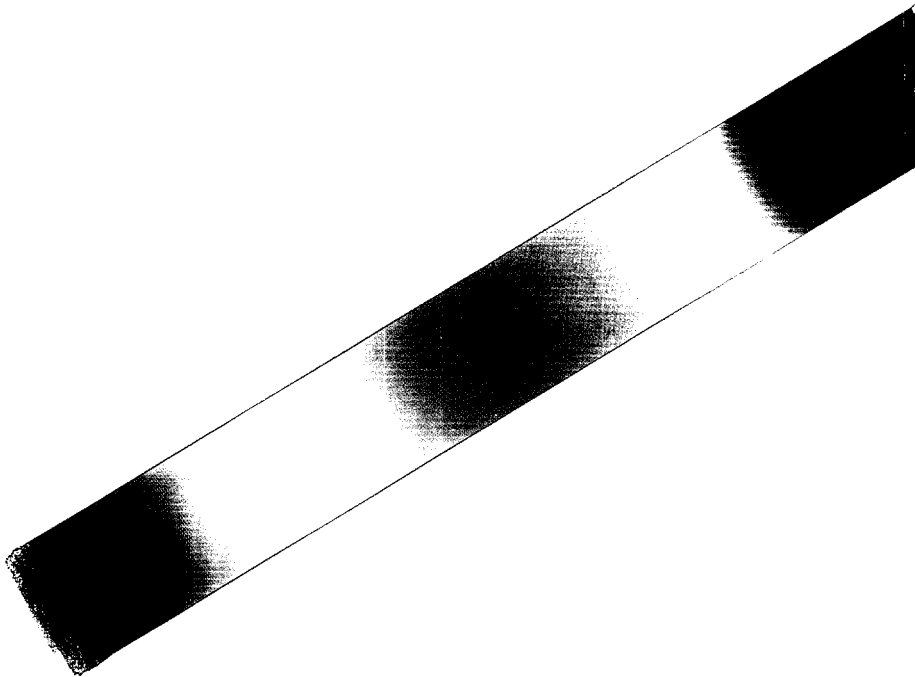
## Quarterly Stock Market Price

Quarter Ended	2004			2003		
	High	Low	Close	High	Low	Close
March 31	\$64.60	\$54.81	\$58.30	\$53.25	\$42.61	\$45.08
June 30	62.89	56.13	62.49	52.08	44.85	50.74
Sept. 30	62.75	56.20	61.28	57.45	49.00	52.22
Dec. 31	68.79	58.89	68.16	64.42	52.01	64.02

The number of holders of record of PPG common stock as of Jan. 31, 2005, was 26,899, as shown on the records of the Company's transfer agent.

## Dividends

Month of Payment	2004		2003	
	Amount (Millions)	Per Share	Amount (Millions)	Per Share
March	\$ 75	\$ .44	\$ 73	\$ .43
June	78	.45	73	.43
September	77	.45	73	.43
December	77	.45	75	.44
<b>Total</b>	<b>\$307</b>	<b>\$1.79</b>	<b>\$294</b>	<b>\$1.73</b>



## PPG Industries

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