

asbestos products will remain constant over the time period used for measurement of costs. Actually, price differentials are likely to decrease over time.

Two types of costs are estimated in the RIA: (1) Costs to consumers and (2) costs to producers. These are discussed below. The costs represent the present value of losses incurred over the 15-year period from 1985 to 2000, using a discount rate of 10 percent.

1. Consumer losses due to the rule would result from increases in costs incurred for asbestos products or substitutes for asbestos products and from inferior performance of substitute products. Total consumer losses due to the rule are estimated to be \$1.77 billion. However, this loss would be spread across the entire consumer population and would average less than \$10 per consumer over 15 years. This rule would not cause dramatic cost increases in typical consumer products.

2. Losses would accrue to producers as a result of the rule when producers are forced to forgo some portion of the return on their capital stock used to produce asbestos products. Owners of equipment which can be readily converted to make other products are not expected to lose nearly as much as owners of equipment which cannot be easily converted. Total producer costs are estimated to be about \$200 million for the rule.

3. In addition, the rule would result in transition costs to workers who are displaced by phasing down production of asbestos products. These losses are incurred in the form of lost wages and job search costs. EPA believes that transition costs of the phase-down will be relatively modest since the rule would allow industry to scale back production gradually and shift production to other products and that the transition costs from the proposed product bans will be small in comparison to the consumer unit product costs.

The sum of these costs, about \$1.98 billion, represents the estimated total real resource costs of the rule. This cost would be spread over 15 years. The cost will also be spread over a large population and the impact on most persons would be negligible.

In addition, EPA estimated the real resource costs of the product bans proposed in this rule. These estimates are shown below:

Product	Real resource cost
A/C Pipe	\$163.1 million
Floor tile	\$119.8 million
Flooring tile	No cost

Product	Real resource cost
Asbestos ceiling	\$1.1 million
Roofing felt	\$2.3 million

The above costs of the rule will be offset to some extent by the following avoided costs.

By reducing the amount of asbestos-related deaths and illnesses this rule would reduce the cost to society of the health resources used to treat asbestos-related illnesses (e.g., hospital and medical treatment) and the productivity (wages and lost work capacity of sick workers, etc.) lost as a result of illness caused by asbestos exposure. EPA estimates that the avoided morbidity cost is about \$1.275 per case. This is measured in 1985 dollars using a 10-percent discount rate.

This figure is relatively low because people generally contract mesothelioma or lung cancer after a long latency period. Thus most medical costs occur far in the future and are therefore discounted heavily.

EPA did not attempt to value the loss of life itself. In addition, no value was assigned to "pain and suffering," "loss of leisure time," and other similar losses.

Substantial asbestos removal and disposal costs would be avoided as a result of this proposed rule. These include avoided expenses as well as avoided health risks for people exposed during removal and disposal activities. Use of nonasbestos products in construction reduces demolition and disposal costs in the future. Removal and disposal costs of products are likely to be considerably higher for asbestos products than nonasbestos substitutes because of the extra precautions required to meet OSHA and Clean Air Act (CAA) requirements. Avoided removal and disposal costs are a major benefit of this proposed regulation. These costs can be substantial. EPA has estimated that removing asbestos from school buildings costs between \$2 and \$13 per square foot of asbestos removed.

OSHA and EPA both have regulations to limit asbestos exposure at work sites. Certain costs related to compliance with these regulations would be avoided as a result of this rule. To comply with OSHA's current workplace standard for asbestos, employers incur expenses related to:

- Monitoring for fibers.
- Providing engineering methods to control exposures (this includes enclosing or isolating asbestos fiber generating activities, providing exhaust ventilation, dust collection, etc.)

- Providing hand tools such as saws, scrapers, drills, and abrasive wheels that have local exhaust ventilation systems.
- Modifying work practices to reduce exposure.

- Providing special clothing, change rooms, lockers, and special laundering.
- Labeling asbestos material and posting caution signs.

- Providing special procedures for collection and processing of asbestos waste.
- Providing medical examinations for employees exposed to asbestos.

- Responding to recordkeeping and reporting requirements.

EPA's CAA regulations require that activities during milling, manufacture, demolition and renovation, waste disposal, and some other asbestos-related activities release "no visible emissions." To comply with this requirement, persons must obtain and maintain air-cleaning devices such as filters and may be required to modify work and waste disposal practices to reduce emissions.

In addition, both OSHA and EPA may require stricter workplace controls for asbestos in the near future. The costs of complying with those requirements would be avoided at least in part by this rule.

United States courts and workers' compensation boards have been inundated with thousands of claims for compensation for deaths and illnesses caused by exposure to asbestos. Some past producers of asbestos products have declared bankruptcy because of these many claims. The continued use of asbestos can only exacerbate the problem. Each case of disease avoided relieves the various systems affected of a considerable burden. This rule, by reducing exposure to asbestos and reducing the number of asbestos-related illnesses and deaths, would reduce these costs.

As required by section 8(c)(1)(D) of TRCA, EPA has analyzed the economic impact of this proposed rule on small businesses. The effect of this rule on such businesses is expected to be small because (1) there are few small businesses producing asbestos products and (2) producer losses are expected to be small since capital equipment for production of most asbestos products can be converted fairly easily to other forms of production. A maximum of 27 out of the 212 primary processors of asbestos products are small businesses. EPA acknowledges that these 27 companies could incur losses under the rule. EPA was unable to determine how many of the secondary processors of asbestos products are small businesses.