

(1) During the interval necessary to install or implement feasible engineering and work practice controls;

(2) In operations such as maintenance and repair activities for which engineering and work practice controls are not feasible;

(3) In work situations in which feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PEL; and

(4) In emergencies.

The language of paragraph (h)(1) has been revised from that of the existing standard to conform to standard language used in more recent OSHA rulemakings. Employers are required under paragraph (h)(2) of the revised rule to select appropriate respirators based on employee exposure levels that exist in the workplace. The required respirators range from half-mask air-purifying respirators equipped with high-efficiency filters for concentrations that do not exceed 10 times the PEL to full-facepiece supplied-air respirators or SCBA when the concentration of asbestos fibers exceeds 100 times the PEL. Employers are required to select respirators from those that are approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration under the provisions of 30 CFR Part 11. In addition, employers are required to provide powered air-purifying respirators at the request of employees whenever such a respirator will provide adequate protection for the concentration existing in the workplace.

Under paragraph (h)(3), employers are required to institute a Respiratory Protection program as required under 29 CFR 1910.134. The required program is to include (1) criteria for changing filter elements for air-purifying respirators; (2) a policy permitting employees time to leave work areas to wash their faces and respirator facepieces to prevent skin irritation; and (3) a policy for reassigning employees to other jobs if a physician determines that the employee cannot function normally while wearing a respirator. Under paragraph (h)(4), the revised standard requires that employees perform qualitative or quantitative fit testing for all employees required to wear a negative-pressure respirator. The requirements for the use, selection, program elements, and fit testing of respirators are the same as those contained in the general industry standard and are substantially similar to the requirements contained in other recent OSHA health standards (see for example 29 CFR 1910.1043; Cotton Dust).

Many commenters who submitted information to OSHA during the rulemaking proceedings addressed

issues regarding the appropriate use of respirators (Exs. 78; 90-113; 90-160; 90-173; 90-182; 90-238; 92-3; 90-13; 92-25; 123-A; 147; 169; 181; 195; 208; 298; 308; 311-E; 311-C; 313; 328; 330; Trs. 6/19, p. 102; 6/20; 6/25, p. 15; 6/28, p. 78; 6/29, p. 196; 7/2, p. 23; 7/3, p. 44; 7/12, p. 330). These commenters addressed four major issues:

- (1) The use of disposable respirators;
- (2) The selection of appropriate filter media for air-purifying respirators;
- (3) The use of Type "C" supplied-air respirators; and
- (4) Requirements for qualitative or quantitative fit testing.

Several commenters advocated the use of disposable respirators for protection against asbestos exposure (Exs. 84-457; 311; 328; 341; Tr. 7/10, p. 128). For example, the Asbestos Information Association/North America stated:

The record of this proceeding shows that employers in primary and secondary manufacturing industries commonly provide negative pressure single use or reusable respirators to workers who request them. AIA/NA recommends that this practice be codified in the Revised Asbestos Standard to allow workers to achieve an additional margin of health protection if they so desire. (Ex. 328).

The Minnesota Mining and Manufacturing Company (3M) stated that "certain air-purifying negative-pressure half-mask disposable respirators should remain in the proposed asbestos respirator selection table for use [during exposures of] up to 10 times the permissible exposure level" (Ex. 341).

E.I. DuPont de Nemours and Company provided the results of a comparative study of the performance of various respirators, including disposable single-use half-mask air-purifying respirators and self-contained breathing apparatus (Ex. 339). DuPont concluded that two of the three disposable respirators tested achieved a protection factor of at least 10 during tests performed in the course of actual asbestos removal operations. DuPont's conclusion was based on comparisons of the concentration of fibrous materials inside the respirator and outside the respirator in the operator's breathing zone (Ex. 339). Based on the data presented in their report, DuPont concluded that negative-pressure single-use respirators can provide adequate protection against concentrations of asbestos fibers less than 10 times the PEL and should be allowed. The DuPont data are discussed at length in Section IX of this preamble (Summary and Explanation for a Revised Standard for General Industry). After reviewing this study, OSHA found

that inconsistencies in the data and the failure of the study to show adequate protection factors for other types of respirators render the study inconclusive.

Many commenters opposed the use of reusable or disposable air-purifying respirators for any airborne asbestos exposure, because they felt that the protection provided by such respirators is inadequate (Exs. 117-A; 150; 151; 123-A; 92-8; 277; 330; Trs. 6/20, p. 196; 6/21, pp. 74-75; 6/25, pp. 17-18; 6/29, p. 106; 7/3, pp. 160-181; 7/3, p. 193; 7/3, p. 50; 7/11, pp. 98-99).

For example, The Building and Construction Trades Department, AFL-CIO, offered the following comments:

In particular, the throw-away of disposable paper half-masks are not acceptable. In addition to providing field use protection factors too low for any serious consideration for wear in asbestos-exposed work throw-away or disposable paper half-masks offer little comfort. In one 1974 study, 97 miners wore disposable masks over a combined period of 248 person-shifts of work and rated their acceptability. Seventy-six miners rated the ubiquitous 3M 8710, which currently accounts for about 80 percent of the disposable dust mask market. . . . Sixty-seven of the 97 miners found it unacceptable. Forty-seven found it too fragile. Thirty-eight said it was too hot. Fourteen said it got wet and stuck to their faces. Eleven simply said that it was uncomfortable. . . . The researchers concluded that whether or not the respirator was comfortable to wear was of paramount importance (to the workers)—even more so than protection—and that a comfortable respirator will be put on sooner and removed later than one that is not. . . .

The International Brotherhood of Painters and Allied Trades found similar patterns of dislike of disposable dust masks among its members in a respirator preference and use survey conducted in 1980. . . . While 40 percent of the 632 members responding in the survey wore the disposable dust mask most, over 50 percent liked it least. By contrast, over 70 percent liked air-lines most. Respondents rated the air-line masks highest in protection, fit and ease of breathing; the dust mask was rated lowest in each of these categories—even lower than widely despised reusable cartridge half-mask. (Ex. 330)

Jeffrey Paull, of the School of Hygiene and Public Health of Johns Hopkins University, reported:

I am [in agreement] with the State of Maryland on their position on disposable respirators. I don't think that they can be reliably . . . fit checked on the face of the employee. . . . I don't like the fact that most of them can't be . . . fit checked to provide some sense of assurance that it is fitting the face. (Tr. 7/11, p. 98)

Agreeing with Mr. Paul, David Kirby, representing the Alabama Safe State Program, expressed the following