

OSHA's existing asbestos standard. The negative-pressure enclosure that constitutes the second type of regulated area defined and required by the revised rule (paragraph (e)(8)) is intended to provide employees engaged in the most hazardous asbestos operations— asbestosis abatement projects—with the greatest possible amount of protection, and also to protect members of the public and other workers on site who are not directly involved in the abatement project from bystander exposure to asbestos. These two types of regulated areas thus reflect the revised standard's use of the "tiering" concept: increasing regulatory stringency with increasing hazard.

"Competent person" is a term and concept widely used and recognized in the construction field. The final rule's definition of a competent person as one who is capable of identifying existing asbestos hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them is consistent with the definition in 29 CFR 1926.32(f). OSHA's safety and health standards for the construction industry. Support for the use of competent persons to oversee the detection and management of asbestos health hazards is documented amply in the record, and is discussed in the summary and explanation for paragraph (e) below.

The terms "clean room," "decontamination area," "equipment room," and "high-efficiency particulate air (HEPA) filter" are self-explanatory and refer to hygiene areas and equipment in standard use in major asbestos abatement work and in the construction industry. A more detailed discussion of HEPA filters may be found in the explanation and summary sections of this preamble that deal with engineering controls [paragraph (g)(1)] and respirators [paragraph (h)].

"Removal," "renovation," and "repair" are terms that refer to those high-exposure operations involving the taking out, modification, or overhauling of previously installed friable asbestos materials, structures, and substrates. OSHA's definitions of these terms reflect the sense and substance of procedures published by the Environmental Protection Agency as guidelines for certain renovation and "ripout" operations that rely primarily on work practices and engineering controls to reduce occupational exposures. For the purposes of this section, the meanings of these terms parallel those used in 40 CFR 61.141, EPA's NESHAP Standard.

In a post-hearing brief, the BCTD submitted a recommended standard to regulate asbestos in the construction

industry. The brief contained definitions for a large group of terms that the BCTD felt were necessary to explicate the scope and purposes of their document. Ten of these terms are used in OSHA's revised rule, although they may be defined somewhat differently than in the BCTD document. For various reasons, OSHA did not find it necessary to include the remaining terms in the revised standard. For example, five of the terms recommended by the BCTD—"category A products or processes," "category B products or processes," "category C products or processes," "certified employee," and "certifying agent"—are concerned with aspects of a product categorization system based on the ambient air level of asbestos released through the handling of various products. OSHA has chosen not to incorporate such a system in the revised standard, because of its administrative complexity. In addition, maintaining OSHA's traditional health standard format to the extent possible facilitates compliance because employers are familiar with this format. Several other definitions recommended by the BCTD have not been included in the revised rule, because they are not used, e.g., "containment," "fiber-year," "friable asbestos," "phase contrast microscopy," "qualified person," and "transmission electron microscopy." The terms "qualitative fit-test" and "quantitative fit-test" are defined in the text of the revised standard (paragraph (h)(4)(iii), Respirator Fit Testing) and are therefore not separately defined in paragraph (b). Several terms recommended by the BCTD for inclusion in the definitions section of the revised rule are used within the body of the standard but have been not separately defined because OSHA deemed them self-explanatory: "installation," "initial personal samples," "respirator," "salvage," and "spill." The terms "asbestos job," "asbestos product or process," "asbestos project," and "asbestos-related work" are also not defined specifically in the revised standard, because they are not used in the regulatory text.

Paragraph (c)—Permissible Exposure Limit

In the revised rule regulating asbestos exposure in the construction industry, OSHA has amended the permissible exposure limit (PEL) by lowering the existing 2 f/cc PEL contained in 29 CFR 1910.1001(b)(2). Paragraph (c) of the revised standard sets an 8-hour time-weighted average (TWA) limit of 0.2 f/cc, which is the same PEL established in the revised standard for general industry.

The determination that a reduction in the PEL for construction is necessary is based on record evidence that shows that occupational exposure to asbestos increases the risk of mortality from lung cancer, mesothelioma, gastrointestinal cancer, and possibly other types of cancer. Asbestos is also the only known etiologic agent associated with asbestosis, a progressive, fibrosing lung disease.

The evidence demonstrating the causal relationship between asbestos exposure and these diseases consists of several well-designed epidemiological studies conducted within many different industry sectors, and of in vivo laboratory experiments in which animals exposed either by inhalation or injection developed increased incidences of cancer and scarring of the lung. (The health effects evidence summarized above is presented in Section IV of this preamble.)

The reduction in the PEL is also based on OSHA's finding that a significant risk of material impairment exists at the existing PEL of 2.0 f/cc (TWA), and that reducing the PEL would substantially reduce that risk. OSHA has determined in its quantitative risk assessment (see Section V) that lifetime exposure to an 8-hour TWA of 2.0 f/cc would result in 64 excess deaths due to cancer per 1,000 workers, and 50 cases of asbestosis per 1,000 workers, an excess risk that is clearly significant and unacceptable. By comparison, lowering the PEL to 0.2 f/cc would reduce the risk by about 80 percent to 7 excess cancer deaths per 1,000 workers and 5 cases of asbestosis per 1,000 workers.

In the April notice, OSHA proposed reducing the PEL to one of two alternative PELs (0.5 or 0.2 f/cc TWA). As explained in that notice, because risk is not eliminated at either of these two alternative PELs, "OSHA's primary consideration for setting a PEL is whether the limit chosen is technically and economically feasible for the affected industries" (49 FR 14122). OSHA is basing its decision to reduce the PEL to 0.2 f/cc for the construction industry on evidence that the 0.2 f/cc limit is the lowest limit that can be achieved by the use of engineering controls and work practices. This finding is based on evidence discussed in Section VII of this preamble (Technological Feasibility and Economic Impact Assessment), which indicates that many operations in construction would have difficulty in consistently meeting a lower PEL without the use of respirators. Some of these operations include the cutting and lathing of A/C pipe and sheet, the installation of