

SPECIAL Report



NATIONAL ROOFING CONTRACTORS ASSOCIATION

OSHA ASBESTOS STANDARD CFR 1926.58

OSHA published its revised asbestos standard on Aug. 10, 1994. On Aug. 17, NRCA and certain roofing contractors appealed the OSHA standard. On March 15 of this year, NRCA and OSHA signed a legally binding settlement agreement that clarified and amended the regulation as to its applicability for roofing operations and stipulated that OSHA provide additional information in the form of technical amendments clarifying the standard, additional preamble language and outreach (compliance) materials.

The following is an explanation of each section of the regulation, incorporating the terms of the settlement agreement. OSHA will be providing a Federal Register notice containing the revised regulatory text and additional preamble language soon. NRCA will be publishing an informational document, which OSHA will review, describing how to comply with the OSHA asbestos standard. The document is scheduled to be completed by Aug. 10.

INTACT INCIDENTAL ACRM

Under the settlement agreement, OSHA now considers projects involving ACRM to fall into one of two categories: one, work involving installation or removal of intact incidental ACRM (cements, coatings, mastics and flashings) and two, Class II roof removal work, which includes all other types of ACRM (e.g., built-up roofing felts, shingles). Generally speaking, the requirements for handling incidental ACRM are far less stringent than those required for non-incidental materials. OSHA agreed to add a new paragraph to the standard to address the handling of incidental ACRM. There are only five requirements under this paragraph. They are as follows:

- Before work begins and as needed during the job, a competent person shall conduct an inspection of the worksite and determine that the roofing material is intact and will likely remain intact. (Competent person will be defined later, see attachment)

- All employees performing work involving only intact incidentals shall be trained. (Training will be discussed later, see attachment)

- The materials shall not be sanded, abraded or ground. Manual methods that do not render the material non-intact shall be used. The definition of "non-intact" is basically the same as EPA's definition of "friable".

- Material that has been removed shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand it shall be lowered to the ground via covered, dust-tight chute, crane or hoist. All such material shall be removed from the roof as soon as practicable, but in any event no later than the end of the workshift.

- Where roofing products that have been labeled in accordance with the regulation are installed on non-residential roofs, the employer shall notify the building owner of the presence and location of such materials no later than the end of the job. In order for a material to be considered "labeled" by OSHA, its container must bear the following sign:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

If the product is labeled as containing asbestos but not as shown above, it is not considered labeled by OSHA, and notification is not required by the standard. Contractors may wish to discuss with building owners the installation of ACRM (e.g., roof cements, mastics, coatings).

When these five requirements are met for incidentals, a contractor is in compliance with the OSHA asbestos standard.

CLASS II ACRM ROOF REMOVAL REQUIREMENTS

Roofing operations involving only the installation or manual removal, repair or maintenance of intact flashings, coatings, mastics or cements are not considered Class II work.

OSHA has divided the regulation into four classes of asbestos removal work. Class I work does not apply to roofing. Class II work includes roof removal but not intact incidental ACRM removal or installation. Class III work involves repair and maintenance operations, and Class IV work includes maintenance and custodial activities. OSHA has indicated that compliance with Class II work requirements constitutes compliance for Class II or IV work. Practically speaking, roofing work involving ACRM will be considered either Class II removal work, intact incidental work or installation.

For handling Class II roof removal projects, employers will be covered by the full text of the regulation. However, as a result of the settlement agreement, the work practices and engineering controls required have been amended to closely resemble EPA's requirements under its interpretive rule. In addition, OSHA is allowing the required initial exposure assessment to be made based on data submitted to OSHA by NRCA. OSHA concluded that employers may rely on the data in the rulemaking record to make a negative exposure assessment for roof removal, repair and maintenance operations when: one, the removal practices strictly adhere to the work practices required under the standard and as amended by the agreement; two, all workers engaged in the removal are trained in accordance with the standard; and three, before removal begins a competent person assesses the job and determines that the roofing material is intact within the meaning of the standard. This was an important determination because it will enable roofing contractors, in most cases, to make negative exposure assessments prior to the start of a job. The requirements for respirators, protective clothing and initial air monitoring are not required when a negative exposure assessment is made. There are two exceptions: one, when a negative exposure assessment is made but material is rendered substantially nonintact on low-slope roofs, respirators are required; and two, where permissible exposure limits are exceeded.

SCOPE AND APPLICATION

This section regulates asbestos exposure in all work as defined by the standard, including but not limited to the following:

- Demolition or salvage of structures where asbestos is present;
- Removal or encapsulation of materials containing asbestos;
- Construction, alteration, repair, maintenance or renovation of structures, substrates or portions thereof that contain asbestos;
- Asbestos spill/emergency cleanup; and

- Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed.

DEFINITIONS

A complete analysis of the various definitions in the standard is not necessary. However, some of the key definitions have been amended pursuant to the settlement agreement. These are as follows:

- The OSHA regulation now uses the EPA one-percent asbestos content test. If the ACM contains less than 1% asbestos as analyzed using polarized light microscopy, it is not considered asbestos-containing material.
- Roofing materials are not "surfacing" material or otherwise subject to the provisions of the standard governing Class I work.
- Class II asbestos work does not include roofing jobs involving only the manual removal of intact flashings, coatings, mastics and cements; these operations are covered by new paragraph 1101(g)(11).
- Intact is defined under the standard as ACM that has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix. The settlement agreement provides that the cutting, separating or incidental breaking of roofing material do not automatically render the removed roofing non-intact. The cut, separated or broken pieces must be evaluated against the definition to determine whether the provisions of the standard governing non-intact roofing material apply.

For example, dust created by the use of a power roof cutter on built-up roofing (BUR) is considered non-intact for the purposes of the provisions, but the remaining sections of BUR are considered intact if they have not crumbled, been pulverized, or are no longer likely to be bound with their matrices. Likewise, when using manual methods such as slicing and prying to remove BUR or other roofing materials, the cut, separated or broken pieces or sections are considered intact if they satisfy the definition of the standard.

- OSHA provides that recovering work is not considered encapsulation and therefore is neither repair work nor Class III work if there is no removal of the existing roof. Generally speaking, almost all roof recovering work is not subject to the OSHA standard.

PERMISSIBLE EXPOSURE LIMITS (PELs)

Under the new standard there are two PELs; the action level has been eliminated. The eight-hour, time-weighted average PEL is 0.1 fibers per cubic centimeter of air as determined by the method prescribed in Appendix A of the standard, or by an

equivalent method. The excursion limit is 1.0 fibers per cubic centimeter of air as averaged over a sampling period of thirty minutes, as determined by the method prescribed in Appendix A or by an equivalent method.

MULTI-EMPLOYER WORKSITES

For Class II roof removal work, the following five requirements may apply:

- On multi-employer worksites employers are required to notify other employers on the site of the nature of the employer's work with asbestos, the requirements pertaining to regulated areas and the measures taken to ensure that employees of other employers are not exposed to asbestos.
- Asbestos hazards at a multi-employer worksite shall be abated by the contractor who created or controls the source of asbestos contamination.
- All employers of employees exposed to asbestos hazards shall comply with applicable protective provisions to protect their employees.
- All employers of employees working adjacent to regulated areas established by another employer shall take steps on a daily basis to ascertain the integrity of the enclosure and/or the effectiveness of the control method relied on by the primary asbestos contractor to assure that asbestos fibers do not migrate to such adjacent areas.
- All general contractors shall be deemed to exercise general supervisory authority over the work covered by the standard, even though the general contractor is not qualified to serve as the asbestos competent person as defined in the standard. As supervisor of the entire project, the general contractor shall ascertain whether the asbestos contractor is in compliance with the standard when necessary.

REGULATED AREAS

- All Class II roof removal work shall be conducted within regulated areas.
- The settlement agreement clarifies that warning tape is not required for Class II roof removal projects, and that posting warning signs at points of access to the roof is sufficient to meet the demarcation requirement.
- Access to regulated areas shall be limited to authorized persons, defined as persons required by work duties to be present in regulated areas. Authorized persons must receive at least eight hours of training. (Training will be discussed later.)
- All persons entering a regulated area where employees are required to wear respirators shall be supplied with a respirator. The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum or apply cosmetics in the regulated area. Note: A Jan. 13, 1995 OSHA interpretation restricts the scope of these prohibitions to regulated areas in which the PELs are exceeded.

- The employer shall ensure that all asbestos work performed within regulated areas is supervised by a competent person as defined by the standard, although the competent person need not be present at all times.

EXPOSURE ASSESSMENTS AND MONITORING

- Each employer who has a workplace or work operation covered by the standard shall ensure that a competent person conducts an exposure assessment immediately before or at the initiation of the operation to ascertain expected exposures during the operation or workplace.

- Basis of initial exposure assessment: Unless a negative exposure assessment has been made, the initial exposure assessment shall, if feasible, be based on air monitoring conducted pursuant to the standard. In addition, the assessment shall include consideration of all observations, information or calculations that indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace.

- An employer may demonstrate that exposures will be below the PELs by data that conform to the following criteria:

- Objective data demonstrating that the product or material containing asbestos or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PELs under those work conditions having the greatest potential for releasing asbestos; or

- Where the employer has monitored prior asbestos jobs for the PEL and the excursion limit within twelve months of the current or projected job, the monitoring and analysis were performed in compliance with the asbestos standard in effect; and the data were obtained during work operations conducted under workplace conditions "closely resembling" the processes, type of material, control methods, work practices and environmental conditions used and prevailing in the employer's current operations, the operations were conducted by employees whose training and experiences are no more extensive than that of employees performing the current job, and these data show that under the conditions prevailing and which will prevail in the current workplace there is a high degree of certainty that employee exposures will not exceed the PELs; or

- The results of initial exposure monitoring of the current job made from breathing zone air samples of employees whose operations are most likely to result in exposures over the PELs.

- The settlement agreement provides that roofing contractors may rely on the monitoring data in OSHA's rulemaking record, including the data summarized in an NRCA Dec. 14, 1994 report entitled *Objective Data Demonstration for Certain Roofing Materials and Operations Under OSHA's 1994 Asbestos Standard*, to make negative exposure assessments for roof removal, repair and maintenance operations when: One, the removal practices strictly adhere to the work practices required by the standard; two, all workers engaged in the removal are trained in accordance with the

provisions of the standard; and three, before removal begins, a competent person assesses the job and determines that the roofing material is intact within the meaning of the standard and as interpreted by the settlement agreement.

METHODS OF COMPLIANCE

- The employer shall use the following engineering controls and work practices in all operations covered by this section regardless of the levels of exposure.
 - Vacuum cleaners equipped with HEPA filters shall be used to collect all debris and dust containing ACM except as provided in the case of roofing material. The interpretation for roofing material limits this provision to dust and debris that can be traced to damaged (non-intact) roofing material; a separate revised provision of the standard specifically addresses dust created by a power cutter used to remove BUR.
 - Wet methods or wetting agents shall be used to control employee exposure except where employers demonstrate that the use of wet methods is infeasible due to, for example, the creation of electrical hazards, equipment malfunction and, in roofing, except as provided in paragraph (G)(8)(ii) of this section.
 - Prompt clean-up and disposal of waste and debris contaminated with asbestos in leak-tight containers is required, except in roofing operations where the procedures specified in paragraph (G)(8)(ii) apply.

- The following work practices and engineering controls cannot be used for work related to asbestos or for work that disturbs ACM regardless of measured levels of asbestos exposure or the results of initial exposure assessments:
 - High-speed abrasive disk saws that are not equipped with point-of-cut ventilator or enclosures with HEPA-filtered exhaust air. The settlement agreement stipulates that this provision excludes power roof cutters (i.e., OSHA allows the use of power roof cutters).
 - Dry sweeping, shoveling or other dry cleanup of dust and debris containing ACM. The settlement agreement limits this provision to dust and debris that can be traced to damaged (non-intact) roofing material; a separate revised provision of the standard specifically addresses dust created by a powered cutter used to remove BUR.
 - Employee rotation as a means of reducing employee exposure to asbestos.

- Work practices and engineering controls for Class II work.
 - All Class II work shall be supervised by a competent person as defined in the standard.

- Impermeable drop cloths should be placed on surfaces beneath all removal activity. The settlement agreement excludes from this requirement roof removals from solid substrates.
 - All Class II asbestos work shall be performed using the work practices and requirements prescribed in the standard. Where more than one control method may be used for a type of asbestos work, the employer may choose one or a combination of designated control methods.
- For removing roofing material that contains asbestos, the employer shall ensure that the following work practices are followed:
- Roofing materials shall be removed in an intact state to the extent feasible. The settlement agreement provides that cutting or otherwise separating roofing pieces or incidental breakage does not automatically render the material non-intact.
 - Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not-intact during removal, unless wet methods are not feasible or will create safety hazards. The settlement agreement provides that, on BUR removal jobs using a power cutter, compliance with the continuous misting and dust collection requirements, as described below, are the only wetting requirements as long as the pieces of BUR that remain after the cutting meet the definition of intact. Likewise, the settlement agreement provides that wetting is not required for manual removal of BUR or other types of ACRM on roofs (e.g., A/C shingles, asphalt shingles, asphalt felt underlayments) if the materials are intact at the outset of the job and remain intact during removal. The settlement agreement also provides that the use of wet methods is not required in the removal of ACRM from sloped roofs (e.g., A/C shingles, asphalt shingles, asphalt felt underlayments) where slipping and falling hazards may be created, even if the material is not intact at the start of the job.
 - Cutting machines shall be continuously misted during use unless the competent person determines that misting substantially decreases worker safety.
 - When removing BUR with asbestos-containing roofing felts and an aggregate surface using a power roof cutter, all dust resulting from the cutting operation shall be collected by a HEPA dust collector, or shall be HEPA vacuumed by vacuuming along the cut line. When removing built-up roofs with asbestos-containing roofing felts and a smooth surface using a power roof cutter, the dust resulting from the cutting operation shall be collected either by a HEPA dust collector or HEPA vacuuming along the cut line, or by gently sweeping and then carefully and completely wiping up the still-wet dust and debris left along the cut line. The dust and debris shall be immediately bagged or placed in covered containers. The settlement agreement provides that, with regard to BUR and all other roofing materials that are removed manually, the OSHA standard does not require HEPA vacuuming if the material is intact at the outset of the job and remains intact during the removal.

- Asbestos-containing material that has been removed from a roof shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane or hoist. Any ACRM that is not intact shall be lowered to the ground as soon as is practicable but in no event later than the end of the work shift. While the material remains on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting.

Intact ACRM shall be lowered to the ground as soon as is practicable but in no event later than the end of the workshift. The settlement agreement provides that, with regard to BUR and all other roofing materials that are removed manually, the OSHA standard does not require leak-type bagging or wrapping if the material is intact at the outset of the job and remains intact during the removal.

- Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such a manner so as to preclude the dispersion of dust.

- Roof level heating, ventilation and air intake sources shall be isolated or the ventilation system shall be shut down. The settlement agreement provides that only air intakes in the regulated area need to be isolated or shut down, unless the competent person determines that other intakes should be isolated or shut down due to factors such as wind speed, direction and proximity to the removal operation. The following measures qualify as isolation:

- Establishing a 20-foot buffer zone (subject to the judgement of the competent person based on factors such as those mentioned);
- The use of HEPA filters;
- The use of extensions that redirect the opening of the intake away from the fiber emission source;
- Covering with plastic sheeting or another kind of barrier.

- Notwithstanding any other provision of this section, removal or repair of sections of intact roofing less than 25 square feet in area does not require use of wet methods or HEPA vacuums as long as manual methods that do not render the material non-intact are used to remove the material and no visible dust is created by the removal method used. In determining whether a job involves less than 25 square feet, the employer shall include all removal and repair work performed on the same roof on the same day. The settlement agreement states that this exemption applies to Class III and Class IV operations as well. As worded, it would also apply to small jobs involving the installation, removal or repair of intact flashings, coatings, mastics and cements. OSHA has also indicated that compliance with the requirements for a "higher, more restrictive," category (e.g., Class II for roofing) constitutes compliance for the lower category (e.g., Class III repair jobs). In addition, the general work practices applicable to all classes specifically refer to Class II requirements in the case of roofing.

A new paragraph, (G)(11), addresses alternative methods for compliance for installation, removal, repair and maintenance of certain roofing materials, including installing, removing, repairing or maintaining intact roof cements, mastics, coatings or flashings that contain asbestos fibers encapsulated or coated by bituminous or resinous compounds. If an employer does not comply with all of the requirements for handling incidental ACRM, or if during the course of the job the material does not remain intact, the Class II requirements apply instead of the new paragraph for handling incidentals.

RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING

■ The employer shall provide respirators and make sure that they are used where required by this section. Respirators shall be used in the following circumstances:

- During all Class II work where the ACM is not removed in a substantially intact state.
- During Class II and III work that is not performed using wet methods, provided, however, that respirators need not be worn during removal of ACRM from sloped roofs when a negative exposure assessment has been made and the ACRM is removed in an intact state.
- During all Class II and III jobs where the employer does not produce a negative exposure assessment.
- During all work covered by the section where employees are exposed above the TWA or excursion limit PELs.

Protective Clothing

■ The employer shall provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves and foot coverings for any employee exposed to airborne concentrations of asbestos that exceed the TWA and/or excursion limit described in the standard, or for which a required negative exposure assessment is not produced.

HYGIENE FACILITIES AND PRACTICES FOR EMPLOYEES

■ The requirements are for Class II and Class III asbestos work operations where exposures exceed the PELs or where there is no negative exposure assessment produced before the operation.

■ The employer shall ensure the employees do not smoke in work areas where they are occupationally exposed to asbestos.

COMMUNICATION OF HAZARDS

■ This section applies to the communication of information concerning asbestos hazards in construction activities to facilitate compliance with the standard. Building

owners are, along with employers of potentially exposed employees, assigned specific information conveying and retention duties under this section.

■ Before work subject to the standard is begun, building and facility owners shall identify the presence, location and quantity of ACRM at the worksite.

Building and/or facility owners shall notify the following persons of the presence, location and the quantity of ACRM at the worksites in their buildings and facilities: Prospective employers applying or bidding for work where asbestos is present in the work area; employees of the owner, who will work in areas where asbestos is present; on multi-employer worksites, all employers whose employees will be working in areas where asbestos is present; and tenants who will occupy areas where asbestos is present. Notification either shall be in writing or shall consist of a personal communication between the owner and the prospective employers whose employees reasonably can be expected to work in or adjacent to areas containing asbestos.

■ Duties of employers whose employees perform work subject to the standard and building/facility owners whose employees perform such work shall comply with these provisions to the extent applicable:

- Before work in areas containing ACRM begins, employers shall identify the presence, location and quantity of ACRM.

- Before work under the standard is performed, employers of employees who will perform such work shall inform the following persons of the location and quantity of asbestos material and ACRM present in the area and the precautions to be taken to ensure that airborne asbestos is confined to the area:

- Owners of the building/facility
- Employees who will perform such work and employers of employees who will work and/or will be working in adjacent areas.

■ Within 10 days of the completion of such work, the employer whose employees have performed work subject to the standard shall inform the building/facility owner and employers of employees who will be working in the area of the current location and quantity of asbestos or ACRM remaining in the area and final monitoring results, if any.

■ In addition to the above requirements, all employers who discover asbestos or ACRM on a worksite shall convey information concerning the presence, location and quantity of such newly discovered asbestos or ACRM to the owner and to other employers of employees working at the worksite, within 24 hours of the discovery.

■ Warning signs that demarcate the regulated area shall be provided and displayed in each location where a regulated area is required to be established. The warning signs required for Class II roof removal work shall bear the appropriate information, as follows:

DANGER
ASBESTOS
AUTHORIZED PERSONNEL ONLY

In addition, where the use of respirators and protective clothing is required in the regulated area under this section, the warning signs shall include the following:
**RESPIRATORS AND PROTECTION CLOTHING
ARE REQUIRED IN THIS AREA.**

Respirators and protective clothing will generally not be required for roofing work under the standard unless roofing materials are not intact at the start of the job, the materials become non-intact during the removal or, theoretically, the PELs are exceeded.

■ Labels shall be affixed to all products containing asbestos unless the asbestos fibers have been modified by a bonding agent, coating, binder or other material, provided that the manufacturer can demonstrate that, during any reasonably foreseeable use, no airborne concentration of asbestos fibers in excess of the PELs will be released; or where asbestos is present in product concentrations less than one percent by weight.

EMPLOYEE INFORMATION AND TRAINING

NOTE: The settlement agreement provides that employees working only on jobs involving intact incidentals ACRM are not subject to these training provisions if the requirements for handling incidentals are satisfied. There are separate training provisions for work involving intact incidentals (see attachment).

■ The employer shall, at no cost to the employee, institute a training program for all employees who install asbestos-containing products and for all employees who perform Class I through IV asbestos operations and shall ensure their participation in the program.

■ Class II training shall be provided prior to or at the time of initial assignment and at least annually thereafter.

■ For employers whose Class II work with asbestos-containing materials involves only the removal and/or disturbance of one generic category of building material, such as roofing materials, flooring materials, siding materials, or transite panels, instead, such employers are required to train employees by providing a training course that includes as a minimum all of the elements included in paragraph k(8)(vi) of the standard and in addition, the specific work practices and engineering controls set forth in paragraph g that specifically relate to that category. Said courses shall include hands-on training and shall take at least eight hours.

The training program shall be conducted in a manner that the employee is able to understand. In addition to the content required by the provisions in the standard, the employer shall ensure that each employee is informed of the following:

- Methods of recognizing asbestos.
- The health effects associated with asbestos exposure.

- The relationship between asbestos and smoking in producing lung cancer
 - The nature of operations that could result in exposure to asbestos, the importance of necessary protective controls to minimize exposure, including, as applicable, engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures and waste disposal procedures.
 - The purpose, proper use, fitting instructions and limitations of respirators.
 - The appropriate work practices for performing the asbestos job.
 - Medical surveillance program requirements.
 - The content of the standard, including appendices.
 - The names, addresses and phone numbers of public health organizations that provide information, materials and/or conduct programs concerning smoking cessation.
 - The requirement for posting signs and affixing labels and the meaning of the required legends for the signs and labels.
 - The employer shall make readily available to affected employees without cost, written materials relating to the employee training program including a copy of the regulation. The employer shall provide to the Assistant Secretary or the Director, upon request, all information and training materials relating to the employee information and training program. The employer shall inform all employees concerning the availability of self-help smoking cessation program material.
- The training requirement for workers handling only incidental ACRM is not given a specific time frame. Workers must receive awareness training about asbestos. These requirements are outlined in Attachment A.

HOUSEKEEPING

- Where vacuuming methods are selected, HEPA-filtered vacuuming, or equivalent, must be used.
- The equipment shall be used and emptied in a manner that minimized the reentry of asbestos into the workplace.
- Asbestos waste, scrap, debris, bags, containers, equipment and contaminated clothing consigned for disposal shall be collected and disposed of in sealed, labeled impermeable bags or other closed, labeled impermeable containers, except in roofing operations, where the procedure specified in paragraph (g)(8)(ii) apply. The settlement agreement provides that only non-intact roofing material is subject to the requirement for leak-tight bagging, wrapping or other containerization.

MEDICAL SURVEILLANCE

- The employer shall institute a medical surveillance program for all employees who, for a combined total of 30 or more days per year, are engaged in Class I, II and III work, or are exposed at or above the PELs and for employees who wear negative-pressure respirators.
- The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided at no cost to the employee at a reasonable time and place.
- The employer shall make available examinations and consultations to each employee covered by this section on the following schedules:
 - Prior to assignment of the employee to an area where negative pressure respirators are worn.
 - When the employee is assigned to an area where exposure to asbestos may be at or above the PELs for 30 or more days per year, a medical examination must be given within 10 working days following the 30th day of exposure, and at least annually thereafter.
 - If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer shall provide such examinations to affected employees at the frequency specified by the physician.
 - Exception: No medical examination is required of any employees if adequate records show that the employee has been examined in accordance with this paragraph within the past one year period.
- Medical examinations shall include:
 - Medical and work history.
 - The standardized questionnaire contained in Part 1 of Appendix D.
 - A physical examination directed to pulmonary and gastrointestinal systems.
 - Any other examinations or tests deemed necessary by the examining physician.
- The employer shall provide the following information to the examining physician:
 - A copy of the standard and Appendices D, E, G, and I.
 - A description of the affected employee's duties as they relate to the employee's exposure.
 - The employee's representative exposure level or anticipated exposure level.
 - A description of any personal protective and respiratory equipment used or to be used.
 - Information from previous medical examinations.
- The employer shall obtain a written opinion from the examining physician that contains the results of the medical examination and shall include:
 - The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at increased risk of material health impairment from exposure to asbestos.

- Any recommended limitations on the employee or on the use of personal protective equipment.
- A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions that may result from asbestos exposure
- A statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.
- The employer shall instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to asbestos.
- The employer shall provide a copy of the physician's written opinion to the affected employee within 30 days of its receipt.

RECORDKEEPING

- The employer is required to keep records of objective data relied on to demonstrate that products made from or containing asbestos are not capable of releasing asbestos fibers in concentrations at or above the PELs. The employer shall establish and maintain an accurate record of objective data reasonably relied upon in support of the exemption.
- The employer shall keep an accurate record of all measurements taken to monitor employee exposure to asbestos. The employer may utilize the services of competent organizations such as industry trade associations and employee associations to maintain the records required by this section. The employer shall maintain this record for at least 30 years.
- The employer shall establish and maintain an accurate record for each employee subject to medical surveillance.
- The employer shall maintain all employee training records for one year beyond the last date of employment by that employer.
- The employer, upon written request, shall make all records required to be maintained by the standard available to the Assistant Secretary and the Director (National Institute for Occupational Safety and Health, or designee) for examining and copying.
- Whenever the employer ceases to do business and there is no successor employer to receive and retrain the records for the prescribed period, the employer shall notify the Director at least 90 days prior to disposal and, upon request, transmit them to the Director.

COMPETENT PERSON

■ The settlement agreement provides that competent persons supervising only intact incidental ACRM are not subject to the provision. The competent person requirements for incidentals are listed separately (see attachment). The competent person must be knowledgeable in the provisions as listed in the outline, which may or may not require training.

■ For all Class II operations, the employer shall designate a competent person having the qualifications and authorities for ensuring worker safety and health.

■ The competent person shall make frequent and regular inspections of the jobsites in order to perform the duties set out by the standard. For Class II and III jobs, onsite inspections shall be made at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request. The competent person shall perform or supervise the following duties, as applicable:

- Set up the regulated area, enclosure or other containment.
- Ensure (by onsite inspection) the integrity of the enclosure or containment.
- Set up procedures to control entry to and exit from the enclosure and/or area.
- Supervise all employee exposure monitoring required.
- Ensure, through on-site supervision, that employees set up and remove engineering controls, use work practices and personal protective equipment in compliance with the regulation.
- Ensure that employees use hygiene facilities and observe the decontamination procedures specified in paragraph j.
- Ensure that through onsite inspection, engineering controls are functioning properly and employees are using proper work practices.
- Ensure that notification requirements are met.

■ For Class II asbestos work, the competent person shall be trained in all aspects of asbestos removal and handling, including abatement, installation, removal and handling, the contents of the standard, the identification of asbestos, removal procedures where appropriate and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course for supervisors such as a course conducted by an EPA- or state-approved training provider, certified by EPA or a state or a course equivalent in stringency, content and length.

APPENDICES

■ Mandatory Appendix A, the OSHA reference method, applies only where monitoring is required. Monitoring is not required where the employer makes a negative exposure assessment.

■ Mandatory Appendix C, respirator fit testing, applies only to employers required to establish respirator programs. Under various revised provisions of the standard, respirators will generally not be required on jobs involving removal or repair of intact roofing materials.

- Mandatory Appendices D and E relate to medical surveillance, which for roofing applies only to workers with 30 or more days per year in Class II or Class III operations, not including incidental jobs, or who are required to wear respirators, or where employees are exposed above the PELs.

DATES FOR COMPLIANCE

- The standard became effective Oct. 11, 1994, but contains phased-in start-up dates.
- The provisions of the previous OSHA standard (29 CFR 1926.58) remain in effect until the start-up dates of the equivalent provisions of the new standard.
- All obligations of the new standard commence on the effective date except as follows: engineering and work practice controls, respiratory protection, hygiene facilities and practices for employees, communication of hazards, housekeeping, medical surveillance, and the designation and training of competent persons shall be completed as soon as possible but no later than Jul. 10, 1995.
- The settlement agreement extends the date for training of roofing workers to Sept. 30, 1995.

Until July 10, 1995, OSHA may enforce the following:

- The requirement for ensuring, by initial exposure assessment, that the PELs will not be exceeded (Paragraph c and g).
- Notification requirements on multi-employer worksites (paragraph i).
- The requirement for establishing a regulated area for Class II work (paragraph e).
- Protective clothing requirements (paragraph i) (but only if PELs are exceeded or negative exposure assessment is not produced).
- Recordkeeping requirements (paragraph m).

SUMMARY OF EPA AND OSHA REQUIREMENTS FOR HANDLING ASBESTOS-CONTAINING ROOFING MATERIAL

REQUIREMENT	OLD OSHA STANDARD	NEW OSHA STANDARD— CLASS II WORK	NEW OSHA STANDARD— INTACT INCIDENTALS	EPA INTERPRETIVE RULE
Permissible Exposure Limits (PELs)	0.2 f/cc, 8 hr. TWA 1.0 f/cc, 30-minute excursion limit 0.1 f/cc action level	0.1 f/cc, 8 hr. TWA 1.0 f/cc 30-minute excursion limit no action level	Not applicable (N/A)	Doesn't establish PELs, only regulates friable ACRM
Exposure Assessment	No	Yes, competent person may make negative exposure assessment (NEA), based on NRCA's data, provided material is intact and standard is complied with.	No	No
Air Monitoring	Historical data exemption	No, if NEA produced	No	No
HEPA Vacuums	No	Only when roof cutter is used on aggregate-surfaced roof with roof area > 5580 ft ² , or material is not intact	No	Only when roof cutter is used on aggregate-surfaced roof with roof area > 5580 ft ² , or material is friable
Wet Methods	No	Only when roof cutter is used or material is not intact	No	Only when roof cutter is used and roof area > 5580 ft ² , or material is friable
Bagging/Wrapping	No	Only the dust dispersed from a roof cutter, or when material is not intact	No	Only the dust dispersed from a roof cutter, where roof area > 5580 ft ² , or material is friable
Lowering Material by Hand, Crane, Hoist or Enclosed (dust-tight) Chute	No	Yes	Yes	Only the dust dispersed from a roof cutter, where roof area > 5580 ft ² , or material is friable
Roof Cutter Adaptations (misting into shroud, HEPA vacuuming or wet wiping)	No	Yes	No	Yes
Roof Level Air Intakes Isolated or Shut Down	No	Yes	No	No
Respirators & Protective Clothing	No	No, if NEA provided	No	No
Smoking Prohibition	Yes	Yes	No	No

REQUIREMENT	OLD OSHA STANDARD	NEW OSHA STANDARD-- CLASS II WORK	NEW OSHA STANDARD-- INTACT INCIDENTALS	EPA INTERPRETIVE RULE
Removal	No	No, to OSHA. Yes to employees, building owner and other employers on site	No	Yes, to EPA, but only if roof cutter used on roof area > 5580 ft²
Installation	No	N/A, products no longer manufactured	Only if products are labeled according to (K)(7)	No
Worker Training	No	Yes, 8 hours annually for authorized persons	Yes, no time minimums stipulated	No
Supervisor Training	No	Yes, EPA supervisor course or equivalent for "competent person"	Competent persons must be "knowledgeable", which may or may not require training	Yes, but only when roof cutter is used or material is friable
Medical Surveillance	No	Yes, if worker is on Class II jobs for 30 or more days per year	No	No
Record Keeping	Limited	Yes, for data, training and medical surveillance	Yes, but only for installation	Limited
Exemptions: Fragile Foot	No	Limited, conditional exemption where work area < 25 ft²	Limited, conditional exemption where work area < 25 ft²	160 ft² for friable material; 5580 ft² when roof cutter is used
Residential Dwellings of Four Units or Less	No	No	No	Yes

Note: This chart is provided as an overview of EPA and OSHA requirements. Please consult the Special Report (enclosed) for additional information.

APPLICABILITY OF OSHA ASBESTOS STANDARDS TO ROOFING WORK

Activity

Removal, by any methods, of asbestos-containing BUR felts, shingles, underlayment and all other non-incidentals ACRM

Removal with hand tools of intact asbestos-containing flashings, cements, coatings and mastics

Removal by any means of non-intact asbestos-containing flashings, cements, coatings and mastics

Installation of asbestos-containing cements, mastics and coatings (new products are intact by their nature)

Requirements

Class II removal work

Intact incidentals

Class II removal work

Intact incidentals



**TRAINING REQUIREMENTS FOR
WORKERS AND COMPETENT PERSONS
FOR WORK INVOLVING ONLY INCIDENTAL ACRM**

1. Employees working on jobs covered by new paragraph 1101(g)(11), involving incidental ACRM (and not on other jobs that are covered by the asbestos standard) must be trained in the following topics:

Identification and Recognition of Asbestos-Containing Roofing Materials

- Identification of asbestos
- Uses in roofing, past and present
- Characteristics of asbestos

Potential Health Effects of Asbestos

- Nature of asbestos-related disease, including latency and medical tests for identifying asbestos diseases
- Routes of exposure
- Dose-response relationships
- Relationship between cigarette smoking and asbestos exposure and availability of smoking cessation programs

Federal OSHA Construction Asbestos Standard

- Overview of standard
- Discussion of alternative methods for handling intact asbestos roof coatings, mastics, cements and flashings
- Discussion of PEL and significant risk

Intact versus Non-Intact Materials

- Definitions
- How to recognize non-intact materials
- Procedures to be followed when material is found to be or becomes non-intact

Appropriate Work Practices

- Applying mastics, cements, coatings
- Manual methods for removing materials
- Clean up and waste disposal

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2. Competent persons supervising jobs involving only incidental ACRM (and no other jobs that are covered by the asbestos standard) must be knowledgeable in the following topics in addition to the topics covered in worker training under paragraph 1:

Methods of Determining Presence of ACRM

Understanding and Interpreting Air Monitoring Data

- Some states, building owners, etc. require air monitoring on all ACM projects
- Understanding a negative exposure assessment

Notification Requirements - Commercial/Industrial Work Only

NRCA RECOMMENDATIONS

NRCA has developed the following recommendations for roofing contractors involved with a project involving ACRM:

- ✓ Establish a company policy for handling ACM. Make sure workers and supervisors are trained properly.
- ✓ Become familiar with OSHA, EPA, state and local regulations.
- ✓ Contact landfills and find out about restrictions and costs for disposing ACRM.
- ✓ Examine underdeck components prior to roofing work to determine if asbestos is present. If it does exist, treat it so that it won't become dislodged, or have it removed prior to the start of the roofing work.
- ✓ Carefully examine all roofing materials prior to bidding and prior to roof removal work. Make sure that you and the owner are aware of the presence of any asbestos and ACRM, and the equipment and practices to be used. This may involve taking core cut samples from areas where asbestos may be present and having them analyzed by polarized light microscopy.
- ✓ Discuss with the building owner the installation of ACRM (e.g., roof cements, mastics, coatings).
- ✓ Find out about other trades that will be working on jobs where ACRM is present.
- ✓ Minimize air infiltration into the building (close or isolate air conditioning intakes, windows, etc. in the work area).
- ✓ Examine the use of water for controlling dust. Where a roof cutter is used, make sure the misting and dust collection requirements are in place.
- ✓ Always be careful when handling ACRM to minimize the creation of dust.
- ✓ Carefully lower the material to the ground using a crane, hoist or enclosed dust-tight chute, or by passing it by hand.
- ✓ Examine insurance policies, particularly liability policies and determine if you have coverage.
- ✓ Examine contract documents and include hold harmless language. The ACRM is the building owner's material unless it is assigned to the contractor (or someone else).
- ✓ Develop smoking cessation programs for workers. OSHA has found that there is a synergistic effect between smoking and certain asbestos-related diseases.
- ✓ Keep records of all asbestos-containing roof removal projects, including air monitoring data, specific work practices, protective equipment used, training and medical surveillance.