

**SUBJECT:** Enforcement guidelines for protective clothing and personal protective equipment in molten metal operations.

**Purpose:** To provide guidance in assuring a uniform enforcement policy when evaluating protective clothing requirements in hot metal operations.

**Scope:** This directive applies MNOSHA-wide.

**References:**

- Industry.
1. MNOSHA Instruction STD 1-6.6 Personal Protective Equipment Used in General Industry.
  2. MNOSHA Instruction STD 3-3.2 Hard Hats Used in Construction and General Industry.
  3. MNOSHA Instruction CPL 2-2.16 Safety Shoes in General Industry and Construction.
  4. MNOSHA Instruction CPL 2.111 Paperwork and Written Program Violations
  5. Federal OSHA Region V Directive CPL 2-1.2
  6. Right To Know CPL 2-2.38
  7. Heat stress 5205.0110 Subp. 2a
  8. AWAIR STD 5-0.1
  9. FSHM Chapter 3 Personal protective equipment for OSHI's

**Background:**

MNOSHA relies on the General Requirements for Personal Protective Equipment, 29 CFR 1910.132 to assure that appropriate personal protective equipment is utilized in molten metal operations. Exposure to molten metal requires additional consideration for the appropriate personal protective equipment to be worn by the employees. Employees who wear personal protective equipment for molten metal operations may be subjected to an additional heat load that can lead to heat stress. Employers need to recognize the potential for heat stress and provide employees with the necessary training.

**It is necessary, due to the unusual circumstances surrounding molten metal operations that only investigators that have been trained in molten metal operations be authorized to conduct an investigation at a molten metal operation. If an investigator encounters a molten metal operation, contact your supervisor for instructions. In cases that do not involve molten metal operations, OSHI's can conduct an investigation such as an imminent danger, serious injury, fatality, or employee complaint. If the investigation includes the molten metal area of the facility, then a foundry trained investigator will do the investigation. In some situations, such as the molten metal operation is completely shut down, an OSHI may be allowed to conduct the investigation with approval from the supervisor/director/OMT member.**

**ACTION:**

- A. Inspection Guidelines. The OSHI shall verify that the employer has conducted a workplace hazard assessment that includes employee exposure to molten metal splash, spill, sparks, explosion, flames, run out/break out (molten metal flowing out of the mold), burns, heat stress, hot surfaces and/or magnesium spontaneous ignition.

Note: 1910.132(d)(1) and (d)(2) may only be grouped with a violation in 1910.133, .135, .136,

1. 1910.132(d) Hazard Assessment and Equipment Selection. The OSHI shall evaluate the the workplace evaluated, the person certifying that the evaluation has been performed, and the date of the Hazard Assessment. The document must be identified as a certification of the

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- a) If the employer has done a Hazard Assessment, identified the hazards that exist that would require personal protective equipment, has provided the personal protective equipment, but failed to complete the certification, no citation shall be issued. The employer will be advised to complete the certification.
- b) If the employer has not conducted a Hazard Assessment, the OSHI shall recommend a grouped citation for 1910.132(d)(1) and (d)(2) along with the appropriate citation for the lack of personal protective equipment, identifying the type of personal protective equipment needed to protect the employee.
- c) Where an employer provides appropriate personal protective equipment as part of a policy of requiring all employees to use required personal protective equipment to serve as evidence of an adequate Hazard Assessment and 1910.132(d)(2) **will not** be cited.
2. 1910.132(e) Defective and Damaged Equipment. The OSHI shall determine if the employer has damaged and/or defective personal protective equipment being used by employees. Where the personal protective equipment is damaged or defective, the OSHI will propose a citation for 1910.132(e). If the employer does **not** provide the proper personal protective equipment, the OSHI will cite the appropriate standard for the type of personal protective equipment.
3. 1910.132 Training. The OSHI shall determine if employees are trained in at least the proper care, maintenance, useful life and disposal of the personal protective equipment.

The employer shall verify that each affected employee has received and understands the

Cite 1910.132(f) where the OSHI recognizes the hazard potential and the employer has not provided training or has not provided complete training, regardless of whether or not appropriate personal protective equipment is provided or a hazard assessment has been done. This should generally be cited non-serious if cited alone, or cited serious if grouped with a citation for failing to provide appropriate personal protective equipment.

4. 1910.135(a)(1) When employees are observed being exposed to head injury hazards, the employer shall be cited under 1910.135(a)(1) for failing to provide and enforce the use of hard hats. Citations may also be proposed under 1910.132(d), (e), and/or (f) as appropriate.
- B. Employer Obligation to Pay for Personal Protective Equipment. The personal protective equipment standards establish the employer's obligation to provide personal protective equipment to employees. In those work situations where it is customary for workers to provide their own personal protective equipment without compromising employee protection, 1910.132(b) requires the employer to assure the adequacy of such equipment.
- Minnesota requirements for "worker provided" personal protective equipment. Minnesota Statute §182.655, subd. 10(a), requires the employer to provide suitable personal protective equipment "...by and at the cost of the employer." Current interpretation of this requirement is that the employer is responsible for providing at least the minimum cost of personal protective equipment that is of a type necessary for the job being performed. If employees want more expensive personal protective equipment, the employer has the option to pay the entire cost or have the employee pay the difference between the minimum type necessary to provide the protection and the option the employee is selecting.
  - Defective or damaged personal protective equipment. The employer is responsible for paying the cost of replacing or repairing defective or damaged personal protective equipment.

- Minnesota Statute §182.655, subd. 10(a) will be cited where personal protective equipment is required but is not paid for by the employer. The OSHI should reference the appropriate standard which requires the personal protective equipment to be provided in the AVD. Since the issue of payment is not directly related to employee safety (the personal protective equipment is already provided), failure to pay should be cited as non-serious.

**All cases where Minnesota Statute §182.655, subd. 10(a) is cited for failure to pay for personal protective equipment will be forwarded to the Area Supervisor/Director for review prior to issuance.**

**Cotton/polyester blend fabrics are not appropriate protection in molten metal operations due to the potential for melting or sticking to the skin. This is to be cited under 1910.132(a), even if appropriate protective clothing is worn over the cotton/polyester blend clothing.**

C. Action by OSHI's

See FSHM for additional criteria.

In operations involving molten metal, in which the hazard of potential employee contact with molten metal exists, fire retardant protective clothing specifically designed for protection against molten metal (such as FR clothing) or a pure wool garment shall be considered minimum acceptable protection.

The protective clothing guidelines referenced above do not preclude the need for greater protection should the hazard exist. For example, aluminized top coats and/or pants may be necessary for employees working in close proximity to molten metal operations where large quantities of metal are being poured. Each situation shall continue to be evaluated on a case-by-case basis to determine what type of protection is appropriate.

OSHI's should maintain at least a 20 foot distance from molten metal. If this is not possible, then the OSHI shall consult with their supervisor/director/OMT member to have a face shield issued to the OSHI.

Metatarsal safety shoes shall be worn by all OSHI's who are conducting an investigation involving molten metal.

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Distribution: OSHA Compliance and WSC Director

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