ESH | Environment, Safety & Health SECTION

12/99

Material Alert... *Zinc-Plated Unistrut*

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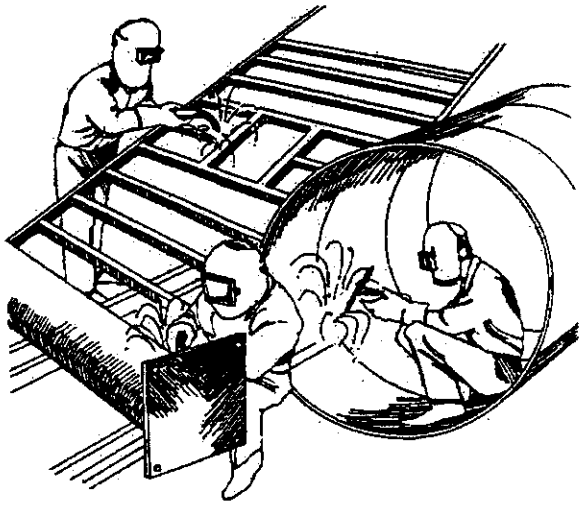
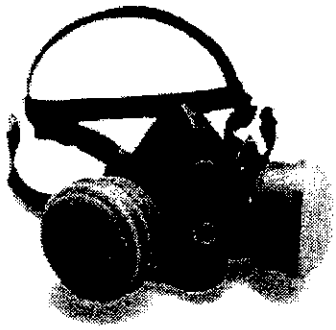
Welding, cutting and brazing are potentially hazardous activities that pose a unique combination of both safety and health risks to welders. One of the effects of over exposure to welding fumes is a condition called "Metal Fume Fever". Metal Fume Fever is a transient illness with flu-like symptoms (fever, chills, and headache). When exposures cease, the symptoms subside as well.



Here at Fermilab, welders in the Technical Division's Weld Shop are well-trained and quite experienced. They are also quite familiar with the measures they need to take to avoid metal fume fever, but this requires them to be aware of the composition of the material they are asked to weld.

Recently, the Weld Shop was asked to do some welding on galvanized unistrut. While they routinely weld on unistrut, they were initially unprepared to deal with the zinc-plating since most of the unistrut encountered at Fermilab is not galvanized. Zinc is one of the metals that can trigger metal fume fever. Fortunately, this hazard was recognized and appropriate precautions were taken.

All work starts with proper job planning. Can associated hazards be completely eliminated? Where possible, the use of galvanized unistrut should be avoided. In any case, welders must be made aware of the hazards associated with their work. Please help by informing the welders about any unique hazards you anticipate they will encounter while performing work for you. If they know they will be welding on zinc-plated unistrut, they will be prepared with the right welding equipment and appropriate respiratory protection.



REVIEW OF WELDING PRECAUTIONS

FIRE - Sparks and hot slag can be very dangerous. Make sure there are no combustible materials in the welding area.

NOISE - Hearing protection is available to help reduce the risk of hearing damage.

HEAT - Slag and sparks can cause burns without direct contact because of the intense heat produced by welding. Wear personal protective equipment at all times to avoid burns.

ELECTRIC SHOCK - Electrical equipment in general is dangerous, and so is welding equipment. Check for loose connections and make sure the equipment is properly grounded.

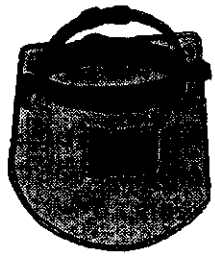
ULTRAVIOLET RADIATION - Also called UV radiation, ultraviolet light can cause welding burns. Wear protective hoods and clothing to avoid injuries. Set up a protective curtain to help prevent injuries to passersby.

GENERAL PRECAUTIONS - Follow these rules when welding:

- Keep the area clean and clear of any combustible material.
- Make sure the sprinkler system is operational before welding.
- Check for and correct any potentially explosive atmospheres.
- Avoid polyester or nylon clothing, in favor of cotton materials.

Keep in mind that you are still at risk even if you are not doing the actual welding. Many welding injuries happen to people who pass by the welding site. Follow these basic rules to avoid injury:

- Observe and obey all warning signs.
- Don't bring anything combustible into the area.
- Stay on marked walkways.
- Do not look directly into the arc light or its reflection off of any shiny surfaces.



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