



# SAFETY ALERT

## Proper Welding Ventilation for Cage Production

For every piece of reinforced concrete product made a steel cage must first be put together. Two of the most commonly used methods are by arc and gas welding. These two methods can cause serious health problems if not managed properly. **Fumes from welding can contain such contaminants as Beryllium, Manganese and Cadmium, and according to OSHA, at certain levels can cause adverse health effects.** The type of steel that is being welded and/or the type of welding rod being used does make a difference in the fume being generated. There are several things you can do to help protect your employees during welding and brazing operations, and to comply with welding regulations OSHA 1910.252:

- First check the MSDS's on each and follow their recommended safety guidelines and procedures.
- It is also recommended that air sampling be conducted to verify the concentration levels of the toxic fumes and gases released by welding. Fumes and gases from welding and cutting cannot be easily classified. The quantity is relative to the metal being worked and the processes and consumable material being used (such as coatings, like paint, galvanizing and platings), along with contaminants in the atmosphere (such as halogenated hydrocarbon vapors from cleaning and degreasing activities).
- Look for ways to eliminate welding, such as using wire ties, staples, hog rings, etc...
- Ensure that your employees have appropriate Personal Protective Equipment when welding or working around welding operations
- Provide Fire Protection by establishing a Hot Works Permitting program for welding work areas.
- Provide proper ventilation to the work area to prevent employee exposure to dangerous fumes. Note description of sufficient natural ventilation below:

**Natural Ventilation** — Natural ventilation is considered sufficient for welding and brazing operations if the present work area meets these requirements:

Space of more than 10,000 square feet is provided per welder;

- A ceiling height of more than 16 feet
- Welding is not done in a confined space
- Welding space does not contain partitions, balconies or structured barriers that obstruct cross ventilation
- If your specific operation does not fall within these guidelines, mechanical ventilation will be required.

**Air sampling to verify the concentration levels of toxic fumes and gases is necessary, and respiratory protection is required, along with appropriate ventilation, in the cutting and/or welding of certain metals and compounds. For more information, see OSHA 29 CFR 1910.252 on welding regulations.**