

## Confined Space Safety in Water Storage Tank Specifications

By: Jennifer Coon, CHMM, CET

When preparing specifications for tank coatings rehabilitation projects, several safety precautions need to be addressed within the specifications. These precautions are meant to not only protect the engineer, engineer's consultant, and the tank owner from liability, but also to promote a safe working environment for the coatings crews. A safe working environment will ultimately make achieving a quality product a more attainable goal, as disruptions and turnovers associated with injured employees, unsafe conditions, and regulatory agency violations will be reduced. Whether you are a coatings contractor or a specifier, be sure to verify that these safety items are addressed in tank coatings project specifications:

- Material Safety Data Sheets (MSDS)
- Confined space entry procedures
- Designated Competent Person

### General Requirements

At the beginning of the project specifications, a general statement should be made summarizing what is expected of the contractor. The statement should require the contractor to comply with all applicable laws and regulations such as the Occupational Safety and Health Act (OSHA). When state and/or local government requirements referenced or specified are more restrictive than the federal requirements, the more restrictive requirements must be met.

The general statement should also require the contractor to:

- provide all necessary safeguards for worker and safety protection
- stipulate that the costs associated with safety must be included in the contractor's bid
- specify that no additional compensation will be paid for changes in the laws, regulations, or any re-interpretation that may occur.

In addition, the contractor will hold the owner, engineer, and engineer's consultant harmless from any civil or criminal penalties imposed because of the contractor's non-compliance with these requirements.

### Material Safety Data Sheets

Material Safety Data Sheets (MSDS) contain crucial information about hazardous materials commonly found on coatings job-sites, including but not limited to:

- Abrasives
- Coatings
- Thinners and other solvents
- Welding materials
- Flexible sealant material
- Disinfecting agents

Information on the MSDS is critical, not only to the contractor's employees, but also to anyone else (such as representatives of the owner, engineer, or engineer's consultant) who may need to enter the project site. The specifications should not only require MSDS be located on the site, but the specs should also require that the MSDS be displayed in a readily locatable area. Some contractors prefer to place the MSDS on the signage displaying emergency phone numbers and contact names.

The prominent display of MSDS is obviously important during the project work hours, but it is also necessary after-hours as well. Emergency personnel will need the information found on an MSDS if they are called to the job site — regardless of the hour. For example, if vandals wander onto the site and cause mischief at 2:00 AM, responding emergency personnel will need information on any hazardous materials found on the site.

### Confined Space Entry

It should also be specified that the coatings contractor must comply with the OSHA Confined Space Standard, 29 CFR 1910.146, entitled “Permit Required Confined Spaces.”

The coatings contractor must have a confined space program documenting all entry procedures, permits, roles, and responsibilities of workers, training, gas monitoring, potential hazardous situations, rescue procedures, and documentation. By definition, a confined space is one that is large enough and designed for personnel to enter, has limited or restricted means of access, and is not designed for continuous occupancy. A tank, even when empty, falls under this definition.

Anytime entry into a confined space occurs, it must be assumed that the space is a permit-required space, unless it is well documented that the space does not possess any recognized or potential safety and health hazards, or if it can be proven that the hazards are eliminated without entry into the space. This means that a well-written tank spec will mandate that a coatings contractor implement a confined space entry program for all crew members working on the project.

### Competent Person

It should be specified that the coatings contractor must designate a Competent Person, and identify that person to the owner, engineer, and engineer’s representative. The Competent Person must be capable of identifying existing and predictable conditions on the work site that are unsanitary, hazardous, or dangerous to employees. The Competent Person must also be authorized to take prompt corrective measures to eliminate these conditions without the help of the owner, engineer, or engineer’s consultant.

The Competent Person must have the complete support of top management and the *written* authority to ensure these operations are carried out in accordance with compliance plans and governmental regulations – independent of production pressures. As such, the Competent Person must report directly to the contractor’s headquarters and *not* to the site foreman. Some of the Competent Person’s responsibilities should include:

- Ensuring that all of the coatings contractor’s safety programs are being followed
- Confirming that all employees are trained in the use of personal protective equipment (PPE), personal hygiene facilities, respiratory protection, decontamination practices, and fall protection systems
- Performing daily inspection and approval of any rigging and scaffolding equipment

- Verifying that engineering controls in use are in operating condition and functioning properly
- Controlling access to the work site and demarcating contaminated control boundaries
- Maintaining documentation

### Applicable Codes and Standards

A well-written tank spec will also include references to applicable industry standards for coatings. The following industry standards contain useful safety-related provisions:

- American Water Works Association (AWWA) Standards
- American Welding Society (AWS) Standards
- American Petroleum Institute (API) Standards
- American Institute of Steel Construction (AISC) Standards
- NACE International (NACE) Standards
- SSPC: The Society for Protective Coatings (SSPC) Standards
- Occupational Safety and Health Administration (OSHA) Standards
- American National Standards Institute (ANSI) Standards
- United States Environmental Protection Agency (US EPA) Standards

Whether you write the project specifications as a specifier, or adhere to them as a coatings contractor, it is your responsibility to insure that the specs contain comprehensive safety requirements. Applying coatings in a tank’s confined-space can be an especially dangerous situation, therefore, several safety precautions must be addressed when preparing (or reviewing) the specifications for tank rehabilitation projects. These precautions are meant to not only protect the engineer, engineer’s consultant, and the tank owner from liability, but to promote a safe working environment for everyone on the jobsite. It is up to specifiers *and* coatings contractors to be sure that the project’s safety specifications address the MSDS, entry procedures, and Competent Person designations. It’s not only good business practice — it can also be a matter of life and death.



*Jennifer Coon, TIC Safety Director, is responsible for developing, communicating, and monitoring TIC’s extensive Health and Safety program. Jennifer is a Certified Environmental Trainer (CET) as designed by the National Environmental, Safety & Health Training Association and is designated by OSHA as an outreach trainer for the 30-Hour General Industry course. She has an MS in Environmental Science (Hazardous Materials Management CHMM) from Indiana University. Coon@TankIndustry.com*