Hot Work Procedures Meeting Kit

What’s At Stake

Hot work may include spark and high heat producing job tasks such as grinding, welding, soldering, thermal or oxygen cutting or heating.

What’s the Danger

HOT WORK HAZARDS

Exposure to fumes and gases: Hot work can expose workers to hazardous fumes and gases that can result in severe health and safety impacts. This exposure may be a direct result of the hot work activity, such as welding fumes, or a result of the environment where the hot work is being undertaken. For example, carrying out hot work to repair a silo without proper removal of previous residues could result in serious adverse reactions, such as generating toxic fumes or an explosive atmosphere.

Exposure to electrical hazards: Depending on the type of hot work being undertaken, live electrical circuits may be used to generate heat, which results in a risk of electric shock.

Heat exposure: Hot work involves ‘use of open fires, flames and work involving the application of heat’, which can expose workers to dangerous elevated temperatures and heat build-up in the body. Excessive heat exposure can result in heat stress, heat stroke and unconsciousness.

Exposure to improper isolation of equipment: Improper isolation of equipment being worked on can result in hazards including entrapment, crushing, asphyxiation, explosive environments, etc. For example, failure to correctly chocking moving equipment is in place or not isolating pipework that could carry gases, vapours or fumes into the workplace.

HOW TO PROTECT YOURSELF

AVOID HOT WORK

Hot work must be avoided, so far as is reasonably practicable. ‘So far as is reasonably practicable’ means that, for any risk that is more than negligible or insignificant, then the duty holder has to weigh the risk against the time, money and trouble required to control it. The level of action should be proportionate to the risk. So, where risks are higher, such as hot work, then the actions taken must be more comprehensive. Therefore, you should consider every possible alternative for completing a task before deciding to proceed with hot work.

HOT WORK CONTROL MEASURES

A variety of industries may require hot work in their premises as part of routine work activities, though it is also frequently carried out as part of contractual work. However, no matter the reason for, or duration of, the hot work being undertaken, it's essential that the hazards have been assessed and appropriate controls have been enforced.

- Elimination – Elimination means to avoid carrying out hot work activities.
- Substitution – The second step in the hierarchy involves substituting for a safer or less hazardous alternative, such as using cold cutting or cold repair methods rather than hot work.
- Engineering controls – This involves using physical solutions to reduce risks, such as using general mechanical ventilation (ducted air with fans) or local exhaust ventilation (to remove fumes from the point of origin).
- Administrative controls – This involves altering the way the activity is undertaken to make it safer.
- Personal Protective Equipment (PPE) – The final stage of the hierarchy of control is the use of PPE to reduce any residual risks. Examples of PPE include respiratory protective equipment (RPE), hearing protection, eye protection and anti-static clothing and boots. PPE must only ever be used as a last resort and only when all other stages in the hierarchy of control have been considered.

THE BEST HOT WORK PRACTICES

- Make sure that all equipment is in good operating order before work starts.
- Make sure that all appropriate personal protective devices are available at the site and each worker has been trained on how to use, clean, and store them properly.
- Inspect the work area thoroughly before starting. Look for combustible materials in structures (partitions, walls, ceilings).
- Move all flammable and combustible materials away from the work area.
- If combustibles cannot be moved, cover them with fire resistant blankets or shields. Protect gas lines and equipment from falling sparks, hot materials, and objects.
- Sweeps clean any combustible materials on floors around the work zone. Combustible floors must be kept wet with water or covered with fire resistant blankets or damp sand.
- Use water ONLY if electrical circuits have been de-energized to prevent electrical shock.
- Remove any spilled grease, oil, or other combustible liquid.
- Vacuum away combustible debris from inside ventilation or other service duct openings to prevent ignition. Seal any cracks in ducts. Prevent sparks from entering into the duct work. Cover duct openings with a fire-resistant barrier and inspect the ducts after work has concluded.
- Make sure that appropriate fire extinguishers (e.g., ABC fire extinguishers) are available and easily accessible.
- Make sure that the first-aid boxes are available and easily accessible.
- Block off cracks between floorboards, along baseboards and walls, and under door openings, with a fire-resistant material. Close doors and windows.
- Cover wall or ceiling surfaces with a fire resistant and heat insulating material to prevent ignition and accumulation of heat.
- Secure, isolate, and vent pressurized vessels, piping and equipment as needed before beginning hot work.
- Inspect the area following work to ensure that wall surfaces, studs, wires or dirt have not heated up.
- Post a trained fire watcher within the work area, including lower levels if sparks or slag may fall during welding, including during breaks, and for at least 60 minutes after work has stopped. Depending on the work done, the area may need to be monitored for longer (up to 3 or more hours) after the end of the

hot work until fire hazards no longer exist.
- Eliminate explosive atmospheres (e.g., vapours or combustible dust) or do not allow hot work. Shut down any process that produces combustible atmospheres, and continuously monitor the area for accumulation of combustible gases before, during, and after hot work.
- If possible, schedule hot work during shutdown periods.

FINAL WORD

Operations that create a spark or flame such as welding, and soldering are referred to as hot work. Special precautions are necessary to perform hot work safely. Hot work procedures must be understood by operators and building managers and all occupants should be familiar with basic safe work practices.