

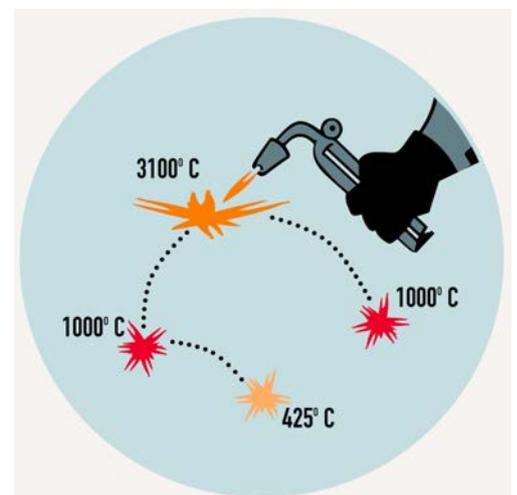


Hot Work

What is the hazard?

Hot work constitutes one of the major fire risks in almost all industrial, commercial and similar activities. Since hot work cannot always be avoided, it needs to be controlled carefully.

Hot work means construction, installation, fitting, dismantling, repair, maintenance and similar work involving the use of an open fire, heating, welding, cutting, brazing, weed burning, soldering and/or grinding equipment; in general working methods that use an open fire or that can generate excessive heat or sparks and thus start a fire. Hot work should never be carried out in direct contact or in close proximity to constructions, i.e. roofs, sandwich panels etc., containing combustible insulation. If this is not possible, as is the case with for example roofing work, special attention needs to be made.



Local standards apply, but their scope might be too limited or their control measures insufficient. Therefore, we advise that you follow the steps described here in order to ensure that your hot work is conducted safely.



How to reduce the risk

Can hot work outside a maintenance workshop be avoided?

If not, you need a Hot Work Permit system

First, check whether hot work can be avoided. Is there a safer method, for instance machining or joining? Is it possible to move the object in question to a maintenance workshop or outside at a safe distance?

When hot work is undertaken in a non-designated area, typically outside a dedicated maintenance workshop, it needs to be controlled carefully. Combustible materials and flammable liquids, dust and waste should be removed. Hidden spaces (wooden constructions, ventilation and extraction ducts and pipes etc.) should be protected if necessary. The hot work equipment should be in good working condition and approved and the approved fire-extinguishing equipment in place and easily accessible. The sprinkler system should be fully operational. A Hot Work Permit, unique for one single work task or project, should be issued, in order to control that the work is performed as safely as possible.

Hot work needs to be controlled no matter who undertakes to carry it out.

Special training is required in many countries.

Note that all hot work, conducted either by own employees or by external contractors, should be controlled by using the same strict procedures.

Personnel, both own and external, who carry out or supervise hot work should, in addition to their specific skills, have received the necessary safety training, if such training is available in the country in question. Note that any certificate, e.g. a hot work card or licence received after this training is not a Hot Work Permit.



Who can issue permits?

Management should appoint the person(s) who can authorise hot work: the fire officer, the maintenance manager, day and shift supervisors or comparable. They should have experience and training in the risks associated with the hot work (e.g. the safety training described above) and be of a suitable status to ensure compliance with the procedures. The issuer of the permit should not be the same person who will carry out the actual work.

Assessing hazards; specifying safety precautions

The plant responsible personnel and the person/company carrying out hot work should perform a hazard assessment (e.g. Safe job analysis) before writing the Hot Work Permit. The safety precautions based on this assessment should be clearly specified in the permit.

Hot Work Permit

Hot Work Permit should be valid for one work shift only. If Hot Work Permits for longer periods than one shift or one day should be provided, there is some additional guidance regarding such situations below. It is good practice to ensure that the hot work is terminated two (2) hours before the end of a working day, in order to have staff available for the inspection of the area.

The Hot Work Permit should be completed in 3 - 4 copies. One copy should be retained by the issuer, who may wish to inspect the hot work place or perform spot-checks to ensure that the safe working conditions have been met. The second copy is handed to the person responsible for carrying out the work. The third copy should be delivered to the security department or the gatehouse, if applicable. A fourth copy could be provided to e.g. the control room.

If an electronic permit system is utilised, then typically only one paper copy of the issued permit is printed out. This copy is then given to the persons actually carrying out the related hot work.

One signed copy of each permit should be filed by the permit issuer for future reference.



Fire watch during and after the work is essential

The affected hot work area should be watched continuously during the work. After its completion, the area should be monitored continuously as long as specified in the Hot Work Permit, but for one (1) hour at a minimum, to ensure that no ignition would occur afterwards in the area. The fire watch should have received the safety training mentioned above.

Following the completion of the hot work, the expiry of the fire watch period and the reinstatement of all fire protection installations, the permit issuer should be informed. The issuer should inspect the site and confirm the completion of the hot work by adding a new signature to his/her copy of the permit. If a permit is issued late in the day, arrangements should be made to ensure that the authorised personnel are available to sign the copy at the time of the completion of all the above mentioned measures.

Remember to reconnect the fire detection system

During hot work, the automatic fire detection system in the relevant section have to be disconnected to avoid “false” alarms. As a part of the control process, it is important to ensure that the detection system is reconnected after the completion of the hot work. Other fire protection installations should be reinstated as well.

Longer term projects

In many building or installation projects (i.e. the installation of new machinery etc.), hot work is performed almost on a daily basis. In these cases, it is possible to issue a Hot Work Permit that is valid for several days, but not for a longer period than a week. However, the work conditions need to be revised by either the permit issuer or another qualified person, e.g. the shift leader, each morning or at the beginning of each work shift. This revision needs to be documented in the permit (date/time, signature).

This Hazard Info Sheet is and is intended to be a presentation of the subject matter addressed. Although the authors have undertaken all measures to ensure the correctness of the material, it does not purport to list all risks or to indicate that other risks do not exist. If P&C Insurance does not give any guarantee thereof and no liability is assumed by reason of this Hazard Info Sheet as it is only advisory in nature and the final decisions must be made by the stakeholder. It shall not be applied to any specific circumstance, nor is it intended to be relied on as providing professional advice to any specific issue or situation.

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