

A close-up photograph of a welding process, showing bright orange and yellow sparks flying out from a blue-tinted metal surface.

Checklist for execution of hot works



The check list below is to enable the person granting the permit to define the safety precautions necessary for the hot works, using safety-relevant questions and observations. This check list does not claim to be complete. In the text below, the person carrying out the hot works will shortly be referred to as the “welder”, even when other hot works are carried out.

Preconditions

To grant the hot works permit including the definition of the necessary safety precautions, the following preconditions are absolutely necessary:

- The person granting the hot works permit must be precisely informed about the working sequence, i.e. the execution of the job in work steps, under particular consideration of fire and explosion protection.
- A preliminary examination must have shown that the works cannot be substituted by other methods involving a smaller hazard, e.g. sawing, chiselling, drilling, flanging, bolting, gluing or removing.
- A preliminary examination must also have shown that the hot works cannot be executed at specifically set-up welder’s workplaces or workshops.
- If hot works must nevertheless be executed, as a basic rule all mobile combustible materials must be removed from the hazard area before starting the hot works. Immobile combustible objects shall be covered up with non-combustible materials so that no gaps are left uncovered. Gaps, holes, breakthroughs and other openings in ceilings, floors and walls separating adjoining rooms shall be thoroughly sealed with non-combustible materials.
- The definition of the safety-relevant requirements in connection with specific hot works shall be made under consideration of the points below, before granting a written hot works permit (preparation of permit) and/or before preparing operating instructions in each case.

1. Preparatory and accompanying work organisation

No.	Requirement	Yes	No	Remarks
1	Is a reliable and qualified expert in charge of the execution?			
2	Does the person executing the work have comprehensive information about the local conditions?			
3	Has a (or have several) trained fire guard(s) („welding guards”) been appointed?			
4	Following the safety check, have the resulting measures been considered in the permit procedure and have the relevant safety precautions been defined?			
5	Has the permit including the list of safety precautions for hot works been filled in completely and legibly and signed at least by the following persons: Supervisor granting the permit, executing „welder”, fire guard?			
6	Has the supervisor granting the permit ensured that all executing „welders” and fire guards have understood all safety information regarding both content and language?			
7	Does the executing „welder” permanently carry a copy of the valid permit with him?			
8	Does the fire guard have sufficient competence for having the hot works stopped if necessary when safety precautions are disregarded or when unforeseeable hazardous situations occur?			
9	Have the „welder” and the fire guard coordinated with one another about the sequence of work / hazard area and checks?			
10	Are permanent checks by the fire guard regarding the observation of the safety precautions made prior to starting the work necessary?			
11	Are the welding flame and the flying sparks as well as other processes important from a fire protection point of view permanently observed by the executing „welder(s)”?			
12	Are safety precautions once made corrected in good time when the situation during the hot works requires such a step?			
13	Is the open flame of ignited and temporarily put down “welding and cutting torches” permanently observed by the fire guard during the works?			
14	During the welding breaks, is the electric welding wire holder of electric welding units put down on an insulated support or suspended so that it will touch neither the workpiece nor its support connected to the power supply?			
15	Is the electric welding unit shut down on the power supply side during extended interruptions of the work?			
16	In other work interruptions, is the gas supply to the “welding torch” properly shut off and is the unit put down safely?			
17	Are the hot works planned so that they can be completed by the end of the shift or of the working hours, including the checks?			
18	If hot works continue after one shift ends, is the work transferred to the following shift in a way adequate to the risk and without gaps?			
19	Have the fire guard and the „welder” agreed between them when the hot works are actually completed?			
20	Is the execution of the 1st check including a check of all adjoining rooms directly after the end of the work a fixed part of the hot works order?			
21	Are the subsequent checks carried out about every 30 minutes after the end of the working hours? (all-around observation of workplace, no more overtemperature can be detected; no glowing spots/fire pockets; no fire smell)			
22	Is a final check carried out around 4 hours after the end of the works?			
23	Are further checks carried out if the situation calls for them?			
24	Are the checks stopped only after the last check has shown that generation of a fire is not probable any more?			
25	Is the respect of all safety precautions up to the final check of the workplace ensured?			
26	Is the completed permit kept in a central place after the work is finished?			

2. Preparation of workplace and measures to be taken during the work

2.1 General

No.	Requirement	Yes	No	Remarks
27	Is the workplace cordoned off and marked?			
28	Have all mobile combustible objects and substances removed from the entire safety area? (dust deposits, oil films, waste, packing materials, etc.)			
29	Have all combustible components (e.g. wooden flooring) and equipment been cleaned and/or covered up with non-combustible materials or moistened if necessary?			
30	Are any further measures required, e.g. continued moistening of floor and of surrounding components which conduct heat and which are flammable, etc.?			
31	Have joints, gaps, pipe breakthroughs and other openings in ceilings/floors, walls etc. been perfectly sealed with loam, mineral fibres, fire protection pads, fire-resisting putty, etc.? (adjoining false floors/rooms/hollow spaces in walls as well as those hidden under covering panels as well as duct areas with difficult access deserve particular attention. Here dust sheets mostly will not be sufficient for protecting these areas against glowing particles!)			
32	Is it secured that no work is carried out in the rooms directly adjoining the workplace which endanger safe execution of the "welding work"? (e.g. in case of insufficient/non-tight room sealing; penetration of flammable gases and vapours through joints and gaps into the hot works area; by handling flammable liquids; during flooring laying work, etc.)			
33	Have the nearby fire stoppings (doors, gates, flaps, louvers, etc.) been closed?			
34	Is the nearest delay-free local fire alarm point for fire-fighters known? (place, route, operation)			
35	Is it ensured that in the area in question, automatic fire alarm systems have been shut off provided false alarms must be expected in the work area?			
36	Is at least one fire extinguisher or, even better, one rolled-out pressurised water hose with a jet pipe (e.g. from a hose reel) available directly at the workplace?			
37	Is there any further suitable fire-fighting equipment in the supervision area of the fire guard which can be operated by these persons?			
38	Are the persons involved locally familiar with the operation of the fire extinguishing equipment?			

2.2 Additional measures when working in tight space conditions, in explosion-hazardous areas and when working on pipes and vessels

No.	Requirement	Yes	No	Remarks
39	Has a risk analysis been carried out prior to starting the work?			
40	Are the rooms subject to sufficient ventilation during the work?			
41	Are preliminary concentration measurements necessary (O ₂ /explosion tests)?			
42	Are further concentration measurements necessary also while executing the works?			
43	Is it secured that when an explosion warning device responds, the hot works are stopped immediately?			
44	Have combustible jackets, coatings as well as pipe, apparatus and wall insulations etc. been removed on a large surface?			
45	Have the contents of vessels and pipes been checked?			
46	Have vessels and pipes been drained/degassed, cleaned and secured with water or inert gas?			

3. Measures following the work

No.	Requirement	Yes	No	Remarks
47	Have the works been completely terminated?			
48	Has the workplace been properly cleaned?			
49	Have all equipment items been removed from the working area?			
50	Is it ensured that the fire guard remains at the location for at least 30 minutes after the work is complete?			
51	Is it ensured that the workplace is checked at least once every 30 minutes during four hours after the work is complete?			
52	Have all fire protection systems been completely put back into operation?			
53	Has the workplace been accepted by the company management or its responsible representatives after the work was complete?			

4. Unit safety and accident prevention

No.	Requirierend	Yes	No	Remarks
54	Is the equipment item safe to operate for hot works?			
55	Are all parts of a gas torch which get in touch with oxygen absolutely free of oil and grease?			
56	Are the gas bottles sufficiently secured against falling over?			
57	Are the equipment items removed directly after the end of the work?			
58	Has a visual inspection of gas-carrying hoses and lines been carried out as a minimum requirement?			

5. Additional organisational and fire protection-related measures for hot works on roofs

No.	Requirierend	Yes	No	Remarks
59	Has the roof structure been thoroughly explored before starting the hot works (is there any combustible roof insulation or are there any other combustible building materials)?			
60	Have all workmen been informed about the fire hazards?			
61	Are all gas bottles in an upright position and secured against falling over?			
62	Has it been agreed that empty containers are removed from the roof without delay?			
63	Are gas hoses with a leakage gas or a hose break safeguard used exclusively?			
64	Has a pressure reducer been installed between the gas vessel and the consuming device?			
65	Is only the gas quantity absolutely required (half the daily consumption max.) stored on the roof?			
66	Are tar boilers set up on a non-combustible bottom plate in a collecting tray?			
67	Are functional tar boilers used exclusively?			
68	Are filling and temperature limits of the boilers reliably respected?			
69	Is it ensured that the boilers are observed during work breaks?			
70	Are suitable fire-fighting agents available (<u>no water</u> in the tar boiler area; use only powder and foam fire extinguishers!) and has a pressurised hose with a jet pipe been laid out to protect the roof area (e.g. from a hose reel)?			

Hot Work Permit



No.:

Contractor (company or department):.....
 Location (company, building, storey, room):.....
 Blowtorch Cutting / Welding Grinding Brazing Shrinking/Hot-bonding Roof work
 Work order:..... to be carried out by:.....
 Beginning of work:..... Planned end:..... Actual end:.....
 Maximum validity: 1 shift

Emergency number:

Nearest phone/push-button alarm:

Measures to be taken prior to beginning with the work

Topic	Action	Requ.	Compl.
Work area	Define the hazardous area, cordon off the area (radius at least 10 m, secure steel grating floors below)	<input type="checkbox"/>	<input type="checkbox"/>
	Safety instructions by the supervisor	<input type="checkbox"/>	<input type="checkbox"/>
	Remove any inflammable substances (gases, liquids, solids) or cover with non-combustible panels, mats	<input type="checkbox"/>	<input type="checkbox"/>
	Wash/clean pipes/containers/appliances	<input type="checkbox"/>	<input type="checkbox"/>
	Cover/close openings, cracks, joints	<input type="checkbox"/>	<input type="checkbox"/>
	Inspect safety of work equipment	<input type="checkbox"/>	<input type="checkbox"/>
Provision of extinguishing agents	<input type="checkbox"/> CO ₂ - <input type="checkbox"/> Dry powder <input type="checkbox"/> Foam <input type="checkbox"/> Water extinguisher <input type="checkbox"/> Wall hydrant, pressurised hose in work area	<input type="checkbox"/>	<input type="checkbox"/>
Plant technology	If fire alarm systems are shut down, inform / coordinate with fire brigade	<input type="checkbox"/>	<input type="checkbox"/>
Fire watch	Instructions for fire watch	<input type="checkbox"/>	<input type="checkbox"/>
Other		<input type="checkbox"/>	<input type="checkbox"/>

Measures to be taken during the work

Topic	Action	Requ.	Compl.
Fire watch	Continuous inspection of the hazardous area (also during work breaks)	<input type="checkbox"/>	<input type="checkbox"/>
Interruption	Person who carries out the work must secure the work equipment (close valves on gas cylinders, isolate electrical equipment)	<input type="checkbox"/>	<input type="checkbox"/>

Measures to be taken after completion of the work

Topic	Action	Requ.	Compl.
Work area	Remove entire work equipment from the area	<input type="checkbox"/>	<input type="checkbox"/>
	Remove all covers with due care and attention	<input type="checkbox"/>	<input type="checkbox"/>
Fire alarm system	Reconnect automatic fire alarm system	<input type="checkbox"/>	<input type="checkbox"/>
	Inform fire brigade	<input type="checkbox"/>	<input type="checkbox"/>
Fire watch	Inspection for up to 30 minutes after completion of the work (fire extinguishers at the workplace)	<input type="checkbox"/>	<input type="checkbox"/>
	Checks every ½ hour for up to 4 hours (fire extinguishers at the workplace)	<input type="checkbox"/>	<input type="checkbox"/>
	Mobile fire alarm system, if required	<input type="checkbox"/>	<input type="checkbox"/>
Completion (after end of fire watch)	Remove barricade	<input type="checkbox"/>	<input type="checkbox"/>
	Remove fire extinguishers and take them back to their correct location	<input type="checkbox"/>	<input type="checkbox"/>
	Record any incidents, if applicable	<input type="checkbox"/>	<input type="checkbox"/>

Release of the work

Parties involved	Action	Name (in print)	Date/time	Signature
Supervisor	Above listed measures are appropriate to cover any hazards that might occur			
Executing contractor	The work may only be started once all required fire protection measures have been implemented and the fire watch is present.			
	Knowledge of the listed measures			
Fire watch	Has taken note of the listed measures			

Transfer of the workplace following completion of the work:

Parties involved	Aktion	Name (in print)	Date/time	Signature
Executing contractor	Execution of the listed measures			
Fire watch	Execution of the listed measures			
Supervisor	Execution of the listed measures and reconnection of fire alarm system			

Preventing losses equates to securing livelihood – this should be the maxim of any in-house safety management. In case of loss, an insurance policy covers material losses and lost profits, but it cannot provide protection against lasting loss of image, customers and position in the marketplace. From this aspect, effective loss prevention is considered essential in industrial activities. We would like to assist you in this respect!

HDI-Gerling Sicherheitstechnik GmbH offers you consulting in detecting and managing your specific risks and you can rely on more than 100 years of experience with claims handling and loss prevention. More than 100 engineers and natural scientists from diverse disciplines are at your disposal. Creating transparency regarding your in-house risks assists you in managing these and assists in preparing the specific insurance programme which is most appropriate for the risks involved.

HDI-Gerling Sicherheitstechnik GmbH is active worldwide in the safety engineering fields of transportation, motor vehicles and property insurance (fire / fire and business interruption / engineering lines). At present, the work is focused on identifying and assessing risks and on developing suitable individual protection programmes. We will gladly assist you in the implementation of suitable protection measures and in training your staff in related safety matters.

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