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| SAFETY REGULATION VV 10 |  |
| Fire hazard work | |

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Fire hazard work



1 PURPOSE

This Safety Regulation describes the requirements that are set when fire-hazardous works are carried out.

2 SCOPE

The requirements of this safety regulation apply to the premises of Nyrstar Belgium.

3 DEFINITIONS

'Fire hazard work' is work in which fire, high temperatures or sparking can occur such as welding (autogenous and electric), grinding, cutting (incl. plasma cutting), paint burning or roofing using heat sources. Repairs to plastics such as HDPE (High Density Polyethylene) and the vulcanization of rubber (transport tires) are also considered to be a fire hazard. During this work there are risks of fire or explosions. Measures are used to control this risk.

4 PRESCRIPTION

4.1 Requirements – working method

The process for controlling fire-hazardous activities takes place in a number of steps.

In the first instance, it is up to the work planner to indicate that the work gives a risk of fire.

It is then to assess in consultation with the provider of the work permit to assess in which zone or category the work is being carried out. Depending on the category (see 4.1.1 to 4.1.3), measures should be adopted.

The person responsible for implementing the measures depends on the nature of the measure. It may be the executor or the work permit provider. The executor is responsible for ensuring that the measures are maintained during the execution of the work.

4.1.1 Low risk zone: block 1 work permit – Zone 1

Zones that are recognized as zones where hot work can be carried out with low risks.

The low-risk category applies if:

1. there are no flammable materials within the range of sparks (no wood, waste, oil residues, metal grinding). Of course, if materials are present but can be assured that they are removed before the start of the work, there is a low risk;
2. there are no installations within the range of sparks which are plastic or internally rubberized.

If these conditions are met, it is sufficient if a fire extinguisher is continuously within reach during the work.

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Block 2A must be filled in on the work permit with attention to

- environment must be free of flammable materials;
- the executor ensures that the extinguisher is always available.

4.1.2 Middle risk zone – Zone 2

This category applies to the following areas:

1. for all work on or in which **plastic equipment or internally rubberized vessels** are located within the range of the sparks. This includes repairs to HDPE pipes and vulcanizing rubber;
2. the area near and under (basement) the stripping machines, mixing pots zamak in connection with the presence of oil residues, metal grinding.
3. for all other activities in which flammable materials are present within the range of the sparks (**electrical cables**, wood, waste, oil residues, metal grinding).
4. For roofing with flammable materials, bituminous roofing applies: 2x ABC 9kg powder extinguisher; 2 fire blankets; bitumen boiler with thermostat and boiler is in collector with insulation between the container and the roof; no more than a day's supply of gas cylinders on the roof.

In addition, the requirement is that within the range of sparks there are no people who are engaged in other activities and that there are sufficient escape options.

The following measures shall apply:

- see 4.1.1
- shielding/capturing sparks by means of suitable material (e.g. fire blankets). Also think of the good shielding of gaps, passages, wall openings;
- wetting and keeping wet combustible materials (this does not apply to zinc dust and high-, low-voltage spaces);
- At the end of the work, check that no traces of incipient fire are visible (approx. 1/2 to 1 hour after termination or interruption of the work. The result of this check must be completed on the work permit under block 4
- The contractor must continuously have a fire blanket within reach.

For the above measure, they must be implemented, unless there are compelling arguments not to do so.

Block 2B of the work permit must be completed

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4.1.3 High risk zone – Zone 3

This category applies in the following situations:

1. One of the points 1 to 4 referred to in 4.1.2 is complied with and, in addition, within the range of the sparks there are people engaged in other activities and/or the possibilities of escape are limited;
2. these are special, occasional activities on equipment used for the storage or transport of flammable substances, such as propane storage, solfer funnel roasting and ore square; work in the vicinity of the Hamon cooling tower, acid storage or acid pipelines
3. It concerns spark-spreading activities in ex-zones: see VV16
4. for all activities where **concentrate** is present: ore shed, conveyor belt to ovens, concentrate dosing;
5. for all activities where **zinc dust** is present.

In these situations, advice must be sought from the Fire Chief of the Company Fire Brigade prior to the work or the working method is clearly described in work instruction. Depending on the exact circumstances, measures may include:

- The preparation of water hoses
 - Setting fire watches (according to requirements in next chapter)
 - Setting the company fire brigade on standby
 - Following the work instruction [XW-501-W1-4-0004](#) in case of work on acid tanks or on acid pipes.
 - 3 hours after the end of the works, another check will be carried out.
- In addition, the measures mentioned in 4.1.1 and 4.1.2 apply.

Block 2C of the work permit must be completed.

4.1.3.1 Confined spaces

Requirements regarding fire-hazardous work in confined spaces are laid down in VV08 ('Working in confined space'). On the TRA that is added as an annex to the confined space map, the measures for controlling the fire hazard in the confined space must be recorded.

In the event of fire-hazardous work in confined spaces that consist entirely or largely of plastic, advice should be sought from the Fire Chief of the Company Fire Brigade.

4.2 Tasks and requirements fire watch

The Fire Watch is charged with monitoring the safe working conditions in the event of fire-hazardous work. To this end, this fire watch has a controlling and preventive task. During the performance of the above task, the Fire Watch may not be charged with any other work, unless his task as Fire Watch is not compromised. The Permit Provider ensures that the Fire Watch is instructed. The Fire Watch reports to the Permit Provider.

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The Fire Watch has the following **tasks**:

- ensures that work is limited to the object/area for which a permit has been granted;
- supervises the working environment and the safeness of working conditions;
- ensure that stairs and escape routes remain freely accessible within the workplace;
- acts if changing conditions arise at the workplace or immediate surroundings and, if necessary, have the work stopped;
- take the necessary actions at the start of fire or in alarm situations;
- tries to extinguish the occurrence of a fire and/or warns the fire brigade via emergency number 9400 for Balen or Pelt;
- reports details to the permit provider.
- reports to the permit provider;
- continues to carry out checks until 30 minutes after the end of the works.

4.2.1 Requirements for the fire watch

The Fire Watch must be familiar with:

- the rules on fire-hazardous work;
- the properties of the hazardous substances at the workplace and in the immediate vicinity;
- alarm signals and associated actions;
- method of calling for assistance
- use of fire extinguishing equipment indicated on the workpermit;
- the geographical environment (such as escape routes, fire alarm buttons).
- The fire watch must be trained in the use of small extinguishing agents and second intervention means.
- Knowledge of risk analysis and management measures of specific tasks