


<b>SAFETY REGULATION VV 25</b>  <b>Requirements for hand tools</b>	  Balen/Pelt
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last change: lessons learned as a result of the incident	In blue
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**SAFETY REQUIREMENT V.V25.**

**Requirements for (electric) hand tools**



Balen/Pelt

## **1 PURPOSE**

This Safety Regulation contains a number of requirements that apply to hand tools, including hand power tools including cable reels, extension and adapter cords.

## **2 SCOPE**

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

## **3 DEFINITIONS**

**Protection transformer:** For protection transformers, the insulation between primary and secondary windings must provide a degree of protection against electric shock equivalent to that of double insulation. A new (floating) mains system is thus obtained on the secondary current path.

**No-load voltage:** This is the voltage present between the electrode and ground when no welding current is flowing. The maximum no-load voltage for cutting and welding equipment using an electric arc is defined by law in Book1 Chapter 4.2.2.5.g. of the AREI.

## **4 REGULATION**

The following general requirements apply to all hand tools.

### **4.1 Requirements for purchase**

All tools must comply with the applicable standards and guidelines. E.g. Machine Directive, CE marking

### **4.2 Requirements for the user**

- Every time before working with hand tools, the condition must be checked by the user. Tools that are no longer suitable for their original purpose due to damage (rotting, mould) or otherwise (e.g. loose parts, defects, damaged cord) may no longer be used and must be destroyed or offered for repair;
- Tools that are not used should be stored in an orderly manner in a location where weather influences or corrosive atmospheres have as little influence as possible on the quality.
- The instructions in the manual of the tools should be followed

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### 4.3 Inspection and maintenance requirements

- All hand tools should be maintained with the regularity necessary to ensure good condition at all times;
- Electric hand tools must be inspected annually by a qualified person. A register of the inspection must be kept. Rejected material must be destroyed or repaired.

## 5 SPECIFIC REQUIREMENTS

### 5.1 Cable reel:

Minimum requirements for cable reels:

- Degree of protection is IP44. (splash-proof ≠ waterproof) 
- Diameter electrical lines is minimum 1.5mm<sup>2</sup> - 25meter / 2.5mm<sup>2</sup> - 40 meter
- Cable reel is equipped with thermal protection.
- Comply with CE approval or CEBEC
- Annual inspection, offering during the annual inspection of the small electric hand tools.

What to look out for:

- Plug, cable and socket in a good condition.
- Input cable in socket and plug is proper, no tape.
- Looping extension cords / cable reels is not permitted.
- Extension cords should not lie on the ground because of tripping hazard and risk of leaks, use S hooks to hang the cables as much as possible.
- Always roll off an extension cable if you insert larger capacities into the reel (max. 850Watt rolled up - 3200W rolled off)
- If the reel is not long enough, a cable calculation will have to be carried out, how thick the section of the extension cable to be made should be, or what the maximum load-bearing capacity will be.
- For cables that are in passages and certainly where you drive vehicles, one should use a protection.

### 5.2 Electric grinding machines

All grinders should be equipped with deadman's handle and [protective cap](#). [The handle may only be removed in exceptional cases based on a TRA.](#)

Large grinding wheels from Ø 125 mm must be equipped with:

- Coaster brake
- Slow run-up

#### Grinding wheel type:

The disc to be used should be chosen according to:

- [the type of operation \(cutting, deburring,.](#)

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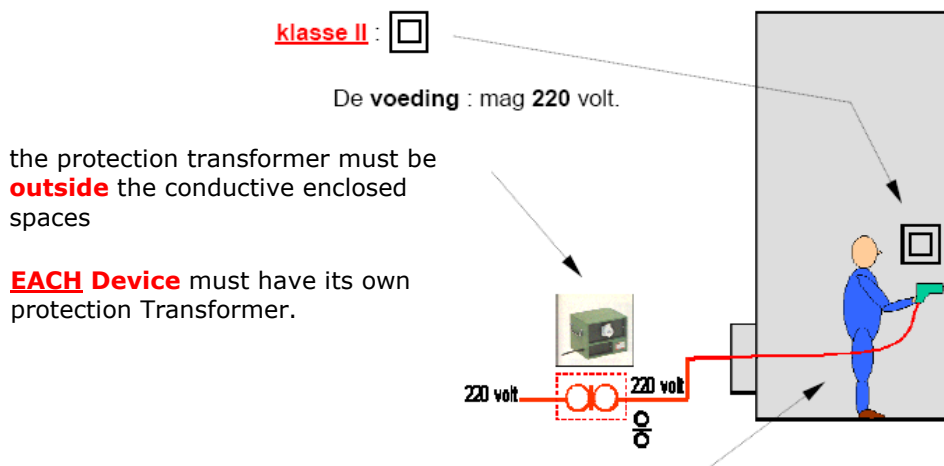
- The type of material. (metal, PVC, stone, ..)
  - Diameter and speed (adapted to machine)
- Check the expiration date of the disc

**5.3 Power tools in narrow conductive space**

- The narrow conductive spaces are characterized by the following external influences:
- BC4: constant contact with conductive parts
- AD1-8: presence of water (depending on the situation)
- BB1-BB3: State of the human body

Here one may:

- **Electrically powered hand tools** double insulated, class II



**The electrical lines:**

- Must have **additional insulation**
- Be classified by decree, having a safety equivalent to that of class **II** appliances
- Must **not have any metal outer casing** .

**Maximum 1 device per protection transformer!**

In order to prevent pinching and/or damage, the power cable between the protective transformer and the electric hand tool must be additionally shielded when accessing the confined space.

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**Fixed lighting 220V**

- Lighting device is mechanically protected, placed out of reach and fixed or fixed to wall or structure.
- Power supply to the luminaire may only be supplied via a protective transformer (\*)
- The pipes should preferably be of type H07RN-F or at least class II. The cable passage to the confined space must provide additional insulation.

(\*) The protection transformer can be recognized by the symbol below or by the building standard EN 61558-2-4.



- **Portable lighting devices** (and fixed ones that are not protected from mechanical influences)

The **power supply**: **very low safety voltage**

with maximum value  $U=$

**25** or 12 volts **AC**

**36** or 18 Volts DC with ripple

**60** or 30 volts DC without ripple

BB1 = completely dry skin or moist due to perspiration

BB2 = Wet skin

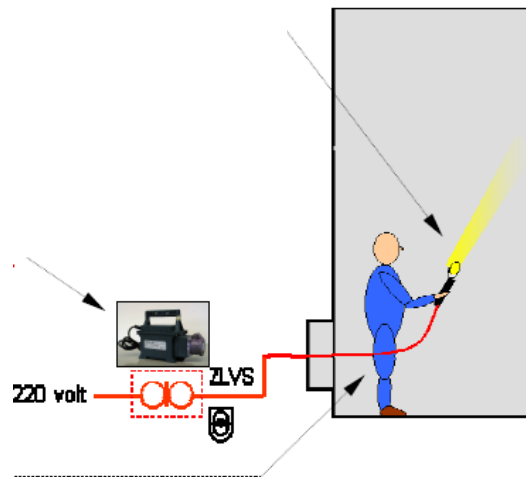
BB3 = Skin submerged in water

The **Safety Transformer** must be placed **outside** the conductive enclosed spaces

The **electrical lines**:

- Must have **additional insulation**
- Be classified by decree, having a safety equivalent to that of class **II** appliances
- Must **not have any metal outer casing** .

To prevent pinching and/or damage, the power cable between the safety transformer and the portable lighting must be additionally shielded when accessing the confined space.



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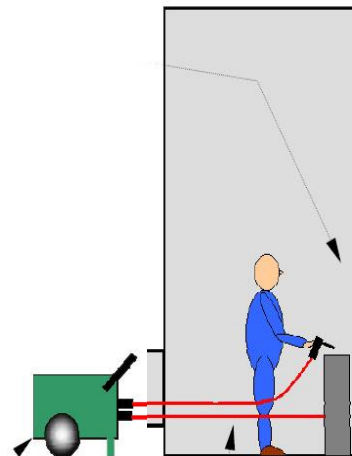
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- **Electric arc welding** (manual or semi-automatic welding machines)

When welding in a high risk environment, one must use a device equipped with a device for reducing the no-load voltage. These devices are identified by the symbol **S** on the rating plate. They comply with the EN 60974-1 standard.

The **welding machine** must be **outside** the conductive enclosed spaces are placed, unless fed by a protective transformer positioned outside.

To prevent pinching and/or damage, the power cable must be between protection transformer and the welding transformer, at the entrance to the confined space, extra shielded.



**Maximum 1 device per protection transformer!**

The **electrically flexible lines** must be at least of the **CTSB-N** type .

The **electrode holders** include **insulated handles**.

The necessary measures must be taken to reduce the risk to persons of direct contact inherent in the presence of live electrodes and when changing them: these measures shall consist of:

- either compliance with appropriate instructions, or
- or use of insulating mats, insulating safety gloves,
- or use devices that allow the welding current to be taken out of voltage.

**Maximum 1 device per protection transformer!**

## 5.4 Tools in ex zones (explosion zoning)

For work carried out in an ex zone, the regulations in the safety regulation **VV 16 Work and stay Ex-zones** must be respected.