

Where a particular subclause is not mentioned in this Part 2-6, that subclause applies as far as reasonable.

Where this Part 2-6 states “addition” “modification” or “replacement”, the relevant text of Part 1 is to be adapted accordingly.

Subclauses, tables and figures which are additional to those in Part 1 are numbered starting from 101.

Subclauses, table and figures which are additional to those in IEC 61029-2-6 are prefixed “Z”.

NOTE In this European Standard, the following print types are used:

- *Requirements proper;*
- *Test specifications;*
- Explanation matter.

## 7 Marking

This clause of Part 1 is applicable except as follows:

### 7.1 Addition:

Diamond drills with water supply shall be marked with:

- Rated no-load speed in revolutions per minute
- Maximum diameter, in millimetres, of the bit for drilling
- Read instruction manual or relevant symbol

### 7.13 Addition:

The instruction handbook shall contain at least a repeat of the warnings affixed to the tool. Furthermore, it shall contain warnings against the following hazards and/or hazardous situations and related instructions for safe use:

#### c) Safety precautions

- Hazardous situation due to broken parts. Instruction shall be given to check core bits before using. Deformed or damaged drill core bits shall not be used;
- Use of non-recommended cutting tools, which can lead to injuries due to the loss of control. Instruction shall be given to use drill core bits designed for this machine only and concerning the minimum and maximum diameter and length of those core bits.
- Incorrect clamping and positioning of the drill core bit may lead to dangerous situations by broken and ejected parts of the drill core bit. Instruction shall be given how the drill core bits shall be assembled and adjusted and which fastening torque (if applicable) is recommended;
- The necessity to always wear suitable personal protective equipment (PPE). Instruction shall describe PPE means such as;
  - Hearing protection, to reduce the risk of induced hearing loss,
  - Gloves, when handling core bits or rough materials, to reduce injuries by sharp edges,
  - Safety glasses, to prevent injuries by flying particles,
  - Non-slipping footwear, to prevent injuries caused by slippery surfaces;
- Hazardous situation due to dust production when drilling without water supply. Instruction shall be given to use a dust extraction device, if any, and/or a dust mask.

#### e) Safe operation

- A wrongly assembled machine may cause a hazardous situation. Instruction shall be given how to fix the machine into the stand and fixing to the material to be drilled;
- Fixing with vacuum devices can lead to dangerous situations.
  - Instruction to check the surface where the drill stand shall be fixed. Surface such as irregular (rough) can significantly reduce the effectiveness of the suction system. Coated or laminated surface can be pulled off during work;
  - Instruction to additionally secure the drill stand in case of drilling horizontally or vertically up by using appropriate accessories or means. A description of the characteristics of these means and how to fit them to the drill system shall be given;
  - Information regarding the minimum vacuum level necessary for safe operation and how to control it during the drilling operation;
  - Information regarding the maximum core bit diameter suitable for use with vacuum fixing.

Za) 3, 4 and 5 *Replacement:*

Under consideration.

## **8 Protection against electric shock**

This clause of Part 1 is applicable.

## **9 Starting**

This clause of Part 1 is applicable.

## **10 Input and current**

This clause of Part 1 is applicable.

## **11 Heating**

This clause of Part 1 is applicable.

## **12 Leakage current**

This clause of Part 1 is applicable.

## **13 Environmental requirements**

This clause of Part 1 is applicable except as follows:

**13.1** This subclause is not applicable.

**13.2.1** *Addition:*

The most important sources of noise from diamond drills are:

- the drill core bit;
- the gear;
- the motor and fan.

NOTE For general information concerning the reduction of noise see EN ISO 11688-1.

**13.2.4** Replacement

Drills with water supply are tested under load in accordance with Table Z101.

**Table Z101 - Noise test conditions**

Orientation	Drilling vertically down into a concrete block having the formulation specified in Table Z102 and having the minimum dimensions 500 mm x 500 mm and 200 mm in height and supported on resilient material.  The concrete block, its support and the tool shall be so oriented that the geometric centre of the tool is approximately 1 m above the reflecting plane. The centre of the concrete block shall be located under the top microphone.  The tool shall be fixed to the concrete block as described in accordance with 7.13.
Tool bit	Medium drill bit of diameter range and medium length of the range as described in accordance with 7.13 for drilling into concrete with a usable length of at least 100 mm.
Feed force	Using the respective feed force leading to the rated normal load of the tool.
Test cycle	Measurement starts when the drill bit has reached a depth of approximately 10 mm and stops when the depth has reached approximately 80 mm.

**Table Z102 - Concrete formulation (per cubic metre)**

Cement	Water	Aggregate**	
330 kg	183 l*	1844 kg	
		Particle size	Fraction (%)
		0 to 2 mm	38 ± 3
		0 to 8 mm	50 ± 5
		0 to 16 mm	80 ± 5
		0 to 32 mm	100
Compressive strength after 28 days to be 40 N/mm <sup>2</sup> .			
* The water/cement mass ratio shall be 0,55 ± 0,02 (the mass tolerance of cement and water is + 10% to enable the concrete manufacturer to ensure compressive strength with local cement).			
** Very hard aggregates such as flint or granite and very soft aggregates such as limestone shall not be used.			

**13.3** This subclause is under consideration

## **14 Protection against ingress of foreign bodies and moisture resistance**

This clause of Part 1 is applicable.

## **15 Insulation resistance and electric strength**

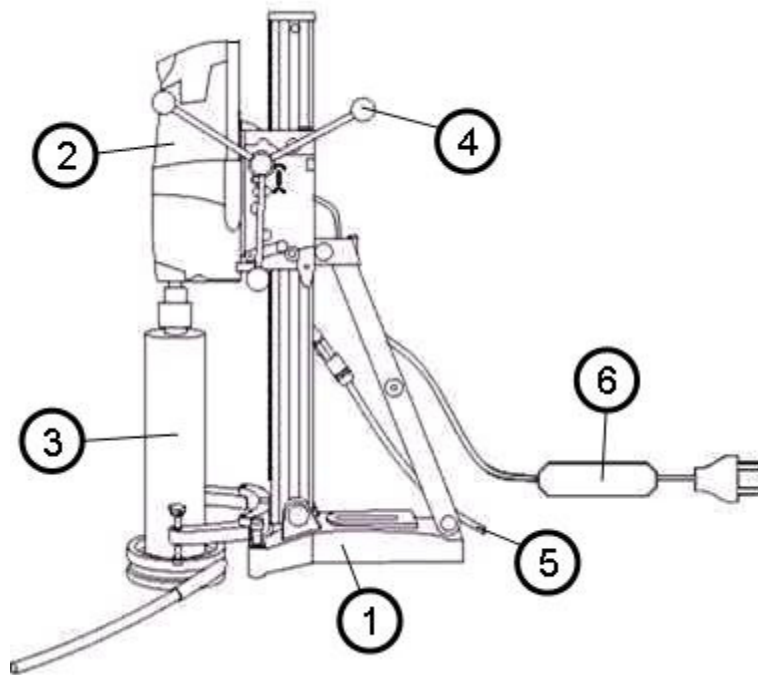
This clause of Part 1 is applicable.

## **16 Endurance**

This clause of Part 1 is applicable except as follows:

### **16.2** *Replacement of the first two paragraphs*

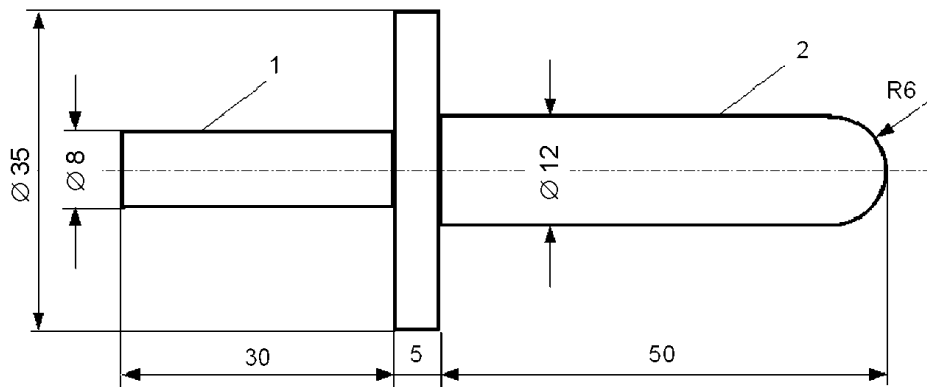
*Diamond drills are operated continuously under no-load condition for 18 hours at a voltage equal to 1,1 times rated voltage and then for 18 hours at a voltage equal to 0,9 times rated voltage. The speed is adjusted to the highest value of the highest range.*



**Key**

- 1. Drill stand
- 2. Drill unit
- 3. Diamond core bit
- 4. Headstock spindle to move the drill unit up and down
- 5. Water supply
- 6. PRCD (Portable residual current device) box, (for example)

**Figure Z101 - Example of a diamond drill with water supply**

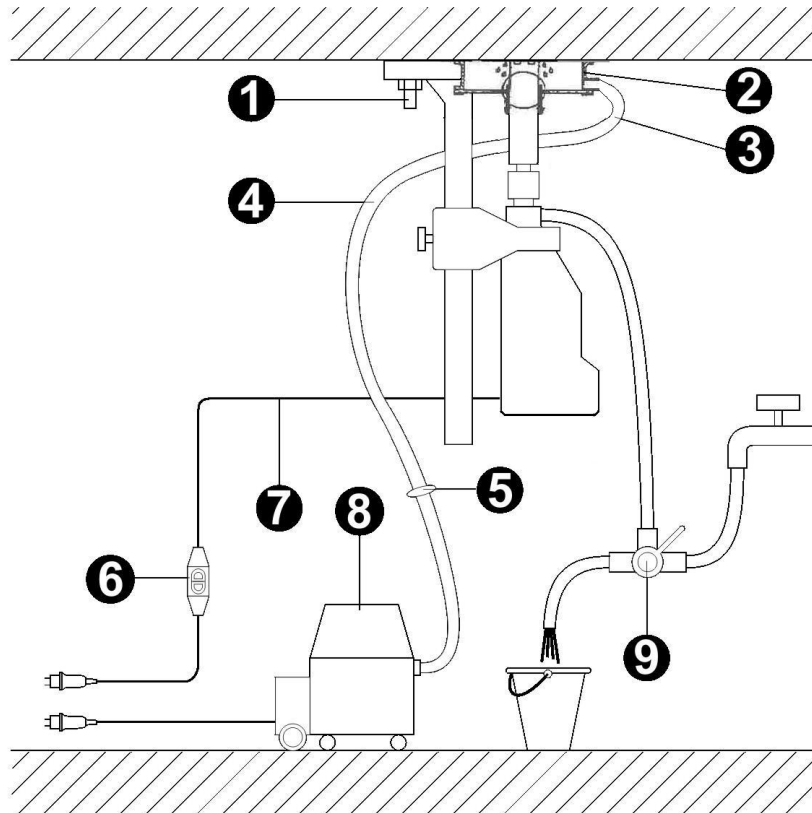


**Key**

- 1 Handle section
- 2 Test section

*Dimensions in mm*

**Figure Z102 - Test probe**



**Key**

- 1 Drill stand fixed with bolt
- 2 Water collection device
- 3 Connection to Water Aspirator
- 4 Water outlet hose
- 5 Adapter for wet vacuum cleaner
- 6 PRCD ( Portable Residual Current Device), (for example)
- 7 Power supply cord
- 8 Vacuum cleaner for wet operations
- 9 Water supply with three way outlet valve

**Figure Z103 - Test arrangement to check efficiency of the water collection device**

## **Annex ZZ** (informative)

### **Coverage of Essential Requirements of Directive 2006/42/EC**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant Essential Requirements as given in EC Directive 2006/42/EC (Machinery Directive), except the following:

- Essential Requirement 2.2.11

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

**WARNING:** Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.