

Clause / prescribed	Observed
<p>6 Void</p>	
<p><i>Replace by:</i></p>	
<p>6 Environmental requirements</p>	
<p>This clause of Part 1 is applicable except as follows:</p>	P
<p>6.1.2.4 Modification:</p>	
<p>Drills without an impact mechanism are suspended.</p>	P
<p>Impact drills are held by the operator for drilling vertically down in accordance with 6.1.2.5.</p>	N/A
<p>6.1.2.5 Modification:</p>	
<p>Drills without impact mechanism are tested at no-load, all speed setting devices adjusted to the highest value.</p>	P
<p>For impact drills the speed setting shall be that recommended by the manufacturer for an 8 mm bit for drilling into concrete.</p>	N/A
<p>Impact drills are tested under load as shown in Figure Z101 and in accordance with the conditions shown in Tables Z101 and Z102.</p>	N/A

Clause / prescribed

Observed

Table Z101 — Concrete formulation for impact drills (per cubic metre)

Cement	Water	Aggregate ^b	
		Particle size	Fraction %
450 kg ^a	220 l ^a	1 450 kg	
		0 to 0,25 mm	12 ± 3
		0 to 0,50 mm	50 ± 5
		0 to 1,00 mm	80 ± 5
		0 to 4,00 mm	100

Compressive strength after 28 days to be 40 N/mm².

^a The water/cement mass ratio shall be 0,49 ± 0,02 (the mass tolerance of cement and water is + 10 % to enable the concrete manufacturer to ensure compressive strength with local cement).

^b Very hard aggregates such as flint or granite and very soft aggregates such as limestone shall not be used.

N/A

Table Z102 — Noise test conditions for impact drills

Orientation	Drilling vertically down into a concrete block having the formulation specified in Table Z101 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 1 m above the reflecting plane. The centre of the concrete block shall be located under the top microphone.
Tool bit	New 8 mm drill bit for drilling in concrete with a usable length of approximately 100 mm
Feed force	150 N ± 30 N in addition to the weight of the drill
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

N/A

6.2.4.2 Location of measurement

Addition:

Figures Z102 and Z103 show the position for different types of tools.

P

6.2.6.3 Operating conditions

Addition:

Drills with an impact mechanism that can be switched off to have a rotary function only are tested as described under 6.2.6.3.101 and 6.2.6.3.102.

N/A

Diamond core drills are tested as described under 6.2.6.3.103.

P

6.2.6.3.101 Drills

Drills without impact action shall be equipped with a new 6 mm bit to drill through 8 mm thick mild steel. Drills shall be set at the correct speed for the drill bit and material as selected above.

N/A

Measurements are conducted drilling into mild steel downwards with a feed force of 200 N ± 30 N in addition to the weight of the machine. The workpiece shall be clamped or adequately fixed on a wooden board.

N/A

Clause / prescribed

Observed

The measurement starts, when the drill bit has contact to the steel plate and stops when the hole is completed.

N/A

NOTE This test is also representative for drilling into other materials without impact.

6.2.6.3.102 Impact drills

For impact drills the speed setting shall be that recommended by the manufacturer for an 8 mm bit for drilling into concrete.

N/A

Impact drills are tested under load as shown in Figure Z101 drilling into a concrete block in accordance with Table Z101 and with the conditions shown in Table Z103.

N/A

Table Z103 — Vibration test conditions for impact drills

Orientation	Drilling vertically down into a concrete block having the minimum dimensions 500 mm x 500 mm and 200 mm in height and supported on resilient material
Tool bit	New 8 mm drill bit for drilling in concrete with a usable length of approximately 100 mm
Feed force	150 N ± 30 N in addition to the weight of the drill
Test cycle	Measurement starts when the drill bit has contact to the concrete block and stops at a drilling depth of 80 mm before the drill bit is removed from the hole

N/A

6.2.6.3.103 Diamond core drills

Diamond core drills provided with an impact function shall also be tested as an impact drill.

N/A

Diamond core drills are tested under load as described in Table Z104.

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The machine settings (speed, water supply, impact, etc.) shall be correctly adjusted for drilling into the material specified for the test and for the type and diameter of the drill bit specified in Table Z104.

P

If the tool is suitable to drill into concrete with water supply, the water collection device, if any, shall be in place during the operation of the tool.

P

Clause / prescribed

Observed

Table Z104 — Vibration test conditions for diamond core drills

Orientation	<p>If the tool is suitable to drill into concrete with water supply: Drilling vertically down into a concrete block having the formulation specified in Table Z105 and having the dimensions 500 mm x 500 mm and 200 mm in height, supported on resilient material.</p> <p>If the tool is designed to drill without water only: The test is conducted drilling horizontally into a sand-lime-stone or brick wall with a minimum thickness of 200 mm. The dust is to be collected.</p>
Tool bit	New or sharpened diamond core bit which is in the middle of the rated capacity range.
Feed force	<p>The feed force applied to the tool shall be determined as follows: Drill with the tool increasing the feed force until either the speed is significantly reduced by the load or a torque limiting device operates. Reduce the feed force slightly until a feed force is reached enabling stable operation. Use this feed force for the test or 250 N, whichever is less.</p>
Test cycle	<p>The measurement starts when the drill bit has contact with the concrete block or brick wall and stops after</p> <p>2 min or,</p> <p>when the hole is completed, or</p> <p>when the maximum drilling depth of the core bit is reached.</p>

P

Table Z105 — Concrete formulation for diamond core drills (per cubic metre)

Cement	Water	Aggregate ^b	
		Particle size	Fraction %
330 kg ^a	183 l ^a	1 844 kg	
		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 ² .			
^a 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).			
^b Very hard aggregates such as flint or granite and very soft aggregates such as limestone shall not be used.			

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6.2.7.1 Reported vibration value

Addition:

If more than one operating mode was measured, the result a_h for each operating mode applicable shall be reported.

P

$a_{h,ID}$ = mean vibration "impact drilling" in accordance with 6.2.6.3.102

N/A

$a_{h,D}$ = mean vibration "drilling" in accordance with 6.2.6.3.101 (representative for steel and other materials)

N/A

$a_{h,DD}$ = mean vibration "diamond drilling" in accordance with 6.2.6.3.103

P

Clause / prescribed	Observed
<p>6.2.7.2 Declaration of the vibration total value</p> <p><i>Addition:</i></p> <p>The vibration total value of the handle with the highest emission and the uncertainty <i>K</i> shall be declared:</p> <ul style="list-style-type: none"> – for drills without impact mechanism the value of $a_{h,D}$, with the work mode description “drilling into metal”; – for impact drills with drill only function the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete” and the value of $a_{h,D}$, with the work mode description “drilling into metal”; – for impact drills without drill only function the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete”; – for diamond core drills without impact mechanism the value of $a_{h,DD}$, with the work mode description “drilling into concrete”; – for diamond core drills with impact mechanism the value of $a_{h,ID}$, with the work mode description “impact drilling into concrete” and the value of $a_{h,DD}$, with the work mode description “drilling into concrete”. 	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>P</p> <p>N/A</p>
<p>21 Construction</p> <p><i>Add:</i></p> <p>21.Z1 This subclause of Part 1 is not applicable.</p>	<p>N/A</p>
<p style="text-align: center;">Annex ZZ (informative)</p> <p style="text-align: center;">Coverage of Essential Requirements of Directive 2006/42/EC</p> <p>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).</p> <p>Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.</p> <p>WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.</p>	<p>P</p>