

STANDARD INFORMATION

Standard: UL 62841-2-1 / CSA C22.2 No. 62841-2-1

Standard ID:

Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 2-1: Particular Requirements for Hand-Held Drills and Impact Drills [UL 62841-2-1:2018 Ed.1+R:27Jan2023]

Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 2-1: Particular Requirements for Hand-Held Drills and Impact Drills [CSA C22.2#62841-2-1:2018 Ed.1+A1]

Previous Standard ID:

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EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **June 1, 2025**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

This standard contains Functional Safety requirements.

Overview of Changes:

- Revised requirements for impact drills and diamond core drills
- New requirements for assessment to determine tool configuration

Specific details of new/revise requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<p>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</p>
		<p>Scope</p> <p>This clause of Part 1 is applicable except as follows:</p> <p>Addition:</p> <p>This part of IEC 62841 applies to hand-held drills and impact drills, including diamond core drills. This standard document also applies to drills that can be used for driving screws by attaching screwdriver bits.</p> <p>This standard document does not apply to rotary hammers, <u>screwdrivers, impact wrenches and ratchet drivers</u> even if they can be used as a drill.</p> <p>NOTE 101 Rotary hammers are covered by IEC 62841-2-6. <u>NOTE 102 Screwdrivers, impact wrenches and ratchet drivers are covered by IEC 62841-2-2.</u></p>
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19	Info	<p>Mechanical hazards</p> <p><i>New clause added;</i></p> <p>The no-load speed of the spindle at rated voltage shall not exceed 120 % of the rated no-load speed.</p> <p>Compliance is checked by measuring the speed of the spindle after the tool has been operating for 5 min at no-load. During the test, separable accessories are not mounted.</p>
19.6		
19.102	Info	<p>Handles</p> <p><i>New clause added;</i></p> <p>Assessment to determine tool configuration</p> <p>This assessment is only applicable for tools that employ an electronic circuit(s) that affects the output torque in the test of 19.102.4.</p> <p>Prior to each measurement, the sample is operated for at least 5 min at no-load. After each 5 min operation period, the measurement shall be conducted within 20 min.</p>
19.102.3		



CLAUSE	VERDICT	COMMENT
		<p>All measurements are made with the tool sample running in the forward position.</p> <p>The sample is connected to the measurement fixture and is fixed during the test.</p> <p>For tools with a soft start function, the test of 19.102.4 through steps 1) and 2) is conducted on the sample with the soft start function enabled and then repeated with the soft start function disabled. If analysis shows that the tool will not operate with the soft start function disabled, then the test with the soft start function disabled is not conducted. For tools employing electronically commutated motors, the configuration that results in the greatest output torque shall be used for the test of 19.102.4. For tools other than those employing electronically commutated motors, the configuration that results in the greatest output torque shall be used for the following test.</p> <p>For tools other than those employing electronically commutated motors, when all functions affecting the test value of the output torque, except for any soft start function, are not evaluated as SCFs according to 18.8 (e.g. current limit and stall detection), the tool configuration for the test of 19.102.4 shall be the configuration that results in the greatest output torque for one trial of the test of 19.102.4 through steps 1) and 2) as specified below:</p> <ul style="list-style-type: none">– all functions affecting the output torque enabled; or– each function not evaluated as an SCF affecting the output torque disabled one at a time.
		<p>Test procedure</p> <p><u>If applicable, the sample is configured as specified in 19.102.3.</u></p>
19.102.4		<p><u>Prior to the test, the sample is operated for at least 5 min at no-load. After the 5 min operation period, the test shall be conducted within 20 min.</u></p> <p>All measurements are made with the tool sample running in the forward position.</p>
Annex I		<p>Measurement of noise and vibration emissions</p>
I.2		<p>Noise test code (grade 2)</p>
		<p>Installation and mounting conditions of the power tools during noise tests</p>
I.2.4		<p>Drills, <u>except for impact drills and diamond core drills</u>, are suspended.</p> <p>Impact drills and <u>diamond core drills</u> are held by the operator for drilling vertically down in accordance with I.2.5.</p>



CLAUSE	VERDICT	COMMENT
		Operating conditions
		Drills, <u>except for impact drills and diamond core drills</u> , are tested at no-load without any accessory mounted, all speed setting devices adjusted to the highest value.
I.2.5		NOTE 101 Experimental investigations have shown that the noise emission values of drills, <u>except for impact drills and diamond core drills</u> , at no-load and under load are very similar. For reasons of simplification, the noise emission is therefore measured at no-load.
		For impact drills, the speed setting shall be that recommended by the manufacturer for an 8 mm bit for drilling into concrete.
		Impact drills are tested under load as shown in Figure I.101 and in accordance with the conditions shown in Table I.101 and Table I.102.
		<u>Diamond core drills are tested under load and in accordance with the conditions shown in Table I.103.</u>
		<i>New table added;</i>
Table I.103		Noise test conditions for diamond core drills
		See standard for details.
I.3	Info	Vibration
		General
I.3.5.1		For battery operated tools, <u>except for diamond core drills</u> , the tests are conducted with the lightest battery in accordance with K.8.14.2 e) 2) <u>that has a sufficient capacity to complete fifteen measurements as specified in Table I.104 and Table I.106.</u>
		<u>For diamond core drills, the tests are conducted with the lightest battery in accordance with K.8.14.2 e) 2). Multiple batteries may be used for the test.</u>



CLAUSE	VERDICT	COMMENT
Annex K	Info	<p>Battery tools and battery packs</p> <p><i>New clause added;</i></p> <p>Assessment to determine tool configuration</p> <p>This assessment is only applicable for tools that employ an electronic circuit(s) that affects the output torque in the test of K.19.102.4.</p> <p>Prior to each measurement, the sample is operated for at least 5 min at no-load using any suitable battery. After each 5 min operation period, the measurement shall be conducted within 20 min.</p> <p>The sample is tested together with its intended battery. If more than one battery is specified for use with the tool, the battery with the highest short-circuit current shall be used.</p> <p>At the beginning of the test, the battery shall be fully charged.</p> <p>All measurements are made with the tool sample running in the forward position.</p> <p>The sample is connected to the measurement fixture and is fixed during the test.</p> <p>K.19.102.3</p> <p>For tools with a soft start function, the test of K.19.102.4 through steps 1) and 2) is conducted on the sample with the soft start function enabled and then repeated with the soft start function disabled. If analysis shows that the tool will not operate with the soft start function disabled, then the test with the soft start function disabled is not conducted. For tools employing electronically commutated motors, the configuration that results in the greatest output torque shall be used for the test of K.19.102.4.</p> <p>For tools other than those employing electronically commutated motors, the configuration that results in the greatest output torque shall be used for the following test. For tools other than those employing electronically commutated motors, when all functions affecting the test value of the output torque, except for any soft start function, are not evaluated as SCFs according to K.18.8 (e.g. current limit and stall detection), the tool configuration for the test of K.19.102.4 shall be the configuration that results in the greatest output torque for one trial of the test of K.19.102.4 through steps 1) and 2) as specified below:</p> <ul style="list-style-type: none">– all functions affecting the output torque enabled; or– each function not evaluated as an SCF affecting the output torque disabled one at a time.



CLAUSE	VERDICT	COMMENT
		<u>If applicable, the sample is configured as specified in K.19.102.3.</u>
K.19.102.4		<u>Prior to the test, the sample is operated for at least 5 min at no-load, using any suitable battery. After the 5 min operation period, the test shall be conducted within 20 min.</u> The sample is tested together with its intended battery. If more than one battery is specified for use with the tool, the battery with the highest short-circuit current shall be used.
