

STANDARD INFORMATION

Standard Number: CSA C22.2 No. 33
Standard Name: Electrical Safety Requirements for Cranes and Hoists
Standard Edition and Issue Date: 4th Edition dated May 1, 2019
Date of Revision: May 1, 2019
Date of Previous Revision of Standard: January 1, 2014

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **February 1, 2021**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: A review of all Listing Reports is necessary to determine which products comply with new/revise requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revise requirements.

Overview of Changes:

- New requirement addressing the disconnecting rating for cranes and hoists
- New requirements for spacing
- New requirements on main contact and bridge contact conductor systems
- Additional requirements to battery-operated operator control units (OCU) +
- Addition of factory and mold stress relief tests

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

If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).

Client Action:

Information – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revise paragraphs noted in the attached or explain why these new/revise requirements do not apply to your product (s).

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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.



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CLAUSE	VERDICT	COMMENT
<p><i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i></p>		
1	Info	<p>Scope</p> <p><i>New clause added;</i></p>
1.5		<p>This Standard applies to wireless control equipment used in conjunction with electric cranes and hoists.</p> <p><i>New section added;</i></p> <p>Construction Requirements</p> <p>This section contains construction requirements for cranes and hoists. See standard for details.</p>
5		<p>5.1 - General 5.2 - Incoming service and feeders 5.3 - Grounding and bonding 5.4 - Protection of crane and hoist equipment 5.5 - Control functions and control circuits 5.6 - Enclosures 5.7 - Conductors and cables 5.8 - Motors and drives 5.9 - Additional requirements to battery-operated operator control units</p>
7	Info	Markings
7.2	Info	Details Required
7.2.1		<p>The following information shall be permanently secured to each crane and hoist:</p> <p>a) manufacturing name, trademark, tradename, or identification symbol; <u>b) fabrication date code;</u> <u>c) enclosure designation rating;</u> d) crane or hoist catalogue number or equivalent; e) supply voltage (<u>including ac or dc designation</u>), number of phases, and frequency in Hertz (ac); <u>f) full load current rating;</u> <u>g) short circuit current rating (SCCR); and</u> <u>h) motor table [quantity, hp or kW, duty rating, full load amperage (FLA)].</u></p> <p>Note: On a single motor, crane, or hoist Items e) and h), may appear on the motor nameplate if the nameplate can be easily read.</p>



CLAUSE	VERDICT	COMMENT
8	Info	Equipment test
8.1	Info	General type test requirement
		<i>new clause added;</i>
8.1.1		The temperature, overload, endurance, overvoltage, undervoltage, short-circuit, calibration, and dielectric strength tests of CSA C22.2 No. 14 shall be conducted as necessary.
		<i>New section added;</i>
8.3		Factory Test
8.3.1		Dielectric strength
8.3.1.1		An insulation resistance test shall be performed on the complete assembly. The insulation resistance between live parts and ground at the completion of a 1 min application of a 500 V dc test voltage shall not be less than that specified in Table 24 of the Canadian Electrical Code, Part I.
		As an alternative to the insulation resistant test in Clause 8.3.1.1, a dielectric withstand test may be performed. The electric equipment completely assembled and wired in the plant shall be capable of withstanding, without breakdown, for a period of 1 min, the application of an ac voltage of suitable frequency, both between parts of opposite polarity (where applicable) and between live parts and exposed non-current-carrying metal parts, as follows:
8.3.1.2		<p>a) for the complete installation of electrical equipment, wiring and other components, a voltage of 15% lower than the lowest test voltage required for any of the individual pieces of equipment, but in no case less than 1000 V, except for extra-low voltage circuits that need not be tested at more than 500 V;</p> <p>b) for a wired assembly, having circuits operating at different voltages, each circuit shall be tested separately, as in Item a), with all other circuits being grounded to the machine during the test; and</p> <p>c) for any individual device that is covered by another Standard of the Canadian Electrical Code, Part II, but which should be investigated as a part of the machine, voltages shall be applied as could be called for by the applicable Standard. The device may be disconnected from the circuit for this test.</p>



CLAUSE	VERDICT	COMMENT
		Mechanical slip clutch test
		The test shall be performed as follows:
8.3.2		a) The clutch shall not slip at less than 125% of the manufacturer recommended load of the hoist. b) The hoist shall then be operated for at least 1 min at manufacturer recommended load with no load drop within normal operating range. c) During the test, the load lifting ability of the hoist shall not be less than 125% of the manufacturer recommended load.
8.4		<i>New section added;</i>
		Mold stress relief test for conductor bar systems
8.4.1		One representative sample of the insulating material (except for rigid thermosetting materials), assembled as intended, shall be placed in a full draft circulating air oven maintained at a uniform temperature at least 10 °C (50 °F) higher than the maximum temperature of the material measured during the temperature test, but not less than 70 °C (178 °F) in any case. The sample shall remain in the oven for 7 h. After its removal from the oven and return to room temperature, the sample shall comply with Clause 8.4.2.
8.4.2		Conditioning of the equipment, as described in Clause 8.4.1, shall not cause softening of the material as determined by handling immediately after the conditioning, nor shall there be any shrinkage, warpage, or other distortion, as judged after cooling to room temperature, that results in any of the following: a) reduction of spacing between uninsulated live parts of opposite polarity, uninsulated live parts and accessible grounded metal, uninsulated live parts and the enclosure below the minimum acceptable values; b) making uninsulated live parts or internal wiring accessible to contact or defeating the integrity of the enclosure so that internal parts of the equipment do not have acceptable mechanical protection; and c) causing interference with the intended operation or servicing of the equipment.
CUSTOMERS PLEASE NOTE: This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.		