

## Standard Information

**Standard Name:** Arc Welding Equipment – Part 1: Welding Power Sources  
**Standard Number:** CSA E60974-1:11  
**Standard Edition and Issue Date:** 2011 (December 2011)  
**Date of Revisions:** n/a  
**Date of Previous Revisions to Standard:** (Edition 2001)

## Effective Date of New/Revised Requirements

**Effective Date:** **November 30, 2015**

## Impact, Fees, Overview, and Action Required

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with the new/revised requirements and which products will require re-evaluation and test. **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requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on the Effective Date of **November 30, 2015** unless product is found to comply with the new/revised requirements.

**Fees:** So that production of your products bearing the Listing Mark will not be interrupted, at some point between **5 –10 months before the Effective Date**, our Engineers will begin reviewing your Listing Report (s) for compliance with these new/revised requirements. Either the Listing Report (s) will be revised to show compliance or a Findings Letter will be prepared and sent to your attention along with a quote for necessary re-evaluation and testing. This initial review of your Listing Report (s) will be covered by a direct billing project and will be invoiced at not more than \$1000 per report (more extensive initial reviews will be quoted before the review is conducted).

**Overview:** Specific details of the new/revised clauses of the standard are found in the table below.

1. Environmental conditions were changed (clause 4.a and 4.e).
2. Sequence of type test was changed (clause 5.4).
3. Creepage values for printed circuit boards are implemented (see Table 2).
4. Requirements for primary leakage current are included (clause 6.3.7 and Annex N).
5. Requirements for engine driven power sources are changed (clause 7.1.2 and 7.3.2).
6. Requirements for supply circuit terminals are changed (clause 10.4.3 and 10.4.4).
7. Requirements for cable anchorage are changed (clause 10.5).
8. Standard characteristic for plasma welding is included (clause 11.2.6).
9. Requirements for manual handling are added (clause 14.3.2).

### Action Required:

Samples – Please submit the following representative sample of product constructions to assist with determining compliance:

-All models (primary leakage current test, cable anchorage test, manual handling test (if applicable) )

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

## Description of New/Revised Technical Requirements

Clause	Verdict	Comment	NC#
4	Info	<p>Welding power sources shall be capable of delivering their rated output when the following environmental conditions prevail:</p> <p>a) range of the temperature of the ambient air: during operation: -10 °C to +40 °C; after transport and storage at: -20 °C to +55 °C;</p> <p>e) base of the welding power source inclined up to 10°.</p> <p><i>Note: change of environmental conditions only</i></p>	
5.4	Info	<i>Change of test sequence only</i>	
6.3.7		<p>The primary leakage current in the external protective conductor shall not exceed:</p> <p>a) 5 mA for plug-connected equipment rated up to and including 32 A; b) 10 mA for plug-connected equipment rated more than 32 A; c) 10 mA for equipment for permanent connection, without special measures for the protective conductor.</p> <p><i>Note: New requirement</i></p>	
7.1.2		<i>Note- new tolerance statements only</i>	
7.3.2		<i>Note- new tolerance statements only</i>	
10.4.3		<p>Supply circuit terminals: A current of 200 % of the maximum effective supply current as given on the rating plate is applied from an enclosure part, that is likely to become live, through the external protective conductor terminal for a period of time given in Table 9, using the smallest external protective conductor size given in Table 10.</p> <p><i>Note- this is a new test</i></p>	
10.4.4		<p>Supply circuit terminals: The test is to verify the continuity of the protective bonding circuit by injecting a current of at least 10 A at 50 Hz or 60 Hz derived from a PELV source. The tests are to be made between the PE terminal and relevant points that are part of the protective bonding circuit. The test time is 1 s.</p> <p>The measured voltage between the PE terminal and the points of test shall not exceed the values given in Table 11:</p> <p><i>Note- this is a new test</i></p>	
10.5		Welding power sources fitted with terminals for the connection of flexible	



# Standards Update Notice

Clause	Verdict	Comment	NC#
		<p>supply cables shall be provided with a cable anchorage that relieves the electrical connection from strain. The cable anchorage shall be so constructed that</p> <ul style="list-style-type: none"> <li>a) it is dimensioned for flexible cables having the range of cross-sectional area of conductor as specified in Table E.1;</li> <li>b) the method of anchorage can be easily recognized;</li> <li>c) the cable can be easily replaced;</li> <li>d) the cable cannot come into contact with conductive clamping screws of the cable anchorage if these screws are accessible or in electrical contact with exposed conductive parts;</li> <li>e) the cable is not retained by a metal screw which bears directly on it;</li> <li>f) at least one part of the cable anchorage is securely fixed to the welding power source;</li> <li>g) any screws that need to be loosened or tightened during cable replacement do not serve to fix any other component;</li> <li>h) when fitted to a class II welding power source, it shall be made of insulating material or so insulated that, if there is an insulation fault, exposed conductive parts shall not become live.</li> </ul> <p><i>Conformity shall be checked</i> by visual inspection and by the following test. A flexible supply cable, which has the minimum cross-sectional area of the conductor specified, is connected at the point of connection to the power supply. The cable anchorage is fitted to the cable and tightened. It shall then not be possible to push the cable so far into the welding power source that either the cable itself or internal parts of the welding power source are likely to be damaged.</p> <p>The cable anchorage is then loosened and retightened 10 times.</p> <p>The cable is then subjected for 1 min to a pull as specified in Table 12 without jerking.</p>	
11.2.6	Info	<p><i>Note: added characteristic for plasma welder. No different requirement for existing listed products.</i></p>	
14.3.2		<p>If means for manual handling are provided for lifting or carrying (for example handles, straps), these shall be capable of withstanding the mechanical stress of a static pull with a force calculated from the mass of the assembled welding power source as follows.</p> <p>A force calculated from four times the mass or at least 600 N shall be used.</p> <p><i>Conformity shall be checked</i> by visual inspection and by the following test.</p> <p>The welding power source is fitted with all the associated attachments, (excluding gas cylinders, separate trailers, carts and wheel undercarriages) that are likely to be installed. The welding power source is anchored rigidly at its base and a chain or cable is attached to its handles or strap, as recommended by the manufacturer, and an upward force is then exerted continuously for 10 s.</p>	



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		<i>Note: new test requirement</i>	
		<b>CUSTOMERS PLEASE NOTE: This Table and column "Verdict" can be used by you to assist in determining how current or future production of the product is or will be in compliance with the new/revised requirements by the Effective Date.</b>	