



Standard Specification for In-Service Test Methods for Temporary Grounding Jumper Assemblies Used on De-Energized Electric Power Lines and Equipment¹

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1. Scope

1.1 These specifications cover the in-service inspection and electrical testing of temporary protective grounding jumper assemblies which have been used by electrical workers in the field.

1.2 These specifications discuss methods for testing grounding jumper assemblies, which consist of the flexible cables, ferrules, clamps and connectors used in the temporary protective grounding of de-energized circuits.

1.3 Manufacturing specifications for these grounding jumper assemblies are in Specifications F 855.

1.4 The application, care, use, and maintenance of this equipment are beyond the scope of this specification.

1.5 Units of measurement used in this specification are in the Metric system (SI) with English units given in parentheses.

1.6 The following safety hazards caveat pertains only to the test portions of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

B 193 Test Method for Resistivity of Electrical Conductor Materials²

F 855 Specifications for Temporary Grounding Systems To Be Used on De-energized Electric Power Lines And Equipment³

2.2 IEEE Standards:⁴

IEEE Standard 80–1986 IEEE Guide for Safety in AC Substation Grounding

IEEE Standard 1048–1990 IEEE Guide for the Protective Grounding of Power Lines

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *grounding jumper assembly*—grounding cable with connectors and ground clamps attached, also called a *grounding jumper* or a *protective ground assembly* installed temporarily on de-energized electric power circuits for the purpose of potential equalization and to conduct a short circuit current for a specified duration (time).

4. Significance and Use

4.1 Grounding jumper assemblies can be damaged by rough handling, long term usage, weathering, corrosion, or a combination thereof. This deterioration may be both physical and electrical.

4.2 The test procedures in this specification provide an objective means of determining if a grounding jumper assembly meets minimum electrical specifications. These methods permit testing of grounding jumper assemblies under controlled conditions.

4.3 Each responsible entity must determine the required safety margin for their workers during electrical fault conditions. Guidelines for use in the determination of these conditions are beyond the scope of this specification and can be found in such standards as IEEE Standard 80–1986 and IEEE Standard 1048–1990.

4.4 Mechanical damage, other than broken strands, may not significantly affect the cable resistance. Close manual and visual inspection is required to detect some types of mechanical damage.

4.5 The test procedures in this specification should be performed at a time interval established by the user to ensure that defective grounding jumper assemblies are detected and removed from service in a timely manner.

4.6 Retest the grounding jumper assembly after performing any maintenance, in order to ensure its integrity.

¹ This specification is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.45 on Mechanical Apparatus.

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² *Annual Book of ASTM Standards*, Vol 02.03.

³ *Annual Book of ASTM Standards*, Vol 10.03.

⁴ Available from the Institute of Electrical and Electronics Engineers, Inc. (IEEE) 1828 L St., NW, Suite 1202, Washington, CD 20036–5104.