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REPORT ON STANDARDS

FOR

FUSES ABOVE 600 VOLTS



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REPORT ON STANDARDS
OF
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No. 25
FUSES ABOVE 600 VOLTS

This Report is not considered by the A.I.E.E. Standards Committee as being final. It has been printed in the belief that the undertaking has reached a stage at which the report should be circulated widely with a view to obtaining the opinions, criticisms and suggestions of as many interested persons as possible on the Standards which are here presented in tentative form. Suggestions for changes, and criticisms of all parts of the report are in order and are solicited. These should be addressed to the Secretary of the A.I.E.E. Standards Committee, Engineering Societies Building, 33 West 39th Street, New York.

This Report has been brought to its present form by a subcommittee of the Protective Devices Committee of the A.I.E.E.



Documents

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Report on Standards for Fuses Above 600-Volts

SCOPE

25-1 These Standards apply to all types of fuses whether for indoor or outdoor service, except fuses for 600-volts and below for which specifications of the National Electric Code definitely define the requirements.

SERVICE CONDITIONS

25-50 Usual Service Conditions.—A fuse conforming to these Standards shall be suitable for operation at its Standard rating—

(a) When and where the temperature of the cooling medium does not exceed 40 deg C.

(b) Where the altitude does not exceed 3300 feet (1000 meters).

25-51 Usual Service Conditions.—The use of fuses in surrounding mediums having temperatures higher than 40 deg C or altitudes greater than 3300 feet (1000 meters) shall be considered as special.*

25-52 Conditions Affecting Constructional or Protective Features.—There are further unusual conditions which where they exist, should receive special consideration. Such conditions should be brought to the attention of those responsible for the application, manufacture and operation of the equipment. Apparatus for use in such cases may require special construction or protection. Among such unusual conditions are:

(a) Exposure to damaging fumes, or vapors, excessive or abrasive dust, explosive mixtures of dust or gases, steam, salt spray, excessive moisture or dripping water etc.

(b) Exposure to abnormal vibration, shocks, or tilting.

(c) Exposure to excessively high or low temperatures.

(d) Exposure to unusual transportation or storage conditions.

(e) Unusual space limitations.

(f) Unusual operating duty, frequency of operation, difficulty of maintenance, etc.

* (a) **Voltage Rating:** For application at altitudes greater than 3300 feet (1000 meters) it is recommended that the standard voltage rating of the apparatus should be multiplied by the following factors to obtain the modified voltage rating:

Altitude in Feet	Correction Factors
3300 (1000 meters)	1.00
4000 (1200 meters)	0.98
5000 (1500 meters)	0.95
10000 (3000 meters)	0.81

(b) **Temperature Rise:** For apparatus intended for service at altitudes greater than 3300 feet (1000 meters) it is provisionally agreed that the permissible temperature rises (as determined by test at low altitude, 3300 feet or less) shall be less than specified in these standards by four-tenths of one per cent of the specified rise for each 330 feet (100 meters) of altitude in excess of 3300 feet (1000 meters).

DEFINITIONS

General

25-100 Arcing Time of a Fuse.—The arcing time of a fuse is the time elapsing from the severance of the fuse link to the final interruption of the circuit under specified conditions.

25-101 Clearing Time (Total Interrupting Time).—The total clearing time of a fuse is the total time, measured from the beginning of a specified over-current condition, for interruption of the circuit, at rated or specified voltage. The total clearing time is equal to the sum of the melting time plus the arcing time.

25-102 Expulsion Fuse Unit.—An expulsion fuse unit is a fuse unit which is characterized by expulsion of the arc gases when it operates.

25-103 Factory-Renewable Fuse Unit.—A factory-renewable fuse unit is a fuse unit which must be returned to the manufacturer for replacement of the fuse element.

25-104 Filled Fuse Unit.—A filled fuse unit is a fuse unit in which the space surrounding the fuse element is filled with a granular, inert material.

25-105 Fuse.—A fuse is an over-current protective device with a circuit opening fusible member directly heated and destroyed by the current passing through it.

25-106 Fuse Clip.—A fuse clip is the contact on the fuse support for connecting the fuse holder into the circuit.

25-107 Fuse Cutout (Fuse Assembly).—A fuse cutout is an assembly of a fuse support and fuse holder which may or may not include the fuse link.

25-108 Enclosed Fuse Cutout.—An enclosed fuse cutout is a fuse cutout in which the fuse clips and fuse holder are mounted completely within an enclosure.

25-109 Open Fuse Cutout.—An open fuse cutout is a fuse cutout in which the fuse support and fuse holder are exposed.

25-110 Oil Fuse Cutout.—An oil fuse cutout is an enclosed fuse cutout in which all or a part of the fuse support is mounted in oil, with provision for partial or complete immersion of the fuse link.

25-111 Fuse Disconnecting Switch.—A fuse disconnecting switch is a disconnecting switch in which a fuse unit forms a part of the blade.