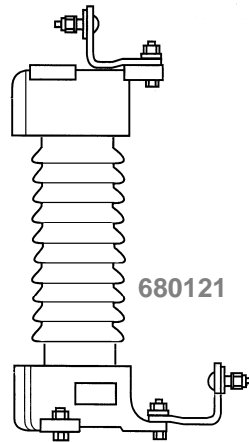


**21 KV INTERMEDIATE CLASS, PORCELAIN,
METAL-OXIDE SURGE ARRESTER**



1. Scope

This Material Standard applies to 21 kV duty-cycle rating, intermediate class, porcelain-housed, metal-oxide surge arresters.

2. Application

Intermediate class surge arresters are intended for use on maximum 26400GrdY/15240 Volt power systems in areas where the fault duty is nominally between 20 kA and 40 kA rms symmetrical.

Porcelain surge arresters are used to construct terminal riser poles.

In situations where vertical pole space is limited, refer to Material Standard 6801.6 - 21 kV Intermediate Class, Polymer, Metal-Oxide Surge Arrester.

In areas where the fault duty is less than 20 kA, refer to Material Standard 6801.4 - 21 kV, Heavy Duty Distribution Class, Polymer, Metal-Oxide Surge Arrester.

Surge arresters designed with gaps (6801.4) offer slightly better electrical performance than surge arresters designed without gaps (6801.3 and 6801.6). Intermediate class arresters are not available with gaps.

3. Industry Standards

Surge arresters shall meet all applicable requirements of the following national standard:

IEEE C62.11-1999, Standard for Metal-Oxide Surge Arresters for AC Power Circuits (> 1 kV)

STANDARDS COORDINATOR	STANDARDS SUPERVISOR	UNIT DIRECTOR
<i>Gold Shield</i>	<i>John Schinner</i>	<i>Hardee Juy</i>

MATERIAL STANDARD

**21 kV Intermediate Class, Porcelain,
Metal-Oxide Surge Arrester**

4. Electrical Requirements

Class (recognized by IEEE C62.11): intermediate
 Type: metal-oxide
 Duty-Cycle Rating: 21.0 kV rms
 Maximum Continuous Operating Voltage (MCOV): 17.0 kV rms
 Maximum Front-of-Wave Voltage Cresting in 0.5 Microseconds for
5 kA Wave: 60.6 kV crest
 Maximum Discharge Voltage for 8 X 20 Microsecond **5 kA Wave:** 50.8 kV crest
 Maximum Discharge Voltage for 8 X 20 Microsecond **20 kA Wave:** 61.8 kV crest
 Minimum Symmetrical RMS Fault-Current Withstand Rating: 40 kA rms
 Minimum Temporary Overvoltage Capability for Three Seconds at 60
 Degrees Centigrade Ambient and No Prior Energy Absorption
 (Overvoltage/MCOV): 1.4 per unit

5. Construction

Housing Material: porcelain
 Housing Material/Hanger Bracket Color: gray
 Ground Lead Isolator: not required or desired
 Terminal – Top: metal with three 0.625 inch diameter
 holes on 8.75 inch bolt circle
 Terminal – Bottom: metal with three 0.625 inch diameter
 holes on 8.75 inch bolt circle
 Height: 23 inches, +/- 1 inch
 Cantilever Strength (minimum): 5,000 in-lbs.
 Nameplate: required per IEEE C62.11-1999,
 Section 10.1 identification data

7. Marking and Packaging

Surge arresters shall be packaged fully assembled, one per cardboard box or wood crate. Each package shall be legibly marked with manufacturer's name or symbol, product description, and quantity contained. Shipping containers shall be marked with manufacturer's name or symbol and Seattle City Light's purchase order number. A packing slip shall be included with each shipment.

8. Stock Unit: EA

9. Manufacturers

Stock Number 680121

Approved Manufacturer	Type	Catalog Number
Cooper Power Systems	AZF	AZF1A21