

MATERIAL SPECIFICATION

VOCAB NUMBER	ITEM DESCRIPTION
134003	SURGER DIVERTER, 33KV, VARIGAP TYPE AZLP HEAVY DUTY DISTRIBUTION CLASS, SILICON RUBBER HOUSED MOV GAP ARRESTER

SPECIFICATION DETAILS

1. Distribution class surge arresters for use on 33kV overhead lines, in accordance with the attached specification.
2. To AS 1307.2 - 1996.
3. Similar to: Copper Power System Varigap Type Arrester. Cat. No. AZ519B21.

- **Unit of Measure:** Each
- **Rejection:** PNG Power Ltd reserves all rights to reject whole or part of the order not complying with this specification and is not liable for any cost or loss with the return of rejects to the Supplier. Facilitation of Invoice Credit must commence between the supplier and PNG Power Ltd through the process of PNG Power Ltd Discrepancy Report provisions.

Drawing References: SC3/27 (Mounting Bracket)

Manufacturer's Product Code:

ENGINEERING STANDARDS APPROVAL

Approval by: Grevasius Peni
TL Standards & Materials

Signature:

Date: 27/2/21

DATA REVIEW ENDORSEMENT

NAME	TITLE	SIGNATURE	DATE
Rawali Rawali	Engineer - Standards & Materials		

SPECIFICATION FOR DISTRIBUTION CLASS SURGE ARRESTERS, VOCAB: 134003**1.0 GENERAL:**

The specification refers to 10kA heavy duty arresters for outdoor use on overhead lines and equipment or nominal 11kV, 22kV and 33kV system voltage.

2.0 APPLICATION:

The surge arresters will be used throughout Papua New Guinea on overhead lines, distribution Transformers, HV Cable termination and switchgear. The arresters will be subject to an outdoor tropical environment with high levels of solar radiation and high rainfall.

Operating Conditions:

The surge arresters shall be suitable for use on systems having the following characteristics: -

Nominal System Voltage	11kV	22kV	33kV
Maximum System Voltage	12kV	24kV	36kV
System frequency	50Hz	50Hz	50Hz
Phases	3	3	3
System Earthing	Solid	Solid	Solid
Basic Impulse Level (Peak)	75kV	150kV	150kV

Environment:

The surge arresters will be installed outdoors will be exposed to the following environment conditions:

Solar Radiation	1000w/m ² with high ultra violet content
Air temperature Range	0°C - 45°C
Annual Rainfall	600mm - 5000mm
Relative Humidity	Typical 40% with extended periods greater than 30% at 30°C
Altitude	Up to 1000m for 11kV systems, Up to 2500m for 22kV and 33kV systems

Connection:

The surge arrester shall be suitable for connections between the active conductors and earth.

3.0 STANDARDS:

The arresters shall comply with AS 1307.2 - 1996 "Surge Arresters (Diverters) - Metal Oxide Type for AC Systems" and related documents.

Other authoritative standards which ensures equal or better performance and quality may be offered, in which case three copies of the appropriate documents, in the English language, shall be included with the Tender.

SPECIFICATION FOR DISTRIBUTION CLASS SURGE ARRESTERS, VOCAB: 134003
4.0 RATINGS:

The arresters shall have the following ratings:

System Nominal Voltage	11kV	22kV	33kV
Arrester rated voltage	10.5kV	21kV	30kV
Minimum protective level	30.5kV	61kV	87kV
Nominal discharge current	10kA	10kA	10kA

Bidders shall state the suitability of 21kV rated arresters for use at altitudes up to 2500m at 22kV nominal system voltage lines having a sea level BIL of 150kV.

Where necessary, alternative arresters should be tendered including recommendations of the altitude range for which they are suitable.

Bidders state the suitability of the specified arresters for use on 12.7kV SWER distribution system. Where appropriate, the alternative arresters should be tendered for SWER applications.

5.0 PRESSURE RELIEF:

The arrester shall be type **S** class **C** pressure relief in accordance with clause 5.5 of AS 1307.2.

6.0 EARTH DISCONNECTORS:

Disconnection devices are not required on arresters to this specification.

7.0 TERMINALS:

Both line and earth terminals shall be of the split bolt type suitable for copper conductors up to 41mm² (7/2.75) - ESSA type B24. The connectors shall be tinned brass.

8.0 MOUNTING BRACKETS:

The arresters shall be supplied complete with mounting brackets suitable for fixing to 100 x 100mm (or 100 x 125mm) timber crossarms. The bracket shall be of the style and the fixing dimensions shown as type A on drawing SC-3/27.

Bidders may additionally offer brackets shown as type B on drawing SC-3/27, or a combination of types A and B which are suitable for single bolt mounting to crossarms and transformer steel work.

The arresters shall be suitable for horizontal, angular and vertical mounting. Any limitation on the mounting orientation must be specially stated in the tender.

The mounting brackets are not required with earthing facilities, but the arresters shall be suitable for use with mounting bracket attached to earthed metal work (eg. Transformer tank).

SPECIFICATION FOR DISTRIBUTION CLASS SURGE ARRESTERS, VOCAB: 134003**9.0 CONSTRUCTION:**

Particular care must be given to the provision of the consistently reliable and durable sealing system. Full details of the construction and assembly of the sealing system along with details of quality control methods and test procedures shall be included in the tender.

10.0 MARKING:

Each arrester shall be marked in accordance with AS 1307.2.

11.0 TEST:

Type test certificates showing compliance with AS 1307.2 shall be submitted with the tender.

Bidder shall provide evidence that identical arresters to those offered satisfy the additional Type Test (clause 4.4) and Acceptance Tests (clause 4.6) of AS 1307.2.

12.0 PACKAGING:

The arresters shall be supplied in individual protective containers appropriate to the nature of the goods and suitable against rough handling during all phases of transport to the work site. The container shall be marked with PNG Power stock number, item description; suppliers name and catalogue number and include recommended handling and installation instructions.