



Ergon Energy Corporation Limited

Technical Specification for Stainless Steel Volute Washers

ETS01-06-01

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Technical Specification for Stainless Steel Volute Washers

1. Purpose and Scope

This technical specification sets out the requirements for the manufacture, testing at works, supply and delivery of stainless steel volute washers for use on overhead electricity distribution systems in a totally exposed environment.

2. References

2.1 Applicable Standards

All items shall be designed, manufactured and tested with the relevant parts of the following Standards and all amendments issued from time to time except where varied by this specification.

STANDARD	TITLE
AS 1444	Wrought alloy steels - Standard and hardenability (H) series
AS 1447	Hot-rolled spring steels
AS 2837	Wrought alloy steels - Stainless steel bars and semi-finished products
ISO 9002	Quality Systems - Model for Quality Assurance in Production, Installation and Servicing

3. Drawings

3.1 Drawings by the Purchaser

The following drawing shall be read in conjunction with, and shall form part of this technical specification.

REFERENCE	REVISION	TITLE
01-04-03	A	Washers, Volute

4. Service Conditions

The items will be exposed to the following environmental conditions:

Temperatures	45oC summer day time -5oC winter night time
Solar Radiation Level	1 000 Wm-2 with high ultraviolet content
Precipitation	Tropical summer storms with gust winds above 160km/h, and an annual rainfall in excess of 1500mm
Humidity	Extended periods of relative humidity in excess of 90%.
Pollution	Areas of coastal salt spray and/or industrial pollution with equivalent salt deposit densities in the range 2.0 to 3.0 gm-2

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5. Design and Construction

5.1 Forming

The volute washers shall be cold-rolled and cold-formed.

5.2 Material

The volute washers shall be manufactured from stainless steel of minimum grade AS 2837-304.

Full details of the type of stainless steel to be used, shall be submitted in the tender.

5.3 Dimensions

The dimensions shall be in accordance with those shown on QESI Drawing 01-04-03.

5.4 Scragging

Each volute washer shall be compressed as required to stabilise creep and to relieve stress.

5.5 Finish

The end surfaces of the volute washers shall be cut perpendicular to the central axis of the wire.

The washers shall be free from cracks, embrittlement, loose scale, excessive burrs or any other defects which may affect its end performance.

5.6 Mechanical Ratings

Volute washers shall have mechanical ratings as specified on QESI Drawing 01-04-03.

6. Performance and Testing

6.1 Batch Tests

A "Certificate of Compliance" is to be supplied with each order delivery. Batch Test certificates for mechanical properties, dimensions and galvanising of each item shall be held by the manufacturer and provided to the Purchaser within 24 business hours upon request. These tests are to be in accordance with the relevant Australian Standards.

7. Risk Assessment

There is no requirement for manufacturer provided safety risk assessments for the items covered in this specification.

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8. Quality Assurance

8.1 Purchasers Policy

The tenderer's attention is drawn to the attached Annexure "Quality Assurance Requirements for Suppliers of Products" which forms an integral part of this specification.

8.2 Documentary Evidence

Documentary evidence shall be provided concerning the level of Quality System Certification associated with the supplier and/or manufacturer. This documentation shall include the Capability Statement associated with the Quality System Certification.

9. Samples

9.1 Production Samples

When requested, Tenderers shall submit a minimum of six (6) production samples of each item offered as part of the tender package.

10. Packaging and Marking

10.1 General Specification

Tenderer's attention is specifically drawn to the requirements of Clause 11.3 of the General Specification with regard to the packaging and delivery of palletised goods.

10.2 Packaged Lots

All items are to be supplied in packaged lots in accordance with the relevant QESI drawing.

10.3 Information on Packaged Lots

Each packaged lot shall be marked with the following information:

Manufacturers Name
Order Release Authority/Order Number
Item Description
Pack Size
Pack Weight

11. Service Performance

Suppliers shall state:

- (a) the period of service achieved by the items offered within Australian service conditions;
- (b) Australian electricity supply authorities who have a service history of the items offered; AND
- (c) Contact names and phone numbers of relevant employees of those supply authorities who can verify the service performance claimed.

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12. Reliability

12.1 Service Life

Tenderers are required to comment on the reliability of the equipment and the performance of the materials offered for a service life of 25 years under the specified system and environmental conditions.

12.2 Evidence in Support of Reliability

Such comments shall include evidence in support of the reliability and performance claimed including information on Failure Mode and Effect Analysis.

13. Training

There is no requirement for training associated with this specification.

14. Environmental Considerations

Suppliers are required to comment on the environmental soundness of the design and the materials used in the manufacture of the items offered. In particular, comments should address such issues as recyclability and disposability at the end of service life.

15. Information to be Provided

15.1 Specific Technical Requirements

The specific technical requirements for the items shall be as stated in **Attachment 1** of this specification. The tenderer shall fill in all data requested by **Attachment 1** and shall guarantee such data.

15.2 Checklist of Supporting Documentation

Attachment 2 details a checklist of supporting technical documentation which is required to be submitted with the tender.

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16. Attachment 1 – Technical Details

NOTE: A separate schedule is to be provided for each item offered except where information common to all items which only needs to be provided once.

PARTICULARS	UNITS	ITEM No.
Manufacturer's Name and Address		
Place of Manufacture		
Manufacturer's Product Catalogue Number		
Are Batch Test Certificates able to be supplied?	Yes/No	
Grade of stainless steel		
Applicable Australian Standard		
Minimum compression force	kN	
Rod diameter	mm	
Maximum outside diameter	mm	
Minimum inside diameter	mm	
Pack Size		
Pack Weight	kg	

SIGNATURE OF TENDERER: _____

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17. Attachment 2 – Technical Document Checklist

CLAUSE Ref.	PARTICULARS	UNITS
Have full and comprehensive details been submitted WITH the tender documents associated with each of the following items?		
5.1	Property class of stainless steel	Yes/No
8.2	Documentary evidence of the Quality System Certification of the SUPPLIER and/or the MANUFACTURER (including Capability Statement)	Yes/No
11.	Service Performance	Yes/No
12.	Reliability	Yes/No
13.	Training Materials (availability)	Yes/No
14.	Environmental Considerations (availability)	Yes/No

NAME OF TENDERER:

ADDRESS OF TENDERER: _____

SIGNATURE: _____ FOR AND ON BEHALF OF TENDERER

DATE: _____