

Technical Specifications of Bolts and Nuts for Overhead Distribution Network

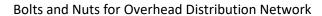




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1. Purpose and Scope

This specification sets out the guideline requirements for the supply of materials used on Totally Exposed Distribution Network.

2. Standards

All items/materials and equipment manufactured shall conform under these specifications with latest applicable standards of AS/NZS, ANSI, IEC, NFC, IEEE, BS except otherwise specified in this document.

Applicable Standards	Description
AS/NZS 1214:2016	Hot-Dip Galvanized Coatings on Threaded Fasteners (ISO metric coarse thread series)
AS/NZS 1393:1996	Coach Screws – Metric with ISO hexagon heads
AS 1111:2000	ISO Metric Hexagon Bolts and Screws – Product Grade C
AS 1112:2000	ISO Metric Hexagon Nuts
ISO 9001	Quality Systems

3. Material List and Quantity

Material	Specification	Reference	Quantity
Bolts and Nuts M16 x 130 M16 x 150 M16 x 180 M16 x 325 M16 x 400 M16 x 425 M20 x 400 Square Washer M20 - 50 x 50 x 3 M18 - 50 x 50 x 3	Material: Steel (Class 4.6 minimum) Nut must be Steel Class 8 Finish: Hot Dip Galvanized Galvanizing to comply with AS/NZS 1214:2016 Minimum Average Coating Mass: 375g/m2 Bolt Dimensions to Comply with AS 1111:2000 Nut Dimensions to Comply with AS 1112:2000 Coach Screws to Comply with AS/NZS 1393:1996	AS/NZS 1214:2006 AS/NZS 1393: 1996 AS 1111:2000 AS 1112:2000	3000 3000 3000 2000 3000 300 300 1500 5000

Type Test required for all items above and a type test Report shall also be provided. Signed and Certified

4. Drawings

The tenderer to supply with the tender detailed drawings and pictures of the items tendered.



Local Environment Conditions

The items/materials as listed are exposed to the following environmental conditions.

Factors	Conditions
Temperatures	Ranges from 20°C - 45°C
Solar Radiation	1000 W/m ²
Humidity	Relative humidity in excess of 90%
Precipitation	Range of 3000 mm to 6000 mm rainfall annually
	Exposure to winds in excess of 250km/hr.
Pollution	Salt spray and salt deposit densities on coastal
	areas and pollution ranging from 3.0g/m ² to
	4.50g/m ²

6. Design and Construction

All items shall be hot-dip galvanized in accordance with AS 4680 or AS 1214.

Prior to galvanizing, the **heads** of bolts and coach screws must be **permanently labelled** with the **Manufacturers trade identification** and **property class** in accordance with the standard **AS/NZS 4291**. The **Nuts** shall be also marked similarly on one of its **hexagon flats**.

All BOLTS to be supplied with NUTS fitted.

7. Performance and Testing

7.1. Type Tests

The following items are to be provided **Type Tests Report** to be supplied with the **Offer.**

Bolts - Tensile Strength Test as per requirement in Standard AS 4291

Nuts – Proof Load Test according to Clause 8.1 and Table 6 of Standard AS/NZS 4291

Coach Screws – Hardness Test as per Class 6 of AS 1393

8. Quality Assurance

The manufacturer shall possess certified certificate of Quality Assurance under the ISO 9001:2015, ISO 9001:2008 is also acceptable for the factory where the materials were manufactured. The bidders must provide with the bid a copy of the ISO Certificate certified as a true copy of the original by the manufacturer.