

Electricity Specification 602

Issue 3 January 2022

Electrical Insulating Rubber Matting



Amendment Summary

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1 Introduction

This specification sets out the requirements for rubber insulating mats purchased by Electricity North West Limited, hereinafter referred to as Electricity North West.

2 Scope

The rubber mats covered by this specification are used by Electricity North West to protect its staff from electric shock due to earth path current when working on distribution Fuseboards (for example when replacing fuses).

The overall specification must comply with BS EN 61111:2009 – “Live working – Electrical insulating matting”

3 Definitions

Approval	Sanction by the Electricity North West Plant Policy Manager that specified criteria have been satisfied
Contract	The agreement between Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.
Contractor	The person or person's firm or company, including personal representatives, successors and permitted assigns, who's Tender has been accepted by Electricity North West.
Specification	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.
Supplier	Any person or person's firm or company who supplies goods to Electricity North West or to its Contractor.
Tender	An offer in writing to execute work or supply goods at a fixed price.
Tenderer	The person or person's firm or company, including personal representatives, successors and permitted assigns, invited by Electricity North West to submit a Tender.

4 General Requirements for Approvals and Testing

4.1 Product not to be Changed

No change in the product, packaging or labelling shall be made after Approval has been granted without prior notice to the North West Plant Policy Manager, and receipt of a written agreement to the proposed change from the North West Plant Policy Manager .

4.2 Electricity North West Technical Approval

The Tenderer shall submit, with this Tender, proposals for testing which will demonstrate, to the satisfaction of the North West Plant Policy Manager, compliance with this Specification. Such tests shall be carried out without expense to Electricity North West.

Alternatively, technical reports and other data may be submitted that the Tenderer considers will demonstrate, to the satisfaction of the North West Plant Policy Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the North West Plant Policy Manager but will not be unreasonably withheld.

Approval shall be 'factory specific' and is not transferable to another factory without the written Approval of the North West Plant Policy Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West document CP311.

4.3 Quality Assurance

The Tenderer shall confirm whether or not Approval is held in accordance with a quality assurance scheme accredited under ISO 9000. If not, the Tenderer shall submit a statement of the quality assurance procedures employed to control the quality of the product, including the performance of Suppliers and Sub-Contractors.

The right is reserved for the repeat of such tests, from time to time, that the North West Plant Policy Manager may deem to be reasonably necessary to demonstrate continued compliance with the Specification.

The Tenderer shall submit, with the Tender, a list of tests and inspections which are carried out on the product prior to despatch which shall demonstrate, to the satisfaction of the North West Plant Policy Manager, fitness for installation and service.

The Tenderer shall provide free of charge to Electricity North West such samples as may, in the opinion of the North West Plant Policy Manager, be reasonably required for inspection and/or retention as quality control samples. The North West Plant Policy Manager will confirm the requirement for samples at the time of Tendering.

The right is reserved for inspections to be made of Tenderer's facilities, from time to time, as deemed reasonably necessary by the North West Plant Policy Manager to ensure compliance with this Specification and any Contract of which it forms a part.

The Tenderer shall submit, with the Tender, such details of product packaging disposal, as will enable Electricity North West to comply with the requirements of BS EN ISO 14001 - Environmental Management Systems.

4.4 Formulation

The Tenderer shall submit, with the Tender, such details of the formulation and use of the product and associated substances as will enable Electricity North West to comply with the obligations of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 2002, in the use, storage and disposal of the product. The Tenderer may stipulate, prior to submission of such information, that it is to remain confidential, and the North West Plant Policy Manager will, if requested, confirm agreement to this prior to receipt of the information.

4.5 Identification Markings

The Tenderer shall submit, with the Tender, details of markings which it is proposed to apply to the product or packaging to identify manufacturing batches or items. The forms and content of such markings shall be subject to the Approval of the North West Plant Policy Manager and shall in all cases include the Electricity North West approved description and commodity code number.

The Tenderer shall submit, with the Tender, such details of marking gross weight on components, assemblies and packages, as will enable Electricity North West to comply with the Health and Safety Manual Handling Operation Regulations 1992, for components, assemblies and packages supplied with a gross weight over 1kg. The forms and content of such markings shall be subject to the Approval of the North West Plant Policy Manager .

4.6 Minimum Life Expectancy

The minimum life expectancy of all products covered by this Specification is 25 years.

4.7 Manufacturers Already Approved

Clauses 4.1, 4.2, 4.3, 4.4 and 4.5 will be waived in the case of products already approved.

4.8 Product Conformity

Preference will be given to those Suppliers who can provide suitable product conformity certification to a recognised or specified standard, or an equivalent certification.

4.9 Confirmation of Conformance

The Tenderer shall complete the conformance declaration sheets in [Appendix A](#). Failure to complete these declaration sheets may result in an unacceptable bid.

5 Requirements for Type and Routine Testing

The Specifier shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier's cost.

5.1 Requirement for Type Tests at Suppliers Premises

These are a series of one-off type tests, which are carried out to ensure the satisfactory performance of the product design, under extremes of operating stresses, and of endurance, as may be appropriate, to be determined by the Specifier.

These may or may not be destructive tests.

5.2 Requirement for Routine Tests at the Supplier's Premises

These tests may be required to be carried out on every individual unit or component, as specified, or at some regular frequency to be determined by the Specifier.

The results of these tests may be required to be supplied to Electricity North West with each unit purchased or retained for inspection, at a period to be determined by the Specifier.

6 Technical and Performance Requirements

6.1 Manufacturing Standard

Ribbed rubber mats shall be manufactured and tested to the mechanical and electrical requirements of BS EN 6111:2019.

6.2 Classification

The electrical insulating matting covered by this specification shall be designated as:

- Electrical Class 0 (1000v AC (r.m.s) / 1500v D.C maximum)
- Standard resistance to ambient temperature between -25°C and $+55^{\circ}\text{C}$ as defined in Annexe A and B of BS EN 61111:2009

6.3 Composition

The mats shall be manufactured of elastomer (As described in BS EN 61111:2009, Section 4.3.1) Mats shall not include any Carbon black in their rubber composition

6.4 Construction

The mats shall be solid and not perforated. The upper surface shall be ribbed / fluted or other suitable patterned surface. Both sides of the electrical insulating matting shall be slip resistant. The slip resistance may be achieved with surface such as corrugated or diamond design.

Any insert shall not affect adversely the dielectric characteristics of the electrical insulating matting.

6.5 Dimensions and tolerances

The minimum thickness of the mat shall be determined only by the ability to pass the tests defined in Clause 5 of BS EN 61111:2009 but shall be no less than 6.5mm when measured at the root of the rib.

The dimensions of the mat shall be in accordance with Electricity North West preference of typically 3000mm length x 900mm width.

These dimensions for matting shall be within a tolerance of $\pm 2\%$ of the stated values.

Matting can be cut to suit the application in which they are to be used where appropriate. Any matting which has been cut to suit shall be checked to ensure it contains the detailed embossing as required in Section 6.6 (Marking).

6.6 Marking

The mats shall be clearly marked at intervals with;

- The name of the manufacturer
- Symbol IEC 60417-5216 (2002-10) suitable for live working double triangle
- BS EN 61111:2009
- The date of manufacture month and year
- The manufacturers identification mark
- The class designation and / or the words “1000V maximum”

Mats shall not be accepted into Electricity North West stores if they are marked with a date of manufacture more than 6 months earlier than the date of delivery.

6.7 Packaging

In addition to the requirements of BS EN 6111:2019, mats shall be delivered flat packed (not rolled up) and shall lay flat without edge curl when laid down on a level floor. This is to prevent any trip hazard.

6.8 Certification

A certificate of conformity with test data shall be available for every roll.

7 Documents Referenced

DOCUMENTS REFERENCED	
Health and Safety at Work Act 1974	
Control of Substances Hazardous to Health Regulations 2002	
Manual Handling Operations Regulations 1992	
BS EN ISO 9000	Quality management systems
BS EN ISO 14001	Environmental management systems. Requirements with guidance for use

BS EN 61111:2019	Live Working: Electrical Insulating Matting
IEC 60417	Graphical symbols for use on equipment. Overview and application
CP311	Equipment Approval Policy and Process

8 Keywords

LV; Safety; Substation ; Mats

Appendix A – Conformance Declaration

SECTION-BY-SECTION CONFORMANCE WITH SPECIFICATION

The Tenderer shall declare conformance or otherwise for each product/service or range of products/services, section-by-section, using the following Conformance Declaration Codes.

Conformance Declaration Codes:

N/A =	Clause is not applicable/appropriate to the product/service.
C1 =	The product/service conforms fully with the requirements of this clause.
C2 =	The product/service conforms partially with the requirements of this clause.
C3 =	The product/service does not conform to the requirements of this clause.
C4 =	The product/service does not currently conform to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.

Manufacturer:

Product/Service Description:

Product/Service Reference:

Name:

Company:

Signature:

SECTION-BY-SECTION CONFORMANCE

Section	Section Topic	Conformance Declaration Code	Remarks * (must be completed if code is not C1)
1	Introduction		
2	Scope		
4.1	Product not to be Changed		
4.2	Electricity North West Technical Approval		
4.3	Quality Assurance		
4.4	Formulation		
4.5	Identification Markings		
4.6	Minimum Life Expectancy		
4.7	Product Conformity		
4.8	Confirmation of Conformance		
5	Requirements for Type and Routine Testing		
6.1	Manufacturing Standard		
6.2	Classification		
6.3	Composition		
6.4	Construction		
6.5	Dimensions & Tolerances		
6.6	Markings		

6.8	Packaging		
6.9	Certification		

* Applicable specifications shall be stated in the Remarks column where alternatives are quoted within a section. The Remarks column shall also be used to indicate cases where the products or services exceed the quoted specifications.