

Electricity Specification 400L7

Issue 2 April 2021

Low Voltage Link Box Blast Mitigation Bags and Blankets



Amendment Summary

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Issue 2 April 2022	Updated to new document Template Removed references to carrying handles Prepared by: Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director

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1 Introduction

To mitigate the potential explosion that could develop in a Low Voltage link box, a blast mitigation bag or blanket shall be installed in accordance with strategy directives detailed in Code of Practice 405.

There are various sizes, types and designs of link boxes on the Electricity North West Ltd network which require blast mitigation. A suitable mitigation bag(s) or blanket(s) shall be designed and tested for this specific purpose.

2 Scope

The positioning of the product shall be above the link box bell housing and below the pavement cover. It is assumed that UV / natural sunlight will not affect the performance of the product.

The Tenderer shall offer alternative sizes of product to apply to the various sizes, designs and types of link boxes. The products shall be designed to offer ease of installation and removal to permit normal operational activities of the link box.

3 Definitions

Approval	Sanction by the Electricity North West Underground Circuits 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.
Guarantee	A document serving as security for the materials supplied/Contract works for the specified period.
Specification	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.
Sub-Contractor	Any person (other than the Contractor) named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-let with the consent in writing of the Electricity North West Underground Circuits Policy Manager, and the legal representatives, successors and assigns of such person.
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 Electricity North West Underground Circuits Policy Manager, and receipt of a written agreement to the proposed change from the Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits Policy Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits Policy Manager, be reasonably required for inspection and/or retention as quality control samples. The Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits 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 Electricity North West Underground Circuits Policy Manager.

4.6 Minimum Life Expectancy

The minimum life expectancy of all products covered by this Specification is 12 years. The Tenderer shall submit the expected life of the product and detailed disposal instructions.

4.7 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.

4.8 Confirmation of Conformance

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

4.9 Environment

The bag or blanket shall be suitable for installation and operation in all ambient environmental temperatures between the ranges of minus 10°C and 40°C.

The bag or blanket shall be suitable to exposure to soils, cleaning wipes, moisture and submersion of up to 1 metre head of water without any detrimental effect over the lifetime of the product

5 Technical Information Requirements

5.1 Mitigation Bag

Refer to [Appendix B](#) for typical example of mitigation bag design and dimensions (each drawing sheet shows a different size).

The mitigation bag shall be filled with 8 - 10mm Lytag.

The bag / jacket shall be of a heavy duty PVC coated Polyester material or equivalent. The bag shall be designed to carry and hold at least twice the weight of the material in the bag. The bag shall be of substantive thickness and quality to withstand handling, storage and operations for a minimum of 12 years. The bag edges shall be double stitched with the fill opening sealed by double stitch or secured zip fastening.

The bag shall be made from Low Smoke and Fume or Low Smoke Zero Halogen material.

The bag shall be orange or yellow in colour.

The approximate amount of Lytag in each bag shall be:

- Size 1 bag, 14kg.
- Size 2 bag, 15kg.
- Size 3 bag, 16kg.
- Size 4 bag, 18kg.
- Size 5 bag, 20kg.

Moisture drainage shall be incorporated in the bag design.

The larger bags (Sizes 3, 4 and 5) shall be designed to include compartments to prevent the movement of material collecting in one position of the bag, providing even distribution of the Lytag material.

Technical data sheets shall be provided with the Tender.

Results from product design and product type tests shall be provided with the Tender.

5.2 Mitigation Blanket

The mitigation blanket shall be filled with layers of fibreglass.

The blanket jacket shall be of a heavy duty silicon material or equivalent.

The blanket jacket shall be made from Low Smoke and Fume or Low Smoke Zero Halogen material. The jacket shall be of substantive thickness and quality to withstand handling, storage and operations for a minimum of 12 years.

The blanket jacket shall be orange or yellow in colour.

The blanket jacket shall incorporate a waterproof label with the wording "Danger Electricity" and danger of death sign. Minimum size 300mm x 200mm.

Moisture drainage shall be incorporated in the jacket design.

Technical data sheets shall be provided with the Tender.

Results from product design and product type tests shall be provided with the Tender.

6 Requirements for Fingerprinting, Type and Routine Tests

6.1 Requirements for Fingerprinting Tests at the Supplier's 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 Electricity North West Underground Circuits Manager.

These may or may not be destructive tests.

6.2 Requirements for Type Tests at the Supplier's Premises

A series of one-off type tests shall be carried out to ensure the satisfactory performance of the product, 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.

6.3 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 Electricity North West Underground Circuits Manager.

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 Electricity North West Underground Circuits Manager.

7 Schedule of Tests

7.1 General Requirements/Additional Tests

The product shall mitigate a link box explosion. Evidence shall be provided of the design and relevant tests carried out to demonstrate the mitigation.

The product shall be immersed in 1 metre head of water for 48 hours and removed by the handles. No tears or breakages should be seen or noted in the outer jacket material, stitching or handles. The product shall function as normal after 10 minutes of drying out.

The product shall have a Low Smoke and Flame or Low Smoke Zero Halogen bag or jacket. Evidence of smoke and halogen tests of the bag / jacket and the results shall be submitted with the Tender.

The product shall be designed to withstand on site mishaps such as accidentally dropping / slipping of the bag. A drop test shall be carried out to demonstrate the performance of the product jacket. The height shall be 1 metre with an ambient temp of 5 degrees Celsius. There shall be no tears or breakages seen in the jacket material.

7.2 Applicable Standards

The Supplier shall declare the Standards to which individual tests are carried out.

7.3 Material Properties

The material flashpoint temperature shall be submitted with the Tender.

8 Packaging

The product shall be supplied in packs / on single pallets.

Each pack / pallet shall be marked with the following:

- Manufacturer's name and product reference number.
- Pack size.
- Gross weight of component and pack / pallet.
- Manufacturer's batch number.
- Use by date.
- Electricity North West Commodity Code Number (a six digit number).
- Approved description.
- Health and Safety Marking and Handling Instructions.

The packaging and labelling shall comply with Regulation EC No 1272 of the European Parliament on classification, labelling and packaging of substances and mixtures.

A sample pack, complete with proposed labelling, shall be submitted with the Tender for Approval.

9 Safety, Handling and Disposal

Information concerning formulation, safety and handling of the components and containers shall be supplied with the Tender. The Tenderer shall submit the expected life of the product and detailed disposal instructions.

10 Storage

Materials shall be suitable for storage in either Electricity North West Stores or in Electricity North West vehicles for a period of at least twelve months without any deterioration within the temperature range of minus 20 degrees to 40 degrees when protected from direct sunlight.

Materials shall be suitable for transportation to and between Electricity North West stores without any deterioration.

11 Technical Support

During the Contract period questions may arise regarding unusual or non standard applications where advice will be required on manufacturing / material / technical issues. The successful Tenderer(s) will be expected to support Electricity North West on these matters.

12 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
BS 7933-1: HD 631.1 S2	Electric cables. Accessories. Material Characterisation. Fingerprinting and type tests for resinous compounds.
CP311	Equipment Approval Policy and Process
CP405	Cable Pit and Link Box Strategy for Power Cables and Associated Joints.

13 Keywords

Not applicable

Appendix A – Schedule of Product Sizes

Mitigation Bags

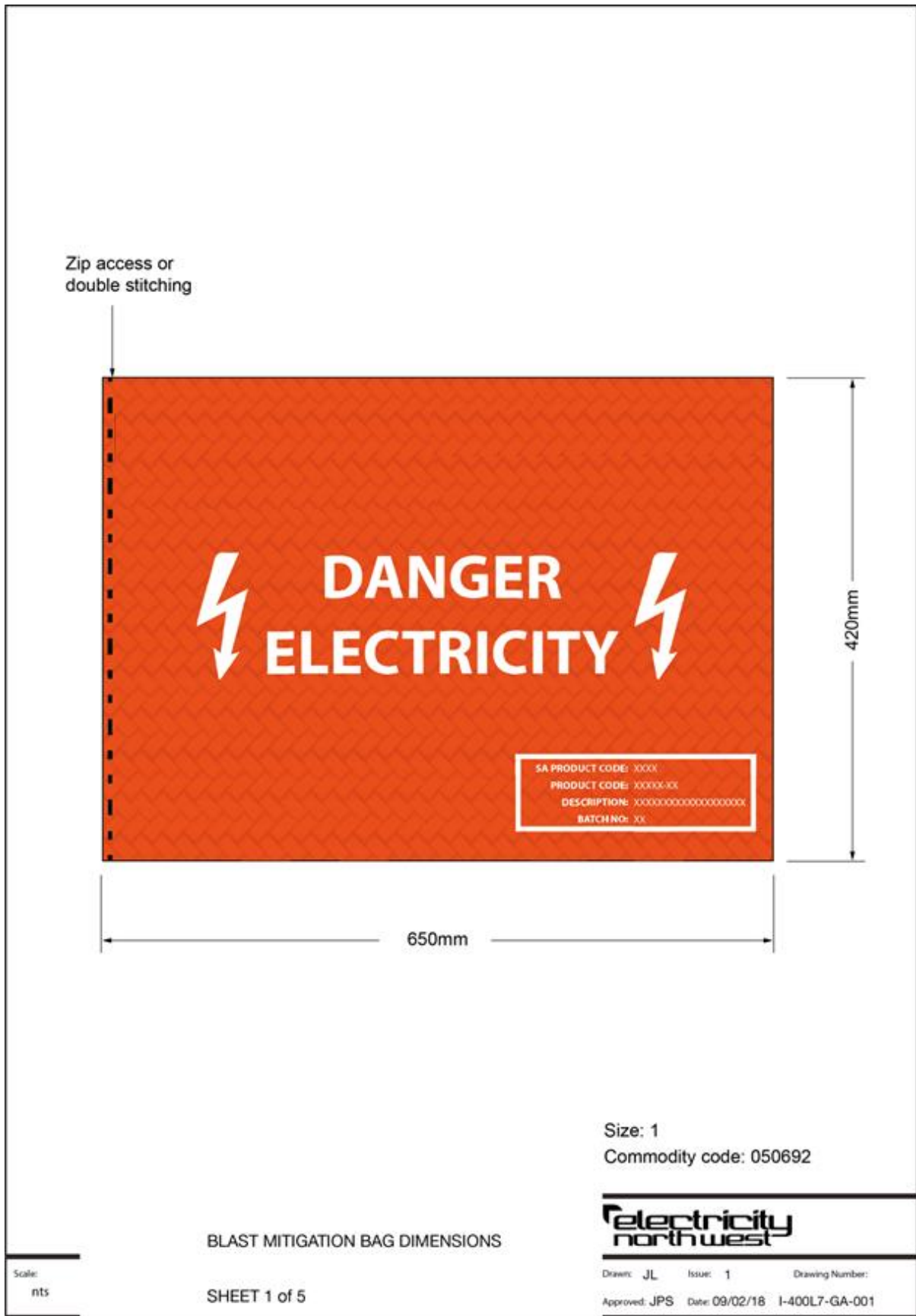
APPROX. MEASUREMENTS	ENWL COMMODITY CODE	COST
650 x 420mm	050692	
700 x 500mm	050693	
700 x 700mm	050694	
1000 x 1000mm	050695	
1200 x 1200mm	050696	
Alternatives		

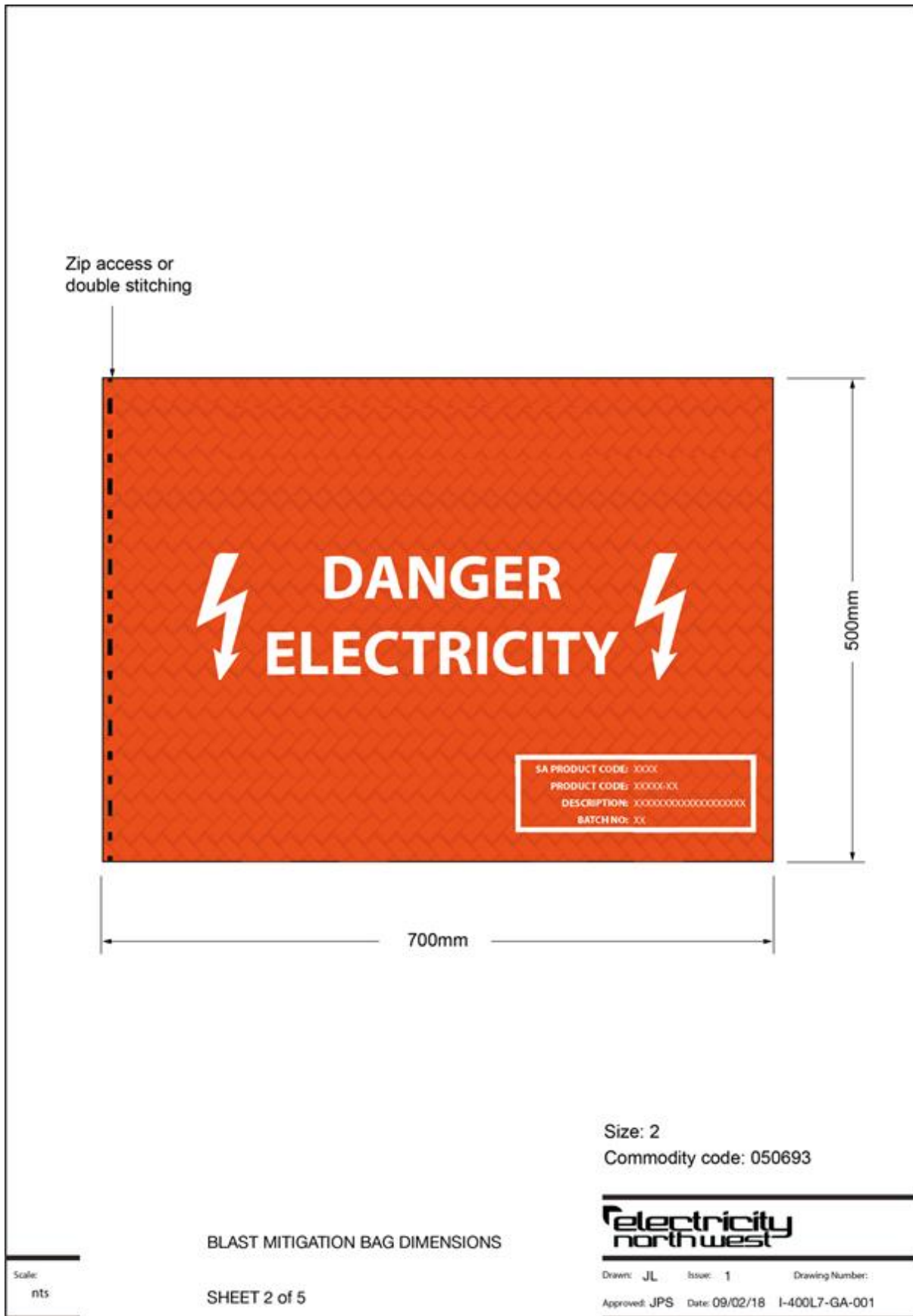
Mitigation Blankets

APPROX. MEASUREMENTS	ENWL COMMODITY CODE	COST
1100 x 900mm	785850	
600 x 450mm	785852	
800 x 700mm	785856	
Alternatives		

Appendix B – Typical Examples of Mitigation Bag Design and Dimensions

(Refer to the following pages)





Size: 2
Commodity code: 050693

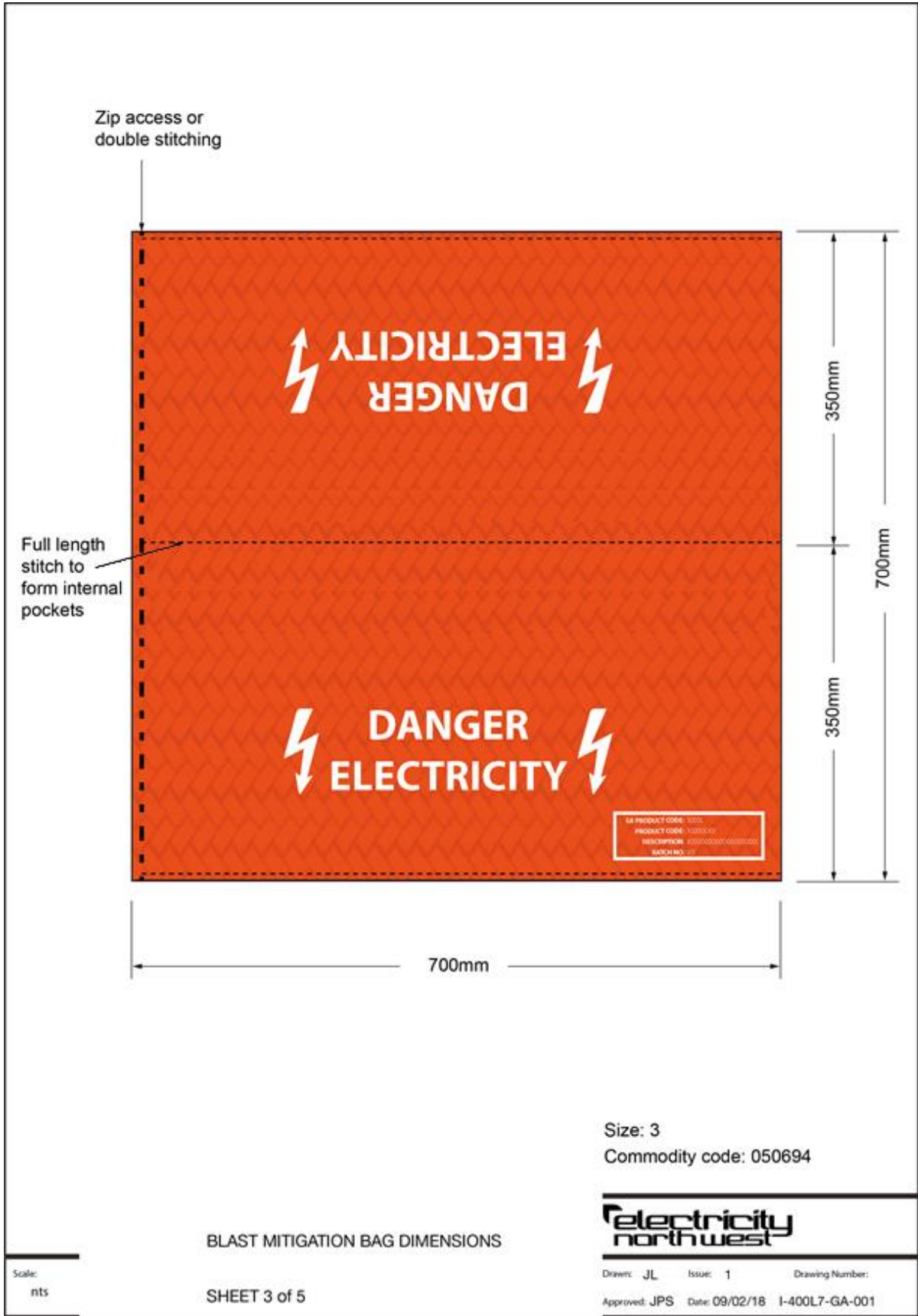
BLAST MITIGATION BAG DIMENSIONS

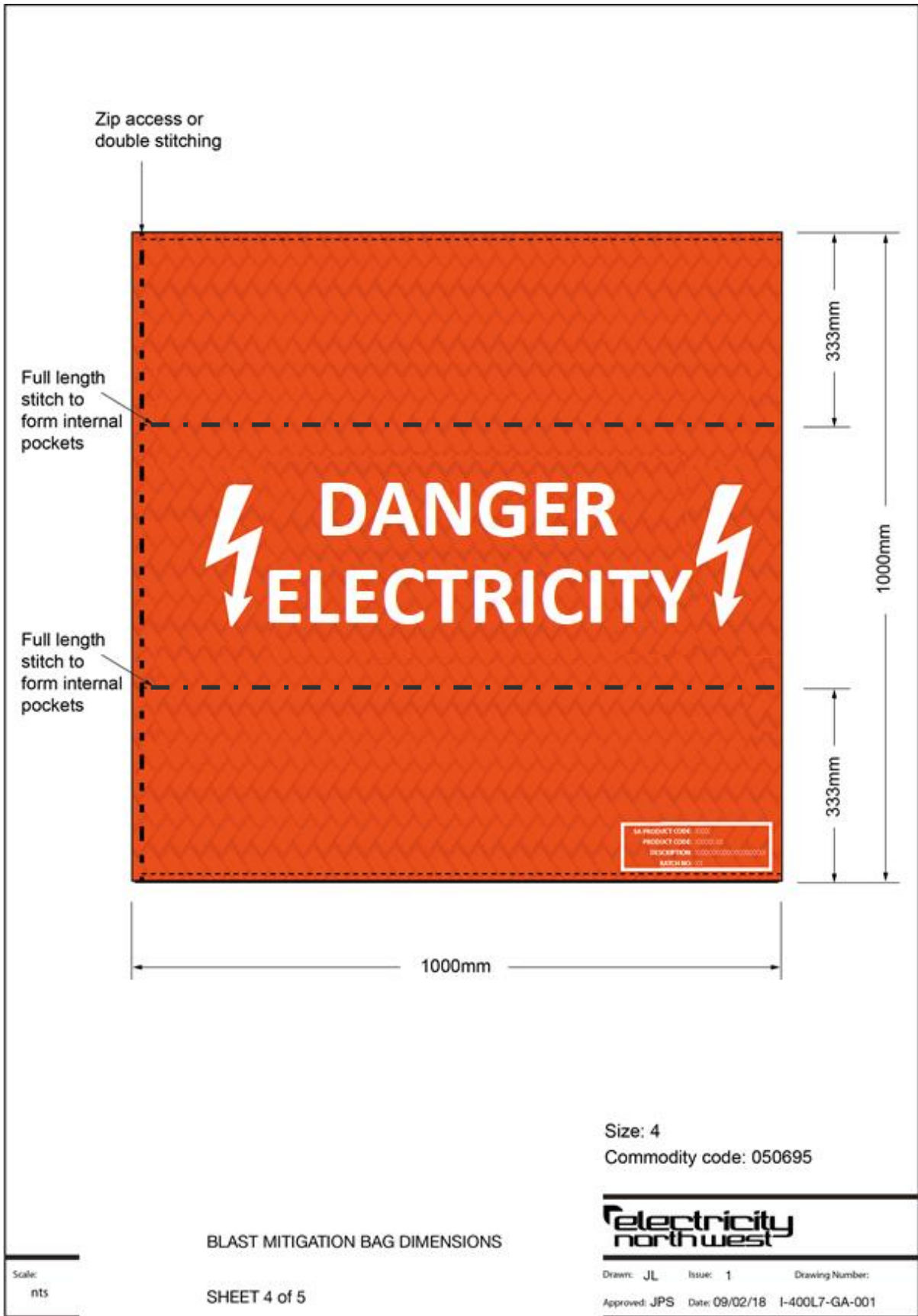
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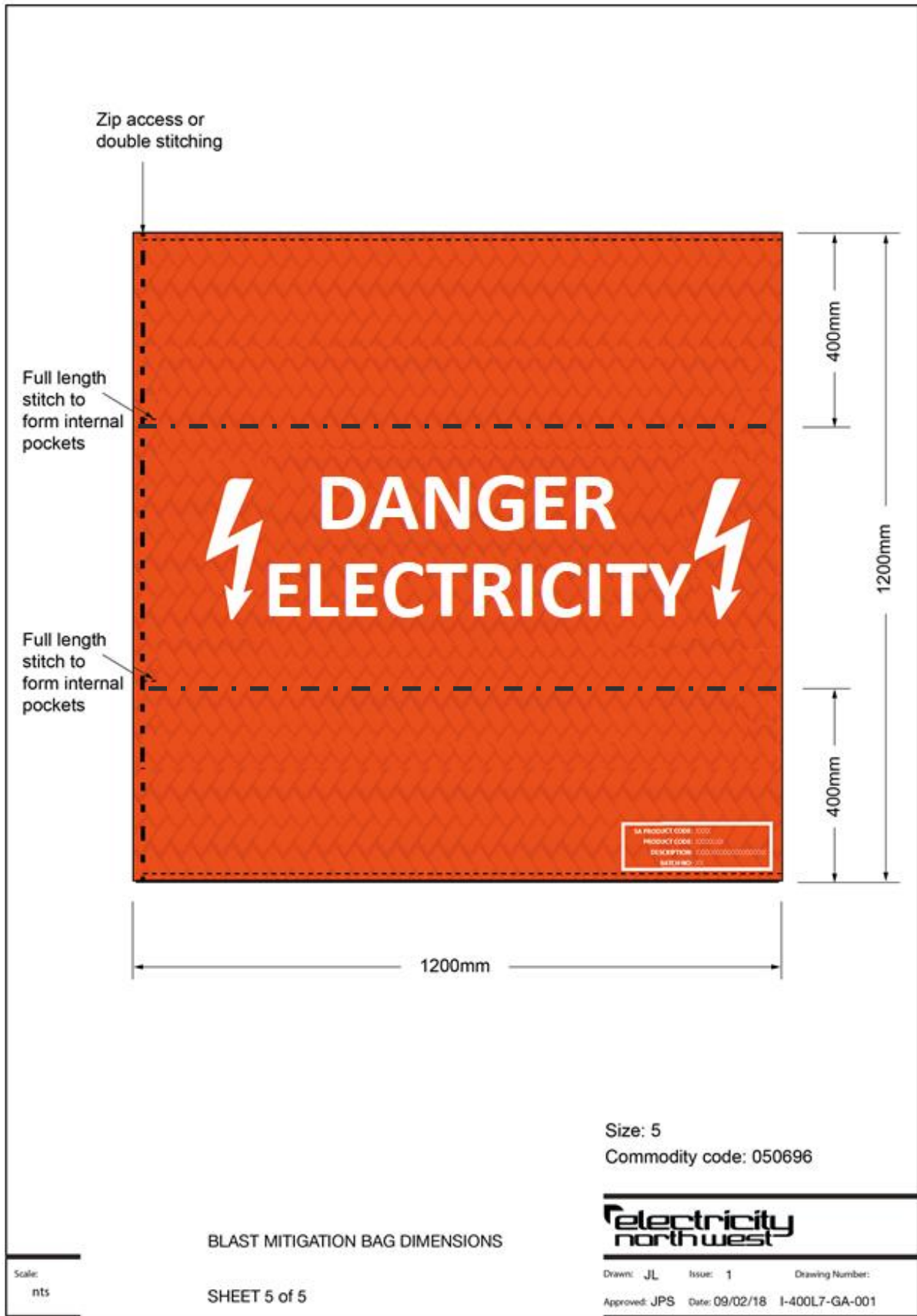
SHEET 2 of 5



Drawn: JL Issue: 1 Drawing Number:
Approved: JPS Date: 09/02/18 I-400L7-GA-001







Appendix C – 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)
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		
4.9	Environment		
5.1	Technical Information Requirements – Mitigation Bag		
5.2	Technical Information Requirements – Mitigation Blanket		
6.1	Requirements for Fingerprinting Tests at the Supplier's Premises		
6.2	Requirements for Type Tests at the Supplier's Premises		

6.3	Requirement for Routine Tests at the Supplier's Premises		
7.1	General Requirements / Additional Tests		
7.2	Applicable Standards		
7.3	Material Properties		
8.	Packaging		
9.	Safety, Handling and Disposal		
10.	Storage		
11.	Technical Support		
12.	Documents Referenced		

*** 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.**

Additional Notes: