electricity north west

Bringing energy to your door

Electricity Specification 400FW1

Issue 2 December 2021

Flags, Pennants, Wristlets and Storage Cabinets

Amendment Summary

ISSUE NO. DATE	DESCRIPTION
Issue 2	New template applied.
December 2021	Prepared by: D M Talbot
	Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director

Contents

1 Scope

This specification covers the following items associated with identification of the climbing-leg / Dead circuit side of steel towers and 132kV wood pole lines owned and operated by Electricity North West Limited (Electricity North West):

- Green flags and flagsticks.
- Red pennants.
- Wristlets.
- Storage cabinets (large and small) for the above.

2 Definitions

Approval	Sanction by the Electricity North West 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.
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 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.

3 General Requirements for Approvals and Testing

3.1 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 Circuits Policy Manager, and receipt of a written agreement to the proposed change from the Electricity North West Circuits Policy Manager.

3.2 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 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 Circuits Policy Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West 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 Circuits Policy Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West documents EPD311 and CP311.

3.3 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 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 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 Circuits Policy Manager, be reasonably required for inspection and/or retention as quality control samples. The Electricity North West 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 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.

3.4 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 Circuits Policy Manager will, if requested, confirm agreement to this prior to receipt of the information.

3.5 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 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 Circuits Policy Manager.

3.6 Minimum Life Expectancy

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

3.7 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.

3.8 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.

4 Requirements for Type and Routine Testing

The Electricity North West Circuits Policy Manager shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier's cost.

4.1 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 Electricity North West Circuits Policy Manager.

These may or may not be destructive tests.

4.2 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 Electricity North West Circuits Policy 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 Circuits Policy Manager.

5 Background

The purpose of a green flag is to indicate:

- A Dead circuit on a wood pole carrying a 132kV overhead line.
- A Dead circuit on a steel tower (including the Dead side of a steel tower carrying a double circuit as shown on Drawing I-400FW1-001).

Each circuit is colour-coded and each green flag is tied to a colour-coded flagstick, which, in turn, is screwed into a unique key (refer to Drawing I-400FW1-002). The key will only fit the corresponding socket. The socket is incorporated in the colour-coded flag bracket on a wood pole or each climbing leg of a steel tower. Therefore, the keyed flag provides an additional safety check that the Dead circuit has been correctly identified.

Red (demarcation) pennants are used on steel towers carrying double circuits. They are tied to the Live side at the junction of the crossarm and the tower leg as shown in Drawing I-400FW1-001. (The positioning enables safety clearance to the Live circuit to be maintained at all times.)

The final safety measure covered by this specification is the colour-coded wristlet. One is issued to each linesman, who will wear it whilst on the pole or tower. Again, the colour of the wristlet will match the circuit colour plate of the Dead circuit.

Keyed flagsticks and colour-coded wristlets will be required for all circuit colour combinations shown on Drawing I-400FW1-002. Colours are specified on Drawing I-400FW1-002.

Green flags, flagsticks, red pennants and wristlets shall be stored in general-purpose storage cabinets housed in substations.

6 Technical Requirements

6.1 Flagsticks

Flagsticks shall comply with Drawing I-400FW1-003. The colour coding shall remain clear for at least the minimum life expectancy (refer to Section 3.6).

Clear plastic sleeves shall also be provided for the flagsticks:

- The purpose of these sleeves is to protect the flagstick colours from becoming obscured by paint during tower painting. (If paint drips on to the flagstick sleeve, the sleeve will be removed, discarded and replaced by a new one.)
- The flagstick colours shall be clearly visible through the transparent sleeve.

6.2 Green Flags

Green flags shall comply with Drawing I-400FW1-004 and the following:

- Alternative fabrics to those named on the drawing may be proposed by Tenderers provided they meet the requirements of this Specification.
- The flag shall be green.

The braid ties shall be white or cream cotton.

6.3 Red Pennants

Red pennants shall comply with Drawing I-400FW1-005 and the following:

- Appropriate fabrics to meet the requirements of this Specification shall be proposed by Tenderers.
- The pennant shall be red.

The braid ties shall be white or cream cotton.

6.4 Wristlets

Linesmen will wear appropriately colour-coded wristlets whilst working on a steel tower. Refer to the examples shown in the photograph opposite.

Wristlets shall comprise a strap and circuit colour tag.

The strap shall be coated in Velcro on one side so that it can be fitted on to wearer's wrist by passing the strap through the buckle, tightening as required, and securing by Velcro-to-Velcro contact.

The circuit colour tag shall be made of plastic or other appropriate material. Circuit colours and colour combinations shall match the colours specified on Drawing I-400FW1-002.

The colour coding shall remain clear for at least the minimum life expectancy (refer to Section 3.6**Error! Reference source not found.**).

6.5 Storage Cabinets

6.5.1 Large Storage Cabinets

Large storage cabinets shall comply with Drawing I-400FW1-006.

Suitable materials shall be proposed by the Tenderers.

6.5.2 Small Storage Cabinets

Small storage cabinets shall comply with Drawing I-400FW1-007.

Suitable materials shall be proposed by the Tenderers.

7 Documents Referenced

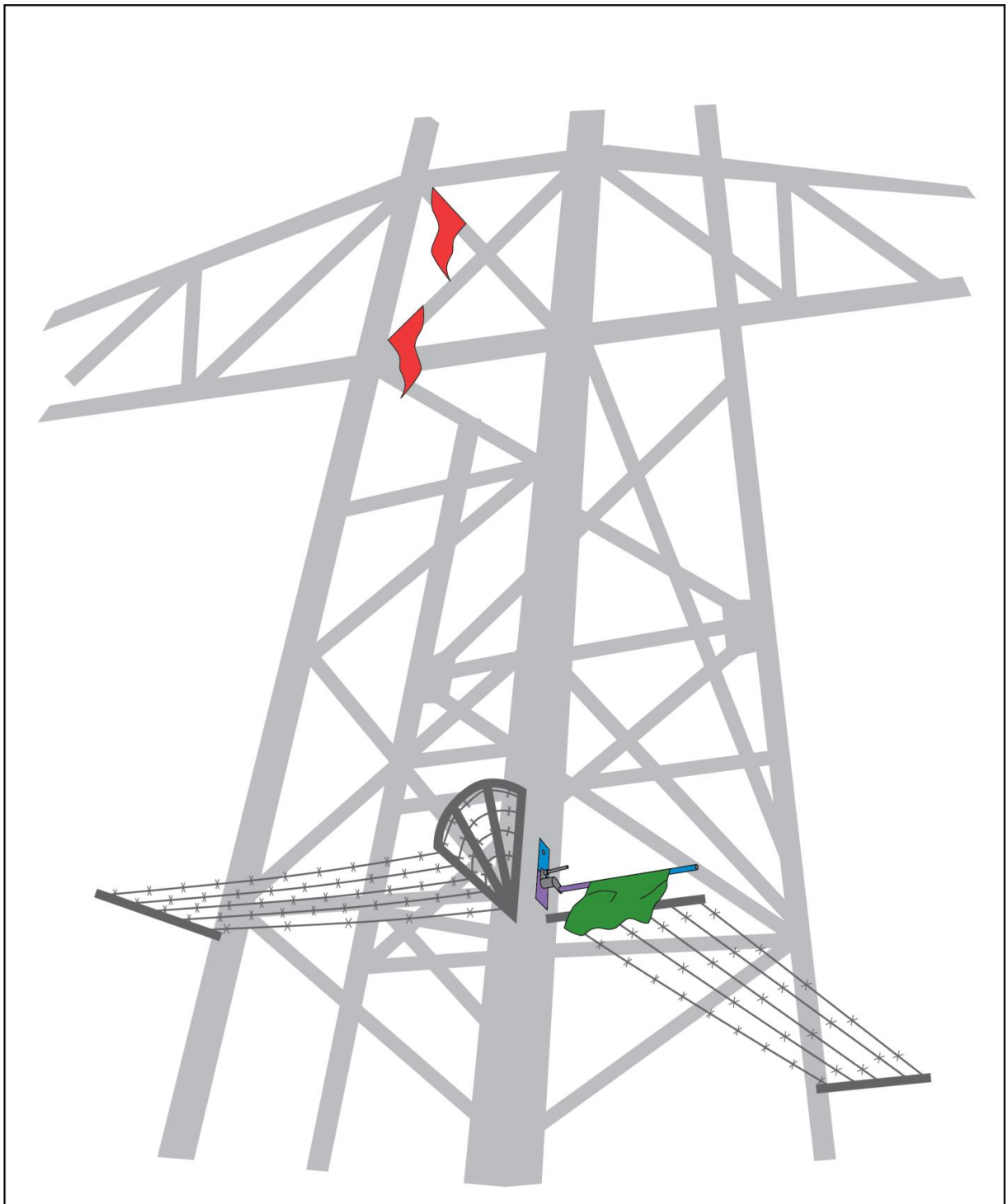
All references to documents listed below are to the latest versions, unless stated otherwise.

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 61386:	Conduit systems for cable management. General requirements.
BS 381C:	Specification for colours for identification, coding and special purposes.

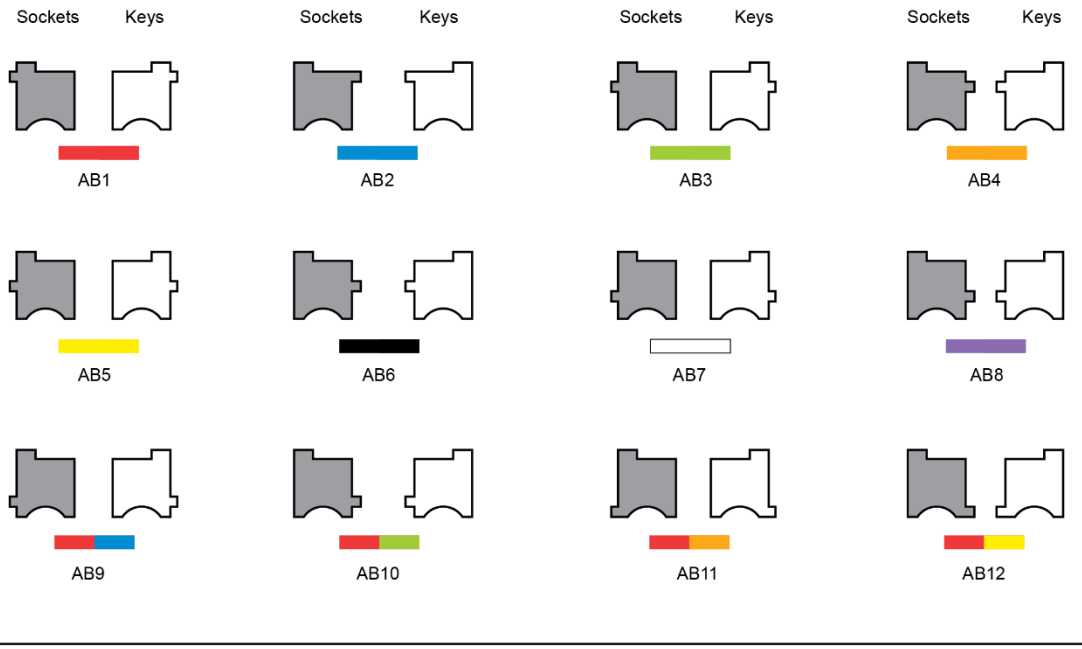
BS 5252:	Framework for colour co-ordination for building purposes.
CP311:	Equipment Approval Policy and Process

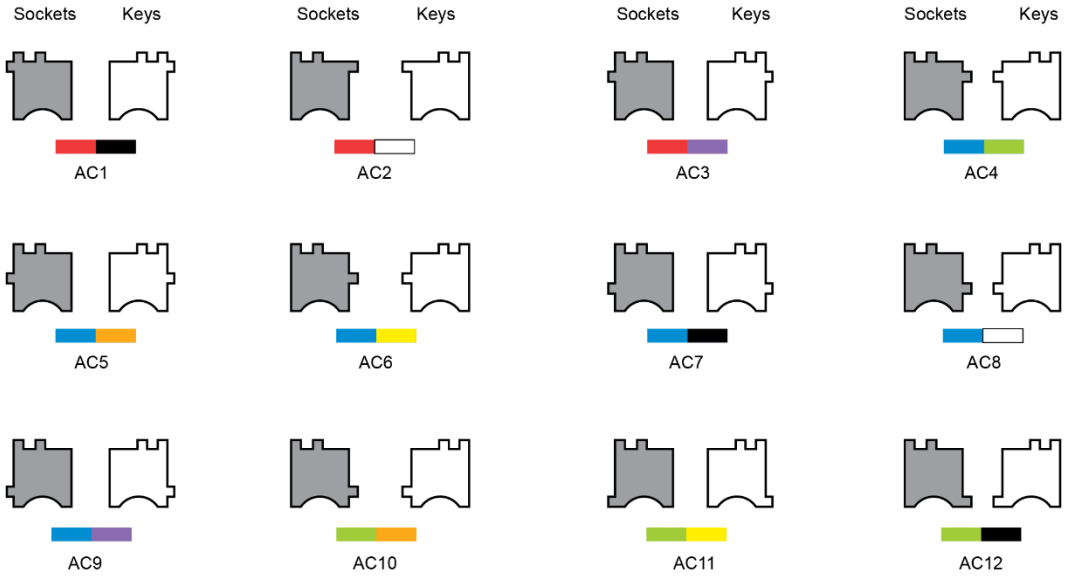
8 Keywords

Flag; Flagstick; Pennant; Storage Cabinet; Wristlet.



GREEN FLAG AND RED PENNANT ON STEEL TOWER (DOUBLE-CIRCUIT OVERHEAD LINE)	Change information for this issue N/A	Appears in ES400FW1 CP430 Pt 2	I-400FW1-001 Iss 1 sht 1 of 1 Scale: nts Auth: DMT Date: 21/06/2018





BS 381C: 538
BS 381C: 166
BS 381C: 355
BS 381C: 218

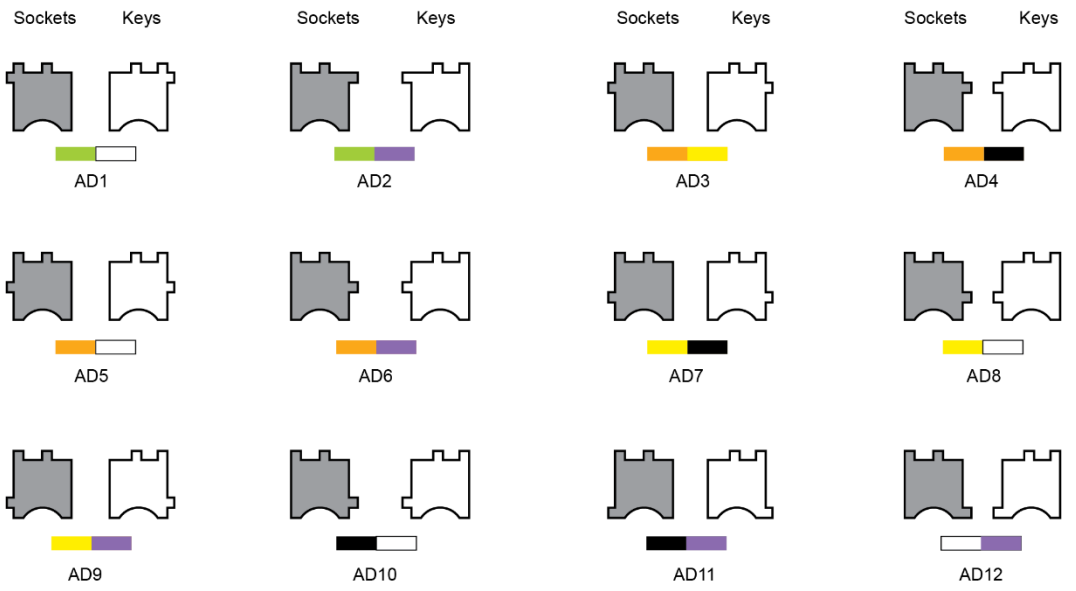
BS 381C: 796
BS 381C: 557
BS 381C or BS5252: 00 E55
BS 381C or BS5252: 00 E53

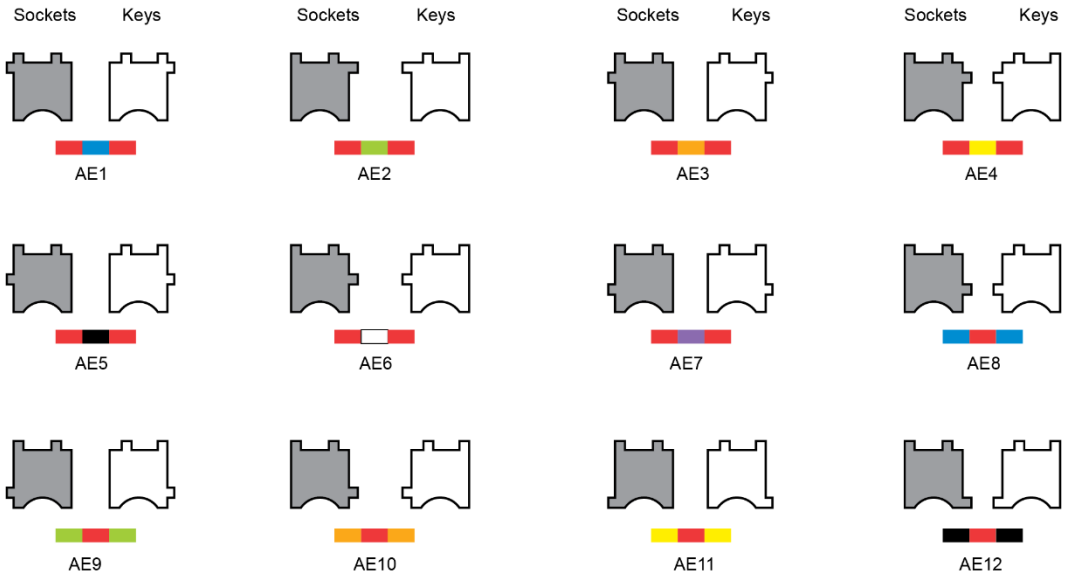
Note: Colours are a representation refer to codes for precise details

SOCKETS AND KEYS FOR KEYED FLAG ON DOUBLE-CIRCUIT OVERHEAD LINE	Change information for this issue: N/A	Appears in: ES400FW1	electricity north west

I-400FW1-002 Iss 1 sht 1 of 8

Scale: nts Auth: DMT Date: 21/06/2018





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BS 381C: 166
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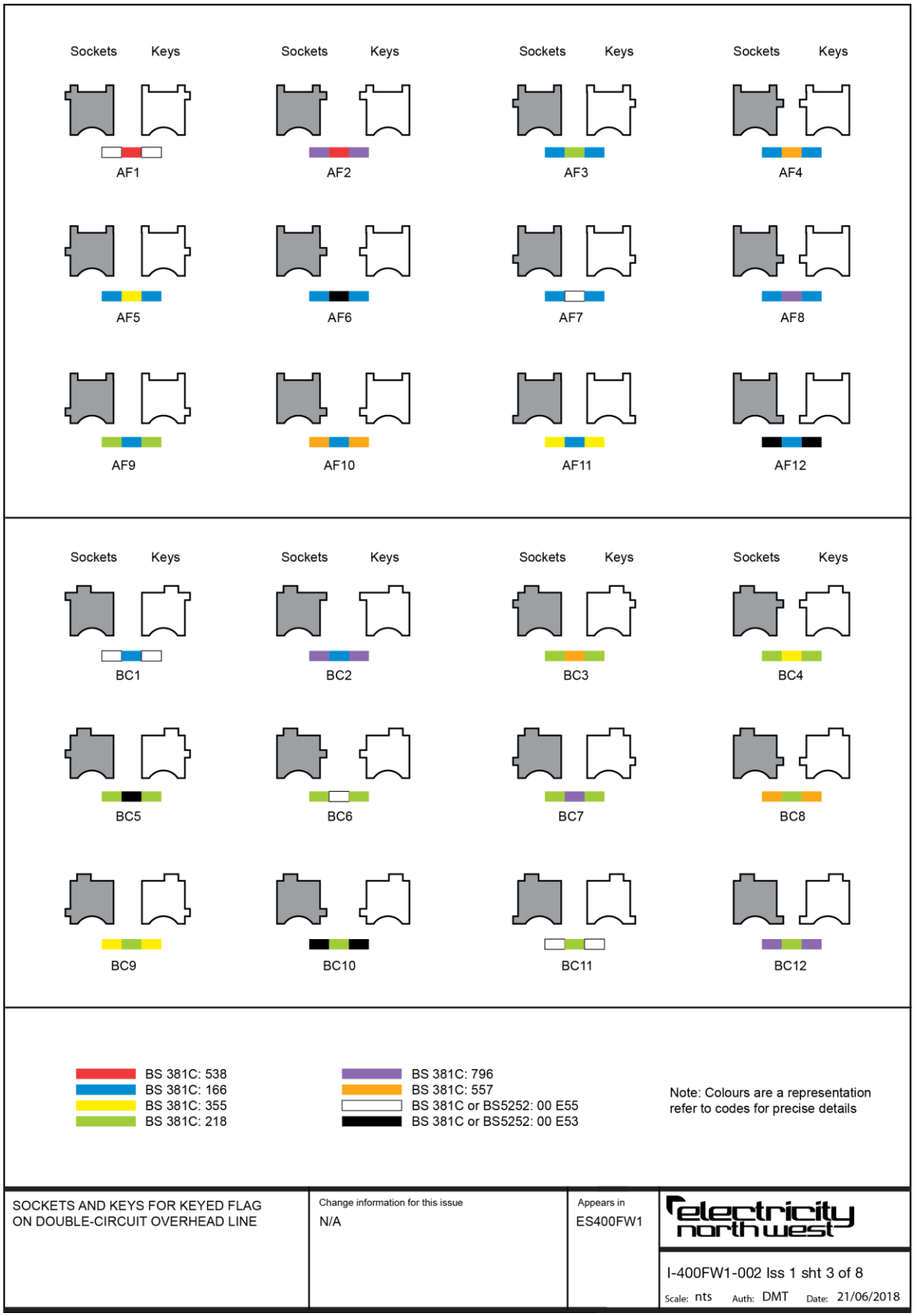
Note: Colours are a representation refer to codes for precise details

SOCKETS AND KEYS FOR KEYED FLAG ON DOUBLE-CIRCUIT OVERHEAD LINE	Change information for this issue: N/A	Appears in: ES400FW1	electricity north west

I-400FW1-002 Iss 1 sht 2 of 8

Scale: nts Auth: DMT Date: 21/06/2018



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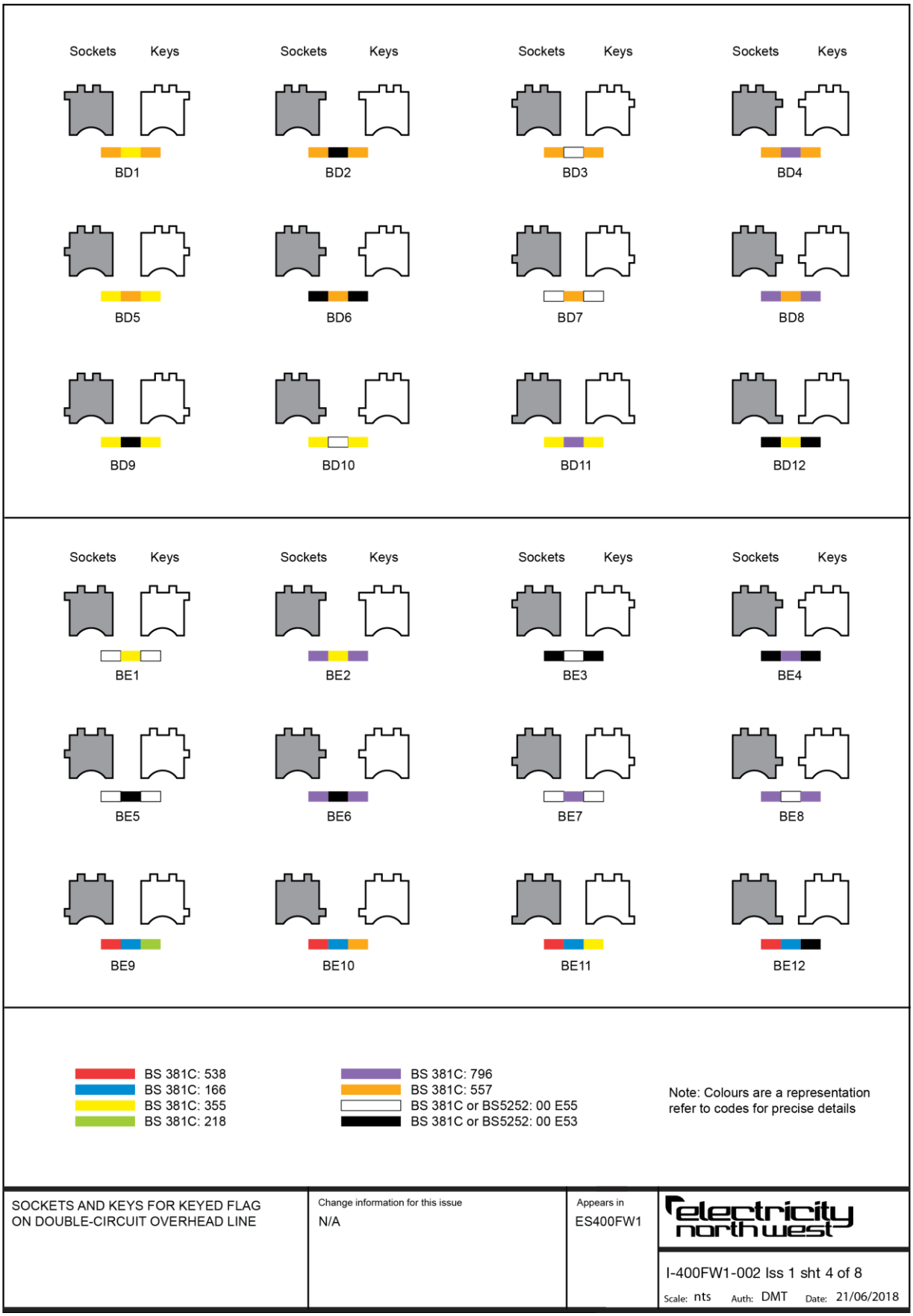
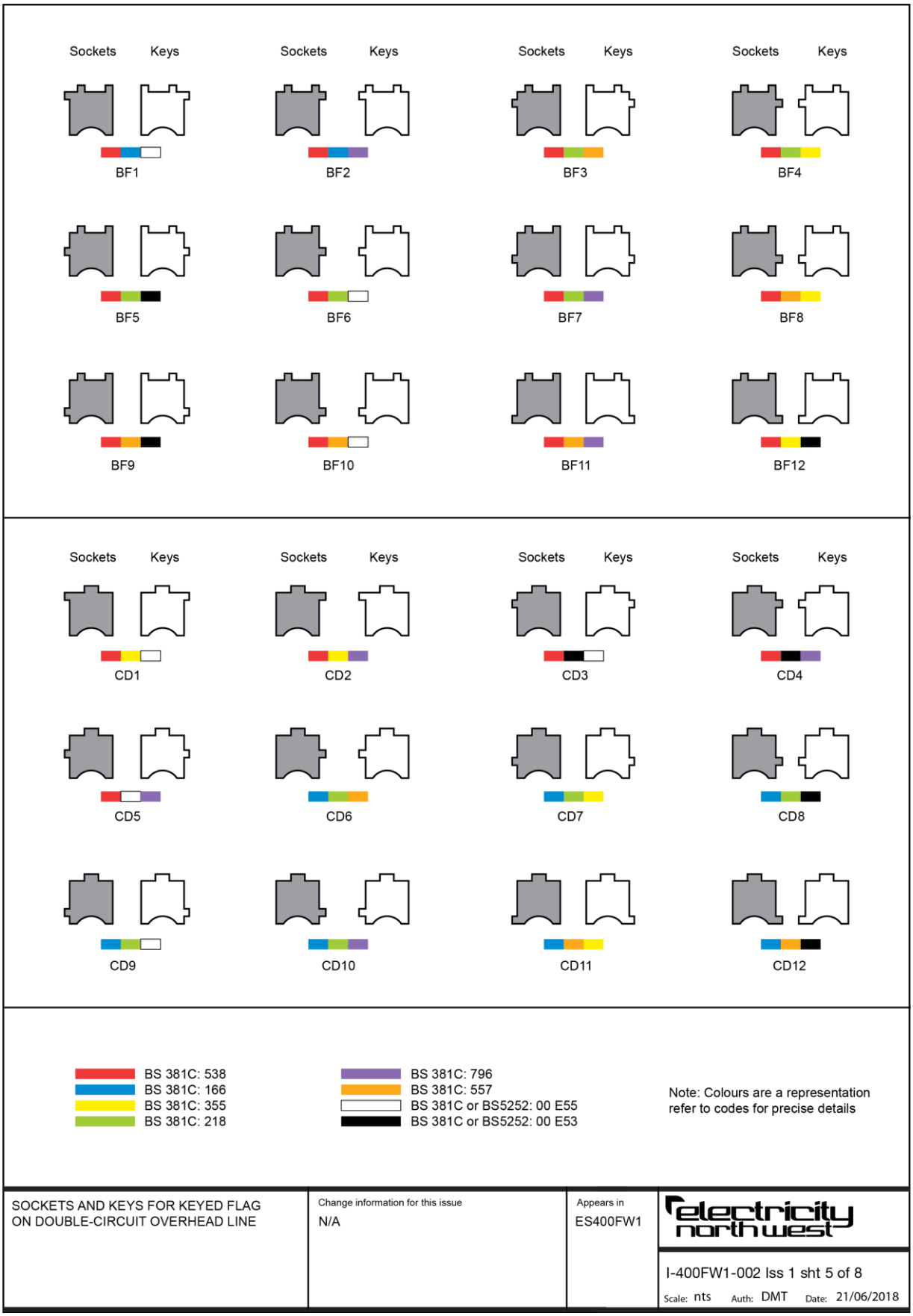
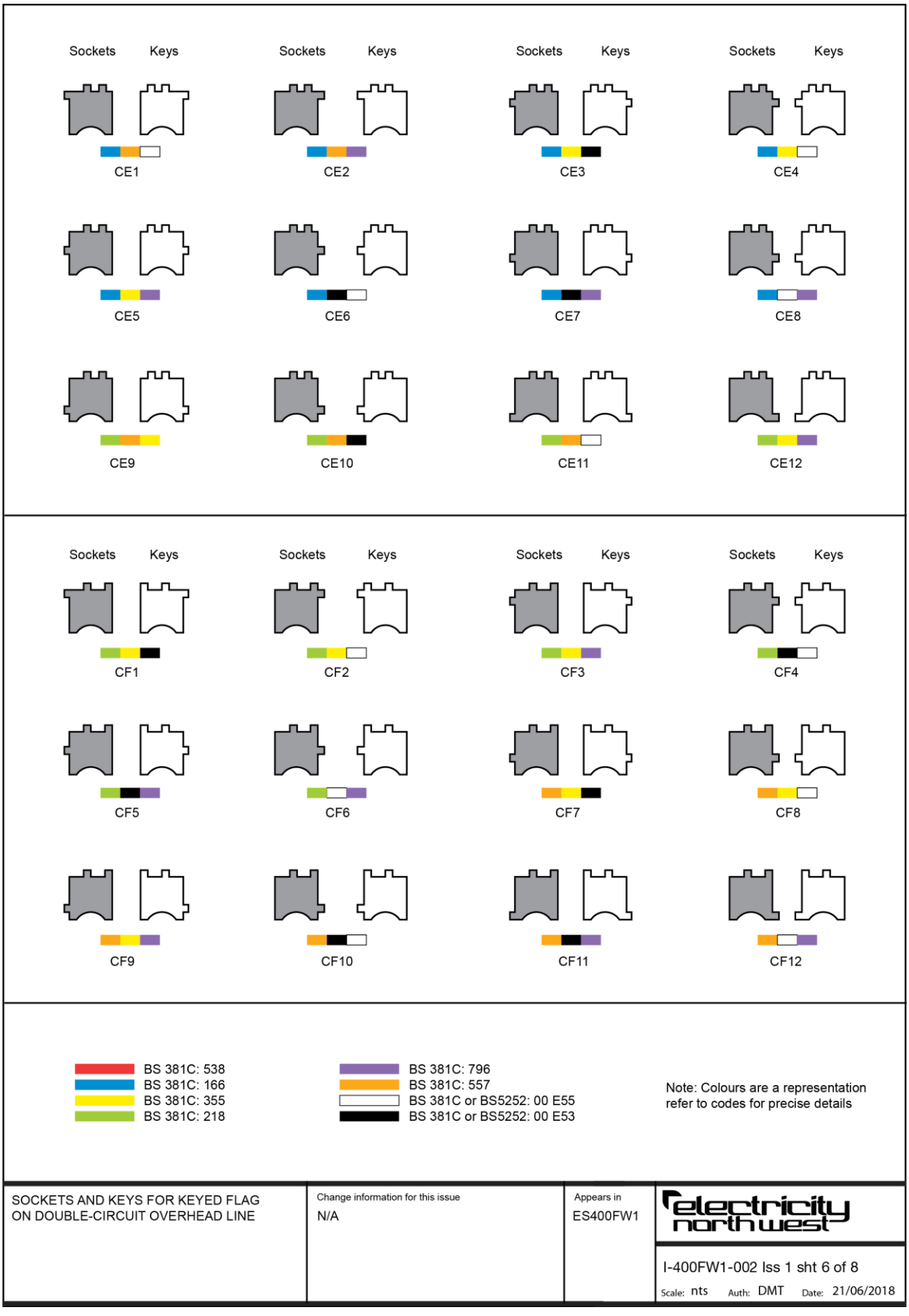
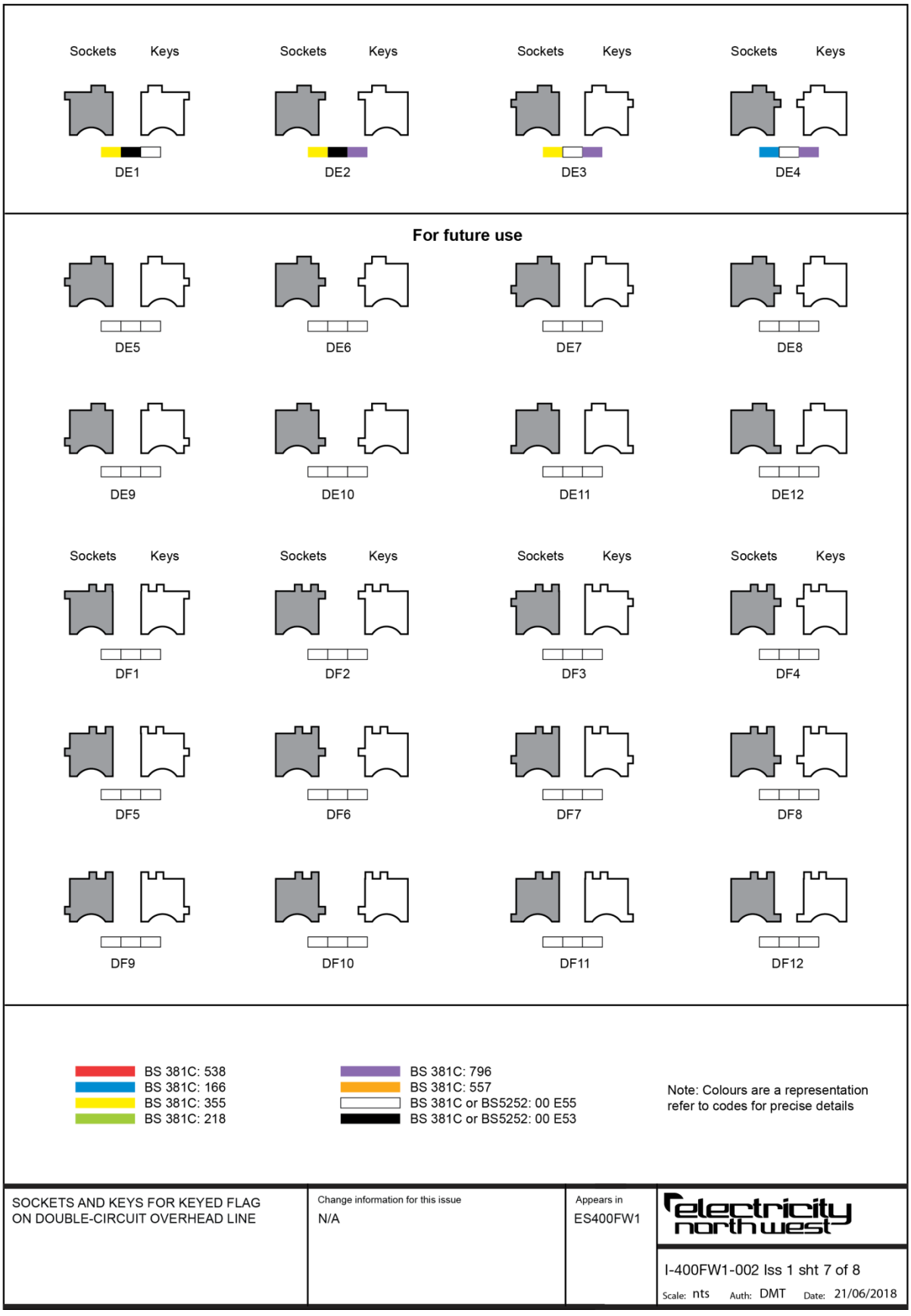
			I-400FW1-002 Iss 1 sht 3 of 8
			Scale: nts Auth: DMT Date: 21/06/2018









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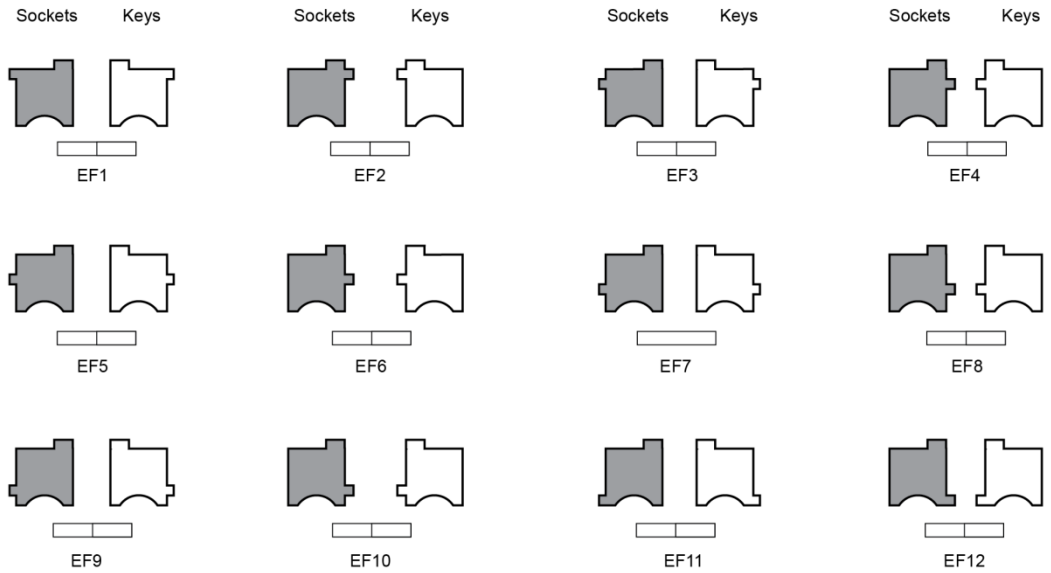


BS 381C: 538
BS 381C: 166
BS 381C: 355
BS 381C: 218

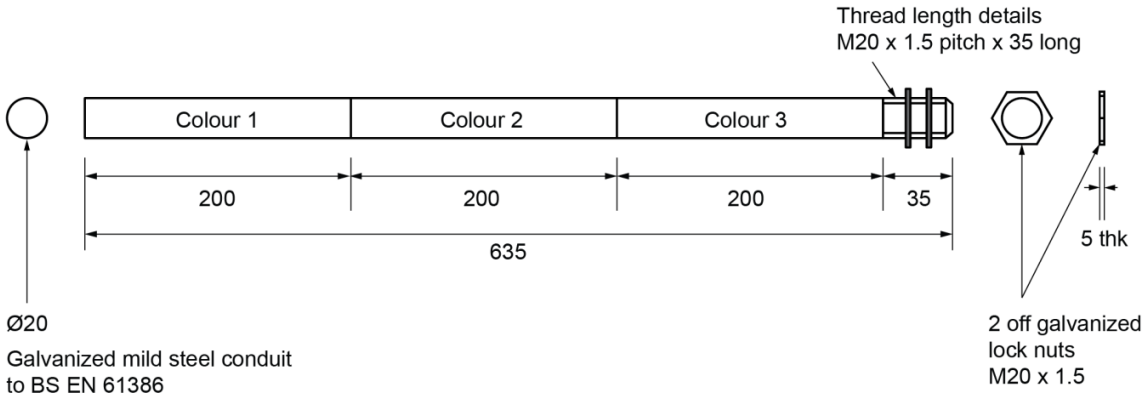
BS 381C: 796
BS 381C: 557
BS 381C or BS5252: 00 E55
BS 381C or BS5252: 00 E53

Note: Colours are a representation refer to codes for precise details

SOCKETS AND KEYS FOR KEYED FLAG ON DOUBLE-CIRCUIT OVERHEAD LINE	Change information for this issue: N/A	Appears in: ES400FW1	electricity north west

I-400FW1-002 Iss 1 sht 8 of 8

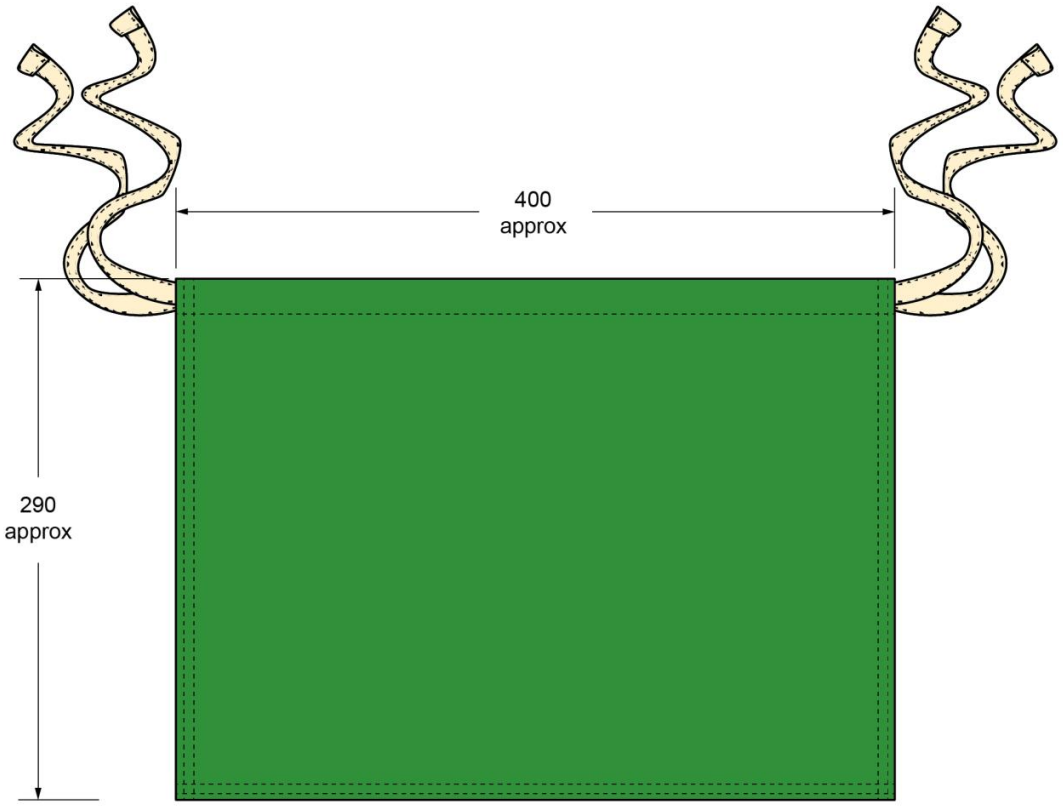
Scale: nts Auth: DMT Date: 21/06/2018



Approved colour	Colour Standard
Red, Cherry	BS 381C: 538
Blue, French	BS 381C: 166
Lemon	BS 381C: 355
Green, Grass	BS 381C: 218
Violet, Dark	BS 381C: 796
Orange, Light	BS 381C: 557
White	BS 381C or (BS5252: 00 E55)
Black	BS 381C or (BS5252: 00 E53)

Note: If only two colours are required each colour shall be 300mm long
One colour shall be 600mm long

FLAGSTICK	Change information for this issue N/A	Appears in ES400FW1	electricity north west I-400FW1-003 Iss 1 sht 1 of 1 Scale: nts Auth: DMT Date: 21/06/2018



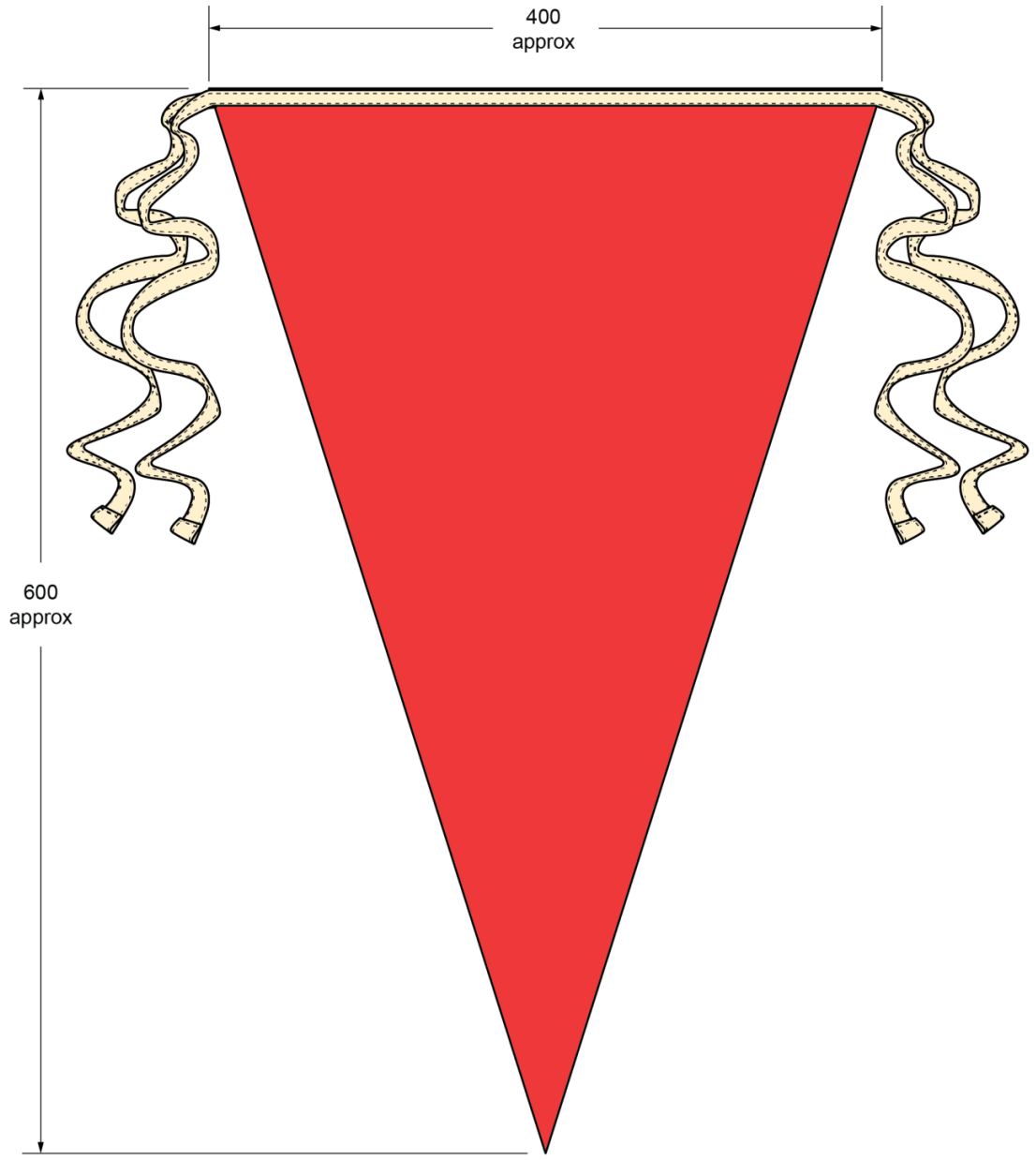
Material: High-quality cotton.

Edges to be hemmed and double-stitched as shown to prevent fraying.

A white or cream double thickness length of cotton braid shall be stitched into two corners of the flag as shown to form two double ties (as shown) to enable the flag to be tied to the flagstick.

The length of each tie shall be approximately 370mm.

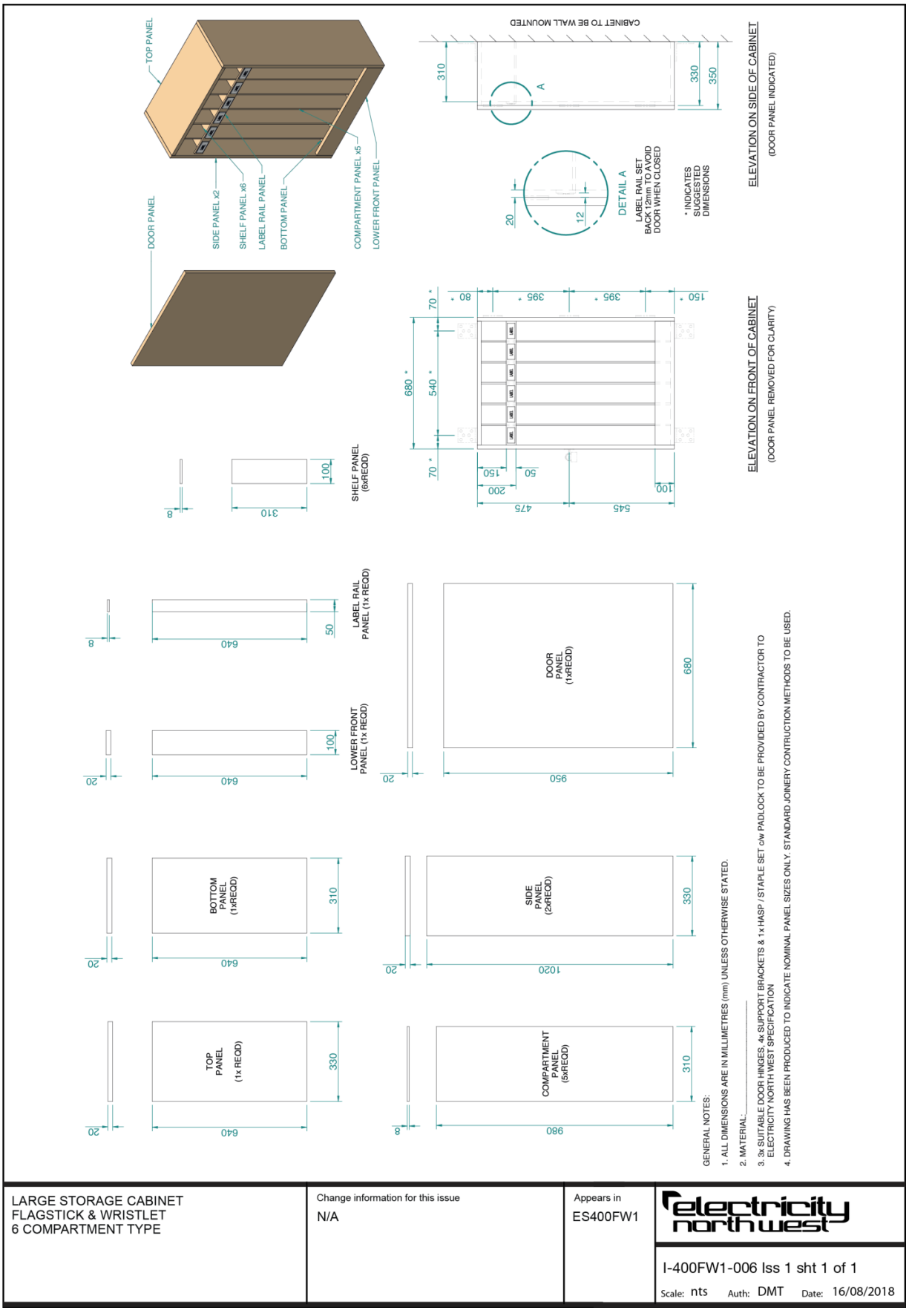
GREEN FLAG	Change information for this issue N/A	Appears in ES400FW1	electricity north west I-400FW1-004 Iss 1 sht 1 of 1 Scale: nts Auth: DMT Date: 21/06/2018



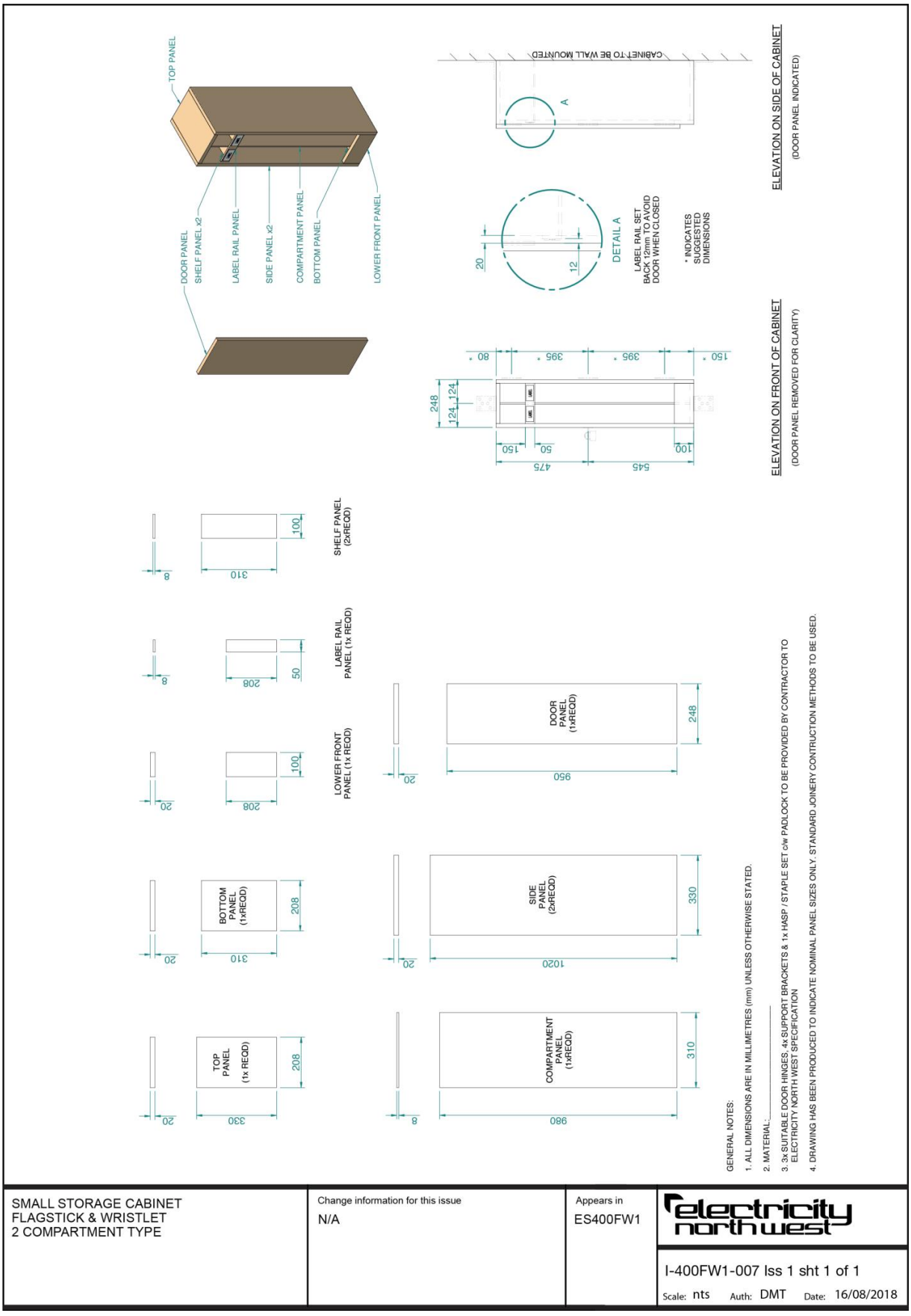
Two lengths of high-quality cotton braid (white or cream) shall be stitched along each side of the base of the flag as shown to form two double ties (as shown) to enable the pennant to be tied to the tower structure.

The length of each tie shall be approximately 400mm

RED PENNANT	Change information for this issue N/A	Appears in ES400FW1	electricity north west I-400FW1-005 Iss 1 sht 1 of 1 Scale: nts Auth: DMT Date: 21/06/2018



LARGE STORAGE CABINET FLAGSTICK & WRISTLET 6 COMPARTMENT TYPE	Change information for this issue N/A	Appears in ES400FW1	electricity north west I-400FW1-006 Iss 1 sht 1 of 1 Scale: nts Auth: DMT Date: 16/08/2018



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)**
3.1	**Product not to be Changed**		
3.2	**Electricity North West Technical Approval**		
3.3	**Quality Assurance**		
3.4	**Formulation**		
3.5	**Identification Markings**		
3.6	**Minimum Life Expectancy**		
3.7	**Product Conformity**		
3.8	**Confirmation of Conformance**		
4.1	**Requirements for Type Tests at the Supplier's Premises**		
4.2	**Requirement for Routine Tests at the Supplier's Premises**		
6.1	**Flagsticks**		
6.2	**Green Flags**		
6.3	**Red Pennants**		
6.4	**Wristlets**		
6.5.1	**Large Storage Cabinets**		

6.5.2	**Small Storage Cabinets**		

*** 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: