

Standards Alert

Part of the Energy Queensland Group

Subject: Constant Force Springs for Earthing of Screen Multicores	Control Ref No: StdsA581
	Date Issued: 01/07/2020
	Supersedes:
For Policy/Procedure/Manual: RED364 Part 5 Section 10, STNW3021	Expiry Date:
Originating Dept: Asset Standards:- Substation Standards	
Target Audience: EQL / Northern /Southern / SouthEast	

1. Introduction

Constant Force Springs (CFS) are a mature technology and have been a standard in the 33kV and 11kV underground cable space in the South East for 15+ years. Several successful trials of Constant Force Springs have been completed within the Northern and Southern Regions for the earthing of Double Brass Tape multicore. As a result, Constant Force Springs are now an approved method of earthing the brass tape screen of a multicore cable.

2. Products

The following products have been introduced into the EQL stores system.

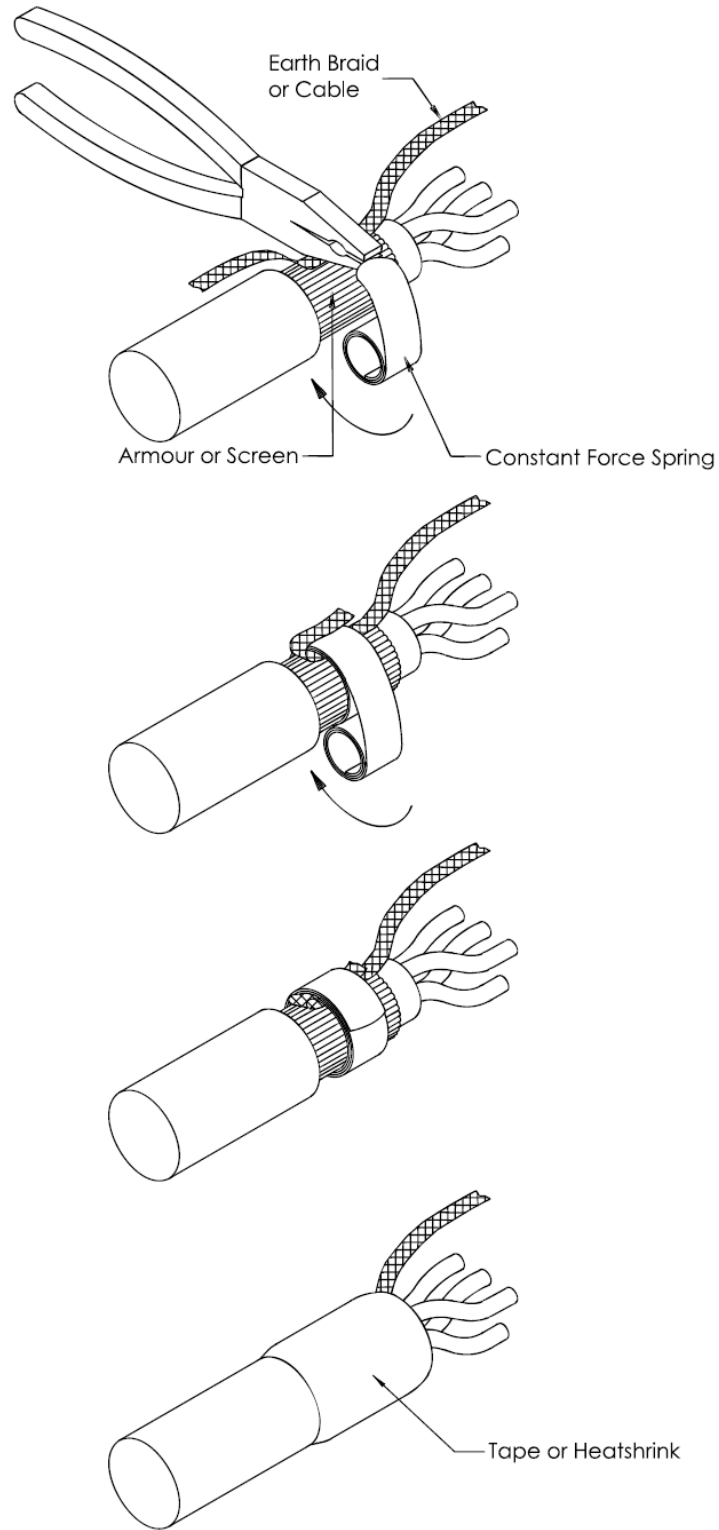
Part Number	Screen Diameter	Stock Code
CFS1	14 mm – 22 mm	002475283
CFS2	19 mm – 29 mm	002475291
CFS3	20 mm – 37 mm	002475309
CFS4	31 mm – 55 mm	002475317

3. Installation Method

- Strip outer insulation from control cable.
- Expose 50mm of the double brass tape.
- Bare 50mm of insulation from a 2.5mm² GN/YE, seven stranded single insulated earth wire.
- Wrap one third of the length of the constant force earthing spring directly onto the control cable brass tape.
- Flatten the strands of the earth wire and place longitudinally directly along the control cable with 25mm of the earth.
- Initially wrap the top half of the earthing conductor under the constant force spring.
- Wrap another third of the constant force earthing spring directly onto the earth wire.
- Fold back the bottom half of the earth wire back towards the end of the control cable.
- Wrap remaining third of the length of the constant force earthing spring over the top of the earth wire compressing it onto the spring and brass tape below.
- Apply a heat shrink or a double layer of 50% lapped 3M Type 23 high voltage self-fusing tape to insulate this connection.
- Run the earth wire to a panel earth bar with wire makers detailing the cable number.

CAUTION	Constant Force Springs can have a thin sharp edge, the appropriate PPE for the task e.g. gloves, shall be used.
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Page 1 of 3	<i>This Standards Alert will remain in force until either the expiry date is exceeded, or update of the relevant sections of the specified manuals has occurred</i> StdSA581 - Constant Force Springs for Earthing of Screen Multicores.	Dept Head J Lansley
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4. DBT Cable to CFS Cross Reference

The following table gives an indication of the size CFS for a particular multicore.

Stock Code	Cores	Diameter	DBT Diameter	CFS	CFS Diameter
2466233	6 cores	1.5 mm ²	11.6 mm	CFS1	14 mm – 22 mm
2466241	10 cores	1.5 mm ²	14.5 mm	CFS1	14 mm – 22 mm
2466258	20 cores	1.5 mm ²	18.5 mm	CFS2	19 mm – 29 mm
2466266	4 cores	2.5 mm ²	11.2 mm	CFS1	14 mm – 22 mm
2466274	8 cores	2.5 mm ²	14.7 mm	CFS1	14 mm – 22 mm
2466282	10 cores	2.5 mm ²	16.5 mm	CFS1	14 mm – 22 mm
2466290	4 cores	4 mm ²	12.5 mm	CFS1	14 mm – 22 mm
2466308	8 cores	4 mm ²	16.5 mm	CFS1	14 mm – 22 mm
2466316	10 cores	4 mm ²	18.7 mm	CFS2	19 mm – 29 mm
22111	4 cores	2.5 mm ²	10.9 mm	CFS1	14 mm – 22 mm
22112	12 cores	2.5 mm ²	16.7 mm	CFS2	19 mm – 29 mm
22113	4 cores	6 mm ²	14.0 mm	CFS1	14 mm – 22 mm
22114	4 cores	10 mm ²	17.2 mm	CFS2	19 mm – 29 mm
22115	4 cores	16 mm ²	19.8 mm	CFS3	20 mm – 37 mm
22116	4 cores	25 mm ²	24.5 mm	CFS3	20 mm – 37 mm

5. Update to Manuals

At the next revision RED364 Part 5 Section 10 and STNW3021 will be updated to include this approved earthing method.

6. Further Information

For further information, please contact Greg Carlill, (greg.carlill@energyq.com.au)