

Scotch®

25 Electrical Grounding Braid

Data Sheet

Product Description

Scotch 25 Electrical Grounding Braid is an all-metal woven grounding braid in a flat, cable-like form. It is conformable due to its woven construction of 240 strands of #30 AWG tinned copper wires.

Features:

- ❖ High current-carrying capacity (approximately that of #6 AWG wire)
- ❖ Tinned copper wires
- ❖ Stable at elevated temperatures
- ❖ Oil resistant
- ❖ Compatible with all power cable installations
- ❖ Fire resistant
- ❖ Easy conformity to irregular surfaces
- ❖ Corrosion resistant
- ❖ Compatible with high-voltage jointing and termination materials
- ❖ Unaffected by solvents, ultra-violet, ozone, and moisture
- ❖ Usable for indoor and outdoor applications
- ❖ Can be easily soldered to high-voltage cable shields

Applications

- ❖ To provide a fault current path across shielded cable joints
- ❖ For grounding high-voltage joints, terminations, cables or other cable accessories

Data

Average Properties

Physical Properties

Thickness ASTM-D-1000	2.38mm
Width ASTM-D-1000	12.7mm
Shelf life	Indefinite

Electrical Properties

Wire size	240 #30 AWG tinned copper wires
Approximate AWG rating	#6

Chemical Properties

Ozone resistance ASTM-D-1373	pass
Resistance to ultra-violet 3M (see sec. 5)	pass

Note: These are typical values and should not be used for specification purposes.

Specifications

Product

Conducting metal braid must be woven from 240 strands of #30 AWG tinned copper wires and be capable of carrying fault current comparable to that of #6 AWG copper wire. It must be usable with or without covering, both indoors and outdoors, without corroding, tearing or splitting. It must be capable of being soldered to high-voltage cable shields while being non-flammable and yet must be compatible with cable oils, common solvents, adhesives and high-voltage jointing and terminating insulations.

Engineering/Architectural Specifications

Jointing and terminating shall be done according to the engineering print supplied by the manufacturer of the jointing or terminating materials for the specific cable and approved by the specifying engineer.

Alternate

Jointing and terminating engineering drawing shall be compatible with specific cable or cables and approved for specific voltage of cable.

Characteristics and Test Data

Test method, as show in Figure 1 was designed to determine fault current carrying capacity of a 30.5cm specimen of 25 Braid. The test ended when the braid separated, due to melting of tinned copper wires. Graph (Figure 2) illustrates the results.

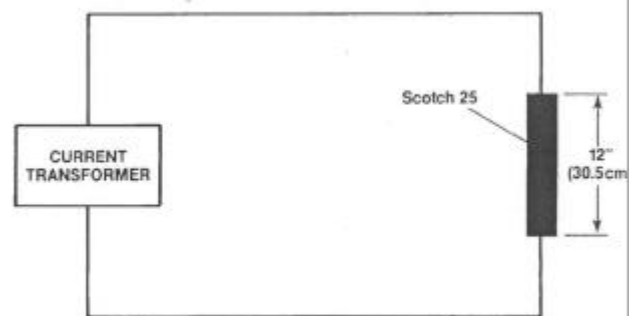


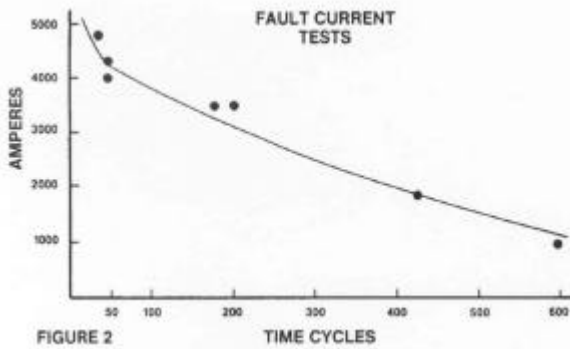
FIGURE 1

Scotch®

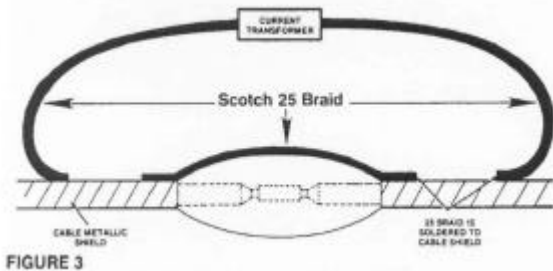
25 Electrical Grounding Braid

Data Sheet

The data indicate that 25 Braid has excellent fault current carrying capacities for replacing shielding in high-voltage cables. It can be used as a ground strap or jumper wire because it can carry fault currents and lightning currents that can appear in high-voltage cables. Figure 3 is representative of the method used for testing fault current carrying capacities of 25 Braid in a high-voltage cable joint.



Every cable tested had a single half-lapped layer of 19mm x 0.13mm tinned copper metallic shielding tape for fault current protection. In all cases, the cable's metallic shield was destroyed (by current), whereas, grounding braid remained unharmed.

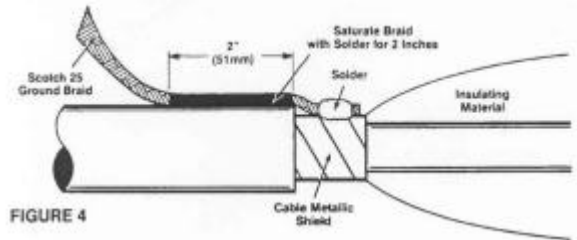


Important Notice

Technical information provided by 3M is based on experience and/or tests believed to be reliable, but their accuracy is not guaranteed and the results may not be relevant to every user's application. For this reason 3M does not accept responsibility or liability, direct or consequential, arising from reliance upon any information provided and the user should determine the suitability of the products for their intended use. Nothing in this statement will be deemed to exclude or restrict 3M's liability for death or personal injury arising from its negligence. All questions of liability relating to 3M products are governed by the seller's terms of sale subject where applicable to the prevailing law. If any goods supplied or processed by or on behalf of 3M prove on inspection to be defective in material or workmanship, 3M will (at its option) replace the same or refund to the Buyer the price paid for the goods or services. Except as set out above, all warranties and conditions, whether express or implied, statutory or otherwise are excluded to the fullest extent permissible at law.

3M and Scotch are trademarks of the 3M Company. Printed in the UK.
 © 3M United Kingdom PLC, 2003.

Installation Techniques



When grounding termination or joints:
 Solder Scotch 25 Ground Braid to cable metallic shields and bring remainder of braid out of joint or termination. Construct a 51mm solder block on ground braid to prevent moisture penetration into joint. Figure 4.

Wrap two half-lapped layers of Scotch 130C Rubber Jointing Tape, covering the end 51mm of cable jacket. Wrap two half-lapped layers of 130 Tape for 76mm along ground braid, beginning at a point where ground is soldered to shield. Lay ground braid over 130C Tape applied on jacket for 25mm then bend strap away from cable. Apply outer sheath over ground braid. For bonding jumper wire across joint, lay Scotch 25 Ground Braid across joint and solder ends to cable's metallic shielding.

Maintenance

25 Braid has an indefinite storage life and is not impaired by freezing nor by over-heated conditions. Braid can be checked for flaws by visual inspection.

Availability

Scotch 25 Braid is available in 12.7mm x 2.38mm x 4.57mm and is available from your local 3M authorised electrical distributor.