



E2R Breakout Boots 2-Way

Heat Shrinkable Moulded Parts



1. Product Description

3M 2-Way Breakouts are designed for quick and easy insulation and sealing of cable end or crutches, and provide resistance to abrasion, weathering and chemical attack. Each Heat Shrink part will cover a wide range of sizes and different kind of cables.

2. Technical Information

These parts are made from semi-rigid, cross-linked modified polyolefin material, which is internally coated with hot melt adhesive. The materials used are halogen free.

On application of heat the adhesive melts and the part shrinks forming a perfect watertight seal. They can be used for insulating/sealing of cable crutches for indoor and outdoor applications.

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3. Typical Properties

Physical Properties	Value	Test Method
Density	1.05 ± 0.2 g/cm ³	ASTM D-1505/D=M/V
Hardness	45 ± 3 shore D	ASTM D-2240
Tensile strength	10 N/mm ²	ASTM D-412 / ISO 37
Ultimate elongation	300 %	ASTM D-412 / ISO 37
Water absorption	0.15 %	ASTM D-570 / ISO 62
Longitudinal Shrinkage	10 %	-
Recovery Temperature	120 °C	IEC - 216
Peel strength	100 N/25 mm	Rolling Drum method
Thermal Tests		
Operating temperature range	- 30 °C + 135 °C	DIN 53 466
Thermal Ageing (150 °C for 168 hrs)		
Tensile strength	8 N/mm ²	ASTM D-412 / ISO 37
Ultimate elongation	200 %	ASTM D-412 / ISO 37
Flammability	Not self-extinguishing	ASTM D 876
Low Temperature Flexibility	- 40 °C	ASTM D 2671C
Electrical Properties		
Volume resistivity	1 x 10 ¹³ Ohm-cm	ASTM D-257 / IEC 93
Dielectric strength	10 kV/mm	ASTM D-149 / IEC 243
Chemical Properties		
Corrosion	None	ASTM D 2671

The above figures are average values, established to our best knowledge, but not to be used for specification purpose.

4. User Information

3.1 Selection Guide

Product Description	Application Range on LV cable (mm ²)	Ø Neck Exp. (mm)	Ø Neck Recov. (mm)	Ø Finger Exp. (mm)	Ø Finger Recov. (mm)	Length Recov. (mm)	Wall Thickness Neck Recov. (mm)	Wall Thickness Finger Recov. (mm)
E2R 10-35	10-35	30	10	12	04	90	2,8	2.0
E2R 35-150	35 - 150	50	21	24	07	121	3	2.5

3.2 Shelf Life and Storage

This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled area (10 °C to 27 °C and <75 % relative humidity).

5. Additional Information

To request additional product information, see address below.

Important Notice

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluates the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application.

Values presented have been determined by standard test methods and are average values not meant to be used for specification purposes.

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