



Data Pack for Advanced Materials Silicone Rubber Grade FR70R

Introduction

Physical Properties

List of reports available

Introduction

FR70R is a market leading silicone rubber developed for mass transit; it boasts excellent fire resistance with low smoke, zero halogen properties.

Advanced Materials Grade FR70R is supplied directly and indirectly into the rail, aerospace, marine and construction markets

Physical Properties

Mechanical properties	Value
Natural colour	Creamy Off White
Shore A Hardness	70 (± 5)
Density / Specific gravity at 25°C	1.28
Tensile Strength MPa approx.	10.2
Elongation @ break, % approx.	320
Tear Strength, kN/m, approx.	19
Rebound resilience, % approx.	47
Dielectric dissipation factor at 1 MHz, approx. (IEC 60250)	$3 \cdot 10^{-3}$
Fire resistance – vertical combustion IEC 60695 – 11-10	classification UL94VO, 3mm
Fire resistance – EN 45 545 Part 2	R1 HL3, 2.2mm R7 HL3, 2.2mm
Limit oxygen index (norm NFT51070,1985) %:	35
Volume resistivity, Ohm.cm, approx. IEC 60093	$8.1 \cdot 10^{15}$
Dielectric constant at 1 MHz, approx. IEC 60250	3.0

Figures given above are for guidance only and should not be used in preparing specifications.

Naming on Reports

Advanced Materials FR70R Grade of material is a raw material called Bluesil FR8775U from Bluestar's FR8700 U Series; Therefore, Test Results will make reference to FR70R, FR8775 or MF775 depending on when the test was carried out and who the test was commissioned by. These are all the same material.

Reports Available:

EN45545-2:2020 R1 – R7 HL1 – HL2 – HL3 requirements set R1 and R7

Tested By LAPI Laboratorio Prevenzione Incendi S.p.A.
Report Number 1925.1IS0040/22
EN 45545-2:2020 Requirements for fire behaviour of materials and components
(Requirement Set R1, R7)
Material Name BLUESIL FR 8775 E NAT
Test Sponsor Elkem Silicones France – R&T Atrion

NFX 70 – 100 Analysis of Gaseous effluents

Tested By Warrington Fire
Report Number WF 151185
NFX 70 – 100 Analysis of Gaseous effluents
Material Name Rhodorsil MF775 CR
Test Sponsor Rhodia Silicones

BS 6853: 1999 Appendix D, Clause D.8.3 Spoke Density

Tested By Warrington Fire
Report Number WF 151186
BS 6853: 1999 Appendix D, Clause D.8.3 Spoke Density
Material Name Rhodorsil MF775 CR
Test Sponsor Rhodia Silicones

BS EN ISO 4589-3: 1996 Determination Of Burning Behaviour By Oxygen Index

Tested By Warrington Fire
Report Number WF 151188
BS EN ISO 4589-3: 1996 Determination Of Burning Behaviour By Oxygen Index (Part 3 Annex A –
Temperature Test)
Material Name Rhodorsil MF775 CR
Test Sponsor Rhodia Silicones

Vertical Combustion UL94

Tested By LNE Laboratoire National D'Essais
Report Number Dossier 1030669 DMAT/12
Vertical Combustion Flammability Test to UL94 of May 1985
Material Name MF775 CR
Test Sponsor ETS Rhone Poulenc

Note: The test is very old (1991) This lab is not approved by Underwriters Laboratories but do fire tests to IEC 60695-11-10 which is an identical test to UL 94. Maintenance of approval by UL is costly and would add considerable costs to our material for a very small requirement.

Determination of the Flammability of an aircraft material according to FAR 25.853(A)-App. F Part I

Tested By Elastomer Research Testing B.V.
Report Number 16210
Determination of the Flammability of an aircraft material according to FAR 25.853(A)-App. F Part I
Material Name FR70R
Test Sponsor Advanced Materials Ltd

EN 45545-2:2013+A1:2015

Tested By Currenta GmbH & Co. OHG
Report Number Classification report No. 16/0634
EN 45545-2:2013+A1:2015 Railway applications – Fire protection on railway vehicles Part 2:
Requirements for fire behavior of materials and components (Requirement Set R22, R23)
Material Name FR 8775 E
Test Sponsor Bluestar Silicones

EN 45545-2:2013+A1:2015

Tested By Currenta GmbH & Co. OHG
Report Number Classification report No. 16/1885
EN 45545-2:2013+A1:2015 Railway applications – Fire protection on railway vehicles Part 2:
Requirements for fire behavior of materials and components (Requirement Set R1, R7)
Material Name BLUESIL FR 8775 E NAT
Test Sponsor Bluestar Silicones

Fire Behaviour to Standard NF F 16-101, Standard NF F 16-102, STM- S-001 Index C

Tested By LNE Laboratoire National D'Essais, Laboratoire De Trappes
Report Number N050890 – DE/1 and DE/3
Fire Behaviour to Standard NF F 16-101, Standard NF F 16-102, STM- S-001 Index C
Material Name Bluesil FR 8775 / MF775 E CR
Test Sponsor Bluestar Silicones

For Advanced Materials Ltd



Littlehampton, England 22nd February 2023

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