

MATERIAL DATA SHEET



FIRE RESISTANT - LOW SMOKE - LOW TOXIC EPDM 60° SHORE 'A'
APPROVED TO EN 45545-2: 2013 + A1:2015
HL3 for R22/ R23/ R24/ R25/ R26 Requirement Sets
QUALITY NO. H 45 - 1000

Mechanical Properties		
Colour	Black	
Hardness	60° (+/-5°) Shore 'A'	ISO 7619-1
Density	1.51 g/cm ³ Apprx.	ISO 1183
Tensile Strength	ca 5N/mm ²	DIN 53 504 / ISO 37
Elongation @ Break	> 400 %	DIN 53 504 / ISO 37
Tear Strength	Ca 5N/mm	ISO 34-1 A
Compression Set (24hrs @ 70°C)	16%	ISO 815
Electrical Volume Resistivity	1.5 x 10 ¹⁴ ohm cm	IEC 60093
Ozone Resistance: 168h /40°C / 50pphm / 20% elongation	Result: No cracks	DIN ISO 1431-1
Service Temperature Range	-40 / +100°C	
No carcinogenic nitrosamine generating raw materials are used.		

1mm to 6mm - Calendered Sheet c/w Fine Fabric Surface Finish - Rolls: 1600mm wide x 10m long
(Smooth Surface Finish available - made to order)



(<0.02%)



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Disclaimer: All information shown in this data sheet is based on our testing & experience & is to the best of our knowledge. It represents an accurate presentation of the product. The data are typical values & are not to be used as the end use specification. It is the customers' responsibility to test the suitability of the material for their application. Any recommendations for use are for guidance only & are offered without warranty or guarantee. Subject to change without notice.

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J-FLEX

High Performance Elastomer Sheetings & Manufactured Components

Units 1 & 2, London Road Business Park, Retford,
Nottinghamshire, DN22 6HG, United Kingdom

tel: +44 (0) 1777 712 400 fax: +44 (0) 1777 712 409
www.j-flex.co.uk





RAILFLEX® LOW SMOKE – LOW TOXIC EPDM 60 SHORE ‘A’
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HL3 for R22/ R23/ R24/ R25/ R26 Requirement Sets
Quality No. H 45 – 1000

NORM	STANDARDS	TEST REPORTS	TESTED BY
EN 45545-2: 2013 +A1: 2015 Set Requirements R22/ R23/ R24/ R25/ R26 Hazard Level HL3	ISO 5659-2 ISO 4589-2 NFX 70 – 100 - 1 NFX 70 – 100 – 2 NF F16-01 (Glow Wire test Acc. EN 60695-2-10/11)	REE 59 -1445/16/158 A REE 1I 1445/07/342 A CCE F 1445/07/342 A CCE F 1445/07/342 A 1445/16/158 A RE 1F 1445/04/086A	Crepim France Crepim France Crepim France
DIN 5510-2 Classification S4-SR2-ST2	DIN 5510-2 ISO 5659-2	RE 59-1445/04/086 A	Crepim France
UL94 V(0)	V(0) Vertical Burn Test (equivalent to: EN 60695-2-11-10)	KUEXT07632 KUEXT07807	U.L.- Thermoplastics Testing Center
ECE – R118, App. 8	Vertical Burn Test	20649290-20 (Result 0)	DMT Germany
NF F 16-101 Class F1- I2	NF F 16-101 F1 – I2 NF X 10-702 NF X 70 – 100 ISO 4589-1 / -2 / EN 60695-2	CCE F 1445/07/342 A CCE I 1445/07/342 A RE 1I 1445/04/086 A RE 1F 1445/04/086 A	Crepim France
NFPA 130 Hazard Rating System	ASTM C1166 ASTM E662 SMP 800-C	15-002-410 (A) 15-002-410 (B) 15-002-410 (C)	EXOVA WarringtonFire - North America
British Standard BS 6853 - Table 7 Cat II + Annex ‘D’	ISO 4589-2	RE1I 1445/04/086 A CCE I 1445/07/342 A	Crepim France



(<0.02%)



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PHYSICAL PROPERTIES & TEST RESULTS SUMMARY

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Mischung / compound		H 45-1000		Spezifikation/specification EN 455 45-2, UL 94 V, DIN 5510-2, NF F 16-101, ECE-R118, NFPA 130, BS 6853	
EPDM solid , 60-65 Shore A, extrusion compound, flame retardant , non-halogen (<0,02%)					
Pos.	Eigenschaften/ properties	Methode method	Einheit unit	Sollwert requirement	Ergebnis result
1	Elastomer / polymer	DIN ISO 1629		EPDM	EPDM
2	Vernetzung / curing system			-	Schwefel/sulphur
3	Farbe / color			schwarz/black	schwarz/black
4	Dichte / specific gravity	EN ISO 1183	g/cm ³	-	approx. 1,51
5	Härte / hardness	DIN ISO 7619-1	SH A	60+5	64
6	Zugfestigkeit / tensile strength	DIN 53 504	N/mm ²	-	ca. 5
7	Reißdehnung / elongation at break	DIN 53 504	%	-	> 400
8	Weiterreißwiderstand / tear strength	DIN ISO 34-1 A	N/mm	-	ca. 5
9	Druckverf.rest/ compr. set 24h/70°C	ISO 815	%	-	16
10	Druckverf.rest/ compr. set 24h/100°C	ISO 815	%	-	38
11	Ozonbeständigkeit/ 168h/40°C/50 pphm ozon resistance 20% elongation	DIN ISO 1431-1		Keine Risse/ No cracks	Keine Risse/ No cracks
12	Nitrosaminfrei/ nitrosamine generating	Es werden keine Rohstoffe eingesetzt die krebserregende Nitrosamine bilden/ no carcinogenic nitrosamine generating raw materials are used			
13.1	Halogenfrei / non-halogen		halogenfrei / non-halogen (<0,02 %)		
13.2	REACH/SVHC Konformität/compliance		entspricht/ compliant		
14	EN 455 45 classification (2016)	EN 45545-2	class		R22/23, HL3
14.1	Rauchdichte / smoke density Gasanalyse/ gas analysis	EN ISO 5659-2	Ds max	max. 150 (HL3)	57
14.2	Sauerstoff-Index / Limiting Oxygen Index LOI	ISO 4589-2	%	min. 32 (HL3)	36
14.3	Toxizität / toxicity	NF X 70-100-1 NF X 70-100-2	CIT NLP	max. 0,75 (HL3)	0,12
15	DIN 5510 classification	DIN 5510-2	class		S4-SR2-ST2
15.1	Brennprüfung / flammability	DIN 548 37			S4-SR2-ST2
15.2	Toxizität / toxicity (2+6mm)	DIN EN ISO 5659-2	FED tzul=15 FED tzul=30	< 1 < 1	0,04/0,04 0,08/0,1
16	UL 94 V Brennprüfung / flammability				
16.1	3 & 6,5 mm Dicke/thickness	UL 94 V	class	-	V-0
17	ECE-R118 Anhang/appendix 8				
17.1	Vertikale Prüfung/vertical burning, 2mm	ECE-R118	mm/min	<100	0
18	NF F 16-101 classification	NF F 16 101	class		F1-I2
18.1	Rauchdichte/smoke density Gasanalyse/ gas analysis	NF X 10-702 NF X 70-100	IF	<20 (F1)	10
18.2	Sauerstoff-Index/Limiting Oxygen Index	ISO 4589-1/-2	%	>32 (I2)	36,1
18.3	Glühdraht/ glow wire test	NF EN 60695-2- 10/11	°C	min. 850	960
19	NFPA 130 classification			ASTM C1166, ASTM E662, SMP 800-C	
19.1	Flammen Ausbreitung / Flame Propagation	ASTM C 1166-06	ln/min	max. 4	1,6 No melting/dripping
19.2	Rauchgasdichte / smoke generation Optical Density at 1.5 minutes Optical Density at 4.0 minutes	ASTM E 662-15 Flaming mode Flaming mode		max. 100 max. 200	40 64
19.3	Toxizität / toxicity Bombadier	SMP 800-C	ppm		erfüllt/passed



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Engineering Rubber Components & Specialised Sheeting Products

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tel: +44 (0) 1777 712 400 fax: +44 (0) 1777 712 409
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PHYSICAL PROPERTIES & TEST RESULTS SUMMARY

		08.2016	Blatt / page 2 von 2		
Lieferant/ supplier HEXPOL COMPOUNDING GMBH D-41836 HÜCKELHOVEN		Kunde /Customer diverse/miscellaneous			
Mischung / compound HexFlame 45-1000		Spezifikation/specification EN 455 45-2, UL 94 V, DIN 5510-2, NF F 16-101, ECE-R118, NFPA 130, BS 6853			
EPDM solid , 60-65 Shore A, extrusion compound, flame retardant , non-halogen (<0,02%)					
Pos.	Eigenschaften/ properties	Methode method	Einheit unit	Sollwert requirement	Ergebnis result
20	British Standard BS 6853 classification			Table 7 Cat. II	
20.1	Sauerstoff-Index / Limiting Oxygen Index LOI	ISO 4589-2 10 mm	%	min. 28 (cat. II)	37,9
20.2	Rauchdichte / smoke density	BS 6853 Annex D.8.3:	A ₀ m ² /g	max. 0,061 (cat. II)	0,033
20.3	Toxizität / toxicity	BS 6853 Annex B.1	R	max. 3,6 (cat. II)	0,4
21	Brennwert / effective heat of combustion	ISO 5660-1 Cone	MJ/kg	-	22,61
22	Glasübergangstemperatur/ Glass transition temp	BMW GS 97036	°C	-	- 64
23	Elektr. Durchgangswiderstand/ Electr. Volume resistivity	IEC 60093	Ohmcm	-	1,5E+14
24	Gebrauchstemperaturbereich/ service temperature range	-	°C	-	-40 / +100
25	Kältebruchtemperatur / Brittleness temperature	ASTM D 2137 A	°C		-47
Die Ergebnisse wurden an vulkanisierten (10 min/180°C) Prüfplatten ermittelt. Test results were determined on vulcanized (10 min/180°C) test sheets.					

20 December 2017

Dear Valued Customer,

Based on the single test results which we got for HexFlame 45-1000 testing acc. EN 45545-2 R22/R23, (Limiting Oxygen Index LOI acc. ISO 4589-2), NF F 16 101 (glow wire test acc. EN 60695-2-10/11) and UL 94-V (vertical burning test equivalent to EN 60695-11-10).

We confirm that HexFlame 45-1000 fulfils the requirement for R24, R25 & R26 HL3 classification.

Mit freundlichen Grüßen / Best regards / Sincères Salutations

Rainer Walter
Technical Service & Development



HEXPOL Compounding GmbH
Ottostraße 34
D-41836 Hückelhoven
AG Mönchengladbach HRB 8742
Geschäftsführer / Managing Directors:
Mikael Fryklund, Andreas Hausmann, Andreas Kerl, Carsten Rüter, Ralph Wolkener

Tel. +49 (0)2433 975546

Fax. +49 (0)2433 975599

rainer.walter@hexpol.com

www.hexpolcompounding.com