

FR-XPE (Chemically crosslinked closed cell fire retardant polyethylene insulation)



It is a chemically Crosslinked closed cell fire retardant polyethylene foam used for duct insulation, chilled water and hot water applications, over deck/under deck insulation, floor insulation and wall insulation. Produced in India by Paramount Intercontinental for the first time in 2003, this product is an excellent insulation material for both cold and warm conditions ranging between -40 oC to +115 oC. It is non sensitive to vapor and offers excellent resistance to chemicals, insects, bacteria and rodents. Being a thin and flexible material, it can be easily cut by scissor or knife.

TECHINCAL DETAILS : FR-XPE (Chemically Crosslinked closed cell fire retardant polyethylene insulation)

S.No.	Properties	Standard	Technical Detailst
01	Density kg/cum Cell Structure Colour	JIS K 6767	30 ± 3 Kg/ M3 Closedcell Light Grey & also available in various customized colours
02	Services Temperature Range	Using Climate Chamber	-40 to 115° C
03	Ozone / UV & Weather / Chemical Resistance		Good / Excellent
04	Thermal Conductivity at 0 / 23/ 46 deg C	IS 3346/1980	0.032 /0.034 /0.038 W/m °k
05	Thermal Conductivity at 40 deg C	IS 3346/1980	0.035 W/m °k
06	Assessment of horizontal burning characteristics	BS 4735	0.72
07	Fire Retardant Test	DIN-5510 (pt-2), 54837	Self extinguishing
(a)	Flammability Class-S4		Passed
(b)	Smoke density Class SR2		Non Dripping
(c)	Dropping Class ST2		
08	Smoke density test	ASTM D 2843-99	Passed
09	Heavy metals for ROHS (Pollution)	Directive 2002/95/EC	Passed
10	Horizontal Flammability test for classifying materials 94 HBF.	UL-94	Passed
11	Horizontal Flammability test for classifying materials 94 HBF.	UL-94	Passed
12	Horizontal Flammability test for Paramount FR XPE	IS 15061-02	Passed
13	Fire Rating (Surface Spread of Flame- plain material)	BS 476 Part 7	Class-1
14	Fire Rating (Fire Propagation Index) – laminated with pure aluminium foil on one side	BS 476 Part 6	Class-0
15	Oxygen Index	ASTM D 2863	27.7 %
16	Insulation without aluminium foil Specific Permeability	ASTM D -1653	Negligible

17	Insulation without aluminium foil Water Vapour Permeability Water vapour resistance factor (μ)	DIN EN ISO: 12572	Negligible 12805 (Plain-without foil)
18	Insulation with aluminium foil on one side. Water Vapour Permeability	DIN EN ISO: 12572	Negligible
19	Water vapour resistance factor (μ)		17300 (with AL foil)
20	Thermal Stability	BS 2972/1989	No visible signs of cracks and distortion
21	Overall Migration Test	IS 9845-1998	Negligible effect of acids and alkalis
22	Fungal Resistance Test	ASTM G-21	Zero Rating (No growth observed)
23	Bacteria Resistance Test	ASTM G 22	No Bacteria growth observed
24	Mold Growth	IS 3144: 1992	No Mold growth observed
25	Compression Set%	JIS K 6767	24.7 %
(a)	At 25% deflection		
(b)	At 50% deflection		42.1 %
26	Dimensional Changes %	JIS K 6767	
(a)	Machine direction		(-) 0.2
(b)	Cross direction		(-) 0.1
27	Tear Strength kg/cm ²	JIS K 6767	
(a)	Machine direction		1.6
(b)	Cross direction		1.4
28	Compressive Strength, KPa	ASTM D 3575	
(a)	At 25% deflection		36.0
(b)	At 50% deflection		65.9
29	Tensile Strength kg/cm ²	JIS K 6767	2.4
(a)	Machine direction		2.2
(b)	Cross direction		
	Elongation%		
(a)	Machine direction		113
(b)	Cross direction		100
30	Absorption Coefficient FR XPU 9 + 5 mm	IS 8225-1987	0.20.
31	Absorption Coefficient FR XPU 15 + 5 mm	IS 8225-1987	0.30
32	Absorption Coefficient FR XPU 20 + 5 mm	IS 8225-1987	0.30
33	Absorption Coefficient FR XPU 25 + 5 mm	IS 8225-1987	0.45
34	90 deg peeling adhesion strength g/mm ²	ISO 36 (2005)	747
35	Toxicity Index	NCD 1409	1.90 (Individual concentration of gases mostly either nil or well below the prescribed limit.
36	Smoke Density	ASTM D 2843-99	Passed
37	Flammability	ISO 3795	Passed