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ARPRO®
Expanded Polypropylene (EPP)

Material Physical Properties for Fire Retardant (FR) PEPP Foam Molded from ARPRO® Porous Expanded Polypropylene Beads

PHYSICAL PROPERTY	TEST METHOD	UNITS	TEST RESULTS		
Density	ASTM-D3575	pcf (g/l)	1.6 (25)	2.8 (45)	3.7 (60)
Porosity[1]	JSPI Internal	%	30	30	30
Compressive Strength	ASTM-D3575				
@25% Strain		psi	10.0	23.0	33.0
@50% Strain		psi	17.0	35.0	50.0
@75% Strain		psi	48.0	79.0	115.0
Compression Set	ASTM-D3575	%	8.0	9.0	9.0
Tensile Strength	ASTM-D3575	psi	22.0	27.0	28.0
Tensile Elongation	ASTM-D3575	%	15.0	13.0	12.0
Tear Strength	ASTM-D3575	lbs/inch	14.5	18.8	22.0
Thermal Conductivity	ASTM-C177 @ 75°F	(K) BTU-in/(ft^2-hr-°F)	0.26	0.25	0.25
Thermal Stability Linear Dimensional Change	ASTM-D3575 24 hrs @ 225°F	%	< 1.0%	< 1.0%	< 1.0%
Thermal Resistance	ASTM-C177	(R)	3.8	4.0	4.0
Coefficient of Linear Thermal Expansion	ASTM-D696				
70°F to -40°F		in/in/°F x 10^{-5}	7.5	6.4	5.0
70°F to 180°F		in/in/°F x 10^{-5}	11.5	10.8	9.7
Water Vapor Permeability	ASTM-E96	lbs/ft^2/hr/mmHg	7.5 x 10^{-5}	6.6 x 10^{-5}	5.9 x 10^{-5}
Water Absorption	ASTM-C272	lbs/in^3 x 10^{-3}	7.2	6.5	5.3
Flammability	FMVSS-302	< 4.0 in/min.	Pass	Pass	Pass
	ASTM-E84	Flame Spread Index[2]	TBD	3 (1" thick) 5 (2" thick)	TBD
	ASTM-E84	Smoke Development Index[2]	TBD	84 (1" Thick) 113 (2" Thick)	TBD
	UL-94	Flame Class[3]	TBD	HBF	TBD
Chemical Resistance (Auto fuels, fluids, solvents)	Various	1 hr exposure	Pass	Pass	Pass

Notes: Above values shown are typical for Fire Retardant (FR) PEPP.
[1]Porosity of 30% (Min.) based on a molded compression ratio of @ 10%
[2]Testing performed on Black PEPP. ARPRO FR PEPP is a Class 1A product (per NFPA No. 101)
[3]Flame Class Equivalent
pcf = pounds/cubic foot, g/l = grams/liter
TBD = To be determined (Testing in progress)

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