Material Physical Property Comparison for ARPLANK® products ARPRO® Expanded Polypropylene (EPP) – High Density (2.8 pcf to 3.7 pcf) vs. Extruded PE Foams – High Density (4.0 pcf to 9.0 pcf)

ARPRO®
Expanded Polypropylene (EPP)

Physical Properties†	Test Method	Units	ARPRO® EPP		Extruded PE		
Density (Grade)	ASTM-D3575	pcf	2.8	3.7	4.0	6.0	9.0
Density	ASTM-D3575	g/l	45	60	64	96	144
Compressive Strength @10%	ASTM-D3575	psi	32	44	NA	NA	NA
Compressive Strength @25%		psi	42	57	16	28	55
Compressive Strength @50%		psi	54	73	26	40	80
Compressive Strength @75%		psi	111	155	NA	NA	NA
Tensile Strength	ASTM-D3575	psi	67	89	75	96	129
Tensile Elongation	ASTM-D3575	%	15	15	NA	NA	NA
Tear Strength	ASTM-D3575	lbs/in	16	19	25	39	45
Compressive Set @ 25%	ASTM-D3575	%	7	7	<15	<10	<10
Compressive Set @ 50%	ASTM-D3575	%	12	12	<15	<10	<10
Buoyancy	ASTM-D3575	lbs/ft^3	59	56.5	NA	NA	NA
Thermal Conductivity	ASTM-C177	(K) BTU-in/ft^2-hr-°F	0.25	0.26	0.45	0.45	0.45
Thermal Resistance	ASTM-C177	(R) @70°F	4.0	3.8	2.2	2.2	2.2
Coef. Of Lin. Thermal Expan.	ASTM-D696	in/in/°F x 10^{-5}	5.4	4.8	NA	NA	NA
Service Temperature	ASTM-D3575	°F (Max.)	212	212	NA	NA	NA
Water absorption	ASTM-D3575/C272	% (lb/ft^2)	< 1% (<0.02)	< 1% (<0.02)	<10% (<0.2)	<5% (<0.1)	<5% (<0.1)
Compressive Creep	ASTM-D3575	1000hr, % (psi)	1.5 (3.0)	1.5 (6.0)	< 5 (3.0)	< 5 (5.0)	< 5 (10.0)
Flammability	FMVSS-302	<4.0 in/min	Pass	Pass	Pass	Pass	Pass
Chemical Resistance	Various	1 hr exposure (solvents, acids, and alkalines)	Pass	Pass	Pass	Pass	Pass
Fuel Immersion	Coast Guard; Fuel B per 33 CFR §183.114	<5% (chg in vol)	Pass	Pass	NA	NA	NA

†Note: The data presented for the JSP ARPRO Expanded Polypropylene (EPP) are for standard JSP ARPLANK Products. While values shown are typical of the product, they should not be construed as specification limits. (NA = Not Available) For Additional Information or Technical Support contact www.arplanksales.com or 1-877-ARPLANK.

ARPRO® Expanded Polypropylene (EPP) is a highly resilient closed-cell expanded bead foam product. It is ideally suited as an energy absorbing cushioning material for products requiring impact protection, shock absorption, vibration dampening, buoyancy, insulation, and chemical resistance. It withstands multiple impacts without damage, is very light-weight and non-abrasive. It is also multi-directional in nature, so unlike traditional extruded foams, which yield different properties along the extrusion, vertical and horizontal axes, the properties of ARPRO® EPP are the same regardless of orientation. These properties make ARPRO® EPP an ideal and versatile product for protective packaging in a variety of applications.

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