



Technical Specifications

QuietPro

SOUND SHIELD

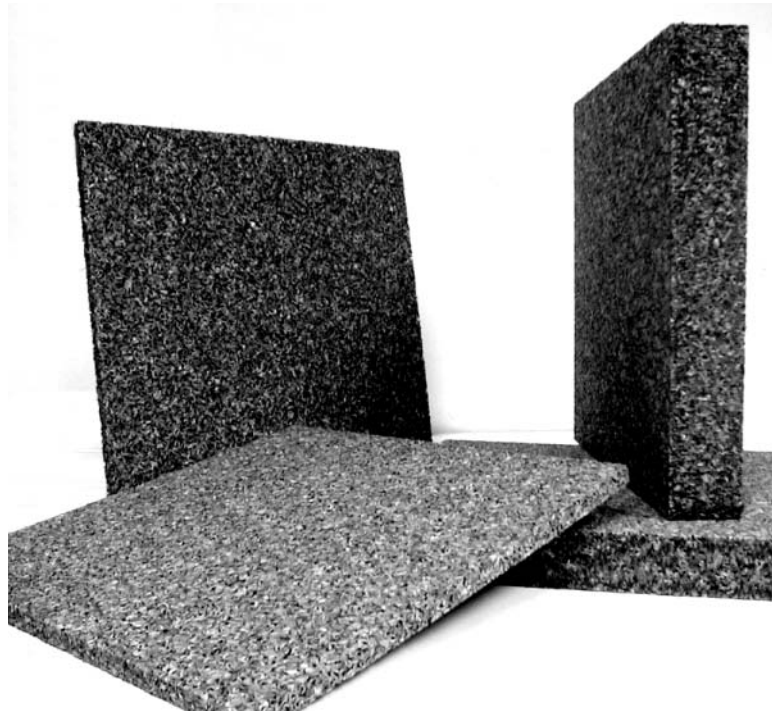
DUAL-LIFT (0.086m)

ENGINE

SERVICE CHANNEL

QuietPro

Water Resistant Sound and Vibration Absorbing Panel



QuietPro is a light weight, water resistant, sound and energy absorbing panel system. It has principal uses as an acoustic liner within air inlet trunks and other sea water exposed (occasional splash wetting) areas. It is also used as an energy absorbing treatment to dampen sound and vibration on thin panels, and as a light weight thermal treatment that does not absorb condensation.

This product is made of expanded polypropylene pellets formed into rigid boards. The technology is based on recent developments related to energy absorbing plastics used for automobile crash protection. The material exhibits high chemical and moisture resistance derived from the special chemistry of the polypropylene resin. These chemistry modifications also enhance its unique sound absorption and damping properties.

The material is molded using a process of expanding polypropylene beads with hollow cavities. The expanded beads are non-porous, but the hollow cores and cracks

between adjacent beads allow sound into a labyrinth-like path where energy is absorbed. The hydrophobic nature of QuietPro allows sound absorption from a material that holds much less water than fiber based acoustic materials.

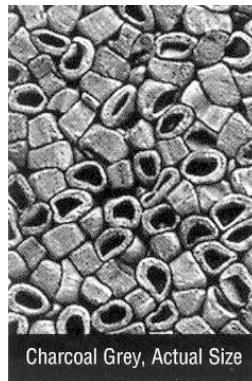
Sound absorption in 2" thickness achieves a value of $NRC = 0.50$. This value provides good sound absorption in moist applications, where fibrous or cellular foam materials cannot be used.

The structural stability of QuietPro combined with its sound and energy absorbing properties make it an ideal core material in marine interiors, machinery spaces, etc. A comparison of wall panels using 1.75" core with .625" skin showed that QuietPro increased the sound transmission coefficient by 9dB due to its excellent mechanical energy absorption characteristics.

Because of its excellent mechanical energy absorption characteristics QuietPro is an ideal light weight vibration damper.

QuietPro

This innovative, water resistant, sound and vibration absorbing product is made of expanded polypropylene pellets formed into rigid boards.



Charcoal Grey, Actual Size



8 ID (203.2mm) ENGINE EXHAUST PIPE

DUAL-LIFT (0.123m)

SOUNDOWN CORPORATION
ACOUSTIC INSULATION DETAIL

SIZE: A PART NO.: RFT010 DWG NO.: 1010
SCALE: NONE DATE: 09-09-07 DREW: [REDACTED]

http://www.soundown.com

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QuietPro meets the following ASTM ratings:

ASTM E 84
 Flame spread index (FSI) = 18
 Smoke development (SD) = 124
 Flammability: Class I or A Rating

Physical Dimensions & Weight

0.5" (12.7mm) 2' x 4' (69cm x 122cm) .08lbs/sq/ft (.039kg/m²)
 1.0" (25.4mm) 2' x 4' (69cm x 122cm) .16lbs/sq/ft (.078kg/m²)
 1.5" (38.1mm) 2' x 4' (69cm x 122cm) .24lbs/sq/ft (1.17kg/m²)
 2.0" (50.8mm) 2' x 4' (69cm x 122cm) .32lbs/sq/ft (1.56kg/m²)

Typical Physical Properties

Physical Property	Test Method	Units	Test Results		
Density	ASTM-D3575	pcf (g/l)	1.6 (25)	2.8 (45)	3.7 (60)
Porosity	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	TBD	TBD	TBD
Thermal Conductivity	ASTM-C177 @ 75°F	(K) BTU-in/(ft ² -hr-°F)	0.26	0.25	0.25
Thermal Stability	ASTM-D3575	%	TBD	< 1.0%	TBD
Linear Dimensional Change	24 hrs @ 225°F				
Thermal Resistance	ASTM-C177	(R)	3.8	4.0	4.0
Coefficient of Linear Thermal Expansion	ASTM-D696				
70° to -40°F		in/in/°F x 10-5	TBD	TBD	TBD
70° to 180°F		in/in/°F x 10-5	TBD	10.8	TBD
Water Vapor Permeability	ASTM-E96	lbs/ft ² /hr/mmHg	TBD	6.6 x 10-5	TBD
Water Absorption	ASTM-C272	lbs/in ³ x 10-3	TBD	TBD	TBD
Flammability	FMVSS-302	< 4.0 in/min.	Pass	Pass	Pass
	ASTM-E84	Flame Spread Index	TBD	3 (1" thick), 5 (2" thick), 84 (1" thick)	TBD
	ASTM-E84	Smoke Development Index	TBD	113 (2" thick)	TBD
Chemical Resistance (Auto fuels, fluids, solvents)	Various	1 hr exposure	Pass	Pass	Pass

Typical Acoustic Properties

