Pyrotek®

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TECHNICAL DATA SHEET | 322IP

0575

QUADZERO™ NL

fire-resistant, foil faced flexible noise barrier

Quadzero™ NL is a high-performance foil faced mass-loaded vinyl noise barrier, offering superior acoustic transmission loss and upgraded fire resistance.

With a fire-resistant foil facing, Quadzero™ NL was developed by Pyrotek® to meet stringent fire safety requirements in the marine, building and transport sectors. The product achieves the highest fire ratings complying with International Marine Organisation standards for low spread of flame, as well as international building and transportation standards for heat release, toxicity and flame propagation properties.

The upgraded fire safety provided by Quadzero™ NL is offered without reducing the strength, tear resistance or flexibility offered by the Wavebar® Quadzero™ product range.

Stiff lightweight panel constructions, such as plasterboard, drywall, plywood and hollow core doors, typically have coincidence dip resonance which allows noise to transmit through a construction. The coincidence dip is dependent on the material's stiffness and thickness and occurs at the point where the sound transmitted through the structure matches the natural frequency of the panel. Quadzero™ NL shifts the coincidence dip to frequencies limiting its impact, thereby maintaining the performance of the product.

The thin, dense mass barrier reflects and absorbs the energy, resulting in the reduction of transmission of sound through walls, ceilings and floors, therefore reducing the noise generated from sources such as mechanical equipment, engine noise and electronic devices.

VOC STATEMENT

Quadzero™ products contain no ozone-depleting substances and comply with European and Australian standards for Volatile Organic Compound emissions.

SPECIFICATIONS

Colour	Silver (Aluminium facing) White backing
Available	Width: 1350 mm Length (m): 5 to 10 m Weight (kg/m^2): 2, 4, 6, 8, 10
	Custom sizes available depending on MOQ

applications

- Applied in marine engine rooms & deckheads to reduce noise transmission
- Rail carriages for under floor insulation to reduce track and brake noise
- Inside cavities or over lightweight wall, ceiling and floor constructions
- Around the outside of metal air ducts to reduce noise breakout
- Wrapped around noise emitting pipes, i.e. fluid or gas pulsation in chemical, petrochemical and waste water treatment plants

features

- Complies to EN 45545-2 R1, R7, R8 HL3
- Complies to IMO FTP 2010 - low spread of flame
- Multiple methods of installation accepted by USA Coast Guard (USCG)
- Complies to BS 476 Part 6 and 7 - Class 0
- Contains no ozone depleting substances
- Free from lead, unrefined odour-producing oils and bitumen
- Easy to cut, tape and mechanically fasten into position
- Self-extinguishes upon removal of flame
- Resistant to water, oil and natural weather conditions
- Tear resistant with high tensile strength - ability to be suspended at lengths of up to 5 metres

PRODUCT SPECIFICATIONS

Barrier weight (kg/m²)	Thickness (mm)	Thermal conductivity k value (Wm⁻¹K⁻¹)	Roll			Ceiling Sound Transmission Test AMA-1-II-1967 (CSTC)	Operating temp. range (°C)
			Width (mm)	Length (m)	Weight (kg)		
2	1.2	0.49 (Report no. 09/1182)	1350	10	27	44 (Report No. A-22104-0228)	-40 to 100 (Continuous) -40 to 120 (Intermittent)
4	2.0			5 or 10	27 or 54	48 (Report No. A-22107-0228)	
6	3.0			5	41	-	
8	4.0			5	54	50 (Report No. A-22114-0228)	
10	4.9			5	68	-	

Tolerances: Length: ±1%, Width: -0/+5 mm, Thickness: ±0.5 mm, Weight: ±10%

MATERIAL PROPERTIES

Test method	Property	Report no.	Results
IMO FTP Annex 1 Part 5	Surface flammability	377172	Complies for bulkheads, walls or ceiling linings and floors for 2 kg/m² to 8 kg/m² products USCG Type approval granted
IMO FTP Annex 2	Smoke and toxicity	377172	
MED B	EC Type Certificate (Module B) for Marine Equipment Directive	164.112/112/WCL/MED0361TE	
MED D	EC Type Certificate (Module D) for Marine Equipment Directive	MEDD000015N	
DNV Type approval	Type approval certification	F-21140	Complies to DNV GL Offshore Standards, SOLAS & recognised as suitable for use by Transport Canada
EN 45545-2 (ISO 5658-2)	Spread of flame	AJFS1803002647RS	R1, R7, R8 (HL1, HL2, HL3)
EN 45545-2 (ISO 5659-2: 50 kWm⁻²)	Heat release rate by cone calorimeter		
EN 45545-2 (ISO 5660-1: 50 kWm⁻²)	Smoke generation (optical density)		
ABS Product Design Approval (PDA)	ABS Design assessment	16-HS1546128-PDA	Suitable for installation on ABS classed vessel and offshore installations
BS 476 Part 6	Fire propagation	377173, 377176	Complies with Class 0 for 6 kg/m² to 10 kg/m²
BS 476 Part 7	Surface spread of flame	377175, 377178	
TÜV SÜD PSB approval	Certificate of Conformity	CLS2 085834 0005 Rev. 00	Complies
Qatar Civil Defence approval	Product approval	PAC15004288	Complies as fire rated and retardant materials
ISO 1716	Heat of Combustion	348394	5311.6 KJ/Kg
GB8624 (EN 13501)	Fire classification of construction products and building materials	GN201312974	Class B (s2, d0, t0)
GB/T 20284 (EN 13823)	SBI - Single burning item test for building materials and products		
GB/T 8626 (ISO 11925-2)	Ignitability of building materials with direct flame impingement		
GB/T 20285	Toxic classification of fire effluents hazard for materials		
ASTM E84	Surface Burning Characteristics of Building Materials	01.17786.01.063a	Class A (Interior finishes), International Building Code
CAN/ULC S102.2	Test for surface burning characteristics	104572841COQ-001B	FSI: 0, SDI: 15
GB/T 2406.1 & GB/T 2406.2	Burning behaviour by oxygen index	SZML110704163	31.5%
TB/T 3138	Specification of flame retardant materials for railway vehicle	SZML110704163	Complies
FMVSS 302	Flammability of interior materials	02313BD2	Complies to the requirements of US (DOT) Department of Transport for occupant compartments of motor vehicles

ACOUSTIC PERFORMANCE

Frequency (Hz)	2 kg/m² (dB)	4 kg/m² (dB)	6 kg/m² (dB)	8 kg/m² (dB)	10 kg/m² (dB)
100	3.8	6.7	11.6	13.3	18.9
125	6.4	10.8	13.8	16.2	19.3
160	10.2	14.7	17.3	22.6	22.6
200	9.8	14.1	17.2	20.5	23.4
250	12.0	16.0	18.7	22.3	25.2
315	13.2	17.9	20.4	23.2	26.1
400	14.8	19.7	22.7	25.0	28.1
500	15.8	20.6	24.1	26.0	29.3
630	17.8	22.6	26.1	28.6	30.5
800	20.0	25.0	27.7	30.1	32.3
1000	21.7	26.6	30.2	32.7	34.9
1250	22.7	27.6	30.3	33.4	35.7
1600	23.9	28.5	31.2	34.1	36.4
2000	25.6	30.4	33.6	35.9	38.4
2500	27.7	32.1	35.4	37.6	40.4
3150	29.9	34.3	37.7	39.7	42.7
4000	32.2	36.7	40.6	42.1	45.7
5000	34.6	39.0	43.3	45.0	48.7
Rw	21	25	28	31	34
STC	21	26	28	31	34

Tested to ISO 15186-1:2003 & 10140-4:2010 at University of Canterbury, New Zealand
Report Numbers: 261d, 262d, 263d, 264d & 265d

ISO 15665 PIPE INSULATION TESTING

Barrier Weight	Test method	System Assembly	Report no.	Results
6 kg/m²	ISO 15665 (Group 2 Pipe Size)	Available on request	A 3041-1E-RA-002	ISO 15665: Class A2 & B2 NORSOK R-004: Class 6 & Class 7
6 kg/m² & 10 kg/m²	ISO 15665 (Group 2 Pipe Size)	Available on request	A 3041-4E-RA-002	ISO 15665: Class B2 & C2 NORSOK R-004: Class 7 & Class 8

Testing was conducted using a system incorporating Wavebar®

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Caveats: Specifications are subject to change without notice. The data in this document is typical of average values based on tests by independent laboratories or by the manufacturer and are indicative only. Materials must be tested under intended service conditions to determine their suitability for purpose. The conclusions drawn from acoustic test results are as interpreted by qualified independent testing authorities. Nothing here releases the purchaser/user from responsibility to determine the suitability of the product for their project needs. Always seek the opinion of your acoustic, mechanical and fire engineer on data presented by the manufacturer. Due to the wide variety of individual projects, Pyrotek is not responsible for differing outcomes from using their products. Pyrotek disclaims any liability for damages or consequential loss as a result of reliance solely on the information presented. No warranty is made that the use of this information or of the products, processes or equipment to which this Information Page refers will not infringe any third party's patents or rights.
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