RHINOPHEN
PHENOLIC FOAM

Datasheet English–Imperial

Introduction

Our Rhinophen product range consists of closed cell phenolic foam blocks, focusing on achieving the highest possible thermal insulation value at minimum thickness which are offered at a range of densities plus specific engineered products for fire protection applications.

Rhinophen is manufactured in the factory in the Netherlands and is finetuned utilzing decades of experience in the production of phenolic foam. This manufacturing process ensures a very fine, closed cell, cell structure which is essential for achieving and maintaining the best properties for any phenolic foam product.

Increased awareness of energy consumption is driving the industry to higher standards of thermal insulation. Rhinophen 2.5 PCF excels in thermal insulation value with an aged thermal conductivity of 0.173 BTU·in/ hr·ft2·°F.

High density Rhinophen provides high mechanical strength required for applications like pipe supports and industrial applications. With the use of Rhinophen we are providing solutions to achieve higher insulation values at minimum thickness.

All products in the Rhinophen product range are combining one other unique feature next to the highest thermal insulation value and mechanical strength; its fire performance.

Rhinophen does not have a melting temperature unlike most thermoplastic and inorganic insulation materials. Official testing concludes Rhinophen has an extremely low smoke emission nor creates burning droplets. In case of fire it will develop a carbonaceous layer on the exposed surface which is protecting the deeper layers of the material.

Rhinophen is supplied as block which can be processed to any size of shape and is available in densities from 2.5 PCF to 10 PCF. Combined with our standardized system of adhesive and aluminium facing which is certified, we deliver thermal insulation, fire safety and durability.

Type

Block type insulation based on closed cell phenolic foam.

Temperature range

Rhinophen will maintain its performance at continuous operating temperatures of -58°F to +230°F.

Under special installation conditions Rhinophen can be used in petrochemical applications up to cryogenic temperatures.

Short term exposures which could exceed the recommended continuous operating temperatures are pending on the application.

Typical applications

- Pipe insulation for the HVAC market
- Fire resistant core material in doors and composite panels
- Pipe insulation for application in the chemical process-and cold storage industry
- Pipe supports from high density Rhinophen
- General technical insulation of tanks, ducts, vessels and technical installations

Benefits

- Excellent insulation performance
- High fire resistance and good fire behavior
- Excellent insulation performance
- Low heat storage
- High strength
- Easy to cut and create any shape or form
- Excellent thermal stability
- Resistant to thermal shock

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Properties measured	Standard	Unit	Rhinophen Phenolic Foam				
			40	**60**	**80**	**120**	**160**
Density	ASTM D1622	PCF	2.5	3.7	5	7.5	10
Continuous use temperature*3		°F			-58 to 230		
Compressive strength	ASTM D1621						
Parallel to rise		PSI	22	58	102	145	218
Perpendicular to rise		PSI	18	50	87	123	145
Tensile strength	ASTM D1623						
Parallel to rise		PSI	22	58	not tested	not tested	not tested
Perpendicular to rise		PSI	20	54	not tested	not tested	not tested
Closed cell content	ASTM D2856	%	95	92	90	85	85
Dimensional stability	EN1601	%			< 1		
Water absorption	EN13087	%			< 3		
Water vapour transmission	EN1286	µm	30	45	50	60	75
Fireproperties							
Euroclass (SBI)	EN13501-1						
Naked product			B-s1,d0	B-s1,d0	B-s1,d0	not tested	not tested
Pipe section with ASJ facing*1			B_L-s1,d0	not tested	not tested	not tested	not tested
surface burning characteristics	ASTM E84-21a						
Flame spread index			10	not tested	0	not tested	not tested
Smoke development index			0	not tested	5	not tested	not tested
UL-C surface burning characteristics	CAN/ULC-S102-03/S127-04						
Flame spread index			< 10	not tested	not tested	not tested	not tested
Smoke development index			< 10	not tested	not tested	not tested	not tested
Thermal conductivity value (λ-value)*2	EN12667 (equivalent to ASTM C518) @ 75°F						
Initial		BTU·in/hr·ft2·°F	0.146	0.167	0.201	0.236	0.278
Aged (verified after 26 weeks @ 158°F)		BTU·in/hr·ft2·°F	0.173	0.194	0.236	0.278	0.347

Availability

Rhinophen is manufactured as a rigid foam block. The standard size is 100x40 inch or 96x48 inch. Height as shown in the table are approximates and pending production parameters. Please note that other sizes are available on request.

Density		100x40	Height	Availability	96x48	Height	Availability
2.5	PCF	36	inch	x	36	inch	o
3.75	PCF	32	inch	x	32	inch	o
5	PCF	30	inch	x	30	inch	o
7.5	PCF	28	inch	o	28	inch	o
10	PCF	24	inch	o	24	inch	o

Standard item x On request o

Product range

Rhinophen is part of an extensive product range supplied by Vulcor Insulation. Vulcor Insulation is supplying insulation solutions from cryogenic to high temperature applications. All products offered by Vulcor are manufactured in house or sourced from exclusive partners.

Certification

All products in the Rhinophen product range are manufactured to the latest production technology and meeting the strictest standards. The quality of Rhinophen validated by CE-marking with KIWA certificate FPC-90988/02 and UL-C certificate R22387.

Technical support

Vulcor Insulation provides specifiers and customers with guidance on all aspects of the materials selection for their application, the installation and compliance with relevant regulations and performance standards. For more information, please contact the team at Vulcor Insulation.

Contact

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**1 System is based on testing at Efectis using Vulcor selected facings and glue system.*
**2 Thermal Conductivity values are given @ 75°F and are monitored on a regular basis as part of certification purposes.*
**3 Under special installation instructions Rhinophen can be used to -250°F*