Johns Manville
A Berkshire Hathaway Company

PRODUCT SELECTION GUIDE

Mechanical Insulation

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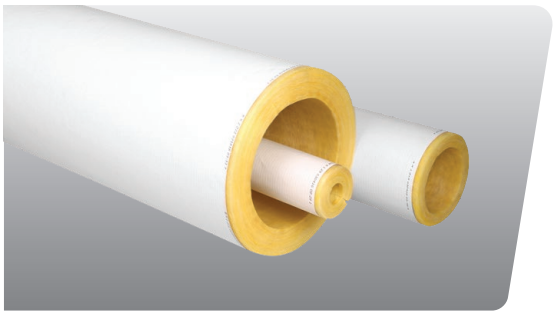
Micro-Lok® *HP*

Jacketed High-Performance Fiberglass Pipe Insulation



Micro-Lok® *HP* is a pre-formed fiberglass pipe insulation with a factory-applied, vapor-retarder ASJ jacket with a self-seal lap. It is manufactured using an in-line manufacturing process, creating a highly consistent fiberglass core for reliable, optimized performance during both installation and operation. Micro-Lok *HP* can be used to insulate hot or cold pipe systems in concealed or exposed applications for commercial, power, or process lines. If used outdoors, it should be covered with a weather-protective jacketing.

Operating Temperature Limit: 0°F to 850°F (-18 to 454°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature	°F	75	100	200	300	400	500
	°C	24	38	93	149	204	260
Btu•in/(hr•ft²•°F)		0.23	0.24	0.28	0.34	0.44	0.55
W/m•°C		0.034	0.035	0.040	0.049	0.063	0.079

AVAILABILITY

3-Foot (0.92 m) Sections
IPS: ½" - 24" (13 mm - 610 mm)*
CT: ⅝" - 6⅛" (16 mm - 156 mm)

Micro-Lok *HP* is available in thicknesses of:
½" - 5" (13 mm - 127 mm)*
in ½" (13 mm) increments.

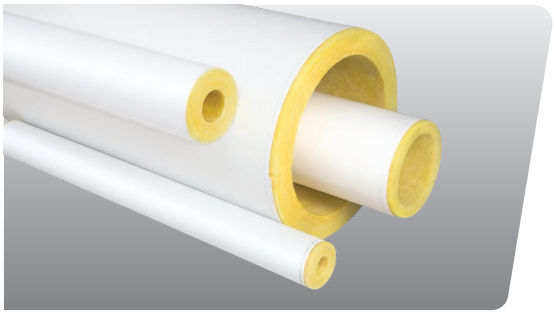
**Check for availability with your Customer Advocate.*

SPECIFICATION COMPLIANCE

ASTM C547, Type I
ASTM C585
ASTM C1136
MIL-DTL-32585
MIL-PRF-22344
MIL-DTL-24244
NRC1.36; ASTM C795
ASTM E84, FHC 25/50, CAN/ULC S102.2
USCG 164.109/56/0 (unjacketed)

Micro-Lok® *HP* Ultra

High-Performance Fiberglass Pipe Insulation with a Poly-Coated ASJ Jacket



Micro-Lok® *HP* Ultra is a pre-formed fiberglass pipe insulation with a factory-applied, polyurethane-coated ASJ jacket with a self-seal lap. The jacket is designed to be able to withstand intermittent, temporary exposure to transient moisture, and it may be wiped clean with a damp cloth should it become dirty. Micro-Lok *HP* Ultra is manufactured using an in-line manufacturing process, creating a highly consistent fiberglass core for reliable, optimized performance during both installation and operation. The insulation may be used to insulate hot or cold pipe systems in concealed or exposed applications for commercial, power, or process lines. If used outdoors, it should be covered with a weather-protective jacketing.

Operating Temperature Limits: 0°F to 850°F (-18°C to 454°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature	°F	75	100	200	300	400	500
	°C	24	38	93	149	204	260
Btu•in/(hr•ft²•°F)		0.23	0.24	0.28	0.34	0.44	0.55
W/m•°C		0.034	0.035	0.040	0.049	0.063	0.079

AVAILABILITY

3-Foot (0.92 m) Sections
IPS: ½" - 24" (13 mm - 610 mm)*
CT: ⅝" - 6⅛" (16 mm - 156 mm)

Micro-Lok *HP* is available in thicknesses of:
½" - 5" (13 mm - 127 mm)*
in ½" (13 mm) increments.

**Check for availability with your Customer Advocate.*

SPECIFICATION COMPLIANCE

ASTM C547, Type I
ASTM C585
MIL-DTL-32585
MIL-PRF-22344
MIL-DTL-24244
NRC1.36; ASTM C795
ASTM E84, FHC 25/50, CAN/ULC S102.2

Micro-Lok® *HP* Plain

Unjacketed High-Performance Fiberglass Pipe Insulation

Micro-Lok® *HP* Plain is a pre-formed fiberglass pipe insulation manufactured using a state-of-the-art, in-line manufacturing process, creating a highly consistent fiberglass core for reliable, optimized performance during both installation and operation. The insulation may be used on hot or cold pipe systems in concealed or exposed applications for commercial, power, or process lines. When used on cold or outdoor applications, it must be sealed with a vapor-retarder jacket and/or weather-protective jacketing.

Operating Temperature Limits: 0°F to 850°F (-18°C to 454°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature	°F	75	100	200	300	400	500
	°C	24	38	93	149	204	260
Btu•in/(hr•ft²•°F)		0.23	0.24	0.28	0.34	0.44	0.55
W/m•°C		0.034	0.035	0.040	0.049	0.063	0.079

AVAILABILITY

3-Foot (0.92 m) Sections
IPS: ½" - 24" (13 mm - 610 mm)*
CT: ⅝" - 6⅛" (16 mm - 156 mm)

Micro-Lok *HP* is available in thicknesses of:
½" - 5" (13 mm - 127 mm)*
in ½" (13 mm) increments.

**Check for availability with your Customer Advocate.*

SPECIFICATION COMPLIANCE

ASTM C547, Type I
ASTM C585
MIL-DTL-32585
MIL-PRF-22344
MIL-DTL-24244
NRC1.36; ASTM C795
ASTM E84, FHC 25/50, CAN/ULC S102.2
USCG 164.109/56/0

Micro-Lok®

Jacketed Fiberglass Pipe Insulation

Micro-Lok® is a pre-formed fiberglass pipe insulation with a factory-applied, vapor-barrier ASJ jacket. It is manufactured using a flame-attenuated fiberization process that delivers excellent thermal properties and an easy-to-install core. Micro-Lok has been a trusted mechanical insulation solution for more than 40 years.

Operating Temperature Limits: 0°F to 850°F (-18°C to 454°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature	°F	75	100	200	300	400	500
	°C	24	38	93	149	204	260
Btu•in/(hr•ft²•°F)		0.23	0.24	0.28	0.34	0.44	0.55
W/m•°C		0.034	0.035	0.040	0.049	0.063	0.079

AVAILABILITY

3-Foot (0.92 m) Sections
IPS: ½" - 24" (13 mm - 610 mm)*
CT: $\frac{5}{8}$" - 6$\frac{1}{8}$" (16 mm - 156 mm)

Micro-Lok *HP* is available in thicknesses of:
½" - 5" (13 mm - 127 mm)*
in ½" (13 mm) increments.

**Check for availability with your Customer Advocate.*

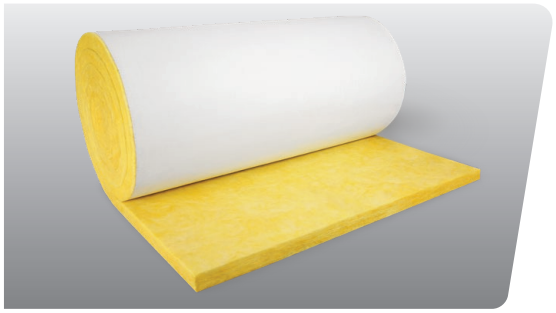
SPECIFICATION COMPLIANCE

ASTM C547, Type I
ASTM C585
ASTM C1136
MIL-DTL-32585
MIL-PRF-22344
MIL-DTL-24244
NRC1.36; ASTM C795
ASTM E84, FHC 25/50; CAN/ULC S102.2

BOARD & BLANKET INSULATION

Micro-Flex®

Large-Diameter Fiberglass Pipe and Tank Wrap



Micro-Flex® is a fiberglass wrap insulation for large diameter pipes and tanks. It is an alternative to pre-formed insulation. The fiber orientation of Micro-Flex enhances both the compressive strength and thermal performance when compared to conventional pipe and tank insulation. Micro-Flex rolls can be cut to size on-the-job and are available with an FSK or AP vapor-retarder facing. It provides a single solution to a variety of field applications.

Operating Temperature Limit: 0°F to 850°F (-18°C to 454°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature	°F	75	150	200	300	400	500
	°C	24	66	93	149	204	260
Btu•in/(hr•ft²•°F)		0.24	0.28	0.32	0.39	0.46	0.58
W/m•°C		0.035	0.040	0.046	0.056	0.066	0.084

AVAILABILITY

Thickness*		Width	
in	mm	ft	m
1-4	25-102	3	0.92
1-4	25-102	4	1.22

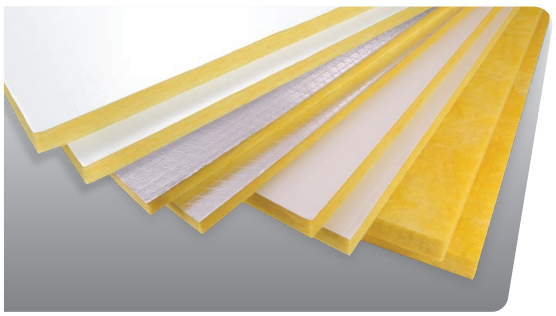
**Available in ½" (13 mm) increments.*

SPECIFICATION COMPLIANCE

ASTM C1393, Type IIIA
ASTM E84
NYC MEA #360-03-E

800 Series Spin-Glas®

Fiberglass Duct and Equipment Insulation



800 Series Spin-Glas® is a fiberglass equipment and external duct insulation offered in a variety of different densities. The board is available plain or with a vapor-retarder FSK, AP, or Ultra (poly-top) facing. The insulation can be readily cut with a knife and secured in place with mechanical fasteners and/or adhesives.

Operating Temperature Limit:
Unfaced: 450°F (232°C)
Faced: unfaced side 450°F (232°C); faced side 150°F (66°C)

THERMAL CONDUCTIVITY ("K") AT 75°F (ASTM C177 AND C518)

Type	in	mm	Btu•in/(hr•ft2•°F)	W/m•°C
812	1½–4	38–102	0.24	0.035
813	1½–4	38–102	0.23	0.033
814	1–4	25–102	0.23	0.033
815	1–2½	25–64	0.22	0.032
817	1–2	25–51	0.22	0.032

SOUND-ABSORPTION COEFFICIENTS

ASTM C423 - Type "A" Mounting

Type	in	mm	125	250	500	1000	2000	4000	NRC
812	1.0	25	0.07	0.24	0.63	0.87	1.00	1.02	0.70
	2.0	51	0.24	0.68	1.10	1.13	1.10	1.07	1.00
813	1.0	25	0.08	0.27	0.69	0.95	1.05	1.02	0.75
	2.0	51	0.19	0.88	1.15	1.14	1.10	1.07	1.05
814	1.0	25	0.06	0.29	0.75	0.99	1.04	1.02	0.75
	2.0	51	0.24	1.00	1.11	1.08	1.06	1.05	1.05
815	1.0	25	0.03	0.32	0.80	1.04	1.05	1.05	0.80
	2.0	51	0.27	0.91	1.11	1.09	1.09	1.09	1.05
817	1.0	25	0.10	0.35	0.85	1.04	1.05	1.03	0.80
	2.0	51	0.38	0.93	1.10	1.07	1.07	1.07	1.05

SPECIFICATION COMPLIANCE

ASTM C612, Type 1A and 1B
- (813, 814, 815, 817)

ASTM C533, Type III
- (812 plain material only)

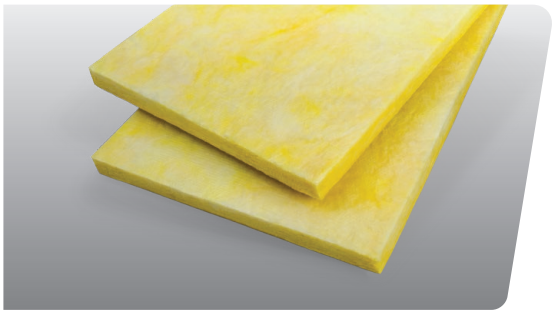
ASTM C1136
- Type I – AP Facing
- Type II – AP, FSK, and Ultra facing

ASTM E84, FHC 25/50; UL 723; NFPA 255
NFPA 90A and 90B
NRC 1.36; ASTM C795
MIL-DTL-24244
HH-I-558C, Form B, Type I, Class 7
- (812, 813, 814, 815)

Canada: CGSB 51-GP-10M and CAN/ULC S102-M88

1000 Series Spin-Glas®

Fiberglass Equipment Board Insulation



1000 Series Spin-Glas® is a 3 pcf, semi-rigid fiberglass board insulation designed for industrial applications. The controlled manufacturing process and unique binder result in improved mechanical properties and higher application temperatures. Typical applications include furnaces, boilers, heated vessels, ducts, tanks, and other heating equipment.

Operating Temperature Limit: 850°F (454°C)

THERMAL CONDUCTIVITY ("K")

Mean	°F	75	300
Temperature	°C	24	149
Btu•in/(hr•ft²•°F)		0.23	0.33
W/m•°C		0.033	0.048

SOUND-ABSORPTION COEFFICIENTS

ASTM C423 - Type "A" Mounting

in	mm	125	250	500	1000	2000	4000	NRC
1.0	25	0.05	0.31	0.67	0.96	1.04	1.03	0.75
2.0	51	0.24	1.05	1.16	1.12	1.08	1.07	1.10
3.0	76	0.58	1.21	1.11	1.08	1.07	1.08	1.10
4.0	102	0.92	1.15	1.09	1.07	1.07	1.09	1.10

AVAILABILITY

	in	mm
Thickness	1–4 (½" inc.)	25–102 (13 mm inc.)
Width	24, 48	610, 1219
Length	48, 96	1219, 2438

SPECIFICATION COMPLIANCE

ASTM C612, Type II
ASTM E84, FHC 25/50
ASTM E136 (noncombustible)
ASTM C612
NRC 1.36; ASTM C795
CAN/51-GP-10M
MIL-DTL-32585
MIL-I-22023, Type I & II, Class 6 Material

Precipitator Spin-Glas®

Fiberglass Board Insulation

Precipitator Spin-Glas® is a semi-rigid, lightweight industrial equipment fiberglass insulation specifically designed to insulate precipitators, baghouses, scrubbers, ducts, and breechings in power-generation plants. It can also be used to insulate boilers, heaters, ovens, and other industrial equipment. Precipitator Spin-Glas is available in a variety of standard and custom sizes and is an excellent choice for applications that do not require higher density insulation.

Operating Temperature Limit: 850°F (454°C)

THERMAL CONDUCTIVITY ("K")

Mean	°F	75	300
Temperature	°C	24	149
Btu•in/(hr•ft²•°F)		0.23	0.34
W/m•°C		0.034	0.049

SOUND-ABSORPTION COEFFICIENTS

ASTM C423 - Type "A" Mounting

in	mm	125	250	500	1000	2000	4000	NRC
1.0	25	0.08	0.32	0.68	0.95	1.06	1.04	0.75
2.0	51	0.20	0.85	1.11	1.11	1.07	1.07	1.05
3.0	76	0.52	1.23	1.16	1.09	1.07	1.10	1.15
4.0	102	0.80	1.23	1.10	1.09	1.08	1.08	1.10

AVAILABILITY

	in	mm
Thickness	1–4 (½" inc.)	25–102 (13 mm inc.)
Width	24, 48	305, 610
Length	48, 96	1219, 2438

SPECIFICATION COMPLIANCE

ASTM C612, Type II
NRC 1.36; ASTM C795
MIL-DTL-24244
ASTM E84, FHC 25/50
CAN/51-GP-10M
HH-I-558C, Form B, Type I, Class 8
- Up to 850°F (454°C)

Fabrication Board

Semi-Rigid Fiberglass Insulation Boards

Fabrication Board is a fiberglass insulation that is designed to be used to fabricate custom pipe and tank insulation in routine commercial and industrial heating and process equipment applications. Fabrication board is light, strong, and resilient for easy fabrication and installation, and it is available in two densities with two different temperature ratings. Typical applications include pipe and tank insulation.

Operating Temperature Limit: 850°F (454°C)

THERMAL CONDUCTIVITY ("K")

Mean	°F	75	300
Temperature	°C	24	149
Btu•in/(hr•ft²•°F)		0.23	0.33
W/m•°C		0.033	0.048

AVAILABILITY

	Density		Thickness		Temp. Limit	
Type	**pcf**	**kg/m³**	**in**	**mm**	**°F**	**°C**
3005	3.0	48	1-4	25-102	850	454
3008	3.0	48	1-4	25-102	650	343

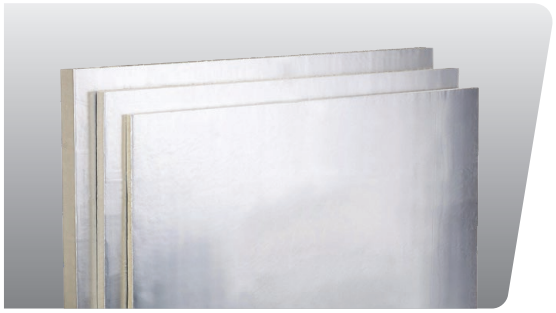
SPECIFICATION COMPLIANCE

ASTM C612
- Class 1 and 2
- Class 3 (3005 Only)

ASTM E84, FHC 25/50
NFPA 90A and 90B
UL 723
NRC 1.36; ASTM C795
MIL-DTL-24244
HH-I-558B, Form A, Class 1 and 2

XSPECT® ISOfoam APF Board

Polyisocyanurate Foam Board Insulation



XSPECT® ISOfoam APF Board is a polyisocyanurate foam board designed to insulate rooftop ducts and HVAC equipment. The closed-cell foam core is bonded to a foil facer on both sides. It is a highly versatile insulation that can be used in a variety of mechanical and OEM applications, including rooftop ducts, appliances, HVAC equipment, refrigerated transportation, storage vessels, and railcars. XSPECT ISOfoam APF board offers one of the highest R-values of any rigid insulation available, making it ideal for both hot and cold applications.

Service Temperature Range: -100°F to 250°F (-73°C to 121°C)

AVAILABILITY & THERMAL PERFORMANCE

R-Value (Board Size [ft] 4x8, 4x10*)

Thickness (inches)	R-Value U.S.[1] (°F • ft² • hr/BTU)	Thickness (mm)	RSI-Value (°K • m²/W)	Design LTTR (°K • m²/W)
1.00	6.0	25	1.06	1.02
1.50	9.3	38	1.63	1.57
2.00	13	51	2.21	2.12
2.50*	16	64	2.79	2.67
3.00	19	76	3.36	3.22
3.50*	22	89	3.94	3.77
4.00*	26	102	4.52	4.31

** Made to Order*

[1] Aged R-value at 75°F in accordance with ASTM C1289

SPECIFICATION COMPLIANCE

ASTM C1289

- Class 1, Type 1

CAN/ULC S704

- Class 1, Type 1

HTB 26 EQ Spin-Glas®

High-temperature Formaldehyde-Free™ Fiberglass Blanket Insulation

HTB 26 EQ Spin-Glas® is a lightweight, fiberglass blanket insulation designed for industrial applications. HTB 26 EQ Spin-Glas is an excellent choice for applications requiring a low-density blanket. In addition, its high tensile strength provides resistance to damage during installation. This flexible blanket is ideal for heated, irregular surfaces.

Operating Temperature Limit: 1000°F (538°C)

THERMAL CONDUCTIVITY ("K")

Mean Temperature			
	°F	75	300
	°C	24	149
Btu•in/(hr•ft²•°F)		0.26	0.46
W/m•°C		0.039	0.075

AVAILABILITY

	in	mm
Thickness	2, 3	51, 76
Width	48	1219
Length	44, 66	1118, 1676

SPECIFICATION COMPLIANCE

ASTM C553, Type I, II, & V

ASTM C1139, Type I, Grade 2

NRC 1.36; ASTM C795

MIL-DTL-24244

ASTM E84, FHC 25/50

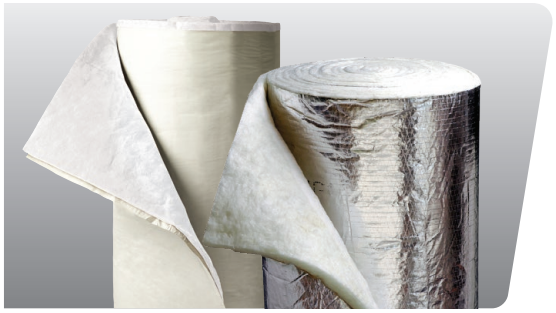
MIL-DTL-32585

MIL-I-22023

CAN/51-GP-11M

Microlite® FSK & PSK Duct Wrap

Formaldehyde-free™ Fiberglass Duct Wrap



Microlite® is a Formaldehyde-free™ fiberglass duct wrap. It comes with either a PSK or an FSK facing that forms a vapor barrier. Microlite is designed to wrap rectangular and round ducts, offering improved thermal control. The insulation will be either in brown or white*.

Operating Temperature Limit: 250°F (121°C)

** Color of product will differ depending on manufacturing location.*

THERMAL PERFORMANCE

R-Value @ 75˚F (24˚C) Mean Temp.

INSTALLED

Type	in	mm	(hr•ft2•°F)/Btu	m2•°C/W
75	1½	38	4.2	0.74
75	2	51	5.6	0.99
75	2.3	58	6.5	1.15
75	3	76	8.3	1.46
100	1½	38	4.5	0.79
100	2	51	6.0	1.06
150	1½	38	4.7	0.83
150	2	51	6.3	1.11

OUT OF PACKAGE

Type	in	mm	(hr•ft2•°F)/Btu	m2•°C/W
75	1½	38	5.2	0.92
75	2	51	6.9	1.22
75	2.3	58	8.0	1.41
75	3	76	10.3	1.81
100	1½	38	5.6	0.99
100	2	51	7.4	1.30
150	1½	38	6.0	1.06
150	2	51	8.0	1.41

SPECIFICATION COMPLIANCE

ASTM C553

- Type II – Type 75, 100 and 150
- Type III – Type 150

ASTM C1290

ASTM C1139, Type II

- Grade I – Type 75 Faced
- Grade II – Type 100 Faced
- Grade III – Type 150 Faced

ASTM E84, FHC 25/50 – FSK Facing

ASTM C1136, Type II – FSK Facing

NYC MEA # 40-75-M

Canada: CGSB 51-GP-11M and CAN/ULC S102-M88

Incombustible Hullboard

Fiberglass Board Insulation

Incombustible Hullboard is a semi-rigid, fire-resistant fiberglass board insulation that provides thermal and acoustical control on naval and merchant vessels and drilling rig platforms. The resilient, semi-rigid insulation has a smooth surface designed specifically for facing adhesion, resulting in a clean, finished appearance. Incombustible Hullboard is US Coast Guard approved and complies with US Navy and Nuclear Regulatory Commission product standards.

Operating Temperature Limit: 450°F (232°C)

THERMAL CONDUCTIVITY ("K")

Mean	°F	75	100	200
Temperature	°C	24	38	93
Btu•in/(hr•ft²•°F)		0.23	0.25	0.31
W/m•°C		0.033	0.036	0.045

SOUND ABSORPTION COEFFICIENTS

Complies with MIL-DTL-32585 Requirements

Mounting Type A (Flat on the floor) [Formerly No. 4]

Thickness		Frequency, Hz						
in.	**mm**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**NRC***
1	25	0.06	0.29	0.75	0.99	1.04	1.02	0.75
2	51	0.24	1.00	1.11	1.08	1.06	1.05	1.05

**Noise reduction coefficient.*

SPECIFICATION COMPLIANCE

Coast Guard/IMO Approved 164.109/46/0

ASTM C1139 Types I & II, Grade 6

MIL-DTL-32585

MIL-I-742F, Type II

Incombustible Hullboard can be used in combination with waffleboard and perforated glass cloth for fabricating Acoustic Absorptive Board per Section 3.2.1 of MIL-A-23054A.

Note: At times, a formal certificate of compliance is required to verify that a product meets an outside specification. In such instances, the request for the required certificate must be made at the time the order is placed. Should outside testing be a condition for certification, a charge is made to cover test expenses.

Incombustible Microlite®

Fiberglass Thermal and Acoustical Blanket

Incombustible Microlite® is a fiberglass blanket insulation that offers excellent acoustical and thermal control for use in a variety of marine applications. It is the recommended solution when design parameters prohibit the use of a rigid product. Incombustible Microlite is manufactured using our flame-attenuated process, delivering a product that is resilient and lightweight. The insulation is US Coast Guard approved and complies with US Navy and Nuclear Regulatory Commission product standards.

Operating Temperature Limit: 400°F (204°C)

THERMAL CONDUCTIVITY ("K")

Mean	°F	75
Temperature	°C	24
Btu•in/(hr•ft²•°F)		0.23
W/m•°C		0.034

SOUND-ABSORPTION COEFFICIENTS

ASTM C423 - Type "A" Mounting

pcf	kg/m³	in	mm	Facing	125	250	500	1000	2000	4000	NRC
0.75	12	½	13	Plain	0.13	0.46	0.43	0.60	0.76	0.86	0.55
0.75	12	1	25	Plain	0.15	0.58	0.62	0.75	0.84	0.90	0.70
0.75	12	2	51	Plain	0.30	0.82	0.86	0.98	1.02	1.07	0.90
0.75	12	4	102	Plain	0.64	1.21	1.14	1.10	1.10	1.16	1.15

AVAILABILITY

Standard Width: 48" (1219 mm)*

Density		Thickness		Width		Roll Length
pcf	**kg/m³**	**in.**	**mm**	**in.**	**mm**	**ft.**	**m**
0.75	12	1½	38	48	1219	100	30.5
0.75	12	2	51	48	1219	75	22.9
0.75	12	2½	64	48	1219	50	15.3
0.75	12	3	76	48	1219	50	15.3

**Additional widths available on a Special Product Price Inquiry (SPPI) basis.*

Note: 3½" to 6" (89 mm to 152 mm) thicknesses available on a Special Product Price Inquiry (SPPI) basis

SPECIFICATION COMPLIANCE

Coast Guard/ IMIO Approved 164.109/38/0

ASTM C356

ASTM C533, Types I & II

ASTM C1304

ASTM C1338

ASTM C665 – Corrosion test

ASTM C1139, Types I & II, Grade I

NRC 1.36; ASTM C795

MIL-DTL-24244

ASTM E84, FHC 25/50

NFPA 90A & 90 B

Capillarity – Negligible (after 24 hours)

MIL-DTL-32585

MIL-I-22023

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www.jm.com/mechanical

MECH-272 5/13/19 (Replaces 4/22/19)

Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of the products listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with your customer service representative for current information.

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