

# Insulation Materials

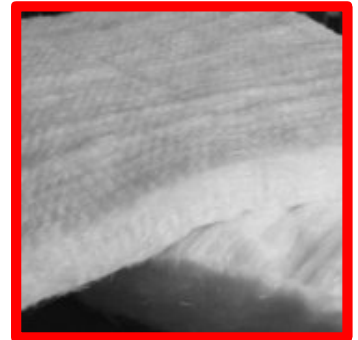
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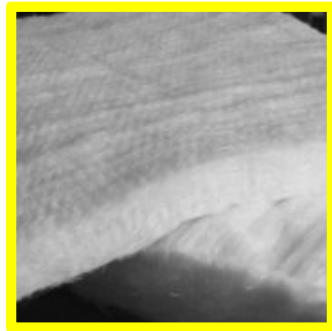
High Temperature  
DeltaMax™ Silicone Foam  
Insulation Page 5-1



High Temperature DeltaMax™  
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**DeltaMax™ Silicone Sponge Foam with Kevlar surface reinforcement**  
**Meets Airbus ABS5026 B01 / DAN 1226-03 specifications**  
**-55°C / -67°F to 200°C /392°F**



This product is a soft silicone foam that has been molded onto a Kevlar® fabric layer, and then has an identical fabric layer impressed to the top side before curing.

No adhesive is used in the bonding/lamination process.

Most applications for this material are in aviation and industrial expansion joints.

Meets a number of flammability and outgassing standards.

- Good abrasion resistance.
- Good tear resistance.
- Good sewability and easy to stitch into shapes.

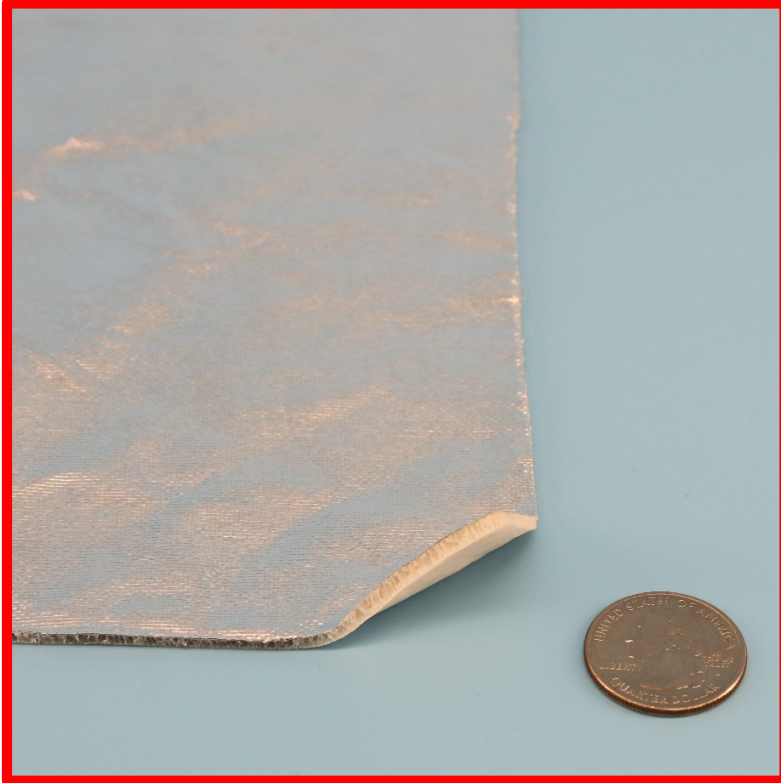
Part Number: IM-SFRK-0.100-48-X

“X” in the part number is roll length in yards

- Olive Green-White color.
- 2.2 to 3.0mm / 0.086” to 0.118” nominal thickness.
- Roll width 1220 mm / 48 inches.
- Areal density: 1.3-1.6 kg/m<sup>2</sup> / 0.26-0.32 lb/ft<sup>2</sup>
- Tear strength, min (N / lbf): Warp – 20 (4.50). Weft – 35 (7.87).
- Tensile strength, min (N/25mm (psi): 500 (1102)
- Elongation, min%: 50
- Meets AITM2.0002B (Vertical 12 sec flammability test).
- Meets AITM2.0010 Flame Penetration (aircraft cargo liner).
- Meets AITM2.0007 Smoke Density.
- Meets AITM3.0005 Toxic Gas Emission.
- Meets Airbus ABS5026 B01 / DAN 1226-03 specifications

All tradenames and trademarks are property of their respective owners

**DeltaMax™ Silicone Sponge Foam with Aluminized Fabric One Side**  
Heat Insulating and Heat Reflecting  
FMVSS302 flammability rating  
-55°C / -67°F to 200°C / 392°F



This product is a soft low density silicone foam that has been bonded to an aluminized fabric.

Provides thermal insulation and heat reflecting properties.

Thermal conductivity of 0.067 W/m °K.

Available in 2.5mm (0.098") and 5mm (0.197") thickness.

Commonly used in engine compartments, electronics cabinets, HVAC systems for thermal and vibration management.

Meets FMVSS-302 flammability requirements.

Areal density:            2.5mm thickness – 0.83 kg/m<sup>2</sup> / 0.17 lb/ft<sup>2</sup>  
                                  5.0mm thickness – 1.17 kg/m<sup>2</sup> / 0.24 lb/ft<sup>2</sup>

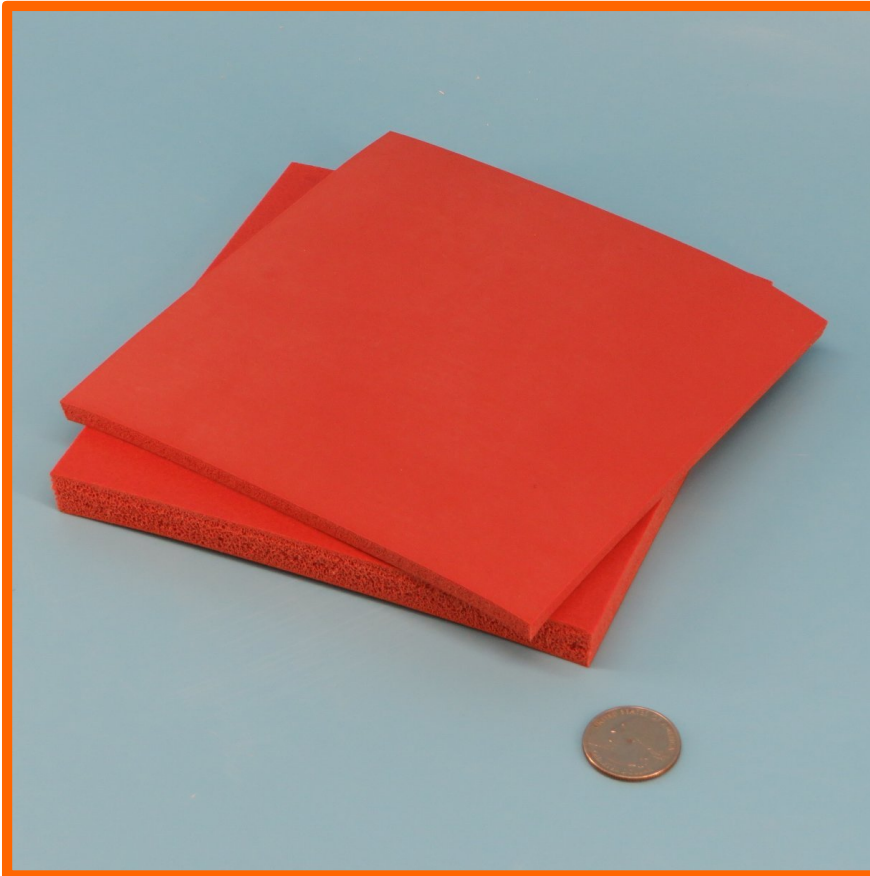
The foam component of this lamination meets EN45545 / 49CFR238 / NFPA 130 / BS6853 (legacy) for HL3 requirements in R2 / R3 / R22 / R23 applications (passenger railcars).

The foam component also meets various standards for Surface Flammability (ASTM E162 / ASTM D3675), Smoke Density (ASTM E662), Toxic Gas Generation (SMP 800-C), Flame Spread (ASTM C1166) and Heat Release (ASTM E1354).

The 2.5mm thickness lamination meets ASTM E162, ASTM E662 and SMP 800C.

Part Numbers: IM-SFRAL-0.098-48-X / IM-SFRAL-0.197-48-X  
"X" in the part number is roll length in yards

**Silicone Sponge Foam - Closed Cell - Roll & Sheet**  
**Soft / Medium / Firm / Extra Firm**  
**Low Thermal Conductivity Insulation**  
**450°F / 232°C: DeltaMax™ High Temperature & Heat Resistant**



- Available in primary thicknesses of:  
 0.032" / 0.81mm,  
 0.062" / 1.57mm,  
 0.093" / 2.36mm,  
 0.125" / 3.18mm,  
 0.187" / 4.75mm,  
 0.250" / 6.35mm,  
 0.375" / 9.53mm,  
 0.500" / 12.7mm.
- 0.625" / 15.88mm,  
 0.750" / 19.05mm,  
 and 1.00" / 25.4mm  
 thick are laminations  
 using acrylic adhesive.
- Standard color is red.  
 Other available colors  
 are White, Black, Gray.
- Standard grades are  
 Soft, Medium & Firm.
- Additional grades of  
 Medium FR (Flame  
 Retardant) and Extra  
 Firm available.

- Water absorption is 5% maximum, typically 1% measured.
- Thermal conductivity 0.110 W/mK.
- Specific Gravity: 0.5
- Tensile Strength: Soft = 90 psi, Medium = 100 psi, Firm = 200 psi, Extra Firm = 300 psi
- Elongation %: Soft = 150, Medium = 200, Firm = 225, Extra Firm = 250
- For thicknesses below .25" the density is .020 lbs/in<sup>3</sup> for Soft, Medium, Medium FR. .028 lbs/in<sup>3</sup> for Firm and .033 lbs/in<sup>3</sup> for Extra Firm. Per ASTM D 1056. For thickness of .25" and thicker, the density is .018 lbs/in<sup>3</sup> for Soft, Medium and Medium FR. .023 lbs/in<sup>3</sup> for Firm and .028 lbs/in<sup>3</sup> for Extra Firm. Per ASTM D 1056
- Compression deflection (25%) for Soft is 5-9 psi, Medium is 6-14 psi, Firm is 12-20 psi, Extra Firm is 17-25 psi.
- Medium Grade is AMS3195. Firm Grade is AMS3196.
- Available slit to any width. Available with PSA adhesive.

**Silicone Sponge Foam - Closed Cell - Roll & Sheet (Continued)**  
**Low Thermal Conductivity Insulation**  
**450°F / 232°C: DeltaMax™ High Temperature & Heat Resistant**



Silicone Sponge Rubber Foam General Purpose and UL94 V-0 rated					
Part Number	Thickness in / mm		Tolerance	Roll Length yd / m	
IM-SSR-R-032-X-Y	.032	.81	+/- 0.016	40	36
IM-SSR-R-062-X-Y	.062	1.57	+/- 0.030	20	18
IM-SSR-R-093-X-Y	.093	2.36	+/- 0.030	20	18
IM-SSR-R-125-X-Y	.125	3.18	+/- 0.030	20	18
IM-SSR-R-187-X-Y	.187	4.75	+/- 0.030	10	9
IM-SSR-R-250-X-Y	.250	6.35	+0.050 -0.030	10	9
IM-SSR-R-375-X-Y	.375	9.53	+/- .060	5	4.6
IM-SSR-R-500-X-Y	.500	12.7	+/- .060	5	4.6
IM-SSR-R-625-X-Y	.625	15.88	+/- .090	5	4.6
IM-SSR-R-750-X-Y	.750	19.05	+/- .090	5	4.6
IM-SSR-R-1000-X-Y	1.00	25.4	+/- .120	5	4.6

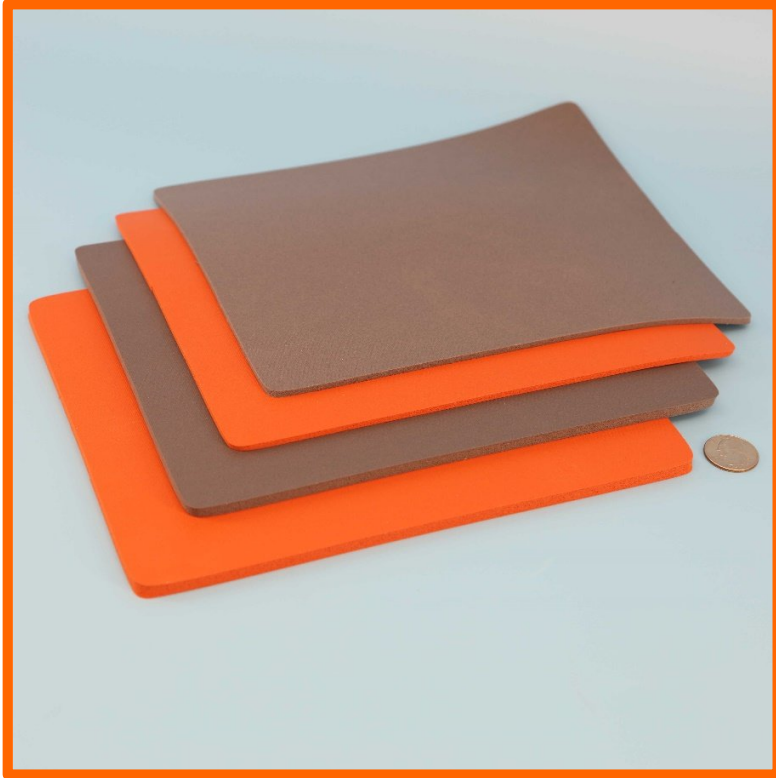
**For the "X" value; specify "S" for Soft, "M" for Medium, "F" for Firm, "X" for Extra Firm or "FR" for Medium with Flame Retardant**

**For the "Y" value specify the length ordering in yards.**

**Roll Width 36" / 91cm – Custom Roll width to 48" / 121 cm available**

**Low Minimums - Typically 1 to 3 yards**

**Silicone Sponge Foam - Closed Cell - Roll & Sheet**  
**Industrial and UL Grade - Medium Firmness**  
**Low Thermal Conductivity Insulation**  
**450°F / 232°C: DeltaMax™ High Temperature & Heat Resistant**



- Available in thicknesses of:  
0.125" / 3.18mm,  
0.250" / 6.35mm,
- Standard color is Red.
- UL grade is Gray

- Water absorption is 5% maximum, typically 1% measured.
- Thermal conductivity 0.110 W/mK.
- Specific Gravity: 0.5
- Tensile Strength: Medium = 100 psi
- Elongation %: Medium = 200
- For thicknesses below .25" the density is .020 lbs/in<sup>3</sup> for Soft, Medium, Medium FR. .028 lbs/in<sup>3</sup> for Firm and .033 lbs/in<sup>3</sup> for Extra Firm. Per ASTM D 1056. For thickness of .25" and thicker, the density is .018 lbs/in<sup>3</sup> for Soft, Medium and Medium FR. .023 lbs/in<sup>3</sup> for Firm and .028 lbs/in<sup>3</sup> for Extra Firm. Per ASTM D 1056
- Compression deflection (25%) for Medium is 6-14 psi
- 
- Available slit to any width. Available with PSA adhesive.

**Silicone Sponge Foam - Closed Cell - Roll & Sheet (Continued)**  
**Low Thermal Conductivity Insulation**  
**450°F / 232°C: DeltaMax™ High Temperature & Heat Resistant**



<b>Silicone Sponge Rubber Foam General Purpose and UL94 V-0 rated</b>					
<b>Part Number</b>	<b>Thickness in / mm</b>		<b>Thickness Tolerance</b>	<b>Roll Length yd / m</b>	
IM-SSR-R-125-X-Y	.125	3.18	+/- 0.030	20	18
IM-SSR-R-250-X-Y	.250	6.35	+ .050 - .030	10	9

**For the "X" value; specify "S" for Standard Grade or "UL" for UL grade**

**For the "Y" value specify the length ordering in yards.**

**Roll Width 36" / 91cm**

**Low Minimums - Typically 1 to 3 yards**



**Meta Aramid Nomex® Insulation Felt**  
**450°F / 230°C PyroTection™ High Temperature Insulation and Protection**  
**Heat Resistant Nomex®**



- Can be used as an insulation.
- Can be used for filtration.
- Can be as a protection pad in hot processes to prevent marking of products.
- Coatings and PSA's available.
- Resin impregnated available to increase stiffness.
- Roll lengths up to 100metres / 328 feet available on thinner materials. Shorter roll length on thicker materials.

These needed pads can be used as insulation or protection in hot processes to prevent marking of products as they exit various drying/curing ovens.

<b>PyroTection™ Felts - High Temperature &amp; Flame Resistant Nomex®</b> 230°C / 450°F Operating Temperature - 400°C / 750°C decomposition temperature						
Part Number	Thickness in / mm		Weight oz/lyd <sup>2</sup> / g/m <sup>2</sup>		Roll Width in / cm	
Nomex® - color is off white						
IM-N-F-8082-10	.080	2.0	10	339	82	208
IM-N-F-8082-14	.080	2.0	14	474	82	208
IM-N-F-11082-6.5	.110	2.8	6.5	220	82	208
IM-N-F-16082-7.5	.160	4.1	7.5	254	82	208
IM-N-F-25082-14	.250	6.3	14	474	82	208
IM-N-F-50072-53	.500	12.7	53	1797	72	182
With Resin Stiffener						
IM-N-F-7082-14R	.070	1.7	14	474	82	208
IM-N-F-11082-15R	.110	2.8	15	508	82	208
IM-N-F-19072-28R	.190	4.8	28	949	72	182
IM-N-F-30072-53R	.300	7.6	53	1797	72	182

**Para Aramid Kevlar® Insulation Felt**  
**840°F / 450°C PyroTection™ High Temperature Insulation and Protection**  
**Heat Resistant Kevlar®**



- Can be used as an insulation.
- Can be as a protection pad in hot processes to prevent marking of products.
- Coatings and PSA's available.
- Resin impregnated available to increase stiffness.
- Roll lengths up to 100metres / 328 feet available on thinner materials. Shorter roll length on thicker materials.

These needed pads can be used as insulation or protection in hot processes to prevent marking of products as they exit various drying/curing ovens.

<b>PyroTection™ Felts - High Temperature &amp; Flame Resistant</b> <b>Kevlar® / Kevlar-Nomex Blend / Kevlar-Polyester Layered</b> 450°C / 840°F Operating Temperature - 525°C / 975°C decomposition temperature							
Part Number	Thickness in / mm		Weight oz/yd <sup>2</sup> / g/m <sup>2</sup>		Roll Width in / cm		Roll Length yards
Kevlar® - color is yellow							
IM-K-F-0440-3.2	.04	1.0	3.2	108	40	101	
IM-K-F-0563-5.5	.05	1.3	5.5	186	63	160	109
Kevlar - Nomex Blend							
IM-K/N-F-16066-32	.16	4.1	32	1084	66	167	109
With Resin Stiffener							
IM-K-F-19083-38R	.190	4.8	38	1288	83	210	109
IM-K-F-48079-95R	.480	12.2	95	3221	79	200	44

**Needled Fiberglass Insulation Felt / Matt / Batt**  
**1200°F / 648°C: DeltaMax™ Very High Temperature, Heat and Flame Resistant**  
**Premium Grade**



- Excellent insulation for sandwiching between front and rear (hot and cold side) layers of blankets & curtains.
- Non-flammable.
- Conforms to MIL-I-16411 Type II.
- Meets US Coast Guard 164.009 for incombustible materials.
- Meets MIL-I-24244 for low corrosiveness.
- Thermal conductivity of .43 at 500°F and .53 at 649°F.
- NSN 5640-00-173-6591. Cage code L8347
- Box size 24" x 24" x 64"

Needled fiberglass insulation felt / matt / batt is manufactured from 100% non-woven E-type fiberglass textile fibers. It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications due to its low corrosiveness (meeting MIL-I-24244).

Used extensively in the production of removable pads for welding stress relieving, furnace and oven wall gap insulation, removable pipe insulation, gas and steam turbine power generating equipment blankets, etc.

Very High Temperature, Heat and Flame Resistant Needled Fiberglass Insulation Felt / Matt / Batt: Premium Grade								
Part Number	Thickness		Density		Roll Width		Roll Length	
	in	mm	lbs/ft <sup>3</sup>	kg/m <sup>3</sup>	in	cm	ft	m
IM-FG-NEEDED-0.25	¼	7	9	144	60	152	150	45.7
IM-FG-NEEDED-0.50	½	13	9	144	60	152	75	22.8
IM-FG-NEEDED-0.75	¾	19	11	176	60	152	45	13.7
IM-FG-NEEDED-1.00	1	25	11	176	60	152	45	13.7

Weight: 0.25 = 3oz/ft<sup>2</sup>; 0.50 = 6oz/ft<sup>2</sup>; 0.75 = 12oz/ft<sup>2</sup>; 1.00 = 15oz/ft<sup>2</sup>

**This Product is Available By-The-Yard / Metre**

**Silica Needled Insulation Felt / Matt / Batt - Premium Grade**  
**1800°F / 982°C: InSiMax™ Extreme High Temperature**  
**Heat Flame Resistant**



- An alternative to asbestos and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO<sub>2</sub>) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.
- Shot-free. 6-micron diameter fibers for low skin irritation during handling.
- High re-use cycles of 25-35 for customers using this product for stress relief processes.

This Insulation is a needled blanket manufactured from amorphous silica. This material is an excellent alternative to Refractory Ceramic Fiber (RCF) or asbestos.

It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSiMax™ Extreme High Temperature Heat & Flame Resistant Insulation								
Part Number	Thickness		Density		Roll Width		Roll Length	
	in	mm	lbs/ft <sup>3</sup>	kg/m <sup>3</sup>	in	cm	ft	m
IM-S-NEEDED-M003-02	1/8	3	8	144	36	91	130	39
IM-S-NEEDED-M007-04	¼	7	10	180	36	91	99	30
IM-S-NEEDED-M013-08	½	13	10	180	36	91	49	15
IM-S-NEEDED-M025-16	1	25	10	180	36	91	25	7.6

**PRICING NOTE:** DUE TO VOLATILITY IN RAW MATERIAL COSTS THE PRICING ON THIS PRODUCT MAY INCUR A SURCHARGE AT TIME OF ORDERING

**This Product is NOT Available By-The-Foot – Full Roll Only**

**Vitreous Silicate Insulation Felt / Matt / Batt**  
**1800°F / 982°C: InSilSafe™ Extreme High Temperature Heat Flame Resistant**



- Bio-soluble, organic free, vitreous silicate mineral fibre.
- An alternative to asbestos, silica and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from a mineral fibre that can be used at 1800°F / 982°C continuously with excursions to 3000°F / 1650°C.

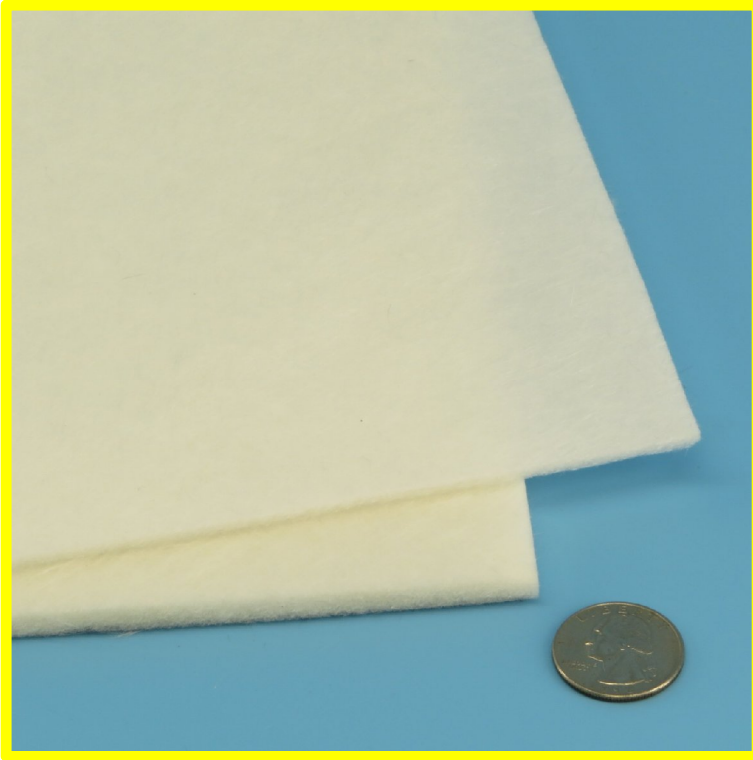
This Insulation is a needled blanket manufactured from Vitreous Silicate Fibre. This material is an excellent alternative to Refractory Ceramic Fiber (RCF), asbestos or Silica.

It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSilSafe™ Extreme High Temperature Heat & Flame Resistant Insulation								
Part Number	Thickness in / mm		Density lbs/ft <sup>3</sup> / kg/m <sup>3</sup>		Roll Width in / cm		Roll Length ft / m	
IM-ISS-24-M007-04	¼	7	10	180	24	91	100	30
IM-ISS-24-M013-08	½	13	10	180	24	91	50	15
IM-ISS-24-M025-16	1	25	10	180	24	91	25	7.6
IM-ISS-48-M007-04	¼	7	10	180	48	121	100	30
IM-ISS-48-M013-08	½	13	10	180	48	121	50	15
IM-ISS-48-M025-16	1	25	10	180	48	121	25	7.6
IM-ISS-54-M007-04	¼	7	10	180	54	137	100	30
IM-ISS-54-M013-08	½	13	10	180	54	137	50	15
IM-ISS-54-M025-16	1	25	10	180	54	137	25	7.6
IM-ISS-60-M007-04	¼	7	10	180	60	152	100	30
IM-ISS-60-M013-08	½	13	10	180	60	152	50	15
IM-ISS-60-M025-16	1	25	10	180	60	152	25	7.6



**Non-Woven Silica Insulation Felt**  
**2000°F / 1093°C: InSilPro™ Extreme High Temperature**  
**Heat Flame Resistant**



- An alternative to asbestos and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO<sub>2</sub>) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.
- Flat orientation thermal conductivity of 0.18 at 200°F; 0.20 at 400°F; 0.23 at 600°F; 0.26 at 800°F.
- Density 8 lbs/ft<sup>3</sup> / 144 kg/m<sup>3</sup>.

This Insulation is a non-woven blanket manufactured from amorphous silica. An excellent alternative to Refractory Ceramic Fiber (RCF) or asbestos.

Flexible, but with handling stiffness - may be cut to size to fit complex fitting areas.

May also be encapsulated in facing materials and other fabrics. It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

<b>InSilPro™ Extreme High Temperature Heat &amp; Flame Resistant Non-Woven Insulation</b>						
<b>Part Number</b>	<b>Thickness in / mm</b>		<b>Roll Width in / cm</b>		<b>Roll Length ft / m</b>	
IM-S-NW-05-X-Y	7/32	5	36	91	50	15
IM-S-NW-05-X-Y	7/32	5	60	152	50	15
IM-S-NW-10-X-Y	13/32	10	36	91	25	7.5
IM-S-NW-10-X-Y	13/32	10	60	152	25	7.6

For the "X" Value, specify 36 for 36" roll width and 60 for 60" roll width.  
For the Y value, specify R for full roll or number of linear yards for cut length

## Ceramic Fiber Insulation: Premium Grade 2000°F / 1093°C: CerMax™ Extreme Temperature



- An alternative to asbestos based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO<sub>2</sub>) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.
- This ceramic fiber insulation is a needed blanket manufactured from ceramic fiber and is an excellent alternative or replacement for asbestos.
- Density is 8 lbs/ft<sup>3</sup> / 128 kg/m<sup>3</sup>

This insulation is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

CerMax Extreme High Temperature +Plus, Heat & Flame Resistant Ceramic Fiber Insulation						
Part Number	Thickness in / mm		Roll Width in / cm		Roll Length ft / m	
IM-C-8-08-24	0.50	13	24	61	50	15
IM-C-8-16-24	1.00	25	24	61	25	7.6
IM-C-8-24-24	1.50	38	24	61	16.5	5
IM-C-8-32-24	2.00	51	24	61	12.5	3.8
IM-C-8-32-48	2.00	51	48	122	12.5	3.8

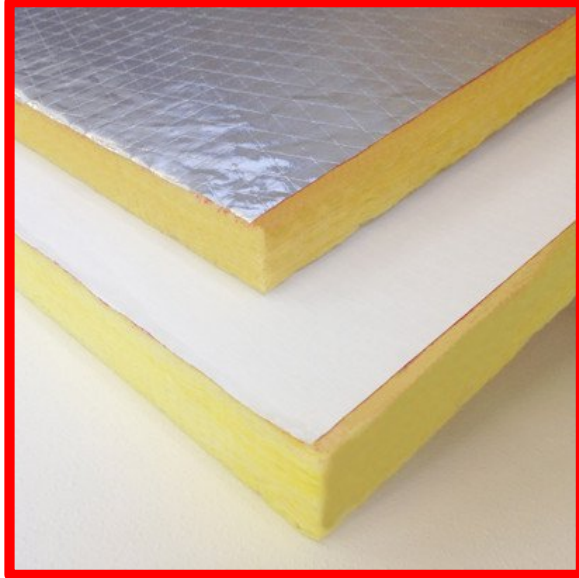
Thermal Conductivity: BTU•in./hr•ft<sup>2</sup>•°F (w/mK)

8 LB Density: @500°F (260°C) 0.44 (0.06); @1000°F (538°C) 0.87 (0.12); @1500°F (816°C) 1.45 (0.21)  
@1800°F (982°C) 1.83 (0.26); @2000°F (1093°C) 2.09 (0.30)

P22022DA

## Rigid Mineral Wool Insulation Board - Marine Approved

- For Decks and Bulkheads requiring up to A-60 rating
- US Coast Guard / Transport Canada / Lloyds Register Approved
- Meets latest IMO 2010 FTP Code



- Suitable for A-30 Steel Bulkhead, A-30 Steel Deck (30 minute rating), A-60 Steel Bulkhead, A-60 Steel Bulkhead (restricted) and A-60 Steel Deck (60 minute rating).
- Non combustible and fire resistant.
- Hydrophobic.
- Reinforced aluminum foil facing on one side. Also available plain (no facing) or with white fiberglass cloth one side.
- 6 lb/ ft<sup>3</sup> density.
- Operating temperature up to 1200°F / 650°C and withstanding flame exposure to 2150°F / 1177°C without melting.

- Flame spread Index = 0, Smoke development index = 0. ASTM E84 (UL 723), CAN/ULC S102
- Thermal resistance: R-value/inch 75°F: 4.1 hr.ft<sup>2</sup>/BTU (0.72m<sup>2</sup>K/W)
- Thermal conductivity: .24 (BTU.in/hr.ft<sup>2</sup>.°F) at 75°F
- Water absorption: <1% Weight
- Suitable for steel pin/metal fastener studs or wire mesh support installation. Easily cut to size.

Mineral Wool Insulation Board - Aluminum Foil Faced - Marine Approved							
Part Number	Thickness in / mm		Density	Board Width in / cm		Board Length in / cm	
IM-MWR-AL--50	2"	51	6 lb/ft <sup>2</sup>	24	60.9	48	121.8

US Coast Guard Certificate of Approval: 164.107/16/0, 164.107/17/0, 164.109/26/0, 164.112/142/0

Transport Canada Certificate of Approval: LRTC 10-60002, LRTC 10-60001, LRTC 10-60004

Lloyds Register Certificate of Approval: SAS F090281, SAS F090280, SAS F090283



**High Temperature, Heat, Flame, Fire, Molten Metal & Weld Splatter Protection Materials**

*Fax Orders: 610-340-9054 Telephone Orders: 610-906-3549 orders@abthermal.com*

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