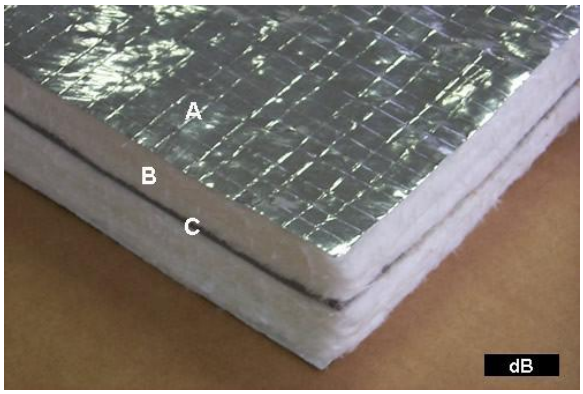
High Temperature Needle Mat Composite



This composite has the advantages of being extremely durable, able to withstand high constant service temperatures, very low thermal conductivity, and excellent noise absorption at both high and low frequencies. It can be combined with several facing films, barriers, and pressure sensitive adhesives to give a composite that will fit most applications.

REINFORCED POLYESTER FACING

Description and Advantages:
Alpha Style VRP-3 is a triple ply laminate of a white vinyl face with a metalized polyester film backing, and a fiberglass scrim tear stopper. The components are adhered together using a high-temperature flame retardant adhesive. It offers many advantages among which is its excellent vapor barrier qualities. The material can be used through a broad range of temperatures and is non-denting. The material can also be readily cleaned. It has superior strength and excellent light reflectivity.

Construction: White PVC Film
4 x 3 Fiberglass Scrim 75G
.0005" Metalized Polyester Film

PROPERTIES	VALUES	TEST METHOD
Weight, oz./sq.yd.	4.2 (140 g/m^2	ASTM-D-1910
Moisture Vapor Transmission	0.02 max.	ASTM-E-96
U.S. Perms		Method A
Tensile Strength, lbs/in.		
MD -	30 (138N)	FED STD 191/5102
CMD -	25 (111N)	
Tear Strength, g.		
MD -	1600g	ASTM-D-1424
CMD -	1600g	
Beech Puncture, scale units	100	ASTM-D-781
Mullen Burst, psi		ASTM-D-774
Vinyl up -	80 (551 kPa)	
Vinyl down -	75 (517 kPa)	
Corrosion Resistance and	None	41^o C, 100% RH
Loss of MVT		30 days
Light Reflectivity 90%		ASTM-C-523
Water Resistance	No delineation	1 hour water soak 23^o C
Dimensional Stability	5% max. loss	ASTM-D-1204
Light Stability, 125 hrs.	No change	ASTM-G-23 Type A
Cold Crack, -12^o C (+10^o F)	No Crack	ASTM-D-1790
U.L. Fire Hazard Classification:		ASTM-E-84
Flame Spread	15	
Smoke Development	50	
This product is UL listed		

NEEDLE MAT

dBcloth HT-NM (High Temp - Needle Mat)
HT-NM is a mechanically bonded glass fiber insulating blanket of uniform density that offers reliable superior performance at temperatures up to 1200 degrees Fahrenheit. HT-NM meets U.L. Requirements (Ref. #R11184). All requirements of military specifications MIL-I-24244 and MIL-I-16411 and all pertinent automotive specifications.

HT-NM is manufactured from a well controlled assortment of long glass textile fibers to assure uniform mechanically bonding with no additional binders. Product quality is maintained through a carefully controlled needling process which creates uniform insulating efficiency during extended exposure to elevated temperatures.

HT-NM is available in standard 1/4", 1/2", 3/4", and 1" grades.

Thermal Conductivity	
According to independent testing, HT-NM meets or exceeds the following "K" factor requirements for MIL-I-16411, Type II.	
Temperature	**BTU in./hr./sq.ft./deg.f**
300F.	.40
500F.	.50
700F.	.65

Product Characteristics:

- Low thermal conductivity
- Non-toxic
- Good dependability (Conforms to irregular surfaces)
- Non-combustible
- Excellent vibration resistance (Will not powder)
- Odorless (Will not absorb odors)
- Will not contribute to metal corrosion
- Excellent sound absorption properties
- Will not decay or sustain mold or vermin
- Conforms to MIL-I-16411 and MIL-I-24244
- UL Listed (Ref# R11184)
- Flame Spread - 0 Smoke Dev. - 0

Acoustical Ratings			
Sound Absorption Coefficients			
Frequency	1/4"	1/2"	1"
250	.10	.13	.46
500	.18	.24	.68
1000	.29	.67	.85
2000	.81	.92	.95
4000	.99	.99	.99

Physical Properties					
Grade (thk.)	Mass (ozs./sq.ft.)	Width (inches)	Roll Length (feet)	Area (sq.ft./rl.)	Weight (lbs./rl.)
1/4	4	60	150	750	185
1/2	6	60	75	375	140
3/4	12.25	60	45	225	172
1	15	60	45	225	215

BARRIER

Physical Data: Barrier Septum

Weight/Sq.Ft.	1 LB
Tensile (Psi)	762
Gauge (Inches)	.108"
Elongation (%)	200 %
Die "C" Tear (#In.)	114
200 Deg. F/7 Days	No Deformation:<1 % Shrink
Mil. Std. 6411 Burn Test	9 (Pass)
MVS 302 Burn Test	Pass: Self Extinguished
STC	26

Table showing how the human ear perceives noise reduction.	
Decibel Reduction	**Reduction Experienced by Ear**
2	15%
4	23%
6	38%
8	48%
10	56%
12	63%
14	68%
16	75%
18	77%
20	81%

All our foam products do not drip upon ignition, cease to burn after removal of the source of ignition and produce a minimal amount of smoke.

IMPORTANT: When the foam is subjected to dirt, grease, moisture and chemical attack, it may require a foam with a protective surface treatment such as our Metalized Mylar or Matte Film Finish foams above.

Most of our products meet all the requirements of UL-94, MVSS-302 and FAR 25.83b. Call or e-mail to request expanded specifications and technical data sheets.