# DELTA®-8

## MINERAL WOOL LAMELLA

### Versatile - Bendable - Compressive Strength

**DELTA®-8 LAMELLA** is manufactured with perpendicular orientated 8 lb./ft$^3$ (128 kg./m$^3$) mineral wool bonded together with a high temperature binder. The end grain of the fiber is adhered perpendicularly to a laminate {facing surface}. This construction provides high compressive strength and easy-to-wrap, flexible type insulation that require the finished characteristics of heavy density mineral wool boards. **DELTA®-8 Mineral Wool LAMELLA** has a wide range of applications from -20°F (-29°C) to 1000°F.*(538°C*) including use on large pipes & cylindrical ducts, storage tanks, and equipment.

### Physical Properties

All values in ( ) are metric conversions.
Density: 8 lb./ft$^3$ (Nom. 128 kg./m$^3$)
Service Temperature: [ASTM C 411] -up to **1000°F*** (**538°C***)

Thermal Conductivity: °F (°C) mean temp.= Btu in./h ft² °F (W/m K) [per ASTM C 177 with C 1045 calculations]
100°F. ( 38°C) = 0.28 (0.040)
200°F. ( 93°C) = 0.36 (0.052)
300°F. (149°C) = 0.43 (0.062)
400°F. (204°C) = 0.50 (0.072)
500°F. (260°C) = 0.58 (0.084)
600°F. (316°C) = 0.67 (0.097)
k = 0.27 @75°F. (24°C) mean temp. ~**R = 3.6** per inch (25mm)

Compressive Strength: [ASTM C 165] Not less than 150 lbs./ft$^2$ (7.3 kPa)
Corrosion to Steel, Aluminum, & Copper [ASTM C 665] -None
Moisture Sorption {Vapor} [ASTM C 1104]-Less than 1%
Water *wicking* resistant* and Non-hygroscopic.*
Permeance: [ASTM E 96]
ASJ & FSK facing only= 0.02 Perm, max. (.014 g/24h m$^2$/mm Hg., max.) Does not promote growth of fungi or bacteria.

*Incombustible*: Mineral Wool per ASTM E 136 Test Method
*Surface Burning Characteristics*: Tested as a composite/finished product with Glass Mat facing per ASTM E 84 Test Method
Flame Spread Index = 10
Smoke Developed Index = 10

### Facings {Laminates}

***Standard***: 0.033"(0.9 mm) thick fiber **Glass Mat**
***Special Order***: **A.S.J.** {**A**ll **S**ervice **J**acket} laminate constructed with 30 lb/3000 ft$^2$ (49g/m$^2$) White Kraft, tri-direction fiber glass filament {Scrim}, 0.00035" (9 um) aluminum Foil, and fire retardant adhesive. **F.S.K.** {**F**oil-**S**crim-**K**raft} laminate constructed with 0.0007"(18um) aluminum Foil, Tri-directional fiber glass filament {Scrim}, 30 lb/3000 ft$^2$ (49g/m$^2$) natural Kraft, and fire retardant adhesive..

### Roll Forms Available

Thickness: 1" (25mm) thru 6" (152mm) in ½" (13mm) increments
Width: 36 in. (91cm)
Roll Length: Varies with thickness
Custom lengths {special stretch-outs} available at extra costs.
Packaged: ~= 27"(69cm) diameter roll in perforated polyethylene or corrugated carton, 27½"(70cm) square by 37"(94cm) high.

### Specifications

{Board Blank tested flat}ASTM C 612-93
U.S. Federal Specification HH-I-558B and C
{ASJ+FSK Facings Only}U.S. Federal Spec. HH-B-100B
Stainless Steel Stress Corrosion Specification:
*Special provisions apply concerning lot testing, contact manufacture…*
ASTM C 795, per test methods, C 871 & C 692
Nuclear Regulatory Commission, Reg. Guide #1.36

*Consult manufacturer for limitations under elevated temperature conditions.

**Suggested Thickness: ≤ 140°F. Outer Temp.**
3EPLUS® v2.12 computer model calculating for insulation thickness at various Process Temperatures on a vertical flat surface. Input data: ambient air= 75° F, no wind, for outer surface...Emittance {A.S.J. Facing} = 0.9 or
Emittance {Oxidized Aluminum Jacketing} = 0.1

| Temp. | Thickness | Temp. | Thickness |
|---|---|---|---|
| 50°F ≤ | 0.5" ---- 1.0" | 650°F + | 2.5" ----- 5.0" |
| 350°F ≤ | 1.0" ---- 2.0" | 750°F + | 3.0" ----- 6.5 |
| 450°F ≤ | 1.5" ---- 2.5" | 850°F + | 4.0" ----- 8.0 |
| 550°F ≤ | 2.0" ---- 4.0" | 950°F + | 4.5" -----XX |

XX Not recommended

**Caution**: Various operational conditions such as insufficient thickness, higher ambient temperatures, solar load, and aluminum jacketing can cause the outer temperature to exceed the maximum temperature {150°F.(66°C)} limit of the insulation facing. Maximum recommended installed thickness is eight (8) inches. Properly installed protective vapor retarders must be used for below ambient applications to prevent movement of water vapor through or around the insulation towards the colder surface. During initial heat-up to operating temperatures above 380°F.(193°C), an acrid odor and smoke will be given off as a portion of the bonding material used in the insulation begins to undergo a controlled decomposition.

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