



FIBER GLASS LAMELLA

Flexible - Versatile - Lightweight

DELTA® LAMELLA is manufactured with perpendicular orientated 3 lb./ft³ (48 kg./m³) fiber glass bonded together with a high temperature binder. The end grain 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 fiber glass boards. **DELTA® Fiber Glass LAMELLA** has a wide range of applications from -20°F. (-29°C) to 850°F. (454°C*) including use on large pipes and cylindrical ducts, storage tanks, and equipment.

Physical Properties

All values in () are metric conversions.
 Density: Nom. 3 lb./ft³ (Nom.48 kg./m³)
 Manufacturer of fiber glass blanks: Knauf Fiber Glass GmbH
 Service Temperature: [ASTM C 411]-up to **850°F* (454°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) = 0.29 (0.042)
 200°F. (93°C) = 0.36 (0.052)
 300°F. (149°C) = 0.46 (0.066)
 400°F. (204°C) = 0.59 (0.085)
 500°F. (260°C) = 0.75 (0.108)
 600°F. (316°C) = 0.92 (0.133)
 k = 0.27 @75°F. (24°C) mean temp. ~R = 3.6 per inch (25mm)

Compressive Strength: [ASTM C 165] Not less than 125 lbs./ft² (5.8 kPa)
 Corrosion [Steel, Aluminum, Copper, ASTM C 665] None
 Moisture Sorption [Vapor, ASTM C 1104]-Less than 1%
 Permeance: [ASTM E 96] ASJ & FSK facing only = 0.02
 Perms, max. (.014 g/24h m²/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 ASJ facings per ASTM E 84 Test Method
 Flame Spread Index = 15
 Smoke Developed Index = 20

Facings {Laminates}

Standard: A.S.J. {All Service Jacket} laminate constructed with 30 lb./3000ft² (49g/m²) White Kraft, tri-direction fiber glass filament {Scrim}, 0.00035"(9 um) aluminum Foil, and fire retardant adhesive. **Special Order: F.S.K.** {Foil-Scrim-Kraft} laminate constructed with 0.0007"(18um) aluminum Foil, Tri-directional fiber glass filament {Scrim}, 30 lb/3000 ft²(49g/m²) natural Kraft, and fire retardant adhesive. 0.033"(0.9 mm) thick fiber **Glass Mat.**

Roll Forms Available

Thickness: ½" (13mm) 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
 {ASJ Facing Only} U.S. Federal Specification HH-B-100B
 U.S. Federal Specification HH-I-558B and C
 Stainless Steel Stress Corrosion Specification:
Special provisions apply, contact manufacturer...
 ASTM C 795, per test methods C 871 and 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
250°F. ≤	0.5" ---- 1.0"	650°F. +	3.0" ----- 6"
350°F. ≤	1.0" ---- 2.0"	750°F. +	4.0" ----- XX
450°F. ≤	1.5" ---- 3.0"	850°F. +	5.0" ----- XX
550°F. ≤	2.0" ---- 4.5"	XX	Not Recommend

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. Double layering is not recommended for process temperatures above 550°F.(288°C) at 80°F.(27°C) ambient air. Maximum recommended installed thickness is six (6) 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.