

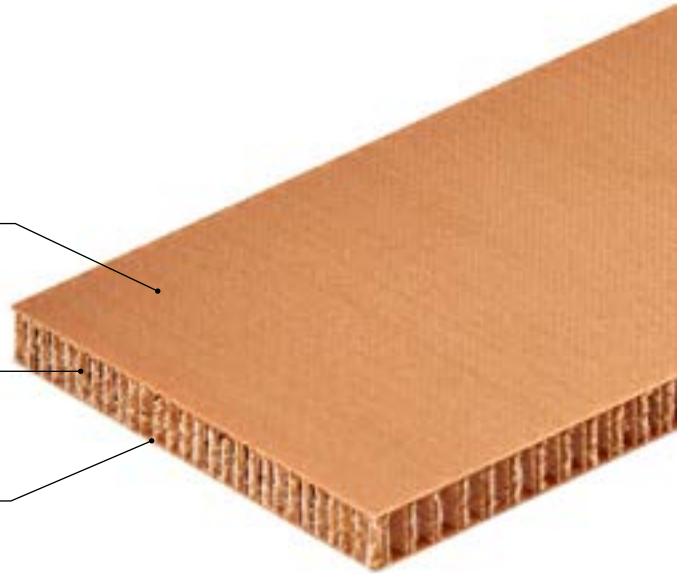
ALUSTEP®- FN

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC impregnated with phenolic resin
Thickness mm: 0,25±0,3

CORE
 Nomex® honeycomb core
Diameter: from Ø1/8" to Ø3/16", X₁

X₁ = other diameters on request



Technical data sheet for standard panels (dimensions, materials and special finishes on request)

| TECHNICAL CHARACTERISTICS OF PANEL | | | | | | | | | | | | |
|--|--|--|----------------------|---|----------------------------|---------|---------|---------|---------|---------|---------|--|
| | | mm | | from 4 to 50 (certified for IMO MED from 4 to 25) | | | | | | | | |
| thickness of the panel | | mm | | from 4 to 50 (certified for IMO MED from 4 to 25) | | | | | | | | |
| panel size | | mm | | standard 1250x2500 | | | | | | | | |
| thickness' tolerance | | mm | | ±0,4 | | | | | | | | |
| dimension's tolerance | | mm | | ±30 | | | | | | | | |
| skins' thickness | | mm | | 0,3 | | | | | | | | |
| glass fiber skin type | | | | satin 8/1 300 gr/m ² | | | | | | | | |
| Impregnation | | | | phenolic resin | | | | | | | | |
| honeycomb type | | | | aramid paper, impregnated with phenolic resin | | | | | | | | |
| diameter of honeycomb | | Ø = mm | | 3 and 4,8 | | | | | | | | |
| honeycomb density | | Kg/m ³ | | 48 and 32 | | | | | | | | |
| adhesive for aluminum honeycomb | | | | thermoplastic | | | | | | | | |
| PANEL PHYSIC AND MECHANIC PERFORMANCES | | type panel (some examples) | mm | 5 | 10 | 15 | 20 | 25 | 30 | 35 | | |
| | | panel weight ‡ | Kg/m ² | 1,4±0,1 | 1,7±0,1 | 1,9±0,1 | 2,1±0,1 | 2,4±0,1 | 2,6±0,1 | 2,8±0,1 | | |
| | | compressive stabilised strength MPa ** ‡ | ASTM C 365-365 M | Mpa | 1,6±0,2 | | | | | | | |
| | | maximum load ** ‡ | ASTM C 393 † | N | 100±10 | 210±20 | 320±30 | 430±40 | 540±50 | 650±60 | 760±70 | |
| | | deflection at maximum load ‡ | ASTM C 393 † | mm | 49±5 | 24±3 | 16±2 | 12±1 | 10±1 | 8±1 | 7±1 | |
| | | skins E Elastic Modulus ** | | Mpa | 22'000±1000 | | | | | | | |
| | | moment of inertia I ** | | mm ⁴ /m | 3'300 | 14'120 | 32'400 | 58'200 | 91'600 | 132'000 | 181'000 | |
| | | middle resistance to peeling ** ‡ | ASTM D1781-98 (2012) | | >450 N/76 mm or >45 Nmm/mm | | | | | | | |
| | | maximum service temperature ** | °C | - 50/ + 80 | | | | | | | | |
| | | thermal expansion coefficient ** | °C ⁻¹ | 3,5*10 ⁻⁵ | | | | | | | | |

* Tested by Certifying Institute

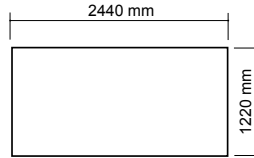
** Tested by Internal Laboratory

*** Approximate value

† Sample dimension with 4 support points (L, W) 540x540

‡ All values refer to a panel made of a honeycomb in nomex diameter 3mm mm 48 kg/m³ and two skins in fiberglass impregnated with phenolic resin and thermoplastic adhesive

Standard dimensions (other dimensions available on request) - Dimension tolerance ± 30 mm



| Honeycomb core's properties | | | Compression Strength | L-Shear | W-Shear |
|-----------------------------|--------------|---------------------------|----------------------|-------------------|-------------------|
| Nomenclature | Cell size mm | Density kg/m ³ | N/mm ² | N/mm ² | N/mm ² |
| Hexagonal | 3,2 | 48 | 1,90 | 1,16 | 0,62 |
| Hexagonal | 3,2 | 64 | 3,10 | 1,48 | 0,82 |
| Hexagonal | 3,2 | 80 | 4,70 | 1,95 | 1,05 |
| Hexagonal | 3,2 | 96 | 6,60 | 2,45 | 1,42 |
| Hexagonal | 3,2 | 128 | 11,30 | 2,95 | 1,78 |
| Hexagonal | 3,2 | 144 | 13,20 | 3,05 | 1,90 |
| Hexagonal | 4,0 | 29 | 0,60 | 0,45 | 0,26 |
| Hexagonal | 4,0 | 80 | 5,10 | 1,90 | 0,98 |
| Hexagonal | 4,8 | 32 | 0,90 | 0,58 | 0,36 |
| Hexagonal | 4,8 | 48 | 2,60 | 0,98 | 0,56 |
| Hexagonal | 4,8 | 64 | 3,40 | 1,70 | 0,92 |
| Hexagonal | 4,8 | 80 | 6,00 | 1,95 | 1,10 |
| Hexagonal | 4,8 | 96 | 7,30 | 2,26 | 1,32 |
| Hexagonal | 6,4 | 24 | 0,54 | 0,34 | 0,18 |
| Hexagonal | 6,4 | 32 | 0,80 | 0,54 | 0,30 |
| Hexagonal | 6,4 | 48 | 2,05 | 1,00 | 0,56 |
| Hexagonal | 6,4 | 64 | 3,40 | 1,54 | 0,79 |
| Hexagonal | 9,6 | 24 | 0,52 | 0,32 | 0,16 |
| Hexagonal | 9,6 | 32 | 0,68 | 0,56 | 0,29 |
| Hexagonal | 9,6 | 48 | 1,80 | 1,15 | 0,66 |
| Over expanded | 4,8 | 29 | 0,60 | 0,31 | 0,32 |
| Over expanded | 4,8 | 48 | 2,30 | 0,60 | 0,72 |
| Over expanded | 4,8 | 64 | 3,80 | 0,72 | 0,90 |
| Over expanded | 4,8 | 72 | 4,00 | 0,75 | 0,92 |
| Over expanded | 4,8 | 80 | 5,30 | 0,88 | 1,17 |
| Over expanded | 4,8 | 96 | 6,70 | 0,92 | 1,28 |
| Over expanded | 6,4 | 48 | 2,30 | 0,60 | 0,72 |
| Over expanded | 6,4 | 64 | 3,20 | 0,72 | 0,90 |

Tolerance - density +/- 16%



Nomex® honeycomb