



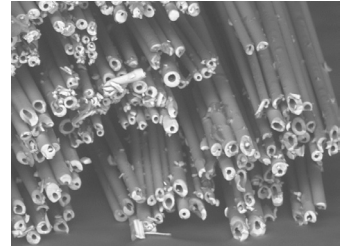
Technical Data

Hollow glass fibres (H-glass)

A new low density structural material

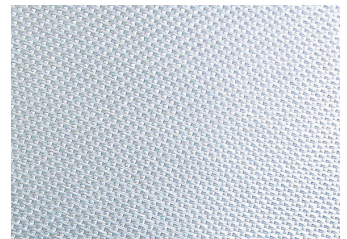
Description

Hollow glass fibers are made of a proprietary blend of alkali-free aluminoborosilicate glass using unique precision manufacturing technology and platinum multi-spin dyes resulting of a special „tube like” continuous structural glass fibers with an outer diameter of 10 - 12 μm and inner capillary „tunnel” of 5 - 6 μm . Continuous hollow glass fibers manufacturing process is patented. With their unique properties, combining low weight, high specific strength and energy absorption capabilities, H-glass fibers became very attractive engineering materials for use in the advanced composites and aerospace industries.



Characteristics

H-glass is a lower density fiber in comparison with a „solid” E-glass or S-2 Glass, thus reducing the overall weight of cured laminates by up to 40 %! H-glass is more elastic, has higher compression strength and specific strength characteristics compare to „solid” E-glass fibers. The hollow structure of H-glass fibers is responsible for significant improvement in their dielectric, thermo-insulating and acoustic insulation properties in comparison to standard „solid” glass and carbon fibers. H-glass fiber based composites serve as a very efficient energy and shock absorbers. H-glass basic characteristics were evaluated in comparison with E-glass in a composite laminate, which contains 60 % of fibers by volume. Evaluation results are shown in table below:



Type of Fiber	Composite density g/cm ³	Spec. compression strength $\frac{R_m}{\rho}$	Thermal conductivity W/m c	Dielectric permittivity 10 ¹⁰ Hz	Loss tangent 10 ¹⁰ Hz
E-glass (solid)	1.98	59	0,40	4,6	0,02
H-glass	1.40	78	0,21	2,9	0,01

Application

All the above make H-glass hollow fibers an attractive material for manufacturing of a wide range of composite products, such as antenna and radoms (a cost effective solution compare to the high cost quartz fibers), cured laminates for electrical insulation, aircraft interiors and sandwich structures (resulting of a lower weight, higher thermal and acoustical insulation panels), a lower weight and higher bending and compression strength structural composite parts for use in aerospace, automotive and sporting goods products.

H-glass fibre fabrics with aminosilane finish

Order no.	Area nominal weigh g/m ²	Weave style	Width cm	Thickness mm	Tensile strength in N (dry)	
					warp	weft
190 055-X	80	Plain weave	90	0,09	255	255
190 050-X	160	Atlas 5/3	92	0,19	784	687
190 070-X	216	Atlas 5/3	95	0,26	1176	784
190 080-X	300	Plain weave	120	0,31	1676	1676

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