PMI FOAM (HF)

PMI foam HF has been specially developed for radome applications. It is characterized by a lower dielectric constant and dielectric loss in the wide frequency range of 2-18GHz, with a dielectric constant of 1.05-1.13. At the same time, PMI foam HF has a lower cell size, which helps to further reduce the amount of surface resin absorption, reduce the weight of the part, and improve the wave transmittance.

For radar, radomes, miniature antennas, etc., PMI foam HF is suitable for autoclaves, RTM, VARI and most composite manufacturing processes such as molding, the molding process conditions can reach 180°C/0.1MPa.

Type	Units	50HF	75HF	Test Method
Density	kg/m^3	50±10	75±10	ISO 845
Compressive Strength	MPa	0.83	1.65	ISO 844
Tensile Strength	MPa	1.65	2.20	ASTM D638
Elastic Modulus	MPa	75	100	ASTM D638
Elongation At break	%	2.8	2.9	ASTM D638
Flexural Strength	MPa	1.55	2.80	ASTM D790
Shear Strength	MPa	0.85	1.25	ASTM C273
Shear Modulus	MPa	28	45	ASTM C273
Thermal conductivity	W/(m*K)	0.030	0.031	-
Compressive Creep	%	≤2.0		GB/T 15048
Bubble cell size	μm	50-150		ZKHT/MT-21
Heat deflection temperature	℃	≥200℃		DIN 53424

*Compression creep test conditions for different density products：

50HF, 130℃/0.3MPa/2h

75HF, 150℃/0.3MPa/2h

Note: Technical data of our products are typical values for the nominal density.

Bubble standard size

HF	Size（mm）	Sheet thicknesses are available
50 HF	2500*1250	1-120
75 HF	2500*1250	1-100

Frequency [GHz]	Dielectric constants		Loss tangent/e^{-003}	
	50 HF	75 HF	50 HF	75HF
2.4	1.07	1.08	3.92	3.65
2.8	1.07	1.08	3.61	3.43
3.3	1.07	1.08	3.29	3.13
3.9	1.07	1.08	2.8	3.05
4.6	1.07	1.08	2.87	2.97
5.3	1.07	1.08	2.8	2.75
6.1	1.07	1.08	2.5	2.42
6.8	1.07	1.08	2.26	2.18
7.2	1.07	1.08	2.33	2.4
8.6	1.07	1.08	2.26	2.3
10.2	1.07	1.08	2.16	2.23
12.0	1.07	1.08	1.7	1.72
13.9	1.07	1.08	1.98	1.89
15.8	1.07	1.08	1.89	1.85
Test equipment: Resonant cavity				