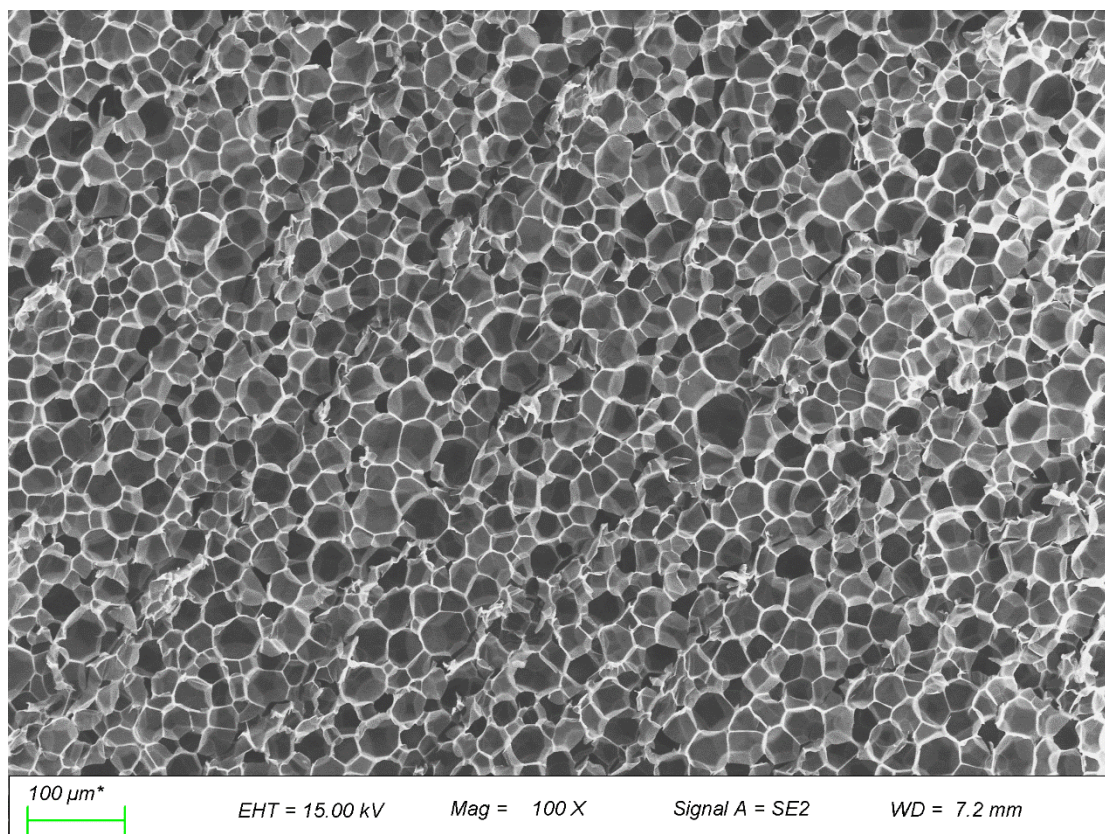


ARCHCELL® WP

ARCHCELL® is a closed-cell rigid PMI (Polymethacrylimide) foam, which used as the core of lightweight sandwich construction.



WP (Wave permeability) is a grade specially designed for wave-transparent needs. ARCHCELL®, as a foaming material, actually has a good overall performance in wave transmission, and WP is optimized on this basis, with very low dielectric constant and favorable high frequency transmission characteristics, as well as good elongation at break, making it a good choice for antenna and medical applications. This grade can be compatible with process conditions of 130°C and 0.3 MPa. And it is suitable for various curing processes (autoclave, vacuum infusion, RTM, VARTM, VARI, HP-RTM, etc.). Also, it has good processability and can be easily thermoformed or CNC machined. The fine cell size of this grade and the closed cell structure of the foam ensure a good balance between peel strength and product weight when building sandwich structure parts



TYPICAL PROPERTY VALUE

Properties	Unit	31 WP	51 WP	71 WP	Standard
Density	kg/m ³	32	52	75	ISO 845
	lbs/ft ³	2	3.25	4.68	ASTM D1622
Compressive Strength	MPa	0.42	0.95	1.81	ISO 844
	psi	60.9	137.8	262.5	ASTM D1621
Tensile Strength	MPa	1.06	1.98	3.11	ISO 527-2
	psi	153.7	287.1	451.0	ASTM D638
Shear Strength	MPa	0.41	0.82	1.4	DIN 53294
	psi	59.5	118.9	203.0	ASTM C273
Elastic Modulus	MPa	34.5	71.3	98.7	ISO 527-2
	psi	5002.5	10338.5	14311.5	ASTM D638
Shear Modulus	MPa	13.7	21.4	36.1	DIN 53294
	psi	1986.5	3103.0	5234.5	ASTM C273
Elongation at Break	%	5	4	4	ISO 527-2
					ASTM D638
HDT	°C	184.6	185.6	188.5	DIN 53424
	°F	364.3	366.1	371.3	

The above technical data are typical values at nominal densities

ARCHCELL® 51 WP DIELECTRIC PROPERTIES

Test Frequency Range: 7.0GHz-18.0GHz

Test Method: GB/T 5597-1999, resonant cavity method

Test company: Beijing Institute of Aeronautical Materials, Report BG2023230

Properties	Frequency (MHz)	ARCHCELL® 51WP
ε	7205	1.06
tanδ	7205	0.00111
ε	8606	1.06
tanδ	8606	0.00110
ε	10249	1.06
tanδ	10249	0.00108
ε	12034	1.06
tanδ	12034	0.00111
ε	13906	1.06
tanδ	13906	0.00108
ε	15837	1.06
tanδ	15837	0.00102
ε	17809	1.06

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TEL: +86 13916212034 FAX: +86 21 52713562 Email: pei.hu@archcell.net



tan δ	17809	0.000983
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The above technical data are typical values at nominal densities

ARCHCELL[®] 71 WP DIELECTRIC PROPERTIES

Test Frequency Range: 7.0GHz-18.0GHz

Test Method: GB/T 5597-1999, resonant cavity method

Test company: Beijing Institute of Aeronautical Materials, Report BG2020357

Properties	Frequency (MHz)	ARCHCELL [®] 71WP
ϵ	7205	1.07
tan δ	7205	0.000419
ϵ	8606	1.07
tan δ	8606	0.000364
ϵ	10248	1.07
tan δ	10248	0.000512
ϵ	12031	1.07
tan δ	12031	0.000489
ϵ	13903	1.07
tan δ	13903	0.000502
ϵ	15833	1.07
tan δ	15833	0.000521
ϵ	17804	1.07
tan δ	17804	0.000459

The above technical data are typical values at nominal densities

ARCHCELL[®] 110 WP DIELECTRIC PROPERTIES

Test Frequency Range: 600-10500MHz

Test Method: GB/T 7265.1-1987, Perturbation method

Test company: Sichuan Fengxi Inspection and Testing Co., Ltd., Report FXBG2024101108-L

Properties	Frequency (MHz)	ARCHCELL [®] 110WP
ϵ_r'	604	1.19
tan $\delta\epsilon$	604	0.00293
ϵ_r'	1817	1.16
tan $\delta\epsilon$	1817	0.00371
ϵ_r'	3032	1.16
tan $\delta\epsilon$	3032	0.00334
ϵ_r'	4256	1.16
tan $\delta\epsilon$	4256	0.00331
ϵ_r'	5487	1.16



$\tan\delta\epsilon$	5487	0.00325
ϵ_r'	6727	1.16
$\tan\delta\epsilon$	6727	0.00314
ϵ_r'	7972	1.15
$\tan\delta\epsilon$	7972	0.00318
ϵ_r'	9223	1.15
$\tan\delta\epsilon$	9223	0.0031
ϵ_r'	10478	1.15
$\tan\delta\epsilon$	10478	0.00323

The above technical data are typical values at nominal densities

ARCHCELL® 200 WP DIELECTRIC PROPERTIES

Test Frequency Range: 350MHz、604MHz

Test Method: GB/T 7265.1-1987, Perturbation method

Test company: Sichuan Fengxi Inspection and Testing Co., Ltd., Report FXBG2024101107-L

Properties	Frequency (MHz)	ARCHCELL®200WP
ϵ_r'	350	1.27
$\tan\delta\epsilon$	350	0.00224
ϵ_r'	604	1.27
$\tan\delta\epsilon$	604	0.0024

The above technical data are typical values at nominal densities

Sales Range

Grade	Size (mm)	Standard Sheet Thickness (mm)	Possible Sheet Thickness (mm)
31 WP	2500*1250	110	1-185mm
51 WP	2500*1250	90	1-155mm
71 WP	2500*1250	80	1-140mm

Thickness tolerance± (0.2mm)

Disclaimer

Our technical advice on the applications of our products is given without obligation.
The buyer is responsible for their use and processing, and is also liable for observing any third-party rights.

Technical data concerning our products are typical values. Subject to alteration.

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