

POLYSTRAND™
CONTINUOUS FIBER
REINFORCED
THERMOPLASTIC
TAPES & LAMINATES

High strength unidirectional fibers and engineered thermoplastic resins are combined to create Polystrand™ continuous fiber reinforced thermoplastic (CFRTP) composites, available in rolls of unidirectional tape, X-Ply™ 0°/90° and other multi-ply laminates.

The tables below represent a sample of available materials and their typical properties. Avient CFRTP materials can be **custom designed** and **value engineered** to meet specific requirements and properties, contact Avient for more information and material offerings.

TYPICAL PROPERTIES - UNIDIRECTIONAL FIBERGLASS REINFORCED THERMOPLASTIC TAPE

Product Name	Resin	Fiber Content	Areal Weight			Nominal Thickness ¹		Flexural Modulus ASTM D790		Flexural Strength ASTM D790		Tensile Modulus ASTM D3039		Tensile Strength ASTM D3039	
		wt %	lb/ft²	oz/yd²	gsm	in	mm	ksi	GPa	ksi	MPa	ksi	GPa	ksi	MPa
6337	PP	63	0.10	14.75	500	0.015	0.38	3570	24.6	58	402	4010	27.6	111	765
6531		65	0.05	7.40	251	0.006	0.15	4020	27.7	73	505	4900	33.8	140	965
6536			0.07	10.32	350	0.009	0.23	4050	27.9	72	494	4500	31.0	131	903
6538			0.14	19.77	670	0.019	0.48	3540	24.4	47	324	4260	29.4	100	689
7034B	PP-Black	70	0.07	10.24	347	0.009	0.23	4400	30.3	83	569	5000	34.5	111	765
6020	PE	60	0.08	11.95	405	0.012	0.30	3600	24.8	54	372	3800	26.2	109	752
6621		66	0.10	13.97	474	0.012	0.30	4000	27.6	55	379	4720	32.5	126	869
5848	aPET	58	0.08	11.85	402	0.008	0.20	3900	26.9	94	648	3580	24.7	112	772
5840B	aPET-Black	58	0.09	13.00	441	0.009	0.23	4120	28.4	107	738	5080	35.0	150	1034

¹ Nominal thicknesses indicated are baseline values that may vary depending on material processing and other variables. Contact Avient with your specific requirements.

TAPE LINE CAPABILITIES

Tape Width	Resin Capabilities	Fiber Inputs	Max Tape Roll Weight	Max Roll Length
25 in +/- 0.3 in 630 mm +/- 5 mm 50 in +/- 1/8 in 1270 mm +/- 3 mm Standard Width, Slit Capabilities	PP, PE, aPET, PA6 Additional polymers in development	E-Glass	Up to 1,800 lbs (816 kg)	Up to 12,000 ft (3658 m)

LAMINATION LINE CAPABILITIES

Max Unfinished Width	Max Finished Slit Width	Max Finished Roll Weight	Max Roll Length (X-Ply™, Full Width)
Up to 125 in (3175 mm)	Up to 120 in (3048 mm)	Up to 10,000 lbs (4500 kg)	Up to 4,000 ft (1200 m)

SLITTING CAPABILITIES

Material	Min Finished Slit Width	Max Finished Slit Width
Unidirectional Tape	2 in (50.8 mm)	24 in (610 mm)
X-Ply™, Tri-Ply, Quad-Ply	2 in (50.8 mm)	120 in (3048 mm)

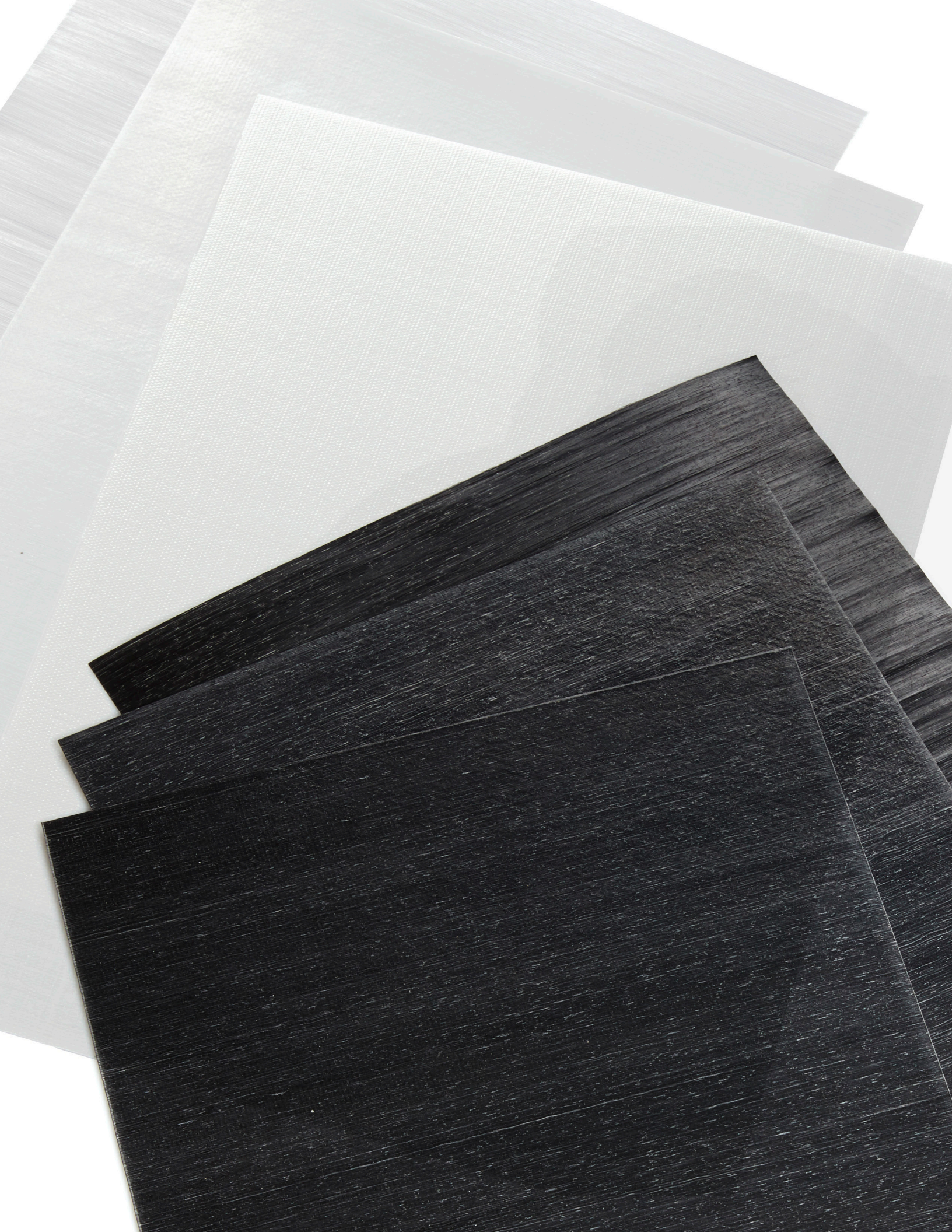


TYPICAL PROPERTIES - MULTI-AXIAL LAMINATES

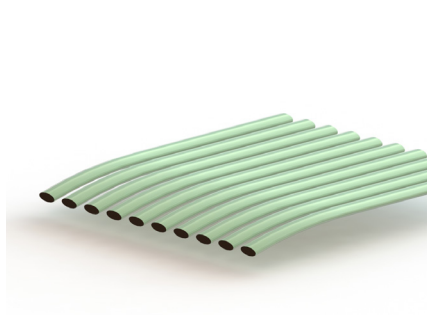
									0° Testing Orientation								90° Testing Orientation							
Product Name	Resin	Fiber Content	Laminate Layers & Orientation	Areal Weight			Nominal Thickness ¹		Flexural Modulus ASTM D790		Flexural Strength ASTM D790		Tensile Modulus ASTM D3039		Tensile Strength ASTM D3039		Flexural Modulus ASTM D790		Flexural Strength ASTM D790		Tensile Modulus ASTM D3039		Tensile Strength ASTM D3039	
		wt %		lb/ft²	oz/yd²	gsm	in	mm	ksi	GPa	ksi	MPa	ksi	GPa	ksi	MPa	ksi	GPa	ksi	MPa	ksi	GPa	ksi	MPa
6337	PP	63	0/90	0.20	29.49	1000	0.031	0.79	-	-	-	-	2020	13.9	59.7	412	-	-	-	-	2020	13.9	59.7	412
			0/90/0	0.31	44.24	1500	0.045	1.14	2250	15.5	46.4	320	3070	21.2	79.4	547	186	1.3	9.7	67	1330	9.2	39.6	273
			0/90/90/0	0.41	58.98	2000	0.057	1.45	2000	13.8	44.0	303	2400	16.5	60.6	418	496	3.4	20.7	143	2210	15.2	56.4	389
6531		65	0/90	0.10	14.80	502	0.014	0.36	-	-	-	-	2240	15.4	60.9	420	-	-	-	-	2240	15.4	60.9	420
			0/90/0	0.15	22.20	753	0.020	0.50	2650	18.3	58.3	402	3100	21.4	82.8	571	280	1.9	NB²	NB²	1670	11.5	42.5	293
			0/90/90/0	0.21	29.61	1004	0.027	0.68	2260	15.6	51.5	355	2470	17.0	62.2	429	580	4.0	30.4	210	2310	15.9	59.6	411
6536			0/90	0.14	20.71	702	0.021	0.53	-	-	-	-	1980	13.7	60.5	417	-	-	-	-	1980	13.7	60.5	417
			0/90/0	0.22	31.06	1053	0.029	0.74	2309	15.9	48.3	333	2730	18.8	81.5	562	245	1.7	13.0	90	1490	10.3	44.3	305
			0/90/90/0	0.29	41.41	1404	0.037	0.94	2164	14.9	47	324	2170	15.0	59.6	411	512	3.5	25.4	175	2340	16.1	71.2	491
6538		0/90	0.27	39.54	1341	0.034	0.86	-	-	-	-	2220	15.3	60.0	414	-	-	-	-	2220	15.3	60.0	414	
		0/90/0	0.41	59.53	2018	0.057	1.44	2825	19.5	40.9	282	2780	19.2	67.6	466	218	1.5	10.2	70	1410	9.7	40.0	276	
		0/90/90/0	0.55	79.37	2691	0.073	1.85	1880	13.0	32.4	223	2060	14.2	54.0	372	478	3.3	18.0	124	2360	16.3	61.0	421	
7034B	PP-Black	70	0/90	0.14	20.48	694	0.016	0.40	-	-	-	-	2680	18.5	62.0	427	-	-	-	-	2680	18.5	62.0	427
			0/90/0	0.21	30.72	1041	0.028	0.71	1750	12.1	55.9	385	3710	25.6	75.1	518	160	1.1	11.3	78	1440	9.9	36.2	250
			0/90/90/0	0.28	40.95	1388	0.036	0.90	1700	11.7	40.4	279	2800	19.3	55.7	384	432	3.0	25.4	175	2350	16.2	52.4	361
6020	PE	60	0/90	0.17	23.90	810	0.023	0.57	-	-	-	-	1830	12.6	52.00	359	-	-	-	-	1830	12.6	52.0	359
			0/90/0	0.25	35.86	1216	0.033	0.84	2265	15.6	40.0	276	2740	18.9	68.2	470	181	1.2	10.0	69	1350	9.3	35.3	243
			0/90/90/0	0.33	47.81	1621	0.044	1.12	1810	12.5	30.0	207	2000	13.8	48.0	331	502	3.5	22.0	152	1820	12.5	46.0	317
6621		66	0/90	0.19	27.94	947	0.025	0.65	-	-	-	-	2280	15.7	60.0	414	-	-	-	-	2280	15.7	60.0	414
			0/90/0	0.29	41.90	1421	0.040	1.01	2490	17.2	37.0	255	2900	20.0	70.0	483	165	1.1	9.7	67	1440	9.9	38.0	262
			0/90/90/0	0.39	55.87	1894	0.053	1.35	1810	12.5	29.0	200	2160	14.9	58.0	400	508	3.5	21.0	145	2170	15.0	53.0	365
5848	aPET	58	0/90	0.17	24.26	822	0.020	0.50	-	-	-	-	2190	15.1	65.0	448	-	-	-	-	2100	14.5	57.8	399
			0/90/0	0.25	36.38	1233	0.030	0.76	2963	20.4	112.3	774	2900	20.0	87.5	603	279	1.9	13.2	91	1366	9.4	35.7	246
			0/90/90/0	0.34	48.51	1645	0.040	1.02	2848	19.6	103.6	714	2106	14.5	64.7	446	947	6.5	33.4	230	2089	14.4	55.8	385
5840B	aPET-Black	58	0/90	0.18	26.01	882	0.021	0.53	-	-	-	-	2530	17.4	55.3	381	-	-	-	-	2530	17.4	55.3	381
			0/90/0	0.27	39.01	1323	0.032	0.82	2986	20.6	91.1	628	3160	21.8	68.7	474	252	1.7	20.0	138	1580	10.9	36.9	254
			0/90/90/0	0.36	52.01	1763	0.042	1.07	3065	21.1	73.1	504	2570	17.7	54.2	374	813	5.6	37.0	255	2440	16.8	55.6	383

¹ Nominal thicknesses indicated are baseline values that may vary depending on material processing and other variables. Contact Avient with your specific requirements.

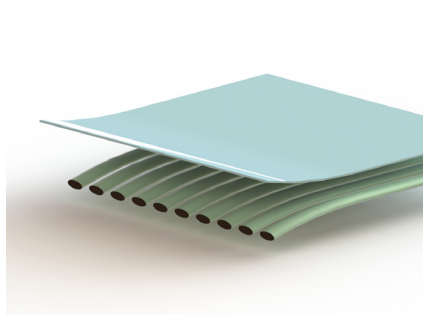
² No break occurred in testing.



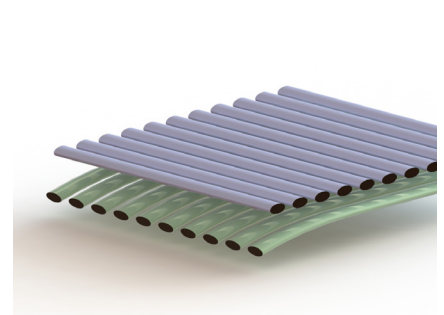
LAMINATION LAY-UP – CONFIGURATION EXAMPLES



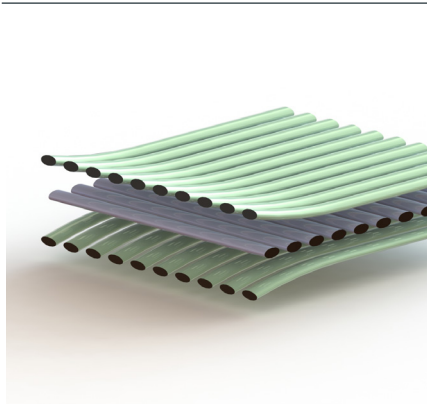
Unidirectional Tape



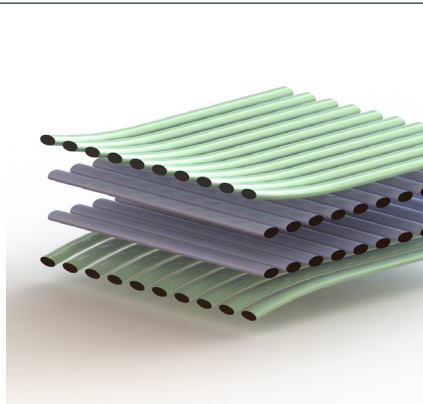
Uni Tape with Scrim



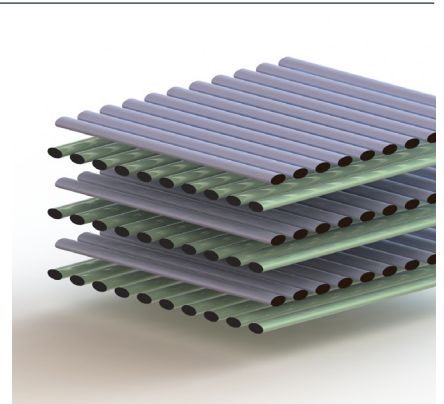
X-Ply™ 0°/90°



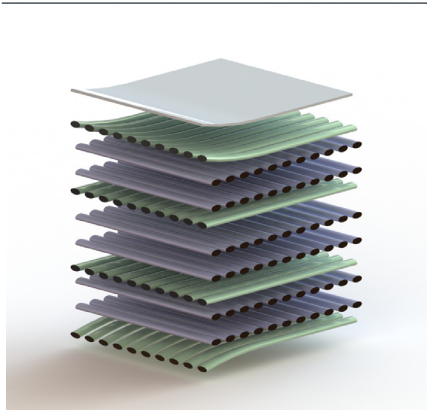
Tri-Ply 0°/90°/0°



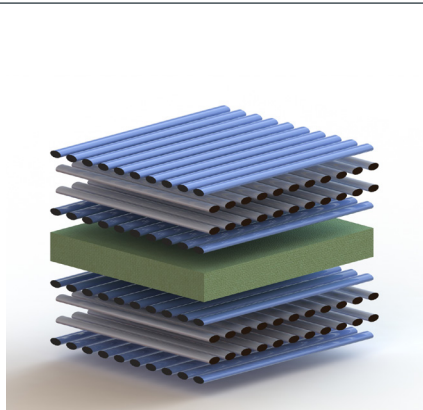
Quad-Ply 0°/90°/90°/0°



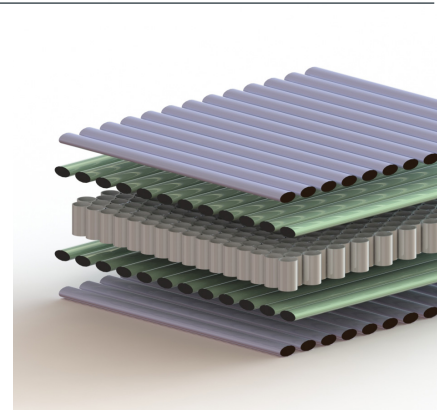
6-Ply



10-Ply with Film



Foam Core, Quad-Ply Skins



**Honeycomb
Core, X-Ply™ Skins**

Additional lay-up configurations are possible and can be customized to application requirements. Contact Avient for details.

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