



### Material Construction

### Technical Parameters of Different Types of Laminates

GV : Glasstissue  
 CSM : Mat  
 SPT : sphere.tex

		1	2	3
		1 Layer GV 40 g/m <sup>2</sup> 4 Layers SPT 2,0 mm 1 Layer GV 40 g/m <sup>2</sup>	2 Layers CSM 450 g/m <sup>2</sup> 4 Layers SPT 2,0 mm 2 Layers CSM 450 g/m <sup>2</sup>	2 Layers CSM 450 g/m <sup>2</sup> 2 Layers SPT 2,0 mm 2 Layers CSM 450 g/m <sup>2</sup>
		UP "POLYGAL PHW 1650 T-K-U"	UP "POLYGAL PHW 1650 T-K-U"	UP „POLYGAL PHW 1650 T-K-U"
Weigth DIN 53 352	(g/m <sup>2</sup> )	6120	9610	7670
Density DIN 53 479	(g/m <sup>2</sup> )	0,74	0,87	0,79
Waterabsorption after 30 days DIN 53 495	(Gew. %)	0,72	0,69	1,16
Flexural moment per m width EN 63	(MPa)	688 (dry) 697 (wet)	2013 (dry) 2020 (wet)	1513 (dry) 1370 (wet)
Flexural strength EN 63	(MPa)	59,6 (dry) 58,1 (wet)	99,0 dry 95,0 (wet)	108,0 (dry) 94,0 (wet)
Flexural Modulus EN 63	(MPa)	3030 (dry) 2840 (wet)	6120 (dry) 5880 (wet)	6870 (dry) 6450 (wet)
Tensile strength length / cross EN 61	(MPa)	42/41 (dry) 40/38 (wet)	59/51 (dry) 58/47 (wet)	62/55 (dry) 58/48 (wet)
Tensile Modulus EN 61	(MPa)	3310 (length) 3180 (cross)	5070 (length) 4420 (cross)	5220 (length) 4620 (cross)
Compression strength (10% comp.) DIN 53 454	(MPa)	8,00	7,30	7,20
Shear strength DIN 53 294	(MPa)	3,10	1,85	2,50
Shear modulus DIN 53 294	(MPa)	195	163	197



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SPC : sphere.core  
 SPT : sphere.tex  
 CSM : Mat

		sphere.core S	sphere.tex	UP-Harz-Glasmatte
		4 Layers SPC je 2 mm Stärke	4 Layers SPT je 2 mm Stärke (Typ 178030012502201)	6 Layers CSM je 600 g/m <sup>2</sup>
		UP-Resin POLYGAL PHW 1650 T-K-U	UP-Resin POLYGAL PHW 1650 T-K-U	UP-Resin POLYGAL PHW 1650 T-K-U
Thickness	(mm)	8,30	7,90	8,20
Resin absorption	(g/m <sup>2</sup> )	4900	4850	7800
Weigth DIN 53 352	(g/m <sup>2</sup> )	4960	6010	11400
Density DIN 53 479	(g/cm <sup>3</sup> )	0,59	0,76	1,39
Waterabsorption after 30 days DIN 53 495	(Gew. %)	0,19	0,39	0,55
Energy of damage DIN 53 443	(Nm)	-	86	37
Flexural strength EN 63	(Nm/m)	16	59	160
Flexural Modulus EN 63	(MPa)	1530	2860	6870
Tensil strength length / cross	(MPa)	6,9 / 5,9	42 / 41	93 / 97
Tensil modulus	(MPa)	750	3300	8200