

## Polystal® - GRP

High-performance composite profiles

Polystal® GRP is a composite of glassfibres and synthetic resin. The distinctive Polystal® surface is sealed with resin and lubricant free owing to the state-of-the-art manufacturing procedure. The material can thus be easily up-jacketed with thermoplastics and offers the most excellent processing performance. Profiles listed below are standard types; custom-made diameters available upon request.

### PHYSICAL PROPERTIES

<b>Glass Content</b>	(%)	80 ± 2.5 %	(DIN EN ISO 1172)
<b>Density</b>	(g/cm <sup>3</sup> )	2.1	(DIN 53479)
<b>Elongation at break</b>	(%)	> 2.5	(DIN EN ISO 527-4)
<b>Modulus of elasticity</b>	(Gpa)	> 50	(DIN EN ISO 527-4)
<b>Tensile strength of area</b>	(Mpa)	1,500 ± 5 %	(DIN EN ISO 527-4)
<b>Coefficient of Thermal Expansion (CTE)</b>	(1/°C)	6.6 x 10 <sup>-6</sup>	
<b>Absorption of Water</b>	(%)	≤ 0.1	

### CHARACTERISTIC VALUES

Type	Nominal Outside Diameter	Tolerance ±	Performance Diameter	Weight ± 4 %	Force @ 0.5 % Elongation min	Force @ 1.0 % Elongation min	Force @ Break ± 5 %	Minimum Bend Diameter	
								Room Δ, 25 °C	inches
	inches	inches	inches	g/m	N	N	N		
P 5	0.02087	0.00197	0.01969	0.38	55	110	331	0.62598	30 x Ø
P 10	0.03937	0.00197	0.03780	1.5	190	400	1,200	1.18110	
P 12	0.04803	0.00197	0.04646	2.3	280	560	1,800	1.44094	
P 14	0.05512	0.00197	0.05354	3.0	370	750	2,400	1.65354	
P 15	0.05906	0.00197	0.05669	3.4	420	820	2,680	1.77165	
P 16	0.06142	0.00197	0.05984	3.8	470	900	3,000	1.84252	
P 16T1	0.06299	0.00197	0.06260	4.2	500	1,000	3,150	1.88976	
P 17	0.06693	0.00197	0.06535	4.5	570	1,100	3,500	2.00787	
P 19	0.07205	0.00276	0.07047	5.3	640	1,250	4,000	2.16141	
P 20	0.07677	0.00276	0.07559	6.0	750	1,500	4,600	2.30315	
P 21T1	0.07953	0.00276	0.07756	6.4	780	1,560	4,800	2.38582	
P 21	0.08071	0.00315	0.07992	6.8	800	1,600	5,000	2.42126	
P 22	0.08661	0.00315	0.08465	7.5	900	1,800	5,800	2.59842	
P 23	0.09055	0.00315	0.08858	8.3	1,000	2,000	6,200	2.71653	
P 24	0.09449	0.00315	0.09252	9.0	1,060	2,200	6,820	2.83464	
P 25	0.09803	0.00315	0.09606	9.8	1,120	2,300	7,500	2.94094	
P 26	0.10118	0.00315	0.09961	10.5	1,220	2,480	7,800	5.05905	
P 27	0.10512	0.00315	0.10354	11.3	1,320	2,700	8,450	5.25590	
P 28	0.10827	0.00315	0.10630	12.0	1,460	2,800	8,900	5.41338	
P 29	0.11614	0.00315	0.11496	14.3	1,700	3,350	10,020	5.80708	
P 30	0.12008	0.00394	0.11929	15.0	1,750	3,500	11,000	6.00393	
P 31	0.12402	0.00394	0.12205	15.8	1,840	3,680	12,100	6.20078	
P 32	0.12795	0.00394	0.12598	16.9	1,925	3,800	12,400	6.39763	
P 33	0.13189	0.00394	0.13071	18.0	2,100	4,200	13,000	6.59448	
P 35	0.13583	0.00394	0.13504	19.5	2,300	4,600	14,200	6.79133	
P 40	0.15945	0.00394	0.15945	27.0	3,150	6,300	19,325	7.97243	
P 45	0.17717	0.00394	0.17717	33.0	4,000	8,000	23,900	13.28738	
P 50	0.19882	0.00394	0.19685	42.0	4,800	9,600	29,500	14.91139	
P 62	0.24409	0.00787	0.23898	60.0	6,720	13,440	45,263	18.30705	
P 70	0.27559	0.00787	0.27559	81.0	9,072	18,144	57,698	20.66925	
P 77	0.30512	0.00787	0.30315	96.0	10,752	21,504	69,814	30.51175	
P 80	0.31496	0.00787	0.31496	106.5	11,928	23,856	75,360	31.49600	
P 90	0.35433	0.00787	0.35433	135.0	15,120	30,240	95,378*	35.43300	
P 115	0.45276	0.00787	0.45276	222.0	24,864	49,728	15,5724*	45.27550	
P 160	0.62992	0.00787	0.62992	420.0	47,040	94,080*	30,1440*	62.99200	
									100 x Ø

\* Calculated values

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