

## 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 × 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	
								mm	mm
P 5	0.53	0.05	0.50	0.38	55	110	331	15.9	30 x Ø
P 10	1.00	0.05	0.96	1.5	190	400	1,200	30.0	
P 12	1.22	0.05	1.18	2.3	280	560	1,800	36.6	
P 14	1.40	0.05	1.36	3.0	370	750	2,400	42.0	
P 15	1.50	0.05	1.44	3.4	420	820	2,680	45.0	
P 16	1.56	0.05	1.52	3.8	470	900	3,000	46.8	
P 16T1	1.60	0.05	1.59	4.2	500	1,000	3,150	48.0	
P 17	1.70	0.05	1.66	4.5	570	1,100	3,500	51.0	
P 19	1.83	0.07	1.79	5.3	640	1,250	4,000	54.9	
P 20	1.95	0.07	1.92	6.0	750	1,500	4,600	58.5	
P 21T1	2.02	0.07	1.97	6.4	780	1,560	4,800	60.6	
P 21	2.05	0.08	2.03	6.8	800	1,600	5,000	61.5	
P 22	2.20	0.08	2.15	7.5	900	1,800	5,800	66.0	
P 23	2.30	0.08	2.25	8.3	1,000	2,000	6,200	69.0	
P 24	2.40	0.08	2.35	9.0	1,060	2,200	6,820	72.0	
P 25	2.49	0.08	2.44	9.8	1,120	2,300	7,500	74.7	
P 26	2.57	0.08	2.53	10.5	1,220	2,480	7,800	128.5	
P 27	2.67	0.08	2.63	11.3	1,320	2,700	8,450	133.5	
P 28	2.75	0.08	2.70	12.0	1,460	2,800	8,900	137.5	
P 29	2.95	0.08	2.92	14.3	1,700	3,350	10,020	147.5	
P 30	3.05	0.10	3.03	15.0	1,750	3,500	11,000	152.5	
P 31	3.15	0.10	3.10	15.8	1,840	3,680	12,100	157.5	
P 32	3.25	0.10	3.20	16.9	1,925	3,800	12,400	162.5	
P 33	3.35	0.10	3.32	18.0	2,100	4,200	13,000	167.5	
P 35	3.45	0.10	3.43	19.5	2,300	4,600	14,200	172.5	
P 40	4.05	0.10	4.05	27.0	3,150	6,300	19,325	202.5	
P 45	4.50	0.10	4.50	33.0	4,000	8,000	23,900	337.5	75 x Ø
P 50	5.05	0.10	5.00	42.0	4,800	9,600	29,500	378.8	
P 62	6.20	0.20	6.07	60.0	6,720	13,440	45,263	465.0	
P 70	7.00	0.20	7.00	81.0	9,072	18,144	57,698	525.0	100 x Ø
P 77	7.75	0.20	7.70	96.0	10,752	21,504	69,814	775.0	
P 80	8.00	0.20	8.00	106.5	11,928	23,856	75,360	800.0	
P 90	9.00	0.20	9.00	135.0	15,120	30,240	95,378*	900.0	
P 115	11.50	0.20	11.50	222.0	24,864	49,728	15,5724*	1,150.0	
P 160	16.00	0.20	16.00	420.0	47,040	94,080*	30,1440*	1,600.0	

\* Calculated values

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