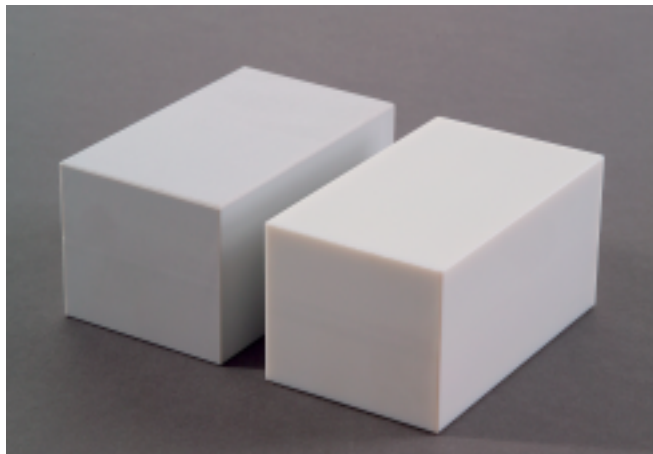


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TECAPET and TECAPET TF Optimum machine processing



Increase in precision and performance with semi-finished goods made from TECAPET and TECAPET TF.

The increased loads in the machining of precision components place high demands on the processing ability of materials. With TECAPET a PET is now available which is particularly easy to machine in comparison to TECADUR PET.

TECAPET TF

Especially suitable for slip-stick applications thanks to PTFE modification.

- | High abrasion resistance
- | Excellent slip-stick properties

TECAPET

- | Particularly good machining ability
- | Impact strength with high degree of hardness and rigidity
- | Very resistant to creep and abrasion
- | Extraordinary dimensional stability
- | Good electrical insulation
- | Good chemical resistance
- | Low tendency to pick up contamination
- | Good radiation stability

Areas of use

Mechanical engineering, precision mechanics, automobile industry, household appliances, semiconductor production, transport and conveying equipment, food technology, electrical engineering, medical technology

Examples of application

Connectors, guide rails, working part supports, casing parts, cylinders, sliding bearings, cog wheels, insulators, stirring and kneading elements, seals



High degree of toughness prevents debris and cavities during machining. Machining comparison between TECADUR PET (left) and TECAPET (right).

Round rods



	Tolerance according to DIN (mm)	TECAPET PET white	TECAPET PET black	TECAPET TF grey
DIN designation		PET	PET	PET
Density (g/cm³)		1.37	1.37	1.44
Dimensions				
Diameter (mm)		kg/m	kg/m	kg/m
4	+0.3 +0.1	0.019	0.019	0.020
5	+0.4	0.030	0.030	0.031
6	+0.1	0.042	0.042	0.044
8	+0.5	0.074	0.074	0.078
9	+0.1	0.093	0.093	0.098
10		0.114	0.114	0.120
11		0.141	0.141	0.148
12		0.167	0.167	0.175
13		0.195	0.195	0.205
14	+0.7	0.225	0.225	0.236
15	+0.2	0.257	0.257	0.270
16		0.291	0.291	0.306
18		0.366	0.366	0.385
19		0.407	0.407	0.428
20		0.450	0.450	0.473
22		0.547	0.547	0.575
25	+0.9	0.702	0.702	0.738
28	+0.2	0.877	0.877	0.922
30		1.00	1.00	1.06
32		1.15	1.15	1.21
36	+1,1	1.45	1.45	1.52
40	+0,2	1.78	1.78	1.87
45	+1,3	2.26	2.26	2.37
50	+0,3	2.78	2.78	2.92
56		3.47	3.47	3.65
60	+1,6	4.00	4.00	4.20
65	+0,3	4.68	4.68	4.92
70		5.42	5.42	5.69
75	+2,0	6.25	6.25	6.57
80	+0,4	7.09	7.09	7.46
90	+2,2 +0,5	8.98	8.98	9.44
100	+2,5 +0,6	11.10	11.10	11.66
110	+3,0 +0,7	13.46	13.46	14.15
120	+3,5	16.05	16.05	16.87
125	+0,8	17.40	17.40	18.28
130		18.85	18,85	19.81
135	+3,8	20.30	20.30	21.34
140	+0,9	21.80	21.80	22.92
150		25.06	25.06	
165	+4,2 +1,0	30.22	30.22	31.77
180	+5,0 +1,2	36.07	36.07	37.92
200	+5,5 +1,3	44.52	44.52	46.79

The quoted kg/m weights are purely calculated values. The delivery weight will deviate. Stock lengths 3000 mm, other lengths can be supplied, also supplied planed. All details without warranty.



= Stock items



= Normally not stock items, manufacture possible.

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Plates




	Tolerance according to DIN (mm)	TECAPET PET white	TECAPET PET black	TECAPET TF grey	
DIN designation		PET	PET	PET	
Density (g/cm³)		1.37	1.37	1.44	
Dimensions (mm)		kg/m	kg/m	kg/m	
5 x 500	+0,2	3,77	3,77	3,97	
6 x 500	+0,2	4,57	4,57	4,80	
8 x 500	+0,9	6,03	6,03	6,34	
10 x 500		7,44	7,44	7,82	
10 x 610	+0,20	9,03	9,03		
12 x 500	+1.5 +0.3	9,10	9,10	9,57	
12 x 610		11,05	11,05	11,61	
15 x 500		11,22	11,22	11,79	
15 x 610		13,61	13,61		
16 x 500		11,92	11,92	12,53	
18 x 500		13,33	13,33	14,02	
20 x 500		14,75	14,75	15,50	
20 x 610		17,90	17,93		
20 x 1000**		29,06	29,06		
22 x 500		16,16	16,16	16,98	
25 x 500		18,27	18,27	19,21	
25 x 610		22,18	22,18		
25 x 1000**		36,02			
27 x 500		+2.5 +0.5	20,11	20,11	21,14
30 x 500			22,22	22,22	23,36
30 x 610	26,97		26,97		
30 x 1000**	43,08		43,08		
32 x 500	23,64		23,64	24,84	
36 x 500	26,46		26,46		
40 x 500	29,28		29,28	30,78	
40 x 610	35,53		35,53		
40 x 1000**	57,71		57,71		
45 x 500	32,81		32,81	34,48	
50 x 300	22,22		22,22	23,36	
50 x 500	36,34		36,34	38,19	
50 x 610	44,10		44,10		
60 x 300	+5		27,08	27,08	28,46
60 x 500			44,27	44,27	46,54
70 x 300		+0.5	31,40	31,40	33,00
70 x 500		51,33	51,33	53,95	
80 x 300	+5 +0.5	35,71	35,71	37,54	
80 x 500		58,38	58,38	61,37	
90 x 300		+0.5	40,03	40,03	42,07
100 x 300		44,34	44,34	46,61	
100 x 500		72,50	72,50	76,20	

**Stock length 2000 mm

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Technical Properties	Units	TECAPET	TECAPET sw	TECAPET TF
DIN designation		PET	PET	PET
Density (ASTM D 792, DIN 53 479)	ρ g/cm ³	1.37	1.37	1.44
Elongation at yield (ASTM D 638, DIN EN ISO 527, ASTM D 1708 (a))	σ_S %	88	88	73
Modulus of elasticity after flexural test (ASTM D 790, DIN EN ISO 178)	E_Z MPa	3200	3200	2900
Hardness (Ball-pressure: ISO 2039/1, Shore D: ASTM D 2240, DIN 53 505 (d), Rockwell: ASTM D 785 , ISO 2039/2 (r), Other: ASTM D 785 (a), DIN 43 456 (s))	H_K MPa	95	95	
Impact strength (DIN EN ISO 179, Izod: ASTM D 256, DIN EN ISO 180 (i), Charpy: DIN EN ISO 179 21, Notched impact: DIN 53 456 (k))	a_n kJ/m ²	n.a.	n.a.	40
Creep-rupture strength after 1000 h with static load	$\sigma_B/1000$ MPa	36	36	40
Time elongation strain for 1% elongation after 1000 h	$\sigma_1/1000$ MPa	13	13	
Coefficient of kinetic friction ($\mu = 0,05N/mm^2$ $v = 0,6m/s$ against hardened steel and sanded)	μ	0,25	0,25	0,1
Frictional wear (conditions as above)	V $\mu m/km$	0,35	0,35	
Melting temperature (DIN 53 765)	T_m °C	255	255	255
Heat distortion temperature acc. to ISO R 75 process A (DIN 53 461)	HDT/A °C	95	95	
Heat distortion temperature acc. to ISO R 75 process B (DIN 53 461)	HDT/B °C	170	170	
Service temperature short-term permanent	°C °C	170 110	170 110	
Thermal conductivity (23 °C)	λ W/(K·m)	0,24	0,24	
Specific thermal capacity (23 °C)	c J/g·K	1,1	1,1	
Coefficient of linear expansion (23 °C, ASTM D 696, DIN 53 752, ASTM E 831)	α $10^{-5} 1/K$	7	7	
Dielectric constant (106 Hz, ASTM D 150, DIN 53 483, IEC-250)	ϵ_r	3,2		
Dielectric dissipation factor (106 Hz, ASTM D 150, DIN 53 483, IEC-250)	$\tan \delta$	0,0021		
Specific volume resistance (ASTM D 257, EC 93, DIN IEC 60093)	R_D $\Omega \cdot cm$	10^{13}		
Surface resistance (ASTM D 257, EC 93, DIN IEC 60093)	R_O Ω	10^{15}		
Dielectric breakdown strength (ASTM D 149, IEC-243, VDE 0303 Part 2)	E_d kV/mm	60		
Creeping current strength (DIN 53 480, VDE 0303 Part 1)	Graduation	KC 350		
Moisture absorption in standard climate 23 °C/50% rel. humidity (DIN EN ISO 62)	$W(H_2O)$ %	0,25	0,25	0,25
Moisture absorption stored in water (DIN EN ISO 62)	W_S %	0,5	0,5	0,5
Flammability acc. to UL standard 94		HB	HB	

Information concerning the exclusion of liability and Terms and Conditions of Delivery can be found in our semi-finished products catalogue or at www.ensinger-online.com.

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