

Technical Data Sheet

Optibelt ALPHaflex T20 - ST

Polyurethane Timing Belt, Optionally With Fabric PAZ,
Thermoplastic PU, Endless

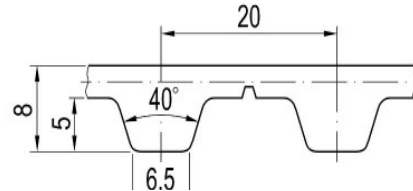


Dimensions, Tolerances

Profile:	T20
Tooth pitch t:	20 mm
Total thickness:	8 mm
Tooth height:	5 mm
Tooth tip width:	6.5 mm
Tooth flank angle:	40°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.7 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 0.9 mm
Fabric, optional:	Polyamide, tooth side (PAZ), green



Specific nominal power transmittable per tooth

rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]	rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]	rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]
0 ¹	0.000	1200	2.161	3600	4.100
20	0.067	1300	2.280	3800	4.202
40 ²	0.130	1400	2.394	4000	4.297
60	0.189	1500	2.504	4500	4.507
80 ³	0.246	1600 ⁷	2.609	5000	4.681
100	0.300	1700	2.711	5500	4.825
200 ⁴	0.548	1800	2.809	6000	4.940
300	0.766	1900	2.903	6500	5.028
400 ⁵	0.964	2000	2.994		
500	1.146	2200	3.167		
600	1.317	2400	3.329		
700	1.477	2600	3.479		
800 ⁶	1.628	2800	3.620		
900	1.771	3000	3.753		
1000	1.907	3200 ⁸	3.876		
1100	2.037	3400	3.992		

¹ $F_{N\ spez}$ [N/mm] 10.400 ² 9.717 ³ 9.217 ⁴ 8.216 ⁵ 7.229 ⁶ 6.104 ⁷ 4.893 ⁸ 3.634

Nominal power P_N

$$P_N = P_{N\ spez} \cdot z_k \cdot z_{eB} \cdot b / 10^3 \quad [\text{kW}]$$

$P_{N\ spez}$	Specific nominal power transmittable per tooth [W/mm]
z_k	Number of teeth, small idler
z_{eB}	Number of teeth in mesh, small idler, limited to $z_{eB\ max}$
$z_{eB\ max}$	12, max. allowable no. of teeth
b	belt width [mm]

Nominal torque M_N

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \quad [\text{Nm}]$$

n_k rpm, small idler [1/min]

Nominal tensile force F_N

$$F_N = F_{N\ spez} \cdot z_{eB} \cdot b \quad [\text{N}]$$

$$F_{N\ spez} = P_{N\ spez} \cdot 6 \cdot 10^4 / (n_k \cdot t) \quad [\text{N/mm}]$$

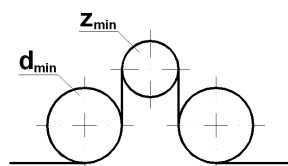
$F_{N\ spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile force, belt weight

Belt width * b [mm]	16	20	25	32	50	75	100
Allowable tensile force ** F_{zul} [N]	1900	2375	3325	4275	7125	11200	15200
Cord breaking strength F_{Br} [N]	7600	9500	13300	17100	28500	44800	60800
Weight per metre [kg/m]	0.125	0.156	0.195	0.250	0.390	0.585	0.780

* Smaller and intermediate widths possible ** Allowable tensile force F_{zul} = 25 % of cord breaking strength F_{Br}

Timing belt pulleys, inside and outside idlers



Minimum no. of teeth of the pulleys:

$$z_{min} = 15$$

Minimum pitch diameter of the pulleys:

$$d_{w\ min} = 95.49 \text{ mm}$$

Plane, cylindrical idlers:

Minimum-Ø of a plane inside idler:

$$d_{min} = 100 \text{ mm}$$

Minimum-Ø of a plane outside idler:

$$d_{min} = 120 \text{ mm}$$