Technical Data Sheet

optibelt ALPHA FLEX 14M - ST

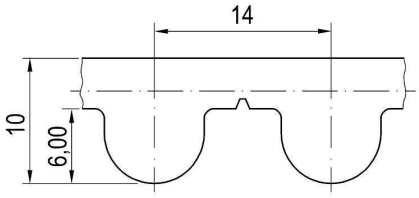
PU Timing Belt, Optionally with Fabric PAZ, Endless

Dimensions, Tolerances

Profile:	14M
Tooth pitch t:	14 mm
Total thickness:	10 mm
Tooth height:	6 mm
Length tolerance:	±0.5 mm/m
Width tolerance:	±1.0 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 1.2 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	1.984	3600	3.330
20	0.058	1300	2.085	3800	3.371
40 [2]	0.114	1400	2.180	4000	3.405
60	0.168	1500	2.270	4500	3.457
80 [3]	0.221	1600 [7]	2.355	5000	3.468
100	0.271	1700	2.435	5500	3.440
200 [4]	0.505	1800	2.511	6000	3.381
300	0.713	1900	2.584	6500	3.289
400 [5]	0.901	2000	2.651		
500	1.073	2200	2.777		
600	1.231	2400	2.889		
700	1.378	2600	2.989		
800 [6]	1.515	2800	3.077		
900	1.644	3000	3.155		
1000	1.764	3200 [8]	3.222		
1100	1.877	3400	3.280	v_{max} = 40 m/s	

[1] $F_{N\ spez}$ [N/mm] 12.700 [2] 12.227 [3] 11.815 [4] 10.825 [5] 9.651 [6] 8.119 [7] 6.309 [8] 4.315

Nominal power P_N

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

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

Nominal torque M_N

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

n_k	rpm, small idler [1/min]

Nominal tensile force F_N

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

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

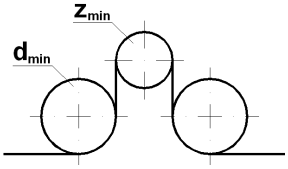
$F_{N\ spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width [1] b [mm]	25	40	55	85	100
Breaking strength F_{Br} [N]	17300	31140	44980	76120	89960
Allowable tensile force [2] F_{zul} [N]	4325	7785	11245	19030	22490
Weight per metre [kg/m]	0.275	0.440	0.605	0.935	1.100

[1] Smaller and intermediate widths possible [2] Allowable tensile force F_{zul} equivalent to 25% breaking strength F_{Br} of the cords

Timing belt pulleys, inside and outside idlers



Minimum no. of teeth of the pulleys:	z_{min} = 25
Minimum pitch diameter of the pulleys:	$d_{w\ min}$ = 111.41 mm
Plane, cylindrical idlers:	
Minimum-Ø of a plane inside idler:	not recommended, see idler
Minimum-Ø of a plane outside idler:	d_{min} = 180 mm

We would be pleased to offer advice about technical characteristics and drive design as well as special requirements. Further information can be found in Optibelt documentation.