

Technical Data Sheet

optibelt ALPHA TORQUE T2.5 - ST

PU Timing Belt, Cast Polyurethane, Endless

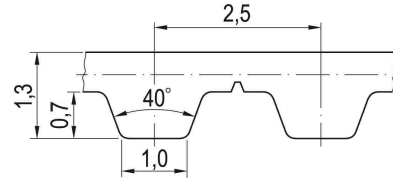


Dimensions, Tolerances

Profile:	T2.5
Tooth pitch t:	2.5 mm
Total thickness:	1.3 mm
Tooth height:	0.7 mm
Tooth tip width:	1.0 mm
Tooth flank angle:	40°
Length tolerance:	See table
Width tolerance, b ≤ 12 mm:	±0.3 mm
Thickness tolerance:	±0.15 mm

Construction

Polyurethane: Thermoset, 84 +/-4 Shore A, transparent
Tension cord: Steel, Ø 0.24 mm



Specific nominal power transmittable per tooth

Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\text{ spez}}$ [W/mm]	Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\text{ spez}}$ [W/mm]	Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\text{ spez}}$ [W/mm]
0	0.0000	1200	0.0284	3600	0.0654
20	0.0006	1300	0.0303	3800	0.0683
40	0.0012	1400	0.0321	4000	0.0710
60	0.0017	1500	0.0338	4500	0.0773
80	0.0023	1600	0.0355	5000	0.0832
100	0.0029	1700	0.0372	6000	0.0937
200	0.0057	1800	0.0388	7000	0.1027
300	0.0083	1900	0.0403	8000	0.1106
400	0.0109	2000	0.0419	9000	0.1174
500	0.0134	2200	0.0449	10000	0.1235
600	0.0158	2400	0.0478	11000	0.1291
700	0.0181	2600	0.0507	12000	0.1345
800	0.0203	2800	0.0535	13000	0.1399
900	0.0224	3000	0.0564	14000	0.1455
1000	0.0245	3200	0.0593	15000	0.1516
1100	0.0265	3400	0.0623	$v_{\text{max}} = 80 \text{ m/s}$	

Nominal power P_N

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

$P_{N\text{ spez}}$	Specific nominal power transmittable per tooth [W/mm]
Z_k	Number of teeth, small pulley
Z_{eB}	Number of teeth in mesh, small pulley, limited to $Z_{eB\text{ max}}$
$Z_{eB\text{ max}}$	12, maximum 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 Speed, small pulley [1/min]

Nominal tensile force F_N

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

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

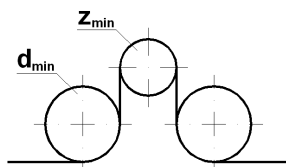
$F_{N\text{ spez}}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width ¹ b [mm]	4	6	10	12	16	20	25	32	50
Breaking strength F_{Br} [N]	340	540	1000	1200	1680	2080	2680	3400	5400
Allowable tensile force ² F_{zul} [N]	85	135	250	300	420	520	670	850	1350
Weight per metre [kg/m]	0.006	0.008	0.014	0.017	0.022	0.028	0.035	0.045	0.070

¹ Other 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



No. of teeth: $z_{\text{min}} = 10$
Pitch-Ø: $d_{w\text{ min}} = 7.96 \text{ mm}$
Plane, cylindrical idlers, Ø
Inside idler: $d_{\text{min}} = 13 \text{ mm}$
Outside idler: $d_{\text{min}} = 15 \text{ mm}$

Length tolerances, shown as centre distance tolerances

Length L_w [mm]	Tolerance a_{LTol} [mm]	Length L_w [mm]	Tolerance a_{LTol} [mm]
≤ 305	± 0.14	> 780 ≤ 990	± 0.28
> 305 ≤ 390	± 0.16	> 990 ≤ 1250	± 0.32
> 390 ≤ 525	± 0.18	> 1250 ≤ 1560	± 0.38
> 525 ≤ 630	± 0.21	> 1560 ≤ 1960	± 0.44
> 630 ≤ 780	± 0.24	> 1960 ≤ 2350	± 0.52

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