Technical Data Sheet

optibelt ALPHA FLEX AT5K6 - ST

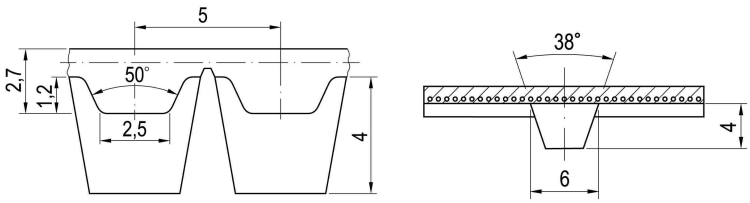
PU Timing Belt, Optionally with Fabric PAZ, Endless

Dimensions, Tolerances

Profile:	AT5K6
Tooth pitch t:	5 mm
Total thickness without V guide:	2.7 mm
Tooth height:	1.2 mm
Tooth tip width:	2.5 mm
Tooth flank angle:	50°
Length tolerance:	± 0.5 mm/m
Width tolerance:	± 0.5 mm
Thickness tolerance:	± 0.15 mm
V guide width, -hight, -angle:	6 mm, 4 mm, 38°

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 0.5 mm
Fabric optional:	Polyamide, tooth side (PAZ), green
	PAZ from 2000 mm production length



Specific nominal power transmittable per tooth

Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]	Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]	Speed, small pulley n_k [1/min]	Specific nom. power $P_{N\,spez}$ [W/mm]
0 [1]	0.000	1200	0.248	3600	0.544
20	0.006	1300	0.264	3800	0.563
40 [2]	0.012	1400	0.279	4000	0.582
60	0.017	1500	0.294	4500	0.626
80 [3]	0.023	1600 [7]	0.309	5000	0.667
100	0.028	1700	0.323	5500	0.705
200 [4]	0.054	1800	0.337	6000	0.740
300	0.078	1900	0.350	6500	0.773
400 [5]	0.100	2000	0.363	7000	0.804
500	0.121	2200	0.389	7500	0.832
600	0.142	2400	0.414	8000	0.859
700	0.161	2600	0.438	8500	0.884
800 [6]	0.180	2800	0.460	9000	0.907
900	0.198	3000	0.482	9500	0.929
1000	0.215	3200 [8]	0.504	10000	0.949
1100	0.232	3400	0.524	v_{max} = 80 m/s	

[1] $F_{N\,spez}$ [N/mm] 3.600 [2] 3.513 [3] 3.435 [4] 3.243 [5] 3.009 [6] 2.694 [7] 2.314 [8] 1.889

Nennleistung P_N

$$P_N = P_{N\,spez} \cdot z_k \cdot z_{eB} \cdot (b - 6) / 10^3 \quad [kW]$$

$P_{N\,spez}$	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 $z_{eB\,max}$
$z_{eB\,max}$	12, maximum allowable no. of teeth
b	Belt width [mm]

Nominal torque M_N

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

n_k Speed, small pulley [1/min]

Nominal tensile force F_N

$$F_N = F_{N\,spez} \cdot z_{eB} \cdot (b - 6) \quad [N]$$

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

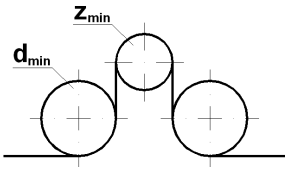
$F_{N\,spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width [1] b [mm]	16	25	32	50
Breaking strength F_{Br} [N]	4300	7200	9200	14800
Allowable tensile force [2] F_{zul} [N]	1075	1800	2300	3700
Weight per metre [kg/m]	0.066	0.103	0.132	0.206
Min. belt length [mm]	1500	1500	1500	1500

[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 number of teeth of the pulley:	z_{min}	= 20
Minimum pitch diameter of the pulley:	$d_{w\,min}$	= 31.83 mm
Plane, cylindrical idlers:		
Minimum pitch diameter of an inside idler:	d_{min}	= 28 mm
Minimum pitch diameter of an outside idler:	d_{min}	= 55 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.