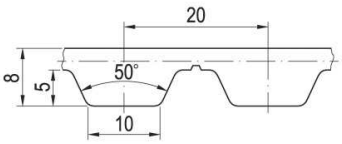
Technical Data Sheet
optibelt ALPHA FLEX AT20 - RF
PU Timing Belt, Endless

Dimensions, Tolerances

Profile:	AT20
Tooth pitch t:	20 mm
Total thickness:	8.0 mm
Tooth height:	5.0 mm
Tooth tip width:	10.0 mm
Tooth flank angle:	50°
Length tolerance:	±0.5 mm/m
Width tolerance:	±1.0 mm
Thickness tolerance:	±0.5 mm

Construction

Polyurethane:	Thermoplastic, 85 Shore A FDA, transparent
Tension cord:	Stainless steel, Ø 1.2 mm



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	3.348	3600	5.619
20	0.098	1300	3.518	3800	5.689
40 [2]	0.193	1400	3.678	4000	5.745
60	0.284	1500	3.830	4500	5.833
80 [3]	0.372	1600 [7]	3.973	5000	5.851
100	0.458	1700	4.109	5500	5.806
200 [4]	0.852	1800	4.238	6000	5.704
300	1.203	1900	4.359	6500	5.550
400 [5]	1.520	2000	4.474		
500	1.810	2200	4.686		
600	2.077	2400	4.874		
700	2.325	2600	5.042		
800 [6]	2.557	2800	5.191		
900	2.774	3000	5.322		
1000	2.977	3200 [8]	5.436		
1100	3.168	3400	5.535	v_{max} = 40 m/s	

[1] $F_{N\,spez}$ [N/mm] 15.000 [2] 14.441 [3] 13.955 [4] 12.786 [5] 11.399 [6] 9.589 [7] 7.451 [8] 5.097

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 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

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

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

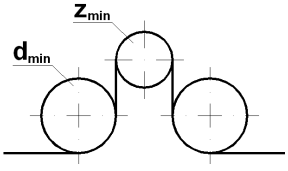
$F_{N\,spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile forces, belt weight

Belt width [1] b [mm]	16	20	25	32	50	75	100
Breaking strength F_{Br} [N]	8820	11760	16160	22000	36720	55860	76440
Allowable tensile force [2] F_{zul} [N]	2205	2940	4040	5500	9180	13965	19110
Weight per metre [kg/m]	0.165	0.206	0.258	0.330	0.515	0.773	1.030
Min. belt length [mm]	1500	1500	1500	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}	= 22
Minimum pitch diameter of the pulley:	$d_{w\,min}$	= 140.06 mm
Plane, cylindrical idlers:		
Minimum pitch diameter of an inside idler:	d_{min}	= 130 mm
Minimum pitch diameter of an outside idler:	d_{min}	= 190 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.