

Technical Data Sheet

Optibelt ALPHA linear H AR

Polyurethane Timing Belt, Thermoplastic PU, Open Ended

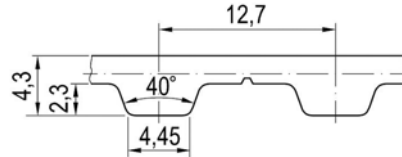


Dimensions, Tolerances

Profile:	H
Tooth pitch t:	1/2 in = 12.7 mm
Total thickness:	4.3 mm
Tooth height:	2.3 mm
Tooth tip width:	4.45 mm
Tooth flank angle:	40°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Aramid, Ø 0,75 mm
Polyamid fabric:	Possible on teeth, back



Specific nominal tensile force transmittable per tooth

Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\ spez}$ [N/mm]
0	4.600	1200	2.635	3600	1.846
20	4.456	1300	2.579	3800	1.807
40	4.336	1400	2.527	4000	1.769
60	4.232	1500	2.478	4500	1.682
80	4.141	1600	2.432	5000	1.605
100	4.059	1700	2.389	5500	1.534
200	3.748	1800	2.349	6000	1.470
300	3.528	1900	2.310	6500	1.410
400	3.358	2000	2.273	7000	1.355
500	3.220	2200	2.205	7500	1.304
600	3.103	2400	2.142	8000	1.256
700	3.002	2600	2.084	8500	1.211
800	2.913	2800	2.030	9000	1.169
900	2.833	3000	1.980	9500	1.128
1000	2.761	3200	1.932	10000	1.090
1100	2.695	3400	1.888		

Nominal tensile force F_N

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

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

$$M_N = F_N \cdot d_{w1} / (2 \cdot 10^3) \quad [Nm]$$

$$d_{w1} = z_1 \cdot t / \pi \quad [mm]$$

d_{w1}	Pitch diameter, driver pulley [mm]
z_1	Number of teeth, driver pulley
t	Tooth pitch [mm]

Nominal power P_N

$$P_N = F_N \cdot z_1 \cdot t \cdot n_1 / (6 \cdot 10^7) \quad [kW]$$

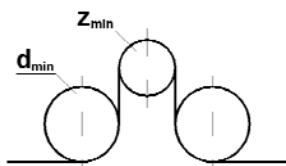
n_1	Speed, driver pulley [1/min]
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Cord tensile forces, belt weight

Width code	050	075	100	150	200	300	400	500	600
Belt width * b [mm]	12.7	19.05	25.4	38.1	50.8	76.2	101.6	127.0	152.4
Allowable tensile force ** F_{zul} [N]	770	1440	2100	3300	4500	7100	9600	12400	14700
Breaking strength F_{Br} [N]	3850	7200	10500	16500	22500	35500	48000	62000	73500
Weight per metre [kg/m]	0.046	0.069	0.091	0.137	0.183	0.274	0.366	0.457	0.549

* Smaller and intermediate widths possible ** Allowable tensile force F_{zul} equivalent to 20% breaking strength F_{Br} of the cords

Timing belt pulleys, inside and outside idlers, clamping plates



Minimum number of teeth of the pulley:	$z_{min} = 14$
Minimum pitch diameter of the pulley:	$d_{w\ min} = 56.60\ mm$
Minimum no. of teeth in mesh, clamping plate:	$z_{CP\ min} = 6$
Minimum diameter of a plane inside idler:	$d_{min} = 55\ mm$
Minimum diameter of a plane outside idler:	$d_{min} = 65\ mm$