

TPU BELTS

THERMOPLASTIC POLYURETHANE

GATES® TPU SYNCHRO-POWER™

FLAT BELT

DESIGNED FOR HIGH STRENGTH SMALL PULLEY DIAMETERS



TPU BELTS®

GATES SYNCHRO-POWER™ FLAT BELTS HIGH STRENGTH COMBINED WITH LOW ELONGATION

Gates TPU Synchro-Power Flat belts are designed for high strength, extruded with wear resistant polyurethane and equipped with steel or aramid cord. Various cord options offer fit-for-purpose tensile strength and stiffness at small pulley diameters.

Commonly, Synchro-Power Flat belts are used in lifting, pulling and conveying applications and are mostly sold as open-ended belts usually attached at one or both ends in the application with clamping devices or the Gates FIX-FLAT system.

With combinations of different types of polyurethanes and cords, we offer a wide variety of belt constructions. Wear-resistant, low friction nylon fabric allows the Synchro-Power flat belt to operate smoothly with high abrasion resistance.

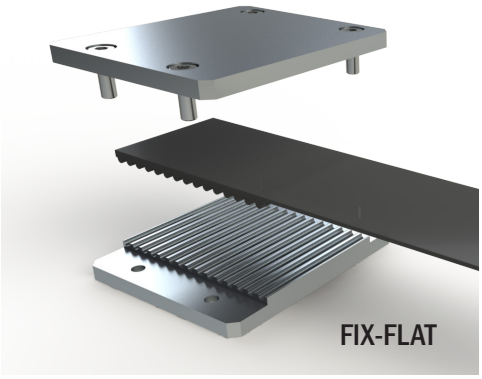
Gates TPU belts combine the durability of Gates quality product and optimal lead times within a reliable partnership - making Gates TPU Syncho-Power belts the number one choice for polyurethane belts. You can confidently rely on Gates TPU Synchro-Power Flat belts.

FEATURES + BENEFITS

- Smooth, vibration free operation
- High strength combined with low elongation
- Sealed belt edges eliminates cord fraying
- Easy belt guide with flanged pulleys or guiding rails
- No re-tensioning required
- Optional low temperature version available
- Optional nylon fabric on flight and/or on back side
- Small pulley diameters



SYNCHRO-POWER™ FLAT BELT



FIX-FLAT

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TPU BELTS®

SYNCHRO-POWER™ FLAT F20



PRODUCT SPECIFICATIONS

STANDARD THICKNESS	2 mm
MINIMUM WELDED BELT LENGTH	
< 100 mm	880 mm
> 100 mm	960 mm
< 50 mm width	+/- 0,5 mm
> 50 mm width	+/- 0,75 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	Black
FDA/EU APPROVAL	Optional
POLYAMIDE FABRIC	Optional NT, NB & NTB

PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE [°C]
STANDARD	R1	92	-5 to +70˚C
FDA OPTIONAL	R2	85	-20 to +60˚C
ANTISTATIC	R4	90	+5 to +60˚C

TECHNICAL DATA

STANDARD WIDTH (mm)		10	16	25	50	75	100	150
Ultimate Tensile Strength	**[N] Average Value**							
Steel		2.604	4.418	7.140	14.700	22.260	29.820	44.940
Aramid		2.911	4.980	8.085	16.709	25.333	33.957	51.205
Steel HF		3.844	6.522	10.540	21.700	32.860	44.020	66.340
Steel RSL		5.130	8.778	14.250	29.450	44.650	59.850	90.250
Aramid RKV		5.827	9.970	16.158	33.449	50.713	67.977	102.505
Steel RHF		4.671	7.993	12.975	26.815	40.655	54.495	82.175
Steel Niro		3.848	6.584	10.688	22.068	33.488	44.888	67.688
Allowable Belt Tension	**[N] Open-Ended**							
Steel		842	1.403	2.386	4.912	7.438	9.963	15.015
Aramid		443	798	1.329	2.747	4.165	5.583	8.419
Steel HF		1.032	1.721	2.925	6.022	9.119	12.216	18.410
Steel RSL		1.559	2.806	4.676	9.664	14.652	19.640	29.616
Aramid RKV		729	1.313	2.188	4.521	6.854	9.188	13.854
Steel RHF		1.440	2.592	4.320	8.928	13.536	18.144	27.360
Steel Niro		1.169	2.104	3.507	7.248	10.989	14.730	22.212
Allowable Belt Tension	**[N] Endless Welded**							
Steel		421	702	1.193	2.456	3.719	4.982	7.508
Aramid		222	399	665	1.347	2.083	2.792	4.210
Steel HF		516	860	1.463	3.011	4.560	6.108	9.205
Steel RSL		779	1.403	2.338	4.832	7.326	9.820	14.808
Aramid RKV		365	656	1.094	2.260	3.427	4.594	6.927
Steel RHF		720	1.296	2.160	4.464	6.768	9.072	13.680
Steel Niro		585	1.052	1.754	3.624	5.495	7.365	11.106
Belt Weight (kg/m)								
Steel		0,030	0,048	0,075	0,150	0,225	0,300	0,450
Aramid		0,023	0,036	0,058	0,115	0,173	0,230	0,345
Steel HF		0,033	0,053	0,083	0,165	0,248	0,330	0,495
Steel RSL		0,038	0,060	0,095	0,190	0,285	0,380	0,570
Aramid RKV		0,022	0,035	0,055	0,110	0,165	0,220	0,330
Steel RHF		0,035	0,056	0,088	0,175	0,263	0,350	0,525
Steel Niro		0,037	0,060	0,093	0,185	0,278	0,370	0,555
Specific Belt Stiffness	**[N]**							
Steel		168.397	280.662	447.125	982.316	1.487.507	1.992.699	3.003.081
Aramid		88.625	159.525	265.875	549.475	833.075	1.116.675	1.683.875
Steel HF		206.471	344.118	585.000	1.204.412	1.823.824	2.443.235	3.682.059
Steel RSL		311.750	561.150	935.250	1.932.850	2.930.450	3.928.050	5.923.250
Aramid RKV		145.833	262.500	437.500	90.467	1.370.833	1.837.500	2.770.833
Steel RHF		288.000	518.400	864.000	1.785.600	2.707.200	3.628.800	5.472.000
Steel Niro		233.813	420.863	701.438	1.449.639	2.197.839	2.946.040	4.442.441

MIN PULLEY DIAMETER	Steel	Aramid	Steel HF	Steel RSL	Aramid RKV	Steel RHF	Steel NIRO
Pulley On Flight Side	35	35	30	48	48	38	64
Idler On Back Side	60	60	50	72	72	57	96

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TPU BELTS®

SYNCHRO-POWER™ FLAT F30



PRODUCT SPECIFICATIONS

STANDARD THICKNESS	3 mm
MINIMUM WELDED BELT LENGTH	
< 100 mm	880 mm
> 100 mm	960 mm
< 50 mm width	+/- 1,0 mm
> 50 mm width	+/- 1,5 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	Black
FDA/EU APPROVAL	Optional
POLYAMIDE FABRIC	Optional NT, NB & NTB

PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE [°C]
STANDARD	R1	92	-5 to +70˚C
FDA OPTIONAL	R2	85	-20 to +60˚C
ANTISTATIC	R4	90	+5 to +60˚C

TECHNICAL DATA

STANDARD WIDTH (mm)		10	16	25	50	75	100	150
Ultimate Tensile Strength	**[N] Average Value**							
Steel		8.650	14.878	24.220	50.170	76.120	102.070	153.970
Aramid		2.910	4.980	8.085	16.709	25.333	33.957	51.205
Aramid RKV		7.785	13.390	21.798	45.153	65.508	91.863	138.573
Steel HF		9.625	16.555	26.950	55.825	84.700	113.575	171.325
Steel RSL		11.520	20.352	33.600	70.400	107.200	144.000	217.600
Allowable Belt Tension	**[N] Open-Ended**							
Steel		2.616	4.186	7.325	15.173	23.021	30.870	46.566
Aramid		443	798	1.329	2.747	4.165	5.583	8.419
Aramid RKV		781	1.250	2.188	4.531	6.875	9.219	13.906
Steel HF		2.267	3.628	6.349	13.151	19.953	26.755	40.360
Steel RSL		4.446	7.114	8.892	19.563	29.345	40.016	60.469
Allowable Belt Tension	**[N] Endless Welded**							
Steel		1.308	2.093	3.663	7.587	11.511	15.435	23.283
Aramid		222	399	665	1.374	2.083	2.792	4.210
Aramid RKV		391	625	1.094	2.266	3.438	4.609	6.953
Steel HF		1.134	1.814	3.174	6.575	9.977	13.378	20.180
Steel RSL		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Belt Weight (kg/m)								
Steel		0,059	0,094	0,147	0,295	0,442	0,589	0,884
Aramid		0,031	0,050	0,078	0,155	0,233	0,310	0,465
Aramid RKV		0,032	0,051	0,080	0,161	0,241	0,322	0,483
Steel HF		0,064	0,102	0,159	0,319	0,478	0,638	0,957
Steel RSL		0,071	0,113	0,177	0,353	0,530	0,707	1,060
Specific Belt Stiffness	**[N]**							
Steel		523.214	837.143	1.465.000	3.034.643	4.604.286	6.173.929	9.313.214
Aramid		88.625	159.525	265.875	549.475	833.075	1.116.675	1.683.875
Aramid RKV		156.250	250.000	437.500	906.250	1.375.000	1.843.750	2.781.250
Steel HF		453.482	725.571	1.269.750	2.630.196	3.990.643	5.351.089	8.071.982
Steel RSL		889.249	1.422.798	1.778.498	3.912.696	5.869.043	8.003.241	12.093.786

MIN PULLEY DIAMETER	Steel	Aramid	Aramid RKV	Steel HF	Steel RSL
Pulley On Flight Side	80	60	80	64	160
Idler On Back Side	120	120	120	96	240

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SYNCHRO-POWER™ FLAT F48



PRODUCT SPECIFICATIONS

STANDARD THICKNESS	4,8 mm
WIDTH TOLERANCE	+/- 2,0 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	50 m
STANDARD COLOR	Black
FDA/EU APPROVAL	Optional
POLYAMIDE FABRIC	Optional NT, NB & NTB

PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE [°C]
STANDARD	R1	92	-5 to +70˚C
FDA OPTIONAL	R2	85	-20 to +60˚C
ANTISTATIC	R4	90	+5 to +60˚C

TECHNICAL DATA

STANDARD WIDTH (mm)		25	50	75	100	150
Ultimate Tensile Strength	**[N] Average Value**					
Steel		45.000	97.500	150.000	202.500	307.500
Allowable Belt Tension	**[N] Open-Ended**					
Steel		13.378	28.986	44.594	60.201	91.417
Allowable Belt Tension	**[N] Endless Welded**					
Steel		N/A	N/A	N/A	N/A	N/A
Belt Weight (kg/m)						
Steel		0,270	0,540	0,810	1,080	1,620
Specific Belt Stiffness	**[N]**					
Steel		2.675.622	5.797.181	8.918.740	12.040.299	18.283.417

MIN PULLEY DIAMETER	
	Steel
Pulley On Flight Side	150
Idler On Back Side	225

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TPU BELTS

THERMOPLASTIC POLYURETHANE

Gates is a leading manufacturer of innovative thermoplastic polyurethane power transmission and conveyor belts. We are a trusted partner delivering superior quality and reliability with optimal lead times worldwide.



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