



TPU BELTS

THERMOPLASTIC POLYURETHANE

GATES TPU SYNCHRO-POWER™

GPP BELT

DESIGNED FOR HIGH SPEED AND HIGH LOAD

GATES PARABOLIC PROFILE HIGH STRENGTH AND LOW NOISE

Gates TPU Synchro-Power GPP belts are high performance, top quality belts designed for high speed precision accuracy to improve your operating efficiency.

Standard GPP belts utilise strong steel reinforcement cord to deliver full tensile strength and allow very small pulley diameters. Reinforced RSL belts have very high tensile strength and stiffness for highly dynamic positioning and vertical lifting applications.

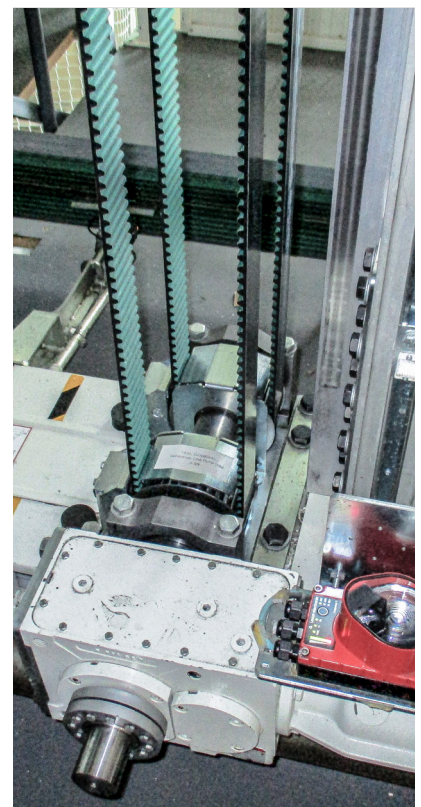
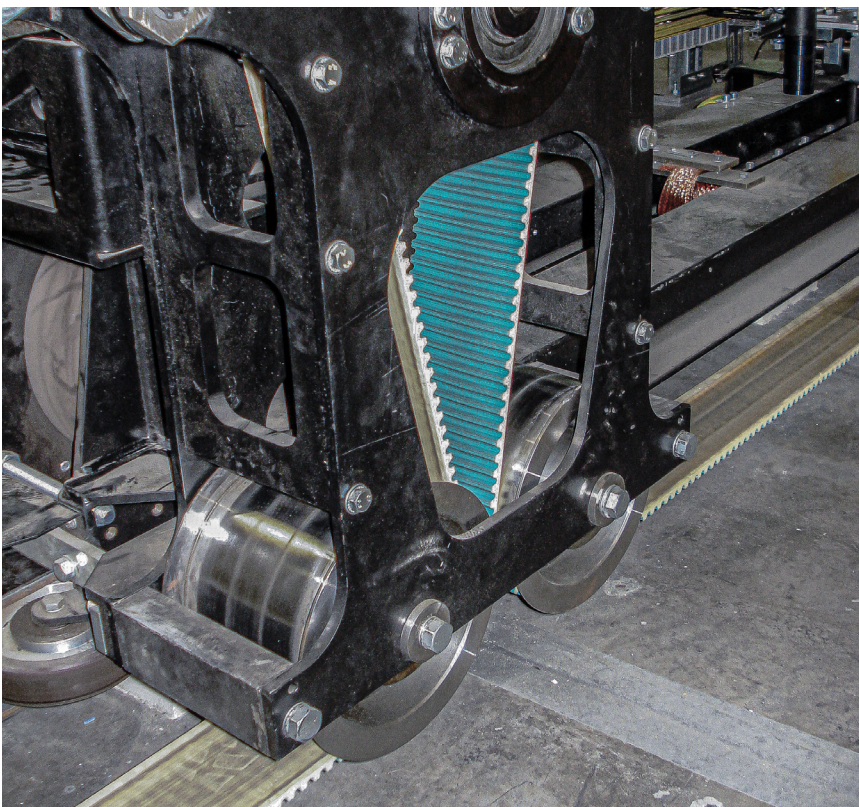
A wear-resistant Nylon fabric on the tooth side allows Synchro-Power GPP belts to operate smoothly with high abrasion resistance.

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

FEATURES + BENEFITS

- GPP8 or GPP14 pitch
- RPP* or HTD pulleys
- Standard belts for medium load capacity
- Reinforced RSL belts for high load applications
- Standard tooth side Nylon fabric
- Optional back side Nylon fabric
- GPP8 in widths up to 150mm
- GPP14 in widths up to 200mm
- Small pulley diameters

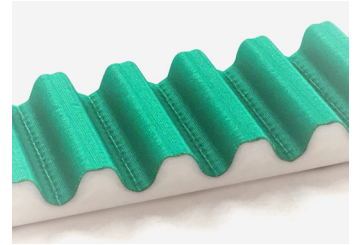
*RPP is a trademark of The Timken Company



SYNCHRO-POWER GPP8

Gates TPU basic 8M pitch parabolic profile belt is ideal for light and medium linear actuation applications, door opening systems, and any application requiring an endless welded belt system for transportation.

- Highly flexible steel cord construction is designed for very small pulley diameters
- Optional stainless steel cord construction for highly corrosive environments
- Durable and abrasion resistant standard 92° ShoreA urethane for -5 to +70°C temperatures
- Optional low temp urethane for low temperature applications – deep freeze warehousing or outdoor equipment
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric back side
- GPP8 belt runs in RPP8* as well HTD8M pulleys



SYNCHRO-POWER GPP8-RSL

In the same dimensions of the GPP8, our RSL belt is equipped with high strength steel cord. A GPP8-RHF belt is available for small pulley diameters.

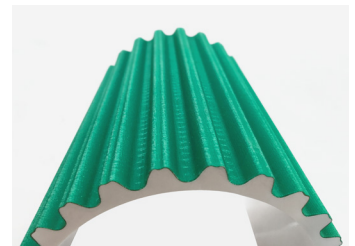
- Higher tensile strength and higher stiffness is perfect for high-precision and very dynamic light to middle load linear applications as well as medium weight lifting
- Standard Applications: RPP8 or HTD8M pulleys
- High Load Applications: HTD8M SG (shallow groove) pulleys recommended for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric back side



SYNCHRO-POWER GPP14

Using a special cord construction, our basic 14M pitch parabolic profile belt delivers great tensile strength and extremely high stiffness for less elastic elongation.

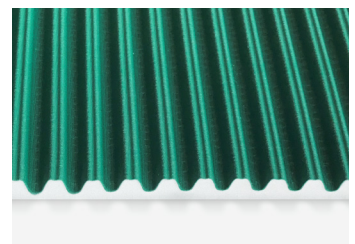
- GPP14 belt runs in RPP14 or HTD14M pulleys
- High Load Applications: HTD14M SG (shallow groove) pulleys recommended for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric on tooth and back side



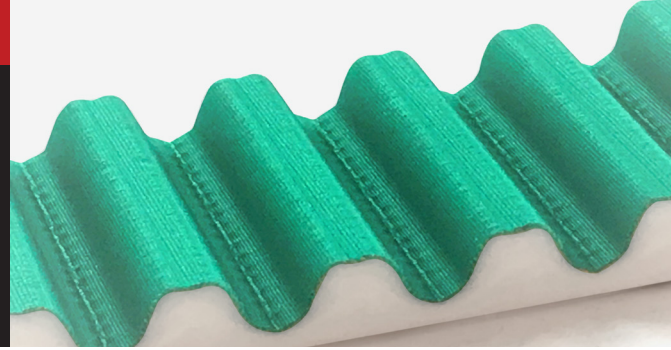
SYNCHRO-POWER GPP14-RSL

Extremely high strength makes our GPP14-RSL belt perfect for heavy lifting and highly dynamic linear movement applications such as high load stacker cranes in automated warehouses – including deep freeze – and material elevators in the automotive industry.

- High Load Applications: Use HTD14M SG (shallow groove) pulleys for perfect fit and longer life
- Standard version for -5 to +70°C temperatures (low temp version for -30 to +50°C)
- Nylon fabric tooth side for low friction and low noise – optional Nylon fabric on tooth and back side



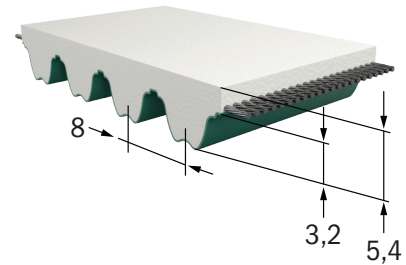
*RPP is a trademark of The Timken Company



PRODUCT SPECIFICATIONS

PITCH	8 mm
STANDARD THICKNESS	5.4 mm
WIDTH TOLERANCE	+/-0.50 mm
MINIMUM WELDED BELT LENGTH	960 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP8



PITCH	POLYURETHANE	HARDNESS [°SHORE A]	TEMPERATURE RANGE [°C]
STANDARD	R1	92	-5 to +70 °C
OPTIONAL	R23T	90	-30 to +55 °C

MIN PULLEY TOOTH COUNT AND DIAMETER

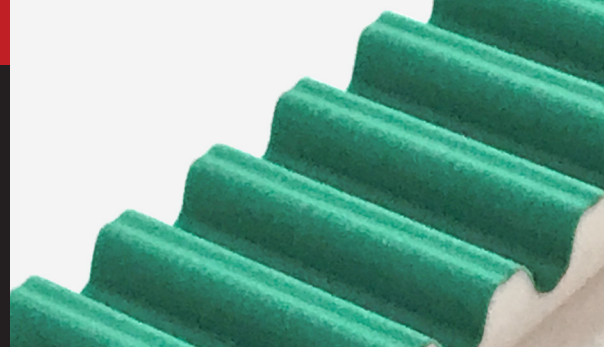
		STEEL / ARAMID	STEEL HF	STEEL NIRO
No back bending	z_{min}	18 teeth	16 teeth	25 teeth
	d_{min}	46 mm	41 mm	64 mm
Back bending	z_{min}	20 teeth	18 teeth	30 teeth
	d_{min}	120 mm	100 mm	150 mm

PULLEY DEFINITION

GPP8 belt runs in RPP8 and HTD8M pulley profile.

TECHNICAL DATA

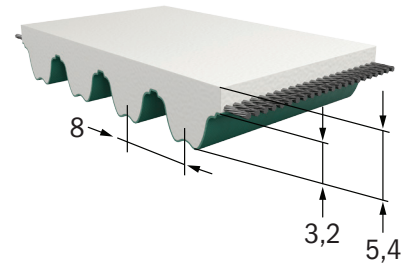
STANDARD WIDTH (mm)	10	15	20	25	30	50	85	100	150
Ultimate Tensile Strength [N] Average Value									
Steel	5.700	8.550	12.350	15.200	19.000	32.300	56.050	66.500	98.800
Steel HF	5.190	7.785	11.245	13.840	17.300	29.410	51.035	60.550	89.960
Stainless	4.275	6.413	9.263	11.400	14.250	24.225	42.038	49.875	74.100
Allowable Belt Tension [N] Open Ended									
Steel	1.403	2.104	3.040	3.741	4.676	7.950	13.795	16.367	24.317
Steel HF	1.296	1.944	2.808	3.456	4.320	7.344	12.744	15.120	22.464
Stainless	1.052	1.578	2.280	2.806	3.507	5.962	10.346	12.275	18.237
Allowable Belt Tension [N] Endless Welded									
Steel	701	1.052	1.520	1.871	2.338	3.975	6.897	8.183	12.158
Steel HF	648	972	1.404	1.728	2.160	3.672	6.372	7.560	11.232
Stainless	526	798	1.140	1.403	1.754	2.981	5.173	6.138	9.119
Allowable Effective Tension [N] Min. 12 teeth in mesh									
	920	1.380	1.840	2.300	2.760	4.600	7.820	9.200	13.800
Belt Weight (kg/m)									
Steel	0,05	0,08	0,10	0,13	0,15	0,25	0,42	0,50	0,75
Steel HF	0,05	0,07	0,09	0,12	0,14	0,23	0,39	0,47	0,70
Stainless	0,05	0,07	0,10	0,12	0,15	0,25	0,42	0,50	0,74
Specific Belt Stiffness [N]									
Steel	350.719	526.078	759.891	935.250	1.169.063	1.987.406	3.448.734	4.091.719	6.079.125
Steel HF	324.000	486.000	702.000	864.000	1.080.000	1.836.000	3.186.000	3.780.000	5.616.000
Stainless	263.039	394.559	569.918	701.438	876.797	1.490.555	2.586.551	3.068.789	4.559.344



PRODUCT SPECIFICATIONS

PITCH	8 mm
STANDARD THICKNESS	5.4 mm
WIDTH TOLERANCE	+/-0.50 mm
STANDARD ROLL LENGTH (TOLERANCE ±1%)	100 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP8-RSL



PITCH	POLYURETHANE	HARDNESS [+SHORE A]	TEMPERATURE RANGE [°C]
STANDARD	R1	92	-5 to +70 °C
OPTIONAL	R23T	90	-30 to +55 °C

MIN PULLEY TOOTH COUNT AND DIAMETER

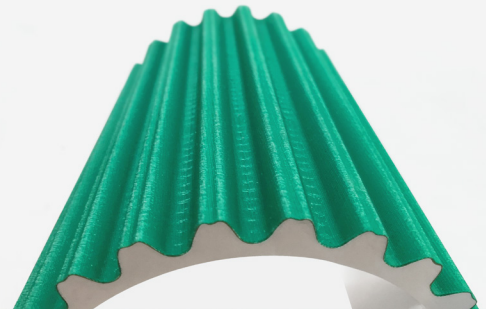
		STEEL	STEEL HF
No back bending	Z_{min}	31 teeth	25 teeth
	d_{min}	80mm	64mm
Back bending	Z_{min}	38 teeth	32 teeth
	d_{min}	150mm	130mm

PULLEY DEFINITION

GPP8-RSL require special shallow groove pulleys. Please contact Gates TPU application engineering for more information.

TECHNICAL DATA

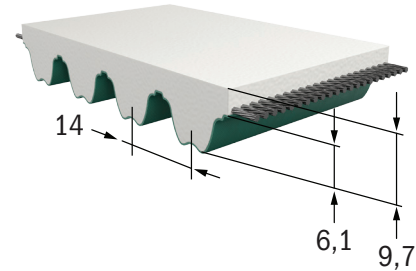
STANDARD WIDTH (mm)	15	20	25	30	50	85	100	150
Ultimate Tensile Strength [N] Average Value								
Steel	13.840	19.030	25.950	31.140	51.900	91.690	103.800	155.700
Steel HF	15.400	21.175	28.875	34.650	57.750	102.025	115.500	173.250
Allowable Belt Tension [N] Open Ended								
Steel	3.349	4.604	6.279	7.534	12.557	22.184	25.114	37.671
Steel HF	2.902	3.991	5.442	6.530	10.884	19.228	21.767	32.651
Allowable Effective Tension [N] Min. 12 teeth in mesh								
	1.380	1.840	2.300	2.760	4.600	7.820	9.200	13.800
Belt Weight (kg/m)								
Steel	0,11	0,15	0,18	0,22	0,37	0,63	0,72	1,09
Steel HF	0,11	0,15	0,18	0,22	0,37	0,63	0,72	1,09
Specific Belt Stiffness [N]								
Steel	837.143	1.151.071	1.569.643	1.883.571	3.139.286	5.546.071	6.278.571	9.417.857
Steel HF	725.571	997.661	1.360.446	1.632.536	2.720.893	4.806.911	5.441.786	8.162.679



PRODUCT SPECIFICATIONS

PITCH	14 mm
STANDARD THICKNESS	10 mm
WIDTH TOLERANCE	+/- 1.0 mm
MINIMUM WELDED BELT LENGTH	NA
STANDARD ROLL LENGTH (TOLERANCE ±1%)	50 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP14



PITCH	POLYURETHANE	HARDNESS [·SHORE A]	TEMPERATURE RANGE [·C]
STANDARD	R1	92	-5 to +70 °C
OPTIONAL	R23T	90	-30 to +55 °C

MIN PULLEY TOOTH COUNT AND DIAMETER

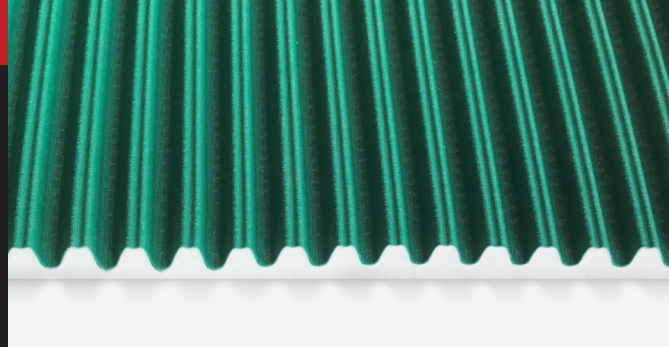
		STEEL	
No back bending		z min	32 teeth
		d min	140 mm
Back bending		z min	32 teeth
		d min	200 mm

PULLEY DEFINITION

GPP14 belt runs in RPP14 and HTD14M pulley profiles, for heavy lifting and high dynamic application please contact our application engineers.

TECHNICAL DATA

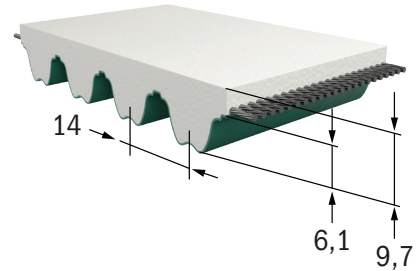
STANDARD WIDTH (mm)	40	55	85	115	150	170
Ultimate Tensile Strength [N] Average Value						
Steel	64.600	87.400	136.800	186.200	247.000	273.600
Allowable Belt Tension [N] Open Ended						
Steel	17.850	24.150	37.800	51.450	68.250	75.600
Allowable Effective Tension [N] Min. 12 teeth in mesh						
	6.900	9.488	14.663	19.838	25.875	34.500
Belt Weight (kg/m)						
Steel	0,50	0,69	1,07	1,44	1,88	2,13
Specific Belt Stiffness [N]						
Steel	4.462.500	6.037.500	9.450.000	12.862.500	17.062.500	18.900.000



PRODUCT SPECIFICATIONS

PITCH	14 mm
STANDARD THICKNESS	10 mm
WIDTH TOLERANCE	+/-1.0 mm
MINIMUM WELDED BELT LENGTH	NA
STANDARD ROLL LENGTH (TOLERANCE ±1%)	50 m
STANDARD COLOR	White
FDA/EU APPROVAL	No
POLYAMIDE FABRIC	
STANDARD	NT
OPTIONAL	NTB

GPP14-RSL



PITCH	POLYURETHANE	HARDNESS [·SHORE A]	TEMPERATURE RANGE [·C]
STANDARD	R1	92	-5 to +70 °C
OPTIONAL	R23T	90	-30 to +55 °C

MIN PULLEY TOOTH COUNT AND DIAMETER

		STEEL	
No back bending	Z_{min}	z min	34 teeth
	d_{min}	d min	152 mm
Back bending	Z_{min}	z min	34 teeth
	d_{min}	d min	250 mm

PULLEY DEFINITION

GPP14-RSL belt requires a special pulley profile, please contact our application engineers.

TECHNICAL DATA

STANDARD WIDTH (mm)	40	55	85	115	150	200
Ultimate Tensile Strength [N] Average Value						
Steel	82.500	112.500	180.000	247.500	322.500	427.500
Allowable Belt Tension [N] Open Ended						
Steel	19.621	26.756	42.810	58.864	76.701	101.674
Allowable Effective Tension [N] Min. 12 teeth in mesh						
	6.900	9.488	14.663	19.838	25.875	34.500
Belt Weight (kg/m)						
Steel	0,56	0,76	1,18	1,60	2,08	2,78
Specific Belt Stiffness [N]						
Steel	4.905.312	6.689.062	10.702.499	14.715.936	19.175.311	25.418.435



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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