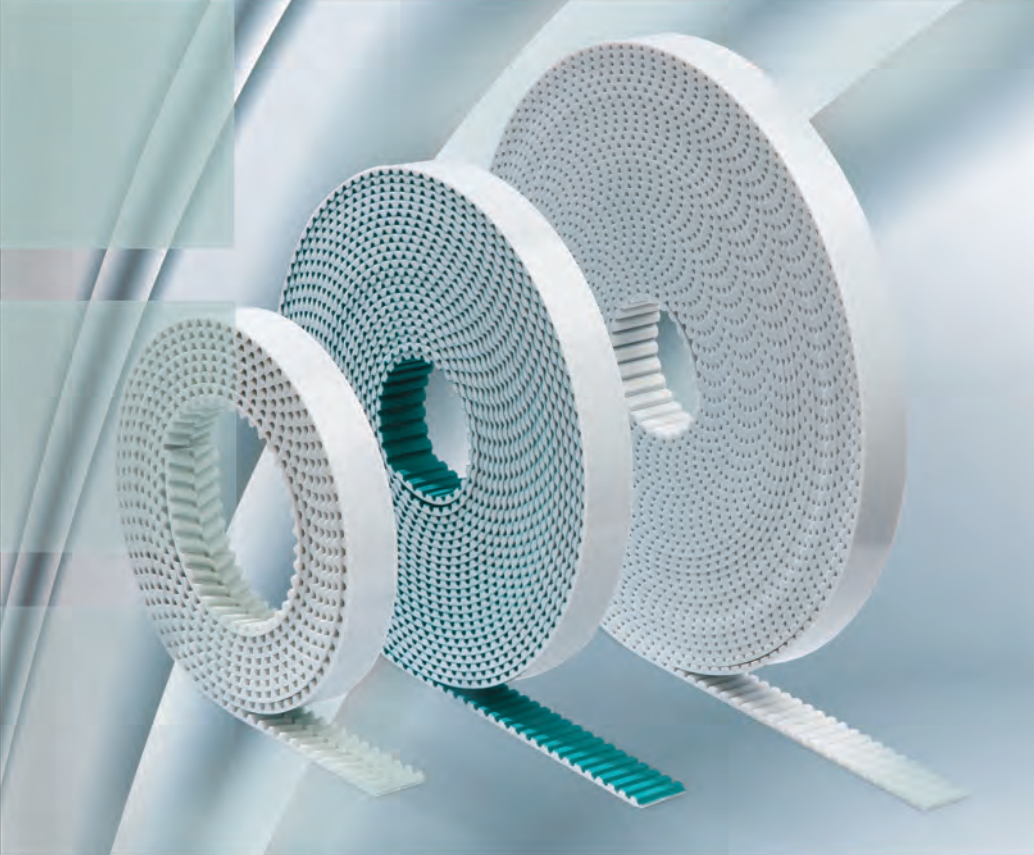
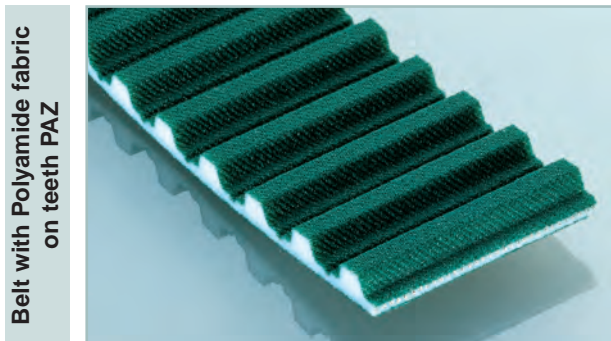


# ELATECH® M and V




Technology in Motion.

The timing belts manufactured by ELATECH® have been designed to comply with every need of the design engineer in linear motion, power transmission and in conveying applications where precise synchronisation is needed. ELATECH® timing belts are manufactured with the body in thermoplastic polyurethane with excellent wear resistance and with high tensile strength steel cords. A special polyamide fabric on the tooth (on request) reduces the coefficient of friction, improves the tooth engagement and reduces noise.



### Product certification

- ELATECH® belts are certified to be according RoHS 2002/95/EC
- On request, it is possible to deliver belts:
  - according to 94/9/CE ATEX  II2G-22D
  - with antistatic properties

### Colour

The standard colour ELATECH® timing belt is white. On demand it is possible to deliver belts in different colours.

### Tension Cords

In order to maximize the application of ELATECH® timing belts, construction with special cords is available on request:



- **HPL** high performance cords: the cord cross section is increased compared with standard. This results in a lower belt elongation and more precise positioning accuracy.
- **HFE** high Flexibility cords: the cord cross section is spread on a higher number of single filaments. This results in a lower bending stress and therefore in a higher resistance at reverse bending of the cords. They allow using pulleys and idlers up to 30% smaller in diameter compared to standard.
- **INOX** stainless steel cords are suitable for application in aggressive environments. They have lower tensile strength than standard cords.
- **ARAMID**: increases belt flexibility and decreases belt weight.

It is to be noted that steel cords offer the best technical performances and dimensional stability of the belts.

Belt length tolerances are valid for steel cord reinforcement. In case of other material (aramid, fibreglass) length tolerance may change.

For application with special cords ask our engineering department.

### Mechanical properties:

- Excellent dimensional stability
- High abrasion resistance
- Low pretension and shaft load
- Maintenance free
- High linear and angular positioning precision
- High efficiency

### Chemical properties:

High resistance to:

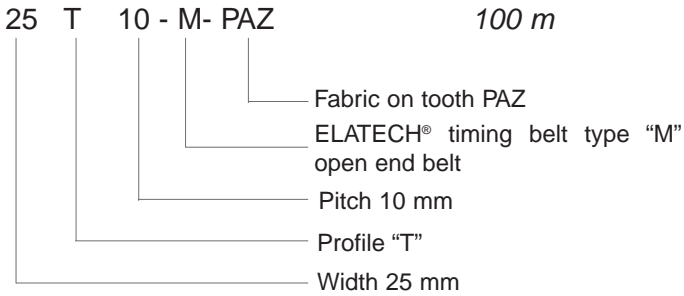
- Hydrolysis
- Ozone
- UVA
- Ageing
- Oils, greases and fats
- Gasoline
- Good resistance to acids
- Working temperatures range for standard material -10°C +80°C (peaks up to 110°C). For very low temperature special compound material is available on request (see dedicated table)
- Silicon free production

## Executions

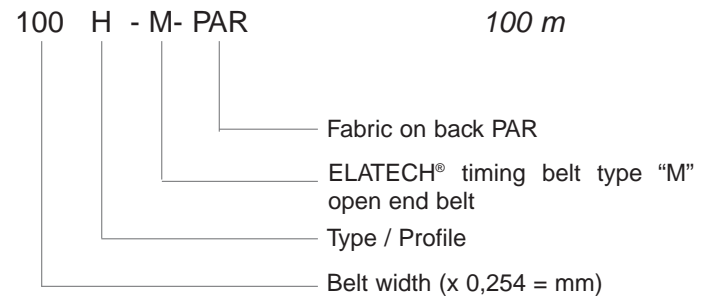
### ELATECH® M

They are manufactured in rolls with standard length of 100 m. On request longer or shorter lengths are available. Main applications are linear drives.

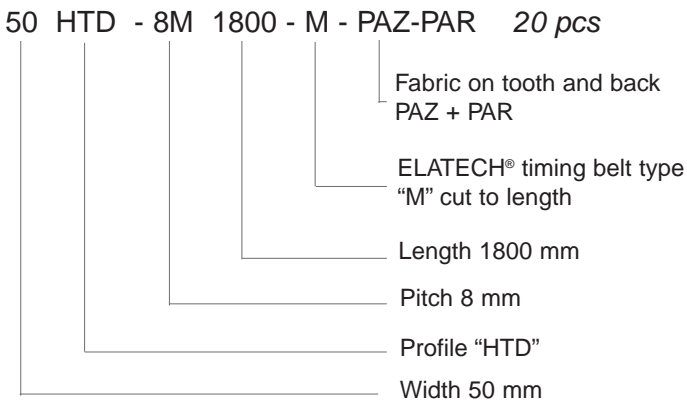
#### Ordering example T :



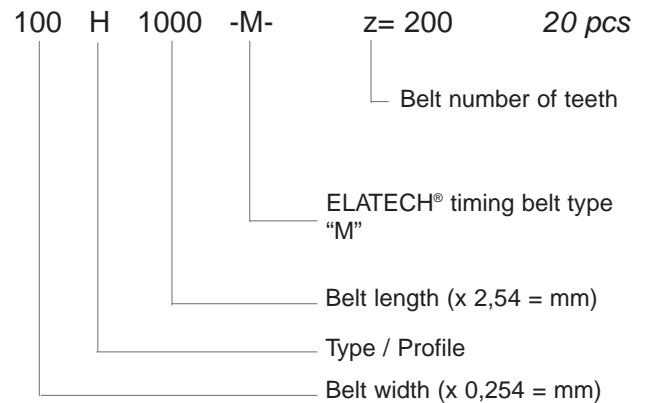
#### Ordering example H :



#### Ordering example HTD cut to length:



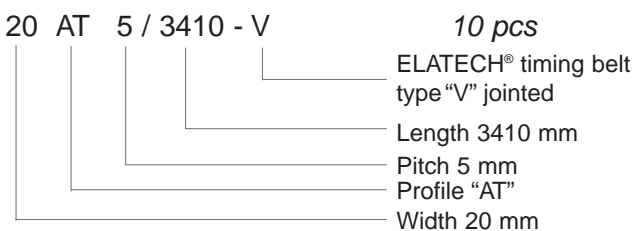
#### Ordering example H cut to length:



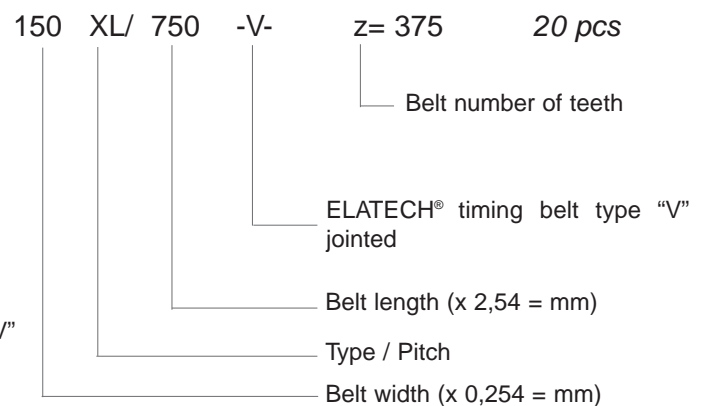
### ELATECH® V

They are jointed belts manufactured from open-end ELATECH® belts. Thanks to the specific manufacturing process, any length may be obtained tooth by tooth with a minimum of 800 mm length. Free combinations with special backing materials and welded profiles, make ELATECH® V belts ideal in synchronized conveying and highly specialised applications.

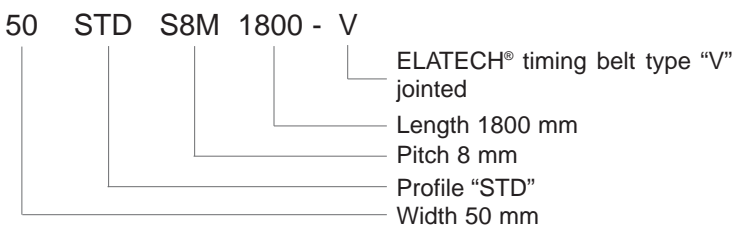
#### Ordering example AT :

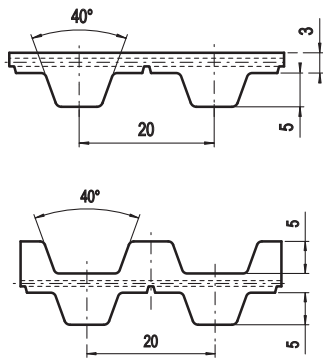


#### Ordering example XL :



#### Ordering example STD :





### Belt characteristics

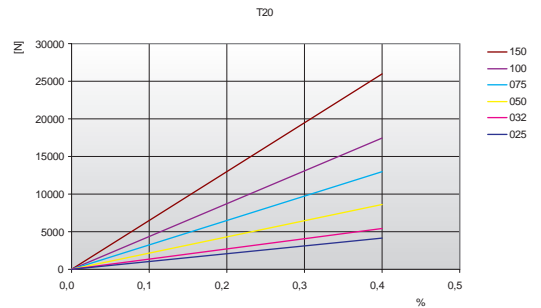
- Polyurethane timing belt with steel tension cords
- Trapezoidal tooth profile according to DIN 7721 T1
- Metric pitch 20 mm
- Ideal for drives where high belt flexibility is requested
- Widely used for conveying, linear drive and heavy power transmission applications
- Double sided tooth construction available

- Width tolerance:  $\pm 1,0$  [mm]
- Length tolerance:  $\pm 0,5$  [mm/m]
- Thickness tolerance:  $\pm 0,4$  [mm]

## Technical Data

Belt width b [mm]	Allowable tensile load Type M $F_{Tzul}$ [N]	Allowable tensile load Type V $F_{Tzul}$ [N]	Breaking load Type M $F_{Br}$ [N]	Specific spring rate $C_{spez}$ [N]	Weight [kg/m]
25	4170	2085	16150	1042500	0,20
32	5390	2695	20900	1347500	0,26
50	8580	4290	33250	2145000	0,41
75	12990	6495	50350	3247500	0,61
100	17400	8700	67450	4350000	0,82
150	26220	13110	101650	6555000	1,23

### Load / Elongation [ % ]

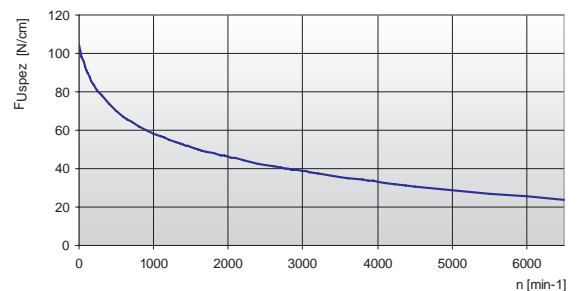


Other widths are available on request.

## Tooth shear strength

rpm	$F_{Uspez}$ [N/cm]	rpm	$F_{Uspez}$ [N/cm]	rpm	$F_{Uspez}$ [N/cm]	rpm	$F_{Uspez}$ [N/cm]
0	104,50	800	62,15	1900	46,88	4500	30,92
20	101,10	900	60,13	2000	45,94	5000	28,93
40	98,15	1000	58,31	2200	44,20	5500	27,14
60	95,58	1100	56,64	2400	42,61	6000	25,49
80	93,35	1200	55,11	2600	41,13	6500	23,97
100	91,41	1300	53,70	2800	39,77	-	-
200	83,50	1400	52,38	3000	38,49	-	-
300	77,84	1440	51,87	3200	37,29	-	-
400	73,49	1500	51,14	3400	36,16	-	-
500	69,96	1600	49,98	3600	35,10	-	-
600	66,98	1700	48,89	3800	34,09	-	-
700	64,41	1800	47,86	4000	33,13	-	-

### Tooth shear strength / rpm



The specific load  $F_{Uspez}$  is the maximum load which one single belt tooth 1 cm wide can withstand in all operating conditions. This force is related to the drive rpm.

The total load  $F_U$  transmissible by the belt in the drive is calculated by:

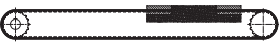

$$F_U [N] = F_{Uspez} \cdot Z_e \cdot b$$

- $F_U [N]$  = peripheral force
- $F_{Uspez} [N/cm]$  = specific load
- $Z_e$  = number of teeth in mesh in the small pulley
- $Z_{emax}$  = max. no of teeth in mesh to be considered for the calculation of the drive
- $Z_{emax}$  = 12 for ELATECH® M
- $Z_{emax}$  = 6 for ELATECH® V
- $b [cm]$  = belt width in cm

Specialties

Belt width b [mm]	ARAMID CORD		STAINLESS STEEL		HFE High Flexibility	
	F <sub>Tzul</sub> [N] M type	F <sub>Br</sub> [N]	F <sub>Tzul</sub> [N] M type	F <sub>Br</sub> [N]	F <sub>Tzul</sub> [N] M type	F <sub>Br</sub> [N]
25	3740	17000	3060	12750	3400	14450
32	4840	22000	3960	16500	4400	18700
50	7700	35000	6300	26250	7000	29750
75	11660	53000	-	-	-	-
100	15620	71000	-	-	-	-
150	24300	110000	-	-	-	-

Flexibility

Minimum pulley number of teeth and minimum idler diameter		Type of cord			
		STANDARD	ARAMID	STAINLESS	HFE
Drive without reverse bending 	Timing pulley z <sub>min</sub>	15	15	20	12
	Flat idler running on belt teeth d <sub>min</sub>	120 mm	120 mm	130 mm	100 mm
Drive with reverse bending 	Timing pulley z <sub>min</sub>	25	25	30	22
	Flat idler running on belt back d <sub>min</sub>	120 mm	120 mm	150 mm	120 mm

Timing pulleys

z	da	dw	z	da	dw	z	da	dw	z	da	dw
15	92,65	95,49	45	283,60	286,47	75	474,60	477,45	105	665,60	668,43
16	99,00	101,86	46	289,95	292,84	76	480,95	483,82	106	671,95	674,80
17	105,40	108,22	47	296,35	299,21	77	487,35	490,19	107	678,30	681,17
18	111,75	114,59	48	302,70	305,58	78	493,70	496,56	108	684,70	687,54
19	118,10	120,96	49	309,10	311,93	79	500,05	502,91	109	691,05	693,89
20	124,50	127,32	50	315,45	318,30	80	506,45	509,28	110	697,40	700,26
21	130,75	133,69	51	321,80	324,67	81	512,80	515,65	111	703,80	706,63
22	137,20	140,06	52	328,15	331,03	82	519,15	522,02	112	710,15	712,99
23	143,55	146,43	53	334,50	337,40	83	525,55	528,39	113	716,50	719,36
24	149,95	152,78	54	340,90	343,76	84	531,90	534,74	114	722,90	725,73
25	156,30	159,15	55	347,25	350,13	85	538,25	541,11	115	729,24	732,09
26	162,65	165,52	56	353,60	356,50	86	544,60	547,48	116	735,61	738,46
27	169,00	171,89	57	360,00	362,86	87	551,00	553,85	117	741,96	744,83
28	175,40	178,25	58	366,35	369,23	88	557,35	560,22	118	748,34	751,19
29	181,75	184,62	59	372,75	375,59	89	563,70	566,57	119	754,70	757,56
30	188,10	190,99	60	379,10	381,96	90	570,10	572,94	120	761,07	763,93
31	194,50	197,35	61	385,45	388,33	91	576,45	579,31			
32	200,85	203,72	62	391,85	394,70	92	582,85	585,67			
33	207,20	210,09	63	398,20	401,06	93	589,20	592,04			
34	213,60	216,44	64	404,55	407,43	94	595,55	598,41			
35	219,95	222,81	65	410,95	413,80	95	601,90	604,77			
36	226,35	229,18	66	417,30	420,17	96	608,30	611,14			
37	232,70	235,54	67	423,65	426,52	97	614,65	617,51			
38	239,05	241,91	68	430,05	432,89	98	621,00	623,88			
39	245,40	248,28	69	436,40	439,26	99	627,35	630,25			
40	251,75	254,65	70	442,80	445,63	100	633,75	636,60			
41	258,15	261,02	71	449,15	451,99	101	640,10	642,97			
42	264,50	267,37	72	455,50	458,36	102	646,50	649,34			
43	270,85	273,74	73	461,85	464,73	103	652,85	655,71			
44	277,25	280,10	74	468,25	471,08	104	659,20	662,06			

