

# Polyurethane belts for conveying applications:

## Backings

The unique chemical and mechanical features of ELATECH® belts together with the possibility of a wide range of backings in different materials make ELATECH® belts ideal for all conveying applications where synchronization is required. The engineer designer has unlimited possibilities to make a unique design.

### Minimum pulley diameter

The minimum pulley diameter can be calculated by means of the "pulley multiplier" shown for each type of backing.

**Minimum pulley diameter = backing thickness x pulley multiplier  $C_D$**

As a general rule, we may say that the smaller the pulley, the thinner the backing has to be.

The diameters obtained are valid for application with speed up to 1 m/s and a temperature of 20° C.

If smaller pulley diameters are needed, please contact Elatech's technical dept.

### Drive with reverse bending

ELATECH® polyurethane timing belts are suitable for drives with reverse bending. Tension should be adjusted, depending on backing hardness.

### Temperature range

The choice of the correct backing may allow the conveying of hot items. However, the toothed structure of the belt must not be exposed to temperatures over 80° C.

The minimum contact temperature should be -10° C for all backing materials, however, special material compounds may be available for lower temperatures. In such cases, please check with Elatech's technical department.

### Coefficient of friction

The values shown in the table refer to the approximate static coefficient of friction against steel.

In order to reduce the pulley's diameter, it is possible to splice the backing allowing a better flexibility. Pulley diameter, should never be smaller than the minimum diameter recommended for the standard belt.

Please ask ELATECH's technical dept. for further details on coefficient of friction with other materials.

### Colours

Standard colours shown in the table may change without notice. Special/personalized colours are available on request.

### Chemical resistance

The values given in the table for the resistance to oils and fat of each backing material are purely indicative and may vary depending on the concentration and the temperature of chemical agents. When in doubt, please check with Elatech's technical department.

### General remarks

ELATECH's wide range of different backings can be grouped into four main categories: cellular, PVC & PU, rubber, and special. Each different category provides special features and top quality performance and endurance making the various backings especially suitable for specific applications. These features include different degrees of hardness, cellular, fabric, felt or solid material compounds, different levels of grip, FDA-compliant materials, antistatic materials, different resistance to oils and fats, and different resistance to abrasion, tear and wear.

Such variety, combined with top quality mechanical and technical properties and state of the art manufacturing systems and techniques including the application of different flights and cleats, the combination of different backing materials, the slitting and grinding of the final product to match exact dimensions and shapes without any burrs or any other imperfections left on the surface, as well as water jet cutting for extremely precise perforations, make ELATECH's coated belts the best and the most reliable solution for specific applications in the most diversified fields of industry.

## Covering Materials

# FABRIC

### Polyamide fabric backings

The special polyamide fabric backings allow a reduction of the friction coefficient and when applied on teeth, decrease noise in high speed drives. They are very useful in applications with sliding surfaces or product accumulation.

**Polyamide fabrics with antistatic properties are available.**

<b>PAZ:</b>	Polyamide backing on tooth side. Reduces coefficient of friction and allows a smoother tooth engagement.
<b>PAR:</b>	Polyamide backing on back side. Reduces coefficient of friction.
<b>PAZ-PAR:</b>	Polyamide backing on both tooth and back side

### Coefficient of static friction

- Polyurethane on steel       $\mu = 0,7$
- Polyamide on steel         $\mu = 0,35$
  
- Polyurethane on aluminum    $\mu = 0,8$
- Polyamide on aluminum      $\mu = 0,45$

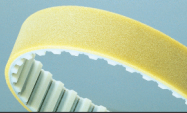



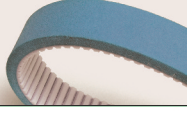
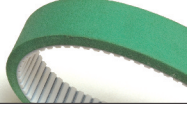
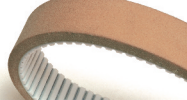
Elatech Code	Description		
TZ11	PAZ Standard		Nylon fabric on teeth
TZ21	PAR Standard		Nylon fabric on back
TZ15	PAZ Antistatic		Antistatic nylon fabric on teeth
TZ25	PAR Antistatic		Antistatic nylon fabric on back



## Covering Materials CELLULAR

Polyurethane / Rubber foam backings are easily compressible according to the cellular structure of the material. Due to this main characteristic, common applications are: labelling equipment, light and/or fragile materials conveying, glass and paper industry, vacuum conveyors.

**Pulley diameter: C<sub>D</sub> • Backing Thickness**

Elatech Code	Description		Material	Color	Hardness [°Sh A]	Standard thickness [mm]	Max contact temperature	Oil and fat resistance	Coefficient of static friction on steel	FDA food grade	Pulley multiplier C <sub>D</sub>
CFX	CELLOFLEX		Microcellular elastomeric polyurethane	brown / yellow	-	3 - 10	+80°C	medium	0,3	No	16
POR	POROL		cellular rubber	black	ca 15	3, 5, 8,10,15	+70°C	medium	0,8	No	6
PY50	PU YELLOW 50		polyurethane	yellow	50	2, 3, 4, 5 6 ,8,10	+70°C	high	0,8	No	20
PY70	PU YELLOW 70		polyurethane	yellow	70	2, 3, 4, 5, 6, 8,10	+80°C	high	0,75	No	25
SYL-B	SYLOMER BLU		Elastomeric PUR	blue	-	6, 12, 25	+70°C	medium	0,5	No	12
SYL-V	SYLOMER GREEN		Elastomeric PUR	green	-	6, 12, 25	+70°C	medium	0,5	No	14
SYL-M	SYLOMER BROWN		Elastomeric PUR	brown	-	6, 12, 25	+70°C	medium	0,5	No	15

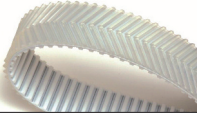

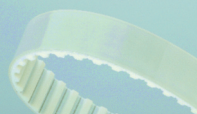
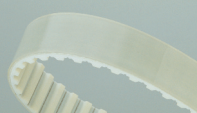

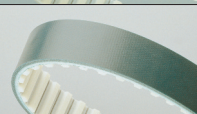

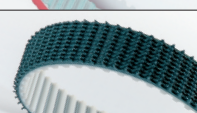
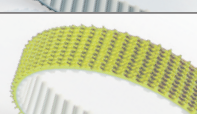
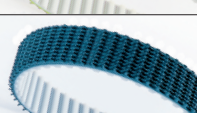
## Covering Materials

### PVC and PU

PVC has a high coefficient of friction and a good resistance to acids. Due to its versatility, it is used in many applications in the paper, glass, ceramic industry, labelling and packing equipment. FDA quality allows the application in food industry processes.

Among all synthetic materials and rubber compounds, polyurethane is the material which offers the best resistance to abrasion. Polyurethane films of different thickness and different shore hardness, applied on ELATECH® belts, are an ideal solution in many applications in the wood processing, ceramic and glass industry. On request it is possible to supply polyurethane backings FDA approved.

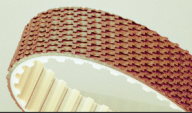

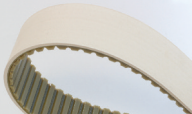



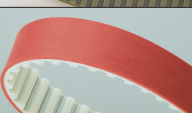



#### Pulley diameter: $C_D$ • Backing Thickness

Elatech Code	Description	Material	Color	Hardness [°Sh A]	Standard thickness [mm]	Max contact temperature	Oil and fat resistance	Coefficient of static friction on steel	FDA food grade	Pulley multiplier $C_D$
FBPU	FISHBONE PU 	PU	transparent	70 / 85	4	+70°C	medium	0,7	No	18
FBPVC	FISHBONE PVC 	PVC	white	65	4	+80°C	high	0,7	Yes	18
PUR70	PUR70 	PU	transparent	70	2 - 5	+70°C	high	0,7	No	25
PUR85	PUR85 	PU	transparent	85	2 - 5	+70°C	high	0,6	No	30
PVCW	PVC WHITE 	PVC	white	ca 60	2,3	+90°C	medium	1,0	Yes	35
PVCG	PVC GREEN 	PVC	green	ca 40	1	+90°C	high	0,9	No	40
SG50R	SUPERGRIP 50 R 	Thermoplastic compound	red	55	4,5 - 12	+80°C	medium	0,9	No	12
SG60	SUPERGRIP 60 GL 	PVC	green	60	4,5	+90°C	medium	0,9	No	12
SG70	SUPERGRIP 70 Y 	PU	yellow	70	4,5	+80°C	high	0,8	No	12
MG	MINIGRIP PVC 	PVC	green	ca 65	1,5	+100°C	medium	0,4	No	40

## Covering Materials RUBBER

Many different rubber backings in both synthetic and natural rubber are available. Due to rubber's high friction coefficient and high temperature resistance, ELATECH® polyurethane belt with rubber backing is used in many different conveying application: paper industry, ceramic industry, wood processing industry, glass industry, labelling and packaging machines.


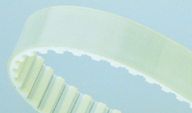
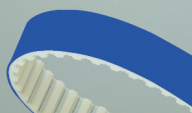






**Pulley diameter:  $C_D$  • Backing Thickness**

Elatech Code	Description	Material	Color	Hardness [°Sh A]	Standard thickness [mm]	Max contact temperature	Oil and fat resistance	Coefficient of static friction on steel	FDA food grade	Pulley multiplier $C_D$
SG50T	SUPERGRIP 50 RT 	natural rubber	red	40	4,5	+80°C	low	1,0	No	15
LTX	LINATEX 	natural rubber	red	ca 40	2,4 - 3,2 - 4,8 6,4 - 8,0 - 9,6	+70°C	low	1,1	No	15
LNP	LINAPLUS 	natural rubber	white	ca 40	2,4 - 3,2 - 4,8 6,4 - 8,0 - 9,6	+70°C	low	1,1	Yes	15
LTR	LINATRILE 	nitrile rubber	orange	ca 55	3 - 6	+110°C	medium	1,0	No	20
NBR	NITRILE 	nitrile rubber	black	65	-	+110°C	high	0,7	No	18
NBR-W	NITRILE 	nitrile rubber	white	65	-	+80°C	high	0,7	No	18
TNX	TENAX / ISOGUM 	rubber	red	40	2 - 15	+60°C	low	0,75	No	15
VTN	VITON 	FKM Fluoroelastomer	black	ca 75	2/4	+275°C	high	0,7	No	30
RP400	YELLOW RUBBER 	natural rubber	yellow	ca 35	3 - 4 - 5 - 6 - 8 10 - 12 - 15 20 - 25 - 30	+65°C	low	1,2	No	13
CRX	CORREX 	para rubber	brown	ca 40	6 - 10	+60°C	low	0,9	No	15

## Covering Materials SPECIAL

Special backings are available in quite a different range of materials to cover even the most demanding design requirements.

### Pulley diameter: $C_D$ • Backing Thickness

Elatech Code	Description	Material	Color	Hardness [°Sh A]	Standard thickness [mm]	Max contact temperature	Oil and fat resistance	Coefficient of static friction on steel	FDA food grade	Pulley multiplier $C_D$
APL	APL 	Thermoplastic compound	red-purple	55	3,5	+60°C	high	0,7	No	25
SLC	SILICONE 	Silicone rubber	transparent	30	3 - 10	+200°C	high	1,0	No	20
SLCF	SILICONE FDA 	Silicone rubber	blue	30	3 - 10	+220°C	high	1,1	Yes	20
TG50	TECNOGUM 50 	Thermoplastic rubber compound	red	ca 50	1 - 6	+80°C	high	0,7	No	20
TG70	TECNOGUM 70 	Thermoplastic rubber compound	red	ca 70	1 - 6	+80°C	high	0,6	No	25
CHRL	CHROME LEATHER 	Chrome leather	grey / blue	-	3	+80°C	high	0,8	No	30
TZ26	TZ PAR 	HDPE	green	-	0,3	+80°C	high	0,18	No	-
APLM	MULTIRIB 	Thermoplastic compound	red	60	3,5	+80°C	medium	-	No	-
APLM-T	MULTIRIB 	Thermoplastic compound	transparent	60	3,5	+80°C	medium	-	No	-