

ELATECH® Conveying Applications



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 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 case, 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 pulley diameter, it is possible to splice the backing allowing a better flexibility. Pulley diameter, should always be not 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 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 always double-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.





PAZ: Polyamide backing on tooth side.
Reduces coefficient of friction and allows a smoother tooth engagement.

PAR: Polyamide backing on back side.
Reduces coefficient of friction.

PAZ-PAR: Polyamide backing on both tooth and back side

Coefficient of friction

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

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.









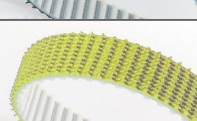
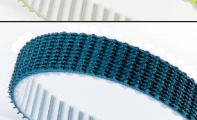
Pulley diameter: C_D • Backing Thickness

Elatech Code	Description		Material	Color	Hardness [°Sh A]	Standard thickness [mm]	Max contact temperature	Oil and fat resistance	coeff. of friction on steel	FDA food grade	Pulley multiplier C_D
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	1,0	No	6
PY50	PU YELLOW 50		polyurethane	yellow	50	2, 3, 4, 5 6,8,10	+70°C	high	0,4	No	20
PY70	PU YELLOW 70		polyurethane	yellow	70	2, 3, 4, 5 6, 8,10	+80°C	high	0,3	No	18
SYL-B	SYLOMER BLU		Elastomeric PUR	blu	-	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

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	coeff. of 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 BIANCO		PVC	white	ca 60	2,3	+90°C	medium	1,0	Yes	20
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	0,7	No	40

Covering Materials

RUBBER







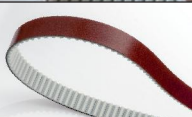
Many different rubber backings in both synthetic and natural rubber are available. Due to rubber high friction coefficient and high temperature resistance, ELATECH® polyurethane belt with rubber backing are used in many different conveying application: paper industry, ceramic industry, wood processing 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	coeff. of friction on steel	FDA food grade	Pulley multiplier C_D
SG50T	SUPERGRIP 50 RT		natural rubber	red	50	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
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
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	0,6	No	15

Special backings are available in quite a different range of materials to cover even the most special demanding design applications 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	coeff. of 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	blu	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	25
TG70	TECNOGUM 70		Thermoplastic rubber compound	red	ca 70	1 - 6	+80°C	high	0,6	No	30
CHRL	CHROME LEATHER		Chrome leather	grey / blue	-	3	+80°C	high	0,8	No	30
TZ26	TEFLON PAR		Teflon	red	-	0,3	+80°C	high	0,18	No	-