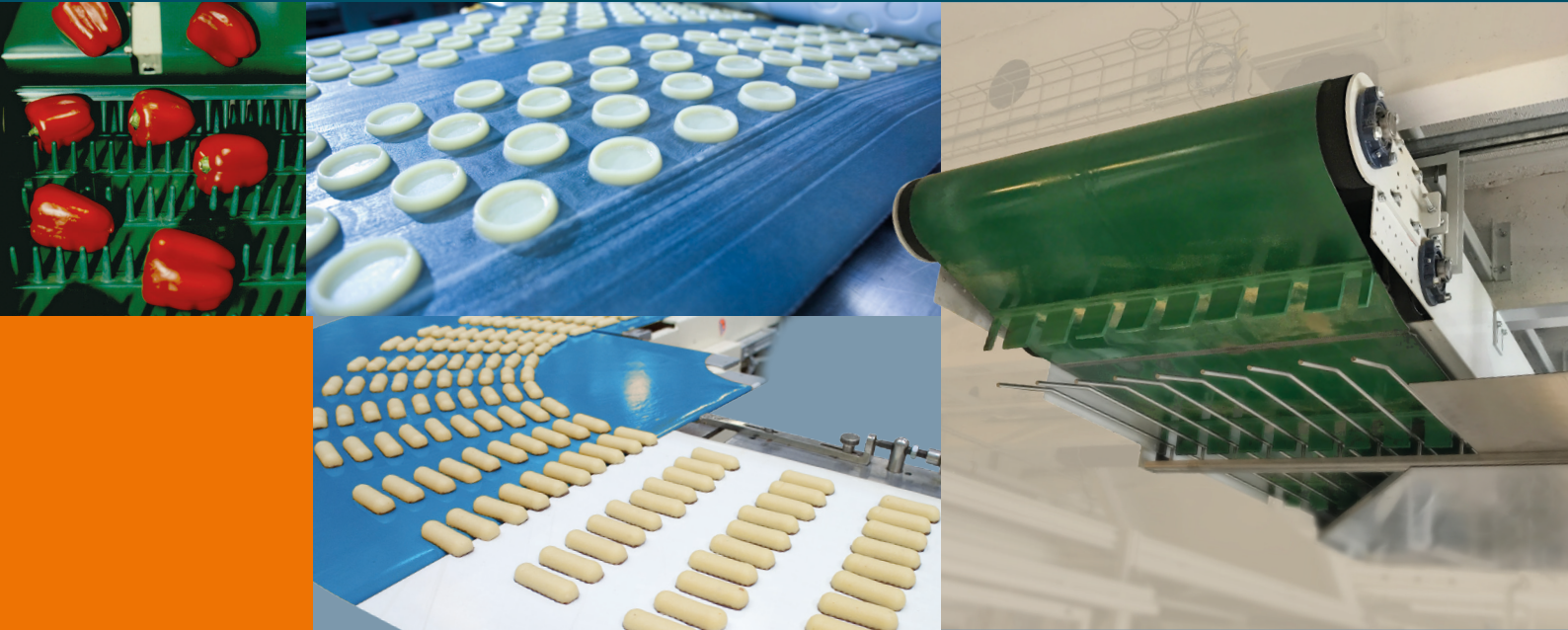


ELLEGAARD GROUP



POLYMAX
PVC/PU CONVEYOR BELTS

EXPERTS IN MATERIAL FLOW

PolyMax

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REGISTREREDE VAREMÆRKER

POLYMAX®
POLYFLEX®
POLYCLEAT®
POLYTRACK®

Due to ongoing product development, we reserve the right to make changes.

Ellegaard manufactures high-quality conveyor belts in PVC, PU and rubber, where PolyMax is our belt in PVC and PU. In addition to traditional conveyor belts, Ellegaard offers a wide range of special belts and profiles.

PolyMax conveyor belts are used today for most purposes within internal transport. Ellegaard has, among other things, great expertise within curved belts, belts for the entire food sector, belts for the sugar industry, the agricultural sector and the electronics industry. Our know-how, flexibility and level of quality today allow us to offer tailor-made solutions for most purposes.

PolyMax conveyor belts are supplied with either a PVC cover layer or the wear-resistant PU Polyurethane.

Depending on the characteristics of the objects being transported on the conveyorbelt, Ellegaard offers a wealth of solutions in terms of colors, hardness in PVC cover layers and profiles. PolyMax conveyor belts are produced with specially manufactured fabrics/inserts, all of which meet the specifications set according to the use of conveyor belts, e.g. tensile strength, flexibility, transverse stability, noise level, etc.

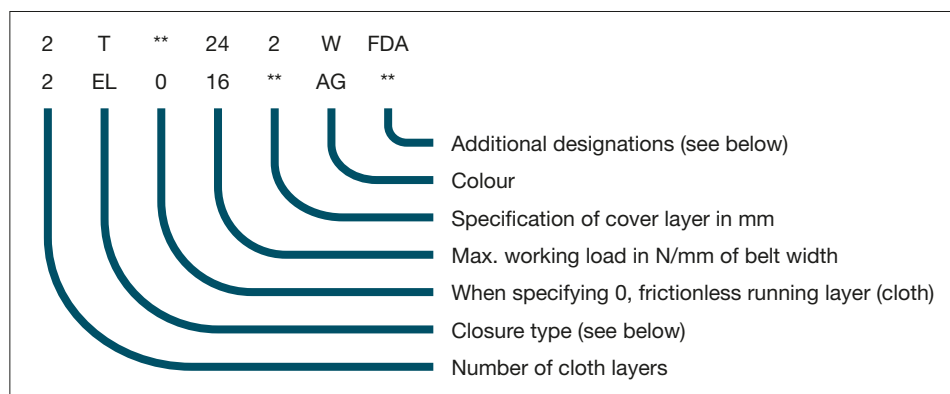
PolyMax white and blue types meet the requirements for the food industry, FDA/USDA and are grease and oil resistant, moisture-repellent, odorless and non-absorbent. This means that they are approved for direct contact with unpackaged food, such as meat, fish and poultry. Among our profile belts, we also offer white belts for ascending transports with optimal water drainage. PolyMax colored matte PVC conveyor belts can be offered in oil and grease resistant qualities.

PolyMax profile belts are specially designed for ascending/descending transports of goods/products with smooth surfaces, such as plastic boxes, cardboard boxes/cartons (e.g. wood industry) and electronic components.

Ellegaard offers a complete delivery program of PolyTrack guide and edge strips, PolyCleave carriers and PolyFlex corrugated edges.

Ellegaard carries out continuous product development to be at the forefront with tailor-made quality products that meet market demand.

Key for PolyMax conveyor belts



Farver

AG	Apple Green
B	Black
BL	Blue
G	Petroleum Green
GY	Grey
TAN	Brown
W	White

Type of fabric	Chain direction	Weft direction	Working load pr. fabric (N/mm)	Friction (steel acc. EN 1724)
E	Polyester	Polyester/Monofil	8	0,14
EB	Polyester	Cotton	9	0,18
F	Polyester	Polyester	5	0,13
K	Polyester/carbon	Polyester/Monofil	10	0,15
LN	Polyester/carbon	Polyester/Monofil	12	0,17
M	Polyester	Polyester/Monofil	12	0,15
N	Polyester/carbon	Polyester/Monofil	12	0,16
R	Polyester/carbon	Polyester/Monofil	24	0,21
S	Polyester	Polyester (solid woven)	26	1,00
T	Polyester	Polyester	12	0,15

Profilbånd

SG-P1	Low Supergrip
P6	Serrated
P7	Grid Structure
SG-P8	High Supergrip
P9	Knurled along
NP	Negative Pyramid
MX	MX Grip

Belt support	Fabric/belt type	Further information
Rollers / trough	EB, F, S, T	For curved belts (-S)
Plate	E, K, LN, M, N, R	Laterally stable construction

Tillægsbetegnelser

AS	Antistatic
BI	Black antistatic interlayer
BLI	Blue antistatic interlayer
CT	Antistatic cloth
EA	Extra durable PVC
FDA	Food approved (FDA/USDA)
FL	Flame resistant PVC (ISO R340)
FO	Oil and grease resistant PVC
H	Hard PVC, shore 90 A
MAT	Matt PVC/PU
PU	Polyurethane
TRI	Transparent antistatic interlayer
WI	White interlayer

Friction of PVC running layer on steel

Smooth	Shore 75 A	1,00
NP profil	Shore 75 A	0,58
NP profil	Shore 80 A	0,46
NP profil	Shore 90 A	0,28





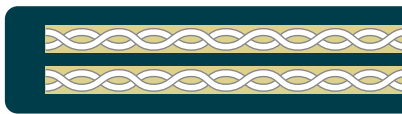
PolyDek Sealed edges

Ellegaard OFFERS PVC AND PU CONVEYOR BELT WITH 100% SEALED EDGES

Conveyor belts tend to have delaminated edges when, for example, the belt is not optimally tracked and therefore migrates into the side of the conveyor. Frayed edges mean that foreign objects and microorganisms can get stuck in the loose threads, which can pose a health risk.

PolyDek edge sealing prevents the penetration of microorganisms into the conveyor belt and the easy-to-clean edge sealing optimizes hygiene conditions on the food industry's production lines.

PolyDek is not an edge protection but an edge closure that seals the edges and thus prevents, among other things, the penetration of bacteria.



Cross-section of a PolyDek belt with a running layer, where the textile fabric is encapsulated 100% in PVC.



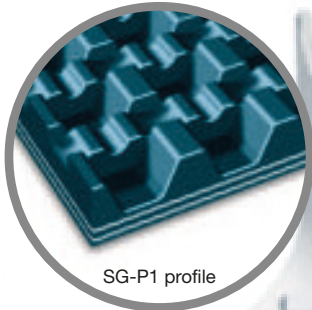
Cross section of PolyDek belt with frictionless running layer (fabric).

BENEFITS OF POLYDEK EDGE CLOSING

- PolyDek minimizes the risk of delaminations caused by stresses or aggressive chemicals from e.g. cleaning agents.
- PolyDek conveyor belts are cut to desired widths and then applied with an FDA/USDA approved PVC or PU closure on specially developed machines.
- PolyDek edge sealing is offered on almost all 2 and 3 layer PVC and PU conveyor belts.



PolyMax profile belts



SG-P1 profile



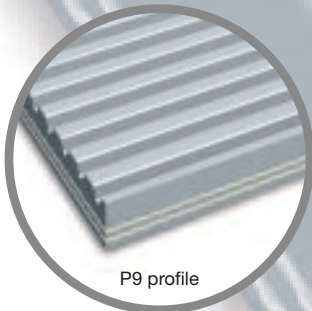
P6 profile



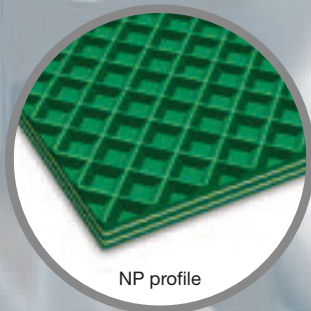
P7 profile



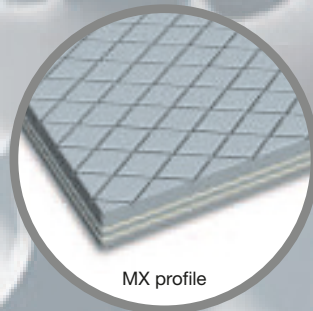
SG-P8 profile



P9 profile



NP profile



MX profile

TOLERANCES FOR COMPLETE ROLLS

Width	2000 mm	± 1,0 %
	100 m	± 0,7 %
	100 - 400 m	± 0,5 %
	400 - 600 m	± 0,4 %
	> 600 m	± 0,3 %

TOLERANCES FOR PRE-MADE RIBBONS

Width	50 - 200 mm	± 2 mm	Length	900 - 1200 mm	± 1,0 %
	200 - 600 mm	± 4 mm		1500 - 2500 mm	± 0,7 %
	600 - 1400 mm	± 6 mm		2500 - 5000 mm	± 0,5 %
	1400 - 2000 mm	± 8 mm		5000 - 10.000 mm	± 0,4 %
	> 2000 mm	± 10 mm		over 10.000 mm	± 0,3 %

Standard widths for PolyMax pre-made belts: 200, 300, 400, 500, 600, 650, 700, 800, 1000, 1200, 1300, 1400, 1500, 1600, 1700, 1800 og 2000 mm.



Assembly methods

Hot jointing of conveyor belts is always preferable, as this provides the absolute strongest solution. Cold joints can only be performed when the belt is exposed to normal working temperatures and normal humidity conditions.

Ellegaard offers ready-made belts with the following jointing methods, based on the individual situation.

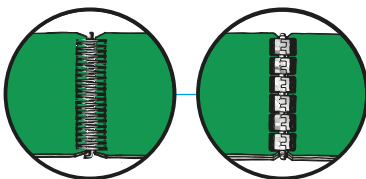
Single finger jointing is used on 1-layer belts and special constructions and ensures maximum flexibility without thickness differences in the joint area. The joint is performed at a 90° angle (60° is possible) and 80/20 finger lengths are used, with the option of 80/15.



Double finger jointing is used on 2 and 3-layer belts and is the strongest and most flexible joint. The joint is performed at a 90° angle (60° is possible) and 50/20 finger lengths are used.



Overlap jointing is mainly used for articulated conveyors, special 2 and 3-layer belt types and for cold jointing. The belt is mounted so that the joint is in line with scrapers and the like. The joint is made at a 70° angle (90° is possible).



Mechanical joint. The simplest endless joint of conveyor belts. Mechanical belt joints can be supplied in a stainless, antimagnetic design. Mechanical belt joints mean a necessary increase in the drum diameters of approx. 50% compared to the values stated in our table. As a supplement, Ellegaard can also offer hidden, mechanical belt collectors.

P = weight total	(kg)
F = actual load/weight	(N)
μ = coefficient of friction	
p = work load	(N/mm)
B = width of belt	(mm)

Plate support for the slide plate

$F = P \times \mu$ (N) $p = \frac{F}{B}$ (N/mm)

Roller support

$F = P \times \mu$ (N) $p = \frac{F}{B}$ (N/mm)

Breaking strength = 10 x p (N/mm)

General guide for calculating conveyor belt breaking strength.

HOW TO CALCULATE THE REQUIRED STRENGTH OF A CONVEYOR BELT

When finding the right band, you should consider the following factors:

- Center distance
- Sscending / descending transport
- Material type and density
- Capacity
- Temperature

The table below indicates the strength of 1 sheet. It must therefore be taken into account that the majority of straps used consist of two sheets, which doubles the strap strength.

Many calculations will show that a 1-layer strap is sufficient, but to have the right stability during transport, it is often necessary to choose a 2-layer strap.

Type of Fabric	E	EB	F	K	LN	M	L	R	S	T
Strength N/mm	8	9	5	10	12	12	12	24	26	12



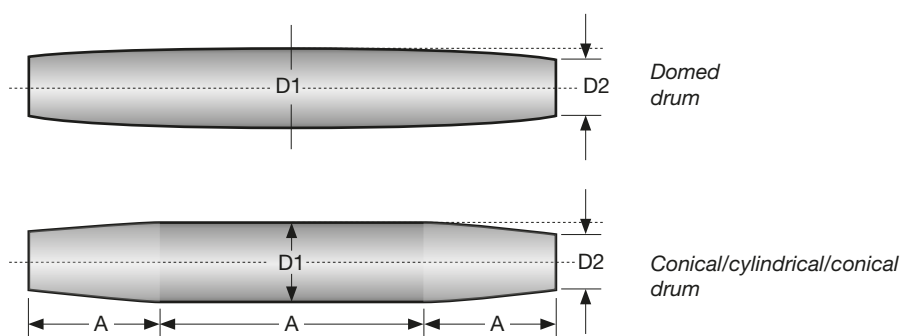
Crowning of drums

The most commonly used drum is the conical/cylindrical/conical due to easy manufacturing methods.

The steering effect is not as optimal as for domed drums and it is extremely important that the ratios between the conical and cylindrical parts are accurate.

Last but not least, it is of great importance for the life of the belt whether there is a good rounding between the conical and cylindrical part

RECOMMENDED RATIO BETWEEN CONICAL AND CYLINDRICAL PARTS	
Length of drum mm	Aspect ration A-B-A
< 500 mm	1/3 - 1/3 - 1/3
500 mm - 1000 mm	1/4 - 2/4 - 1/4
1000 mm - 1200 mm	1/5 - 3/5 - 1/5
> 1200 mm	1/7 - 5/7 - 1/7
Cylindrical drums are only recommended for short and wide belts with low elasticity. In addition, at least one guide roller is required and additional guide units are recommended.	



VEJLEDENDE BOMBERINGSHØJDER

Center distance	< 1500 mm				1500 - 3000 mm				> 3000 mm			
Band thickness	< 1,5	1,5-3,0	3,0-5,0	> 5,0	< 1,5	1,5-3,0	3,0-5,0	> 5,0	< 1,5	1,5-3,0	3,0-5,0	> 5,0
Band width					Diameter difference in mm							
125 mm	0,5	0,5	0,5	0,5	1	1	1	1	1	1	1	1
250 mm	0,5	1	1	1	1	1	1,5	2	1	1,5	2	2
400 mm	1	1	2	2	1,5	1,5	2	2	1,5	2	3	3
600 mm	1	1	2	2	1,5	2	3	3	1,5	2,5	3	4
900 mm	1,5	1,5	2	2	1,5	2	3	3	2	3	4	5
1200 mm	1,5	1,5	2,5	2,5	2	2,5	3,5	4	2	3	5	6
1500 mm	1,5	2	3	3	2	3	4	5	2	3,5	5	7
2000 mm	1,5	2	3	3	2	3	4,5	5	2,5	4	6	8

The table gives maximum values for both domed and conical/cylindrical/conical drums. The values, which indicate the diameter difference between D1 and D2, are based on drum diameters from 40 times the belt thickness upwards.

At half the drum diameter, the values in the table are also halved.

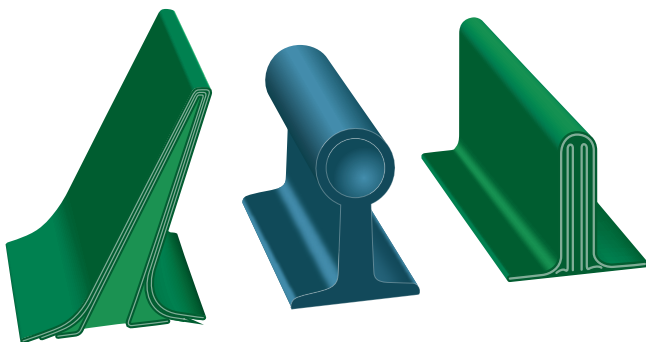
It is advisable that the crowning does not exceed the values in the table, as otherwise a fold may occur on the belt at the highest point of the crowning, which is most pronounced with thin belts. It is also important that all rollers are in line and parallel to each other.



Ellegaard offers PVC and PU carriers in a 90° profile angle (T) and PVC carriers with a 60° bend in the middle of the blade (TC).

Type	B	H	Vægt	Tromlediametre		
	Bredde	Højde		mm		
	mm	mm	g/m	T	TW	TT
T medbringere i PVC						
T20	20	20	220	100	-	-
T30	24	30	380	100	100	-
T40	24	40	460	100	100	80
T50	26	50	620	100	100	80
T60	28	60	830	125	-	80
T80	44	80	1500	125	125	-
T100	44	100	1800	125	125	-
TC medbringere i PVC						
TC30	23	30	325	100	100	-
TC40	23	40	490	100	100	-
TC50	24	50	850	100	100	-
TC60	24	60	940	125	-	-
TC80	44	80	1600	125	125	-
TC100	44	100	1900	125	125	-
T medbringere i hvid PU						
T20	24	20	225	40	-	-
T40	27	40	340	50	-	-
T50	28	50	500	70	-	-

Specified dimensions may vary $\pm 10\%$.
The drum diameters listed are recommended for normal working conditions (20°C). Lower temperatures require larger drum diameters.



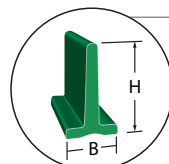
Attachment can only be accomplished through the use of high frequency welding.

PolyCleat Cleats

When transporting powdery or non-sticky products, it is necessary to attach carriers or profiles to the surface. These carriers prevent the natural fall-back of the transported material and thus ensure that the required capacity is maintained according to the belt width and speed.

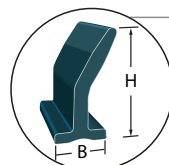
PolyMax carriers are supplied as standard in oil and grease resistant qualities in the colours white (W), apple green (AG) and petrol green (G). Special versions and alternative colours can be offered on request.

T = massive TW = re-inforced fabric TT = hole top



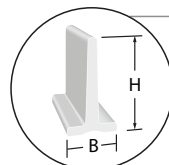
T cleats in PVC

90° profile attached across the belt for ascending transport up to 35-40° incline.



TC cleats in PVC

90° profile with a 60° angle in the middle of the body for maximum capacity. Can in some cases be used up to 90° PolyFlex transporters.



T cleats in white PU

Profile at 90° angle with high rigidity.

CUSTOM CLEATS

We also offer fabric reinforced PVC carriers in the same heights as normal PolyCleat carriers.

PolyCleat TW and CW carriers are available with both smooth surface, NP surface and with fabric surface in the same colors as PolyMax conveyor belts.

PolyCleat fabric reinforced carriers are supplied for special purposes where traditional, extruded carriers cannot meet the required stiffness.

A prerequisite for attaching TW and CW carriers is that the base belt must have a minimum 0.7 mm cover layer. Attachment can only be carried out using high frequency welding.

Polytrak guide- og edge profiles

FLEX EDGES

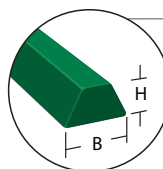
PolyMax profiles are manufactured from flexible and durable quality materials that are grease and oil resistant. Profiles can be added to both the carrier and running side of conveyor belts for belt guidance and alternatively as carriers and edge strips.

All profiles are supplied as standard in white, apple green and petroleum green. Special profiles, such as PU guide strips and alternative colours can be offered on request.



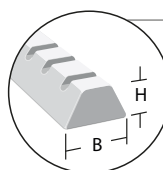
As an example, we offer our M profiles attached as chevron carriers.

Type	B	H	Vægt	Drum diameter			
	Width	Height		Running side	Top layer	Top layer	Top layer
	mm	mm	g/m	guide strip	cleat	edge list	chevron
				mm	mm	mm	mm
Type M							
M6	6	4	22	40	30	30	30
M8	8	5	42	60	50	50	50
M10	10	6	61	80	70	70	70
M13	13	8	98	100	90	90	90
M17	17	11	170	120	100	100	100
Type K							
K8	8	5	35	50	50	50	50
K10	10	6	51	60	60	60	60
K13	13	8	86	70	70	70	70
K17	17	11	150	90	90	90	90
Type R							
R8	8	8	77	110	60	135	200
R12	12	12	120	120	60	180	320
R15	20	15	300	130	135	320	400



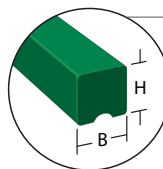
Type M

Wedge-shaped profiles welded onto the carrier side of the conveyor belt as an edge strip or carrier for ascending transport. Welded onto the running side as a guide strip to ensure the belt runs straight in the event of any side impacts.



Type K

Wedge-shaped profiles with punched grooves are mainly used as guide profiles.



Type R

Rectangular profiles are used as carriers for ascending transports or alternatively as edge strips.

Specified dimensions may vary $\pm 10\%$.

The indicated drum diameters are recommended for normal working conditions (20 °C). For every 10 °C drop, the drum diameter must be increased by 35%.

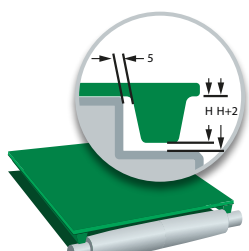
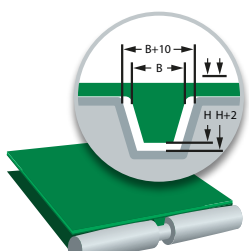
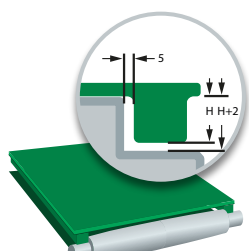
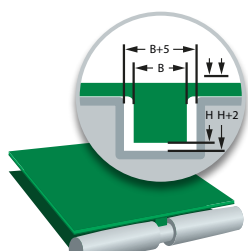
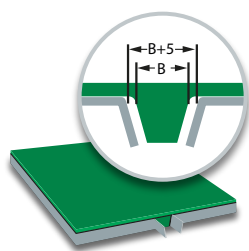
DESIGN CRITERIA FOR LONGITUDINAL PROFILES

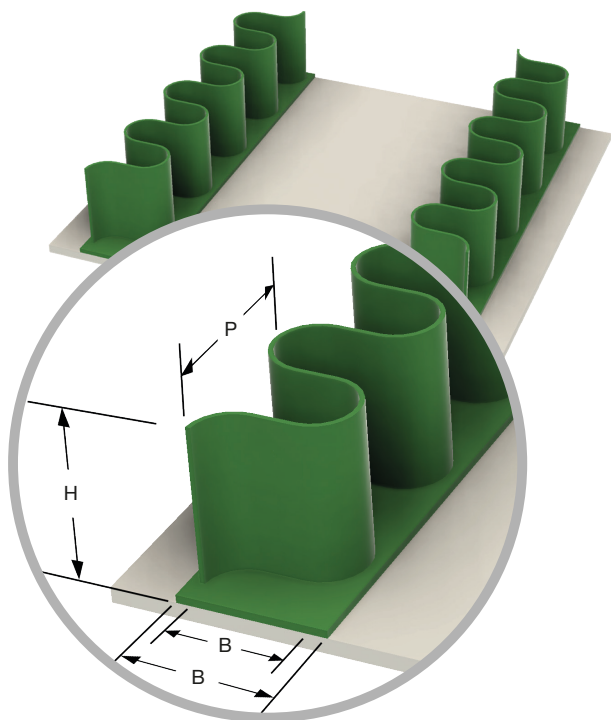
Longitudinal profiles can only withstand large lateral forces for limited periods. The basic tracking of the belt is influenced by the wedge-shaped construction of the end roller.

Longitudinal profiles are used in rectangular (R-profile) and wedge-shaped (M + K profile) versions. To avoid

contact between the profile and the drive or end roller, the milling should be carried out approximately 10 mm wider than the profile.

For rollers with crowning, where the guide strip is located at the edge, it is advisable to have a 5 mm clearance zone between the profile and the end of the roller.





PolyFlex flex edges

PolyFlex corrugated edges are the result of several years of development work to create the optimal and most flexible solution for ascending transport of bulk products in both small and large grain sizes.

The capacities of a PolyFlex belt make feeder systems, cup belts and similar lifting devices redundant. The combination of corrugated edges and carriers ensures optimal transport solutions for most products, which means minimal damage or waste of the transported material.

Corrugated edge strips are also an alternative to trough belts. In general, capacity is increased by 50 - 80%, while having the option of both horizontal and ascending transport on the same conveyor.

Type	H	B	B*	P	Weight g/m	Tromlediamtre (mm)	
	Height mm	Wave width mm	Width at base mm	Wave section mm		with wave edges	med wave edges and cleats
U20	20	23	33	25,4	200	80	100
U30	30	23	33	25,4	260	80	100
U40	40	23	33	24,4	330	100	100
U60	60	45	55	50,8	510	100	125
U80	80	45	55	50,8	590	130	130
U100	100	45	55	50,8	700	160	160
U120	120	45	55	50,8	850	185	185
U140	140	45	55	50,8	1020	210	210

The drum diameters given are values at 20° C. Lower temperatures mean larger drum diameters.

PolyFlex is available in white, apple green and black as standard. Alternative colours and sizes are available upon request.

ADVANTAGES WITH POLYFLEX CORRUGATED EDGES

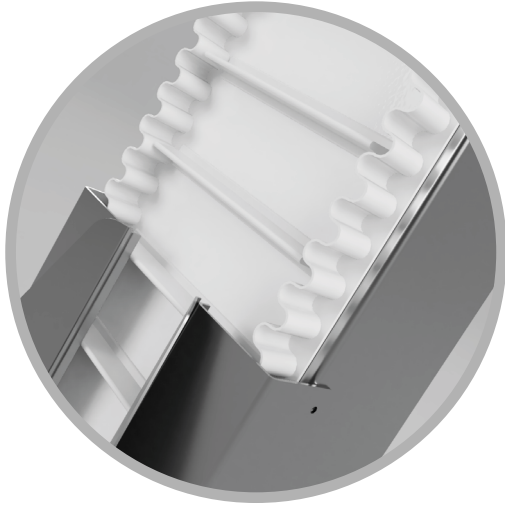
- ✓ Suitable for small drum diameters
- ✓ Can be attached to both PVC and PU conveyor belts
- ✓ Can be repaired at any time
- ✓ Partially self-cleaning
- ✓ Extremely chemical resistant
- ✓ Can run directly on return rollers
- ✓ Allows working temperatures from -20° to +110° C.

PolyFlex corrugated edges are supplied in durable polyurethane quality, which allows for extremely flexible solutions.

Many customers also use the addition of more than two corrugated edges, which allows for example the dosing of two, three or four very different products via the same belt.

Due to the conditions of transporting under both extremely low and high temperature conditions as well as the good resistance to chemicals, most industries, such as candy/chocolate manufacturers or recycling companies, prefer the advantages of the PolyFlex belts.





Polyurethane is easy to clean and maintain. It is especially the smooth surface with perfect slip properties that attracts food manufacturers.

PolyFlex corrugated edges can be easily welded onto all PolyMax conveyor belts with PVC and PU cover layers. The wide base means optimal adhesion between the corrugated edge and the belt when using a heat gun or glue.

When fitted with PolyCleat TC carriers, PolyFlex belts can be used on approximately 90 degree inclines and 'Z' conveyors.

The table below gives indicative, theoretical capacities in m³ per 100 mm effective width:

THEORETICAL CAPACITIES

Cleat type	Angle of incline	Cleat section	Cleat height (mm)						
			20	30	40	50	60	80	100
T	30°	200	1,33	3,02	5,36	8,38	11,91	19,08	26,38
		250	1,06	2,42	4,29	6,71	9,53	15,26	21,11
		300	0,88	2,01	3,57	5,59	7,94	12,71	17,57
TC	30°	200		3,31	5,81	9,09	12,88	21,18	30,34
		250		2,65	4,65	7,27	10,31	16,94	24,27
		300		2,20	3,87	6,05	8,59	14,12	20,22
T	40°	200		1,72	3,28	4,80	6,94	12,24	18,90
		250		1,38	2,62	3,84	5,55	9,79	15,12
		300		1,15	2,19	3,20	4,63	8,15	12,59
TC	40°	200		2,02	3,73	5,50	7,92	14,34	22,86
		250		1,61	2,98	4,40	6,33	11,47	18,28
		300		1,34	2,49	3,67	5,27	9,56	15,23
TC	50°	200		1,43	2,50	3,90	5,58	10,29	16,77
		250		1,14	2,00	3,12	4,46	8,23	13,42
		300		0,95	1,66	2,60	3,71	6,86	11,18
TC	90°	200		0,75	1,27	1,99	2,84	5,43	9,15
		250		0,60	1,02	1,59	2,27	4,34	7,32
		300		0,50	0,85	1,33	1,89	3,62	6,10

Calculation basis:

Speed: 1 m/sec Density of material: 1 t/m³ Grain size: 1 mm Filling degree: 100% Slip angle of material: $\beta = 15^\circ$

The table above lists the most commonly used factors. For conversion to other widths, the following formula is used:

$$Q_v = \text{table value} \times \frac{B_n}{100} \times v$$

where

B_n = effective width in mm

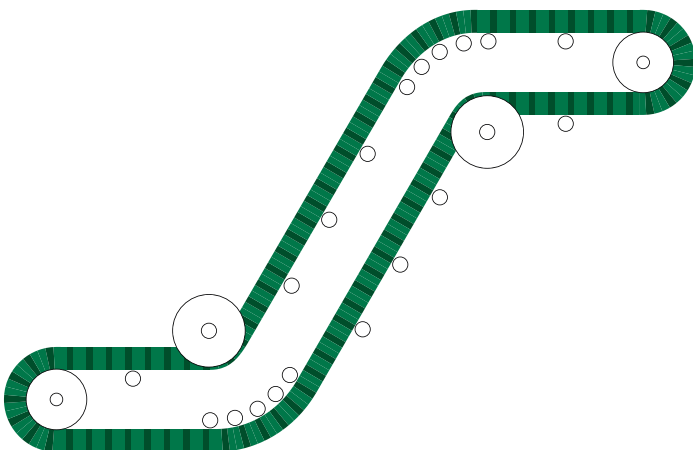
Q_v = achievable capacity in m³/h

v = belt speed in m/sec

Conversion to weight capacity:

$$Q_m = Q_v \text{ (m}^3\text{/h)} \times d \text{ (t/m}^3\text{)}$$

Please note that calculated values are reduced by 20 - 30% in practice.



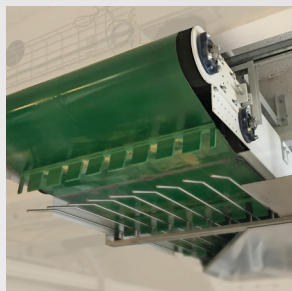
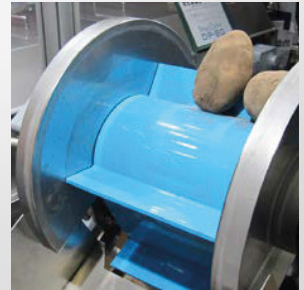
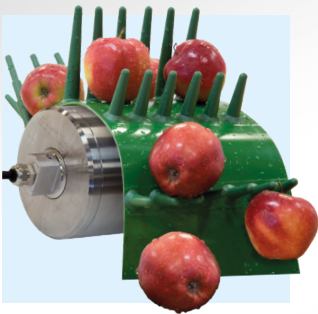
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