

## CONTACT INFORMATION

Ellegaard wants to provide the highest possible service and for that reason we have set up a service call center on +45 8020 8020. Our service staff has extensive knowledge of our product lines and you can use the phone number for all kinds of applications: information, purchase, service etc.

At [www.ellegaard.com](http://www.ellegaard.com) you will find more information about our products and services.



**+45 8020 8020**

## POLYMAX PVC/PU CONVEYOR AND PROCESSING BELTS



**+45 8020 8020**

ELLEGAARD makes PVC and PU belts of the high rated Polymax® quality

# POLYMAX®

P. ELLEGAARD A/S makes high quality synthetic PVC and PU conveyor belts.

Polymax® conveyor belts are today used in most conveying applications and Polymax Roulunds is well experienced within applications for electronic industry, transportation, agricultural industry, curve belts and the food sector.

Polymax® standard program consists of our stock items, which ensures fast delivery.

Beside the Polymax® standard program we offer speciality products and custom made products.

Polymax® conveyor belts are today supplied with either PVC coating in various designs or the strong PU coating.

P. ELLEGAARD A/S offer a wide range of products in various colours, shore A PVC coatings and profile belts.

Polymax® fabric constructions are comprised of low friction, low noise, and flexible polyester and cotton qualities.

Polymax® white FDA/USDA food approved conveyor belts are fat and oil resistant, resistant to moisture, and non-absorbent. This enables direct contact with unwrapped food-stuffs such as meat, poultry and fish. Among our range of profile belts we also offer white FDA/USDA belts with perfect designs for working with inclined transports in wet conditions.

Polymax® coloured, mat conveyor belts can also be offered in constant fat and oil resistant qualities. For further information please see our chemical catalogue.

Polymax® profile belts are specially designed for in-/declined transporting of products with smooth surfaces, such as plastic or carton boxes (eg. wood industry) and electronic components.

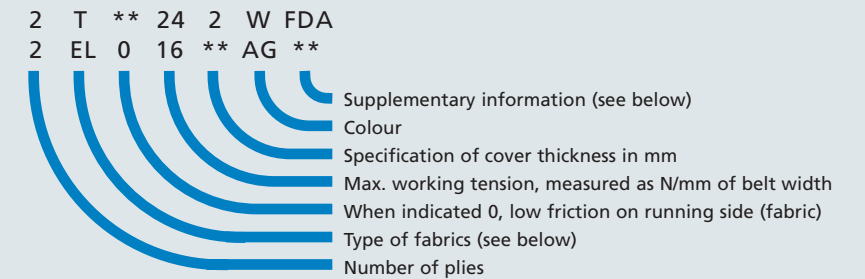
P. ELLEGAARD A/S offer a complete range of POLYTRACK guide- and edgelists, POLYCLEAT cleats, and POLYFLEX® sidewalls.

P. ELLEGAARD A/S has continuous R&D to maintain custom high quality products and to respond to the changing demands of the market place.



2T024W-FDA / M13W

## HOW TO DECODE A POLYMAX® CONVEYOR BELT



Fabric	Warp	Weft	Working tension each ply (N/mm)	Friction (steel, according to EN 1724)
E	Polyester	Polyester/Monofilament	8	0,14
EB	Polyester	Cotton	9	0,18
F	Polyester	Polyester	5	0,13
K	Polyester/carbon	Polyester/Monofilament	10	0,15
LN	Polyester/carbon	Polyester/Monofilament	12	0,17
M	Polyester	Polyester/Monofilament	12	0,15
N	Polyester/carbon	Polyester/Monofilament	12	0,16
R	Polyester/carbon	Polyester/Monofilament	24	0,21
S	Polyester	Polyester (solid woven)	26	1,00
T	Polyester	Polyester	12	0,15

Support type	Fabric/belt type	Specific information
Rollers/throughed	EB, F, S, T	For curvebelts (-S)
Plate	E, K, LN, M, N, R	Crossrigid construction

Supplementary information	
AS	Antistatic
BI	Black intermediate layer (AS)
BLI	Blue intermediate layer (AS)
CT	Antistatic fabric
EA	Extra abrasive resistant
FDA	Food approved (FDA/USDA)
FL	Flame resistant (ISO R340)
FO	Fat and oil resistant quality
H	Hard PVC, shore 90 A
MAT	Mat PVC
PU	Polyurethane
TRI	Transparent intermediate layer (AS)
WI	White intermediate layer
All coloured belts are antistatic and moderate FO as standard. All white belts and white intermediate layers are FDA-approved and FO as standard.	

Colours	
AG	Apple green
B	Black
BL	Blue
G	Petrol green
GY	Grey
TAN	Brown
W	White

Profile belts	
SG-P1	Low supergrip
P6	Saw tooth
P7	Lattice
SG-P8	High supergrip
P9	Ribbed longitud.
NP	Negativ Pyramid
MX	MX Grip

Friction of PVC bottom cover on steel		
Smooth	Shore 75 A	1,00
NP profile	Shore 75 A	0,58
NP profile	Shore 80 A	0,46
NP profile	Shore 90 A	0,28

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### REGISTERED TRADEMARKS

- POLYMAX®
  - POLYFLEX®
  - POLYCLEAT®
  - POLYTRACK®
- are registered trademarks of P. ELLEGAARD A/S

*Due to the ongoing development of our products, we reserve the right for changes.*

*Polymax Roulunds A/S have a quality assurance system securing our customer delivery of correct and approved quality products on time - every time.*



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P: ELLEGAARD AIS has a broad selection of food-grade belting.



Cross section of POLYDEK® conveyor belt with top and bottom cover where the fabric is 100% surrounded by PVC.



Cross section of a POLYDEK® conveyor belt with frictionless bottom side (fabric).

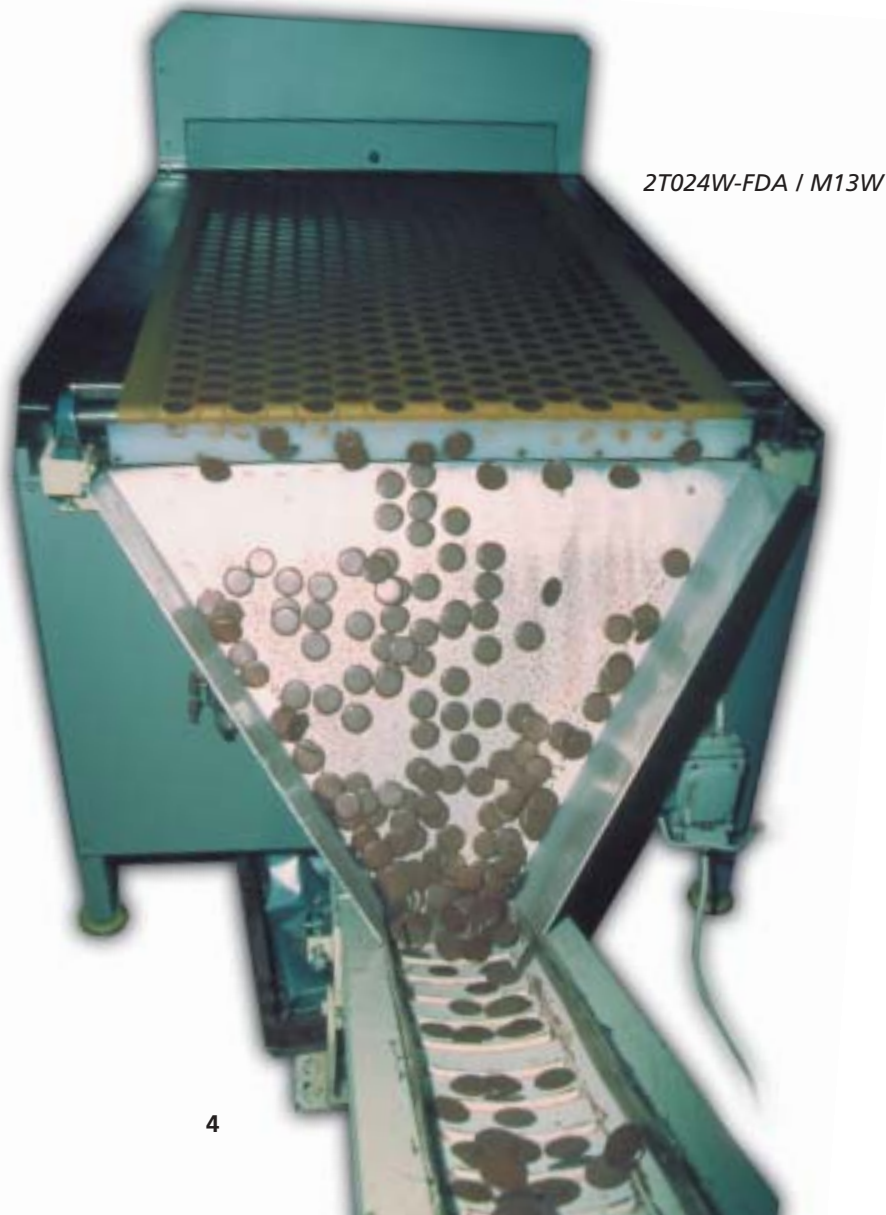
## POLYDEK® Sealed Edges

P. ELLEGAARD A/S OFFER PVC AND PU CONVEYOR BELTS WITH 100% SEALED EDGES.

At a certain time in the life of a conveyor belt, the edges tend to delaminate. One reason for this, could be poor tracking which will cause the belt to run into the sides of the conveyor. Frayed edges opens the possibility for having bacteria accumulating in the loose threads from the fabric. This is subject to health risks especially within the food sector.

POLYDEK® edge sealing eliminates pepration of bacteria into the belt, which increases the hygiene and environmental safety on production lines in the food sector.

POLYDEK® is designed to aid cleaning of the belt edges and to restrict bacterial contamination of the fabric. POLYDEK should not be seen as an added protection against physical strain on belt edges, e.g. from incorrect tracking.

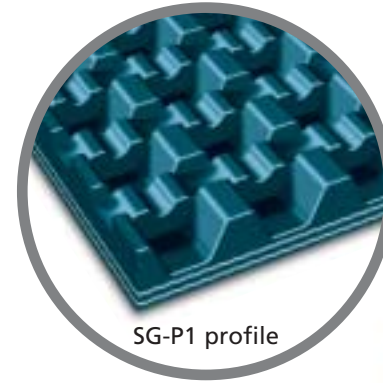


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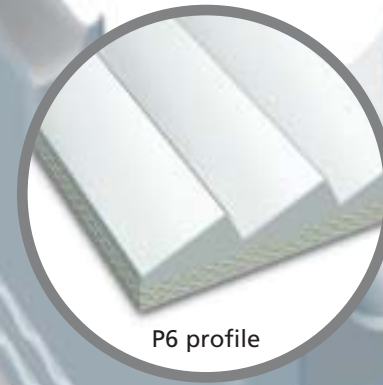
### POLYDEK® SEALED EDGES

- POLYDEK minimizes the risk for delamination caused by stress of the belt or from aggressive chemicals, especially cleasing agents, and ensures longer belt life.
- POLYDEK conveyor belts are cut in the desired width and a FDA/USDA approved PVC or PU sealing is performed using specially designed machinery.
- POLYDEK sealed edges are available on most types of 2- and 3-ply PVC belting.

## POLYMAX® Profile Belts



SG-P1 profile



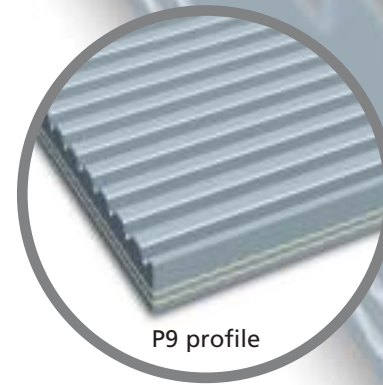
P6 profile



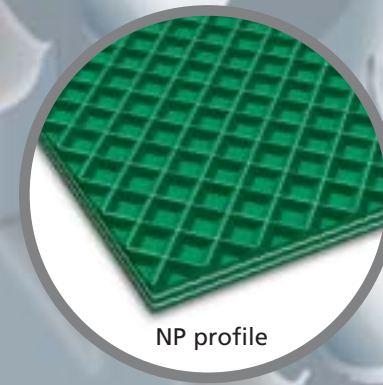
P7 profile



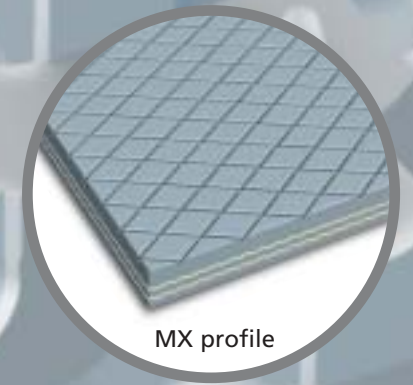
SG-P8 profile



P9 profile



NP profile



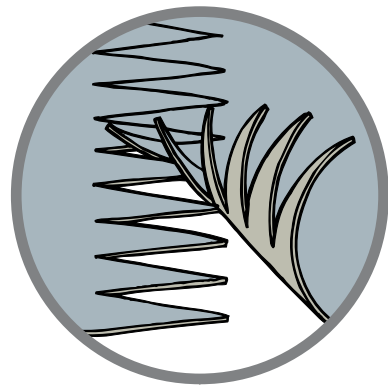
MX profile

TOLERANCES FOR FULL ROLLS		
Width	2000 mm	± 0,2 %
Length	100 m	± 10 %
	100 - 400 m	± 5 %
	400 - 600 m	± 3 %

TOLERANCES FOR TAILOR-MADE BELTS					
Width	50 - 200 mm	± 2 mm	Length	900 - 1500 mm	± 1,0 %
	200 - 600 mm	± 4 mm		1500 - 2500 mm	± 0,7 %
Width	600 - 1400 mm	± 6 mm	Length	2500 - 5000 mm	± 0,5 %
	1400 - 2000 mm	± 10 mm		5000 - 10.000 mm	± 0,4 %
				more than 10.000 mm	± 0,3 %

Standard widths for Polymax® tailor-made belts are: 200, 300, 400, 500, 600, 650, 700, 800, 1000, 1200, 1300, 1400, 1500, 1600, 1700, 1800 and 2000 mm.

# Joining Methods



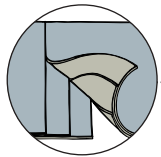
When making a conveyor belt endless, the best solution is by hot vulcanizing as this creates a strong and durable splice. Cold gluing is only recommended when the belt is exposed to ambient temperatures and moisture conditions.

P. ELLEGAARD A/S offer tailor-made belts with the following hot press joinings:

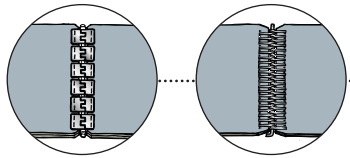
**Single finger joining** is used on 1 ply belts and special constructions, ensuring maximum flexibility without thickness variations in the joining area. Joining angle is 90° (60° is possible) with 80/20 finger length, with the possibility for 80/15 lengths.



**Double finger joining** is used on 2 and 3 ply belts and is the strongest and most durable joining. Joining angle is 90° (60° is possible) with stepped 50/20 finger lengths.



**Overlap joining** is used at bend conveyors, special 2 or 3 ply belt types and when performing cold gluing. The endless belt is installed making sure that the lap will run with the scrapers - and not against. Joining angle is 70° (90° is possible).



**Mechanical joining** is the most simple joining of a conveyor belt. Mechanical hook and clamp fasteners are mainly supplied in stainless and anti magnetic qualities. Using mechanical fastener means necessary increase in pulley diameters of approx. 50% from our recommended values. P. ELLEGAARD A/S can also offer hidden mechanical fasteners.

P = total load (between centres) (kg)  
 F = actual load on belt (N)  
 $\mu$  = coefficient of friction  
 p = working load (N/mm)  
 B = belt width (mm)

**Slider bed support**

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

**Roller support**

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

**Tensile strength = 10 x p (N/mm)**

## HOW TO CALCULATE THE NECESSARY STRENGTH OF A CONVEYOR BELT

When choosing the right conveyor belt for a specific transport, certain factors must be observed, such as

- centre distance
- incline/decline
- material type and density
- capacity
- temperature

◀ *General guideline for calculating tensile strength of a conveyor belt.*

The formula below can be used as guide line when choosing the right belt with suitable strength for carrying out the transportation.

Some calculations will show that using a one ply belt would be sufficient, but in order to maintain proper stability in the transport it can be necessary to choose a two ply belt.

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

# Crowning of Pulleys



2M024W-FDA / TC40W

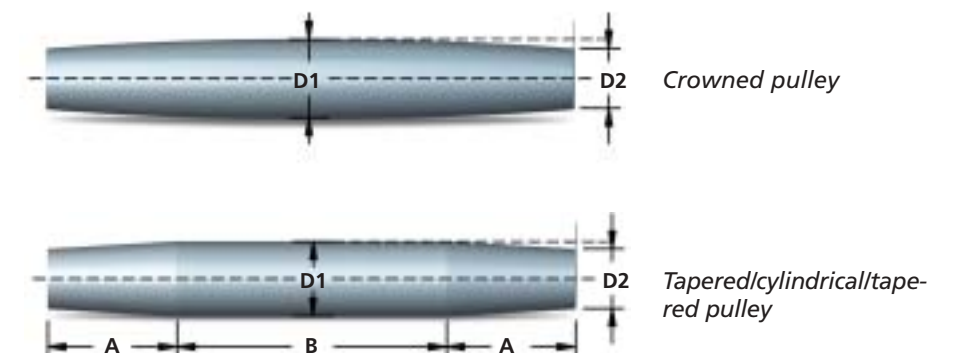
The most common pulley used today is the tapered/cylindrical/tapered. What makes it so popular is its ease of production.

However, the tracking on such pulleys is not as good as tracking on crowned pulleys. Therefore, it is important that when using tapered/cylindrical/tapered pulleys the scale between the sections must be exact.

The belt life is also depending on a good rounding between tapered and cylindrical sections.

RECOMMENDED SCALE BETWEEN TAPERED AND CYLINDRICAL PARTS	
Pulley length mm	Scale 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 pulleys are recommended for short, wide belts with little elasticity. It is also necessary to have at least one guide roller and additional guide units.



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



The table states maximum values for both crowned and tapered/cylindrical/tapered pulleys. The values mean the diameter difference between D1 and D2 are based on pulley diameters from 40 times thickness of belt and up.

Using pulley diameter equal to only 50% of this value also means 50% reduction of the table values.

It is recommended that crowning does not exceed the table values as this would mean the belt could wrinkle at the highest place of the crowning. This is of course mostly for thinner conveyor belts. It is also important that all rollers are in line and function properly.

◀ 3M0362G



P. ELLEGAARD A/S offer PVC and PU cleats in 90° angle (T) and PVC cleats with 60° angle in the middle (TC).

# POLYCLEAT®

When performing incline conveying of powdered or non-sticking products it can be necessary to weld cleats or profiles on the top surface. Cleats stop the natural relapse of the transported material, thereby ensuring fulfilling the desired capacity according to the belt width and speed.

Polymax® cleats are supplied as standard in fat and oil resistant qualities in the colours white (W), and apple green (AG), and petrol green (G).

Special profiles and alternative colours can be offered on request.



Type	W width mm	H height mm	Weight g/m	Pulley diameter mm			Description
				T	TW	TT	
<b>T cleat in PVC</b>							
T20	20	20	220	100	-	-	90° profile welded across the belt for inclined transport up to max. 35-40°.
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	-	
<b>TC cleat in PVC</b>							
TC30	23	30	325	100	100	-	90° profile with 60 degree angle on the body for maximum capacity.
TC40	23	40	490	100	100	-	
TC50	24	50	850	100	100	-	For certain applications used up to 90° POLYFLEX® transports.
TC60	24	60	940	125	-	-	
TC80	44	80	1600	125	125	-	
TC100	44	100	1900	125	125	-	
<b>T cleat in white PU</b>							
T20	24	20	225	40	-	-	Profile in 90° angle with high stiffness.
T40	27	40	340	50	-	-	
T50	28	50	500	70	-	-	

Dimensions can vary ± 10%.  
Given pulley diameters are recommended for normal working conditions.  
Lower temperatures demand increased pulley diameters.

## SPECIAL CLEATS



P. ELLEGAARD A/S offer fabric reinforced PVC cleats in the same heights as normal cleats. TW and CW cleats are offered with both smooth, and

fabric surface in the same colours as Polymax® conveyor belts.

POLYCLEAT® fabric reinforced cleats are designed for special purposes where the traditional extruded cleat can not fulfil the demand for the required stiffness. A condition for welding on TW and CW cleats is that base belt must have min. 0.7 mm PVC top cover. Welding can only be carried out using high frequency.



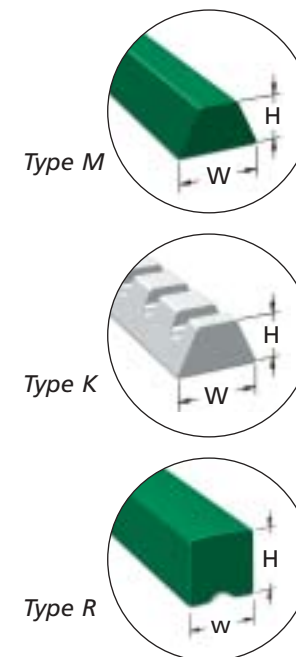
For example, we offer our M profile welded on as chevron cleat.

# POLYTRACK® Guide- and Edgelists

Polymax® profiles are produced from flexible and tear resistant materials in fat and oil resistant qualities. Profiles are welded onto both top and bottom surface on conveyor belts for guidance and alternatively as cleats or edge lists.

All profiles are supplied as standard in white, apple green, and petrol green.

Special profiles, as PU guide lists and alternative colours can be offered on request.



Type	W width mm	H height mm	Weight g/m	Pulley diameter mm				Description
				bottom guide list	cover cleat	cover edgelist	cover chevron	
M6	6	4	22	40	30	30	30	Trapezoidal profiles are welded onto top side of conveyor belts as edge list or cleat for inclined transport. Welded on bottom side for keeping belt on track.
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	
K8	8	5	35	50	50	50	50	Trapezoidal profiles with serrated top side gives higher flexibility as is most used as guidelist.
K10	10	6	51	60	60	60	60	
K13	13	8	86	70	70	70	70	
K17	17	11	150	90	90	90	90	
R8	8	8	77	110	60	135	200	Rectangular profiles are used as alternative to cleat or as edge list.
R12	12	12	120	120	60	180	320	
R15	20	15	300	130	135	320	400	

Given dimensions can vary ± 10%.  
Given pulley diameters are recommended at normal working conditions.  
Lower temperatures require larger pulley diameters.

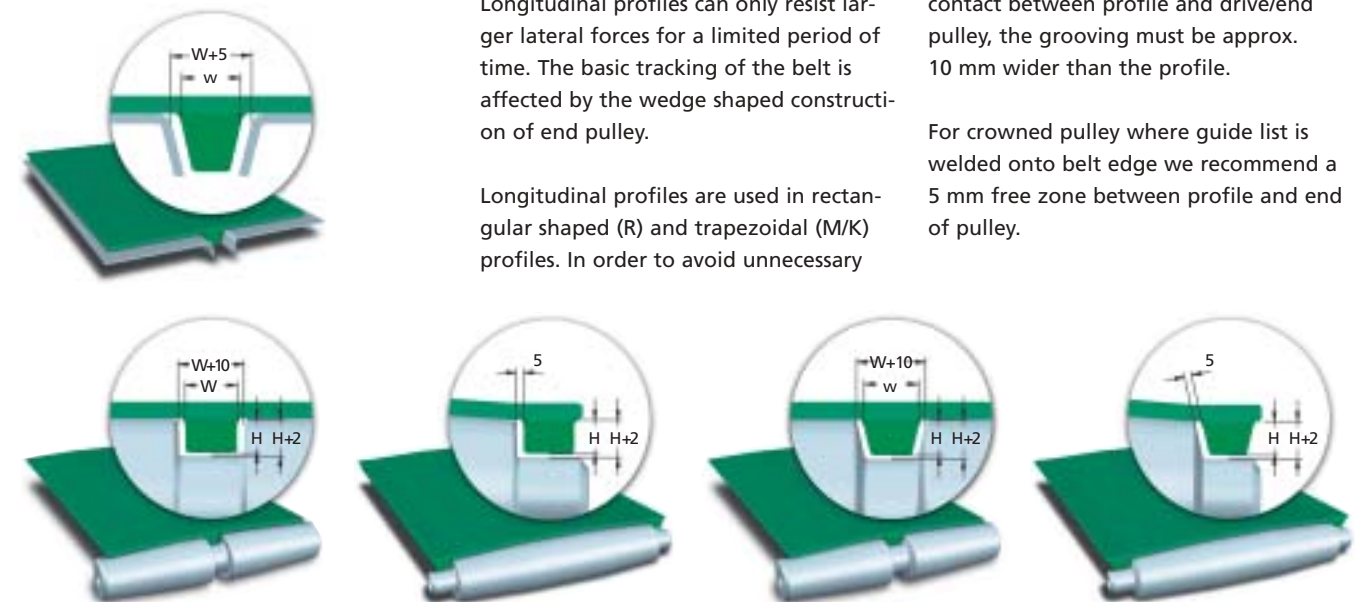
## DESIGN CRITERIA FOR LONGITUDINAL PROFILES

Longitudinal profiles can only resist larger lateral forces for a limited period of time. The basic tracking of the belt is affected by the wedge shaped construction of end pulley.

contact between profile and drive/end pulley, the grooving must be approx. 10 mm wider than the profile.

Longitudinal profiles are used in rectangular shaped (R) and trapezoidal (M/K) profiles. In order to avoid unnecessary

For crowned pulley where guide list is welded onto belt edge we recommend a 5 mm free zone between profile and end of pulley.



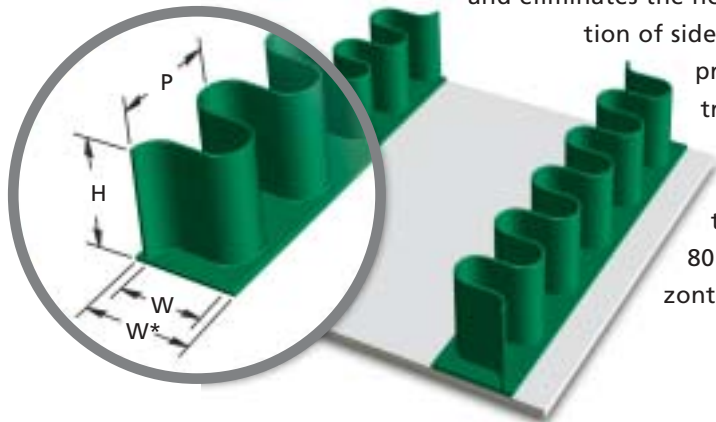


# POLYFLEX® Sidewalls

POLYFLEX® sidewalls are the result of years of R&D in P. ELLEGAARD A/S, for creating the optimum and most flexible solution of inclined transportation of bulk products in both small and larger grain sizes.

The capacity of a POLYFLEX® conveyor belt outdates old feeding systems and eliminates the necessity for elevator cup belt and such. The combination of sidewalls and cleats ensure optimum conveying of most products with minimum damage or spillage of the transported material.

Sidewalls are also an alternative to standard trough belts. In general, capacity is increased by 50 - 80% and gives the opportunity to carry out both horizontal and inclined transport on the same conveyor.



## STANDARD POLYFLEX® TYPES

Type	H	W	W*	P	Pulley diameters (mm)	
	Height mm	Wave width mm	Foot width mm	Pitch of waves mm	Sidewalls	Sidewalls and cleat mm
U20	20	23	33	25,4	200	80 100
U30	30	23	33	25,4	260	80 100
U40	40	23	33	25,4	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 given pulley diameters are values at 20° C. Lower temperatures demand for larger diameters. POLYFLEX® sidewalls are supplied in standard colours white, apple green, and black. Other colours and sizes can be offered on request.

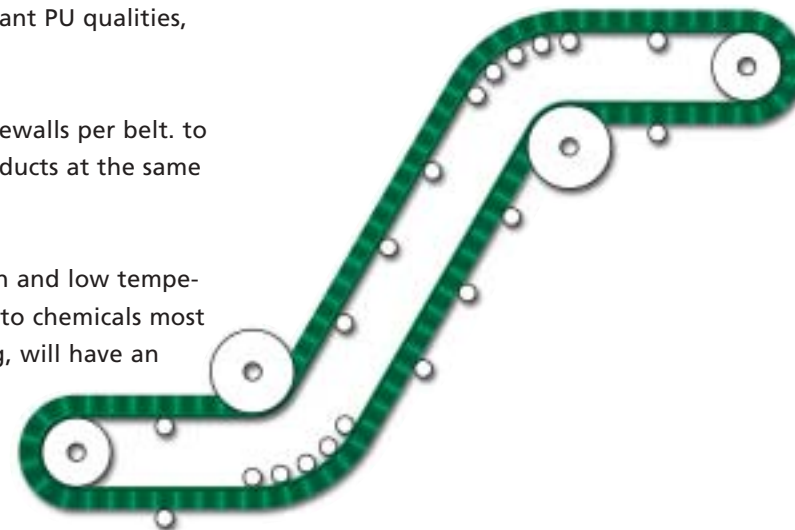
### POLYFLEX® SIDEWALLS:

- Suitable for small pulley diameters
- Can be welded onto both PVC and PU conveyor belts
- Can be repaired at any time
- Partially selfcleaning
- Extremely resistant to chemicals
- Can run directly on return rollers
- Allowable working temperatures -20° til +110° C.

POLYFLEX® sidewalls are supplied in wear and tear resistant PU qualities, thereby optimizing possibility for very flexible solutions.

Many companies take use of welding more than two sidewalls per belt. to use as a feeder belt for two, three, or four different products at the same time.

Because of being able to perform in both extremely high and low temperatures - and in addition having the excellent resistance to chemicals most industries, as candy/chocolate manufacturers or recycling, will have an advantage by using POLYFLEX® conveyor belts.



Polyurethan is easy to clean and maintain. The smooth surface with excellent release qualities is especially attractive to manufacturers of foodstuffs and sticky materials.

POLYFLEX® sidewalls are easy to weld onto POLYMAX® PVC and PU conveyor belts with smooth surface. The base is welded onto the basebelt using heating gun or glue.

Welding on our TC cleats opens the possibility for using POLYFLEX® conveyor belts on "S" conveyors and up to 90° inclinations.

The table indicates guiding, theoretical capacities in cubic metre per 100 mm effective width:

## THEORETICAL CAPACITIES

Cleat height (mm)	Inclination	Cleat pitch mm	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

Basis of calculation:  
Speed: 1 m/sec Density of material: 1 t/m³ Grainsize: 1 mm Filling rate: 100% Angle of repose: β = 15°

The table displays the most common factors. The following formula is used for calculating alternative widths:

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

where  
 B<sub>n</sub> = effective width in mm  
 Q<sub>v</sub> = desired capacity m³/h  
 v = belt speed in m/sec

Calculating weight capacity:

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

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