Ammeraal Beltech

EN

Technical Manual

Ultrascreen Belt Range

Innovation and Service in Belting

Contents

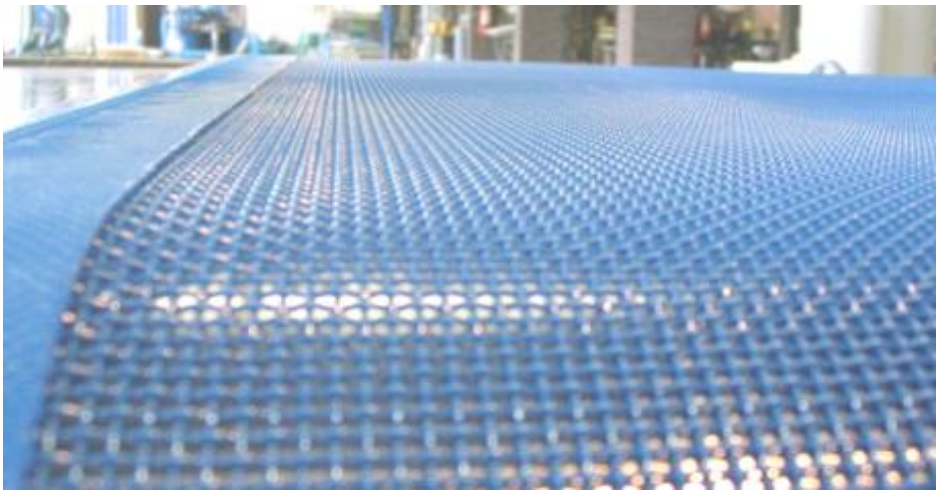
© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

1. Introduction

The main applications of Ultrascreen (PRO) belts are the dewatering and drying of washed fresh cut vegetables/salad leaves. Ultrascreen (PRO) belts are available in different mesh sizes. In order to optimise your production output, we offer different mesh sizes to perfectly match every cut product size. Ammeraal Beltech has an extensive product range for the food industry. Of course, our Ultrascreen (PRO) belts meet the highest hygiene demands and comply with EU10/2011 and FDA. Ultrascreen (PRO) belts are easy to clean and support hygiene program HACCP.

Ultrascreen (PRO) belts are also used in cooling processes, recycling of used washing water, wastewater treatment, filtering, sieving, and squeezing.

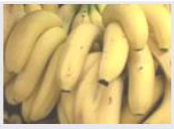
If your question is not mentioned in this manual, or if you need more detailed information about endlessing, overview of accessories, technical drawings, etc. please contact your local Ammeraal Beltech representative.



© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

2. Food segment and applications

With a full range of belting products, Ammeraal Beltech is able to provide the best possible solutions for all belting processes. For the processing of vegetables, fruit, and fish, Ultrascreen (PRO) belts with polyester monofilaments are the proven solution. The food approved screen is available in different sizes and is fabricated with longitudinal edge strips to provide stability. The traditional Ultrascreen can be executed with guide ropes for proper tracking and safety. Ultrascreen PRO is the ultimate tracking solution and allows you to run your belt at very low tension. Also, cleats for inclined conveying are possible. The belts are designed for washing and drying of fruit and vegetables without damaging the delicate products.

Temperate	(Sub)tropical
Fresh fruit	
Apples, pears Grapes Deciduous fruit (peaches, nectarines, apricots, cherries, etc.) Berries (strawberries, raspberries, blueberries, etc.) Melons, water melons Etc.  	Bananas Citrus fruit Pineapples Avocados Mangoes Lychees Papayas Others: passion fruits, carambolas, durian, dates, figs, etc.  
Fresh vegetables	
Tomatoes Onions, shallots, garlic Beans, peas Asparagus Courgettes Eggplants Capsicum Sweet maize Etc.  	Cassava Arrowroot Yams Sweet potatoes Dasheen Breadfruit Etc.  

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Fruit and Vegetables

SEPARATION

CUTTING

WASHING

DRYING

WEIGHING

PACKAGING

Fresh-cut

Convenience

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

3. Properties and product range

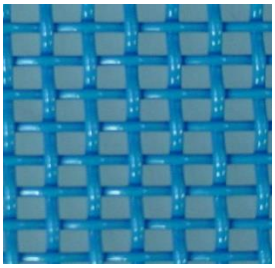
Various mesh sizes of the screen material assure the perfect solution for each product size. Combined with a large open area, results in the highest possible production output.

During production and fabrication, special care is given to the stabilisation of the screen. This ensures shrink-free flat belts which track properly.

Screen Types

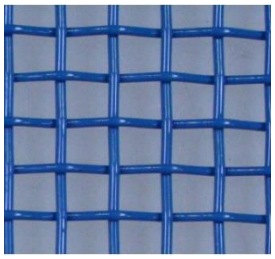
Mesh size µm	Air permeability L/dm²/s at 100Pa	Screen thickness mm
1000	3640	1.50
2000	5080	1.85
3000	6000	1.85
4000	6540	2.00

1000 µm



2000 µm

3000 µm



4000 µm

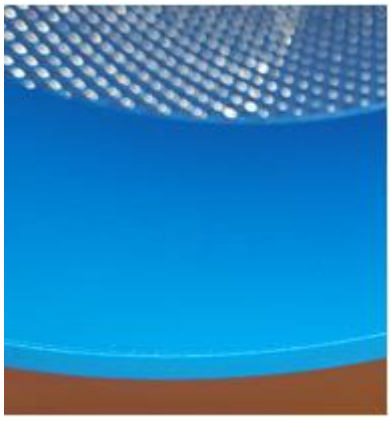
2000 µm is the most used mesh size in the industry. The belt has an excellent balance between flexibility and stability. A smaller mesh opening is used when product would fall through or get stuck in the mesh. The larger mesh opening is used when a larger permeability is required or to have less contact surface with fragile products.

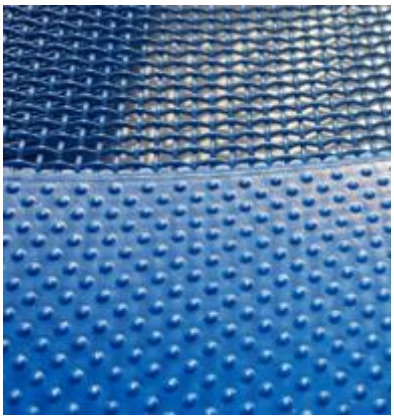
© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

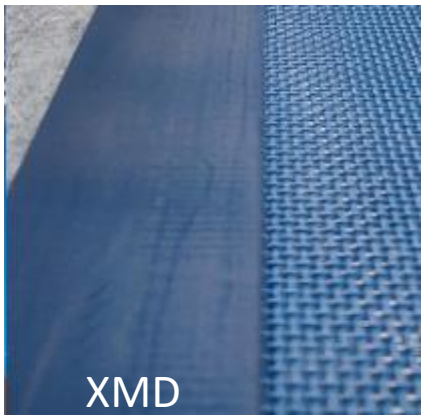
Homogeneous edge strips

To seal the edges and fix the monofilament, each screen belt must have edge strips at both sides, as well as on both ends. All strips used on a screen belt have to be of the same material. The Ultrascreen edge strips are made of a special mixture of Flexam PVC and comply with Food Safety. The Flexam edges have a high chemical resistance and are less sensitive to **chlorine based cleaning agents** (when in doubt, consult the cleaning instructions).

The strips are applied by means of high frequency technology, which makes the seal with the mesh more hygienic.







The edge strips can be made with a smooth top and bottom, on special request (contact our local representative) with a pebbled bottom side, as shown in the picture above. The pebble breaks the surface contact, uses non-stick technology, and reduces friction.

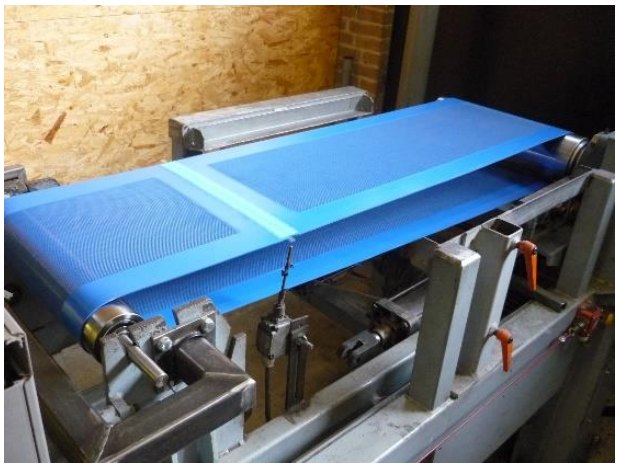
Food-safe Homogeneous edge strips (XMD)

Every segment of the Food Industry runs the risk of foreign body contamination, with heavy consequences that include everything from disruptive claims affecting the brand reputation, up to very expensive product recalls. For those reasons, we have the Ultrascreen XMD edges available. The edges are X-ray and metal detectable. Should the edge or cleats pollute your product, it will be picked up by your metal detector. 10x6 and 13x8 v-guides are also available with XMD detection.

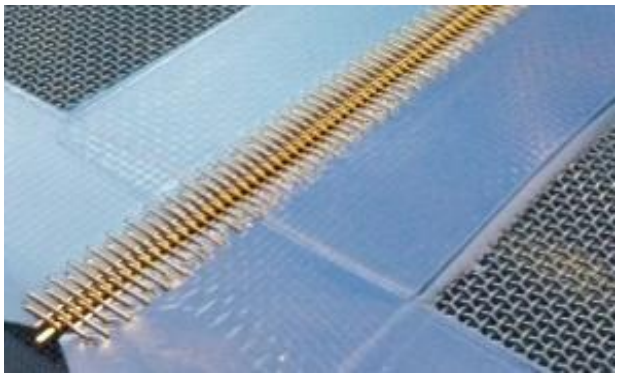
© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Fasteners

The most common way to endless an Ultrascreen belt is with fasteners. The fasteners are inserted in 50mm end strips.



Over 20 different fasteners are extensively tested. The strength of the fastener in the end strips, the running performance and the wear are important characteristics. These characteristics are tested with speeds of over 2 meters per second and a minimum of 2 million cycles.



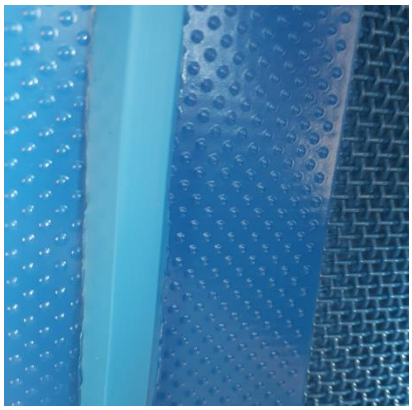
The Flexco A3 fastener and the Flexco A40 have proven to be the best performing stainless steel fasteners in Ultrascreen belts.

Code	Description
ACFA000100	Fastener TieBar A3 Stainless for Ultrascreen (XMD)
ACFA000102	Fastener A40 Stainless For Ultrascreen PRO and XMD

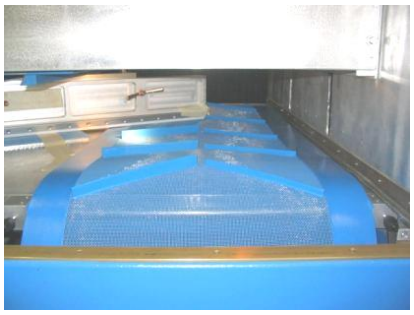
© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Accessories

Various accessories can be used. We will shortly discuss v-guides, cleats, and Bordoflex.



Ultrascreen belts can be equipped with v-guides. Most commonly used is the 13x8mm v-guide and the TPE A52 solid 9x9mm guide. See also paragraph "tracking".



When required, various TPU cleats can be applied to Ultrascreen (PRO) belts. This is done by melting the foot of the cleat into the screen and thus creating a mechanical adhesion.

On regular Ultrascreen belts, Amtel edge strips can be installed, and it is possible to install Bordoflex as well. Requests can be sent to our local representative.

.

Bordoflex and endlessing

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

4. Basic Conveyor Design - Ultrascreen

In the basic conveyor design, we will first explain the design for a traditional Ultrascreen belt. In Chapter 5 we will discuss the new Ultrascreen PRO design.

To get the full benefits of Ultrascreen mesh belts, special attention should be given to the conveyor design. This chapter gives guidelines and design considerations.

Pretension

A low pretension maximises the lifetime of an Ultrascreen belt. The pretension on Ultrascreen belts should be just enough to drive the belt free of slip. In most cases, a pretension of 0.2% is enough. How to pre-tension the belt? Apply 0.1 – 0.2% tension by measuring a 1000 mm mark on both sides of the belt, and tension until these become 1001 - 1002 mm. Let the belt run for a short while and re-check the elongation.

Tension

With a belt tension above the 20 N/mm the stainless steel fasteners will be torn out of the belt. Therefore, the maximum belt tension should be kept much lower than this. We recommend a maximum of 8 N/mm. Edge strips have little, or no effect, on the force elongation properties of an Ultrascreen belt. When below 1% elongation this effect can be disregarded.

Friction coefficients

Coefficient Of Friction (COF) is a very important belt feature. In most cases, a low friction between belt and slider bed is preferred. This reduces the drag forces and thus the elongation in the belt, and the necessary power to drive it. The friction coefficients of Ultrascreen belts to common slider materials are:

Slider material	Polyester
HDPE	0.29
Stainless steel	0.27

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

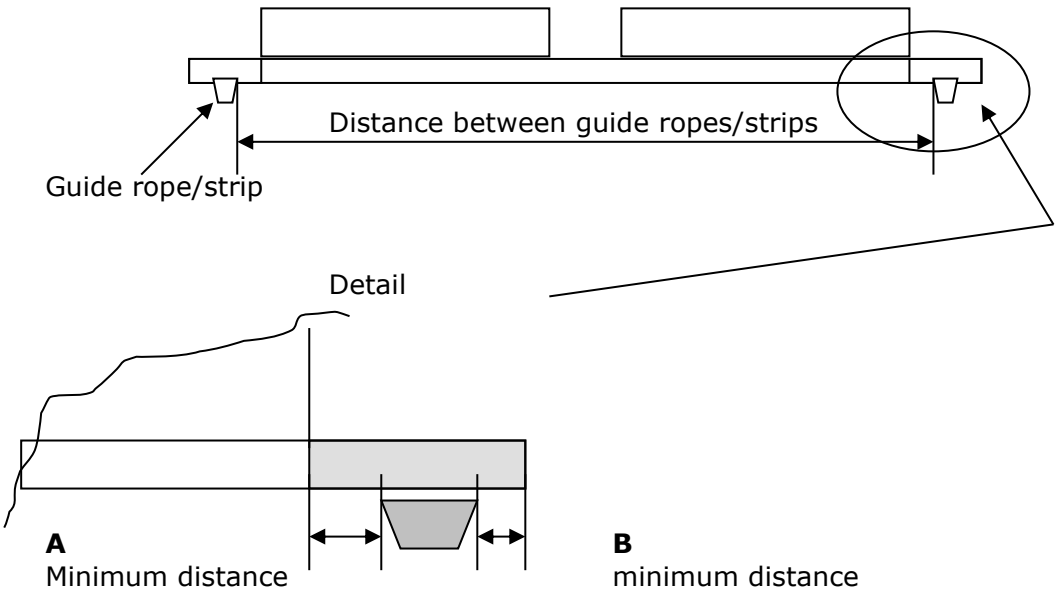
Tracking

There are various ways to track a traditional mesh belt. Crowning of the end drum is known as an effective tool to track an Ultrascreen belt.

Ultrascreen belts can also be fitted with guide ropes for tracking. A 13x8mm v-guide or an Amtel 9x9 toothed guide are most often used. The Amtel guide rope is strong, wear resistant, and yet flexible. Guide ropes/strips should only track on the slider bed or in special slots, but never on the rollers/drums.

In the case of belts without cleats, tracking idlers can also be used. These, in fact, only have a tracking effect on the edge strips; the screen itself will have very little friction on a smooth steel roller.

Position of guide ropes, guide strips:
A guide rope/strip must be fitted at least 5 mm from the belt edge and at least 10 mm from the edge screen/strip (please see A and B in detail below).



A
Minimum distance between rope and edge screen-strip
≥ 10 mm

B
minimum distance between rope and the edge of the belt
≥ 5 mm

Tracking by means of Soliflex PRO Lug technology

The ultimate way to track a belt is with lugs. This will be discussed in chapter 5.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Prevent slippage

The polyester screen material has a very low Coefficient Of Friction (COF), especially in wet circumstances. Therefore, the drive drum should always be lagged. The coefficient of friction between the screen material and rubber lagging material is as follows:

Trough

The weft monofilament of an Ultrascreen belt can only handle a large radius trough at a maximum trough angle of 10° degrees. The belt needs an in-and-out feed of minimum 2x the belt width. The weight on the Ultrascreen belt should be sufficient to keep the belt in the trough. With too little weight, the belt will tend to stay flat, so and want to come out of the trough.
Notes:

- When using a fastener in a trough, take a special care!
- An Ultrascreen belt cannot be used in a 3-part V-trough.

Belt support

Both slider strips and slider bed can be used. Rollers however, are less suitable due to the low friction between the roller and the belt.

Return part of the belt

Both sliding strips and slider bed support can be used.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

5. Basic Conveyor Design - Ultrascreen PRO

As discussed in chapter 4, traditional mesh belts can be tracked in various ways and require to be tensioned. The high tension on a traditional mesh belt often leads to failure of the fastener or damage of the v-guide as shown in pictures below.

Cracking of v-guides and misalignment of fasteners.

The Ultrascreen PRO solution of Ammeraal Beltech has 3 main benefits:

- Very low tension < 0.1%
- Ultimate tracking
- Lower construction cost and maintenance

To understand all benefits of Ultrascreen PRO positive driven belts, special attention should be given to the conveyor design. This chapter gives guidelines and design considerations for the lay-out of slider beds, tensioning devices, etc.

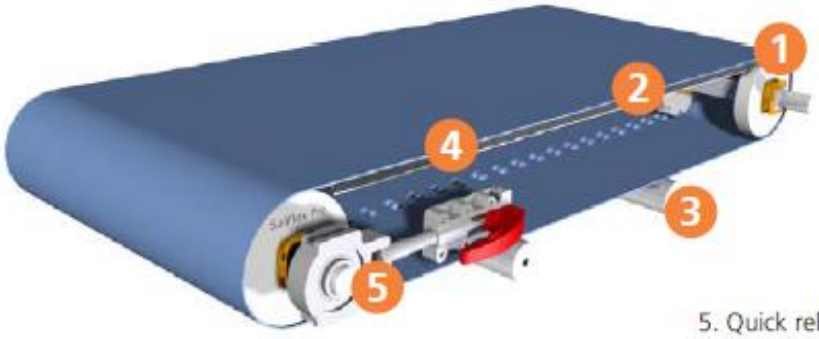
Ultrascreen PRO belts are tested at conveyor speeds up to 1 m/s. Higher speeds are possible after consultation with your local Ammeraal Beltech representative.

Ultrascreen PRO is based on the Soliflex PRO lug technology which is also used in our Homogeneous product line and AMMdrive product line. Some design pictures in the chapter are taken from the Soliflex and AMMdrive product line.

Ultrascreen PRO, Soliflex PRO and AMMdrive all use the Solilfex PRO lug technology and the design principles are very similar.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

A typical conveyor layout for Ultrascreen PRO belts:



1. Support pulley
2. Sprocket
3. Return roller
4. Slider strips
5. Quick release tensioning device

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Drive lug configuration and belt width

Ultrascreen PRO belts are driven at the edges of the mesh. The ***Duplex*** *- 2 rows of polyester drive lugs are installed on the PVC edge reinforcement which is 60mm wide.* The pitch of the Ultrascreen PRO belts lugs in the length direction of 51 mm. The available belt widths and centre-to-centre distance between the rows can be found in below table. Only the belts widths in the below table are available. The edge is always 60mm and the belt width tolerance is +/- 2mm.

Available belt width in mm and pitch of lugs

Belt width	Lugs CC	Working area	Edge strips 2 pcs.	Belt width	Lugs CC	Working area	Edge strips 2 pcs.
200	140	80	120	900	840	780	120
225	165	105	120	925	865	805	120
250	190	130	120	950	890	830	120
275	215	155	120	975	915	855	120
300	240	180	120	1000	940	880	120
325	265	205	120	1025	965	905	120
350	290	230	120	1050	990	930	120
375	315	255	120	1075	1015	955	120
400	340	280	120	1100	1040	980	120
425	365	305	120	1125	1065	1005	120
450	390	330	120	1150	1090	1030	120
500	440	380	120	1175	1115	1055	120
525	465	405	120	1200	1140	1080	120
550	490	430	120	1225	1165	1105	120
600	540	480	120	1250	1190	1130	120
650	590	530	120	1275	1215	1155	120
700	640	580	120	1300	1240	1180	120
750	690	630	120	1325	1265	1205	120
775	715	655	120	1350	1290	1230	120
800	740	680	120	1375	1315	1255	120
825	765	705	120	1400	1340	1280	120
850	790	730	120	1425	1365	1305	120
875	815	755	120	1450	1390	1330	120

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Belt tensioning / take-up

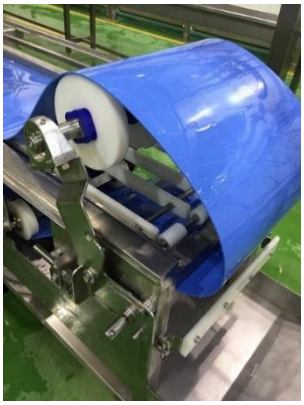
To operate an efficient Ultrascreen PRO belts conveyor, the tension should be ≤ 0.1%. A higher level of pretension will reduce the allowable loading of the belt.

The maximum allowable elongation at full load for Ultrascreen PRO belts is 0.6% and in special cases up to 1.0%. At a higher elongation, the pitch of the drive lugs will no longer fit the sprockets. Your Ammeraal Beltech local representative can support you with the necessary design requirements.

A retractable pulley design is the preferred solution for quick removal and installation of the belt (e.g. for cleaning purposes). Another option is to use a quick release tensioning device. This enables easy belt removal for cleaning and/or maintenance.

How to tension the belt?

In general, for most applications apply 0.1% tension by measuring a 1000 mm mark on both sides of the belt, and tension until these become 1001 mm. Let the belt run for a short while and recheck the elongation.



© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Layout of drive and tail shaft

For optimal performance, the drive and tail shaft should have *both* sprockets *and* rollers. For the return shaft, this ensures a rotating shaft at all times, therefore eliminating the chance of slippage and thus reducing wear on sprockets and the belt.

Depending on the actual situation (width, usage of blowers, products to be transported etc.), it might be beneficial to fill out the complete shaft with sprockets and support pulleys. The maximum centre-to-centre distance between sprockets and/or rollers is 150 mm.

Sprockets and support pulleys

Ultrascreen PRO belts make use of the Soliflex PRO lug technology, and also use the Soliflex sprockets and support pulley system. These are available for both round and square shafts. All sprockets and support rollers are made from solid Food Grade HDPE, with FDA and EU approvals.

- Round bore 20, 25, 30, 40 and 50 mm; all with DIN keyway.
- Square bore 40 and mm; other types on request.
- Pilot bore PRO 15mm can be machined by customer

Soliflex sprockets and support rollers can be supplied in split versions (with a puzzle piece fit) for easy assembly on existing conveyors. Special sprockets versions are: self-cleaning or de-icing (where ice can be an issue). See also Table

Please note that the PRO sprockets and support rollers are 30 mm. The Ultrascreen PRO lug pair are 32mm wide. So the lug pairs are 1-2 mm wider than the sprockets and rollers. See also the drawings below.

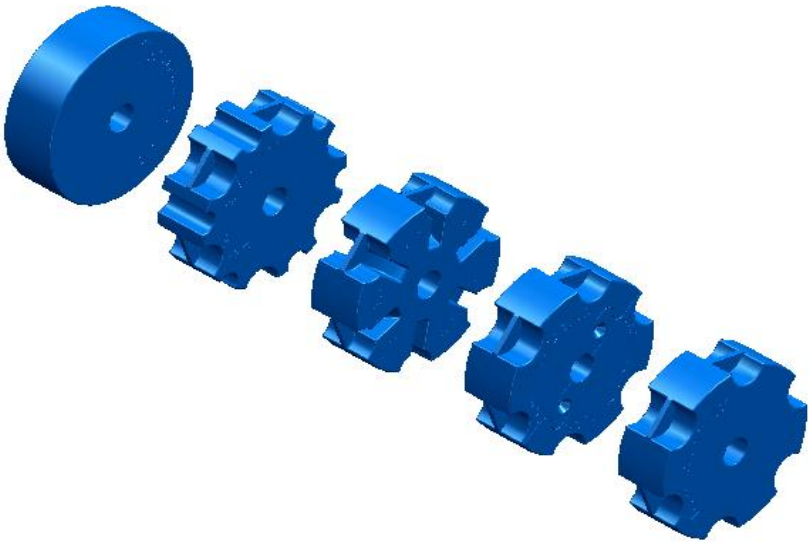


Figure 1 Soliflex Sprockets Variations

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Mounting sprockets and supporting rollers to the shaft

- Both square and round bore sprockets and support rollers can be fixed in axial direction with retainer rings.
- Fixate one sprocket axial and give the other sprockets on the shaft some 2 mm play in axial direction to compensate for thermal expansion.
- Round bore sprockets and support rollers can be fitted with DIN keyways.
- To align the sprockets make sure that the engraved logos are all pointing in the same direction.
- The minimum sprocket diameters for a belt type are valid for a mesh belt without accessories. For a mesh belt with ropes, guides or Bordoflex the minimum allowable sprocket diameter should be increased; see tables at the end of this manual for design tips for special conveyors possibilities.

Drum motors

For drum motors, Interroll developed a special Ultrascreen PRO drum motor in 3 sizes:

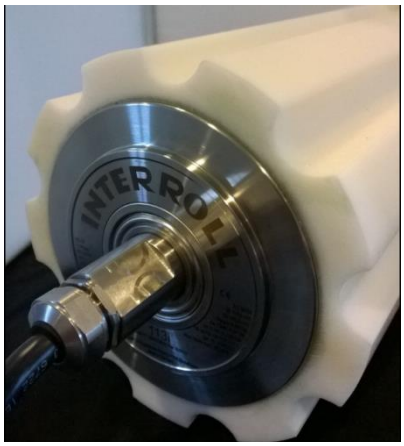


Figure 2 Interroll Drum Motor with Soliflex PRO technology Lagging

Interroll DM0113 with a Soliflex PRO Z9 lagging TPU 82 shore D

Interroll DM0138 with a Soliflex PRO Z10 lagging TPU 82 shore D

Interroll DM0165 with a Soliflex PRO Z12 lagging TPU 82 shore D

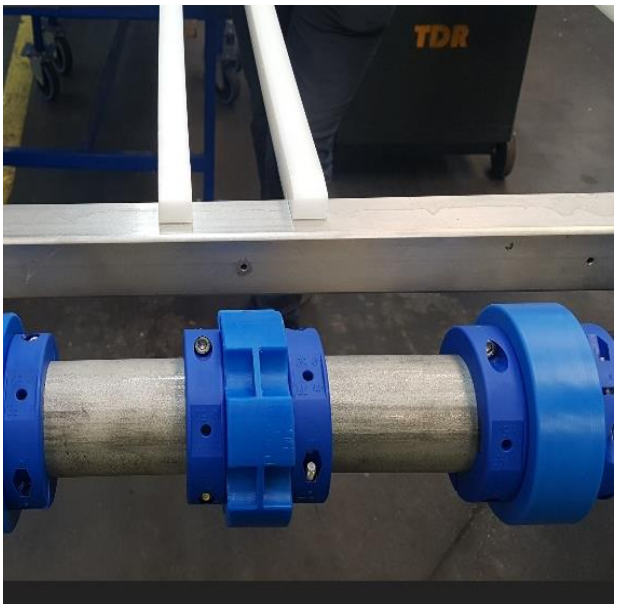
NOTE Drum motors do not offer the steering properties

We advise to contact your local Interroll representative for Ultrascreen PRO belts.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Slider strips

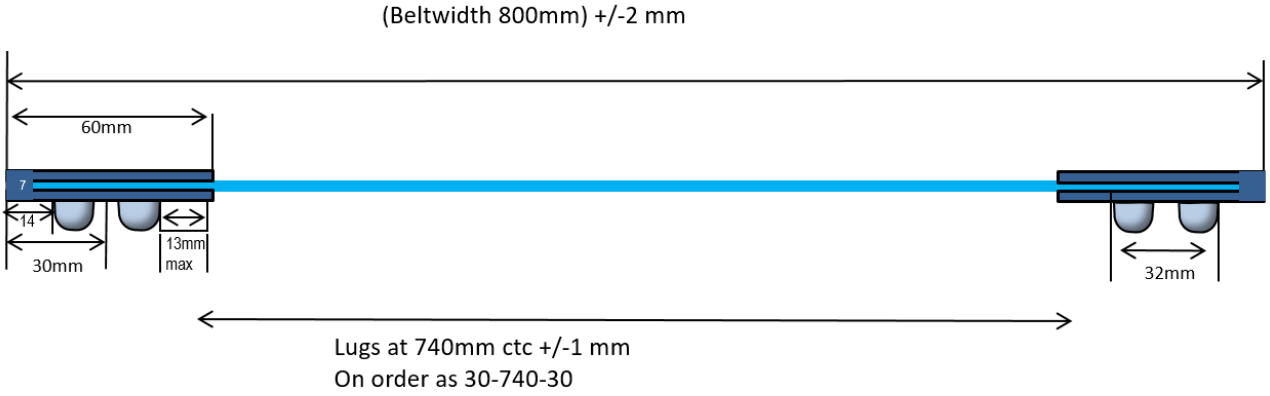
A unique lug design in combination with guide strips ensure superior and 100% trouble-free tracking.



A conveyor with slider strips is the preferred solution for Ultrascreen PRO belts. Use HDPE or UHMWPE slider strips to minimise the friction. **Use a minimum width of 10mm and a maximum width of 13mm. A wider slider strip is possible but blocks your mesh opening.**

The slider strips should be mounted close to the sprockets and pulleys. Allow some room to accommodate for possible thermal expansion (see page 20). Make sure that the height of the slider strips is not higher than the upper face of the pulleys. Stainless steel strips or round bars are possible; use the same configuration as for HDPE strips. Recommended stainless steel type is 316(L), stainless steel type 304 gives blackening on the belt. Make sure all edges are smooth.

Ultrascreen PRO Duplex



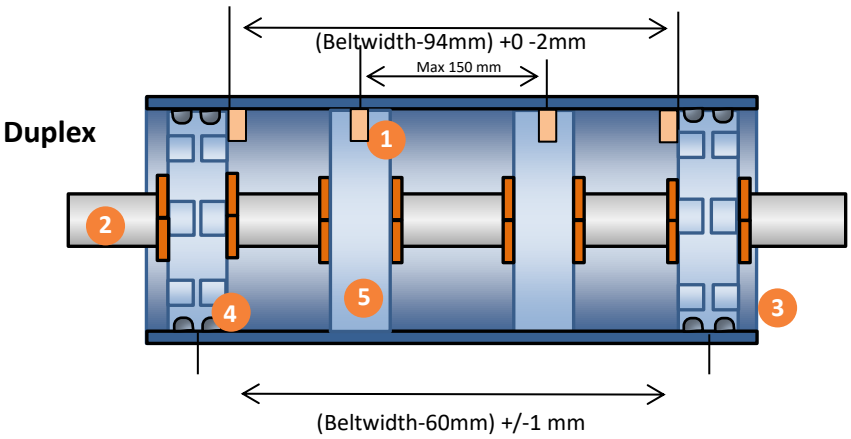
© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Positioning of slider strips - Ultrascreen PRO belts

How to calculate ……?

This is an example of a standard configuration.

1. Slider strips
2. Shaft
3. Retainer ring
4. Sprocket
5. Support pulley



The slider strips should be used to guide/track the drive lugs in the running direction. Allow space between the slider strips and lugs.

Strip position	Distance between 2 strips
Inside lugs	(Beltwidth-94mm) +0 -2mm

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

NOTICE *Be aware of the thermal expansion coefficient of the material.*

Thermal expansion / contraction

In applications where operating temperatures are different from ambient temperatures (20°C), linear expansion of the belt length and width will occur. In lateral direction, the absolute expansion or contraction is relatively small and no special actions are necessary. In longitudinal direction the following will occur:

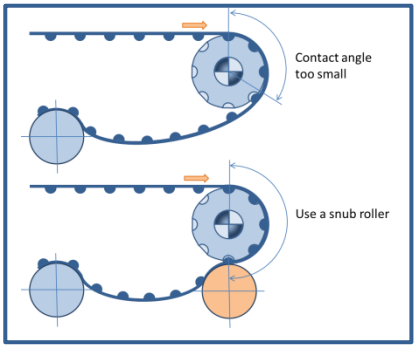
Operating temperatures higher than ambient temperatures: ***Expansion***

- Belt tension will decrease, and at a certain point, the pitch of the belt will no longer match the pitch of the sprockets. This will happen at about 50°C belt temperature. For belts operating at 50°C or more, special precautions should be taken (e.g. using sprockets with larger pitch). Contact your local Ammeraal Beltech representative for special solutions.
- Example: belt is installed, spliced and pre-tensioned at 22°C and then moved to an environment operating at 62°C. Temperature difference = 40°C, the belt will elongate 40 x 0.17 = 6.8 mm/m or 0.68%. In this example the belt needs to be stretched before starting!

Each material is characterised by its own coefficient of linear thermal expansion. Changes in the belt length can be calculated as follows:

$\Delta L = L \times \alpha \times \Delta T$	α	=	linear thermal expansion coefficient
	L	=	belt length nominal in m
	ΔL	=	thermal expansion / contraction
	ΔT	=	temperature difference

Return part of the belt



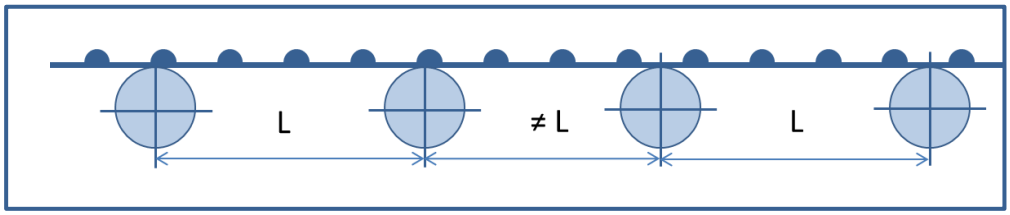
The belt in the return part will hardly have any stress. On a heavily loaded belt, large catenary sag could form. In some cases, this may become so big that the belt no longer has a sufficient wrapping angle on the drive sprocket. Use of pretension of 0.1% and a snub roller can be used just on the drive shaft. The snub roller must have the same width as the belt and a min. diameter of 50 mm. Position the snub roller just below or after the heart of the drive shaft and leave some room for the belt so that it is not pinched off.

Slider strips can be used to support a belt in the return part. This can be especially advantageous on inclined conveyors. Do not use these over the complete length of the conveyor; allow space for the catenary belt sag near the drive shaft.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Alternatively, support pulleys or rollers in the return part should be positioned every 2 meters. To prevent resonance of the belt in the return part, this distance should be slightly varied as shown in the drawing. The diameter of these supports is minimum 50 mm.

Ultrascreen PRO belts have a monofilament mesh fabric. When a belt has cleats, the cleats are normally not supported. However, the cleats add lateral stability together with the monofilament fabric. When a belt with cleats is wider than 800 mm and supported by pulleys or rollers than extra support is needed. This can be achieved by dividing the cleat into two sections and leaving an indent of a minimum of 50 mm in the middle. A support roller has to be placed in this free section to support the belt.



Friction coefficients

Friction is a very important belt feature. In most cases, a low friction between belt and slider bed/strips is preferred, this reduces the drag forces and thus the elongation in the belt and necessary power to drive it.

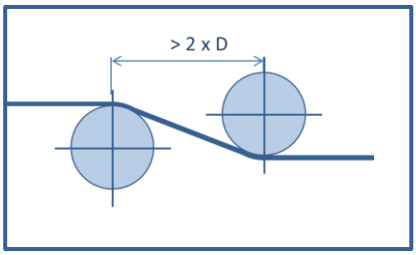
Electrostatic load can occur due to high friction. For example, in **high speeds logistic applications**. The electrostatic charge depends on: specific material resistance, environment (dry or humid), speed, possible belt tension, belt width and pulley surfaces. Anti-static fabrics or metal rollers in-between the slider strips are possible methods to discharge Ultrascreen PRO belts. Contact your local Ammeraal Beltech representative for detailed advice

Design guidelines for special conveyor types

In most applications, a straight standard conveyor does the job, sometimes special designs are needed. This chapter gives some design guidelines for a number of special conveyor types.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Flexing and back flexing diameters



The allowed minimum flexing diameters for Ultrascreen PRO belts are dependent on flexibility of the lugs. These values can be found on the belt data sheet. If flex and back flex sprockets are close to each other, there should be at least a diameter distance in between. Accessories, in limited amount, can be used with Ultrascreen PRO belts.

Inclined conveyors

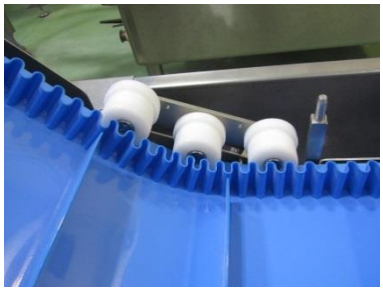
Inclined conveyors are used to overcome height differences. The angle of inclination is limited by the friction between the transported goods and the belt. For most bulk goods the angle of inclination should be less than 15°, use cleats otherwise. The friction for piece goods should be tested.

Make sure that the drive drum is always on the topside of the conveyor. This is also important for declining conveyors.

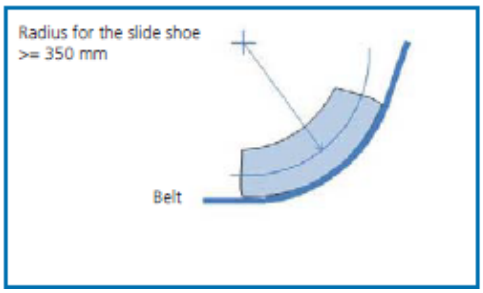
Swan neck conveyors

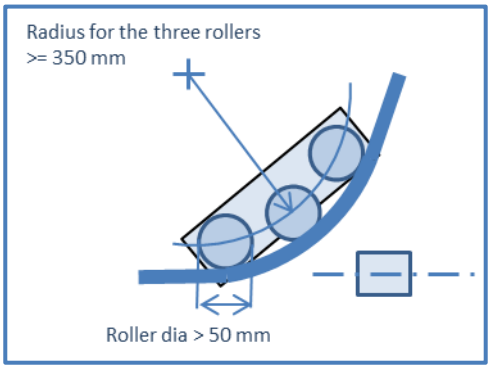
Swan neck conveyors are often used to transport bulk goods or small products coming from a hopper to a higher level. Swan neck conveyors only need a relatively small floor space. Inclination angles start at 30° and go up to 75°. In these conveyor types the belt width must be chosen carefully. Safe values normally recommended for Ultrascreen PRO belts go up to a width op 500 mm. For wider belts consult your local Ammeraal Beltech representative.

Give special attention to the design of the bends:



- The radius in these bends should be min. 350 mm. For slow moving conveyors (up to 0.2 m/s) slider shoes made from HDPE or UHMWPE can be used. A small outward pointing groove in the sole of the shoe can help to prevent dirt building up here.
- Use roller sets in the bends for conveyors running at higher speed. The effective width of shoes or rollers should be 50 mm. The space between shoe or roller and Bordoflex should be at least 10 mm.
- Looking from the width of the belt: The centerline of the shoe or rollers should be on the centerline of the outer lug rows.





© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Existing conveyor retrofit to Ultrascreen PRO

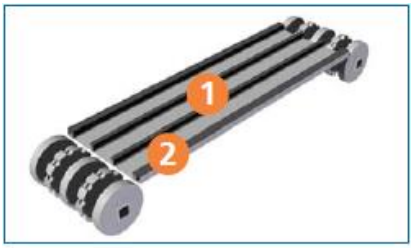
It is possible to exchange traditional Ultrascreen mesh belts for positive driven belting Ultrascreen PRO belts. Below are some tips for an Ultrascreen PRO belts retrofit on existing conveyors.

From Ultrascreen to Ultrascreen PRO

Sprockets and Rollers

Exchange the drive and tail pulleys for the appropriate sprockets and support rollers.

Slider strips/bed



1. Flat slider bed
2. Slide strips

If the slider bed construction is made out of UHMWPE, HDPE or metal strips, position them in such a way that they act as guides for the drive lugs (see also the chapter on slider strips).

Ensure that the slider bed height is slightly lower than, or leveled with, the upper face of the pulleys. A deviation of max. 5 mm will not negatively affect the operation of the positive drive.

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Tables

Ultrascreen and Ultrascreen PRO belts Specifications

Table 1. Ultrascreen PRO bels Specifications

	Thickness (mm)	Belt Colour	Lug Colour	Temperature Min (°C)	Temperature Max (°C)	Min Pulley Dia (mm)	Min Pulley Dia Backflexing (mm)
Ultrascreen 1000 lightblue FG	1.5	Light blue	NA	-15	70	100	100
Ultrascreen 2000 lightblue FG	1.85	Light blue	NA	-15	70	100	100
Ultrascreen 3000 lightblue FG	1.85	Light blue	NA	-15	70	100	100
Ultrascreen 4000 lightblue FG	2.0	Light blue	NA	-15	70	100	100
Ultrascreen PRO 1000 lightblue FG	1.5	Light blue	Light blue	-15	70	143.5 (T9)	225 (T14)
Ultrascreen PRO 2000 lightblue FG	1.85	Light blue	Light blue	-15	70	143.5 (T9)	225 (T14)
Ultrascreen PRO 3000 lightblue FG	1.85	Light blue	Light blue	-15	70	143.5 (T9)	225 (T14)

The thickness is specified for the mesh. The edges will have a thickness between 4-5mm.

Table 2. Pretension

Belt type	**Advised pretension**	**Max. allowable elongation**
Ultrascreen PRO belts PRO	0 - 0.1%	0.6% standard
		1.0 % special

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Table 3. Recommended minimum configurations Ultrascreen PRO

Duplex Belt width	**200 - 300 mm**	**300 - 500 mm**	**> 500 mm**
Sprockets	2	2	2
Support Rollers	0	2	4

Properties of Sprockets

Table 4. Sprocket Dimensions for Ultrascreen PRO belts

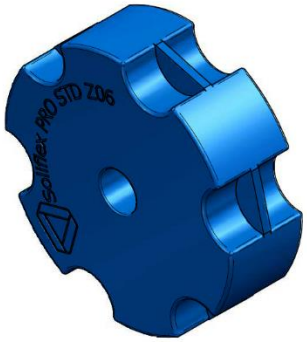
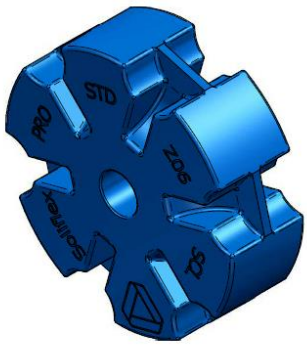
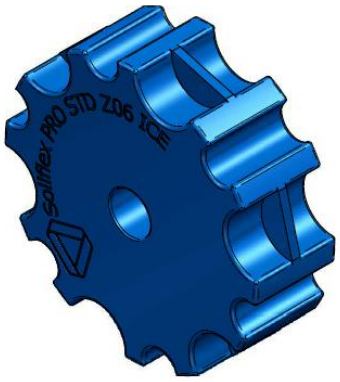
No. of teeth (Z)	**diameter (mm)**
	Ultrascreen PRO belts PRO
9	143.5
10	159.8
11	176.1
12	192.4
14	225.0

Table 5. Sprocket Bore dimensions

Pilot Bore (PB)	**Square (SQ)**	**Round (RR)**
	40	20
15	50	25
		30
		40
		50
Not all options are applicable on all sprocket type/sizes		

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Table 6. Sprocket Executions

 Standard Sprocket	 Self-Cleaning Sprocket
 De-Icing Sprocket	 Support Roller

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Table 7. Maximum Cleat type per sprocket type

Ultrascreen PRO	Maximum Synthetic footless Ropanyl cleats **
	PN53
Z09 143.5	*PN79*
Z10 159.8	*PN79 / 100 x 6*
Z11 176.1	*PN79 / 100 x 6*
Z12 192.4	*PN79 / 100 x 6*
Z13 208.7	*PN79 / 100 x 6*
Z14 225.0	*PN79 / 100 x 6*
Z16 257.5	*PN79 / 100 x 6*

Others

Table 2. Thermal expansion

ΔL = L x α x ΔT	α	=	linear thermal expansion coefficient
	L	=	belt length nominal in m
	ΔL	=	thermal expansion / contraction
	ΔT	=	temperature difference

	Material	α [mm/m/°C]
Ultrascreen PRO	TPE	0.17
	TPU	0.17
	PVC	0.17

© Ammeraal Beltech. Because of continuous development, the data is subject to alteration. This data replaces that included in previous publications. Ammeraal Beltech excludes any liability for the incorrect use of the given information.

Local Contacts

... and 150 more service contact points at ammeraalbeltech.com

Argentina
T +54 11 4218 2906
info-ar@ammeraalbeltech.com

Australia
T +61 3 8780 6000
info-au@ammeraalbeltech.com

Austria
T +43 171728 133
info-de@ammeraalbeltech.com

Belgium
T +32 2 466 03 00
info-be@ammeraalbeltech.com

Canada
T +1 905 890 1311
info-ca@ammeraalbeltech.com

Chile
T +56 22 656 1600
info-cl@ammeraalbeltech.com

China
T +86 512 8287 2709
info-cn@ammeraalbeltech.com

Colombia
T +57 1 893 9890
info-co@ammeraalbeltech.com

Czech Republic
T +420 567 117 211
info-cz@ammeraalbeltech.com

Denmark
T + 45 7572 3100
info-dk@ammeraalbeltech.com

Finland
T +358 207 911 400
info-fi@ammeraalbeltech.com

France
T +33 3 20 90 36 00
info-fr@ammeraalbeltech.com

Germany
T +49 4152 937-0
info-de@ammeraalbeltech.com

Hungary
T +36 30 311 6099
info-hu@ammeraalbeltech.com

India
T +91 44 265 34 244
info-in@ammeraalbeltech.com

Israel
T +972 4 6371485
info-il@ammeraalbeltech.com

Italy
T +39 051 660 60 06
info-it@ammeraalbeltech.com

Japan
T +81 52 433 7400
info-jp@ammeraalbeltech.com

Luxembourg
T +352 26 48 38 56
info-lu@ammeraalbeltech.com

Malaysia
T +60 3 806 188 49
info-my@ammeraalbeltech.com

Mexico
T +52 55 5341 8131
info-mx@ammeraalbeltech.com

Netherlands
T +31 72 57 51212
info-nl@ammeraalbeltech.com

Peru
T +51 1 713 0069
info-pe@ammeraalbeltech.com

Poland
T +48 32 44 77 179
info-pl@ammeraalbeltech.com

Portugal
T +351 22 947 94 40
info-pt@ammeraalbeltech.com

Singapore
T +65 62739767
info-sg@ammeraalbeltech.com

Slovakia
T +421 255648542
info-sk@ammeraalbeltech.com

South Korea
T +82 31 448 3613-7
info-kr@ammeraalbeltech.com

Spain
T +34 93 718 3054
info-es@ammeraalbeltech.com

Sweden
T +46 (0) 10 130 96 00
info-se@ammeraalbeltech.com

Switzerland
T +41 55 225 35 35
info-ch@ammeraalbeltech.com

Thailand
T +66 2 902 2604-13
info-th@ammeraalbeltech.com

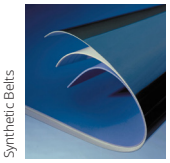
Turkey
T +90 232 877 0700
info-tr@ammeraalbeltech.com

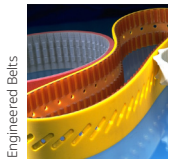
United Kingdom
T +44 1992 500550
info-uk@ammeraalbeltech.com

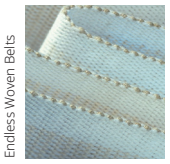
United States
T +1 847 673 6720
info-us@ammeraalbeltech.com

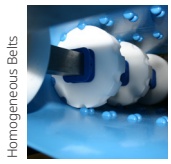
Vietnam
T +84 8 376 562 05
info-vn@ammeraalbeltech.com

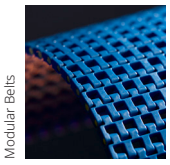
Expert advice, quality solutions and local service for all your belting needs


Synthetic Belts


Engineered Belts


Endless Woven Belts


Homogeneous Belts


Modular Belts


Fabrication & Service

General contact information:

Ammeraal Beltech
P.O. Box 38
1700 AA Heerhugowaard
The Netherlands

T +31 (0)72 575 1212
info@ammeraalbeltech.com

ammega.com

Member of Ammega Group.

Date: 04.2023