Ammeraal Beltech

EN

Technical Manual

Soliflex PRO (mini) Fabrication manual

Guidelines & considerations

Innovation and Service in Belting

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1 Introduction

A homogeneous (Soliflex) belt has benefits in many applications. It is complementary to our synthetic and modular belts lines and make each other stronger. It also has some limitations inherent to Homogeneous belts. In this feasibility manual we will manage the expectations and explain the possibilities. To make a belt from our Soliflex sheets we can add all sorts of accessories. It starts with adding drive lugs to make it a Soliflex PRO belt. The welding of cleats and Bordoflex is also part of the fabrication. In this document we will discuss the fabrication guidelines and considerations for Soliflex (PRO) belts in detail.

NOTICE

Notice that we theoretically can make even more exotic products than the ones mentioned in this manual. As an example we mention the possibility to butt weld cleats to the Bordoflex. We know this can be done, however to make this work we would need to use a modular tool for the welding of the cleats and we would need to manually butt weld the cleats to the Bordoflex. We have seen that this generally results in products with an insufficient quality. ***In this feasibility manual we only present fabrication solutions that have sufficient quality.***

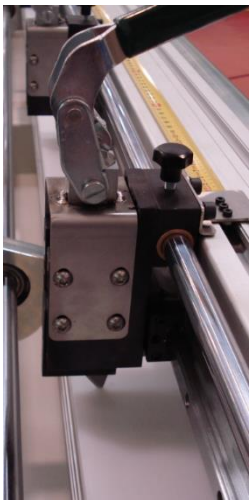
We also make a distinction between standard configurations (within Connect smart rules) and non-standard configurations. Both configurations are possible and the result will have a sufficient quality. The standard configurations in this report are the preferred executions of our product and can be ordered at Eurofab without any special ordering information.

The non-standard configurations are in place to make belts for special applications (for instance for swan neck conveyors) and in general extra information will be needed to order such a belt.

For non-standard belts the homogeneous team (CPM) can be contacted

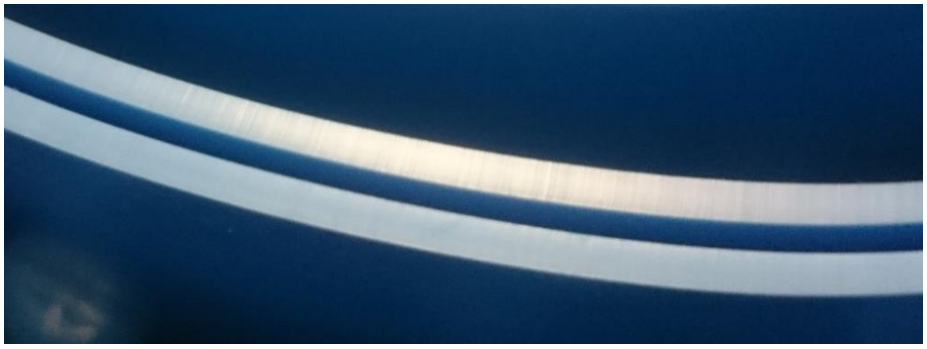
2 Cutting a Soliflex belt

There are various ways to cut a homogeneous conveyor belt. Commonly used techniques are the rotary cutter (left upper picture) and the stationary knife cutter (left bottom picture).



2.1 Cutting quality requirements for Homogeneous belts

The market for Homogeneous belts is very focused on hygiene. Any imperfection is a potential threat and needs to be avoided. A Soliflex belt needs to have a spotless edge as shown in the picture below:



2.2 Length requirement for non-endlessed Soliflex PRO belts.

A non-endlessed Soliflex PRO belt will always be delivered with a minimum of 30 mm behind the drive lugs. This ensures maximum flexibility for splicing on site or applying fasteners afterwards.

3 Welding the drive lugs

Soliflex is made PRO by welding drive lugs to the belt. There are two type of lugs; standard lugs are used to create the Soliflex PRO belts with a lug pitch of 51 mm. Mini lugs are used to create the Soliflex PRO mini belts with a lug pitch of 25.5 mm.

The pattern of the drive lugs has three standard configurations. The lugs are always somewhat visible at topside due to shrinkage (see picture). The surface must remain glossy.

3.1 Standard drive lug configurations

Soliflex PRO Mono - 1 row of drive lugs

For very narrow belts (<200 mm) the Duplex configuration is too wide. For those applications we can make a Soliflex PRO Mono belt. Minimum width is 60 mm.

Soliflex PRO Duplex - 2 rows of drive lugs

The advice for most applications is Soliflex PRO Duplex with 2 rows of drive lugs. Center-to-center distance between the rows is 150 mm and the drive lugs are always positioned in the center of the belt. Minimum width is 200 mm.

Soliflex PRO Quattro - 4 rows of drive lugs

This Soliflex PRO Quattro configuration is used for wider belts in combination with high loads. Using 4 rows spreads the transmitted force across the belt width, enabling a smooth operation. The two blocks of Duplex lugs are on a fixed distance of 150 mm. The minimum width for a Quattro configuration is 500 mm

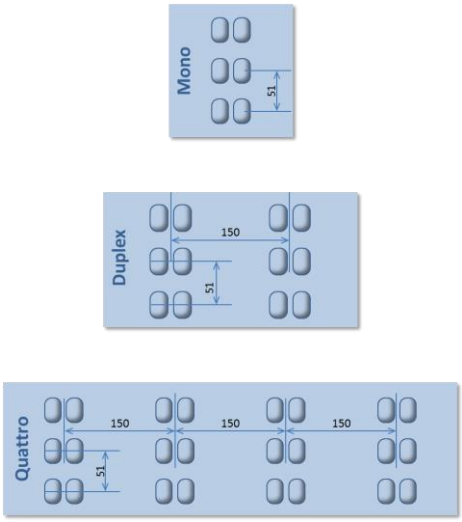


Figure 1 Standard Drive Lug Configurations

3.2 Non-standard drive lug configurations

Soliflex PRO Half Mono – only 1 line of drive lugs

In some applications the drive lugs are used as an alternative for a rope. The drive lugs generally are in the center of the belt and their function is to make the belt track better.

Soliflex PRO Wide Quattro - 4 rows of drive lugs

When wide belts are used in swan neck conveyors the drive lugs are used to keep the belt flat in the bend. To make this effective we position the two rows of Duplex lugs as far as possible to the outside of the belt. The **Soliflex calculation tool** assists in choosing the right positions for the drive lugs, slider strips, sprockets and pulleys.

3.3 Custom made configurations

For example in case of a retro-fit a standard configuration doesn't always fulfill the needs of the customer. In those cases it is needed to place the lugs at another center to center distance than 150 mm. This possibility to change the center to center distance is currently only possible on Soliflex PRO.

The center to center distance of the lug rows can be changed in steps of 25 mm while the minimum distance between two lugs rows is 50 mm. This result in a minimum belt width for Duplex of 100 mm. The maximum distance of the two lug rows in a Duplex configuration is 750 mm and the maximum belt width is 800 mm. The maximum distance between the two outer lug rows in a Quattro configuration is 1200 mm. The maximum belt width is the maximum available slab width (1800 mm for TPU). The minimum distance between the outer two lugs rows is 150 mm, which results in a minimum belt width of 200 mm.

The minimum distance from the edges of the belt and the center of the outer lug rows is 25 mm.

In all cases the configuration needs to be symmetrical over the belt width.

To order non-standard configuration you need to specify the center-to-center distance between the lug rows in the order.

As an example, the configuration as shown in Figure 2 will be described as 50-150-200-150-50. **When a non-standard configuration is ordered, the lug center-to-center distance always need to be specified on the order.**

Figure 2 Lug configuration

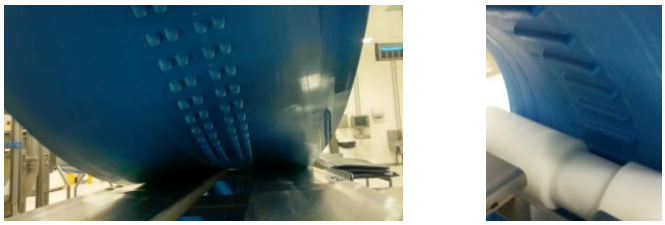


Figure 3 Volta Retrofit

An example is the retrofit of Volta Superdrive. Two duplex rows has to be fit on a center to center distance of 50 mm. This results in an edge to edge distance of 82 mm. This is similar to the Superdrive. In this case only the sprockets of the conveyor have to be exchanged.

4 Splicing

Splicing a belt is the preferred method for making Soliflex endless. To splice Soliflex belts Ammeraal Beltech has developed the Soliflex Maestro splicing press.

4.1 Standard splices in non-profiled TPE and TPU with the Soliflex Maestro

By default the Soliflex Maestro is suitable to splice all Soliflex and Soliflex PRO (mini) belts in both TPE and TPU and with an additional splice insert for Soliflex PRO mini. The press is available in dimensions of 500mm, 800mm, and 1200 mm. The Soliflex Maestro press has a shaped bottom plate that takes up the drive lugs in all configurations (Mono, Duplex, Quattro, etc.). As a result the splice will have the exact right pitch.
For Soliflex PRO belts wider than 1200 mm there's a special splice plate available for rent, please contact CPM about availability. These plates are used in combination with a regular 2200 maestro press and can splice up to 1800 mm. For Soliflex PRO mini wider than 1200 mm contact CPM about possibility.

The splice method and all the settings are given in the **Soliflex Splicing Manual** in detail. The method relies on in-press cutting of the belt ends and a special drying procedure is explained to prevent issues with foam (bubbles) in the splice.

Splices made with the Maestro and the right procedure (including pre-drying) will not fail in the field and are completely hygienic.

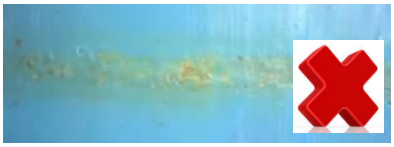
We advise to make splices with PTFE/glass cloth which preferably is glued to the top and bottom press plates (self-adhesive PTFE cloth is available in ICPL).

When Soliflex TPE belts are spliced in the Maestro the edges of the splice tend to stand up due to shrinkage of the belt material. In most applications this small wave won't impair with the functionality of the belt. An extra treatment by regular Maestro press can be done to further limit the wave. Details can be found in the Soliflex splicing manual.

4.2 Standard spliced in profiled TPU

Profiled belts can be supplied endless. For splicing on-site please contact CPM for possibilities.

4.3 Splicing quality requirements for Homogeneous belts

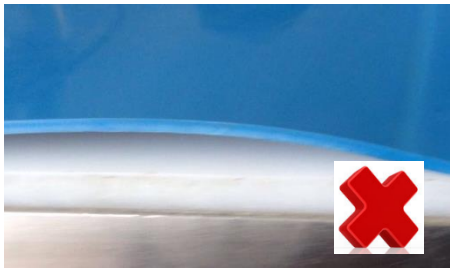


Smoothness

Splicing by the Soliflex Maestro gives a visible, but smooth finishing as shown in the top picture to the left. When the moisture levels are high and the drying procedures are not followed the splice will be unacceptable. The splice as shown in the 3rd picture to the left will lead to failures and the splice will break.

Waving

Some waving is unavoidable and happening with any splice (also competition). Plastics which get heated shrink and this creates tension in the material. TPU shrinks less than TPE and therefore the wave will be very limited.



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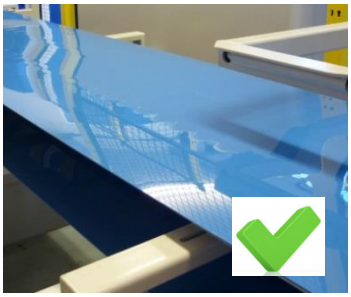
In TPU a wave within 5mm is acceptable



In TPE a wave within 10mm is acceptable. Always tension TPE 0.1%

4.4 Strength of the splice

Splices created in the workshop are tested by default for quality. A splice should be free of cavities, no cavities should be visible when a flashlight is hold under the splice area. A splice is tested for force-elongation and should not break below an elongation of 400%.
In the splicing manual the full procedure is explained.

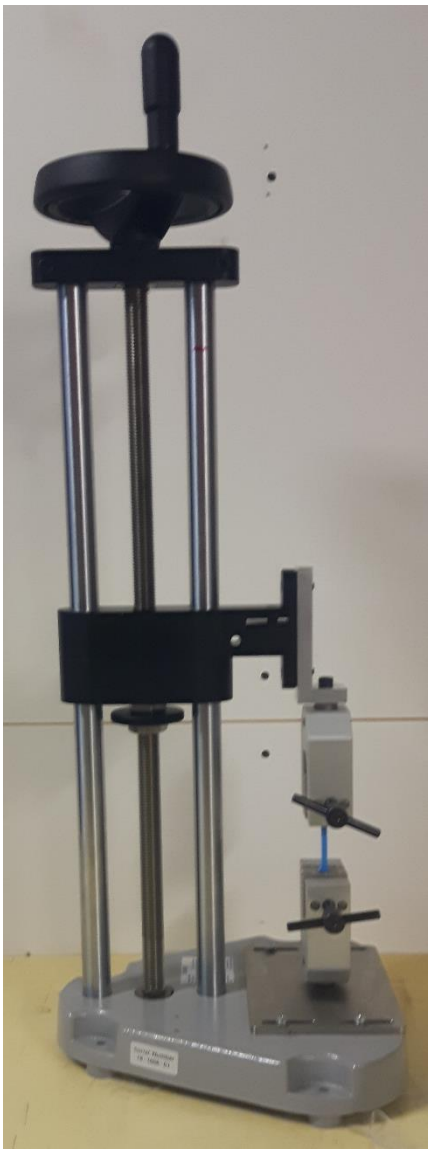


Figure 4 Splice test stand for workshop

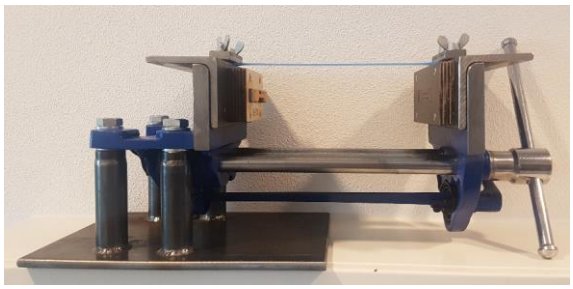


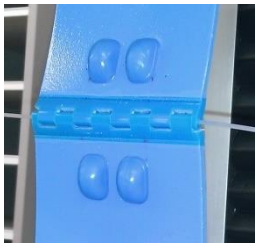
Figure 5 Splice Test stand for on-site jobs

5 Fasteners and laces

Splicing a belt is the preferred endlessing method for Soliflex. In some cases our customers choose for a belt with a fastener. This can be a convenient solution for spare belts or when belts need to be taken from the conveyor for cleaning. The fasteners we offer are all suitable for Soliflex PRO although some types put limitations to the system.

5.1 Standard laces for TPU

The standard TPU lace is welded to the belt and closed with a nylon pin. The lace is suitable for 2 and 3 mm Soliflex TPU belts. The lace will be flush with the top of the belt, but is slightly thicker. This lace is suitable for belts with scrapers. The TPU fastener is made by means of a butt weld splice. The edges need to be straight and the bead removed properly.



5.2 Standard plastic fasteners for both TPU and TPE

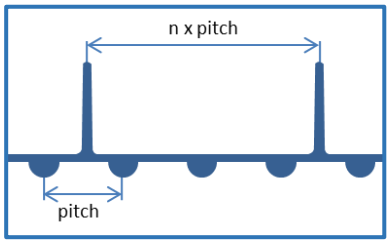
The Flexco Alligator Plastic Rivet (APF) is suitable for Soliflex TPE and TPU belts in 2 and 3 mm. These fasteners are less suitable for use with scrapers and stick out slightly above and below the belt.

When used in combination with Soliflex PRO special precautions need to be taken. To use this fastener one row of lugs must be left out since the fasteners are too large to fit between the drive lugs. When this one lug row is left out always use a sprocket of Z8 or larger.

5.3 Standard stainless steel fasteners for both TPU and TPE

Stainless steel fasteners are suitable for both Soliflex TPE and TPU. These fasteners are considered less hygienic that the other solutions because they are difficult to clean. The strength is very good but they aren't suitable in combination with scrapers. An overview of all available fastener type per belt type is available in Table 1

6 Cleats



Cleats are welded to a belt just between the drive lugs and therefore need to have a fixed distance, a pitch that is *n* x 51 or 25.5 mm (where *n* = 1, 2, 3, etc.).
All described cleats options are available for Soliflex PRO, for Soliflex PRO mini only the PN20, PN35 and PN50 can be used. An overview is available in Table 2.
The cleats will always be perpendicular to the running direction of the belt. We offer a standard solution, cleats made of Soliflex Belt material, and a non-standard solution, Ropanyl cleats as used on our Synthetic belts.

Note: If cleat pitch is < 255 mm, the belt must be spliced before mounting the cleats due to splice press.

Figure 6 Imprint of cleat tool

6.1 Standard Soliflex belt cleats

Cleats cannot be welded to the edge of the belt; there must be 5 mm free on both sides of the belt. The tolerance on the height is +/- 3 mm for all cleats. When used in combination with Bordoflex we **cannot** weld the cleat directly to the Bordoflex waves. There needs to be 6 mm left free between Bordoflex and cleat to allow for the HF tools.

The standard cleats are cut directly from belt material and as such they will have the same colour, hardness and surface quality as the belt. The maximum width of these standard cleats is 707 mm. These cleats can be straight, angled or have a scoop. We can offer four different (scoop) cleat types:

Straight Soliflex belt cleat

The straight cleat has a 90 degrees angle to the belt.
Maximum cleat width b = up to 707 mm
Cleat thickness t = 3 and 4 mm
Cleat height h = from 30 to 150 mm, in steps of 10 mm.

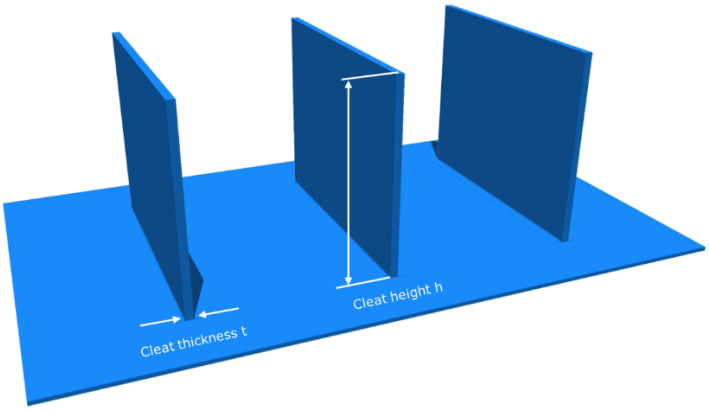


Figure 7 Straight Belt Cleats

Angled Soliflex belt cleat

The angled cleat has a 70 degrees angle to the belt.
Maximum cleat width b = up to 707 mm
Cleat thickness t = 3 and 4 mm
Cleat height h = 30 to 150 mm, in steps of 10 mm.

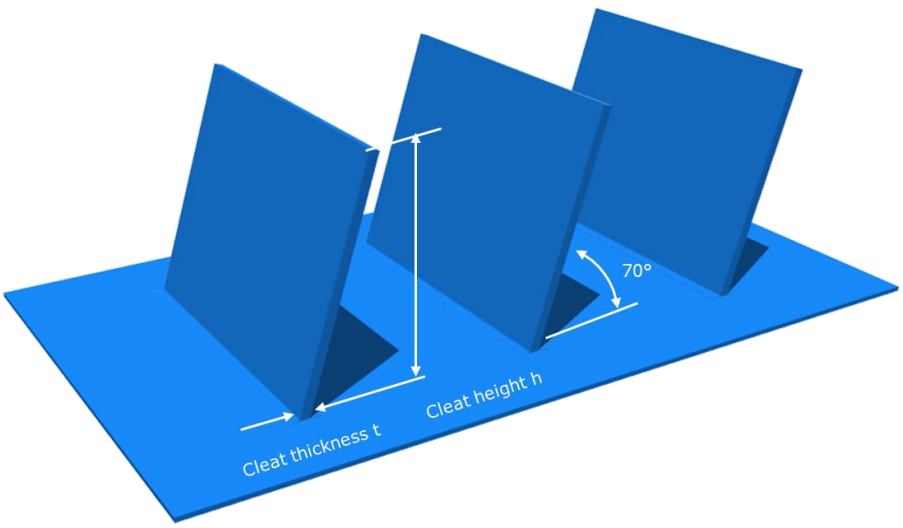


Figure 8 Angled Belt Cleats

Angled Soliflex belt scoop cleat

The angled scoop cleat is straight and has a 120 degrees scoop.
Maximum cleat width b = up to 707 mm
Cleat thickness t = 3 and 4 mm
Cleat height h = 40 to 150 mm (25mm scoop), in steps of 10 mm
Cleat height h = 70 to 150 mm (50mm scoop), in steps of 10 mm
Scoop width w = 25 or 50 mm

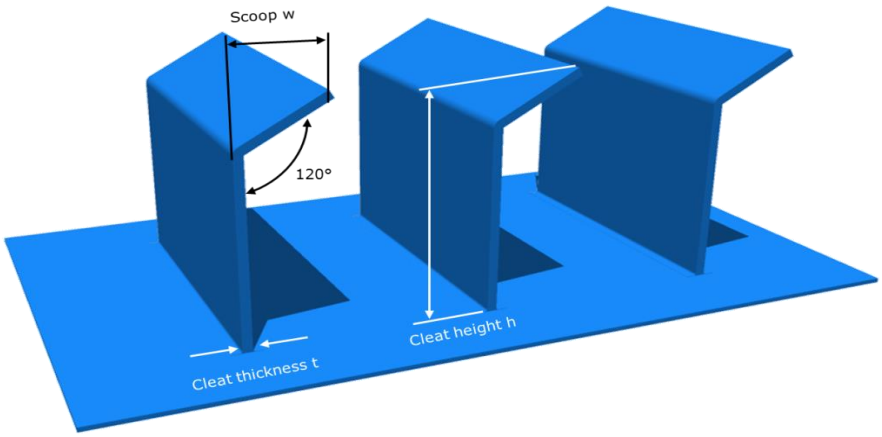


Figure 9 Belt Scoop Cleats Angled

Straight Soliflex belt scoop cleat

The angled scoop cleat is straight and has a 90 degrees scoop.
Maximum cleat width b = up to 707 mm
Cleat thickness t = 3 and 4 mm
Cleat height h = 40 to 150 mm (25mm scoop), in steps of 10 mm
Cleat height h = 50 to 150 mm (50mm scoop), in steps of 10 mm
Scoop width w = 25 or 50 mm

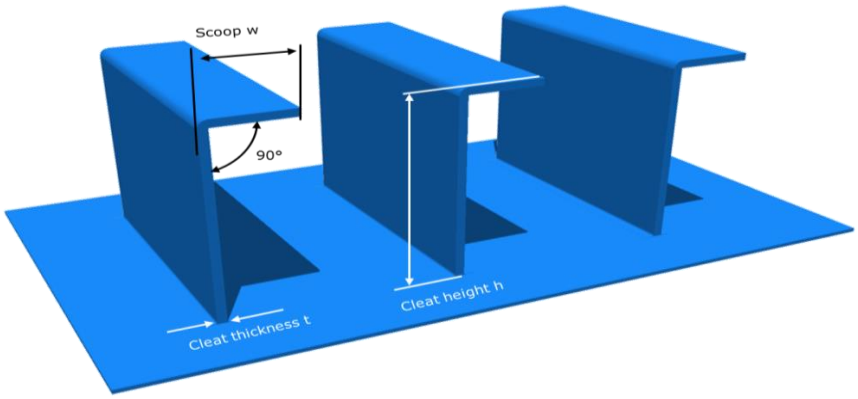


Figure 10 Belt Scoop Cleats Straight

For ordering information please look at 9.2. All possibilities are mentioned in Table 5 and onwards.

6.2 Non-standard cleats

We have solid cleats available that are used for synthetic belting. The cleats are a bit softer than the belt (around 90 Shore A) and we have cleats for both TPU and TPE. Notice that the colour of these cleats will be slightly different from the colour of the belt.

Figure 11 Cleat with free flow of material

leats cannot be welded to the edge of the belt; there must be 5 mm free on both sides of the belt. The tolerance on the height is +/- 3 mm for all cleats. When used in combination with Bordoflex we **cannot** weld the cleat directly to the Bordoflex waves. The standard is to have a minimum of 6 mm left free between Bordoflex and cleat to allow for the HF tools.

When using a modular tool to weld cleats to the belt it is possible to create a free space of 2 mm between the Normal Wave (NW) Bordoflex and cleat. The cleat length must then be a multiple of 5 mm with a minimum of 100 mm with the exception of 105.

Less than 2 mm free space is not allowed, as this requires to weld the cleats without end-stops which gives too much free flow of material. This leads to an un-hygienic result as shown in the picture to the left. Cleats welded to the Bordoflex are not recommended.

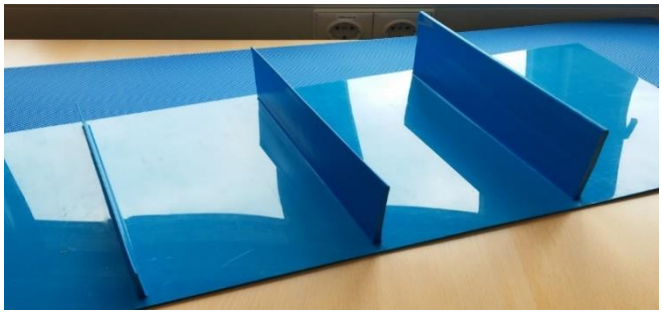


Figure 12 Non-standard Belt Cleats

Footless cleat Ropanyl (TPU 85 Shore A) and Amtel (TPE 40 Shore D)

The footless cleat can be mounted straight or at a 72 degrees angle.
Maximum cleat width b = up to 1020 mm
Cleat thickness t = 3 - 6 mm at the foot and 2 mm at the top
Cleat height h = 20, 35, 50 or 75 mm

Footless cleat 100 x 6 Ropanyl (TPU 85 Shore A) and Amtel (TPE 40 Shore D)

The footless cleat can only be mounted straight.
Maximum cleat width b = up to 1020 mm
Cleat thickness t = 6 (constant thickness)
Cleat height h = 100 mm

It is also possible to weld several small cleats on one line to the belt (instead of 1 large cleat). To order such a belt a drawing will be needed. Make sure that the distance between the individual small cleats is 40 mm (the dimensions of the stop in the HF tool).

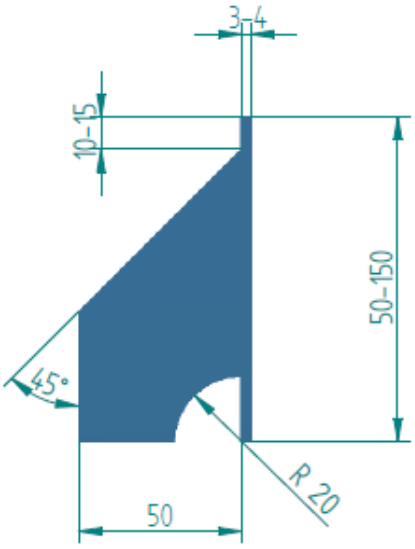
Figure 13 Inclined conveyor with cleats

6.3 Perforating Cleats

Cleats can be perforated too. This will affect the stiffness of the cleat and make it less hygienic. To make such cleats is quite laborious and expensive. Check the details with CPM/EuroFAB before ordering. Available standard bore diameters are in Table 4.

Figure 14 Perforated cleats

6.4 Gussets



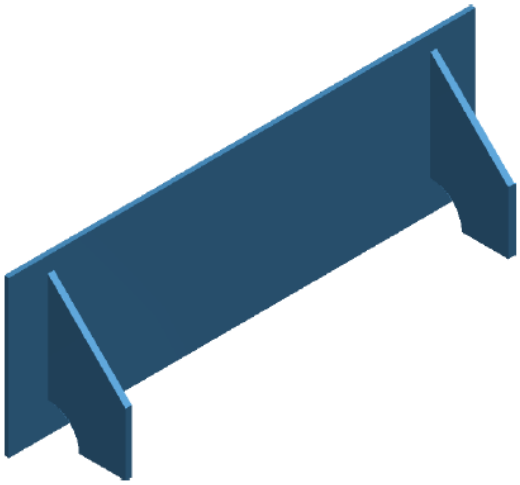
When cleats with back supports are needed we advise to contact CPM/EuroFAB.

Gussets are supports at the back of a cleat to avoid a cleat to bend over. The cleats can then handle a higher load.

The cleats are made out of Soliflex belt material, the thickness of the cleats is 3 or 4 mm. The minimum height for a cleat with gussets is 50 mm and the maximum is 150 mm. The gussets are positioned 75 mm from both cleats sides and the maximum distance between the gussets is 200 mm. The thickness of the gussets is 4 or 6 mm.

The gussets have to be applied by hand, so the connection between the gusset and the cleat will not have a perfect hygienic seal. Gussets will be attached to the cleat, not the belt.

Gussets are not possible on Soliflex PRO mini belts.



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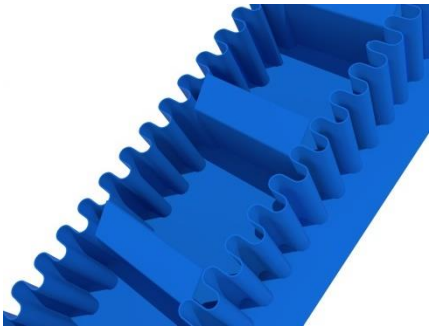
7 Spilling edges/Bordoflex



For inclined transport our customers need to close the sides of the belt. This can either be done with sidings on the conveyor frame which is very common with modular belts. For Soliflex we recommend Bordoflex, ropes or side-skirts (1.5mm TPU).

7.1 Bordoflex

On Soliflex TPE Bordoflex is not possible due to technical limitations of the HF welder.

The Bordoflex cannot be welded to the belt edge; a minimum of 5 mm must be left open. When cleats are specified together with a Bordoflex than there always will be 2-6 mm of distance between the Bordoflex and the cleat ends. If belts with Bordoflex and cleats are ordered than we weld the cleats to the belt before welding the Bordoflex. See chapter about cleats.

When applying belts with Bordoflex the sprocket size must be chosen larger than the standard sizes. The minimum sprocket diameter must be higher than three times the Bordoflex height and also be bigger than the minimum sprocket diameter than the belt, an overview is shown in Table 3. The maximum height of Bordoflex on Soliflex PRO mini is 50 mm.

We advise to order a belt with Bordoflex as an endless belt. The workshop will close the Bordoflex and HF weld it to an already spliced belt. This gives a very good quality.

For belts with Bordoflex the sprocket size must be chosen larger than the standard sizes. The minimum sprocket diameter must be higher than three times the Bordoflex height and also be bigger than the minimum sprocket diameter than the belt.

Table 3 helps in choosing the right sprocket size depending on the height of the Bordoflex.

Example: Soliflex PRO TPU 3 mm with Bordoflex 50 mm high. The minimum flex diameter for this belt is Z8 (ø 127.3 mm), 3 times the Bordoflex height is 150 mm. In this case a sprocket diameter larger than 150 mm is needed: Z10 (ø 159.8 mm).

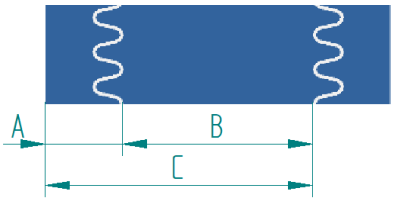
7.1.1 Bordoflex quality requirements

As mentioned the quality of a Bordoflex cannot be perfect when done on site (by hand). When supplied endless by Eurofab the finishing is smooth. Finished as shown in the left picture is not acceptable as this will harvest bacteria.

We advise to order a belt with Bordoflex as an endless belt. The workshop will than close the Bordoflex and HF weld it to an already spliced belt. This gives a very good quality.

Belts with a Bordoflex cannot be spliced in the field with a perfect quality. The welding of the last waves of Bordoflex over the splice area by hand is very difficult. Only very experienced fitters will be able to do that with satisfactory results.

7.1.2 The position of the Bordoflex



We assume that a Bordoflex will always be welded symmetrically to the belt. So there will be a Bordoflex on the left side and on the right side of the belt. To specify the position of the Bordoflex we have agreed to give up three dimensions A, B and C as seen in the sketch to the left. This is an internal Ammeraal Beltech standard that guarantees that belts from all workshops will be made in the same way.

7.1.3 Standard Small Wave (SW) Bordoflex

The Small Wave Bordoflex is made with a 1.7 mm thick TPU material. Notice that the colour of this material will be slightly different from the colour of the belt. The pitch of this small wave is 25 mm. The width of the Short Wave is 23.4 mm. The height of the Bordoflex can be chosen between 20 and 55 mm high in steps of 5 mm.

Constraints:

1. The minimum distance A is 30 mm. This ensures a minimal distance of 5 mm between the edge of the belt and the Bordoflex.
2. Minimum distance B is 50 mm more than the lug row pitch. This ensures a minimal distance of 9 mm between the Bordoflex and the lug rows.
3. The maximum distance C is the belt width minus 30 mm. This ensures a minimal distance of 5 mm between the edge of the belt and the Bordoflex.

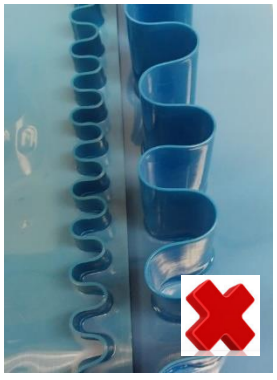
For example: A standard Duplex has a lug row of 150 mm, this means the minimum distance B is 200mm. When a non-standard pitch is used like 100 mm, the minimum distance B is 150 mm

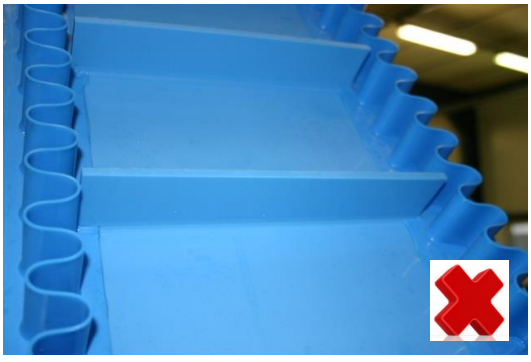
7.1.4 Standard Normal Wave (NW) Bordoflex

The Normal Wave Bordoflex is made with a 2.5 mm thick TPU material in the colour of our Soliflex TPU. The pitch of this wave is 51 mm, the same as our drive lugs. The width of the Normal Wave is 45.5 mm. The height of the NW Bordoflex can be chosen between 30 and 100 mm high in steps of 5 mm.

Constraints:

1. The minimum distance A is 51 mm. This ensures a minimal distance of 5 mm between the edge of the belt and the Bordoflex.
2. Minimum distance B is 50 mm more than the lug row pitch. This ensures a minimal distance of 9 mm between the Bordoflex and the lug rows.
3. The maximum distance C is the belt width minus 51 mm. This ensures a minimal distance of 5 mm between the edge of the belt and the Bordoflex.





To order Bordoflex you need to specify the type (Small Wave or Normal Wave) and the height of the Bordoflex as well as the dimensions A, B and C. The calculation tool assists in specifying the Bordoflex.

7.1.5 Aligning cleats and Bordoflex

When the cleats and the Bordoflex needs to be aligned. The wave pitch of the Bordoflex and the pitch of the cleats must be in line. This alignment is only possible with Normal Wave (NW) Bordoflex. The pitch of both the belt and the Bordoflex is 51 mm.
Aligning Short Wave Bordoflex and cleats is not possible, due to the incompatible pitch (25 mm and 51 mm)

7.1.6 Smaller gap between Bordoflex and cleat (2 mm)

When synthetic cleats are used in combination the modular HF tool of Eurofab, it is possible to get a smaller gap between the Bordoflex and the cleat. It is possible to reach a gap of 2 mm. This tool is only possibly when using Ropanyl cleats used for synthetic belts. For details of these cleats see non-standard cleats section.
The length of the cleat must be a multiple of 5 mm with a minimum of 100 mm (105 mm excluded) and the distance B will then be the cleat length + 4 mm. All other constraints as described in the previous sections will stay in place.

Bordoflex on foot is no longer available for Soliflex. The strength and hygiene of HF welded Bordoflex is superior. And the use of adhesives is not advised for food applications.

7.1.7 Fasteners and Bordoflex

In case of fasteners on a belt with Bordoflex it's not possible to apply Bordoflex fully to the belt at the end of the belt. On installation the Bordoflex of the two belt ends will be joined together when the belt is installed.

The distance where the bordoflex is not attached to the belt is 10 mm from the edge of the fastener.

7.2 Ropes

Ropes can also be used for spilling edges. The following ropes are available:

- Rope TPU Solid Vee 17 x 11 L. Blue
- Rope TPU Solid Vee 13 x 08 L. Blue
- Rope TPU Solid Vee 10 x 06 L. Blue

Constraints:

1. The minimum distance from the edge of the belt to the edge of the rope is 5 mm.
2. Ropes on top cannot be applied where the lug rows are at the bottom.

8 Perforations

Soliflex PRO belts can be perforated for instance in applications were vegetables are washed or products are dried. The resulting belt will have a considerably lower F/E than the original belt, and a lower strength. We advise to use perforations only on Soliflex PRO belts. We consider flat Soliflex belts unsuitable for perforations.

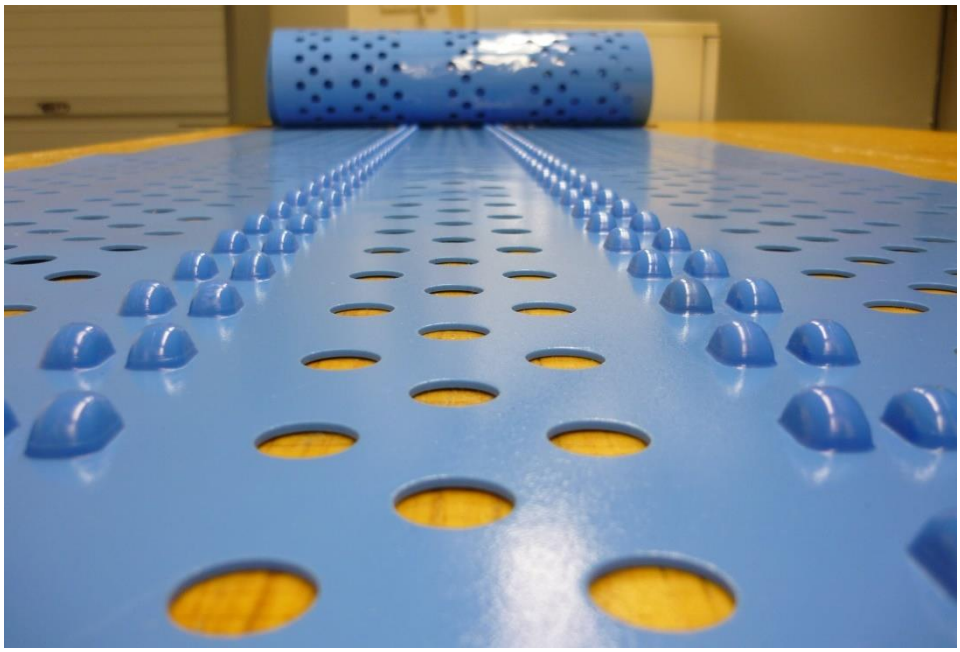


Figure 15 Belt Perforations

When Soliflex PRO belts are perforated some areas must remain unharmed. Avoid perforations close to the edge, close to the drive lugs or in the splice region as shown in the sketch below.

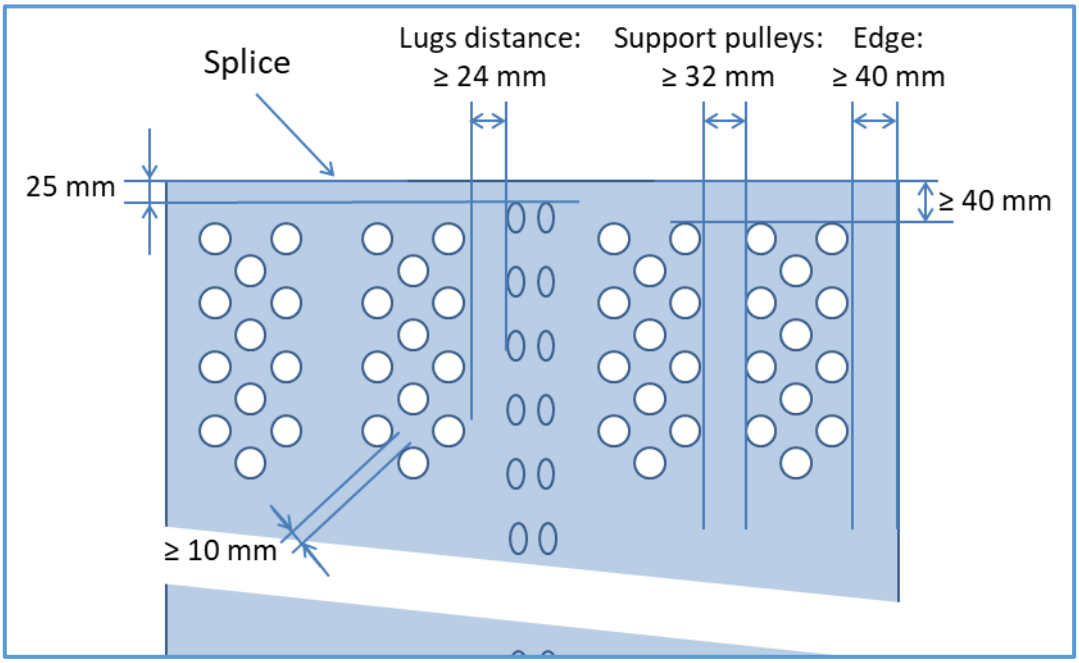


Figure 16 Constraints of hole punching

Available hole sizes

The following hole sizes are standard available (in mm): 2 till 25 in steps of 1 mm and 30, 40, 45, 50.
Other sizes require new tools and longer lead times. Contact CPM in these cases.

9 References

9.1 Tables

9.1.1 Fastener types

In the overview below all available fastener types per belt type are shown:

Table 1 Fastener types

Belt type	**Fastener Type**
TPU/20	G002, APF150, TPU Fastener*
TPU/30	G002, APF150, TPU Fastener*
TPU/40	G006
TPE/20	G002, APF150
TPE/30	G002, APF150
	*maximum width: 1000mm

9.1.2 Cleat type

Table 2 Maximum Cleat type per sprocket type

	PRO	**PRO mini**	**Maximum standard belt cleat thickness (mm)**	**Maximum synthetic footless Ropanyl cleats**	**Maximum synthetic footless Amtel cleats**
		Z06 47.0	Na	Na	Na
		Z08 63.3	Na	PN20	Na
		Z10 79.6	Na	PN35	Na
		Z12 95.9	Na	PN50	Na
	Z06 94.7		3.0	PN50	Na
	Z07 111.0		3.0	PN50	Na
	Z08 127.3		4.0	PN50	PN35
	Z09 143.5		4.0	PN75	PN35
	Z10 159.8		4.0	PN75 / 100 x 6	PN50
	Z11 176.1		4.0	PN75 / 100 x 6	PN50
	Z12 192.4		4.0	PN75 / 100 x 6	PN75 / 100 x 6
	Z13 208.7		4.0	PN75 / 100 x 6	PN75 / 100 x 6
	Z14 225.0		4.0	PN75 / 100 x 6	PN75 / 100 x 6
	Reducing PN-cleat height does not influence minimum sprocket diameter.				

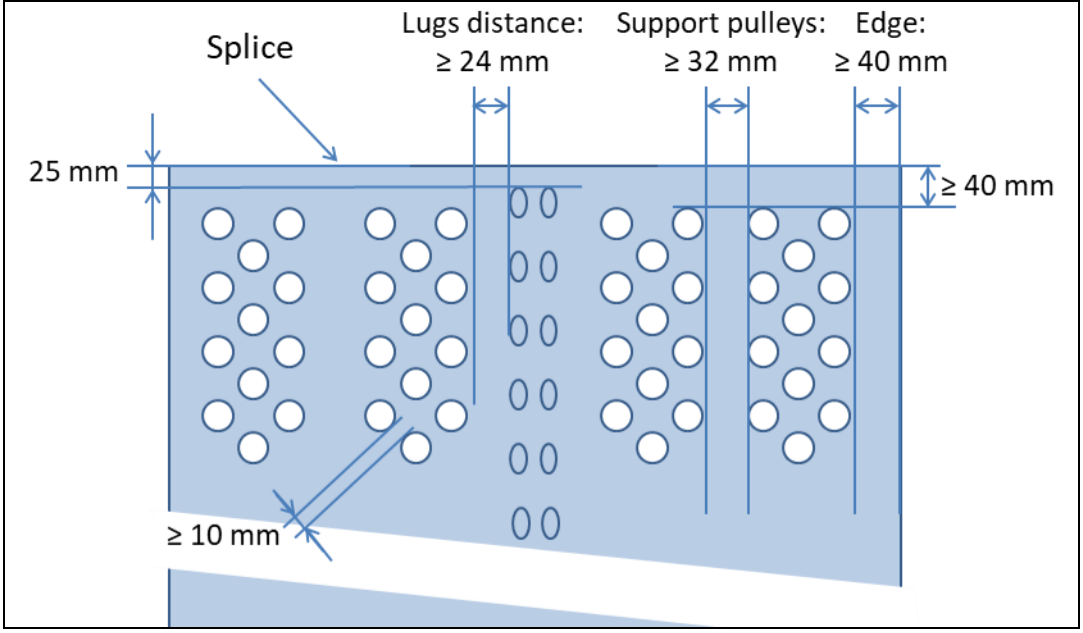
9.1.3 Bordoflex

Table 3 Maximum Bordoflex Height per sprocket type

PRO	PRO mini	Maximum height (mm)
	Z06 47.0	na
	Z08 63.3	20 mm
	Z10 79.6	25 mm
Z06 94.7	Z12 95.9	30 mm
Z07 111.0		35 mm
Z08 127.3		40 mm
Z09 143.5		45 mm
Z10 159.8		55 mm
Z11 176.1		60 mm
Z12 192.4		65 mm
Z13 208.7		70 mm
Z14 225.0		75 mm
For belts with Bordoflex the sprocket size must be chosen larger than the standard sizes. The minimum sprocket diameter must be higher than three times the Bordoflex height and also be bigger than the minimum sprocket diameter than the belt.		

9.1.4 Perforation Possibilities

Table 4 Perforation Possibilities

Available standard bore diameters
2 till 25 mm in steps of 1 mm and 30, 40, 45, 50 mm
Minimum distance between holes is 10 mm.
For other sizes and shapes please check CPM/Eurofab


9.1.5 Overview standard belt cleats.

Table 5 Straight Belt Cleats

Height (mm)	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**	**150**
TPU 3mm 90°	X	X	X	X	X	X	X	X	X	X	X	X	X
TPU 4mm 90°	X	X	X	X	X	X	X	X	X	X	X	X	X

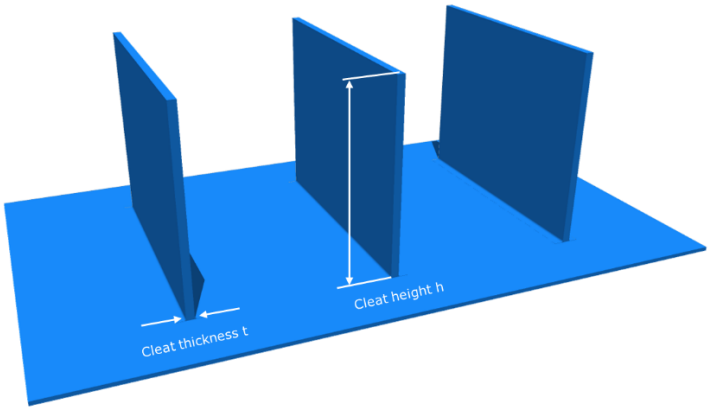


Table 6 Angled Belt Cleats

Height (mm)	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**	**150**
TPU 3mm 70°	X	X	X	X	X	X	X	X	X	X	X	X	X
TPU 4mm 70°	X	X	X	X	X	X	X	X	X	X	X	X	X

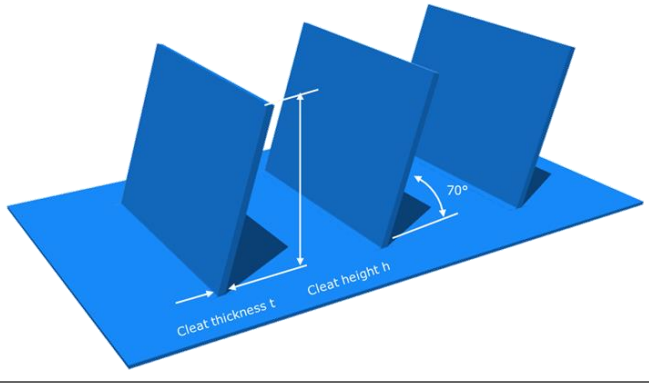


Table 7 Angled Belt Scoop Cleats

Height	40	50	60	70	80	90	100	110	120	130	140	150
TPU 3mm +25W+120º	X	X	X	X	X	X	X	X	X	X	X	X
TPU 3mm +50W+120º	-	-	-	X	X	X	X	X	X	X	X	X
TPU 4mm +25W+120º	X	X	X	X	X	X	X	X	X	X	X	X
TPU 4mm +50W+120º	-	-	-	X	X	X	X	X	X	X	X	X

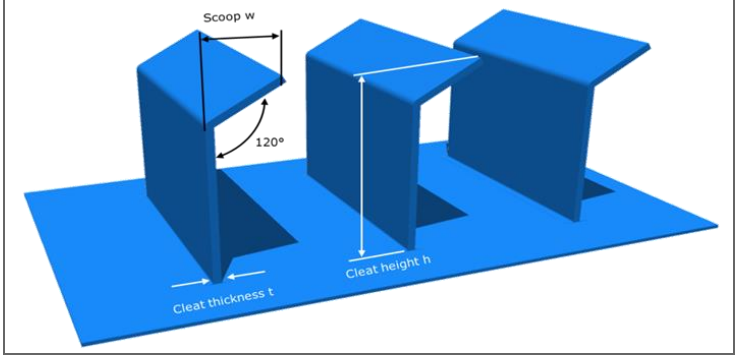
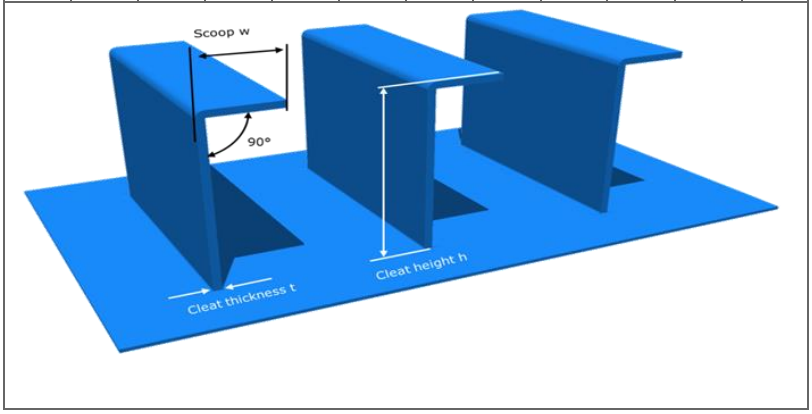


Table 8 Straight Belt Scoop Cleats

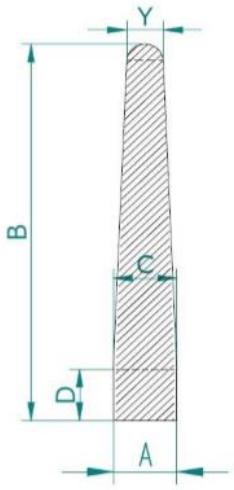
Height	40	50	60	70	80	90	100	110	120	130	140	150
TPU 3 mm+25W+90º	X	X	X	X	X	X	X	X	X	X	X	X
TPU 3 mm+50W+90º	-	-	-	X	X	X	X	X	X	X	X	X
TPU 4 mm+25W+90º	X	X	X	X	X	X	X	X	X	X	X	X
TPU 4 mm+50W+90º	-	-	-	X	X	X	X	X	X	X	X	X



9.1.6 Overview non-standard (synthetic) cleats

Table 9 non-standard (synthetic) cleats

	PN20	PN35	PN50	PN75
A	3.0 ±0.1	4.0 ±0.1	5.0 ±0.1	6.0 ±0.1
B	22.0 ±1.0	37.0 ±1.0	53.0 ±1.0	79.0 ±1.0
C	3.2 +0.3 /-0	4.2 +0.3 /-0	5.2 +0.3 /-0	6.2 +0.3 /-0
D	3	3	3	3
Y	2.0 +0.5 / -0	2.0 +0.5 / -0	2.0 +0.5 / -0	2.0 +0.5 / -0



9.2 Ordering information (belt & scoop cleats)

To make sure that the belt and scoop cleats are made as per specification it's important that the order details are correctly transferred to the Soliflex workshop.

9.2.1 Ordering within connect company (configurator)

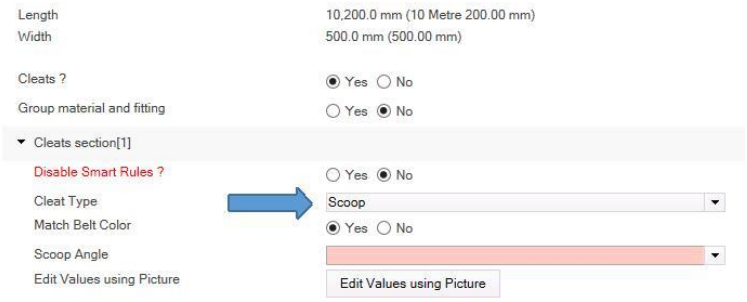
9.2.1.1 Scoop Cleats

Step 1: Select belt

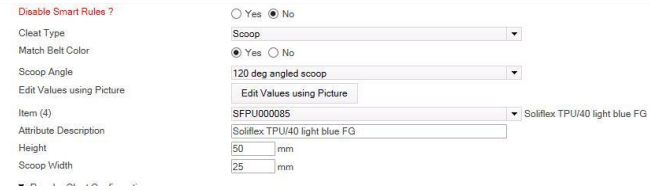
Select belt and defined length and width

Step 2: Select "Cleat Type"

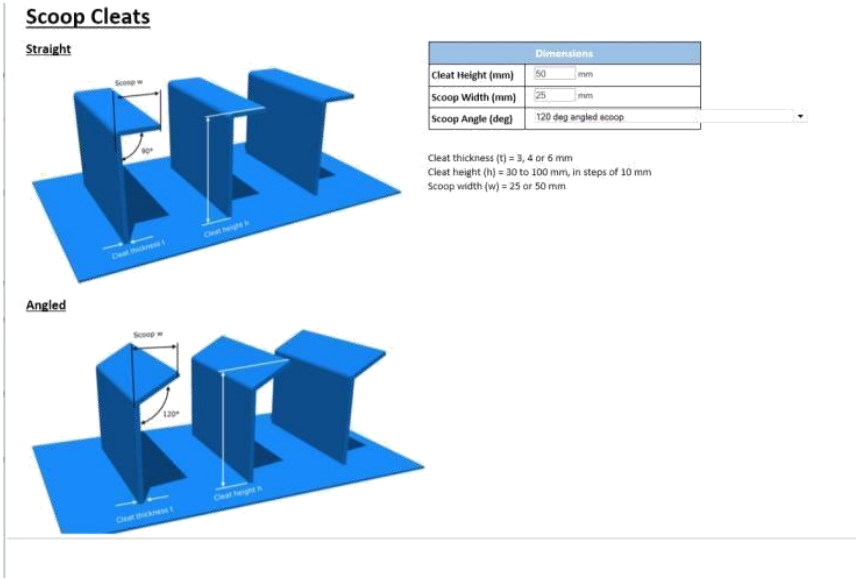
Select "Scoop" as cleat type.



Step 3: Configure the cleat,



You can also use “edit values using pictures”. The following screen then pops-up.



Step 4: Then configure the placement of the cleats on the belt

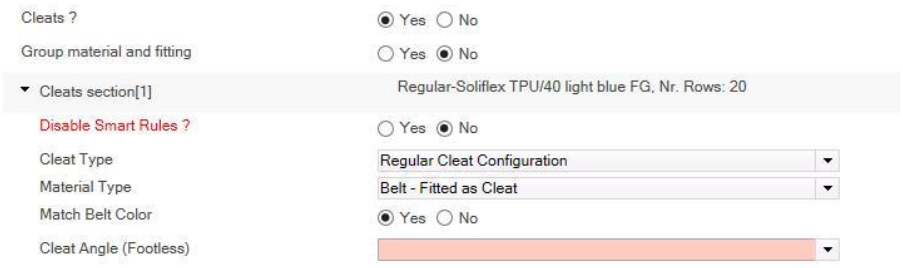
9.2.1.2 Belt as cleat

Step 1: Select belt

Select belt and defined length and width

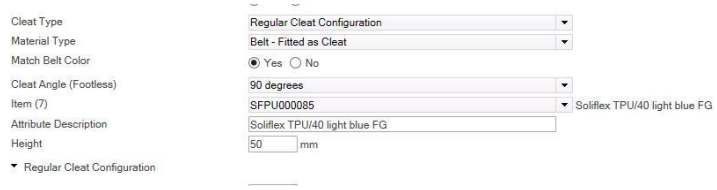
Step 2: Select “Cleat Type”

Select “Regular Cleat Configuraion” as cleat type and “Belt – Fitted as Cleat” as Material type.

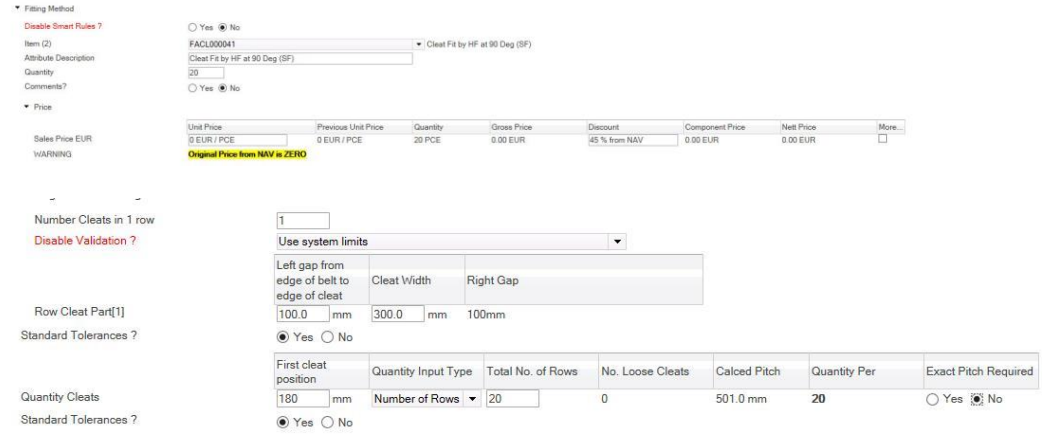


Step 3: Configure the cleat type

Select the cleat angle and the material



Step 4: Then configure the placement of the cleats on the belt



All data will be generated automatically.