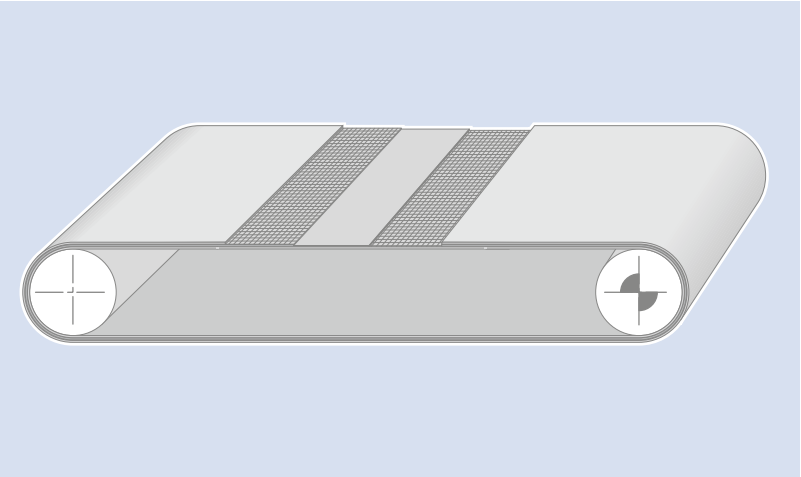
siegling transilon
conveyor and processing belts

TECHNICAL INFORMATION 1
STORAGE, FINISHING, FITTING



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INTRODUCTION

Siegling Transilon conveyor and processing belts are high quality products that are durable, easy to handle, require no maintenance and are economical to operate. From strong allrounders to high-tech specialists, our product range includes more than 650 types and designs worldwide for the most varied of conveying and processing tasks in all industries.

This brochure provides basic information about your conveyor and processing belt.

Further information about belts with special mechanical, physical or chemical properties, patterns, profiles and sidewalls as well as about curved belts can be found in our brochure ref. no. 318 Technical Information 2.

Our web-based Transilon product finder app allows users to find the right conveyor/processing belt for their application quickly and easily. Users can make the results list more accurate by entering the specifications they are looking for, such as the belt thickness, return diameters and profiles. Even if just a few search terms are added, the app swiftly generates a list of product names and technical information. The app can also retrieve product data sheets and brochures with technical information.

The Siegling Transilon product finder is available at www.forbo.com/movement > E-Tools > Product Finder

Because our products are used in so many applications and because of the individual factors involved, our operating instructions, details and information on the suitability and use of the products are only general guidelines and do not absolve the customer from carrying out checks and tests themselves. When we provide technical support on the application, the customer bears the risk of the machinery functioning properly.

DESIGN AND MATERIAL

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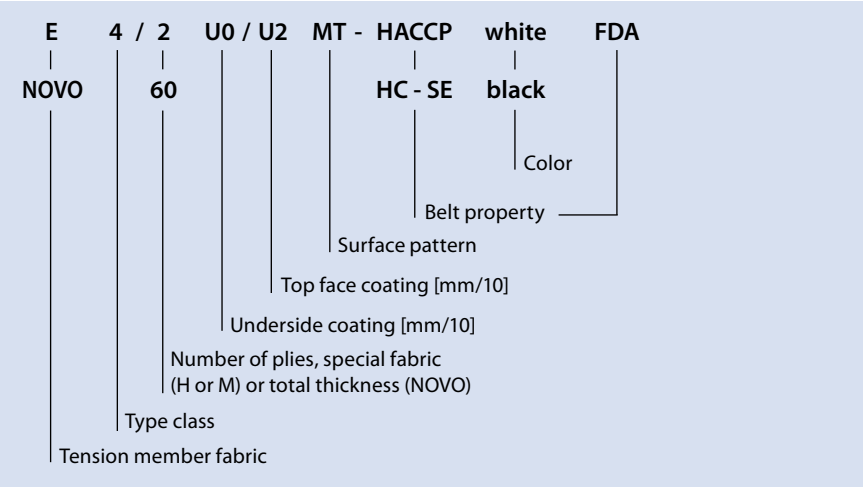
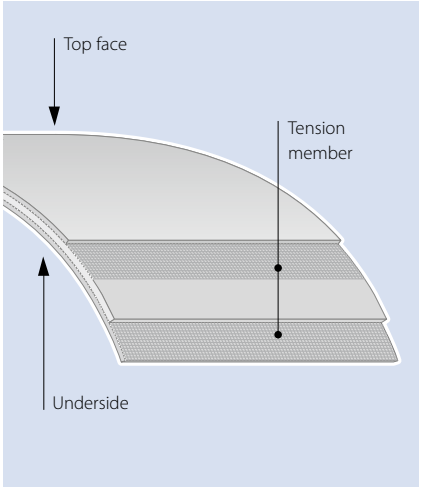




Tension member fabrics	
AE	Aramid/polyester blended fabric
E	Polyester
EL	Polyester (elastic)
EP	Polyester/polyamide blended fabric
NOVO	Polyester felt
P	Polyamide

Design	
1, 2, 3	Number of fabric plies
H	HighTech-fabric
M	Solid-woven material

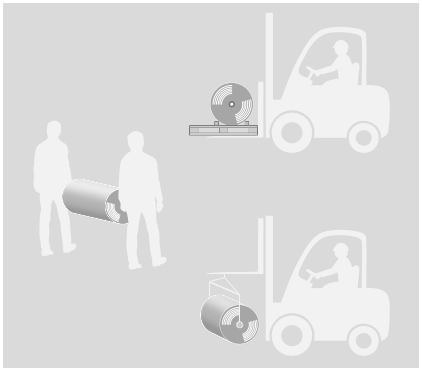
Coatings	
0	Fabric uncoated
A	Polyolefin
C	Cotton
E	Polyester
F	Polyester felt
G	Rubber/elastomer
G…H	Rubber/elastomer hard
L	Leather
P	Polyamide
R	High Grip
S	Silicone
TX0	Texglide™
U	Polyurethane
U…D	Polyurethane dehesive
U…H	Polyurethane hard
U…S	Polyurethane soft
V	Polyvinyl chloride
V…H	Polyvinyl chloride hard
V…S	Polyvinyl chloride soft
U0, E0, A0, S0, Y0, UH	Polyurethane impregnation

Surface patterns	
AR	Rough-top
BT	Broken twill
CH	Check-in
DIA	Diagonal
FG	Herringbone
Fine	Fabric, fine
FSTR	Fine texture
GL	Smooth
GSTR	Coarse texture
KN	Cross-stud
LG	Longitudinal groove
MT	Matte
NP	Inverted pyramid
NSTR	Normal texture, fine
QS	Quartz sand
R	Large diamond
RF	Fine rhomboid
RFF	Flat fine rhomboid
Rough	Fabric, rough
RPH	High round profile
R80	Check-in, rhomboid
SG	Lattice
SMT	Semi-matte
SP	Star pyramid
STR	Normal texture
TRI	Triangle, crosswise
VN	Staggered stud
WG	Wide groove
Z	Velour

Belt properties	
AMP	Amp Miser™
ATEX	Certified according to ATEX category 2G/2D
C, Q	Laterally flexible, suitable for curved belts
FF	Non-fraying (Frayfree)
FR	Flame-retardant, ASTM D-378
FDA	EC/FDA (see data sheet)
HACCP	Supports the HACCP concept
HC	Highly-conductive
HW	Hot-water resistant
LF	Low friction
M	Particularly stiff laterally
NA	Non-antistatic
PS	Pre-shrunk
S	Very low noise
SE	Flame-retardant, EN340
TT	Pyrolysis compliant (tobacco type)

TRANSPORT AND STORAGE

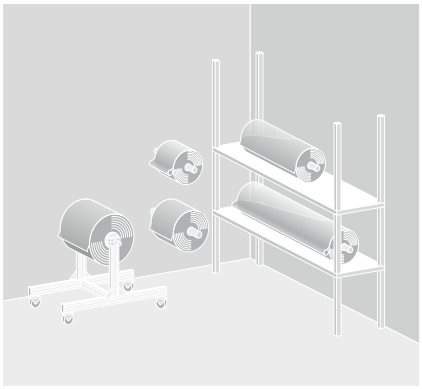
Transport Siegling Transilon belts in such a way that they aren't bent or damaged by sharp edges; don't tip over the belt edges. Use forklift trucks, hoists, hand carts or similar to transport roll material and finished belts (depending on the size) and place them on a firm base or use a transport rod in the winding core. If possible, don't remove the packaging until the belt has reached the place where it's to be fitted. When fitting, don't drag the belt over rough, dirty or wet flooring. In the case of material prepared for endless splicing, separate packaging protects the ends of the belt from mechanical damage and getting dirty. This protective packaging must not be removed until just before the splice is made and when inserting the belt into the conveyor, always leave it on the ends of the belt.



If possible, we recommend allowing the belt to acclimatize for one day before it's fitted. Please note that major departures from the recommended conditions for storing and transporting the belts can have a negative impact on any guarantee entitlements.

If in doubt, contact your local Forbo Siegling rep and have the product number, product name, delivery number, delivery date and fitting date to hand.

Just like all products made of synthetic materials, Siegling Transilon conveyor belts age and ambient conditions have a major impact on this process. Due to the variety of materials that can be combined with one another, production methods and storage conditions, it's not possible to provide accurate information on a particular product's shelf life. However, the risk of products aging prematurely can be reduced if the following recommendations are complied with:



– Don't store them at temperatures below – 10 °C or above + 25 °C.
– The storage space should be clean and ventilated, humidity should be 40 – 65 %.
– Avoid exposure to direct sunlight or UV rays at all costs.
– Don't store finished belts or unfinished rolls on their edges but hang them on a winding core (if available) or place them flat on a shelf or pallet.
– Only remove the packaging shortly before fitting the belts.

Once the belts have been in storage for two years, we recommend checking the surface for any changes in the color or pattern:

– Is the coating softer or harder than usual?
– Is the splice and any film that might have been used still intact?
– Are any profiles still stuck?

RESISTANCE AND CARE

Depending on the coating, Siegling Transilon is safe, corrosion and rot resistant, largely impervious to oils, greases, and many chemicals. Further details are available in the product information on our website or on request.

We recommend you test resistances yourself according to prevailing operating conditions and other influences affecting the belt.

Siegling Transilon belts are easy to clean with lukewarm water. Very greasy patches can be removed with alcohol from V (PVC) coatings or with white spirit from U (urethane) coatings. Then clean with water. (Please inquire about P coatings.)

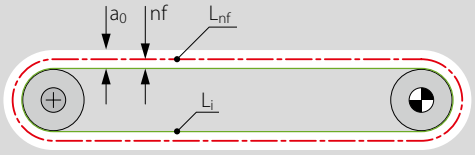
The right cleaning method ultimately depends on the surface material, the surface and type of soiling. Get in touch with your Forbo Siegling contact if you have any questions.

We recommend that belt, drums, support rollers and skidplates be kept clean at all times.

AVAILABILITY, STANDARD SIZES AND TOLERANCES

Establishing lengths for orders

All lengths of spliced conveyor belts on orders and spare parts cards refer to what's known as the inside length (L_i) when the belt has not been tensioned. This dimension is not the same as the length of the neutral axis. With respect to general tolerances, the difference between these two dimensions in belt lengths as of 3 m is virtually immaterial. However, in the case of shorter belts and tighter length tolerances, it does have to be taken into account when checking measurements. The inner length (L_i) is either established based on the conveyor's dimensions or a belt sample. You can find information about this in our document entitled Establishing the Lengths of Spliced Conveyor Belts, ref. no. 591.



a_0 = Belt thickness
nf = Height of the neutral axis
L_{nF} = Length of the neutral axis = elongated length (red)
The layer that isn't subjected to elongation or compression
L_i = Inner length of the belt (green)

Minimum lengths for endless belts

Belt width [mm]	Shortest belt lengths [mm]	
	splice <) 90°	splice <) 80° (on request)
≤ 200	700	950
≤ 300	700	1000
≤ 400	700	1050
≤ 500	700	1150
≤ 600	900	1250
≤ 800	900	1400
≤ 1000	1250	1550
≤ 1250	1300	1750
≤ 1500	1400	2000
≤ 1750	1400	2300
≤ 2000	1400	2600
≤ 2250	1600	2900
≤ 2500	1600	3200
≤ 2750	1600	3500
≤ 3000	1600	3800
≤ 3500	2300	4500
≤ 4000	2300	5000
≤ 4400	2300	5500
≤ 5000	2500	
≤ 6000	2500	

Please inquire about shorter belt lengths and larger belt widths.

Supplied as

Siegling Transilon conveyor and processing belts are available as

- endless belts
- belts prepared for on-site melt splicing or cold bonding,
- roll material for customized fabrication (The length of the roll supplied is limited by the length manufactured, winding diameter, weight, width and surface pattern. Please inquire.)
- belts with metal or plastic mechanical fasteners
- belts with sealed edges (Smartseal)
- belts with profiles welded on (longitudinal, lateral, diagonal, half-round)
- belts with sidewalls
- belts with perforations
- special designs with metal eyelets, trip foil strips, special labelling, etc.

Information about the finishing of special types such as profile, perforated or curved belts can be found in our brochure ref. no. 318 Technical Information 2.

Maximum width

Transilon is produced in widths of 1400 to 4700 mm, depending on the type and surface material. Belts longer than 30000 mm with widths over 5000 mm available on request.

Note:
If they can be supplied with a longitudinal seam, belts with patterned top faces may have small changes in the pattern in the area of the seam. If two longitudinal seams are required, they will be fabricated symmetrically to the center of the belt.

Types	Endless belts without longitudinal seam [mm]	Endless belts with 1 longitudinal seam [mm]	Endless belts with 2 longitudinal seams [mm]
one-ply	≤ 4700 [1]	on request	on request
2-ply/3-ply [1]	1400	2700	4000
	1500	2900	4300
	3000	6000	6000 [2]
	4600 [1]	6000	6000 [2]
E 10/M (U)	1450	2800	4200
E 10/M (V)	3000	6000	6000 [2]
E 15/M	2500	5000	6000 [2]
E 20/M	1600	3100	4600

[1] types available on request
[2] larger widths available on request

Fabrication tolerances

These fabrication tolerances are determined by the fabrication process. These tolerances do not include changes in width or length which can arise after fabrication due to fluctuations in ambient conditions or other external factors.

The tolerance range may not be extended up or down arbitrarily. Special tolerances are also possible. Please ask.

In order to guarantee repeat accuracy around the splice there are different length tolerances for Transilon with special surface patterns such as the CH, R80, R, KN, VN pattern.
Please note the repeat info and different length tolerances in the technical product data sheets.

Width tolerances* [mm]	
10 – 200	± 2 mm
201 – 600	± 4 mm
601 – 1400	± 6 mm
1401 – 2700	± 10 mm
2701 – 4300	± 14 mm
4301 – 6000	± 18 mm

Length tolerances [mm]	
700 – 1500	± 0.8 %
1501 – 2500	± 0.5 %
2501 – 5000	± 0.4 %
5001 – 10000	± 0.3 %
> 10001	± 0.2 %

* for belts with longitudinal seam tolerance values are double in the width

Sets of belts

We fabricate sets of belts of the same length.

max. length = 10500 mm
max. width of set = 600 mm

Special types on request.

When ordering please specify which belts belong to one set so that they can be supplied as a set. Slight differences in length which cannot be avoided with synthetic materials can best be counterbalanced by placing the longest belts in the center of the set when fitting.

TYPES OF SPLICES

The appropriate splicing method for each belt depends on the belt type, the application and the conditions under which they operate. Key criteria for selecting the splicing method are, in addition to splice reliability, also the flexibility of the splice and the properties required by the application technology.
Detailed splicing instructions available on request.

Hot-press method

A hot-pressed splice provides the greatest durability and flexibility. The following versions are possible:

■ **Z-splice** ①
Meets the most stringent requirements for uniformity of thickness. Very flexible splice, ideal for knife edge belts. Standard splice for 1 and 2-ply belt types. Standard splice angle is 90° (60° is possible).

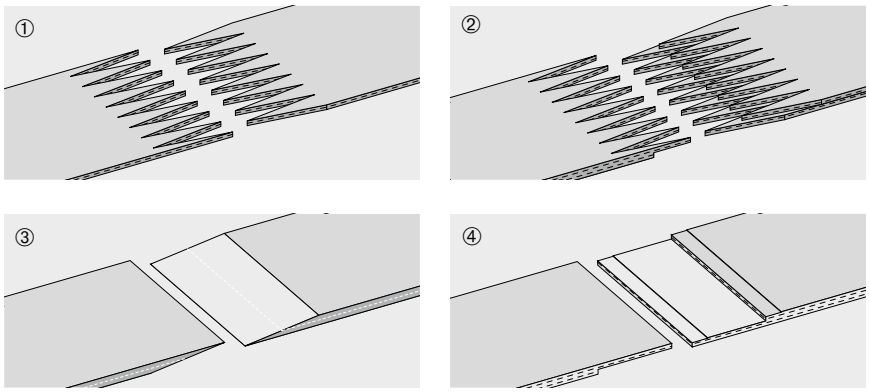
■ **Stepped Z-splice** ②
Similar properties as the Z-splice.
Also suitable for tough operating conditions.
Possible on various 2 and 3-ply belt types.
Splice angle is 90°.

■ **Wedge splice** ③
Splice type used for solid-woven and NOVO types.
Splice angle is 90°.

■ **Overlap splice** ④
Ideal for 2 and 3-ply belt types with duroplastic surface materials. Splice angle is 90° or 80°.

Cold-press method

Customers can cold-press wedge or overlap splices themselves when fitting belts or carrying out repairs on-site. Please note that the splice strength and flexibility are limited.



Mechanical fasteners

Mechanical fasteners make it possible

- to replace belts speedily without dismantling machine components,
- to repair belt quickly by inserting a piece of belt,
- to make belts endless quickly and easily (for details about lacers please inquire).

Fasteners available:

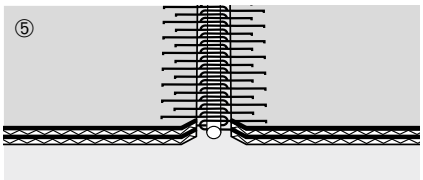
■ **Hook fasteners (HS)** ⑤,
stainless, antimagnetic, sheathed connecting rod, can also be embedded or heated into belt surface material

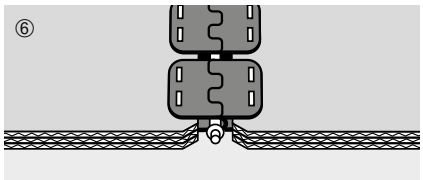
■ **Clamp fasteners (CS)** ⑥,
stainless or standard, sheathed connecting rod

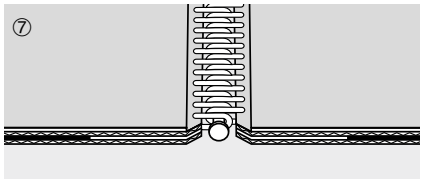
■ **Plastic fasteners (KS)** ⑦,
white polyester, FDA, heated into belt surface material

Fasteners	D_{min}*
HS-27	25
HS-21	50
HS-22	50
HS-23	75
HS-24	75
HS-25	75
HS-26	100
CS-05	50
CS-06	75
CS-07	100
KS-fasteners	Z, S: 25; U: 60

* The d_{min} specifications for the belt and the mechanical fastener must be taken into consideration when determining the drum diameters. The biggest value is the most important factor and a smaller diameter may not be used.







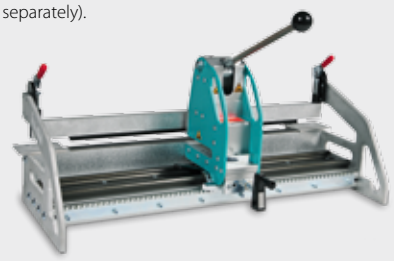
SPLICING EQUIPMENT

A diverse range of tried-and-true equipment is available for splicing Siegling conveying and processing belts.

Which is the best device depends on the type of splice and the belt width. Another factor is the conditions under which the splice is to be fabricated (in the workshop or on-site fitting).

The devices shown are just a selection from our equipment range. Further information about how splicing devices are used is available on our website or on request.

PP-ZPB-V/300-1500
Z-punch press for belts with a belt width between 300 and 1500 mm – consisting of a base frame and detachable punch press head (must be ordered separately).



SM-HP-120/130
Water-cooled heating press for melt splices on belts with a max. belt width of 130 mm

SM-HP-180/500 – 4000-P
Water-cooled heating press for melt splices on belts with a max. belt width of 4000 mm

Blizzard HP 160/400-1500 AIR
Air-cooled heating press for melt splices on belts with a max. belt width of 1500 mm

FITTING

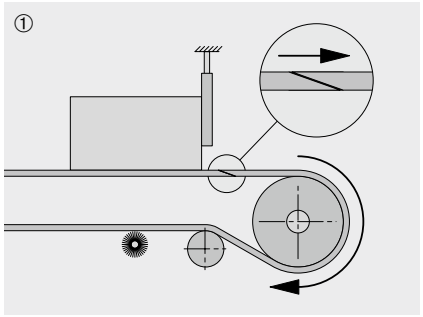
All work carried out on the conveyor must comply with the manufacturer's operating instructions and any relevant legal stipulations or safety regulations in each country. When splicing and repairing Siegling Transilon. follow the instructions for specific processes and types, available on request. Recommended elongation at fitting 0.2 to 1.0%. For higher loads we recommend calculating elongation at fitting using our B_Rex calculation program. You can receive the calculation program by registering free of charge at: **www.forbo.com/movement** > E-Tools

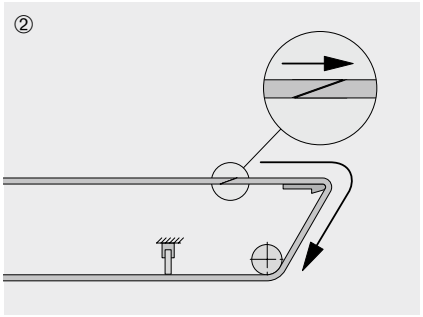
Operational direction

Conveyor belts subjected to unusual loads should only be made endless using a z-splice or stepped z-splice. If an overlap or wedge splice is used instead observes the operational direction as follows.

For unusual loads on the top face from scrapers, brushes, accumulation etc. the splice lap must always decline from the top face (fig. 1).

For unusual loads on the underside from scrapers, brushes, fixed knife edge etc. and for belt operation without unusual loads the splice lap must always decline from the underside (fig. 2).





Fitting

Before fitting the belt on the conveyor, ensure that the conveyor is in perfect operating condition, taking any necessary steps. Clean drums, support rollers and skid plate, removing any residues. Prepare the conveyor for the insertion of the conveyor belt.

Feed conveyor belt carefully into place and avoid creasing it. With large belt rolls use retarder to prevent the belt material from unrolling.

– for endless conveyor belts:
Move take-up unit(s). If necessary, disassemble reversing/drive drum, insert into belt loop and reassemble.

– for open conveyor belts:
Move take-up unit(s). Feed belt laps around drums and place in a position for splicing.

Remove protective coverings from belt laps. Keep belt laps clean! Clean dirty belt laps with white spirit or benzine before splicing. Follow the splicing instructions for the belt.

Trial run

After fitting the belt, evenly apply slight and even tension. Observe belt travel and if required correct by adjusting the drums.

Aftera trial run, tension the conveyor belt only as much as is necessary to convey goods properly under full load (see our brochure Recommendations for Conveyor Design).

For normal operating conditions (temperatures to approx. + 25 °C) move the gravity take-up in order to be able to exploit the take-up range fully.

In cases of extreme temperature variation, set the take-up approx. in middle so that length fluctuations of at least 0.3% can be absorbed.

Siegling – total belting solutions

Committed staff, quality oriented organization and production processes ensure the constantly high standards of our products and services.

Forbo Movement Systems complies with total quality management principles. Our quality management system has ISO 9001 certification at all production and fabrication sites. What's more, many sites have ISO 14001 environmental management certification.

Forbo Siegling service – anytime, anywhere

The Forbo Siegling Group employs around 2,400 people. Our products are manufactured in ten production facilities across the world. You can find companies and agencies with warehouses and workshops in over 80 countries. Forbo Siegling service points are located in more than 300 places worldwide.

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Forbo
MOVEMENT SYSTEMS

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