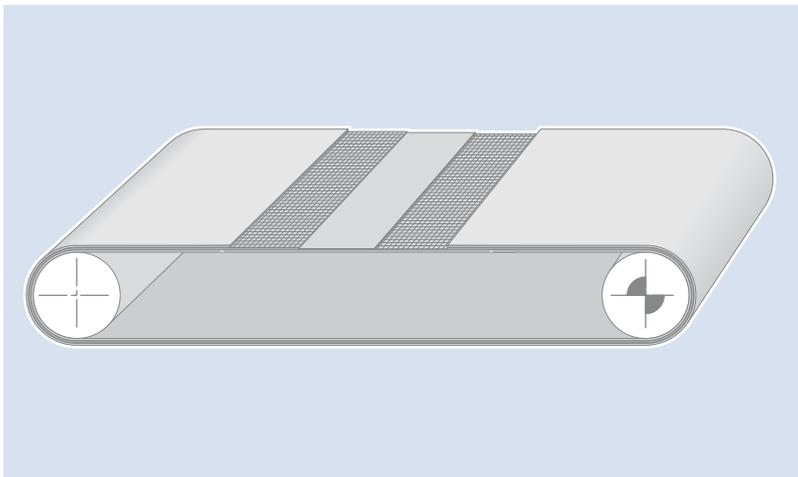


siegling transilon
conveyor and processing belts

TECHNICAL INFORMATION 1

STORAGE, FINISHING, FITTING



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- 3 Design and material
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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.

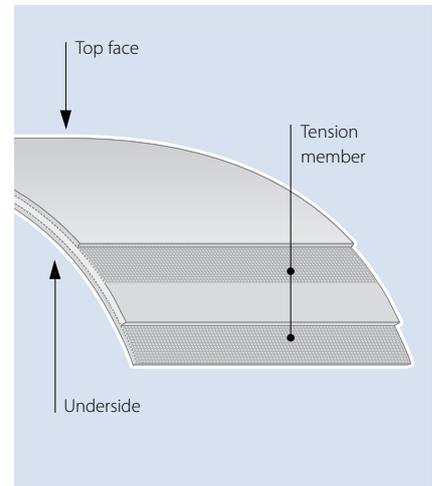
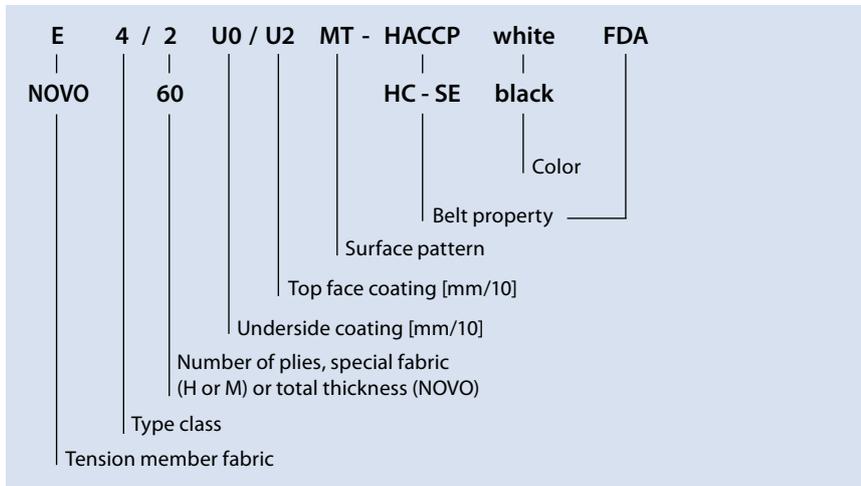


The Siegling Transilon product finder
is available at www.forbo.com/movement >
E-Tools > Product Finder

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

Type code



| 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 | |
|-------------------------------|---------------------------|
| O | 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 adhesive |
| 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.

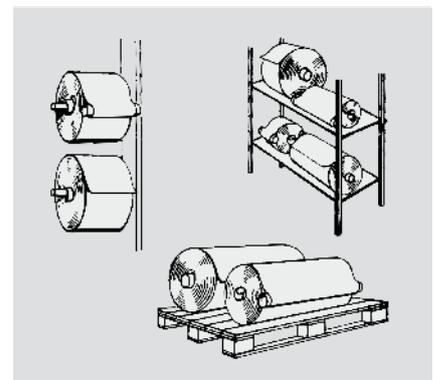
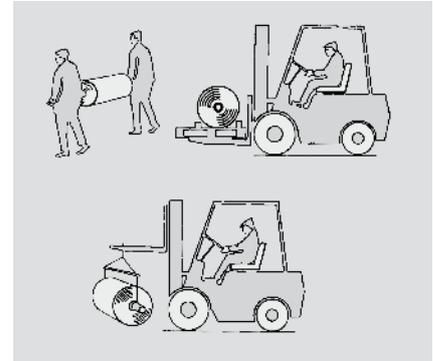
If in doubt, contact your local Forbo Siegling rep and have the product number, product name, delivery number, delivery date and fitting date to hand.

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 $+25^{\circ}\text{C}$.
- 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

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
- 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.

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.

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.

Roll material

The length of the roll supplied is limited by the length manufactured, winding diameter, weight, width and surface pattern. Please inquire.

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

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

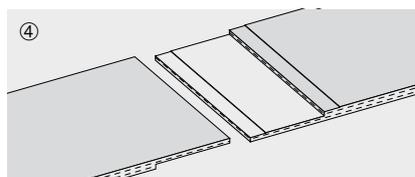
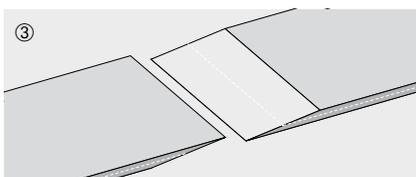
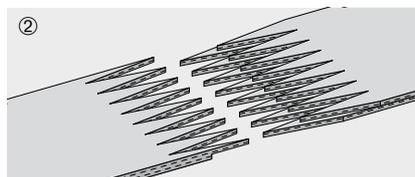
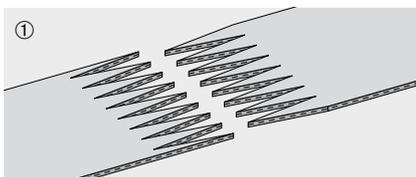
Splice type used for solid-woven and NOVO types. Splice angle is 90°.

■ 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:

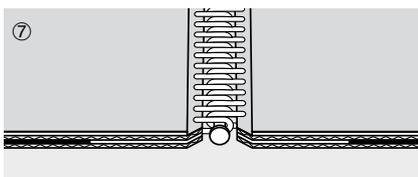
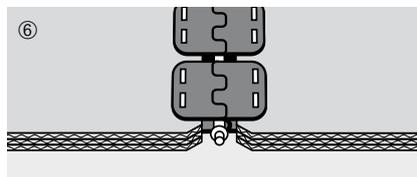
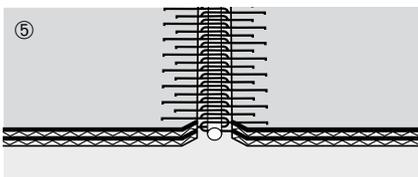
■ **Hook fasteners (HS) ⑤**,
stainless, antimagnetic, sheathed connecting rod, can also be embedded or heated into belt surface material

■ **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

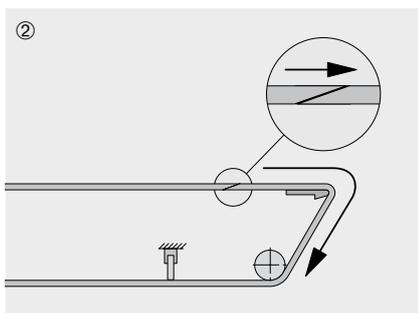
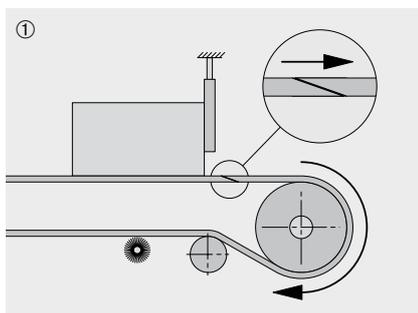
All work carried out on the conveyor must comply with the manufacturer's operating instructions and any relevant legal stipulations or safety regulations in each country. When splicing and repairing Siegling Transilon, follow the instructions for specific processes and types, available on request. Recommended 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 observe 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.

After a 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. The Forbo Siegling Quality Management System is certified in accordance with ISO 9001.

In addition to product quality, environmental protection is an important corporate goal. Early on we also introduced an environmental management system, certified in accordance with ISO 14001.



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Forbo Siegling service – anytime, anywhere

The Forbo Siegling Group employs more than 2,500 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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MOVEMENT SYSTEMS