Paper & Print

Layboy tapes for the paper industry and letter sorting

siegling belting
The amount of paper types used nowadays seems endless: from packaging paper, cardboard, tissue, writing and printer paper to paper types for newspaper printing, offset, SC, LWC, ULWC, HWC and art paper as well as siliconised paper, NCR and thermosensitive paper types.

It is this variety, both in paper processing and letter sorting, that presents a challenge to Forbo Siegling. For this reason we have been a development partner and supplier to original equipment manufacturers and users for decades. This expertise has produced our comprehensive range of Siegling Extremultus layboy tapes for all applications and the processing of each type of paper in these sectors.
Siegling Extremultus layboy tapes excel because of their friction coefficients adapted to particular functions, top coatings kind to paper, good release and grip properties and long service lives.

The types in the Siegling Extremultus E+A series are the outcome of our research and development work. Their aramide or polyester tension member means they have little elongation at fitting, high flexibility and are not sensitive to fluctuations in ambient conditions.

The splicing method (Z-splice) for these types does not require any additional materials and has the necessary flexibility and durability required for small corner radii. Easy to handle Z-punch presses and heating clamps make simple fitting directly on the machine possible, reducing the down times.

Thanks to these advantages maximum quality and productivity potential from paper processing and letter sorting machinery can be achieved even more easily.

The Properties

- not sensitive to fluctuations in ambient conditions
- simple, precise Z-splicing (E/A/Elastic types)
- highly elastic
- low level of elongation
- very flexible
- extremely long service lives
- homogenously welded
- very safe to use
- short fitting times, no adhesives
- shorter take-up ranges
- low level of pull on the bearings
- small corner radii, low energy use
- low operational costs
- maintenance free, no re-tensioning

All types are easy to clean and largely resistant to oils, greases and many solvents.

Further Forbo Siegling products relevant to the paper industry can be found in the following brochures:

- No. Title
  - 224 Product range
    - Conveyor and processing belts
  - 225 Power transmission belts
  - 244 Siegling Linpack (Linatex coated power transmission belts)
  - 271 Layboy tapes for the printing industry
  - 284 Folder and carrier belts

Siegling Linpack folder and carrier belts (with natural rubber Linatex coated power transmission belts) are used in the paper industry and letter sorting and elsewhere as pick-off belts.

Siegling Linpack power transmission belts are highly specialised products, which is why they are shown separately in another of our brochures (ref. no. 244).
Comparison of the series

- **E series**
  - Thermoplastic, with polyester fabric in warp and weft
  - Transmission of high effective pull at low elongation ≤ 37.5 N/mm
  - 0.3 % – 2.0 %
  - High flexibility
  - Top resistance
  - Z-splice without bonding agent
  - Very good price-performance ratio, optimal solution in nearly all applications, strong edges, laterally stiff
  - Special properties: optimal surface coatings for different applications
    - Modified G elastomer coating with high drag and abrasion resistance, conveying gently without leaving marks.
    - Nonwoven polyester material with much improved wear resistance and with good service life: Changing products conveyed entirely possible without exchanging belt.
    - Fabric surfaces for multi-purpose usage with good release properties and long service lives.
    - Highly abrasion resistant polyurethane.

- **A series**
  - Thermoplastic, with highly modular mixed fabric (aramide warp)
  - Transmission of highest effective pull at low elongation (≤ 70 N/mm)
  - 0.3 % – 0.8 %
  - High flexibility
  - Low
  - Sufficient resistance
  - Z-splice without bonding agent
  - Very good
  - Very good
  - Very good
  - Very high flexibility
  - Very good
  - Top resistance
  - Top resistance
  - Butt splice or Z-splice without bonding agent

- **P series**
  - Highly-orientated polyamide belt
  - Transmission of high effective pull
  - 0.6 % – 3.0 %
  - Lower flexibility
  - Very good
  - Top resistance
  - Wedge overlap splice with bonding agent
  - Very high damping properties, strong edges, laterally stiff
  - Particularly suitable when subjected to extreme counter bending at small drum diameters

- **Elastic series**
  - Highly elastic polyurethane belt
  - Transmission of low effective pull at high elongation
  - 3 % – 8 %
  - Very high flexibility
  - Very good
  - Top resistance
  - Butt splice or Z-splice without bonding agent
  - Particular suitability when subjected to extreme counter bending at small drum diameters

**Graph:**
- **x-axis:** ε [%]
- **y-axis:** ε [N/mm]
- **Points:** A, B, C
- A clear advantage of the new series is the low elongation at fitting.
With its new layboy tape range Forbo Siegling provides solutions for the special requirements of the various manufacturing processes and all sorts of further processing and conveying.

Cross cutters

The most varied types of paper and cardboard have to be precisely conveyed in the cross cutter at very high speeds without leaving any marks through each production stage.

Apart from the layboy tapes for the P series the new E series types are perfect for this type of demanding usage.

Even at fluctuations in ambient conditions and after long operational periods no re-tensioning is required, they are suitable for small roller diameters, laterally stiff and have strong edges. Their relatively low elongation at fitting means that the shaft load is minimised.

Long service life and quick Z-splicing without additional materials minimise fitting and the resulting down times.

Letter sorting machinery

In letter sorters and sorters, rough types of paper and bulky letters are par for the course.

Flexible layboy tapes can deal with these sorts of applications very easily.

The elastic types in the Elastic series are used mainly for very small deflections without take-up systems.

In other applications the E series types get to grips with conveying materials smoothly even under extreme conditions. Both series have long service lives.

The quick Z splice without additional substances and excellent lead times guarantee low fitting times. Down times are reduced to a minimum.
### Technical data

<table>
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<th>E series (Layboy tapes with polyester tension member)</th>
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### Chemical resistance

Siegling Extremultus has a permanently antistatic finish, is almost maintenance free and chemically resistant to:

- Wet conditions, moisture, spirits, household cleaners and solvents normally used in the paper and printing industry; resistant to some extent to alcohols.

Permanent contact with acetone, solvents, chlorinated hydrocarbons and concentrated acids should be avoided.

Further details on resistance on request.

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**Key to the Siegling Extremultus layboy tape types**

**GG 8 E**

**TT 6 P**

**NN 4 P - HC**

- Abbreviation for special properties (here: high conductivity)
- Tension member
- Fw value at 1 % elongation
- Top face
- Friction coating

**GG 40 U**

**UU 20 U**

- Tension member
- Fw value x 10 at 5 % elongation
- Top face
- Friction coating

**Key**

1) Tolerance ± 0.1 mm

2) The minimum admissible roller (pulley) diameters have been established at standard climatic conditions. Lower temperatures or particularly low humidity require larger diameters.

3) The Fw value indicates the shaft load at 1 % elongation in N/mm belt width. It represents a parameter, which in contrast to the ultimate tensile strength, gives a direct indication of the tensile force in the belt.

A = Aramide

E = Polyester

G = G elastomer

N = Nonwoven polyester material

P = Polyamide

S = Special structured

T = Mixed or polyamide fabric

U = Polyurethane

GL = Smooth

HC = High conductivity

FSTR = Fine pattern
Splicing technology

Siegling Extremultus layboy tapes in the P series are made endless with a bonded wedge splice.

All other types are made endless with a Z-splice as a rule. Combined with our easy to handle fabrication devices this splice method secures important advantages:

- very easy preparation and making of the splice on the machine
- no additional materials needed
- very flexible and durable splice

The GS-tested Siegling Extremultus SM-HC 50/40, SM-HC 50/60, SM-HC 50/80 heating clamps can be supplied as complete tool sets with accessories. A handy additional item, useful for fitting jobs, is a fitting case lined with foam material.

Our overview of devices, data sheets and instructions – for Siegling Transilon conveyor and processing belts too – can be obtained on request.

Supplied as

- Roll material for individual fabrication.
- Endless power transmission and conveyor belts*
- Prepared power transmission and conveyor belts for heated splicing on site
- Special designs with perforations on request.

* Please state the required power transmission belt length, width, type of splice and if necessary the amount of pre-tensioning required. For power transmission belt lengths <500 mm and lengths <125 m please ask whether feasible.
Committed staff, quality-orientated organisation and production processes ensure the constantly high standards of our products and services. The Forbo Siegling Quality Management System is certified in accordance with DIN EN ISO 9001:2000.

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.

Forbo Siegling Service – anytime, anywhere

In the company group, Forbo Siegling employs more than 1900 people worldwide. Our production facilities are located in eight countries; you can find companies and agencies with stock and workshops in more than 50 countries. Forbo Siegling service centres provide qualified assistance at more than 300 locations throughout the world.