Product range
Power transmission belts

siegling extremultus
flat belts
Siegling Extremultus –
exceptional power transmission

We have developed the Siegling Extremultus power transmission belt range in close co-operation with users and OEMs. As a result, it can offer a market-driven range of types that can handle all sorts of power transmission in every industry.

Different materials for the friction and top coating are combined with one of the three tension member materials
– A (aramide – also truly endless)
– E (polyester – also truly endless) or
– P (polyamide)
Producing a varied range with ideal properties for each and every application.

Siegling Extremultus power transmission belts are durable, extremely tough, elastic, absorb vibrations and shocks and can be used at belt velocities of up to 100 m/s.

Compared with other power transmission belts, they are easy to handle, extremely efficient and have a high level of synchronisation accuracy.

Apart from traditional pulleys, they can easily handle bevel and cone drives and drive several shafts, even in different rotational directions.

The properties

<table>
<thead>
<tr>
<th>The properties</th>
<th>The advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>thin/flexible</td>
<td>low power requirement, small pulley diameter</td>
</tr>
<tr>
<td>constant friction coefficient, high wear-resistance</td>
<td>constant RPM, long belf life</td>
</tr>
<tr>
<td>high elastic modulus</td>
<td>short take-up ranges, low creep</td>
</tr>
<tr>
<td>laterally stiff</td>
<td>good edge stability</td>
</tr>
<tr>
<td>good damping properties</td>
<td>treats bearings gently, vibration-free operation</td>
</tr>
</tbody>
</table>

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<td>Truly endless belts</td>
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</tr>
</tbody>
</table>

More information on Siegling Extremultus flat belts can be found in the following brochures:

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<thead>
<tr>
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<th>Title</th>
</tr>
</thead>
<tbody>
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<td>Wood</td>
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<td>Yarn production</td>
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<tr>
<td>316</td>
<td>Siegling Extremultus Flat belts Technical Information</td>
</tr>
</tbody>
</table>
Chipper (wood manufacture), belt type GT 80 P black, width = 1000 mm, P = 1850 kW, v = 65 m/s

Drive (textile industry/yarn manufacture), belt type GG 20E-20 NSTR/FSTR grey/black

Live roller conveyor (logistics), belt type GG 20E-20 green
Multi-purpose, highly-efficient belts

In addition to other advantages, **flat belts are much more efficient than V-belts**. In V-belts, energy losses occur, not just due to flexing in the material, but also due to friction at the sides and other aspects associated with the belt design.

Friction on the sides at the top and bottom, internal friction losses due to hysteresis.

Higher friction losses when the V-belt pulleys are misaligned.

Difference in length and rotational vibrations when V-belts are not loaded evenly.

Efficiency of a flat belt (top), efficiency of a V-belt (bottom). Siegling Extremultus flat belts have an efficiency of 98.6%.

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Source:
1. Tests carried out by the University of Göteborg
2. German Institute for Materials Testing, Berlin

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1. Classical two-pulley drive
2. Multiple pulley drive
3. Taper-cone drive
4. Mule drive
Urethane (U)
The urethane friction layer U is mainly used for drives. Thanks to its low thickness, it is especially well-suited for extreme flexing stress.

Elastomer G (G)
The friction coating elastomer G is used for all standard drives, also wherever dust and moisture are a factor. Not recommended when oil and grease are present (e.g. oil vapour).

Chrome-leather (L)
The chrome-leather friction coating is used wherever oil and grease are present.

Overview of the lines

<table>
<thead>
<tr>
<th>Top coating</th>
<th>Tension member</th>
<th>Friction coating</th>
<th>Traction layer properties</th>
<th>Elongation at fitting</th>
<th>Flexibility</th>
<th>Damping properties</th>
<th>Type of splice</th>
<th>Other factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly wear-resistant elastomer G (grey or black) or highly wear-resistant urethane (green)</td>
<td>Thermoplastic tension member with polyester fabric in warp and weft</td>
<td>Highly wear-resistant elastomer G (grey or black) or highly wear-resistant urethane (green)</td>
<td>Transmission of significant effective pull at low elongation</td>
<td>0.3 % – 2.0 %</td>
<td>High flexibility</td>
<td>Good</td>
<td>Z-splice 70 x 11.5 mm without adhesives</td>
<td>Power transmission belts with polyester tension members made can transmit significant effective pull and are excellent value. They are a perfect solution for almost any application.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E line</th>
<th>A line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly wear-resistant elastomer G (black) or highly wear-resistant urethane (green)</td>
<td>Highly wear-resistant elastomer G (black) or highly wear-resistant urethane (green)</td>
</tr>
<tr>
<td>Thermoplastic tension member with highly-modular mixed fabric and aramide warp</td>
<td>Thermoplastic tension member with highly-modular mixed fabric and aramide warp</td>
</tr>
<tr>
<td>Highly wear-resistant elastomer G (grey) or highly wear-resistant urethane (green)</td>
<td>Highly wear-resistant elastomer G (grey) or highly wear-resistant urethane (green)</td>
</tr>
<tr>
<td>Transmission of significant effective pull at low elongation</td>
<td>Transmission of significant effective pull at low elongation</td>
</tr>
<tr>
<td>Elastomer G: 0.3 % – 1.0 %, urethane: 0.3 % – 0.8 %</td>
<td>Elastomer G: 0.3 % – 1.0 %, urethane: 0.3 % – 0.8 %</td>
</tr>
<tr>
<td>High flexibility</td>
<td>High flexibility</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Z-splice 110 x 11.5 mm without adhesives</td>
<td>Z-splice 110 x 11.5 mm without adhesives</td>
</tr>
<tr>
<td>Power transmission belts with aramide tension members are designed for high levels of specific effective pull. Aramide line belts require careful handling to ensure perfect operation.</td>
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</tr>
</tbody>
</table>
### P line

- Chrome-leather, highly wear-resistant elastomer G (black) or polyamide fabric
- Highly-orientated polyamide sheet
- Chrome-leather or highly wear-resistant elastomer G (black or grey)
- Transmission of large effective pull
- 1.5 % – 3.0 %
- Low flexibility
- Very good
- Wedge splice with adhesives
- Power transmission belts with tension member made of polyamide sheet are laterally stiff and have very good damping properties.

### The endless line

- Chrome-leather, highly wear-resistant elastomer G/Urethane (green) or polyamide fabric
- Truly endless polyester cord
- Truly endless aramide cord
- Chrome-leather or highly wear-resistant elastomer G/Urethane or polyamide fabric
- Transmits high levels of effective pull with little elongation
- Polyester cord: 0.5 % – 1.5 %, aramide cord: 0.3 % – 1.0 %
- High flexibility
- Polyester cord: very good, aramide cord: lower
- No splice, as truly endless
- Power transmission belts with truly endless polyester or aramide cord tension members require short take-up ranges, can transmit high specific levels of effective pull and are not sensitive to fluctuations in ambient conditions. Because they are very flexible and track very steadily and evenly, they are an excellent choice for high levels of power transmission (> 60 m/s) and multiple rotations.

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**GG** = elastomer friction layer on both sides (normal pattern) for power transmission on both sides

**UU** = green urethane friction coating on both sides, power taken from both sides of belt.

**GT** = elastomer friction coating on one side, for power transmission on one side, top coating made of polyamide fabric.

**LT** = chrome-leather friction coating on one side, for power transmission on one side, top coating made of polyamide fabric.

**LL** = chrome-leather friction coating on both sides, for power transmission on both sides.
## Technical data

<table>
<thead>
<tr>
<th>Article number</th>
<th>Total thickness approx. [mm]</th>
<th>( d_{\text{min}} ) [mm]*</th>
<th>Nominal effective pull width**</th>
<th>Nominal working elongation [% of belt length]</th>
<th>Max. transmittable effective pull [N/mm belt width]</th>
<th>Shifted at [% of belt length]</th>
<th>Elongation at fitting [% of belt length]</th>
<th>Weight approx. [kg/m²]</th>
<th>Permissible operating temperature [°C] (long-term temperature)***</th>
</tr>
</thead>
</table>

### A line
- **UU 15A-17 FSTR/FSTR green**
  - 995473
  - 1.7
  - 24
  - 15
  - 25
  - 1.0
  - 28
  - 55
  - 0.3 – 0.8
  - 1.9
  - 20/+70

- **GG 25A-25 NSTR/FSTR green**
  - 822130
  - 2.5
  - 40
  - 25
  - 1.0
  - 28
  - 55
  - 0.3 – 0.8
  - 2.7
  - 20/+70

- **GG 40A-32 NSTR/FSTR green**
  - 822131
  - 3.2
  - 60
  - 40
  - 1.0
  - 42
  - 90
  - 0.3 – 1.0
  - 3.45
  - 20/+70

### E line
- **GG 8E green**
  - 822062
  - 1.8
  - 14
  - 10
  - 2.0
  - 10
  - 8
  - 0.3 – 2.0
  - 1.6
  - 20/+70

### P line
- **LL 6P**
  - 800015
  - 3.0
  - 35
  - 6
  - 2.0
  - 7.5
  - 6
  - 1.5 – 3.0
  - 2.95
  - 20/+80

- **LL 10P**
  - 800016
  - 3.1
  - 40
  - 10
  - 2.0
  - 10.5
  - 10
  - 1.5 – 3.0
  - 3.1
  - 20/+80

### Legend

- The smallest permissible pulley diameters were established in standard ambient conditions (23 °C, 50% rel. humidity). Lower temperatures require larger drum diameters. For the P line, this also applies in the case of low humidity.

- Recommended \( d_{\text{min}} \) for power transmission:
  - A line: 2.5 x type number
  - E line: 2 x type number
  - P line: 5 x type number

- According to the type number (7 x type number at relative humidity < 40%)

- The nominal effective pull states the possible power transmission in N/mm belt width (standard ambient conditions 23 °C/50% rel. humidity) that the belt type can produce at nominal elongation.

- If temperatures are exceeded, please contact Forbo Siegling application engineers.

**Explanation of the abbreviations used, the type designation and resistances on page 11.**

**Supplied as**
- Roll material for customers to finish themselves
- Prepared belts for on-site heating of splices. Please state the type of splice you require, sizes and any pre-tension required. Please contact us about belts lengths < 450 mm and > 125 m
- Special types with perforation or sawn edges (in the P line) on request
### Splice

<table>
<thead>
<tr>
<th>Splice type</th>
<th>Splice length [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-Splice</td>
<td>110</td>
</tr>
<tr>
<td>Ground wedge splice</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>35/70</td>
</tr>
<tr>
<td></td>
<td>35/70/110</td>
</tr>
<tr>
<td></td>
<td>35/70</td>
</tr>
<tr>
<td></td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>35/70</td>
</tr>
</tbody>
</table>

#### Splicing technology

All types are made endless with tried-and-tested splicing methods. Using our practical finishing equipment guarantees:

- extremely fast preparation and finishing of the splice in the workshop or on the machine
- very flexible and durable splices
- detailed instructions for all tools and equipment and power transmission belt types

You can obtain our tool overview, tool sheets and instructions on request.

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- Equipment for finishing the wedge splice (P line)
- Equipment for finishing the Z-splice (E line, A line)
## Selection from product range

### Endless line

<table>
<thead>
<tr>
<th>Technical data</th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>Aramide cord</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>GT 54A black</td>
<td>810053</td>
<td>1.8</td>
<td>150</td>
<td>54</td>
<td>1.0</td>
<td>0.3 – 1.0</td>
<td>1.9</td>
<td>-20/+60</td>
</tr>
<tr>
<td>GT 80A black</td>
<td>810082</td>
<td>1.9</td>
<td>150</td>
<td>80</td>
<td>1.0</td>
<td>0.3 – 1.0</td>
<td>2.0</td>
<td>-20/+60</td>
</tr>
<tr>
<td>GG 54A NSTR/NSTR black</td>
<td>811055</td>
<td>2.8</td>
<td>150</td>
<td>54</td>
<td>1.0</td>
<td>0.3 – 1.0</td>
<td>2.8</td>
<td>-20/+60</td>
</tr>
<tr>
<td>LT 54A</td>
<td>810081</td>
<td>2.7</td>
<td>200</td>
<td>54</td>
<td>1.0</td>
<td>0.3 – 1.0</td>
<td>2.7</td>
<td>-20/+60</td>
</tr>
<tr>
<td>LT 80A</td>
<td>810080</td>
<td>2.8</td>
<td>200</td>
<td>80</td>
<td>1.0</td>
<td>0.3 – 1.0</td>
<td>2.8</td>
<td>-20/+60</td>
</tr>
<tr>
<td>Polyester cord</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UU 10E green</td>
<td>810011</td>
<td>0.75</td>
<td>30</td>
<td>–</td>
<td>1.0</td>
<td>0.5 – 1.5</td>
<td>0.7</td>
<td>-20/+60</td>
</tr>
<tr>
<td>UU 14E green</td>
<td>810012</td>
<td>0.8</td>
<td>30</td>
<td>–</td>
<td>1.0</td>
<td>0.5 – 1.5</td>
<td>0.8</td>
<td>-20/+60</td>
</tr>
<tr>
<td>UU 20E green</td>
<td>810013</td>
<td>1.2</td>
<td>90</td>
<td>–</td>
<td>1.0</td>
<td>0.5 – 1.5</td>
<td>1.1</td>
<td>-20/+60</td>
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<tr>
<td>GT 10E black</td>
<td>810028</td>
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<td>1.0</td>
<td>0.5 – 1.5</td>
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<td>-20/+60</td>
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<tr>
<td>GT 14E black</td>
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<td>50</td>
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<td>1.0</td>
<td>0.5 – 1.5</td>
<td>1.3</td>
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</tr>
<tr>
<td>GT 20E black</td>
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<td>70</td>
<td>20</td>
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</tr>
<tr>
<td>GT 28E black</td>
<td>810029</td>
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<td>120</td>
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<td>-20/+60</td>
</tr>
<tr>
<td>GT 40E black</td>
<td>810032</td>
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<td>160</td>
<td>40</td>
<td>1.0</td>
<td>0.5 – 1.5</td>
<td>2.5</td>
<td>-20/+60</td>
</tr>
<tr>
<td>GG 10E black</td>
<td>810033</td>
<td>1.8</td>
<td>30</td>
<td>10</td>
<td>1.0</td>
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<tr>
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<tr>
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<tr>
<td>LL 40E</td>
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<td>180</td>
<td>40</td>
<td>1.0</td>
<td>0.5 – 1.5</td>
<td>4.8</td>
<td>-20/+60</td>
</tr>
</tbody>
</table>

### Legend

* The smallest pulley diameters permissible were established in normal ambient conditions (23 °C, 50% rel. humidity). Lower temperatures require larger drum diameters.

** The nominal effective pull states the possible power transmission in N/mm belt width (standard ambient conditions 23 °C/50% rel. humidity) that the belt type can produce at nominal elongation.

*** If temperatures are exceeded, please contact Forbo Siegling application engineers.
### Special properties/resistances (all lines)

- **Siegling Extremultus** is antistatic.
- Truly endless types cannot be lengthened, shortened or repaired.

The Siegling Extremultus **GT** and **GG** types are not sensitive to oils and greases, as well as commonly-available solvents. However, using in oily or greasy conditions (e.g. oil vapour) is not to be recommended (risk of the belt slipping – if possible use **LT** or **LL** types).

The Siegling Extremultus sub-types **LL**, **LT** and **UU** are impervious to machine oils, diesel fuels, petrol, benzene, commercially available solvents such as ethyl acetate, acetone, etc.; chlorinated hydrocarbons such as perchloroethylene, etc.

Siegling Extremultus is not resistant to organic and inorganic acids.

For further details, see the Siegling Extremultus – Technical information brochure (ref. no. 316).
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.

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 1800 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.