siegling
belting

PAPER & PRINT

Machine tapes
for the paper industry and letter sorting

Siegling – total belting solutions

forbo
MOVEMENT SYSTEMS

MACHINE TAPES
FOR THE PAPER INDUSTRY AND LETTER SORTING

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, this variety places high demands on the belts used, both in paper production and letter sorting. 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 Extremultus machine tapes for all applications and the processing of each type of paper in these sectors.

Extremultus machine tapes excel because of their friction coefficients adapted to particular functions, top coatings kind to paper, good release and grip characteristics and long service lives.

The types in the Extremultus Polyester and Aramide line 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.

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.

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

The properties

The advantages

largely unaffected by fluctuations in ambient conditions	maintenance free, no re-tensioning, very reliable
simple and precise Z-splice, homogeneous welding	shorter fitting times, no adhesive
high elastic modulus	shorter take-up ranges
low elongation at fitting	low shaft load
very flexible	small drum diameters low power consumption
constant drag with high wear-resistance	reliable function, low operating costs

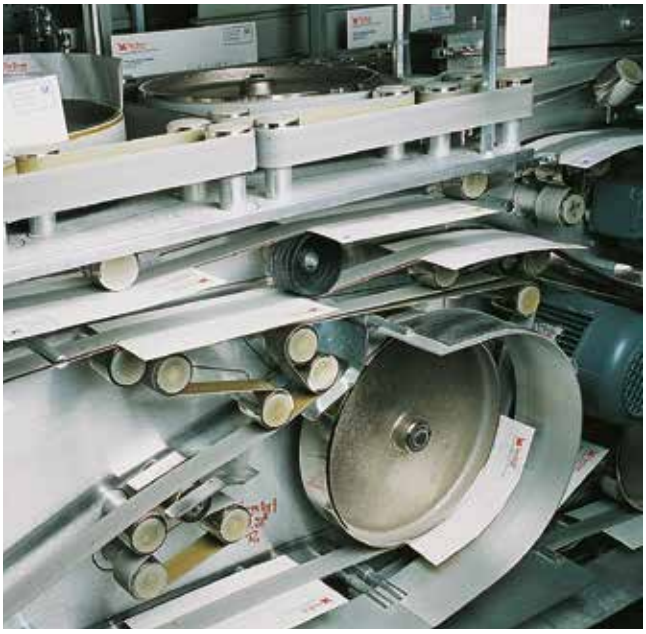
All types are easy to clean and largely resistant to oils, greases and many solvents.

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

No.	Title
224	Siegling Transilon conveyor and processing belts
244	Siegling Linpack folder and carrier belts
251	Grip Star Flat belts that hold on tight
271	Paper & Print – Machine tapes for the printing industry
279	Siegling Belting tools
284	Paper & Print – Folder and carrier belts
333	Siegling Extremultus compendium flat belts

HIGH-PERFORMANCE BELT SOLUTIONS FOR ALL PROCESSES

With its machine tape range Forbo Movement Systems 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 machine tapes for the Polyamide line the Polyester line 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, abrasive types of paper and letters with fragile contents are commonplace.

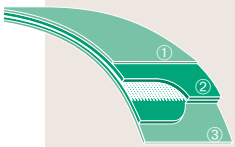
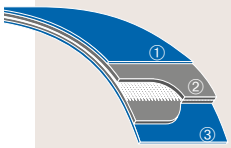
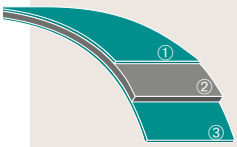
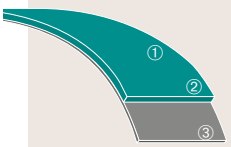
Flexible machine tapes can deal with these sorts of applications very easily.

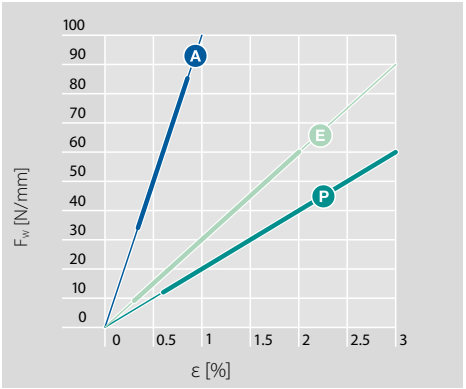
The elastic types in the Polyurethane line are used mainly for very small deflections without take-up systems.

In other applications the Polyester line types get to grips with conveying materials smoothly even under extreme conditions. Both lines 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.

COMPARISON OF THE SERIES

	Polyester line	Aramide line	Polyamide line	Polyurethane line
				
① **Top face** ③ **Underside**	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 characteristics and long service lives. – Highly abrasion resistant polyurethane.			
② **Tension member**	Thermoplastic, with polyester fabric in warp and weft	Thermoplastic, with highly modular mixed fabric (aramide warp)	Highly-orientated polyamide belt	Highly elastic polyurethane belt
Load transmission	Transmission of high effective pull at low elongation ≤ 35 N/mm)	Transmission of high effective pull at low elongation (≤ 40 N/mm)	Transmission of highest effective pull (≤ 100 N/mm)	Transmission of low effective pull at high elongation
Elongation at fitting	0.3% – 2.0%	0.3% – 0.8%	0.6% – 3.0%	3% – 8%
Flexibility	High flexibility	High flexibility	Lower flexibility	Very high flexibility
Damping characteristics	Good	Low	Very good	Very good
Elongation at break	Top resistance	Sufficient resistance	Very high resistance	Very high resistance
Splice type	Z-splice without bonding agent	Z-splice without bonding agent	Wedge overlap splice with bonding agent	Butt splice or Z-splice without bonding agent
Special characteristics	Very good price-performance ratio, optimal solution in nearly all applications, strong edges, laterally stiff	Careful handling a must for smooth operation, strong edges, laterally stiff	Particularly strong edges, laterally stiff	Particularly suitable when subjected to extreme counter bending at small drum diameters



A clear advantage of the Aramide (A) and Polyester (E) line is the low elongation at fitting.

Extract from the product range

	Article number	Total thickness approx. [mm]	d_{min} approx. [mm]*	Specific shaft load [N/mm belt width]**	Weight approx. [kg/m²]	Manufacturing	Processing	Letter-Sorters/Postal	Packaging
Polyester line (Machine tapes with polyester tension member)									
GG 5E gray	822115	1.4	14 (10)	5	1.4		●	●	●
GG 8E green	822062	1.5	14	8	1.6		●	●	●
TG 10E black/green	822081	1.3	20	10	1.4		●		●
TT 6E black/gray	822103	1.0	14	6	1.0		●		●
TT 10E-HC black	822096	1.0	24	10	1.0		●		●
UN 6E green/gray[1)]	822091	1.9	24	6	1.9		●		●
UP 6E GSTR/GL black/transp.	822134	1.2	30 (24)	5	1.3				●
UR 8E-15 HC+ FSTR/NSTR green/gray	822174	1.5	14	8	1.6		●	●	●
UU 8E green	995451	1.5	14	8	1.7		●	●	●
PU 8E green	995453	1.4	24	8	1.5		●		●
Polyester line (Power transmission belts with polyester tension member)									
GG 15E-18 green	822053	1.8	20	15	2.0	●	●	●	●
GG 20E-20 green	822052	2.0	24	23	2.15	●	●	●	●
GG 20E-30 green	855538	3.0	40	23	3.4	●	●		●
RR 20E-30 gray FDA	822148	3.0	30	23	3.4	●	●		●
GG 30E-32 FSTR/FSTR black	822118	3.0	40	30	3.55	●	●	●	●
TG 30E-30 black/green	822058	3.0	40	30	3.2	●	●		●
UU 20E-16 FSTR/FSTR green	822055	1.6	30	20	1.85	●	●	●[2)]	●
UU 30E-20 FSTR/FSTR green	822133	2.0	30	28	2.2	●		●[2)]	●
Aramide line (Power transmission belts with aramide tension member)									
UU 15A-17 FSTR/FSTR green	995473	1.7	30	60	1.9			●[2)]	
Polyamide line (Machine tapes with polyamide tension member)									
RR 4E-14 HC+ FSTR gray	822151	1.35	14	4	1.4		●	●	●
RR 4E-HC+ NSTR/NSTR gray	822154	1.35	14	4	1.4		●	●	●
GG 4P gray	850040	1.4	14	4	1.6		●	●	●
GG 6P gray	850007	1.5	30	6	1.7		●	●	●
NN 4P-HC+ gray	855635	1.6	20	4	1.3		●		●
TG 10P-20 FBRC/NSTR black/green	855644	2.0	30	10	2.05		●		●
TG 4P green/gray	850039	1.0	24	4	1.1		●	●	●
G 5/0 XP green	855582	1.25	24	6	1.15		●	●	●
TT 2P green	850028	0.6	20	2	0.5		●		●
TT/S 3P/green	850032	0.7	14	3	0.5		●		●
TT 4P-HC black	855619	0.8	20	4	0.75		●		●
TT 6P-HC black	855597	1.0	24	6	1.05		●		●
TT 6P black/green	850210	0.8	24	6	0.7		●		●
TT/S 6P/green	850042	1.15	30	6	0.9		●		●
TU 6P black/green	850209	1.1	24	6	1.05		●		●
Polyurethane line (Machine tapes with polyurethane tension member)									
GG 40U green	855552	1.4	20	0.8	1.6		●	●	●
PN 75P green/gray[1)]	855503	1.5	14	1.5	1.3		●	●	●
UG 50U black/green	855599	1.6	20	1.0	1.7		●	●	●
UU 15U black/green	850221	0.8	14	0.3	0.8		●	●	●
UU 20U black/green	850207	1.1	10	0.4	1.2		●	●	●
UU 20U-HC+ FSTR/FSTR black	855631	1.1	20	0.4	1.2		●	●	●
UU 40U black/green	850208	1.1	14	0.8	1.2		●	●	●
UR 40U-HC+ GSTR/NSTR black/gray	855636	1.45	14	0.8	1.45		●	●	●
UU 40U GSTR/GL black/green	995207	1.0	14	0.8	1.05		●		●
UU 60U black/green	850289	1.5	14	1.2	1.6		●	●	●

Legend

The values stated were identified in standard ambient conditions (23 °C, 50% rel. humidity).

* Lower temperatures require larger drum diameters. For the Polyamid line, this also applies in the case of low humidity.

** Relaxed specific shaft load at 1% elongation at fitting and 180° arc of contact in N/mm belt width.

1) The nonwoven coating (N) usually faces towards the product.

2) Only as a power transmission belt.

3) 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.

A = Aramide
E = Polyester
G = Elastomer G
N = Polyester web
P = Polyamide P
R = High Grip or Medium Grip
S = Special structured
T = Blended or Polyamide fabric
U = Polyurethane

GL = Glossy
HC = Conductive belt surfaces
HC+ = Conductive belt surfaces + conductive over the thickness
FSTR = Fine texture
GSTR = Coarse texture
NSTR = Normal texture

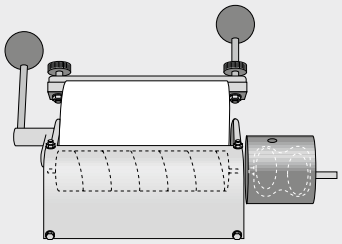
Key to the Siegling Extremultus machine tape types

GG 8 E
TT 6 P
NN 4P - HC+

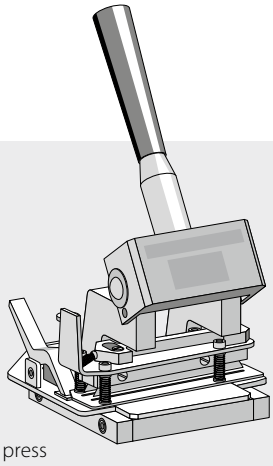
- Abbreviation for special characteristics
- Tension member
- FW value*** at 1% elongation
- Top face
- Underside

GG 40 U
UR 40 U

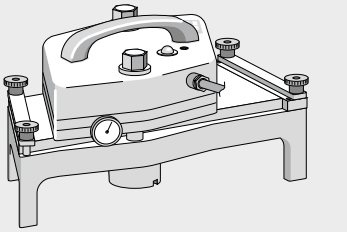
- Tension member
- Type class
- Top face
- Underside



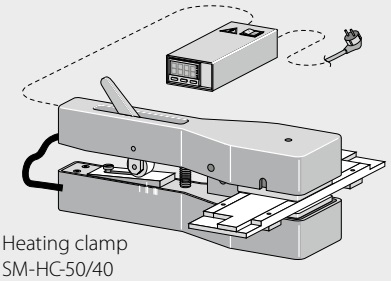
Grinder
PG-GM-V/130



Z-punch press
PP-ZP-V/40-3
PP-ZP-V/80-3



Hot press
SB-HP-160/150



Heating clamp
SM-HC-50/40
SM-HC-50/60
SM-HC-50/80

Supplied as

- Roll material for individual fabrication
- Endless power transmission and conveyor belts [3)]
- Prepared power transmission and conveyor belts for heated splicing on site [3)]
- Special designs with perforations on request

Chemical resistance

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 information about chemical resistance available on request.

Splicing technology

Extremultus layboy tapes in the Polyamide line 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 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 Transilon conveyor and processing belts too – can be obtained on request.

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.

Our service – anytime, anywhere

Forbo Movement Systems employs around 2,300 people in its group of companies. 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.
Service points are located in more than 300 places worldwide.

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