

Ideas in motion

**CHIORINO**<sup>®</sup>  
1906

**Machine tapes, conveyor  
and folder belts for paper  
and printing industry**



## Machine tapes, conveyor and folder belts for paper and printing industry



CHIORINO, a leading company in the materials handling and power transmission field produces a wide range of

- ▶ **Machine tapes and conveyor belts**
- ▶ **Folder belts**
- ▶ **MF Endless rubber belts**

The CHIORINO products cover all applications in the paper and printing industry:

- printing, graphic and publishing industry (magazines, newspaper, books, catalogues)
- paper converting machines: cutters, tube winders, tissue
- folder-gluer machines for plain and corrugated cartons
- production lines for corrugated boxes and cartons.

Through close cooperation with the most important OEM's in the world, the CHIORINO R&D laboratories have developed innovative and customized solutions to meet customer demands.

CHIORINO operates throughout the world with 15 Associated Companies and more than 60 partners, if one includes exclusive distributors, and highly qualified assistance centres capable of guaranteeing a speedy assistance and installation service, 24 hours a day. For more information on the Distribution Network see [www.chiorino.com](http://www.chiorino.com).

Quality and environment certified

**EMAS - UNI EN ISO 9001:2000 - UNI EN ISO 14001:2004**



# Features and benefits of the CHIORINO products

## Machine tapes and conveyor belts Folder belts



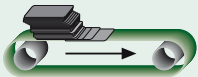
Excellent resistance to abrasion, oils, inks and chemicals. They do not mark the paper.



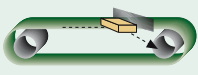
High flexibility and dimensional stability



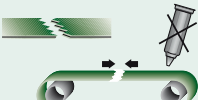
Permanent antistatic



Wide range of belts providing high friction cover and excellent traction capability



Wide range of belts providing low friction cover that guarantee the best surface for perfect accumulation



Wide range of thermoplastic Fast Joint belts that allow the user to join in an easy and fast way

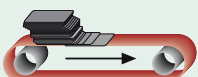
## Endless rubber belts



Mandrel-made, they track perfectly and can run in both directions



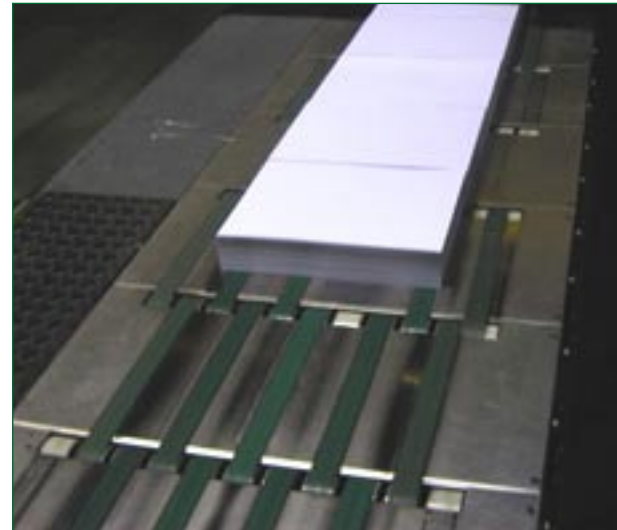
Excellent resistance to abrasion, oils, inks and chemicals. They do not mark the paper.



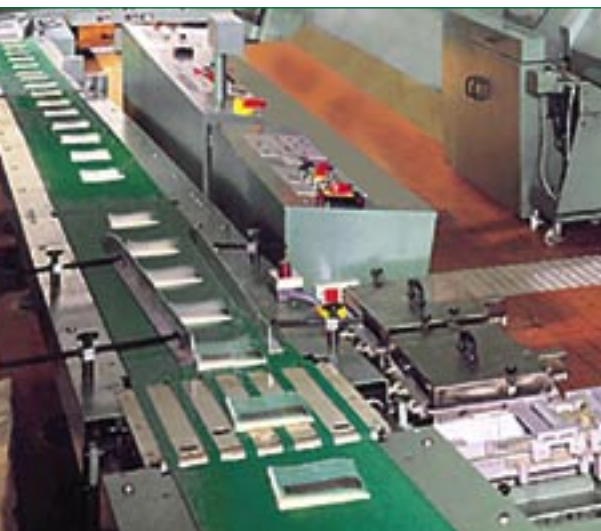
They provide excellent coefficient of friction. The special elastomer of the cover keeps its unique friction capability during their whole working life.



Permanent antistatic



## Printing industry



CHIORINO manufactures a wide range of machine tapes designed to provide excellent performances for any application in the graphic, publishing and printing industry:

- ▶ **NEWSPAPERS AND MAGAZINES PRINTING AND PAGE FOLDING**
- ▶ **INSERTION CASSETTES WINDING/ UNWINDING**
- ▶ **CATALOGUES OFFSET PRINTING**
- ▶ **BOOKBINDING**

In the table at page 11 are listed the recommended CHIORINO products for each application.

With the FAST JOINT presses the CHIORINO thermoplastic machine belts can be made endless on site in a few minutes without use of cements, reducing the machine downtime.

### Features and benefits

- ▶ **Excellent traction and highest feed precision with any type of paper**
- ▶ **High resistance to chemicals and inks**
- ▶ **Superb resistance to abrasion**
- ▶ **Dimensional stability**
- ▶ **High flexibility**
- ▶ **They do not mark the paper**
- ▶ **Soft surface**
- ▶ **Long life**

CHIORINO offers a range of specialized products for paper converting:

▶ **CUTTERS**

- Thermoplastic polyurethane Fast Joint belts.
- Low friction traditional belts with polyamide traction core providing high capability of accumulation.

▶ **TUBE WINDERS**

- **T-E and DG-E Fast Joint series:** belts with polyester traction core and thermoplastic elastomer covering.
- **DG HS series:** belts with polyamide traction core and very high resistance to abrasion.

▶ **TISSUE**

Low friction polyurethane and PVC belts with non marking surface for tissue production (handkerchief, napkins, toilet paper etc.)

## Features and benefits

▶ High resistance to abrasion

▶ Excellent traction with any type of paper

▶ High dimensional stability

▶ Excellent flexibility

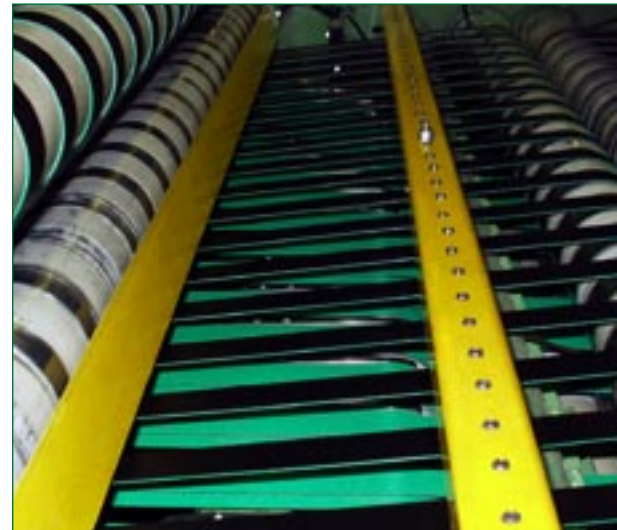
▶ They do not mark the paper

▶ Permanent antistatic

▶ Perforated belts on demand

▶ Long life

## Paper converting



## Box folding industry



CHIORINO manufactures a wide range of specialized products for the box folding industry, including foldergluers working at a very high speed.

CHIORINO has studied and developed customized belts to satisfy the demand of high speeds in the folder glueing industry for any type of carton, plain or synthetic materials with any type of finish (special inks, varnishing etc.) and corrugated cartons.

Page 7 shows a production line of boxes for which CHIORINO offers belts for every position, listed in the table at page 11.

### Features and benefits

- ▶ Excellent resistance to abrasion and to any type of ink
- ▶ High resilience elastomer
- ▶ High resistance to chemicals
- ▶ They do not mark the paper
- ▶ Excellent paper traction capability
- ▶ High flexibility
- ▶ Permanent antistatic
- ▶ Dimensional stability
- ▶ Perforated belts on demand
- ▶ Long life

## CHIORINO belts for foldergluers

### FEEDING (pos. 1)

Mandrel made truly endless belts with special elastomer cover that keeps their high friction capabilities during their whole working life. The drive surface elastomer cover of the **MF-351 G** guarantees a consistent drive to provide efficient feeding even on the fastest machines. These feeder belts are latex-free, therefore they can be used for producing light weight cartons for the food and pharmaceutical industry.

These belts are available with three different versions of the MF cover to be selected according to the type of material to be processed:

- **L raspberry**: suitable for smooth cardboard, either glossy or matt;
- **R purple red**: suitable for abrasive smooth cardboard, PVC boxes and corrugated carton;
- **HS ochre**: for abrasive corrugated carton and for very high speed foldergluers.



### FOLDING-GLUEING (pos. 2)

#### • High-Speed foldergluers

- **DG-E series**: thermoplastic folder belts with traction core in polyester and elastomer covering that can be fitted on site using the FAST JOINT system and equipment, which require only few minutes and no adhesives.
- **DG HS series (High Speed)**: folder belts with traction core in polyamide and the special elastomer "HS" covering which, thanks to its resilience, prevents cuts and surface crackings.

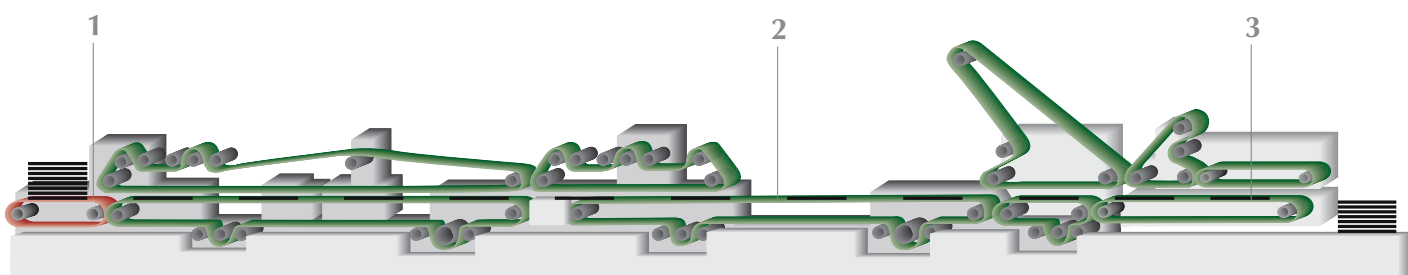
#### • Traditional foldergluers

- **DG series**: traditional high duty folder belts with elastomer covering and polyamide traction core.



### COMPRESSION (pos. 3)

Compression belts in PVC or elastomer, antistatic.



## Corrugated carton boxes

CHIORINO offers a complete range of belts for the whole production cycle of carton boxes, from the corrugator to the stacker.

CHIORINO has studied and developed customized belts to satisfy the growing demand in terms of speed and quality in the production of corrugated cartons.

In these two pages a line is shown for the production of corrugated cartons boxes; all the belts suitable for each position are listed in the table on page 11.

### Features and benefits

- ▶ Superior abrasion resistance
- ▶ High traction capability
- ▶ Excellent flexibility
- ▶ Dimensional stability
- ▶ Permanent antistatic
- ▶ Perforated belts on demand
- ▶ Long life





## CHIORINO belts for carton boxes

**LOADING** (pos. 1)

**CONVEYING TO PUNCHER AND SLOTTER**(pos. 3)

Belts with PVC or elastomer covering with high coefficient of friction and superior abrasion resistance.

**FEEDERS TO PRINTER** (pos. 2)

**FLEXO-FOLDER** (pos. 5)

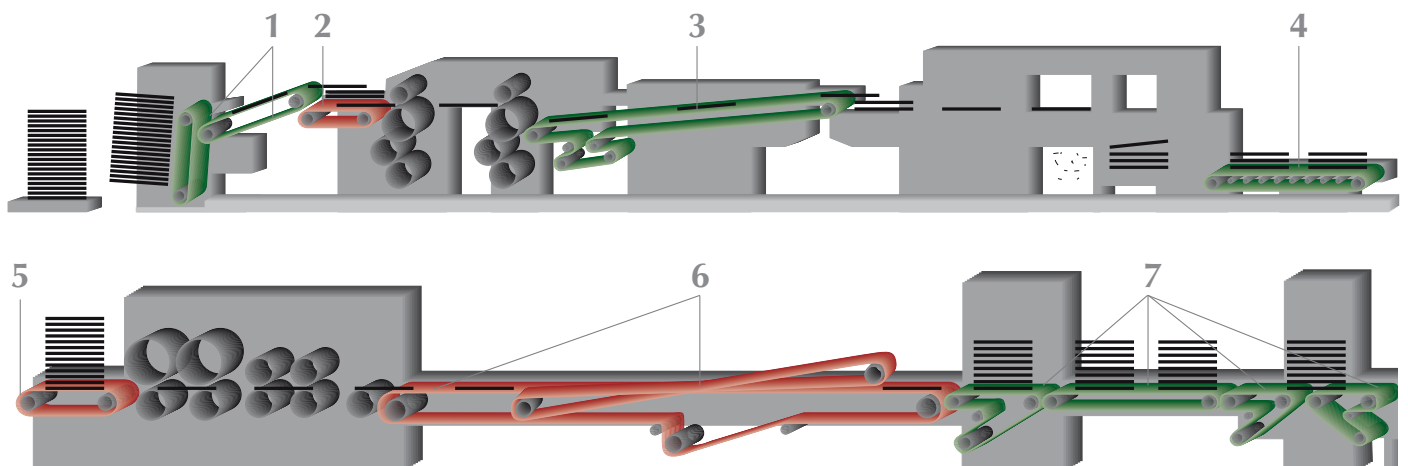
Belts with polyamide traction core with self-regenerating elastomer cover that guarantee very high friction and abrasion resistance.

**FLEXO-FOLDERS BELTS** (pos. 6)

- Belts with elastomer or PVC covering with high resistance to abrasion, excellent traction capability and high flexibility.
- Belts with MF self-regenerating elastomer covering that offer a very high coefficient of friction.

**STACKERS** (pos. 4, 7)

- DG belts with high resistance to abrasion and excellent traction capability.
- DG MF belts where very high friction is required and for an absolute precision feed of corrugated carton boxes.



	Type	Traction core		Permanent antistatic	Total thickness		Weight	Minimum diameter (1)		Pull for 1% elongation		Max. admissible pull / Tensile strength (2)	Min. temperature resistance	Max. temperature resistance	Comparative coefficient of friction (3)
		Top cover	Bottom cover		mm	kg/m <sup>2</sup>		mm	N/mm	N/mm	[°C]				
MEDIUM FRICTION HIGH FRICTION	2M8 U0-V5 FM	PET	PVC ●	TPU ●	✓	2,1	2,3	30	8	16	-10	+60	MF		
	2M12 V5-V10	PET	PVC ●	PVC ●		3,0	3,5	80	12	24	-10	+60	MF		
	3M18 U0-V15 A	PET	PVC ●	TPU ●	✓	4,2	4,9	100	18	36	-10	+60	MF		
	3T18 U0-V15	PET	PVC ●	TPU ●	✓	4,2	4,9	100	18	36	-10	+60	MF		
	2M8 U0-U-G5 FL	PET	NBR ●	TPU ●	✓	2,0	2,4	25	8	16	-20	+100	MF		
	2M8 U0-U-G15 FL	PET	NBR ●	TPU ●	✓	3,0	3,4	50	8	16	-20	+100	MF		
	3TG	PA	NBR ●	PA ●	✓	1,9	1,8	20	3	6	-20	+100	MF		
	NT1	PA	NBR ●	TPU ●	✓	1,2	1,2	15	3	6	-20	+100	MF		
	NT2	PA	NBR ●	TPU ●	✓	2,0	2,1	20	3,5	7	-20	+100	MF		
	NT3	PA	NBR ●	TPU ●	✓	3,0	3,2	40	6	12	-20	+100	MF		
	NT4	PA	NBR ●	TPU ●	✓	4,0	4,3	60	6	12	-20	+100	MF		
	2M8 U0-V17 GP	PET	PVC ●	TPU ●	✓	5,2	3,7	50	8	16	-10	+60	HF		
	2M12 U0-V7 LG	PET	PVC ●	TPU ●	✓	2,4	2,4	40	12	24	-10	+60	HF		
	2M12 U0-V8 RT	PET	PVC ●	TPU ●	✓	2,3	2,4	40	12	24	-10	+60	HF		
	2M12 U0-V10 RT	PET	PVC ●	TPU ●	✓	2,6	2,6	50	12	24	-10	+60	HF		
	2M12 U0-V20 GP	PET	PVC ●	TPU ●	✓	5,5	3,9	50	12	24	-10	+60	HF		
	3M18 U0-V30 HF	PET	PVC ●	TPU ●	✓	5,8	7,2	150	18	36	-10	+60	HF		
	2M12 U0-G25 GP	PET	NR ●	TPU ●	✓	5,5	4,5	60	12	24	-40	+100	HF		
	2T12 U0-G25 GP	PET	XNBR ●	TPU ●	✓	5,5	4,5	80	12	24	-40	+100	HF		
	2T12 U0-G35 GP	PET	XNBR ●	TPU ●	✓	6,5	6,5	80	12	24	-40	+100	HF		
	3M18 U0-U-G40 MF	PET	NR ●	TPU ○	✓	5,7	5,9	100	18	36	-20	+100	HF		
	3M18 U0-U-G60 MF	PET	NR ●	TPU ○	✓	7,3	8,3	100	18	36	-20	+100	HF		
	NT5 MF	PA	NR ●	TPU ●	✓	5,0	5,5	50	6	12	-20	+100	HF		
	DG1/15 HS	PA	NBR ●	NBR ●	✓	1,6	1,8	20	5	200	0	+100	MF		
	DG1/30 HS	PA	NBR ●	NBR ●	✓	3,0	3,4	30	5	200	0	+100	MF		
	DG1/40 HS	PA	NBR ●	NBR ●	✓	4,0	4,6	40	5	200	0	+100	MF		
	DG2/30 HS	PA	NBR ●	NBR ●	✓	3,2	3,7	40	7,5	300	0	+100	MF		
	DG2/40 HS	PA	NBR ●	NBR ●	✓	4,0	4,8	50	7,5	300	0	+100	MF		
	DG2/60 HS	PA	NBR ●	NBR ●	✓	5,5	6,3	60	7,5	300	0	+100	MF		
	DG3/40 HS	PA	NBR ●	NBR ●	✓	4,0	4,3	100	10	400	0	+100	MF		
	DG1/15	PA	NBR ●	NBR ●	✓	1,6	1,8	20	5	200	0	+100	MF		
	DG1/30	PA	NBR ●	NBR ●	✓	3,0	3,4	30	5	200	0	+100	MF		
	DG1/40	PA	NBR ●	NBR ●	✓	4,0	4,6	40	5	200	0	+100	MF		
	DG2/20	PA	NBR ●	NBR ●	✓	2,4	2,8	40	7,5	300	0	+100	MF		
	DG2/30	PA	NBR ●	NBR ●	✓	3,2	3,7	40	7,5	300	0	+100	MF		
	DG2/40	PA	NBR ●	NBR ●	✓	4,0	4,8	50	7,5	300	0	+100	MF		
	DG2/60	PA	NBR ●	NBR ●	✓	5,5	6,3	60	7,5	300	0	+100	MF		
	DG1/45 MF	PA	NR ●	NBR ●	✓	4,5	5,1	50	5	200	0	+100	MF		
	DG2/60 MF	PA	NR ●	NBR ●	✓	6,5	7,1	75	7	300	0	+100	MF		
	LOW FRICTION	2M5 U0-U0 HP A	PET	TPU ○	TPU ○	✓	1,0	1,0	↗	6	12	-30	+110	LF	
		2MT5 U0-V3 N	PET	PVC ●	TPU ○	✓	1,8	2,0	20	6	12	-10	+60	LF	
		2MT5 U0-V3 SM N	PET	PVC ●	TPU ○	✓	1,9	2,0	20	6	12	-10	+60	LF	
		2M8 U0-U2 SP	PET	TPU ●	TPU ●	✓	1,5	1,6	↗	8	16	-20	+100	LF	
		2M12 U0-V3	PET	PVC ●	TPU ●	✓	1,9	2,1	40	12	24	-10	+60	LF	
		SILON 60 HC	PET	PET ●	PET ●	✓	5,5	3,4	100	10	10	-20	+120	LF	
		N	PA	TPU ●	TPU ●	✓	0,6	0,6	15	2	4	-20	+100	LF	
		N8	PA	TPU ●	TPU ●	✓	1,0	0,9	15	3	6	-20	+100	LF	
P0		PA	TPU ●	TPU ●	✓	0,9	1,0	15	2	80	0	+100	LF		
P1		PA	TPU ●	NBR ●	✓	1,4	1,5	25	5	200	0	+100	LF		
P1-L		PA	TPU ●	NBR ●	✓	1,3	1,1	25	2	80	0	+100	LF		
PR0-L		PA	TPU ●	TPU ●	✓	0,9	0,8	15	2	80	0	+100	LF		
Fast-Joint		2P6 G1-0	PA	PA ○	NBR ●	✓	1,8	1,8	20	9	16	-20	+100	LF	
	1M6 U0-U5 FL	PET	TPU ●	TPU ●	✓	1,0	1,0	10	6	6	-20	+100	MF		
	1M6 U3-U3 FL	PET	TPU ●	TPU ●	✓	1,2	1,3	10	6	6	-20	+100	MF		
	1M6 U5-U5 FL	PET	TPU ●	TPU ●	✓	1,6	1,9	20	6	6	-20	+100	MF		
	T-E 10/20	PET	NBR ●	NBR ●	✓	2,2	2,5	25	10	90	-20	+70	MF		
	T-E 30/30	PET	NBR ●	NBR ●	✓	3,0	3,5	50	30	250	-20	+70	MF		
	DG-E 10/30	PET	NBR ●	NBR ●	✓	3,0	3,5	30	10	90	-20	+70	MF		
DG-E 10/40	PET	NBR ●	NBR ●	✓	4,0	5,0	40	10	90	-20	+70	MF			
ENDLESS	MF L-351 G	PET	NR ●	NBR ●	✓	6÷12	---	(4)	10	---	-20	+70	HF		
	MF R-351 G	PET	NR ●	NBR ●	✓	6÷12	---	(4)	10	---	-20	+100	HF		
	MF HS-351 G	PET	NR ●	NBR ●	✓	6÷12	---	(4)	10	---	-20	+100	HF		
	MF HS-311	PET	NR ●	PET ○	✓	6÷12	---	(4)	10	---	-20	+100	HF		
	MF L-311	PET	NR ●	PET ○	✓	6÷8	---	(4)	10	---	-20	+70	HF		
	MF R-311	PET	NR ●	PET ○	✓	6÷8	---	(4)	10	---	-20	+100	HF		

(1) Minimum roller diameter is dependent on the joint recommended by CHIORINO.

(2) For TRANSMISSION BELTS, the value indicates the tensile strength.

(3) Bottom cover coefficient of friction: low LF, medium MF, high HF.

(4) Minimum diameter for MF belts is according to total thickness.

↗: knife edge

Rotary printer page folding  
 Insertion cassettes wind/unwinding  
 Stacking  
 Gathering / Binding  
 Wrapping / Binding  
 Cutters  
 Tube winders  
 Tissue  
 Feeding  
 Folding-gluering  
 Compression  
 Corrugator  
 Loading and conveying  
 Feeding  
 Flexo-folding  
 Stacking  
 MULTIPURPOSE CONVEYING  
 Type

PRINTING AND GRAPHIC	PAPER	BOX FOLDING	CORRUGATED CARTON	Type
				2M8 U0-V5 FM
				2M12 V5-V10
				✓ 3M18 U0-V15 A
				✓ 3T18 U0-V15
				2M8 U0-U-G5 FL
				2M8 U0-U-G15 FL
				3TG
				✓ NT1
				✓ NT2
				✓ NT3
				✓ NT4
				✓ 2M8 U0-V17 GP
				✓ 2M12 U0-V7 LG
				✓ 2M12 U0-V8 RT
				✓ 2M12 U0-V10 RT
				✓ 2M12 U0-V20 GP
				✓ 3M18 U0-V30 HF
				2M12 U0-G25 GP
				2T12 U0-G25 GP
				2T12 U0-G35 GP
				✓ 3M18 U0-U-G40 MF
				✓ 3M18 U0-U-G60 MF
				NT5 MF
				DG1/15 HS
				DG1/30 HS
				DG1/40 HS
				DG2/30 HS
				DG2/40 HS
				DG2/60 HS
				DG3/40 HS
				DG1/15
				DG1/30
				DG1/40
				DG2/20
				DG2/30
				DG2/40
				DG2/60
				DG1/45 MF
				DG2/60 MF
				2M5 U0-U0 HP A
				2MT5 U0-V3 N
				2MT5 U0-V3 SM N
				2M8 U0-U2 SP
				2M12 U0-V3
				SILON 60 HC
				N
				N8
				P0
				P1
				P1-L
				PRO-L
				2P6 G1-0
				1M6 U0-U5 FL
				1M6 U3-U3 FL
				1M6 U5-U5 FL
				T-E 10/20
				T-E 30/30
				DG-E 10/30
				DG-E 10/40
				MF L-351 G
				MF R-351 G
				MF HS-351 G
				MF HS-311
				MF L-311
				MF R-311

**Explanation of type designation  
 Conveyor and process belts**

- 2 Number of plies
- M** Textile carcass
- 8 Pull for 1% elongation [N/mm]
- U** Bottom cover
- 0 Thickness (mm/10)
- U** Possible interply
- G** Top cover
- 15 Thickness (mm/10)
- FL** Surface pattern (see photos)  
Other characteristics

- SILON** Non woven
- 60 Thickness (mm/10)
- HC** Static conductivity (ISO 284)

**TEXTILE CARCASS**

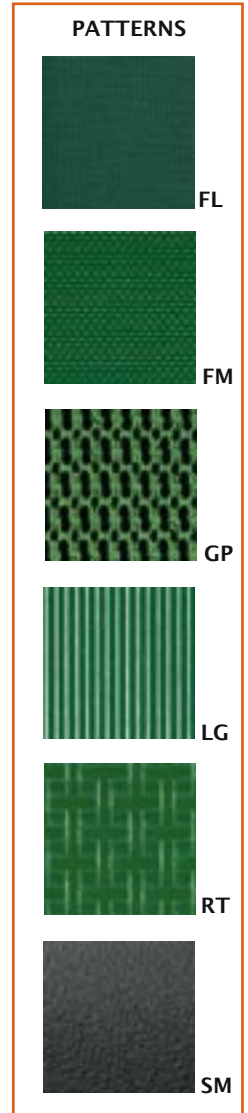
- M** Rigid polyester
- MT** Combined polyester
- T** Flexible polyester

**COATING AND INTERPLY MATERIALS**

- G** Elastomer  
NBR = synthetic rubber  
NR = natural rubber  
XNBR = carboxilated rubber
- U** Polyurethane
- V** Polyvinyl chloride (PVC)

**OTHER CHARACTERISTICS**

- HF** High coefficient of friction
- HP** High performance
- MF** Self-regenerating elastomer
- N** Black colour top cover
- SP** Polyurethane belt  
3000-3500 mm wide



**Transmission belts - Explanation of type designation**

**TRACTION CORE**

- T-E - DG-E** Polyester fabric
- DG** Mono ply polyamide

**SURFACE MATERIALS**

- T-E - DG-E - DG** NBR synthetic rubber

**OTHER CHARACTERISTICS**

- HS** For folder-gluers at very high speed

**Endless belts - Explanation of type designation**

- MF** Endless belt (mandrel made)
- L** Outer cover
  - L** raspberry (35 Sh.A)
  - R** purple red (45 Sh.A)
  - HS** ochre (40 Sh.A)

- 351** 3 ply polyester fabric and elastomer inner cover

- 311** 3 ply polyester fabric

- G** Synthetic rubber, green colour 65 Sh.A inner cover

The technical data of this table have been formulated under normal environment conditions. They are subject to alteration without notice.