

# BrecoFlex Flat Belts

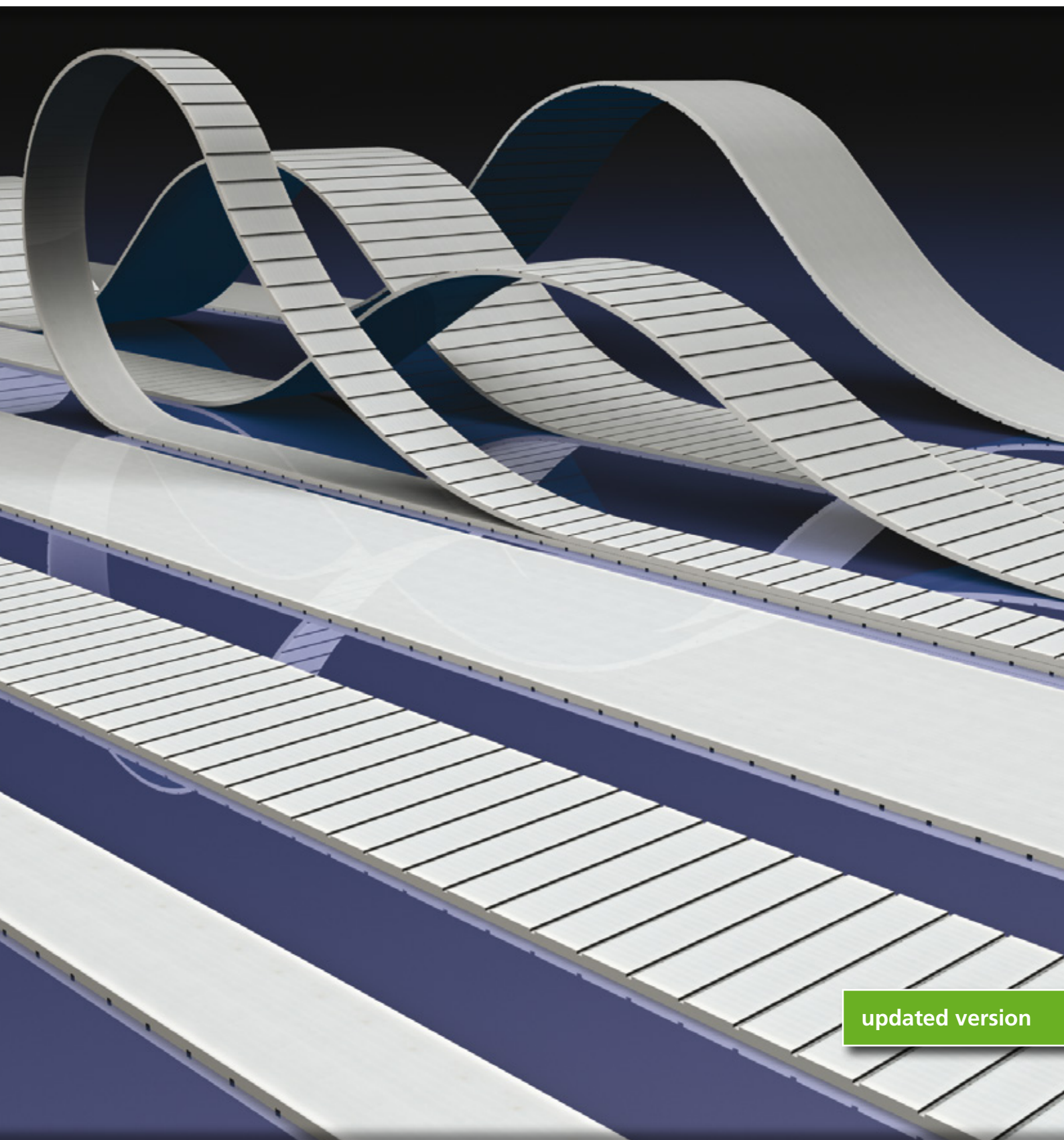
# BONDY

INDUSTRIAL EQUIPMENT SUPPLIER

For ordering and questions call

**(+45) 70 15 14 14**

# BRECO<sup>®</sup>-, BRECOFLEX<sup>®</sup> flat belts



updated version



BRECO is member of Mulco Europe EWIV



April 2014



### Keeping things moving!

Innovation is our drive - this principle marks BRECO Antriebstechnik Breher GmbH & Co., manufacturer of BRECO® and BRECOFLEX® timing belts as the most innovative producer in the field of polyurethane timing belt technology worldwide. The basis for a high-quality and reliable product is provided by wear resistant polyurethane for the belt body and high tensile steel cord tension members.

The name BRECO became the synonym for polyurethane timing belts resulting from years of experience in the field of thermoplastic polyurethane, the development of BRECO® and BRECOFLEX® manufacturing processes and their further development. The BRECO® and BRECOFLEX® timing belts, the pulleys designed to match them perfectly, and other components supplied by BRECO reflect the breadth of experience gathered over decades by countless people who have used the products. We maintain a consistently high level of quality through our exclusive use of high-quality materials and by listening to feedback from our suppliers about the needs of our customers.

One strong point is the development and production of special belts for various application fields. The large number of belt coatings and the most varied shape of flights open up an extremely broad application field for BRECO®- and BRECOFLEX® timing belts. We stock a broad range of belt and tension cord materials to cater for applications in very cold or very hot environments.

In simple applications too, BRECO timing belts offer all the advantages and quality expected of a high-end branded product. Safety, durability, accuracy and availability are some of the benefits which ultimately have a positive impact on costs.

The same applies to BRECO®- and BRECOFLEX® polyurethane flat belts. Like the timing belts, they cover a very broad spectrum of different areas of use. As an alternative to chains and cable control systems they provide the user with a maintenance-free as well as cost and space-saving solution for the application in question.

All our products conform to the European RoHS Directive which restricts the use of hazardous substances.

**Staying safely on the move.**



**Table of contents**

BRECO<sup>®</sup>, BRECOFLEX<sup>®</sup> flat belts..... 5  
 Flat belts with E tension member..... 6  
 Available materials..... 7

**BRECOFLEX<sup>®</sup> flat belts**

F2 ..... 9

**BRECO<sup>®</sup> flat belts**

F1 ..... 10  
 F2 ..... 11  
 F2.2 ..... 12  
 F2.5 ..... 13  
 F3 ..... 14  
 F6 ..... 15

**Information**

Flat belts fastening elements ..... 16  
 Instructions for storing and operating ..... 17  
 Mounting instructions ..... 18  
 Service life ..... 19  
 EC declaration of conformity ..... 20

**Flat belts made of polyurethane**

In this combination high-flexible steel cords of high tensile strength, embedded in wear resistant polyurethane as flat belts are a maintenance-free, low noise and space and cost saving alternative to chains and cable tension systems. These characteristics favour the increasing range of applications of the BRECO<sup>®</sup> flat belt.

Fitness stations, lifting tables, elevator systems and car wash stations are only some of the numerous application possibilities, where the BRECO<sup>®</sup> flat belt quality convinces.

Our delivery range of standard flat belts offers solutions for the majority of application areas. Individually adapted designs are also possible.

For special areas of use we can produce all types of timing belts in materials, whose properties make it possible, to use belts in following areas:

- Foodstuff sector
- Low temperature range from -30°C to +5°C
- High temperature range from +20°C to +110°C
- Use in low aggressive environment

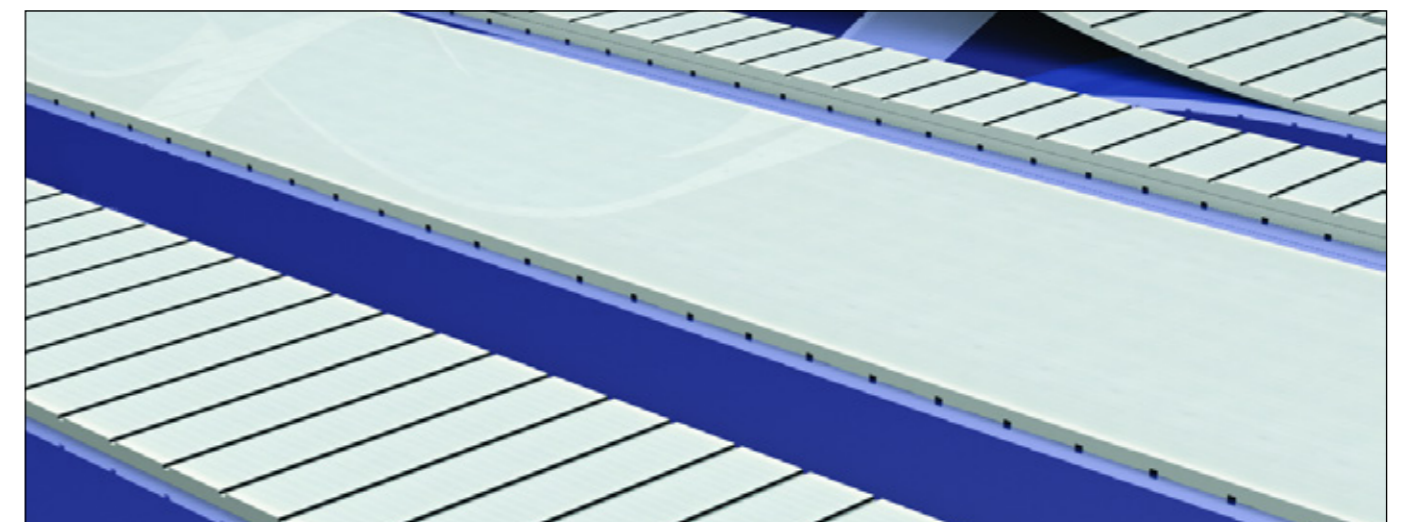
As alternative to the standard steel cord tension members, tension members in stainless steel and aramide are available. In the case of strong bending stress resp. tension load, flat belts with very high flexible tension members (E) resp. with reinforced tension members could be produced.

**Please contact our distribution partner for this type of application.**

**Properties:**

- Low noise
- Low maintenance
- Highly flexible
- Wear resistant
- Small build sizes
- Low elongation
- Constant length
- Hydrolysis resistant
- Temperature resistant
- Resistant against simple oils, fats and petrol
- Resistant to some acids and lyes

**The flat belts are temperature resistant with ambient temperatures from -30°C to +80°C. Applications close to the limit temperatures (<-10°C and >50°C), however, might require adapted dimensioning. For specific temperature ranges various belt materials are available.**



Highly flexible tension inserts - the E steel cord tension member

The thinner the single wire, the more flexible the overall tension member! This interrelation led us to develop BRECO® and BRECOFLEX® flat belts with E tension members.

In the E tension member the tension member cross-section is distributed to a lot more thinner individual wires and, therefore, the bending fatigues are markedly lower in the individual wires. The advantage of the E tension members is a higher flexibility.

This is especially important, when smaller mounting dimensions for pulleys and tension rollers are required. The minimum diameter of the pulleys can be fallen below up to 30% compared with standard tension members.

Flat belts with E tension members are recommended for multi-shaft drive with frequent bends.

Application informations: For intended application under extreme conditions please contact our technical department for advise.

Steel cord tension members example:



The thinner the individual wire the more flexible the whole flat belt.

Summary:

- Thinner individual wires in the steel cord
- Higher dynamic capabilities
- Extremely high bonding and bending fatigue strength
- Smaller pulley and tension roller diameter

Materials for the standard application area

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUST1	<ul style="list-style-type: none"> <li>• steel cord</li> <li>• VA cord</li> </ul>	white	92 Shore A	0°C bis +80°C
TPUST2	<ul style="list-style-type: none"> <li>• steel cord</li> <li>• VA cord</li> </ul>	transparent	85 Shore A	+5°C bis +50°C

Approved materials by contact with food

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUFD1	<ul style="list-style-type: none"> <li>• VA-cord</li> </ul>	transparent	92 Shore A	0°C bis +80°C

Materials for the use in areas with low aggressive environment

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUAU1	<ul style="list-style-type: none"> <li>• VA-cord</li> </ul>	transparent	92 Shore A	0°C bis +50°C

Materials for the use in areas with high ambient temperature

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUWB1	<ul style="list-style-type: none"> <li>• steel cord</li> <li>• VA cord</li> </ul>	white	94 Shore A	+20°C bis +110°C

Materials for the use in areas with low ambient temperature

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUKF1	<ul style="list-style-type: none"> <li>• steel cord</li> <li>• VA cord</li> </ul>	transparent	85 Shore A	-25°C bis +5°C

Materials with electrically discharge properties

Name of material	Selectable tension member	Color	Hardness	Temperature range
TPUAS1	<ul style="list-style-type: none"> <li>• steel cord</li> <li>• VA cord</li> </ul>	grey-transparent	92 Shore A	0°C bis +80°C

For further information about the resistance of polyurethane flat belts and available belt materials as well as alternatively tension member materials please contact our distribution partner.

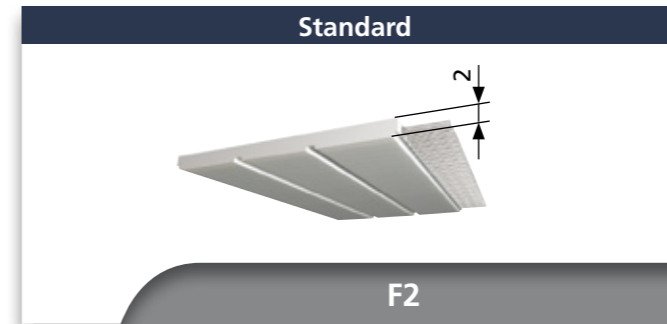
**BRECOFLEX<sup>®</sup> manufacturing process**

The BRECOFLEX<sup>®</sup> flat belt is produced in continuous lengths without tension carrier interruptions. The tension carrier is wound in the form of a thread. Continuous flat belts are available in standard lengths and widths as shown in the tables. The BRECOFLEX<sup>®</sup> manufacturing process enables intermediate lengths up to a maximum continuous length of 20,000 mm to be supplied.

**BRECO<sup>®</sup> manufacturing process**

The BRECO<sup>®</sup> flat belt is produced by the metre (M). The tension carriers are always arranged in an edge-parallel manner. All the tension carriers are involved in the force flow.

The by-the-metre product can be combined to produce continuous welded BRECO<sup>®</sup> flat belts (V) of any length. At the connection point only half the number of tension carriers is involved in the force flow.



Belt widths b [mm] (in-between belt widths on request)					
16	25	32	50	75	100

BFX F2	Available versions and lengths
Standard lengths	see table on the right
Length graduation from groove to groove (in 10 mm stages)	1500 mm up to 20000 mm
Under 1500 mm	on request
Intermediate lengths	o
Over 20000 mm	on request
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	o
VA tension member	o
PAZ (groove side)	x

Standard lengths [mm]	
Length	Length
1500	1900
1550	1950
1600	2000
1650	2100
1700	2500
1750	3000
1800	4000
1850	5000

BRECOFLEX <sup>®</sup> F2		Admissible tensile force of the belt F <sub>adm</sub> / Belt weight					
Belt width	b [mm]	16	25	32	50	75	100
E / Steel tension member	F <sub>adm</sub>	1000	1800	2300	3800	5800	7800
VA tension member	F <sub>adm</sub>	800	1440	1840	3040	4640	6240
Belt weight	Standard [kg/m]	0,050	0,078	0,100	0,157	0,235	0,313

BRECOFLEX <sup>®</sup> F2		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
 d <sub>min</sub>	Without contra-flexure	d <sub>min</sub> [mm]	30	25	60
	 d <sub>min</sub> d <sub>min Sp</sub>	With contra-flexure	d <sub>min</sub> [mm]	60	50
			d <sub>min Sp</sub> [mm]	60	50

- x available, Standard lengths (see table) without minimum purchase
- o minimum purchase amount on request
- not available
- <sup>1)</sup> further materials on request

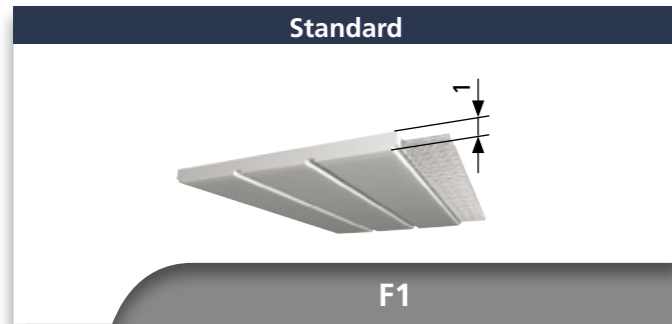
**Ordering example:**

**BRECOFLEX<sup>®</sup> flat belt**      **50 F2 / 2000**

Width in mm \_\_\_\_\_

Type \_\_\_\_\_

Length in mm \_\_\_\_\_



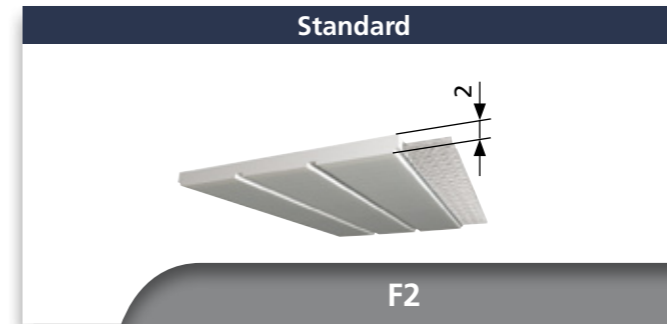
F1 (M)	Available versions and lengths
Standard delivery length (M)	rolls of 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	-
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	o
VA tension member	o
PAZ (groove side)	-

Belt widths b [mm] (in-between belt widths on request)			
8	10	15	20

BRECO® F1 (M)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight				
Belt width	b [mm]	8	10	15	20	
M	E / Steel tension member	$F_{Tadm}$ [N]	300	360	510	720
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	1200	1440	2040	2880
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$7,5 \cdot 10^4$	$9,0 \cdot 10^4$	$12,8 \cdot 10^4$	$18,0 \cdot 10^4$
	VA tension member	$F_{Tadm}$ [N]	230	275	390	550
	Tensile strength (VA tension member)	$F_{break}$ [N]	920	1100	1560	2200
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$7,5 \cdot 10^4$	$9,0 \cdot 10^4$	$12,8 \cdot 10^4$	$18,0 \cdot 10^4$
V	E / Steel tension member	$F_{Tadm}$ [N]	-	-	-	-
	VA tension member	$F_{Tadm}$ [N]	-	-	-	-
Belt weight	Standard	[kg/m]	0,012	0,015	0,023	0,030

BRECO® F1 (M)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contra-flexure	$d_{min}$ [mm]	16	12	30
	With contra-flexure	$d_{min}$ [mm]	30	18	60
		$d_{min Sp}$ [mm]	30	18	60

- x available, Standard lengths (see table) without minimum purchase
- o minimum purchase amount on request
- not available
- <sup>1)</sup> further materials on request



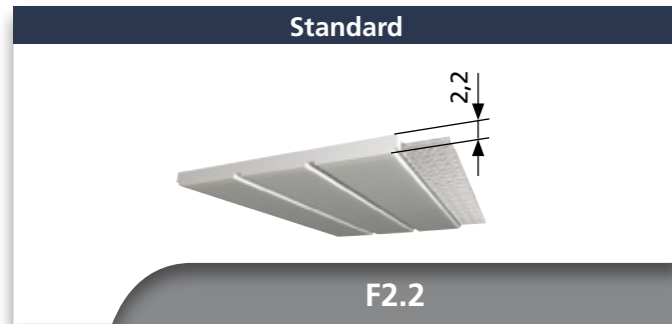
F2 (M/V)	Available versions and lengths
Standard delivery length (M)	rolls of 50 or 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	880
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	o
VA tension member	o
PAZ (groove side)	x

Belt widths b [mm] (in-between belt widths on request)				
25	32	50	75	100

BRECO® F2 (M/V)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight					
Belt width	b [mm]	25	32	50	75	100	
M	E / Steel tension member	$F_{Tadm}$ [N]	2200	2600	4400	6600	8800
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	8800	10400	17600	26400	35200
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$5,5 \cdot 10^5$	$6,5 \cdot 10^5$	$1,1 \cdot 10^6$	$1,65 \cdot 10^6$	$2,20 \cdot 10^6$
	VA tension member	$F_{Tadm}$ [N]	1760	2080	3520	5280	7040
	Tensile strength (VA tension member)	$F_{break}$ [N]	7040	8320	14080	21120	28160
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$5,5 \cdot 10^5$	$6,5 \cdot 10^5$	$1,1 \cdot 10^6$	$1,65 \cdot 10^6$	$2,20 \cdot 10^6$
V	E / Steel tension member	$F_{Tadm}$ [N]	1100	1300	2200	3300	4400
	VA tension member	$F_{Tadm}$ [N]	880	1040	1760	2640	3520
Belt weight	Standard	[kg/m]	0,081	0,101	0,161	0,241	0,322

BRECO® F2 (M/V)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contra-flexure	$d_{min}$ [mm]	30	25	60
	With contra-flexure	$d_{min}$ [mm]	60	50	130
		$d_{min Sp}$ [mm]	60	50	130

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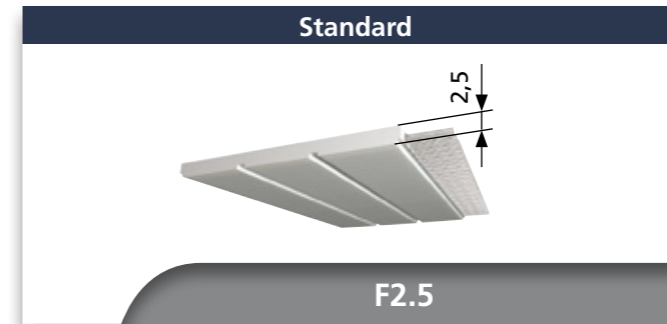
F2.2 (M/V)	Available versions and lengths
Standard delivery length (M)	rolls of 50 or 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	880
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	o
VA tension member	o
PAZ (groove side)	x

Belt widths b [mm] (in-between belt widths on request)							
20	25	30	32	40	50	75	100

BRECO® F2.2 (M/V)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight								
Belt width	b [mm]	20	25	30	32	40	50	75	100	
M	E / Steel tension member	$F_{Tadm}$ [N]	2500	3500	4500	5000	5500	7000	10000	14000
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	10000	14000	18000	20000	22000	28000	40000	56000
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$6,25 \cdot 10^5$	$8,75 \cdot 10^5$	$1,13 \cdot 10^6$	$1,25 \cdot 10^6$	$1,38 \cdot 10^6$	$1,75 \cdot 10^6$	$2,50 \cdot 10^6$	$3,50 \cdot 10^6$
	VA tension member	$F_{Tadm}$ [N]	1875	2625	3375	3750	4125	5250	7500	10500
	Tensile strength (VA tension member)	$F_{break}$ [N]	7500	10500	13500	15000	16500	21000	30000	42000
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$6,25 \cdot 10^5$	$8,75 \cdot 10^5$	$1,13 \cdot 10^6$	$1,25 \cdot 10^6$	$1,38 \cdot 10^6$	$1,75 \cdot 10^6$	$2,50 \cdot 10^6$	$3,50 \cdot 10^6$
V	E / Steel tension member	$F_{Tadm}$ [N]	1250	1750	2250	2500	2750	3500	5000	7000
	VA tension member	$F_{Tadm}$ [N]	940	1315	1685	1875	2060	2625	3750	5250
Belt weight	Standard	[kg/m]	0,071	0,092	0,120	0,130	0,146	0,213	0,309	0,366

BRECO® F2.2 (M/V)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contraflexure	$d_{min}$ [mm]	60	40	80
	With contraflexure	$d_{min}$ [mm]	120	70	130
$d_{min Sp}$ [mm]		120	70	130	

- x available, Standard lengths (see table) without minimum purchase
- o minimum purchase amount on request
- not available
- <sup>1)</sup> further materials on request



F2.5 (M/V)	Available versions and lengths
Standard delivery length (M)	rolls of 50 or 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	880
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	o
VA tension member	o
PAZ (groove side)	x

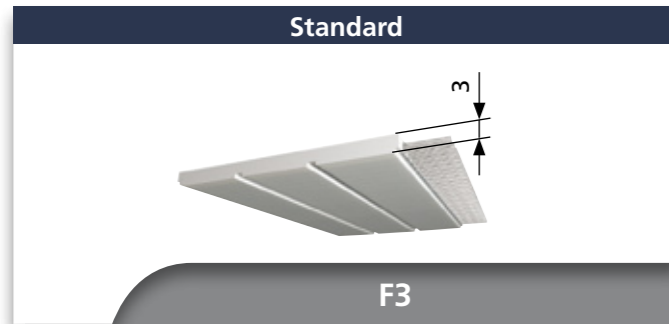
Belt widths b [mm] (in-between belt widths on request)	
50	100

BRECO® F2.5 (M/V)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight		
Belt width	b [mm]	50	100	
M	E / Steel tension member	$F_{Tadm}$ [N]	11200	22400
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	44800	89600
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$2,8 \cdot 10^6$	$5,6 \cdot 10^6$
	VA tension member	$F_{Tadm}$ [N]	8960	17920
	Tensile strength (VA tension member)	$F_{break}$ [N]	35840	71680
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$2,8 \cdot 10^6$	$5,6 \cdot 10^6$
V	E / Steel tension member	$F_{Tadm}$ [N]	5600	11200
	VA tension member	$F_{Tadm}$ [N]	4480	8960
Belt weight	Standard	[kg/m]	0,263	0,526

BRECO® F2.5 (M/V)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contraflexure	$d_{min}$ [mm]	80	60	100
	With contraflexure	$d_{min}$ [mm]	120	80	160
$d_{min Sp}$ [mm]		120	80	160	

- x available, Standard lengths (see table) without minimum purchase
- o minimum purchase amount on request
- not available
- <sup>1)</sup> further materials on request





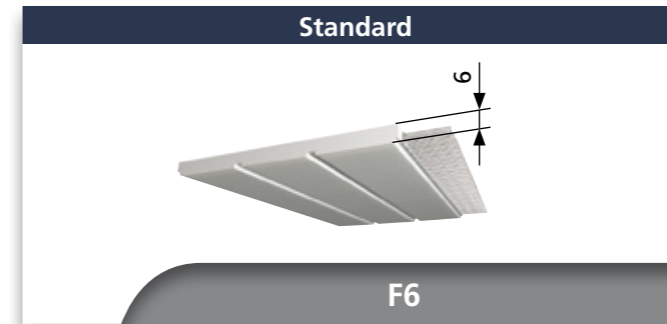
F3 (M/V)	Available versions and lengths
Standard delivery length (M)	rolls of 50 or 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	880
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	-
VA tension member	o
PAZ (groove side)	x

Belt widths b [mm] (in-between belt widths on request)			
30	50	75	100

BRECO® F3 (M/V)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight				
Belt width	b [mm]	30	50	75	100	
M	E / Steel tension member	$F_{Tadm}$ [N]	8400	14700	23800	30800
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	33600	58800	95200	123200
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$2,10 \cdot 10^6$	$3,68 \cdot 10^6$	$5,96 \cdot 10^6$	$7,70 \cdot 10^6$
	VA tension member	$F_{Tadm}$ [N]	6720	11760	19400	24640
	Tensile strength (VA tension member)	$F_{break}$ [N]	26880	47040	76160	98560
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$2,10 \cdot 10^6$	$3,68 \cdot 10^6$	$5,96 \cdot 10^6$	$7,70 \cdot 10^6$
V	E / Steel tension member	$F_{Tadm}$ [N]	4200	7350	11900	15400
	VA tension member	$F_{Tadm}$ [N]	3360	5880	9520	12320
Belt weight	Standard	[kg/m]	0,197	0,343	0,518	0,686

BRECO® F3 (M/V)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contra-flexure	$d_{min}$ [mm]	120	-	180
		With contra-flexure	$d_{min}$ [mm]	150	-
		$d_{min Sp}$ [mm]	150	-	300

- x available, Standard lengths (see table) without minimum purchase
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- not available
- <sup>1)</sup> further materials on request



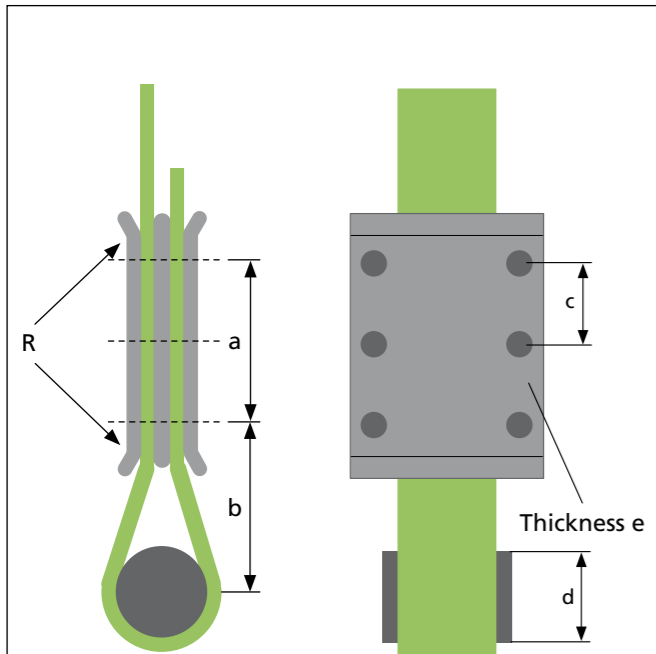
F6 (M/V)	Available versions and lengths
Standard delivery length (M)	rolls of 50 or 100 m
Cuts / Lengths > 100m Length graduation from groove to groove (in 10 mm stages)	on request
Minimum length joined (V)	880
Standard material	TPUST1 <sup>1)</sup>
Steel tension member (standard)	x
E tension member	-
VA tension member	o
PAZ (groove side)	x

Belt widths b [mm] (further belt widths on request)	
30	

BRECO® F6 (M/V)		Admissible tension cord strength $F_{Tadm}$ / Specific elasticity / Belt weight	
Belt width	b [mm]	30	
M	E / Steel tension member	$F_{Tadm}$ [N]	1800
	Tensile strength (E / steel tension member)	$F_{break}$ [N]	7200
	Specific elasticity (E / steel tension member)	$C_{spec}$ [N]	$4,0 \cdot 10^5$
	VA tension member	$F_{Tadm}$ [N]	1440
	Tensile strength (VA tension member)	$F_{break}$ [N]	5760
	Specific elasticity (VA tension member)	$C_{spec}$ [N]	$4,0 \cdot 10^5$
V	E / Steel tension member	$F_{Tadm}$ [N]	900
	VA tension member	$F_{Tadm}$ [N]	720
Belt weight	Standard	[kg/m]	0,232

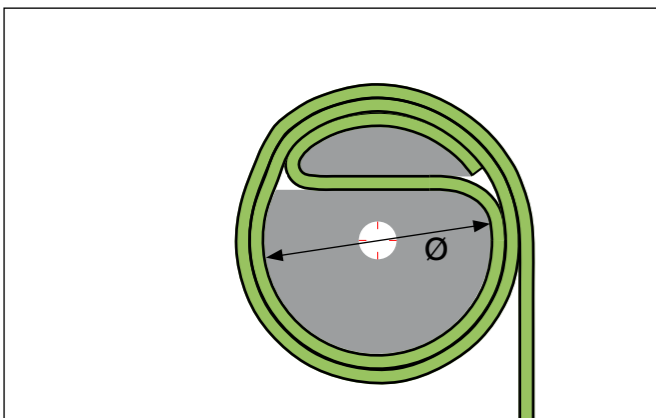
BRECO® F6 (M/V)		Flexibility (minimum diameter)			
		Steel tension member	E tension member	VA tension member	
		Standard	Standard	Standard	
	Without contra-flexure	$d_{min}$ [mm]	90	-	90
		With contra-flexure	$d_{min}$ [mm]	90	-
		$d_{min Sp}$ [mm]	90	-	130

- x available, Standard lengths (see table) without minimum purchase
- o minimum purchase amount on request
- not available
- <sup>1)</sup> further materials on request



Fastening element Type 1 (pictorial schematic)

Technical					
Type 1	F1	F2	F2.2	F2.5	F3
$a_{min}$ [mm]	40	50	60	80	125
$b_{min}$ [mm]	25	30	45	50	75
$c$ [mm] approx.	20	25	20	20	25
$\varnothing d_{min}$ [mm]	16	25	30	30	50
$e_{min}$ [mm]	3	3	4	5	5
Radius $R_{min}$	10	12	15	15	25
Thread (min)	M5	M6	M6	M6	M8



Fastening element Type 2 (pictorial schematic)

Technical					
Type 2	F1	F2	F2.2	F2.5	F3
$\varnothing$ [mm] (min)	40	50	60	80	100

For the purposes of safety, at least two complete windings must remain on the end attachment in the unwound state.

The type 1 and type 2 end attachments depicted in the basic diagrams are suggestions of potential solutions and do not hold any type approval certificates. At the same time, the indicated values are only guidelines and must, in individual cases, be adapted to potential special circumstances. In addition, the functional reliability of the end attachments must be checked. Potential procurement sources can be requested from us.

**Information relating to the storage and use of BRECO® and BRECOFLEX® flat belts (original instructions for use)**

The flat belts must be stored in a dry, cool and dark environment (max. 60% relative humidity, temperature range +5°C to +35°C).

By observing the geometries, loadings and ambient conditions indicated in the accompanying catalogue and in the data sheets the flat belts can be operated without maintenance. All the elements involved must be arranged so that sideways running of the belts, more particularly running off the pulleys, is avoided.

The end attachments must be rigid enough (recommendation for flat belt end attachments on page 16) that practically uniform pressure (= uniform conveying) is guaranteed over the entire width of the belt.

Twice as many inspections should take place per year as the number of stress cycles per minute. For example: two stress cycles per minute result in four inspections per year. As a rule, a simple visual inspection is sufficient. The following should be checked:

Firm seating of the end attachments and any displacement of the belt therein (marks on the flat belt and end attachments may be helpful).

Cleanliness of the running surfaces of flat belts and pulleys. Dust, oil and grease residues reduce the friction. Dirt can result in diagonal tension and uneven carrying. Cleaning can be carried out using normal household washing and soap solutions, or cleaning solvents, followed by immediate drying of the flat belt.

Damage to the belt running surface. Small areas of damage are generally not critical. In the case of damage to the lateral edge extending to the tension carriers, the belt must always be replaced.

It is imperative to ensure that the flat belt drives are only started up when the entire assembly, i.e. the finished machine with all protective systems, is in operation and meets the machine guidelines. An assessment of all possible remaining risks has been carried out in line with the Machinery Directive. If you are interested, please request the detailed contents from your sales partners.

**Assembly instructions for BRECO® and BRECOFLEX® flat belts**

The flat belts must be fastened at both belt ends in a suitable manner. The recommended flat belt end attachments can be used for fastening. The specified values and instructions must be observed. The flat belts must be guided in a suitable manner on the drive and deflecting pulleys. In the case of cylindrical pulleys, flanged pulleys or, as the case may be, convex pulleys can be used for guiding. In the case of convex pulleys please observe DIN 111. Depending on the selected convexity, any necessary oblique setting of the pulley and/or shaft must be checked. Due to the high tensile strength of BRECO® and BRECOFLEX® flat belts and the uneven force distribution as a result of wearing of convex pulleys, deductions are necessary for the permissible tensile force of the flat belts. In individual cases, these deductions may have to be determined by experiment.

To guarantee full operational function, the belts must be free of grease and residues after assembly.

When setting up several flat belts running in parallel to each other and jointly driven, they should be taken from one manufacturing batch with minimal thickness tolerances between them.

**Replacement stage / duration of use**

The use of the BRECO® and BRECOFLEX® flat belts covers a very broad spectrum of applications. In doing so, belts are only one part of the entire system of many different individual components. Because of this, the loads actually acting on the flat belts are often only partially known, which makes it impossible to make definitive statements about the anticipated service life. As a rule, if all the specifications in the product catalogue are observed, a life span of up to approximately three million reverse bending cycles distributed over 10 years can be expected. In order to achieve this, the following points must be taken into account and observed:

Observation of the details set out in the BRECO® and BRECOFLEX® flat belts catalogue (including permitted loads, keeping to the minimum pulley diameters, information relating to end attachments and their assembly, ambient conditions such as temperature and media influences), torsion resistant and dimensionally accurate overall assembly (parallel axles and shafts, „rigid“ axle distances, flush pulleys), low-friction and wear-resistant belt guiding, force-free assembly of the belts and pulleys in accordance with the assembly instructions for BRECO® and BRECOFLEX® flat belts, as well as observation of the instructions for storing and operating the BRECO® and BRECOFLEX® flat belts.

**EC declaration of conformity  
(here as part of the original operating instructions)**

The manufacturer,

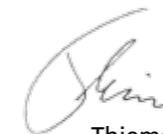
BRECO Antriebstechnik Breher GmbH & Co. KG  
Kleiststrasse 53  
D-32457 Porta Westfalica,

hereby declares that the BRECO® and BRECOFLEX® flat belts  
conform to the provisions of EC guideline 2006/42/EC.

Porta Westfalica, January 1<sup>st</sup> 2011



Dr Steinert  
Managing Director



Thieme  
QMB



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Great Britain

BRECO insists on high quality not only in its manufacturing processes but also in the standard of its advice and service in everything to do with polyurethane timing belt technology. Our distribution partners are all specialists in this field who themselves offer first-class customer service.

BRECO is a member of Mulco Europe EWIV, a European Economic Interest Grouping (EEIG). All the members of this group are considered pioneers in the field of polyurethane timing belt technology. The trust which has evolved over many years and the intensive cooperation have been and will continue to be the basis for innovative power transmission solutions in mechanical engineering in general.

**BRECO® and BRECOFLEX® timing belts - staying safely on the move.**

## Available product catalogues - for every application the right product

**BRECO® and BRECOFLEX® timing belts**

- General information (application and calculation notes)
- Endless timing belts (BRECOFLEX®)
- Open length timing belts (BRECO® M)
- Endless joined timing belts (BRECO® V)
- Timing belt lock for AT10, T10

**ATN-System - BRECO® timing belts for transport technology**

- General information about the ATN system (application information and notes on calculations)
- ATN timing belts
- ATN timing belt lock
- ATN standard profile connection
- ATN profiles
- ATN components

**BRECO® and BRECOFLEX® flat belts**

- General information
- Endless flat belts (BRECOFLEX®)
- Open length timing belts (BRECO® M)
- Open length flat belts (BRECO® M)
- Endless joined flat belts (BRECO® V)
- Fastening elements

**Finishing of timing belts**

- Coatings for polyurethane timing belts
- Mechanical rework of coatings
- Mechanical rework of timing belts
- High strength profile connection
- Welded-on profiles

**Components**

- General information
- Timing pulleys
- Synchronising shafts
- Synchronising pulleys with tensioners
- Tension rollers
- BRECO® fix-clamping elements

**BRECObasic®-timing belts**

- Product range
- Coatings for BRECObasic® timing belts

**BRECOprotect®-timing belts**

- Product range

**Further information about:**

- Sales partners
- New products and developments
- Available catalogues can be found at [www.breco.de](http://www.breco.de)

**Warranty**

All information has been compiled with the utmost care and attention and reflects the current state of knowledge. However, we would like to particularly draw your attention to the fact that all technical data is quoted subject to tolerances and must not be interpreted as a guaranteed delivery specification. We reserve the right to make technical changes as part of our continuous product development process.



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# Keeping things moving!



This company positioning confronts  
BRECO Antriebstechnik Breher GmbH & Co. KG,  
manufacturer of BRECO® and BRECOFLEX® timing belts,  
with new great challenges, which are accepted with pleasure.

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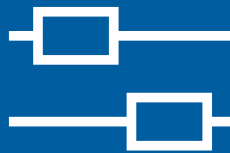
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