Materials for the standard application area

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUST1	• steel cord • stainless steel cord	all standard types, not for BRECOFLEX® belts up to 720 mm	white	92 Shore A	0°C up to +80°C
TPUST2	• steel cord • stainless steel cord cord	all standard types, not for BRECOFLEX® belts up to 720 mm	transparent	85 Shore A	+5°C up to +50°C
TPUST3	• steel cord • stainless steel cord	BRECOFLEX® belts up to 720 mm	transparent	92 Shore A	0°C up to +80°C

Approved materials by contact with food

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUFD1	• temperature range	all standard types	transparent	92 Shore A	0°C up to +80°C

Materials for the use in areas with low aggressive environment

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUAU1	• stainless steel cord	all standard types, not for BRECOFLEX® belts up to 720 mm	transparent	92 Shore A	0°C up to +50°C

Materials for the use in areas with high ambient temperature

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUWB1	• steel cord • stainless steel cord	all standard types, not for BRECOFLEX® belts up to 720 mm	white	94 Shore A	+20°C up to +110°C

Materials for the use in areas with low ambient temperature

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUKF1	• steel cord • stainless steel cord	all standard types, not for BRECOFLEX® belts up to 720 mm	transparent	85 Shore A	-25°C up to +5°C

Materials with electrically discharge properties

Name of material	Selectable tension member	Timing belt types	Color	Hardness	Temperature range
TPUAS1	• steel cord • stainless steel cord	all standard types, not for BRECOFLEX® belts up to 720 mm	grey-transparent	92 Shore A	0°C up to +80°C

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

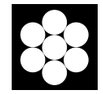
Highly flexible tension inserts - the E steel cord tension member

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

In the E tension member the tension member cross-section is distributed to a lot more thin 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 number of teeth and/or minimum diameter of the pulleys can be fallen below up to 30% compared with standard tension members.
Timing 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 timing 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*
- *No correction of the synchronising pulleys are necessary*

Notes:

- *AT3 (standard), AT5 (standard), ATL5 (standard)*
- *Belt lengths respectively to the delivery range*
- *Synchronising pulleys respectively to the delivery range*
- *Calculation analog to the standard tension member*
- *For deliverable types refer to delivery programme*

“E” Tension Member

Highly flexible tension members – the “E” steel cord tension member

The smaller the diameter of each single wire, the more flexible the overall tension member is! This relationship led us to develop CONTI SYNCHROFLEX® Polyurethane Timing Belts with “E” tension members.

The cross sectional area of the “E” tension member comprises several strands of smaller diameter wires, each with excellent bending fatigue characteristics. With much improved overall flexibility CONTI SYNCHROFLEX® Polyurethane Timing Belts are particularly suited to smaller diameter pulleys and tension rollers; the minimum number of teeth and/or minimum diameter of the pulleys can be reduced by up to 30% compared with standard tension members. Timing belts with “E” tension members are recommended for multi-shaft drive applications with frequent reverse bending.

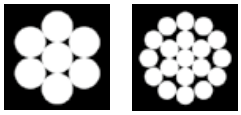
Summary:

- smaller diameter individual wires in the steel cord
- higher dynamic capabilities
- extremely high bonding and bending fatigue strength
- smaller pulley and tension roller diameters
- runs on standard diameter timing pulleys.

For applications under extreme conditions, please contact your Mulco sales partner.

Application information:

Steel cord tension members encapsulated in polyurethane:

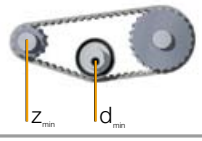
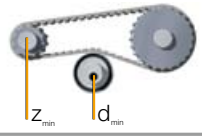


The smaller the diameter of the individual wire, the more flexible the whole timing belt.

Available versions:

- for the pitches AT 3 (standard), AT 5 (Gen III standard), AT 10, ATP10, T 5, T 10, T 20
- all standard belt lengths for the chosen pitch
- all standard pulley sizes for the chosen pitch
- all calculations as per the standard belt chosen

Timing belts with “E” tension members, minimum numbers of teeth:

Drive Type			AT 3 (Standard)	AT 5 (GEN III, Standard)	AT 10 ATP 10	T 5	T 10	T 20
without contraflexure 	Timing pulley	z_{min}	15	12	12	10	10	12
	Tension roller (smooth), running on teeth	d_{min} [mm]	20	18	50	18	50	80
with contraflexure 	Timing pulley	z_{min}	20	20	20	12	15	20
	Tension roller (smooth), running on the back of the belt	d_{min} [mm]	20	50	80	18	50	120