Continental AG, ContiTech Power Transmission Systems
Division Polyurethane Belts

Manual
Traction Member
Type: CONTI POLYROPE®

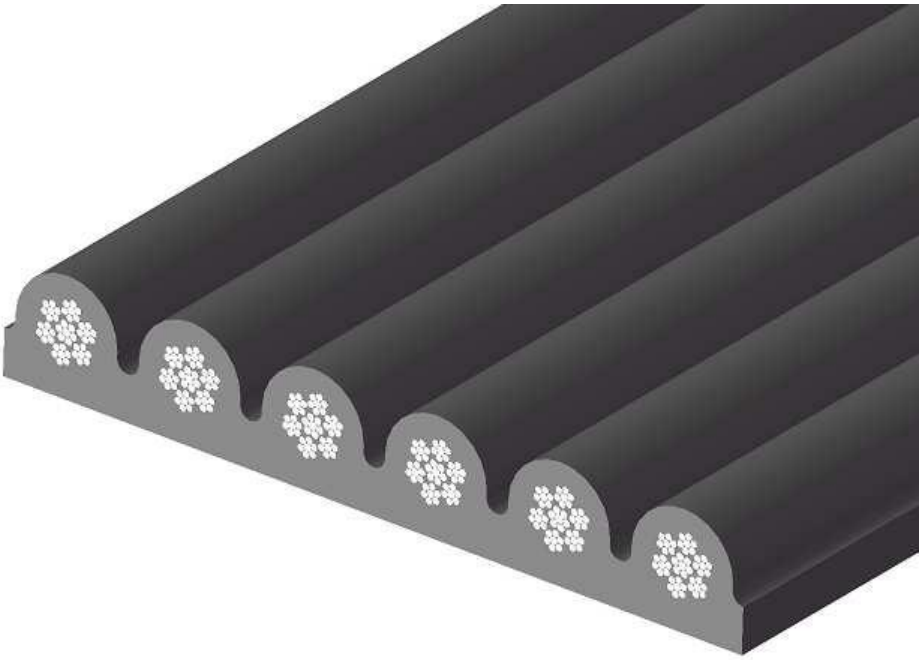


Fig. 1: CONTI POLYROPE® 25-6x2.0 [ContiTech]

Date: August 21, 2012, last changed April 20, 2018

Original language: German

Contents Page

1. Introduction

The fitting instructions contain warnings and safety information in the form of pictograms that draw attention to hazards and tips.

Fig. 2: Operating tip
[www.brandschutz-schilder.de]

Operating tip:

Additional information

No hazard

Fig. 3: Warning
[www.brandschutz-schilder.de]

Warning: general hazard

Potential hazard to system and

risk of personal injury

Fig. 4: Crush hazard
[www.brandschutz-schilder.de]

Warning: crush hazard

Potential hazard

Serious personal injury

Fig. 5: Stop
[www.brandschutz-schilder.de]

Warning: high risk

Potential risk of personal injury and damage to

system

Serious personal injury or death

1.1 CONTI POLYROPE® Designation

The CONTI POLYROPE® designation, e.g. **25-6x2.0 DP**, is made up as follows:

- **25** mm wide
- **6** tension members and **6** ribs
- **2.0** mm tension member diameter
- **D**ouble **P**rofile

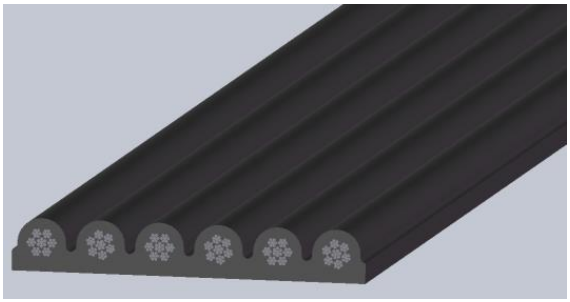


Fig. 6: CONTI POLYROPE® 25-6x2.0 [ContiTech]

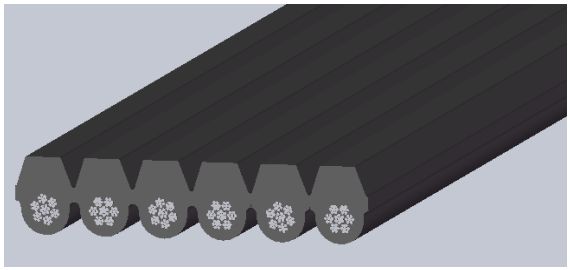


Fig. 9: CONTI POLYROPE® 25-6x2.0 DP [ContiTech]

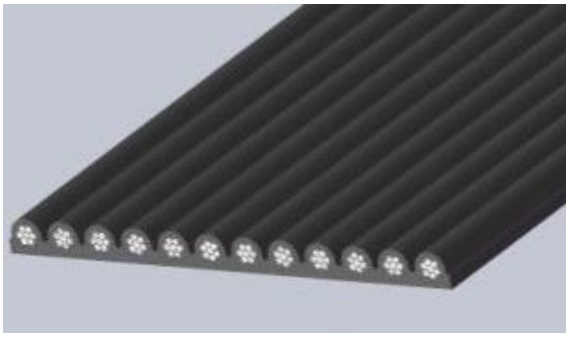


Fig. 8: CONTI POLYROPE® 50-12x2.0 [ContiTech]

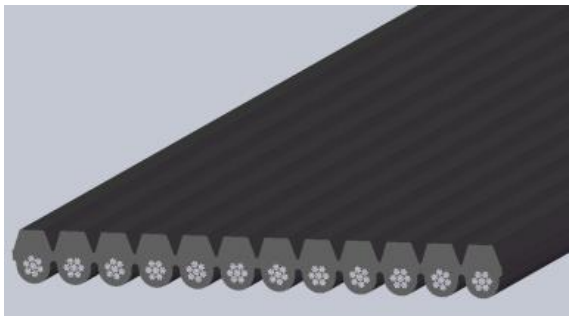


Fig. 7: CONTI POLYROPE® 50-12x2.0 DP [ContiTech]

2. Safety Information for CONTI® POLYROPE Traction Members

2.1 Intended Use

CONTI POLYROPE® traction members are designed and intended solely for installation and use in electrically/hydraulically operated passenger and goods elevators in accordance with EN 81-20:2014 / EN 81-50:2014. The traction member can be installed 1:1 and 2:1.

Any other use or use going beyond that is deemed to be non-intended use. Continental ContiTech accepts no liability for any damage or injury resulting from this or from process defects.

All planning, installation and maintenance work may only be carried out by qualified personnel.

Other applicable or relevant legal provisions (e.g. relating to operation, maintenance and inspection) remain unaffected.

No responsibility is accepted for damage or injury arising from improper or other actions which do not comply with these operating instructions and/or are not in conformity with the above standards and thus impair the product's features or properties.

The traction member may only be fitted if in perfect technical condition and in accordance with the capacity rating confirmed by ContiTech.

The following also form part of the intended use:

- Observance of the operating instructions
- Compliance with the statutory accident prevention and environmental regulations
- Compliance with and observance of the elevator documentation / regulations

2.1 Inappropriate Use

ContiTech traction members must not be used in an explosive environment or aggressive atmosphere.

Use is inappropriate if the permitted limits are exceeded.

Permitted limits:

- Operating temperature range (see paras. 4.x)
- Max. load (see paras. 4.x)
- Minimum pulley diameters (see paras. 4.x)

It is essential to note the following:

Fig. 10: Warning [www.brandschutz-schilder.de]

- All work relating to the transport, connection, commissioning and maintenance of the drive must be carried out by qualified specialist personnel. Improper actions can cause serious personal injury or property damage.
- The driving pulley must be fitted with an anti-jump guard.
- Regular tests should not cause excessive wear or lead to stresses which impair the operational safety of the elevator.

2.3 Warranty and Liability for the Traction Members

- The manufacturer of the traction members guarantees proper, safe functioning of the traction member only if it is sized adequately in accordance with the European Union Lifts Directive and is fitted, maintained, tested and operated correctly as specified in the maintenance instructions and the procedure specified here.

- If the permitted limits are exceeded operationally, during maintenance or during testing, the warranty shall be void.

- The customer is liable for the correct fitting, maintenance, testing and operation of the drive and shall provide verifiably trained and qualified personnel.

- If faults are identified in the elevator system including the traction member, the system must be taken out of service immediately; if not, the operator shall be solely liable for all personal injury and property damage, irrespective of legal basis.

- Incorrect fitting or inexpert operation of the system, especially with the non-permitted actions described above, shall result in the manufacturer of the traction member rejecting all liability, irrespective of legal basis.

- ContiTech will reject all warranty and liability claims if the installing company, operator and/or maintenance company cannot provide complete documentary evidence of the permitted procedures for and usage of the elevator system including traction members (e.g. elevator log etc.), as described.

2.4 Hazards Arising from the Traction Member

The traction members have been developed in accordance with the latest state of the art and shipped in an operationally safe state. No change, especially one which impairs operational safety, is permitted.

The CONTI POLYROPE® traction member may only be used in enclosed elevator shafts. If elevator shafts are glazed, UV-resistant glass must be fitted. When in the elevator shaft, maintain an adequate safety distance from all rotating components.

Fig. 11: Crush hazard
[www.brandschutz-schilder.de]

Warning, crush hazard!
The elevator manufacturer must fit guards on the respective rotating components.

2.5 Instructions for Safe Operation

If changes, e.g. as a result of wear or aging etc., are identified during the service life of the traction member, eliminate these immediately in accordance with these operating and maintenance instructions.

2.6 Requirements of Fitting and Maintenance Personnel

The commissioning, maintenance or repair of traction members may only be carried out by trained, qualified personnel.

Qualified personnel are persons who, on the basis of their training, experience, instruction and knowledge of the relevant standards and provisions, accident prevention regulations and operating conditions, have been authorized by the person responsible for the safety of the system to carry out the relevant necessary work and are capable of identifying and avoiding the potential hazards in the process. (Definition of skilled staff according to IEC 364)

Please read the enclosed operating and maintenance instructions carefully. They will help you avoid any potential malfunctions or problems during commissioning and operation of the machine.

2.7 General

Should any damage have occurred in transit or if a fault is identified during commissioning of the machine, please notify ContiTech immediately, specifying the fault or damage.

The decision as to whether the traction member can nonetheless be fitted should only be taken after consultation with and approval by ContiTech. If necessary, return the traction member in its original packaging. For that reason, please retain the packaging material until after commissioning is complete.

ContiTech accepts no responsibility for patent protection, or lack thereof, of the configuration or action of the traction member in the shaft. Responsibility for ensuring freedom from patent protection lies solely with the manufacturer and/or operator of the elevator.

3. Fitting and Commissioning

3.1 General

The CONTI POLYROPE® traction member may only be stored, fitted and operated in enclosed, dry spaces. The end customer and user must take appropriate protective action to prevent contamination with dust or severe soiling through dirt during construction work.

Steps must be taken to guarantee that the traction member is free of dust and grease during fitting and commissioning. All items in contact with it (end connectors, pulleys) must also be degreased before installation. Permitted cleaning agents are described in para. 6.

Fig. 12: Operating tip
[www.brandschutz-schilder.de]

Gloves prevent injuries.
However, they may only be used if there is no increased entrainment hazard as a result.

Fig. 13: Stop
[www.brandschutz-schilder.de]

Warning:

Incorrect or faulty fitting of the traction member can cause malfunctions.

3.2 Unrolling the Traction Member

- Store the traction belt roll or reel on a mandrel.
- The traction member roll stored on the mandrel can now be unrolled into the shaft space.
- The traction member must not be twisted in the process, except in systems with a crossed design.
- Removing the traction member sideways from the roll and unrolling it from the inner end of the traction member are not permitted.

3.3 Dressing the Traction Member on the Driving Pulley

Take the traction member and lay it over the driving pulley.

Notes:

- The traction member protrusions must be positioned in the pulley grooves (see Fig. 14).

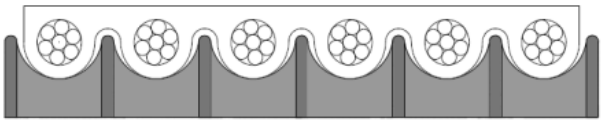


Fig. 14: Traction Member (CONTI POLYROPE® 25-6x2.0) with driving pulley [ContiTech]

- The traction member must not be laid on the pulley flanges.
- It is essential for the contact surface between the traction member and the pulley to be free of greases and oils.

3.4 Wrapping Smooth Idlers

Position the reverse of the traction member (the non-grooved face of the traction member) centrally on the idlers.

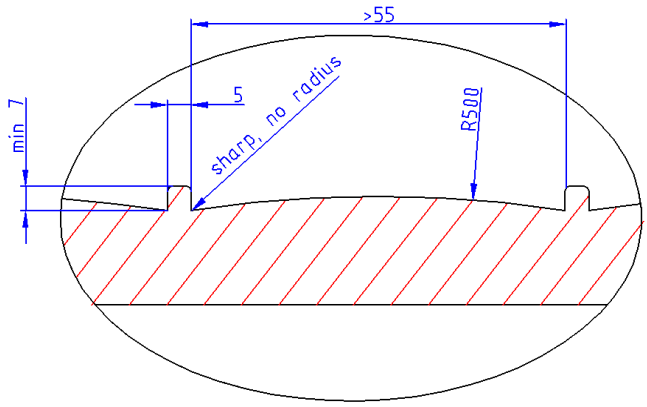


Fig. 15: Drawing of smooth idler (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Notes:

- The traction member must be laid centrally on the pulley.
- When wrapped around the idler, there must be no contact with the pulley flange.

3.5 Wrapping Grooved Idlers

Take the traction member and lay it over the idler.

Notes:

- The traction member protrusions must be positioned in the pulley grooves (see Fig. 16).

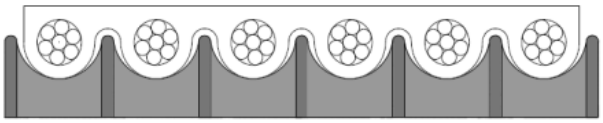


Fig. 16: Traction Member (CONTI POLYROPE® 25-6x2.0) with idler [ContiTech]

- The traction member must not be laid on the pulley flanges.
- It is essential for the contact surface between the traction member and the pulley to be free of greases and oils.

3.6 Wrapping DP Grooved Idlers

Take the traction member and lay it over the DP idler.

Notes:

- The traction member protrusions must be positioned in the pulley grooves of the DP pulley (see Fig. 17).

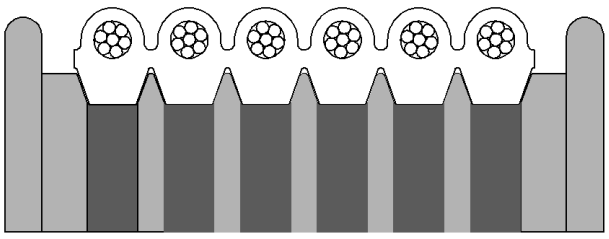


Fig. 17: Traction belt (CONTI POLYROPE® 25-6x2.0) with DP idler [ContiTech]

- The traction member must not be laid on the pulley flanges.
- It is essential for the contact surface between the traction member and the pulley to be free of greases and oils.

3.7 Threading the Traction Member into the End Connector

Place the end of the traction member through the end connector. Then lay the traction member around the teardrop-shaped component such that the traction member assumes the shape of the teardrop and then guide the end of the traction member back through the end connector.
The traction member and the teardrop-shaped component are now in the end connector. Ensure that the end of the traction member and the traction member itself are parallel after threading. Then secure the end of the traction member to the traction member using the clamp.

If you have any queries about the fitting instructions, please contact Süther+Schön.

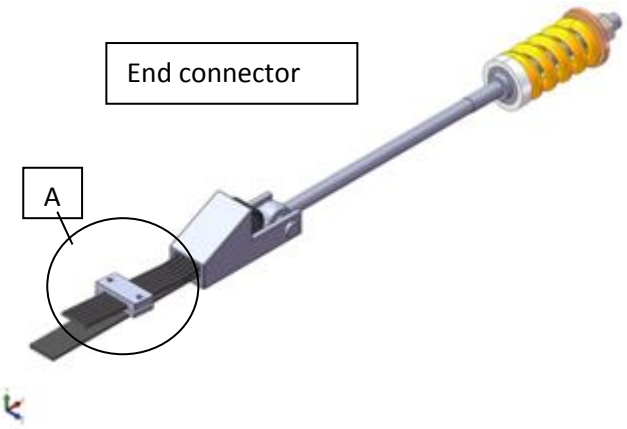


Fig. 18: End connector (CONTI POLYROPE® 25-6x2.0) [ContiTech]

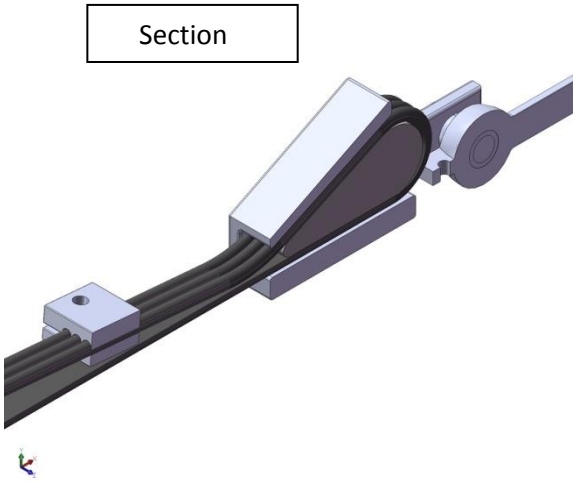


Fig. 19: Section through end connector (CONTI POLYROPE® 25-6x2.0) [ContiTech]

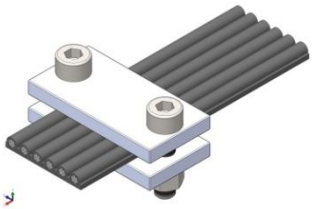


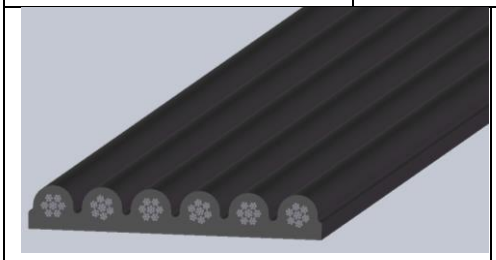
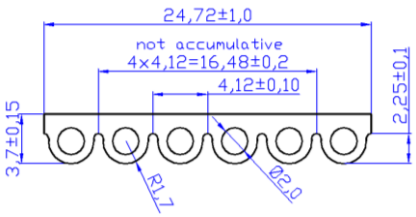
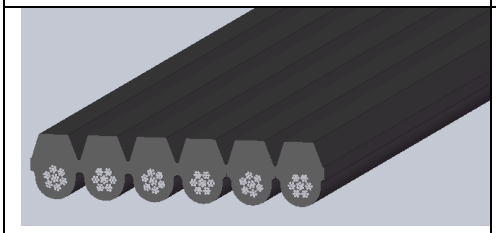
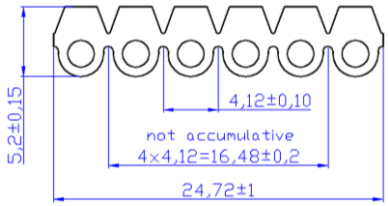
Fig. 20: Detail view of end connector (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Note:

- Ensure the correct positioning of the traction member.
- The end connectors must be fitted in the traction member direction and must not touch each other. The end connectors must be installed such that they are parallel and at a spacing equivalent to the traction member width.
- There must be an even distribution of tension between the spring packages and the traction member length in the traction member.

4. Design and Function

4.1 Technical Specifications for POLYROPE® 25-6x2.0 (DP)

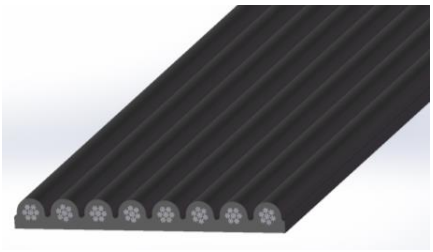
Data Sheet	CONTI POLYROPE® 25-6x2.0 CONTI POLYROPE® 25-6x2.0 DP
	POLYROPE® 25-6x2.0 
	POLYROPE® 25-6x2.0 DP (double profile) 

		
	25-6x2.0	25-6x2.0 DP
Width	24.72 mm +/-1mm (sleeve width 50mm)	
Thickness	3.7 +/- 0.15 mm	5.2 +/- 0.15 mm
Pitch of ropes	4.12 +/- 0.1 mm (not accumulative)	
Body material	PU black, Conti compound	
Body hardness	92 +/-3 Sh A	
Cord	6 x Ø2.0 mm steel, zinc-coated	
Cord diameter	Ø 2.0 mm	
Min. tensile strength / cord	5000 N	
Nominal tensile strength	6 x 5000 N = 30 kN	
Elongation at break	Approx. 2%	
Driving pulley Dmin	85mm	100mm
Idler Dmin	100mm	100mm
Weight	0.18kg/m	0.21kg/m
Temp. elongation	As for steel	
Operating temp. range	Approx. +60°C to -10°C	
Storage temp. range	Approx. +60°C to -30°C	
Ordering code	CONTI POLYROPE® 25-6x2.0	CONTI POLYROPE® 25-6x2.0DP
Labeling code	Type, time, production code	

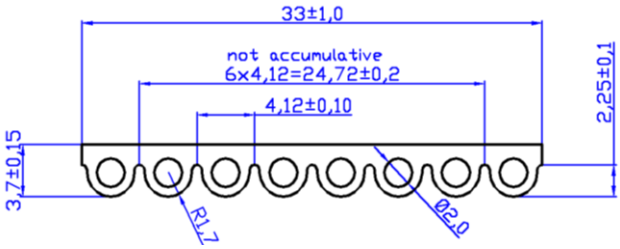
Fig. 21: Data sheet for CONTI POLYROPE® 25-6x2.0 (DP) [ContiTech]

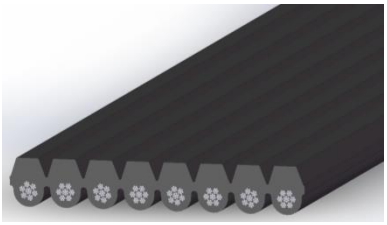
4.2 Technical Specifications for POLYROPE® 33-8x2.0 (DP)

Data Sheet	CONTI POLYROPE® 33-8x2.0 CONTI POLYROPE® 33-8x2.0 DP

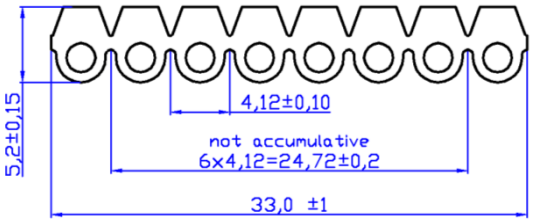


POLYROPE® 33-8x2.0





POLYROPE® 33-8x2.0 DP (double profile)



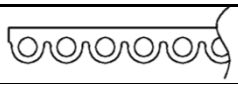
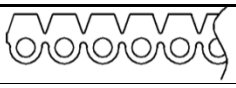
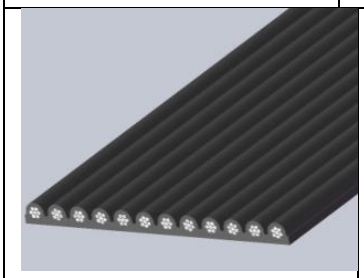
		
	33-8x2.0	33-8x2.0 DP
Width	33 mm +/- 1mm	
Thickness	3.7 +/- 0.15 mm	5.2 +/- 0.15 mm
Pitch of ropes	4.12 +/- 0.1 mm (not accumulative)	
Body material	PU black, Conti compound	
Body hardness	92 +/-3 Sh A	
Cord	8 x Ø2.0 mm steel, zinc-coated	
Min. tensile strength / cord	5000 N	
Nominal tensile strength	8x 5000 N = 40 kN	
Elongation at break	Approx. 2%	
Driving pulley Dmin	85mm	100mm
Idler Dmin	100mm	100mm
Weight	0.24kg/m	0.28kg/m
Temp. elongation	As for steel	
Operating temp. range	Approx. +60°C to -10°C	
Storage temp. range	Approx. +60°C to -30°C	
Ordering code	CONTI POLYROPE® 33-8x2.0	CONTI POLYROPE® 33-8x2.0DP
Labeling code	Type, time, production code	

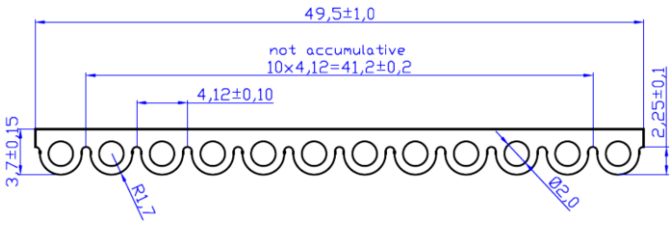
Fig. 22: Data sheet for CONTI POLYROPE® 33-8x2.0 (DP) [ContiTech]

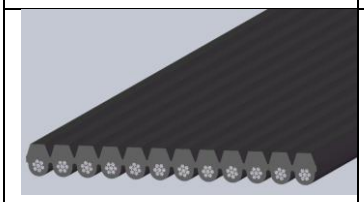
4.3 Technical Specifications for POLYROPE® 50-12x2.0 (DP)

Data Sheet	CONTI POLYROPE® 50-12x2.0 CONTI POLYROPE® 50-12x2.0 DP

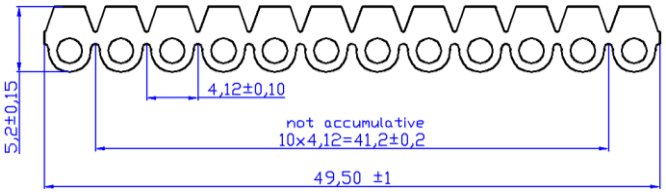


POLYROPE® 50-12x2.0





POLYROPE® 50-12x2.0 DP (double profile)



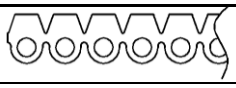
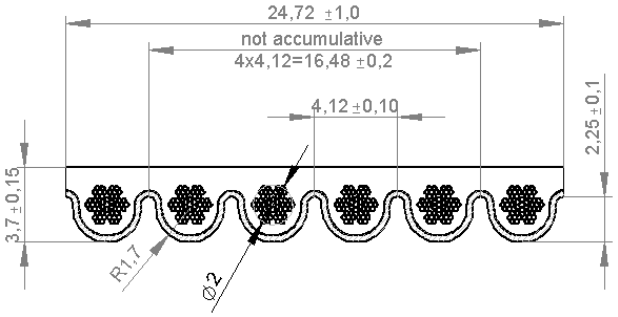
		
	50-12x2.0	50-12x2.0 DP
Width	49.50 mm +/- 1mm	
Thickness	3.7 +/- 0.15 mm	5.2 +/- 0.15 mm
Pitch of ropes	4.12 +/- 0.1 mm (not accumulative)	
Body material	PU black, Conti compound	
Body hardness	92 +/-3 Sh A	
Cord	12 x Ø2.0 mm steel, zinc-coated	
Min. tensile strength / cord	5000 N	
Nominal tensile strength	12 x 5000 N = 60 kN	
Elongation at break	Approx. 2%	
Driving pulley Dmin	85mm	100mm
Idler Dmin	100mm	100mm
Weight	0.36kg/m	0.42kg/m
Temp. elongation	As for steel	
Operating temp. range	Approx. +60°C to -10°C	
Storage temp. range	Approx. +60°C to -30°C	
Ordering code	CONTI POLYROPE® 50-12x2.0	CONTI POLYROPE® 50-12x2.0DP
Labeling code	Type, time, production code	

Fig. 23: Data sheet for CONTI POLYROPE® 50-12x2.0 (DP) [ContiTech]

4.4 Technical Specifications for POLYROPE® 25-6x2.0 FR

Datenblatt / Data-Sheet	CONTI POLYROPE® 25-6x2.0 FR

POLYROPE® 25-6x2.0 FR



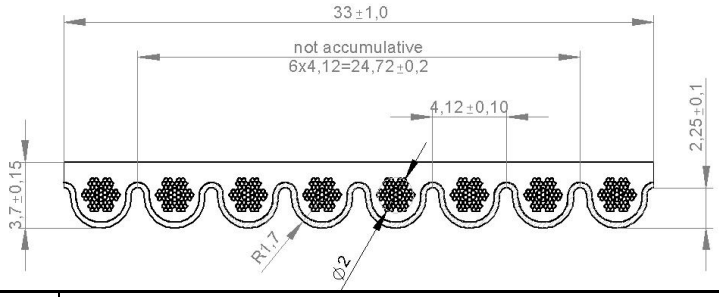
	25-6x2.0
Breite / Width	24.72 mm +/-1mm (sleeve width 50mm)
Dicke / Thickness	3.7 +/- 0.15 mm
Rillenteilung / Pitch of ropes	4.12 +/- 0.1 mm (nicht summierend / not accumulative)
Elastomer Material Traktionsseite / Elastomer Material Traction Surface	PU Schwarz / black, Conti compound DIDU9091
Elastomer Härte Traktionsseite / Elastomer Hardness Traction Surface	91 +/-3 Sh A
Elastomer Material Mantel / Elastomer Material Body	PU grau / grey, Conti compound DFRU8590
Elastomer Härte Mantel / Elastomer Hardness Body	88 +/-3 Sh A
Cord	6 x Ø2.0 mm steel, zinc coated
Cord Durchmesser / Cord Diameter	Ø 2.0 mm
Min Bruchwert Cord / min Fbreak / Cord	5000 N
Nominaler Bruchwert Riemen / Nominal Breaking value	6 x 5000 N = 30 kN
Dehnung bei Fbreak / Elongation at break	approx 2%
minØ Antriebsscheibe/driving pulley Dmin	85mm
minØ Umlenkscheibe/idler pulley Dmin	100mm
Gewicht / weight	0,18kg/m
Temp.-Dehnung / Temp. Elongation	for steel
Temp.-Einsatzbereich / working Temp.	approx +60°C….-10°C
Temp.-Lagerbereich / storage Temp.	approx +60°C….-30°C
Bestellbezeichnung / Ordering code	CONTI POLYROPE® 25-6x2.0 FR
Kennzeichnung / Labeling code	Type, Time, Production code

Fig. 24: Data sheet for CONTI POLYROPE® 25-6x2.0 FR [ContiTech]

4.5 Technical Specifications for POLYROPE® 33-8x2.0 FR

Datenblatt / Data-Sheet	CONTI POLYROPE® 33-8x2.0 FR

POLYROPE® 33-8x2.0 FR



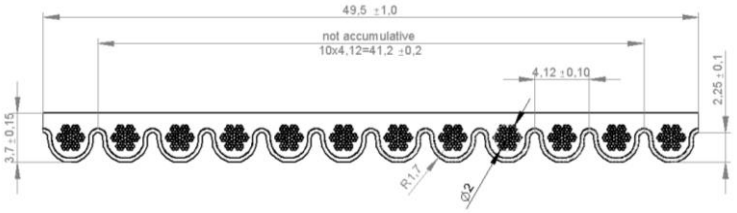
	33-8x2.0
Breite / Width	33 mm +/-1mm (sleeve width 50mm)
Dicke / Thickness	3.7 +/- 0.15 mm
Rillenteilung / Pitch of ropes	4.12 +/- 0.1 mm (nicht summierend / not accumulative)
Elastomer Material Traktionsseite / Elastomer Material Traction Surface	PU Schwarz / black, Conti compound DIDU9091
Elastomer Härte Traktionsseite / Elastomer Hardness Traction Surface	91 +/-3 Sh A
Brandhemmendes Elastomer Material Mantel / Fire Retardant Elastomer Material Body	PU grau / grey, Conti compound DFRU8590
Elastomer Härte Mantel / Elastomer Hardness Body	88 +/-3 Sh A
Cord	8 x Ø2.0 mm steel, zinc coated
Cord Durchmesser / Cord Diameter	Ø 2.0 mm
Min Bruchwert Cord / min Fbreak / Cord	5000 N
Nominaler Bruchwert Riemen / Nominal Breaking value	8 x 5000 N = 40 kN
Dehnung bei Fbreak / Elongation at break	approx 2%
minØ Antriebsscheibe/driving pulley Dmin	85mm
minØ Umlenkscheibe/idler pulley Dmin	100mm
Gewicht / weight	0,24kg/m
Temp.-Dehnung / Temp. Elongation	for steel
Temp.-Einsatzbereich / working Temp.	approx +60°C….-10°C
Temp.-Lagerbereich / storage Temp.	approx +60°C….-30°C
Bestellbezeichnung / Ordering code	CONTI POLYROPE® 33-8x2.0 FR
Kennzeichnung / Labeling code	Type, Time, Production code

Fig. 25: Data sheet for CONTI POLYROPE® 33-8x2.0 FR [ContiTech]

4.6 Technical Specifications for POLYROPE® 50-12x2.0 FR

Datenblatt / Data-Sheet	CONTI POLYROPE® 50-12x2.0 FR

POLYROPE® 50-12x2.0 FR



	50-12x2.0
Breite / Width	49,5 mm +/-1mm
Dicke / Thickness	3.7 +/- 0.15 mm
Rillenteilung / Pitch of ropes	4.12 +/- 0.1 mm (nicht summierend / not accumulative)
Elastomer Material Traktionsseite / Elastomer Material Traction Surface	PU Schwarz / black, Conti compound DIDU9091
Elastomer Härte Traktionsseite / Elastomer Hardness Traction Surface	91 +/-3 Sh A
Brandhemmendes Elastomer Material Mantel / Fire Retardant Elastomer Material Body	PU grau / grey, Conti compound DFRU8590
Elastomer Härte Mantel / Elastomer Hardness Body	88 +/-3 Sh A
Cord	12 x Ø2.0 mm steel, zinc coated
Cord Durchmesser / Cord Diameter	Ø 2.0 mm
Min Bruchwert Cord / min Fbreak / Cord	5000 N
Nominaler Bruchwert Riemen / Nominal Breaking value	12 x 5000 N = 60 kN
Dehnung bei Fbreak / Elongation at break	approx 2%
minØ Antriebsscheibe/driving pulley Dmin	85mm
minØ Umlenkscheibe/idler pulley Dmin	100mm
Gewicht / weight	0,36kg/m
Temp.-Dehnung / Temp. Elongation	for steel
Temp.-Einsatzbereich / working Temp.	approx +60°C….-10°C
Temp.-Lagerbereich / storage Temp.	approx +60°C….-30°C
Bestellbezeichnung / Ordering code	CONTI POLYROPE® 50-12x2.0 FR
Kennzeichnung / Labeling code	Type, Time, Production code

Fig. 26: Data sheet for CONTI POLYROPE® 50-12x2.0 FR [ContiTech]

4.7 End connectors

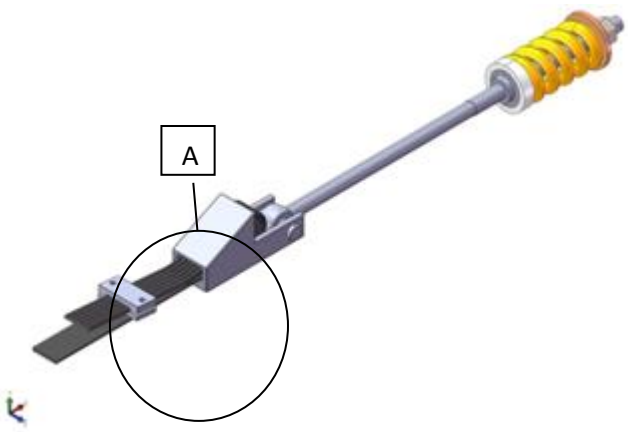


Fig. 27: End connector (CONTI POLYROPE® 25-6x2.0) [ContiTech]

You are recommended to purchase the end connector system from Süther+Schön.

www.Suether-Schoen.de

Phone: +49 201 855 25-0

Fax: +49 201 855 25-24

If you have any queries about the data sheet and fitting instructions, please contact Süther+Schön.

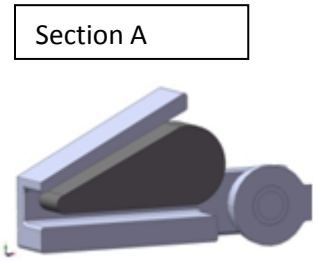


Fig. 28: Section through end connector [ContiTech]

General features:

- F_{Break} min > 80 %
- The end of the traction member (non-live end) should be clamped.
- The angle of variation between the two end connectors is less than 5°.
- Traction member twist up to 180° with minimum free traction member length >/= 600mm (ratio L_{min} = 24 x width)
- Alignment/angular tolerance between pulley and traction member max. +/- 0.5°

4.8 Driving Pulley

The traction member has been tested on driving pulleys with a minimum diameter of 85 mm or 100 mm (DP version).

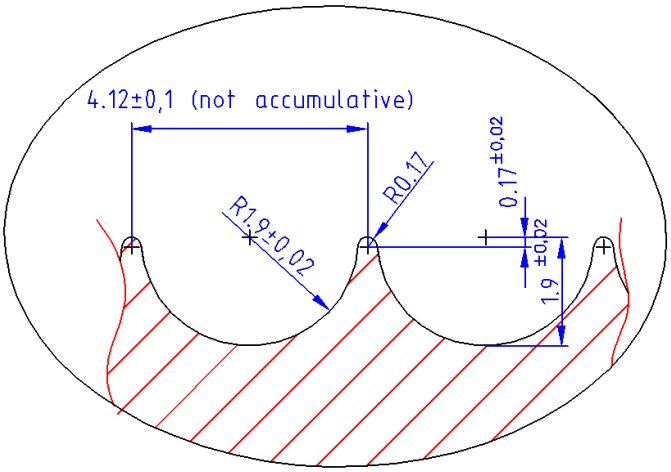


Fig. 29: Drawing of driving pulley (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Radius of groove:	1.9 mm +/- 0.02 mm
Pitch:	4.12 mm
Pitch tolerance:	+/- 0.1 mm not accumulative
Rotational tolerance:	0.05 mm to DIN 7721 Part 2 for grooved pulleys up to 200 mm
Material:	Steel, preferably $42CrMo_4$
Coating:	Cr or Ni against rust (no change in coefficient of friction permitted)
Hardness:	55-62 HRC
Roughness:	Preferably sand-blasted surface Ra 1.6 - 3.2 µm
Belt wrap:	120 – 180° (2 x 90° coupled)
Angular offset:	Max. +/- 0.5° between pulley and traction belt
Anti-jump guard:	Cross-grooving/jumping after unsteady movement not permitted, e.g. 2x thickness of traction belt

All non-toleranced dimensions are toleranced to DIN 16901, precision engineering category.

4.9 Idler, Smooth

If the traction member is tracked via the smooth face, a crowned idler must be used.

The traction member has been tested on idlers with a minimum diameter of 100 mm.

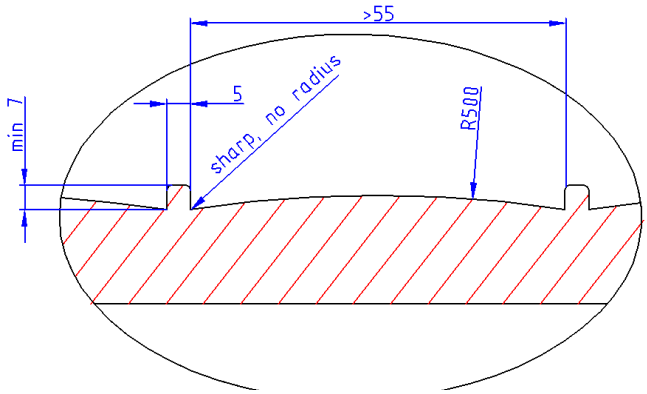


Fig. 30: Drawing of smooth idler (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Crown radius:	r = 500 mm permitted for a width of 25 mm r = 650 mm permitted for a width of 33 mm r = 900 mm permitted for a width of 50 mm
Track width per traction member:	15 mm per side wider than the traction member width, separated by anti-jump guard approx. 2x traction member height
Material:	Steel preferably with a low-friction coating or nylon (polyamide)
Anti-jump guard:	Cross-grooving/jumping after unsteady movement not permitted, e.g. 2x thickness of traction member

All non-toleranced dimensions are toleranced to DIN 16901, precision engineering category.

4.10 Idler, Grooved

If the traction member is tracked via the grooved face, a grooved idler must be used. For example, with a traction member twist of 180°.

The traction member has been tested on idlers with a minimum diameter of 100 mm.

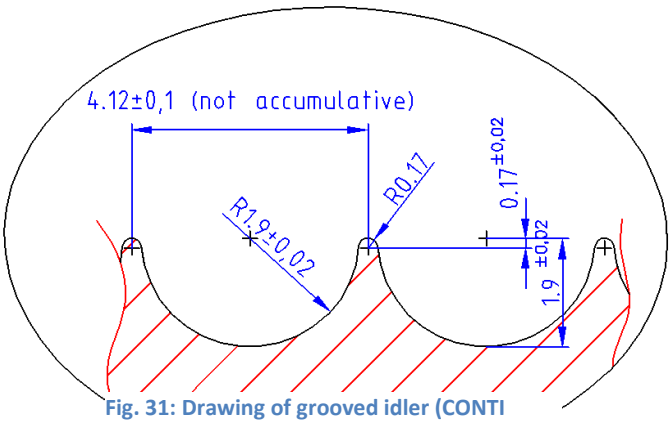


Fig. 31: Drawing of grooved idler (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Radius of groove:	1.9 mm +/- 0.02 mm
Pitch:	4.12 mm +/- 0.1 mm
Pitch tolerance:	+/- 0.1 mm not accumulative
Rotational tolerance:	0.05 mm to DIN 7721 Part 2 for grooved pulleys up to 200 mm
Material:	Steel with a low-friction coating or nylon (polyamide)
Angular offset:	Max. +/- 0.5° between pulley and traction member
Anti-jump guard:	Cross-grooving/jumping after unsteady movement not permitted, e.g. 2x thickness of traction member

All non-toleranced dimensions are toleranced to DIN 16901, precision engineering category.

4.11 Idler DP

If the traction member is tracked via the DP reverse, a profile-section idler must be used.

The traction member has been tested on idlers with a minimum diameter of 100 mm.

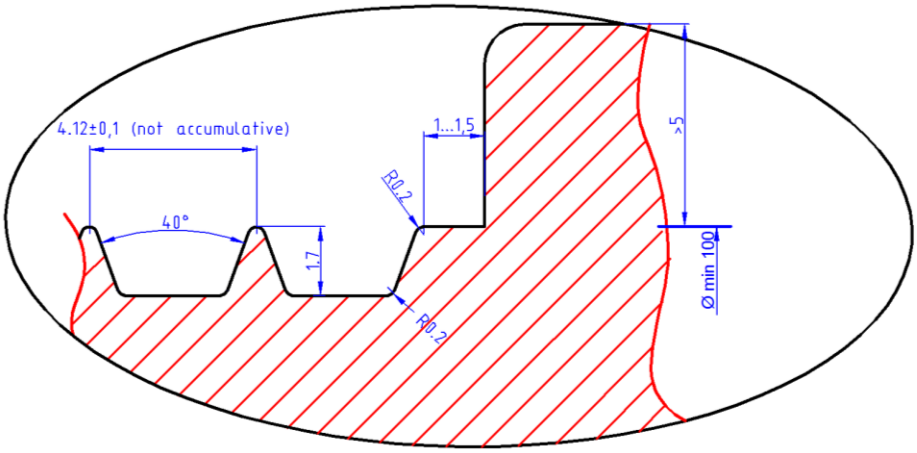


Fig. 32: Drawing of profile-section idler (CONTI POLYROPE® 25-6x2.0) [ContiTech]

Depth of profile section:	1.7 mm +/- 0.02 mm
Pitch:	4.12 mm +/- 0.1 mm
Pitch tolerance:	+/- 0.1 mm not accumulative
Angular offset:	Max. +/- 0.5° between pulley and traction member
Material:	Steel preferably with a low-friction coating or nylon (polyamide)
Anti-jump guard:	Cross-grooving/jumping after unsteady movement not permitted, e.g. 2x thickness of traction member

All non-toleranced dimensions are toleranced to DIN 16901, precision engineering category.

5. Transport and Storage

5.1 Transport

All traction members left the factory in perfect condition after testing. After delivery, please check the traction member for external damage. Should you find any damage which has occurred in transit, a damage claim should be completed in the presence of the carrier. Commissioning of the traction member should, if necessary, be prevented. Weight of the traction member: see paras. 4.1; 4.2; 4.3.

5.2 Storage

Storage conditions:

- The traction member must not be stored outdoors or be exposed to weather unprotected.
- The storeroom should be cool, dry, low in dust and moderately ventilated.
- The temperature for storage should be in the range from -10°C to +35°C. Temperatures above or below these figures are permitted for brief periods.
- In heated storerooms the product must be protected from heat sources. A distance of at least 1 m must be maintained between a heat source and the product. A greater distance is required in rooms heated using blown hot air.
- Storage in damp or humid rooms should be avoided. Care should be taken to ensure that no condensation occurs.
- The product must be protected against light, especially against direct sunlight. The window panes should be UV-screened. Lighting using normal incandescent bulbs or fluorescent tubes is preferred.
- Solvents, fuels, lubricants, chemicals, acids, disinfectants and similar must not be stored in the storeroom.
- Ensure that no tensile, compressive or other distorting force acts on the product during storage.
- The materials used for the containers for the packaging and covering material must not contain any constituents which are harmful to the product.

6. Operation and Maintenance

The specifications relating to operation, maintenance and inspection in accordance with the applicable safety regulations for elevator engineering, such as DIN EN 81: “Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods,” Part 1: “Electric lifts,” “Technical Rules for Lifts” and other relevant, fundamental regulations must be complied with.

The operator is responsible for safe installation, inspection and maintenance (defined in the elevator regulations).

The following visual inspections should be carried out regularly:

- End connectors firmly and evenly seated, check on firm seating of securing clamps for non-live end of traction member
- Cleanliness of traction member and pulleys, clean with ethyl alcohol if necessary
- Check on initial tension, position of end connector spring package
- No wear on flanks and traction member surface
  →Para. 7
- No cords or filaments protruding
  →Para. 7
- No surface damage, such as cracks, e.g. caused by foreign bodies
  →Para. 7
- Emergence of traces of rust caused by cord corrosion
  →Para. 7

7. Lifetime

The traction member has reached its design service life at the following points:

- Permitted no. of movements before replacement of traction member:
  - 4,000,000* for elevators with 2 single bends and 1 counterbend
  - 6,000,000* for elevators with 1 single bend and 1 counterbend (or 2 single bends)
  - 12,000,000* with 1 single bend

Fig. 33: Damaged traction member [ContiTech]

- Wear on flanks and traction member surface

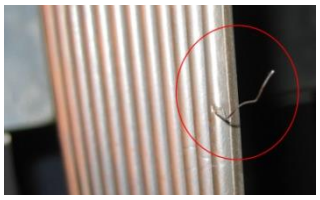


Fig. 34: Exposed traction member [ContiTech]

- Cords or filaments protruding → visual inspection or permanent electrical monitoring
- Surface damage, such as cracks, e.g. caused by foreign bodies

Fig. 35: Longitudinal crack on reverse [ContiTech]

- Emergence of traces of rust caused by cord corrosion
- Polyurethane is damaged or worn
- Monitoring unit triggers an alarm

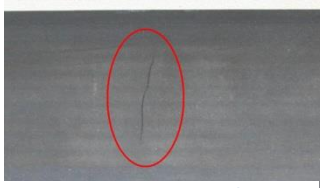


Fig. 36: Transverse crack on reverse [ContiTech]

The Polyropes shall be replaced after a servicetime of 15 years at maximum.

Magnetic induction methods for monitoring wear in the cords are still under development.

*Check using tamper-proof cycle counter in the controller

8. Removal

The traction member has to be changed if it has reached its design service life or is damaged or worn (see para. 7).

To remove the traction member, proceed in the reverse order to that used for commissioning.

9. Disposal

Dispose of the replaced traction member in accordance with statutory requirements. The traction member is declared as domestic waste and can therefore be disposed of straightforwardly.

List of figures