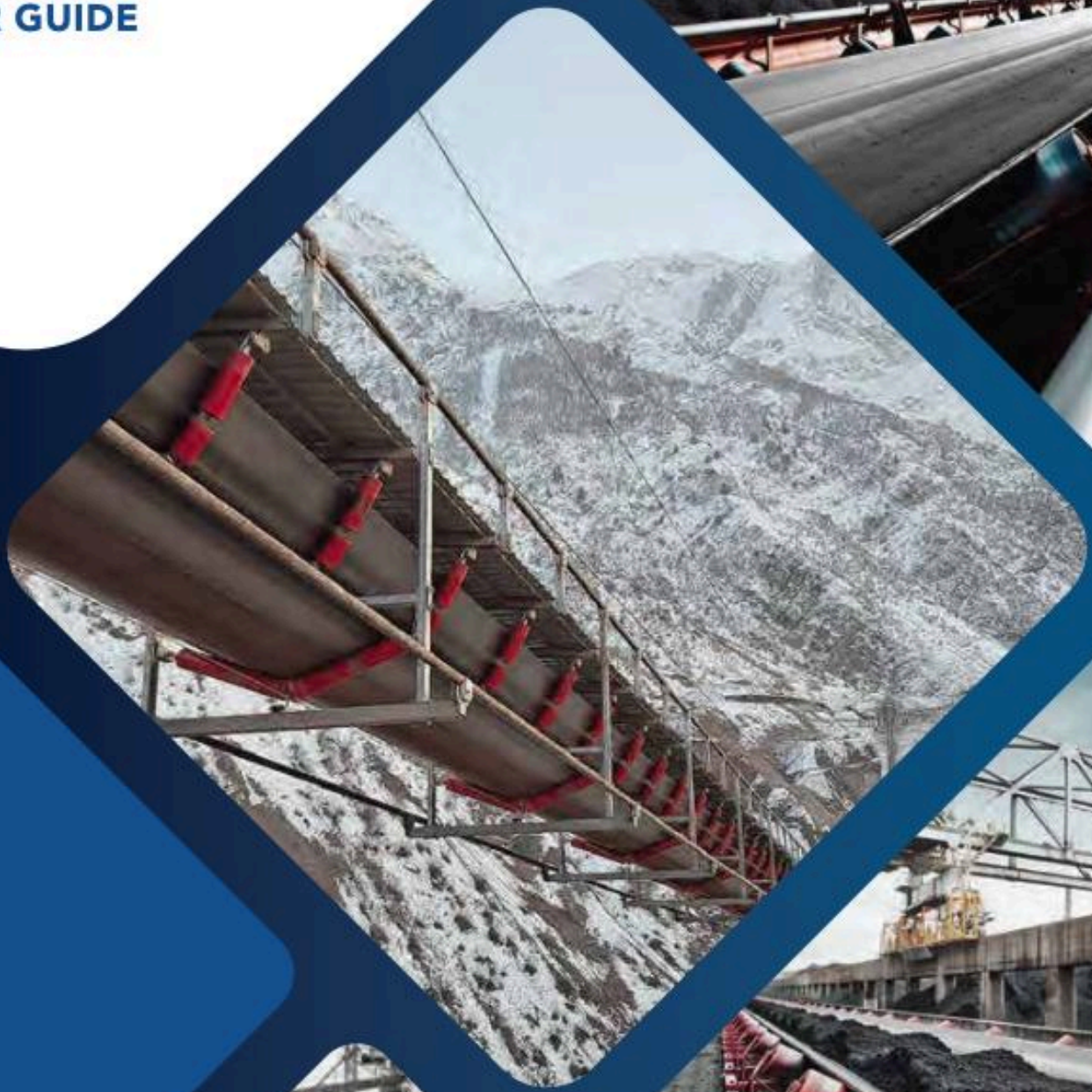
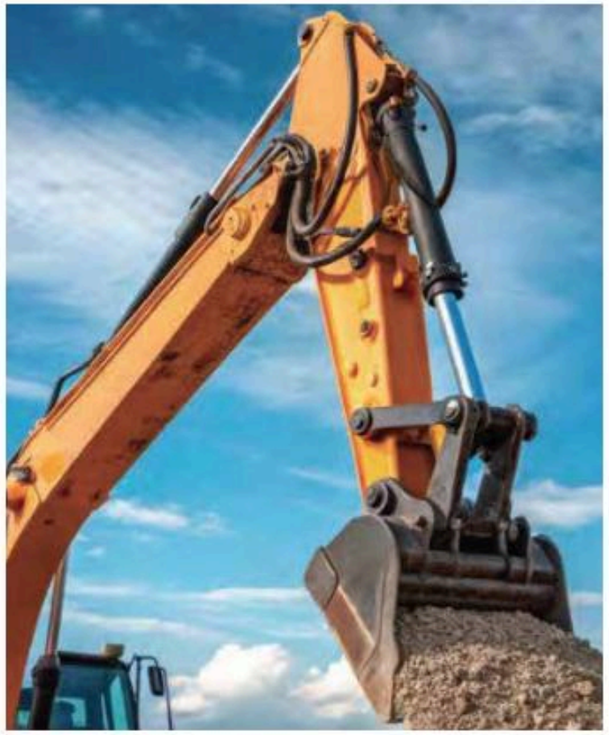
sempertrans®

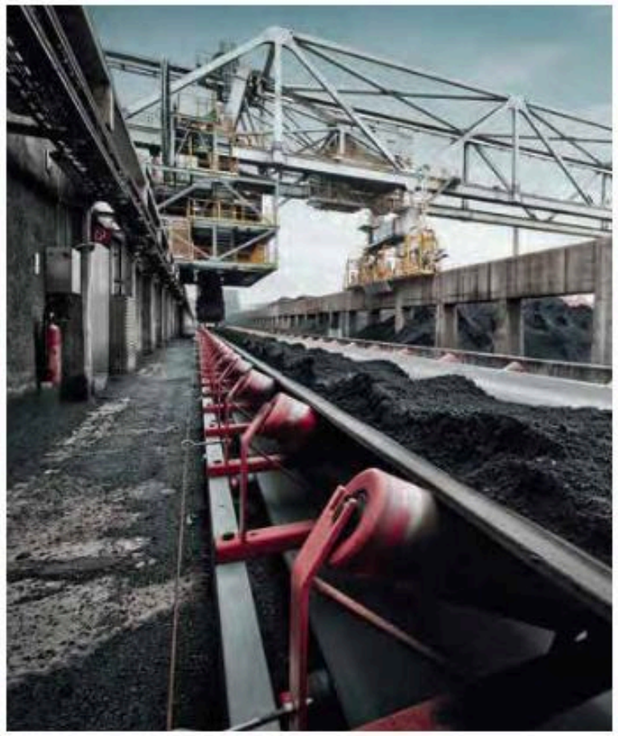
A MEMBER OF THE SEMPERIT-GROUP

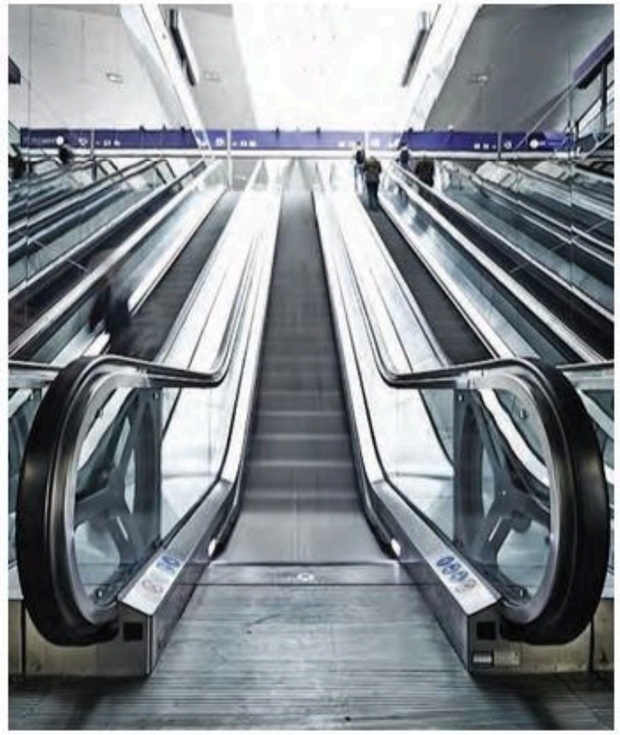
HIGH PERFORMANCE CONVEYOR BELTS

YOUR GUIDE









SEMPERIT AT A GLANCE

200 Years of elastomer excellence • Industrial Focus • Global Strength

Founded in **1824** and headquartered in Vienna, Semperit is one of the world's leading developers and manufacturers of products made from form-stable but elastic plastics known as elastomers. The company's diverse portfolio includes hydraulic and industrial hoses, conveyor belts, handrails for escalators, and precision parts made from liquid silicone

Global Player

16 production sites across Europe, Asia, Australia, and the Americas, backed by numerous sales offices. Approximately **4,600 employees** in its industrial operations (4,576 at the end of 2023)

Customer Champion

Strong **close-to-market presence**, offering tailor-made polymer systems. Expertise in **collaborative development,** ensuring solutions align with the needs of sectors like mining, construction, transport, and heavy industry

Innovation Engine

Innovation led by global R&D and enhanced through the **acquisition of the RICO Group** in 2023, gaining leadership in **liquid silicone rubber.**

Sustainability Leader

Committed to resource-efficient production, employee safety, and regional responsibility. Ongoing investments in sustainable facilities, including photovoltaic-powered plants and low-emission expansions .

200 YEARS EXPERIENCE FOR TOMORROW

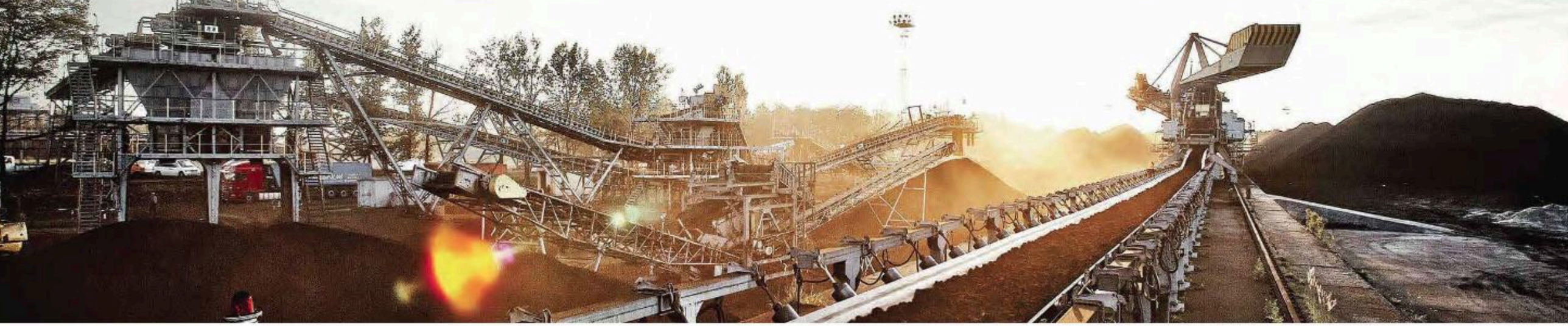
Celebrating its bicentennial theme: **"200 Years of Semperit – Experience for Tomorrow."** Reinforces Semperit's legacy of resilience, adaptability, and ongoing evolution as an industrial elastomer specialist **semperitgroup.com.**

Our Industrial Focus

Semperit is a leading provider of elastomer-based products for industrial applications.

- Conveyor belts
- Hydraulic & industrial hoses
- Escalator handrails
- Building profiles & seals
- Railway and cable car rings
- Liquid silicone rubber via RICO

SEMPERIT	
SEMPERIT INDUSTRIAL APPLICATIONS	**SEMPERIT ENGINEERED APPLICATIONS**
HOSES	BELTING (SEMPERTRANS)
PROFILES	FORM
	LSR (liquid silicone rubber)



SEMPERTRANS AT A GLANCE

Innovation, experience and know-how have made Sempertrans one of the world's leading suppliers in the conveyor belt industry. We offer a broad range of conveyor belts and services to help accelerate your unique conveyor operations. We provide solutions for the most demanding applications in the mining, cement and steel industries, as well as many others. From standard products such as textile belts to highest breaking strength steel cord belts, Sempertrans ensures safe, high-quality and highly efficient conveying even under extreme conditions.

Sempertrans has been developing, manufacturing and installing conveyor belts for more than 50 years. Our far reaching experience, state-of-the-art technologies and high production capacity, as well as our expert know-how conveying know-how have made us one of the most reliable conveyor belt suppliers in the world, guaranteeing excel- lent quality in terms of products and services.

We deliver value

Our goal is to be a trusted partner for our customers and help enhance their business operations with innovative and reliable solutions. We place particular importance on the quality of our products and services, as well as creating long-term value to all our stakeholders by delivering excellence and effectiveness in anything we do. We strive to ensure that our customers achieve maximum operating life with the lowest cost of ownership achievable.

We are committed to sustainable growth

Sempertrans constantly tries to increase its resource efficiency, aiming at reducing pollution whilst improving our products' competitiveness. Therefore, all raw materials and processes are thoroughly researched to assess their impact on the environment, ensuring that we incorporate only controlled and approved materials and avoid the use of environmentally harmful raw materials during any material development or production process.

Continuous innovation through R&D

Our conveyor belts are specifically engineered to meet the most demanding and stringent global customer specifications and, as a result, have earned a strong reputation across the globe for their established high performance level. We have developed some unique products such as the self - centring Autostable or the energy-saving TransEvo.

Our commitment to innovation is driven by a significant focus on research and development. In our decentralised product development centres and laboratories, our research experts are devoted to developing the optimum solutions to fulfil customers' current requirements and anticipate their future needs. Their efforts are directed towards the continuous improvement and development of materials, manufacturing processes and product quality for the benefit of our customers and the environment.

To reach the highest quality standards, our R&D and production units are furnished with state-of-the-art equipment. Most importantly, we make it a focal point to engage in all processes of manufacturing a conveyor belt, from creating our own belt design to mixing our own compounds in-house and producing our own steel cords in our production site in Poland. This way we ensure continuous know-how transfer and exchange of experience among the individual business areas, thereby achieving greater efficiency.

SOLUTIONS & SERVICES

Sempertrans stands out in the conveyor belt industry, not only thanks to a vast range of high-quality products, but also thanks to our unique and exhaustive offering. This inclusive approach comprises various services dedicated to meeting our customers' conveying needs. We support you through every step of your project.

CUSTOMER FOCUS

Our customers choose us for our technologically-advanced products and business efficiency. But the success of our partnership would not be possible without the close relationship we strive to establish with our customers, OEMs as well as service and distribution partners.

Sempertrans has the expertise to optimally identify your needs and provide you with advice far in advance of the actual production process. In this regard, an international network of specialists and expert partners are always at your disposal at any time and anywhere you are to guarantee diligent project development and follow-up.

Our global reach is supported by mobile and multilingual sales representatives and distribution partners whose physical proximity to your business locations allows for more effective project handling. Through their deep understanding of the drivers and challenges of your industry they are able to help you bring value to your conveying installations and maximise your investment.

GLOBAL APPLICATION ENGINEERING

Our Global Application Engineering team are expert technicians and professionals who will cater to your every need. Whether your business requires a new conveyor belt or process improvements, the Sempertrans Global Application Engineering team is your best choice.

FIELD SERVICE

Sempertrans believes that Field Service is a critical factor for creating and delivering added value to your conveying operations. With the help of our international network of highly competent technicians and professionals, we are greatly qualified to deliver outstanding services, including the installation, commissioning, splicing and maintenance of conveyor belting.

Splicing

Sempertrans maintains an extensive service network of local partners to support you wherever you are located. Additionally, our Field Service teams based in France and Poland are at your disposal and will support you with any of our belts.

Installation and maintenance

Sempertrans offers you both the training as well as the supervision of your team, ensuring an independent continuation of your project.

PRODUCT PORTFOLIO

Sempertrans is one of the largest and most technologically-advanced conveyor belt manufacturers in the world. With production facilities in Poland and India, we are close to our customers' operations ensuring secured supply and offering short lead and transport times. Our desire to fulfil your needs and expectations has led us to develop a complete range of belts to adapt to the most extreme conditions of use.

The Sempertrans product range comprises both textile and steel cord conveyor belts with a maximum belt width of 3,200 mm, perfectly fitting all requirements of their respective fields of application. Their core product characteristics include high resistance to abrasion, fire, heat, oil and cold, coupled with excellent belt breaking strength. On customer request we also install Rip Detection Systems from third-party suppliers on your conveyor.

Sempertrans developed and successfully launched an innovative, energy saving conveyor belt. TransEvo features a new rubber mixture enabling a considerable reduction in roll resistance and thus achieving energy savings of up to 25% compared with conventional conveyor belt solutions as well as allowing investment savings for new conveyor systems.

Quality commitment

Sempertrans is fully prepared and equipped to get the best out of your project for your maximum satisfaction. We are ISO 9001, ISO 14001 and ISO 45001 certified and guarantee our customers high-quality products and services meeting worldwide standards. Therefore, the constant execution of checks and tests in laboratories and external institutes during the manufacturing process ensures that those standards are maintained.

STEEL CORD CONVEYOR BELTS
Sempertrans steel cord conveyor belts are characterised by their high level of operational safety and their long life span. They ensure exceptional stability.

TEXTILE CONVEYOR BELTS
Sempertrans textile conveyor belts are known for their high performance and flexibility. For conveying raw materials used in various processing industries, they guarantee optimal operation.

MAIN AREAS OF APPLICATION

Mining

Sempertrans has been active in the mining industry for more than 50 years. During that period, we have been able to acquire great experience concerning coal, copper and iron ore mining, as well as other fields of mineral resource extraction. Our expertise and reliability have long convinced major players in the mining industry all over the world to work with us.

Cement

As a supplier of high-quality and performance conveyor belts for cement works for more than 50 years, Sempertrans has built a high number of partnerships with multinational and local players in the cement industry.

Steel

Sempertrans has also conquered a top position among the leading suppliers to steel works thanks to its expertise and experience. Over the years, Sempertrans has succeeded in establishing real partnerships with leaders in the steel sector worldwide.

General Industry / Other Applications

As one of the world's leading manufacturers of conveyor belts, Sempertrans does not only operate in the major industries listed above but also in other areas of applications for bulk conveying such as ports, thermal power plants, fertilisers, foundries and glassworks, quarries and sandpits, etc.

1

GENERAL SOLUTIONS

MULTITRANS™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The multi-purpose textile belt for general to highly demanding applications.

Multitrans conveyor belts are widely used by the mining and processing industries for transporting bulk or lumpy materials such as aggregates, sand, clinker, ore, chemicals, coke, crops, construction materials and much more.

Multitrans is a textile belt construction consisting of two to six EP or PP fabric plies (EP – polyester warp and polyamide weft or PP – polyamide in weft and warp). Multitrans can be supplied either with cut or moulded edges.

APPLICATIONS

- Open-pit and underground mining
- Lignite and hard rock mining
- Aggregates
- Cement industry
- Chemical industry and fertilisers
- Grain and sugar industries
- Mineral processing plants
- Packing industry
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

TECHNICAL DETAILS

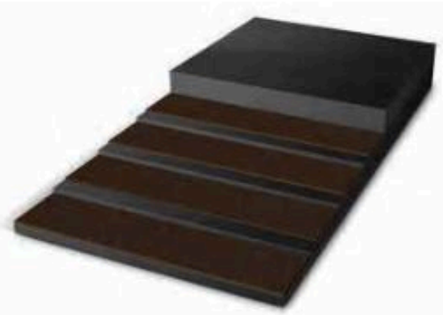
Multitrans: Standard Plain Weave construction for light to medium duty applications.

Multitrans PP: Special fabrics construction utilizing Polyamide in the warp direction, to ensure high elasticity. Made for applications that require additional stretch.

Multitrans HD: Enhanced Plain Weave fabrics construction for heavy duty applications, exceeding standards, for superior performance and lifetime

Multitrans HD+: Specially developed Broken Twill fabrics design targeting users who require a belt with superior mechanical fastener retention and/or greater impact resistance.

Multitrans CFW: Uses a Crow Foot Weave fabrics design that has been proven to give twice the amount of impact resistance and limit the damage from rips.



DESIGNATION EXAMPLES

Product	Designation	Cover	Edge Type
Multitrans	1200 EP 800/4 6+2	X	ME
Multitrans	1200 NN 800/46+2	X	CE

Multitrans 1200 EP 800/4 6+2 X ME

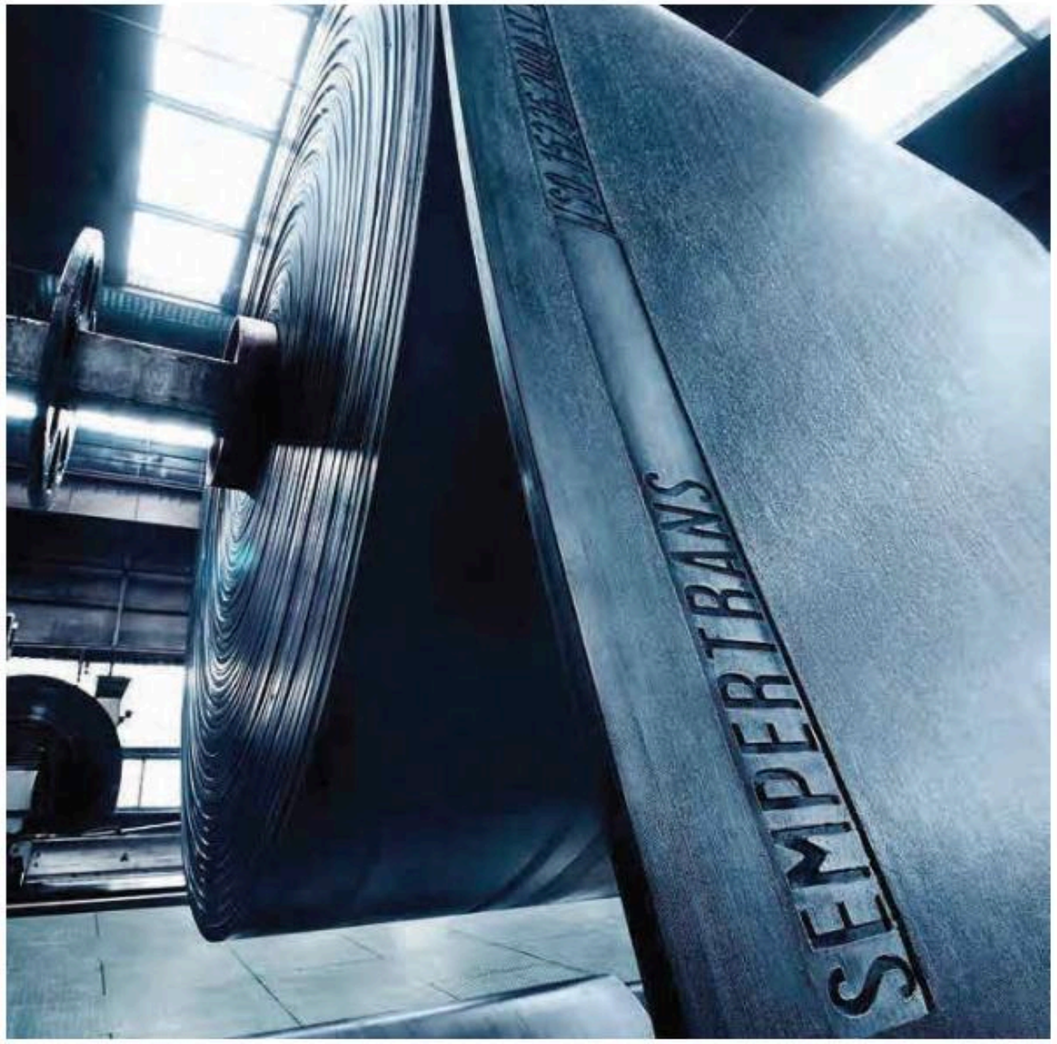
- Product group
- Belt width (mm)
- Carcass type
- Nominal belt strength (N/mm)
- Number of fabric plies
- Top and bottom cover thickness (mm)
- Cover grade
- Edge Type

DATA

Multitrans standard range (other types, strengths and dimensions are available on request)

Belt width: 500 mm to 2600 mm
Nominal belt strength: 250 N/mm to 3500 N/mm

	Nominal belt strength [N/mm]												
Number of plies	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	3500
2	X	X	X	-	-	-	-	-	-	-	-	-	-
3	-	-	X	X	X	X	X	X	-	-	-	-	-
4	-	-	-	X	X	X	X	X	X	X	X	-	-
5	-	-	-	-	-	X	X	X	X	X	X	X	X



FLEXTRANS™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The straight warp textile belt providing cut and rip resistance for demanding applications.

Flextrans is a single- or double-ply belt featuring a special straight warp fabric that ensures excellent impact and cutting resistance which is often associated with primary crushers and feeder belt applications.

The fabric in the warp direction lies straight and therefore enables very low elongation, significantly reducing the required take-up length. The high concentration of weft yarns ensures that the belt can be easily spliced with mechanical fasteners at the highest pull-out strengths. Hot vulcanised splicing is also possible.

APPLICATIONS

- Mining
- Aggregates
- Cement industry
- Chemical industry
- Steel industry

COVERS

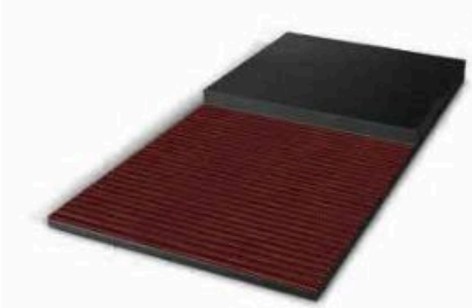
- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

TECHNICAL DETAILS

The special carcass of Flextrans ensures excellent impact resistance and makes the use of mechanical fasteners a convenient and reliable option. Therefore, Flextrans provides very high nominal belt strength and impact resistance, allowing very short downtime for maintenance purposes.

Flextrans offers the following advantages:

- Very low elongation
- Very high impact and cutting resistance
- Easy splicing with mechanical fasteners



Flextrans

DESIGNATION EXAMPLE

Product	Designation	Cover
Flextrans	1000 EPP 800/1 8+4	W

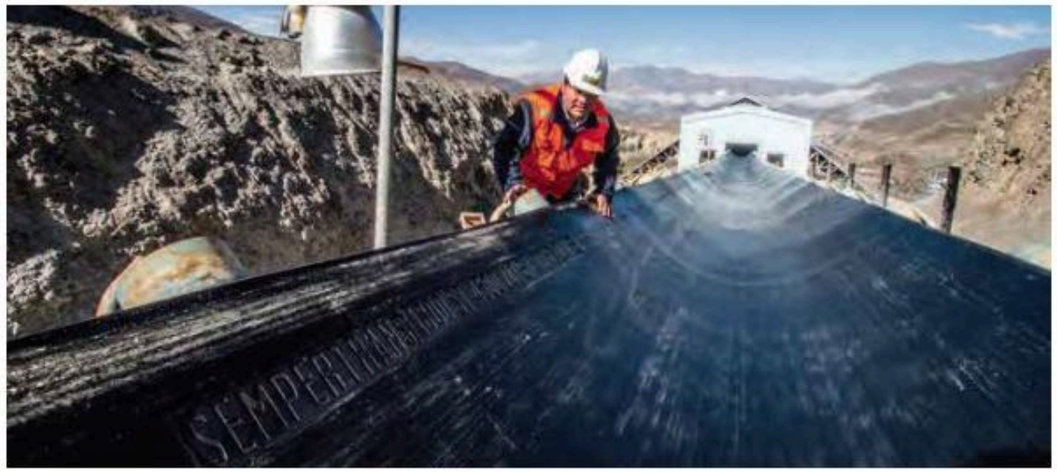
DATA

Belt width: 400 to 2400 mm
Nominal belt strength: 315 to 1250 N/mm with single-ply
630 to 2500 N/mm with double-ply

SEMPERCORD™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The Sempertrans steel cord belt with the highest strength and longest service life.



Sempercord high strength steel cord belts are a combination of both, ultimate breaking strength of the carcass and lowest elongation. The Sempercord belts ensure reliable transport at the highest capacities and supply ultimate service life and utilisation. They are widely used in heavy duty mining applications, as well as industrial environments where reliable performance and availability are key. Thus, Sempercord steel cord belts comply with all major international standards as much as they can be specified for meeting individually exceeding requirements of high end users.

Sempercord is the best choice in case of:

- Heavy duty conditions
- Highest transport capacities
- Long centre distances
- High nominal belt strength requirements

Sempertrans steel cord belts can also be supplied with embedded sensor loops which work with industry standard rip detection systems. Special solutions are available on request.

APPLICATIONS

- Open-pit and underground mining
- Lignite and hard rock mining
- Aggregates
- Cement industry
- Mineral processing plants
- Overland conveyors
- Port operations
- Power and heating plants
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- TransEvo (energy saving)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

sempertrans
A MEMBER OF THE SEMPERIT GROUP

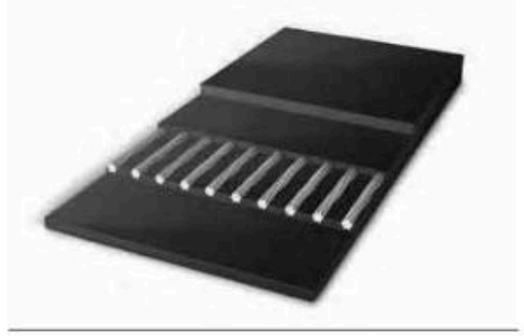
GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
SEMPERTRANS COVERS
TECHNICAL SPECIFICATIONS
SEMPERCORD

TECHNICAL DETAILS

Sempertrans has an in-house production of high strength steel cords and proprietary mixing facilities for high-tech rubber compounds. This ensures the highest flexibility in belt design and construction, as well as complete control over the technology and the entire production chain.

- Highest nominal belt strengths available for our belts (8000 N/mm and above)
- Lowest belt elongation in operation, allowing long single flight conveyors with short take-up lengths
- High transverse elasticity, providing excellent troughability
- High dynamic splice strength and durability
- Highest durability for heavy duty operations such as hard rock mining
- Longest carcass service life

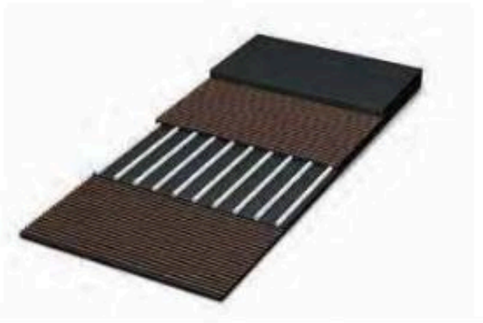
Sempertrans also continuously develops state-of-the-art splicing material and tailor-made splicing kits, as well as detailed splicing instructions. As a result, Sempercord belts achieve the highest possible dynamic splice efficiency. This enables lower safety factors, higher utilisation, reduced capital investments and operating costs.



Sempercord

SEMPERCORD WITH BREAKERS

Sempercord belts can be equipped with textile or steel breakers to provide efficient protection. These breakers can be included in either the top or both the top and bottom cover. They guarantee extra impact and rip protection for the belt and potentially allow smaller pulley diameters, serving as the basis for a longer service life and a lower risk of severe damage.



Sempercord with textile breakers

Sempercord with steel breakers

TECHNICAL DETAILS

Sempercord with breakers offers a broad range of advantages:

- Choice of several breaker types, either steel or textile, perfectly tailored to the specific application
- High elasticity in transversal direction provides high impact resistance while maintaining an excellent troughability
- Increased carcass protection against longitudinal cuts and punctures
- Improved absorption and distribution of the impact energy over the full belt width
- Higher protection against penetration by foreign objects
- Enhanced load distribution on the drive pulley and therefore more room for optimisation of pulley diameters

APPLICATIONS

- Heavy duty handling of sharp and abrasive bulk materials
- Installations with severe belt stresses
- Highly demanding operating conditions

Two types of breakers are available:

T – Textile Breaker as a high strength single-cord or woven breaker that provides excellent carcass protection and transversal elasticity.

S – Breaker made of single steel cords in a transversal direction offers higher strength with high or super high elongation for high elasticity and enhanced protection against rips

DESIGNATION EXAMPLES

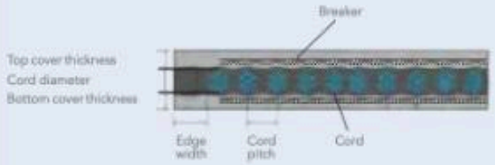
Product	Designation	Cover
Sempercord	1800 ST 4500 14T+7	X
Sempercord	1800 ST 4500 14S+7	X

Sempercord 1800 ST 4500 14T+7 X

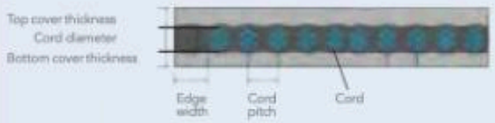
- Product group
- Belt width (mm)
- Carcass type
- Nominal belt strength (N/mm)
- Top and bottom cover thickness (mm)
- Breaker type (T = Textile, S = Steel)
- Cover grade

BREAKER IN TOP COVER

BREAKER IN TOP AND BOTTOM COVERS



STANDARD (NO BREAKER)



SEMPERCORD STEEL CORDS

Sempertrans has its own steel cord production unit which is specialised in the design and production of steel cords for Sempertrans conveyor belts. The consequent short lead times enable us to react with increased flexibility to our customers' requirements.

The steel cords as embedded in our high-tech rubber comprise the crucial components enabling high nominal strength. The cords used in Sempercord belts are designed in "open construction". This allows the rubber to penetrate each individual cord during the production process, ensuring high pull-out strength and protection against corrosion.

All our steel cords are either zinc or brass coated for special applications, providing the highest protection against corrosion and the highest adhesion to the rubber matrix, as well as additional protection against corrosion. This extends the service life of Sempercord belts.

CONSTRUCTION OF SEMPERTRANS CORDS

Sempercord steel cords offer the following advantages:

- Produced using high strength steel wire
- Open construction for thorough rubber penetration between wires in order to achieve excellent adhesion
- Extensive protection against corrosion for extended belt service life

DATA
Sempercord standard range (other strengths and dimensions are available on request)

Nominal belt strength (N/mm)	Maximum nominal cord diameter [mm]	Recommended min cover [mm]	Belt Width (mm)														
			500	650	800	1000	1200	1400	1600	1800	2000	2250	2400	2600	2800	3000	3200
ST 630	3.2	4.0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 800	3.2	4.0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1000	3.7	4.0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1250	4.4	4.0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1400	4.4	4.0		x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1500	4.4	4.0		x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1600	5.0	4.0		x	x	x	x	x	x	x	x	x	x	x	x	x	x
ST 1800	4.4	4.0			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 2000	4.4	4.0			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 2250	5.0	4.0			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 2500	6.4	5.0			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 2800	6.4	5.0			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 3150	7.2	5.5			x	x	x	x	x	x	x	x	x	x	x	x	x
ST 3500	8.0	6.0				x	x	x	x	x	x	x	x	x	x	x	x
ST 4000	8.2	6.5				x	x	x	x	x	x	x	x	x	x	x	x
ST 4500	8.8	7.0				x	x	x	x	x	x	x	x	x	x	x	x
ST 5000	10.6	7.5				x	x	x	x	x	x	x	x	x	x	x	x
ST 5400	10.6	7.5					x	x	x	x	x	x	x	x	x	x	x
ST 5600	10.9	8.0					x	x	x	x	x	x	x	x	x	x	x
ST 6300	12.4	9.0					x	x	x	x	x	x	x	x	x	x	x

Sempertrans manufacture steel cord belts that comply with DIN 22131, ISO 15236, AS 1333 and our own Sempertrans Specification. Belt constructions according to other standards are available on request.

The cover types and thicknesses are selected according to belt service conditions, taking the following factors into consideration:

- Loading conditions
- Number of working cycles
- Belt service life under continuous operation
- Material lump size
- Material abrasiveness
- Fire resistance
- Temperature conditions
- Resistance to chemicals

Recommended minimum cover thickness for Sempercord belts

Application	Carried material	Top cover (mm)	Bottom cover (mm)
Underground and surface conveyors	Coal, gravel, overburden	6.0-8.0	4.0-6.0
Underground and surface conveyors, reloading conveyors, short conveyors	Unsized coal, ores, stone overburden	8.0-10.0	5.0-6.0
Excavator and dumping conveyors, reloading stations	Lump coal, stone ores	12.0-18.0	6.0-10.0

Sempertrans provides full support regarding belt selection and belt design. Our Global Application Engineering team will assist in finding the optimised solution for your application.

METALCORD™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

Special belt design with outstanding impact and cutting resistance: a unique and unrivalled steel carcass construction.

Metalcord conveyor belts consist of a carcass construction of three layers of rubber embedded cords. Two different constructions are available, both offering unique properties perfectly suited to your application.

Metalcord belts with M-cords in the warp direction offer the highest elasticity. This allows the belt to go around the tightest curves or smallest pulley diameters. Metalcord belts with E-cords in the warp direction provide low elongation for applications with long centre distances.

Both carcass types are equipped with super high elastic cords in a weft direction. Only the Sempertrans construction offers this advantage providing the highest service life. These tightly pitched cords are located above and below the cords in a longitudinal direction. Metalcord ensures outstanding impact and cutting resistance while exceptional troughability is maintained.

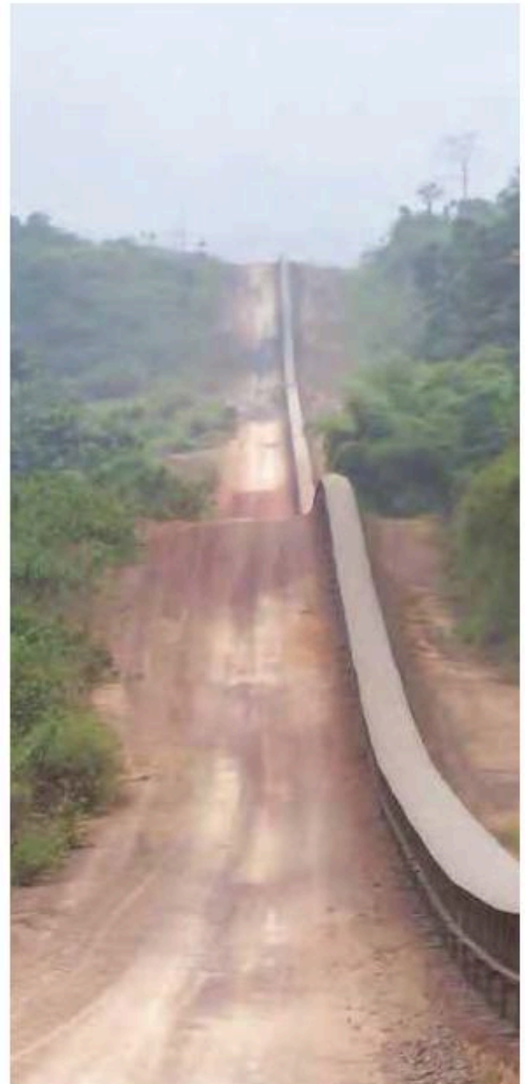
Metalcord belts comply with the ISO 15236.

APPLICATIONS

- Lignite and hard rock mining
- Aggregates
- Cement industry
- Grain and sugar industries
- Mineral processing plants
- Overland conveyors
- Port operations
- Power and heating plants
- Recycling industry
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)



METALTRANS™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The special metal belt with a unique steel carcass construction for enhanced impact and tear resistance.

Metaltrans conveyor belts consist of an assembly of two layers of rubber embedded cords. Two different constructions are available, both offering unique properties perfectly suited for your application.

Metaltrans with M-cords in the warp direction provides the highest elasticity. This allows the belt to go around the tightest curves or smallest pulley diameters. Metaltrans with E-cords in the warp direction provides low elongation for applications with long centre distances.

Both carcass types are equipped with the super elastic cord in the weft direction. These special weft cords featuring a narrow pitch above or below the cords in the running direction. This provides exceptional impact and tear resistance.

Metaltrans complies with the ISO 15236.

APPLICATIONS

- Lignite and hard rock mining
- Aggregates
- Cement industry
- Grain and sugar industries
- Mineral processing plants
- Overland conveyors
- Port operations
- Power and heating plants
- Recycling industry
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

TECHNICAL DETAILS

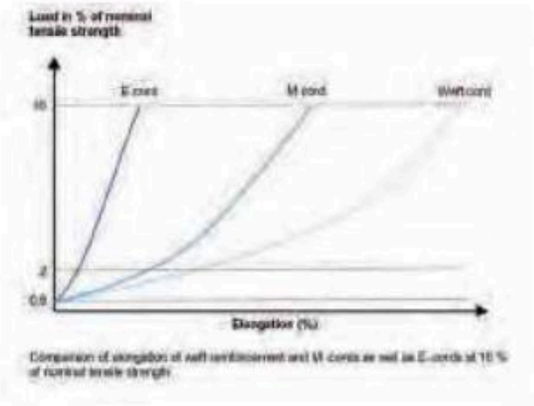
The unique carcass type provided by Metaltrans can be produced with two kinds of warp cords: M and E. The highly elastic M-cords allow for transportation around tight horizontal and vertical curves and short transition lengths, whereas the E-cords provide lower elongation. The weft cords, which are used in cross direction, protect the warp cords and are resistant to strong impact due to their super high elasticity.

This kind of construction offers several advantages, in particular:

- Excellent cord/rubber adhesion under tough working conditions
- Exceptional resistance to repeated shocks
- High resistance to penetration limiting longitudinal cuts and tears

The Metaltrans construction with the highly elastic M warp cords (4x7 design) offers a low elastic modulus and strong impact resistance and is particularly suitable for:

- Installations with highly dynamic specifications
- Short installations with repeated impacts and risk of cuts
- Small pulley diameters
- Very small radii for horizontal and vertical curves
- Crowned pulleys for centring on short conveyors



Comparison of elongation of weft reinforcement and M cords as well as E-cords at 10 % of nominal tensile strength

The Metaltrans construction with the low elongation E warp cord (7x7 design) provides high breaking strength and is particularly suitable for:

- Long centre distances with repeated impacts and high risk of cuts and tears
- Installations where low belt elongation is requested

The Metaltrans super high elastic weft cords have been especially designed for Sempertrans. They are about ten times more elastic than warp cords. This ensures an exceptional troughing capability regardless of the belt width. This special cord construction creates enhanced impact resistance compared to standard constructions significantly limiting cord breakages.

DESIGNATION EXAMPLE

Product	Designation	Cover
Metaltrans	1000 MTE 1600 S6+3	X

Metaltrans

DATA
Metaltrans standard range (other strengths and dimensions are available on request)

	Metaltrans M with one steel weft								
	Warp cord 4x7								
Nominal belt strength (N/mm)	500	630	800	1000	1250	1400	1600	1800	2000
Diameter of warp cord (mm)	2.85	2.85	2.85	2.85	2.85	3.7	3.7	3.7	3.7
Carcass thickness (mm)	4.6	4.6	4.6	4.6	4.6	5.5	5.5	5.5	5.5
Carcass weight (kg/m²)	8.2	8.3	8.9	9.7	10.3	11.5	12.2	12.8	13.5

	Metaltrans E with one steel weft												
	Warp cord 7x7												
Nominal belt strength (N/mm)	800	1000	1250	1400	1600	1800	2000	2250	2500	2800	3150	3500	4000
Diameter of warp cord (mm)	3.1	3.1	3.1	3.1	3.1	3.7	3.7	3.7	On Request				
Carcass thickness (mm)	4.9	4.9	4.9	4.9	4.9	5.5	5.5	5.5	On Request				
Carcass weight (kg/m²)	9.2	9.9	10.7	11.7	11.9	14.1	14.8	15.7	On Request				

2

ENGINEERED
SOLUTIONS

AUTOSTABLE™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The troubleshooter for belt running off-track: Autostable, our unique self-centring belt.

Sempertrans developed the original Autostable belt more than 30 years ago and has continuously improved this very unique belt since then. The special carcass construction of the Autostable belt provides a self-centring effect without any accessory or modification of the conveyor system. Due to the Autostable cross rigid centre, it provides a form locking shape which allows no transversal movement of the belt, avoiding all mistracking-related damages to the belt or the conveyor structure. This solves all tracking problems of standard belts. Autostable increases the lifetime of conveyor belts and reduces the total cost of ownership.

APPLICATIONS

- Open-pit mining
- Lignite and hard rock mining
- Aggregates
- Cement industry
- Chemical industry and fertilisers
- Mineral processing plants
- Overland conveyors
- Port operations
- Power and heating plants
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

TECHNICAL DETAILS

One of the main problems encountered in the use of conveyor belts is off-centring and therefore mistracking. This phenomenon may be caused by various factors which may lead to clogging, reduction of output, deterioration and/or damaging of the belt edges and a noticeable shortening of the service life of the belt itself.

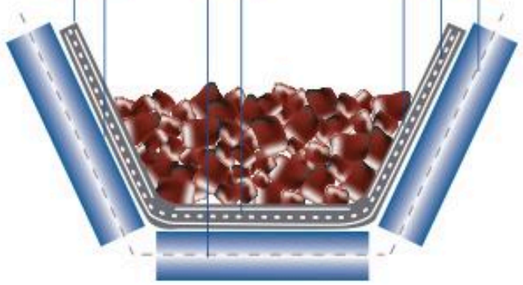
Sempertrans developed the Autostable belt, which centres itself without additional equipment on the conveyor. It reduces the risks of off-centring and consequently of deterioration of the moulded edges. The constructive difference in rigidity between the centre area and the sides ensures the self-centring effect of the belt. As the more rigid central part cannot adapt to the troughing angle as formed by the idlers, the belt tends to return to its natural troughed position, thus favouring its stability along its entire length.

The distinct advantages of Autostable are:

- Fewer edge damages
- Significant extension of belt service life especially for installations with idler adjustment issues
- Possibility to significantly raise the installation output by increasing the troughing angle
- Possibility to increase the installation output by replacing the standard belt with a wider Autostable belt
- Less mistracking allows for tighter tolerances. Thus wider belts are possible on the same conveyor
- Possibility to go around tight horizontal curves as form locking keeps the belt in position
- Excellent tracking for reversible conveyors

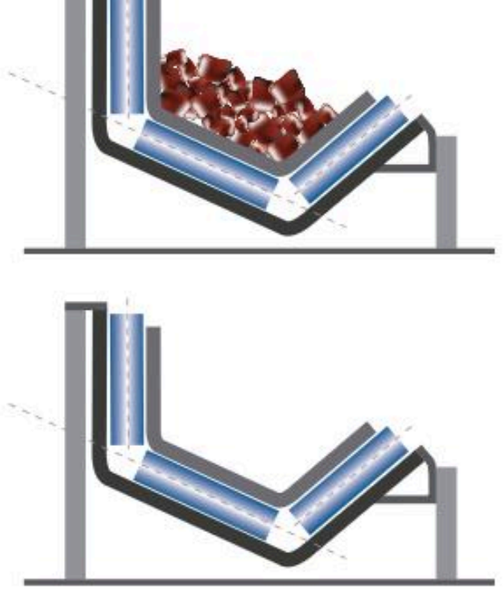
Main application areas:

- Reversible installations where standard belts are hard to track
- Installations with a poorly centred load (e.g. bucket wheel excavators)
- Belts running with high speed and short centre distances
- Existing overland conveyors with mistracking problems



1. Top cover
2. Bottom cover
3. Centre idler (length to be specified at the time of order)
4. Cross reinforcement
5. Reinforcement
6. Tension member
7. Idler

the outputs and tensions required. Sempertrans' Global Application Engineering team will perform this calculation for you.



SPECIAL APPLICATIONS FOR CONVEYORS WITH CURVES IN THE HORIZONTAL PLANE

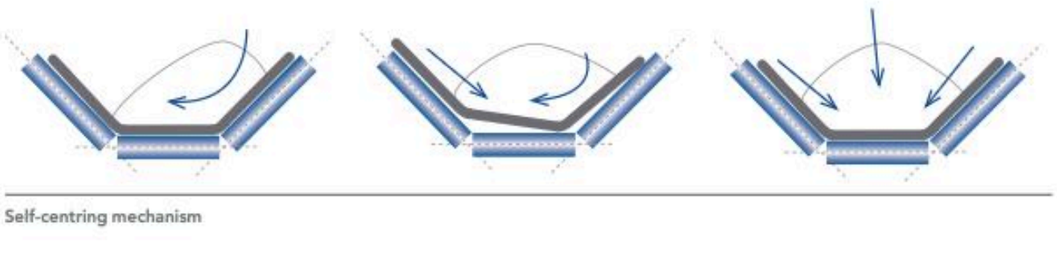
This configuration enables the belt to be kept stable in the curve by opposing the natural movement of the belt in a curve on its support. The acceptable force limits must be calculated on a case-by-case basis in accordance with

Advantages:

- Automatic load centring (elimination of off-centring)
- Elimination of spillage
- Elimination of edge damages
- A wider belt in the standard conveyor construction upgrades the capacity

COMPARISON OF CENTRING FORCES

Depending on the troughing angle, the centring force provided by an Autostable belt is five to eight times higher than the one provided by a normal belt.

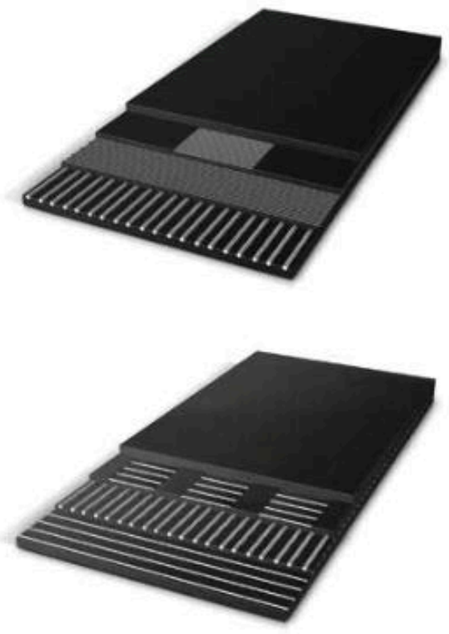


Self-centring mechanism

AUTOSTABLE™ M

The self-centring metal belt.

The Autostable M is a combination of an Autostable belt benefitting from all advantages of a metal carcass. Depending on the application, either special 4x7 or 7x7 steel cords from our Metalcord belt range are used in the longitudinal direction. For high nominal belt strengths or extreme widths, either 7x7 or 7x19 steel cords from our Sempercord range are used.



Autostable M

Autostable M advantages:

- High nominal belt strength, flexibility of Metalcord
- Small pulley diameters
- Tight horizontal and vertical curves
- Excellent cord/rubber adhesion

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge) CleanShield (non-stick)

DATA

Autostable M standard range (other strengths and dimensions are available on request)

Belt width: 800 mm to 3200 mm
Nominal belt strength: 500 N/mm to 4500 N/mm

DESIGNATION EXAMPLES

Product	Designation	Cover
Autostable	1000 MASE 1000 SS6+3	W
Autostable	1000 MASM 1000 SS6+3	W

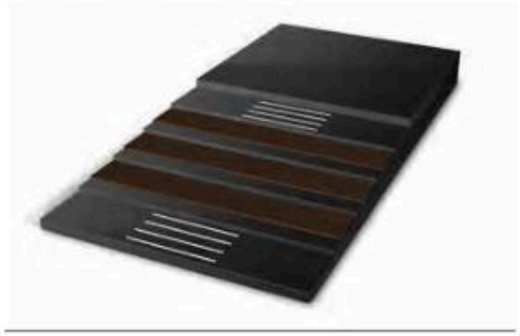
AUTOSTABLE™ T

The self-centring textile belt for standard applications with mistracking issues.

This Autostable belt is a textile/steel weft construction. It uses the Multitrans EP carcass as well as two layers of highly rigid steel wefts on the top and bottom side of the textile carcass.

Autostable T advantages:

- Splicing as easy as standard textile belts
- Warp elongation of a textile belt



Autostable T

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge) CleanShield (non-stick)

DATA

Autostable T standard range (other strengths and dimensions are available on request)

Belt width: 800 mm to 2400 mm
Nominal belt strength: 400 N/mm with 3 plies to 3500 N/mm with 5 plies

DESIGNATION EXAMPLE

Product	Designation	Cover
Autostable	1000 EPAS 630/3 S6+S3	W

TRANSPIPE™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The engineered solution to protect the transported material and the environment.

Transpipe allows enclosed material transport whilst providing several other advantages over conventional conveyor belt systems.

The principle of an enclosed conveying system is to load the Transpipe belt like a regular conveyor belt and then form it into a pipe shape along the conveying route. Multiple loading and unloading sections are possible. As the return strand is also shaped like a pipe, spillage will be avoided in the return strand.

APPLICATIONS

- Cement industry
- Chemical industry and fertilisers
- Grain and sugar industries
- Mineral processing plants
- Overland conveyors
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- TransEvo (energy saving)
- Transcold (cold resistant)

TECHNICAL DETAILS

The main benefits of Transpipe belts are:

- Reduction of maintenance and cleaning costs due to avoiding spillage and loss of material along the conveyor
- Protection of the conveyed material from external influences like dust, rain or wind
- Protection of the environment from pollution by the conveyed material

Besides the benefits of enclosed transportation, Transpipe conveyors offer even more advantages:

- A Transpipe belt can be guided through tight horizontal and vertical curves as it is supported by a set of 6 idlers. This results in the reduction of transfer points and an improved adaption to the existing topology of terrain or existing factory buildings.
- Higher inclination angles can be achieved as the inner side of the Transpipe offers more contact surface to the conveyed material compared to a regular conveyor belt.

These advantages can only be realised by a Transpipe belt, of which design is specifically adapted to the individual application. Sempertrans' Global Application Engineering team will support in selecting the right carcass construction in combination with the right cover grade to fulfil the requirements of each application.

The main focus areas for the selection of Transpipe are:

- The correct cross rigidity: Transpipe offers a long-lasting rigidity due to a special carcass construction which is especially adapted to each individual application. The design decisions are based on the Transpipe nominal belt diameter and the conveyor routing. Transpipe's cross rigidity will be adapted to each application individually in order to optimise both the power consumption and the stability of the belt.
- Highest ozone protection: Transpipe comes with optimised cover grades, which are developed to provide superior resistance to ozone. By nature the outside rubber cover of the Transpipe is under constant tension as it is formed into a pipe shape. Therefore, it has a higher exposure to aggressive ozone and UV-light. The special Transpipe covers provide high protection against ozone.

As Transpipe is a tailor-made engineered solution, Sempertrans' Global Application Engineering team will analyse each application to provide a superior and long lasting product.

DESIGNATION EXAMPLES

Product	Designation	Cover
Transpipe	1600 ST 1600 8T+7S	X/P
Transpipe	1200 EP 63Q/3 6+2	X/P

Transpipe

DATA

	Designation	Comparable Cover for Flat belts	Description	Lowest Possible T (°C)	Max. Possible T (°C)	Max. Allowable Peak T (°C)
Transdura	X/P	X	Wear resistant, heavy duty applications	-35	60	60
	Y/P	Y	Wear resistant, standadr applications	-45	60	60
	YW/P	Y,W	Extremely wear resistant	-45	60	60
	W/P	W	Extremely wear resistant	-45	60	60
Transoil	GM/P	GM	Rresistant to vegetable oils and greases	-25	60	60
Transtherm	TEA/P	TEA	Wear and heat resistant	-35	100	130
Transtflam	K/P	K	Flame retardant with covers	-35	60	60
	S/P	S	Flame retardant with and without covers	-35	60	60
TransEvo	TransEvo-P	TransEvo	Energy saving, low rolling resistance	-35	60	60
	TransEvo-KP	TransEvo-K	Energy saving, low rolling resistance, flame retardant with covers	-35	60	60

Nominal pipe diameter	Belt width	Nomin Belt Strength			
		Textile belts	Steel cord belts	High Elastic Steel cord belts	Aramide belts
mm	mm	N/mm	N/mm	N/mm	N/mm
200	800	250-500	630-1250	500-1250	630-1000
250	1000	260-630	630-1600	500-1600	630-1250
275	1100	400-1000	800-2800	500-2000	630-1600
300	1200	500-1000	800-2800	500-2000	630-1600
325	1300	630-1250	1000-4000	500-2000	630-2000
350	1400	800-1600	1000-4000	500-2000	630-2500
400	1600	1000-2500	1000-4000	500-2000	630-3150
450	1800	1250-2500	1000-4500		630-3150
500	2000	1250-3150	1000-4500		630-3150
550	2200	1600-3150	1000-4500		630-3150
600	2400	1600-3150	1000-4500		630-3150

RIPSTOP™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

Ripstop is the unbeaten reference in terms of impact protection. It encompasses a textile and a metal option.

The Ripstop range encompasses several options enabling a tailor-made protection of your belt against impact and punctures. Ripstop belts are based on the Multitrans or Sempercord steel carcass.

APPLICATIONS

- Open-pit and underground mining
- Lignite and hard rock mining
- Aggregates
- Cement industry
- Chemical industry and fertilisers
- Grain and sugar industries
- Mineral processing plants
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- TransEvo (energy saving)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

sempertrans®
A MEMBER OF THE SEMPERIT-GROUP

GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
SEMPERTRANS COVERS
TECHNICAL SPECIFICATIONS
RIPSTOP

RIPSTOP™ M

Ripstop M is designed for the toughest applications. It has its own carcass design with three layers of steel, each one embedded in core rubber. The strength comes from cords with higher elasticity, compared to standard steel cord belts. This allows for smaller pulley diameters and provides higher impact protection already. To further increase the impact protection, two cross reinforcements, one above and one below the longitudinal cords, are placed in the carcass. This high amount of super elastic steel cords in cross direction provides the highest rip and puncture resistance possible while keeping excellent troughability values.

Ripstop M advantages:

- Improved distribution of shocks and carcass protection. Providing impact resistance up to twice as much or more as compared to a normal steel belt
- Highest anti-tear resistance
- Can be used in combination with small pulley diameters

DESIGNATION EXAMPLE

Product	Designation	Cover
Ripstop	1000 MCIM 1250 S8+S4 1000 MCIE 1250 S8+S4	W

DATA

Ripstop M standard range (other strengths and dimensions are available on request)

Belt width: 600 mm to 1829 mm
Nominal belt strength: 500 to 2250 N/mm

RIPSTOP™ T

Ripstop T combines the convenience of a textile belt with the strength of steel. The multi-ply carcass structure combined with a super high elastic steel cross reinforcement provides the highest impact protection.

Ripstop T advantages:

- Outstanding tear resistance
- Increased fastener retention
- Improved distribution of shocks and thus higher carcass protection

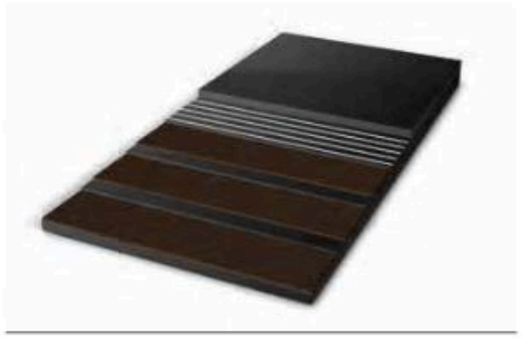
DESIGNATION EXAMPLE

Product	Designation	Cover
Ripstop	1000 EPI 630/4 10S+3	Y

DATA

Ripstop T standard range (other strengths and dimensions are available on request)

Belt width: 400 mm to 3200 mm
Nominal belt strength: 400 N/mm with 3 plies
Up to 3150 N/mm with 5 plies



Ripstop T

TRANSLEV™ T

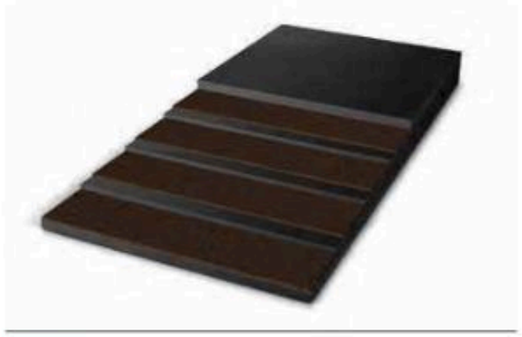
The elevator belt for light applications such as the transport of grains and similar light materials offers a low elongation fabric carcass with high bolt pull-out strength. Its thin carcass allows for very small pulley diameters. Translev T can be used in almost any application in combination with different cover types.

APPLICATIONS

- Mineral processing plants
- Chemical industry and fertilisers
- Grain and sugar industry
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Salt industry
- Steel industry

COVERS

- Transflam (flame retardant and anti-static)
- Transflam oil (flame retardant, anti-static and oil resistant in GMK and GMS)
- Transoil (oil resistant)
- Transtherm (heat resistant)



Translev T

Besides the standard anti-abrasive grades, special cover grades meeting special application requirements are also possible. One example is the GMS belt construction which has been specially developed for Translev T to respond to the two major challenges involved in the handling of grains:

- Swelling due to contact with oily/greasy substances (wood chips, grains, seeds, etc.)
- Risk of explosion/propagation of fire

DESIGNATION EXAMPLE

Product	Designation	Cover
Translev T	800 EPL 500/3 2+2	GMK

DATA

Translev T standard range (other strengths and dimensions are available on request)

Belt width: Up to 2400 mm
Nominal belt strength: 400 N/mm to 3150 N/mm

BIATHLON™

GENERAL INDUSTRY

The light belt with high impact resistance.

Biathlon has the unique feature of being a light belt offering the high impact resistance of a heavier belt. The Biathlon belts consist of two textile plies (polyester warp and polyamide weft) and a layer of high elasticity rubber distributing the force between the plies and providing superior ply adhesion.

APPLICATIONS

- Aggregates
- Cement industry
- Chemical industry and fertilisers
- Grain and sugar industries
- Mineral processing plants
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Salt industry
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)
- CleanShield (non-stick)

TECHNICAL DETAILS

Biathlon belts combine both advantages of performing like light belts for the installation and benefitting from the impact protection of heavy belts. Biathlon has a very specific construction. A highly elastic rubber layer is placed in the centre of the belt between the two fabric plies. This additional layer improves the impact resistance level and thus increases the service life of the belt.

Typical installations for Biathlon belts are:

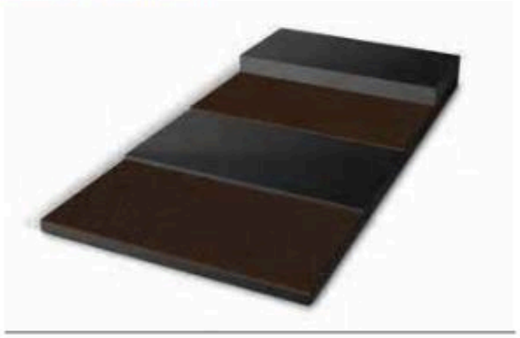
- Conveying of materials of large lump size on long centre distances
- Applications requiring impact and tear resistance
- Installations with small pulley diameters

DESIGNATION EXAMPLE

Product	Designation	Cover
Biathlon	1600 EPBI 1600/2 6+3	X

DATA
Biathlon standard range (other types and dimensions are available on request)

Belt width: 400 to 1829 mm
Nominal belt strength: 250/2 to 1600/2 N/mm



Biathlon

TRANSGLIS™

GENERAL INDUSTRY

The textile belt with sliding surface for the recycling and waste industries.

Transglis belts are the optimal solution if the application does not allow idlers or empty spaces under the loaded belt. On the loaded portion of the installation, the full width and length of the belt glides on a flat surface, allowing a smooth transfer of the unevenly distributed loads. Different cover grades are available for the Transglis belt depending on the type of use and the material conveyed.

APPLICATIONS

- Chemical industry and fertilisers
- Packing industry
- Recycling industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)
- Transcold (cold resistant)
- TransTough (cut and gouge)

TECHNICAL DETAILS

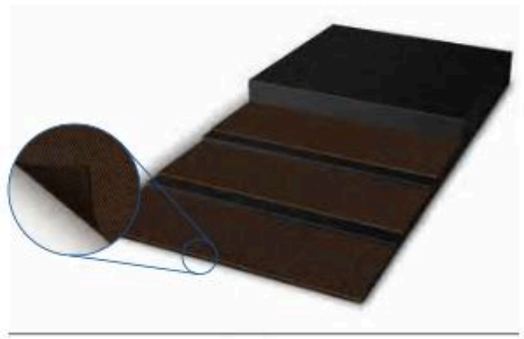
- Two textile plies (polyester warp/polyamide weft), including one sliding (bottom) side
- Rot proof carcass and slide layer
- Splicing possible also with mechanical fasteners

DESIGNATION EXAMPLE

Product	Designation	Cover
Transglis	650 EP 400/2 3+0	GM

DATA
Transglis standard range (other strengths and dimensions are available on request)

Belt width: 400 to 1600 mm
Nominal belt strength: 250/2 to 630/4 N/mm



Transglis

TRANSRIGID™

GENERAL INDUSTRY

The cross-stabilised belt.

Transrigid is a belt with high transverse rigidity specifically designed for flat use. Its main purpose is to be the base for belts with corrugated side walls and cleats. These belts are used for conveyors with steep inclination and specific geometries. Transrigid is also widely used as a cover belt for the safe protection of channels and gutters. It is available with either a textile or steel carcass construction.

APPLICATIONS

- Cement industry
- Chemical industry and fertilisers
- Grain and sugar industries
- Hard rock mining
- Mineral processing plants
- Open-pit mining
- Port operations
- Power and heating plants
- Steel industry

COVERS

- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)

TECHNICAL DETAILS

Transrigid belts are equipped with a special cross reinforcement making the belt self-supporting. They can be designed to be load bearing. Typical applications are cover belts and base belts for side wall belts.

Transrigid belts can be equipped with all standard types of sidewalls and cleats available on the market.

DATA
Transrigid standard range (other strengths and dimensions are available on request)

Belt width: 500 mm to 2500 mm

DESIGNATION EXAMPLE

Product	Designation	Cover
Transrigid	1000 EPR 500/3 S3+S3	Y

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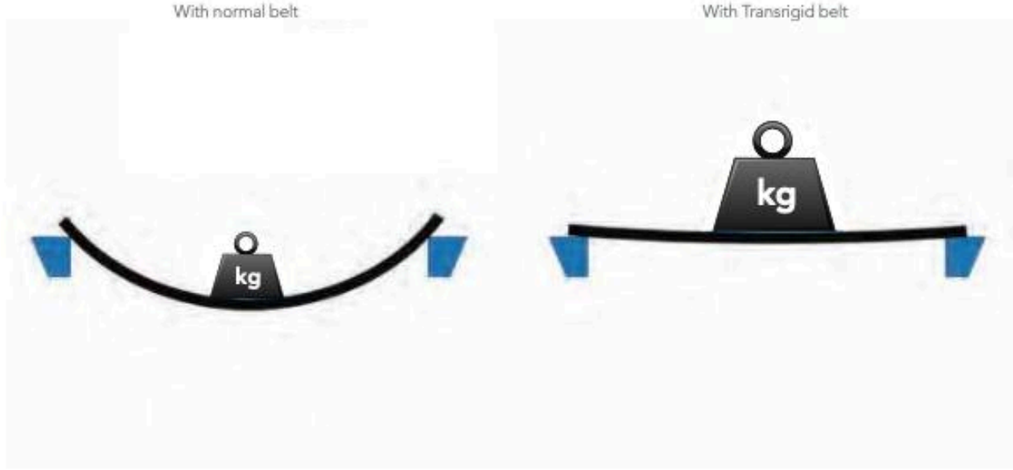
GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
TRANSRIGID
SEMPERTRANS COVERS
TECHNICAL SPECIFICATIONS

Transrigid with steel carcass

Transrigid with textile carcass



3

SEMPERTRANS
COVERS

TRANSDURA™ (AntiAbrasive)

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The anti-abrasive cover: the long-life solution for both steel cord and textile conveyor belts.

When conveyed materials do not involve chemicals, extreme temperatures, or fire hazards, wear and tear becomes the key challenge. Transdura, the Sempertrans anti-abrasive cover, is the optimal choice for outstanding abrasion resistance and extended service life. Transdura covers go beyond fulfilling local and international standards — they set benchmarks in the industry. No matter the application, Sempertrans provides the right cover to meet abrasion-related demands while keeping a strong focus on cost efficiency and total cost of ownership.

APPLICATIONS

- Open-pit mining
- Lignite and hard rock mining
- Aggregates
- Cement industry
- Mineral processing plants
- Overland conveyors
- Port operations
- Power and heating plants
- Salt industry
- Steel industry

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop
- Translev
- Transprofile
- Biathlon
- Transglis

TECHNICAL DETAILS

Sempertrans has developed a complete range of specifically adapted covers. These cover grades exceed standards for the most part, ensuring an extended service life and higher productivity in customer operations.

Some of our top anti-abrasive special covers include:

- **D50 – The hard rock cover**
  Especially designed for the specific requirements of hard rock mining. It is the perfect fit for highly abrasive ores. It provides high cut & gouge resistance with a very low abrasion, maximising the lifetime of your belts.

- **D30 – The iron cover**
  Sempertrans' newly developed cover with rock bottom abrasion values has been especially designed for the transportation of small sized, but highly abrasive materials such as iron ore.

- **Sempertrans IronShield – Unparalleled Abrasion Resistance for Maximum Performance**
  Sempertrans IronShield has been rigorously tested to ensure optimal performance. The table below compares the abrasion resistance of Sempertrans Iron Shield against other compounds, D30 and D50, show-casing its industry-leading durability and suitability for the most demanding operations.

Mechanical characteristics of Transdura special covers

Cover grades	Description	Tensile strength	Elongation at break	Abrasion resistance
D50	Excellent impact resistant properties while providing very low abrasion	+++	+++	+
D30	Highly anti-abrasive cover for small size materials	+	+	++
Sempertrans IronShield	Unparalleled abrasion resistancefor maximum performance	++	++	+++

DATA
Mechanical characteristics of Transdura standard covers

Cover grades acc. to DIN, ISO, US and AS standards	Standards	Characteristics	Tensile strength (MPa)	Elongation at break (%)	Abrasion (mm^3)	Sharp edged material	Lump size	Impact
W	DIN	Anti-abrasive cover with excellent mechanical properties for smaller sized lumps with abrasive properties	≥ 18	≥ 400	≤ 90	No	Small	Normal
Y	DIN	Cover with good mechanical properties for standard applications	≥ 20	≥ 400	≤150	No	Small	Normal
D	ISO	Anti-abrasive cover with excellent mechanical properties for smaller sized lumps with abrasive properties	≥ 18	≥ 400	≤ 100	No	Small	Normal
L	ISO	Cover for light applications without special requirements	≥ 15	≥ 350	≤ 200	No	Small	Light
A	AS	Anti-abrasive cover with excellent mechanical properties for smaller sized lumps with abrasive properties	≥ 17	≥ 400	≤ 70	No	Small	Normal
N	AS	Cover for light applications without special requirements	≥ 17	≥ 400	≤ 200	No	Small	Light
RMA-I / RMA	US	Cover with good mechanical properties for standard applications	≥ 17	≥ 400	≤ 125	No	Small	Normal
RMA-II / RMA	US	Cover for light applications without special requirements	≥ 14	≥ 400	≥ 175	No	Small	Light

TRANSTOUGH™ (CUT & GOUGE)

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

CUT & GOUGE RESISTANCE FOR HIGH-ENERGY IMPACTS

Engineered for extreme impact loading and challenging material handling.

Heavy and sharp material causes significant damage at the loading point of the conveyor belt. In many demanding industrial environments, the primary reason for belt replacement isn't wear due to abrasion — it's the accumulation of deep cuts and gouges caused by high-energy impacts.To address these challenges, TransTough™ has been specially developed to perform under extreme drop heights, large lump sizes, and sharp-edged materials. These covers are designed not only to resist cutting, but to dampen and disperse impact energy — reducing the severity of damage right where the belt is most vulnerable.

APPLICATIONS

- Hard rock mining
- Iron ore mining
- Copper and gold mining
- Mineral processing plants
- Aggregates
- Cement industry
- Overland conveyors

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop
- Transprofile
- Biathlon
- Transglis

TECHNICAL DETAILS

Smart impact management for superior belt life

Unlike standard covers, which attempt to absorb impact and return to form, TransTough™ compounds work by diffusing the impact forces over a broader area. This capability significantly improves the belt's durability and extends its operational lifespan in harsh loading conditions.

If your conveyor system handles:
- Large, sharp-edged lumps
- Material with high drop height
- Hard rock, ore, or heavy construction debris

TransTough™ is your best line of defense.

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GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
TECHNICAL SPECIFICATIONS

Our Special Covers: UCG and XCG

To meet the most extreme challenges in high-impact material conveying,Sempertrans has developed two specialized cover compounds under the TransTough family:

- **UCG – Ultimate Cut & Gouge Cover**

Our top-performing compound, UCG, is engineered for applications involving extreme impact, sharp-edged materials, and heavy lumps. It provides unmatched cut and gouge resistance, ideal for operations with high drop heights, such as hard rock or iron ore mining. UCG excels at energy absorption and dispersion, dramatically reducing cover damage and prolonging belt life.

- **XCG – Extra Cut & Gouge Cover**

Positioned just below UCG, XCG is a high-resilience cover offering outstanding protection in tough environments. It is tailored for heavy-duty applications like copper and gold mining or mineral processing plants where both impact and sharp material are present. XCG is the smart choice when superior durability is needed without stepping up to the UCG level.

Both covers are the result of extensive field testing and R&D efforts, designed to meet the highest operational reliability and lower total cost of ownership in extreme conditions.

Cover grades	Standards	Characteristics	Main Applications
X+	Exceeding standards	Good cut and gouge resistance, for sharp and heavy impact conditions	Large sharp-edged lumps, high impact (e.g. hard rock mining)
UCG	Exceeding standards	Ultra cut and gouge resistance, built for extreme conditions	Extreme impact zones, large and sharp lump material
XCG	Exceeding standards	Extra cut and gouge resistance, with improved abrasionprotection	Crushers, rock drop zones, very sharp and aggressive material handling
H	ISO	Cut and gouge resistant, standardized performance	Sharp-edged ore handling, general impact
X	X	Cut and gouge resistant under standard conditions	Sharp ore or gravel processing
AS-M	AS	Good cut and gouge resistance with abrasion resistance	Ore prep and crushing with sharp edges
M24	IS	Good cut and gouge resistance with abrasion protection	Sharp-edged ore prep and loadout

Sempertrans CleanShield™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

THE NON-STICK COVER FOR CLEANER OPERATIONS

SMOOTH MATERIAL TRANSPORT SOLUTION

Sempertrans CleanShield is our latest advanced cover compound developed to significantly reduce material adhesion and ensure smooth, uninterrupted material transport. This innovative non-stick solution is particularly effective in applications where moisture and fine particles typically cause carryback, material buildup, and increased cleaning costs. Designed for mining and mineral processing environments—especially copper leaching—CleanShield ensures optimal belt performance by preventing the accumulation of sticky residues on the belt surface. The cover works by minimizing the bond between moisture-laden materials and the rubber, leading to better cleaning performance, a cleaner working environment, and reduced maintenance time.

APPLICATIONS

- Hard rock mining
  (Copper / Gold / Silver / Zinc / Nickel / Uranium)
- Mineral processing plants

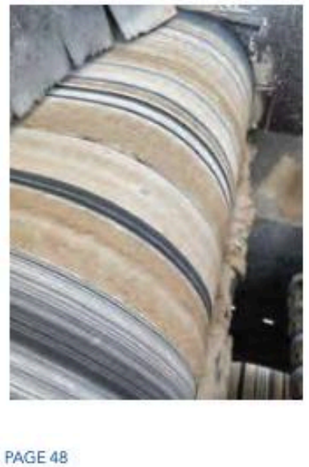
AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop

TECHNICAL DETAILS

- Full-thickness non-stick cover compound
- Excellent anti-adhesion properties, even under moist and sticky conditions
- Improved operational efficiency in sticky bulk material handling
- Specifically optimized for copper leaching environments
- Compliant with industry standards for demanding mining operations

STANDARD COVER VS NON-STICK COMPARISON



ABRASION COEFFICIENT INDEX

Conventional Rubber vs. CleanShield (Non-Stick)

The abrasion coefficient index is used to evaluate how well different rubber compounds resist wear when exposed to abrasive materials.

The abrasion coefficient index is used to evaluate how well different rubber compounds resist wear when exposed to abrasive materials.

Conventional Rubber
Standard rubber compounds provide basic resistance to abrasion. However, when transporting rough or sharp bulk materials, the surface tends to wear down more quickly. This results in reduced belt lifespan and higher maintenance needs.

CleanShield (Non-Stick)
Developed with anti-adhesive properties, no-stick rubber prevents material build-up on the belt surface. With less material sticking, friction and scraping are minimized. This significantly improves abrasion resistance, extending service life and reducing downtime for maintenance.

In summary: while conventional rubber performs adequately in normal conditions, CleanShield non-stick rubber ensures longer durability, lower maintenance, and better reliability in demanding applications.

Cover Grade	Main Relevant Standard (other standards may apply)	Characteristics	Main Applications
CleanShield	Exceeding standard	Special non-stick cover compound designed to minimize material build-up	Copper leaching, high-moisture and sticky material transport in mining

TRANSFLAM™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The flame retardant cover range ensures uncompromising safety in underground applications, power generation and tunnelling.

S: Flame retardant cover and carcass according to ISO 340, anti-static according to ISO 284. For general use with electrical and fire safety requirements in line with EN 12882 as well as the former German grade S as defined in DIN 22102.

TG-V: Flame retardant cover for underground use with electrical and fire safety requirements to EN 14973 and for general use with electrical and fire safety requirements in line with EN 12882.

APPLICATIONS

- Underground mining
- Hard rock mining
- Cement industry
- Grain and sugar industries
- Mineral processing plants
- Overland conveyors
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Steel industry
- Tunnelling

Transflam is especially designed to prevent the propagation of an accidental fire and guard against the risk of explosion due to its improved static conductivity.

Sempertrans belts with the Transflam cover fulfil the highest safety requirements according to EN 14973 Class A, and B2., EN 12882 and ISO 340, but also various other international standards such as Australian FRAS-S or the American MSHA.

Our Transflam range includes conventional K, S and TG-V grades but also complies with additional specific Inetrnational and national standards:

K: Flame retardant cover according to ISO 340 and anti-static properties according to ISO 284. For general use with electrical and fire safety requirements in line with EN 12882 as well as the former German grade K as defined in DIN 22131 and DIN 22102.

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop
- Translev
- Biathlon
- Transglis

TECHNICAL DETAILS

DATA
Extract from the Transflam cover standard range

Cover grades	Defined in	Characteristics	Tensile strength (MPa)	Elongation at break (%)	Abrasion resistance [mm³]
K	DIN 22131 and DIN 22102	Flame retardant with cover according to ISO 340 and EN 12882	≥ 20	≥ 400	200
K	DIN EN ISO 15236-1	Flame retardant with cover according to ISO 340 and EN 12882	≥ 15	≥ 350	200
S	DIN 22102	Flame retardant with and without cover according to ISO 340 and EN 12882	≥ 20	≥ 400	≤ 200
TG-V	DIN EN ISO 15236-3	Flame retardant according to EN 14973 and EN 12882	≥ 17	≥ 350	≤ 175

Category acc. EN 12882	Application	Electrical conductivity acc. ISO 284	Flammability acc. ISO 340	Propane burner tests acc. EN 12881-1 Method A	Drum friction test acc. ISO 1554				
					Method	Flame	Glowing	Load	Time
1	General use	< 300 MΩ	Not required	Not required	Not required				
2A	Same as category 1, additional risk of small, open flame on the cover	< 300 MΩ	Yes	Not required	Not required				
2B	Same as category 2A, additional risk of smaller, open flame on the carcass	< 300 MΩ	Yes	Not required	Not required				
3A	Same as category 2A, additional risk of local heating due to friction	< 300 MΩ	Yes	Not required	A1	No	Not required	343 N	1h
3B	Same as category 3A, additional risk of small, open flame on the carcass	< 300 MΩ	Yes	Not required	A1	No	Not required	343 N	1h
4A	Same as category 1, additional risk of fire spreading caused by additional fire sources	< 300 MΩ	Not required	After the end of the test there shall be a piece of undamaged conveyor belting not less than 100 mm wide across the whole width of the belt	Not required				
4B	Same as category 4A, additional risk of local heating due to friction	< 300 MΩ	Not required	After the end of the test there shall be a piece of undamaged conveyor belting not less than 100 mm wide across the whole width of the belt	A1	No	Not required	343 N	1h
5A	Same as category 4B, additional increased risk of local heating due to friction	< 300 MΩ	Not required	After the end of the test there shall be a piece of undamaged conveyor belting not less than 100 mm wide across the whole width of the belt	A2	No	Not required	1715 N	2.5h

Class acc. EN 14973	Application	Electrical conductivity acc. ISO 284	Flammability acc. ISO 340	Propane burner tests acc. ISO 12881-1 Method A	Drum friction test acc. ISO 1554 Method B2				
					Method	Flame	Glowing	Temperature	Time
A	General use, only hazards being limited access and means of escape	< 300 MΩ	Yes	DIN EN 12881-1 Method A. If incomplete ignition achieved, use Method B or C	A1	No	Permitted	343 °C	1h
B2	Same as Class A plus potentially flammable atmosphere. With secondary devices	< 300 MΩ	Yes	DIN EN 12881-1 Method A. If incomplete ignition achieved, use Method B or C	B2	No	Permitted	No limit	1h

TRANSFLAM SPECIAL COVERS

Besides the conventional covers referring to specific standards, Sempertrans has developed a range of special covers exceeding these standards. In addition to their exceptional mechanical properties, these special covers always fulfil safety regulations according to ISO 340 and anti-static requirements according to ISO 284, as well as fire safety requirements.

The benefit for our customers is an increased operating life for the belts without compromising on safety.

FRAS-S and MSHA

Part of the Transflam range comprises the flame retardant covers according to the North-American standards (MSHA and CAN-CSA) as well as to the Australian standards (FRAS-S).

DATA
Mechanical characteristics of Transflam covers

Cover grades	Tensile strength	Elongation at break	Abrasion resistance
K	+++	++	+
K+	+++	+++	++
FH	+++	+++	+++

TRANSOIL™

GENERAL INDUSTRY

Our belt protection against chemicals, grease, vegetable and mineral oils or fats.

The Transoil compound range has been especially designed for conveying oily or greasy products. This also includes solvents, diluted acids, or products impregnated with hydrocarbons.

The Transoil cover types provide the perfect oil resistant solution for most textile and steel belt applications. For specific safety requirements, Transoil is also available with flame retardant properties to ensure safer operation.

APPLICATIONS

- Chemical industry and fertilisers
- Grain and sugar industries
- Mineral processing plants
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop
- Translev
- Biathlon
- Transglis

DATA

There are six types of Transoil covers available for most textile and steel cord belt applications:

G: Highly resistant to mineral oils and standard hydrocarbons.

GK: Highly resistant to mineral oils and standard hydrocarbons. Flame retardant as per EN ISO 340 (with covers) and anti-static.

GS: Highly resistant to mineral oils and standard hydrocarbons. Flame retardant as per EN ISO 340 (with and without covers) and anti-static.

GM: Resistant to vegetable and animal oils and oleaginous products.

GMK: Resistant to vegetable and animal oils and oleaginous products. Flame retardant as per EN ISO 340 (with covers) and anti-static. This grade is particularly well suited for grain silo applications.

GMS and GMSG: Resistant to vegetable and animal oils and oleagi-nous products. Flame retardant as per DIN EN ISO 340 (with and without covers) and antistatic

Mechanical characteristics of Transoil covers

Cover Grade	Oil Resistance	Anti-static	Flame Retardance
G	++++	Yes	-
GK	+++	Yes	ISO 340 with covers
GS	+++	Yes	ISO 340 with and without covers
GM	++	Yes	-
GMK	++	Yes	ISO 340 with covers
GMS & GMSG	++	Yes	ISO 340 with and without covers

TRANSTHERM™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The cover for high temperatures ensuring the longest belt life.

Transtherm covers are the right choice whenever hot materials need to be conveyed. Select the best technical option among our range of Transtherm covers to achieve the maximum belt lifetime.

APPLICATIONS

- Cement industry
- Grain and sugar industries
- Overland conveyors
- Paper and wood industries
- Port operations
- Power and heating plants
- Recycling industry
- Steel industry

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Transpipe
- Ripstop
- Translev
- Biathlon
- Transglis

TECHNICAL DETAILS

The standard types of Transtherm covers are:

CW: The cover grade especially designed for the transportation of coke wharf, providing medium heat resistance combined with flame retardant properties according to DIN EN ISO 340.

TEA: The cover grade with excellent mechanical properties, providing heat resistance for medium temperatures. In specific markets TEA is also known as HR.

TEB: The cover grade for high heat resistance and special applications such as transporting chemicals. In specific markets the cover grade SHR is available for this temperature range, if no specific resistance to chemicals is required.

TEC: The cover grade for extremely high temperatures up to 400 °C short term peaks.

Recommendations

There is a major difference between the temperature of the product conveyed and the temperature transmitted to the cover by the materials conveyed. This difference between the surface temperature of the belt and the temperature of the product conveyed may vary according to various parameters:

- Particle size of material
- Belt speed
- Length of conveyor (cooling on return strand)
- Ambient temperature
- Ventilation or possible watering

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GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
SEMPERTRANS COVERS
TECHNICAL SPECIFICATIONS
TRANSTHERM

DATA
Mechanical characteristics of Transtherm covers

Cover grade		Tensile strength	Elongation at break	Abrasion resistance	Temperature resistance
CW (flame retardant)	SBR compound	+++	+++	++	+
TEA	SBR compound	+++	+++	+++	++
TEB	BUTYL/EPDM compound	++	+++	+	+++
TEC*	EPM compound	++	+++	+++	++++

Temperature ranges

	CW	TEA	TEB	TEC
1. Maximum continuous allowable surface temperature		120 °C	150 °C	200 °C
2. Average material temperature fine goods	120 °C	130 °C	160 °C	210 °C
3. Maximum allowable local peak temperature fine goods		150 °C	180 °C	230 °C
4. Average material temperature large lumps	130 °C	140 °C	200 °C	250 °C
5. Maximum allowable local peak temperature lumpy goods		160 °C	250 °C	400 °C*

*For TEC, 400°C: "For optimal performance in high heat applications we would recommend minimum covers of 6x3mm"

Large lumps: materials with large particle size and high abrasiveness such as pitch, iron and steel industry, coke or pellets.
Fine goods: fine materials such as cement, calcium calcinates (CaO), clinker and foundry sand.

Sempertrans' Global Application Engineering team will support you in finding the suitable cover grade for your application.

TRANSEVO™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The cover grade which saves approximately 25% energy and reduces operating costs.

TransEvo covers are based on a special rubber compound which significantly reduces rolling resistance due to indentation losses while the belt is running over the idlers. TransEvo achieves energy savings of up to 25% compared to conventional conveyor belts, proven by both external testing facilities and field tests at several installations at Sempertrans customers' sites.

Characteristics for existing installations with standard belts when compared to TransEvo:

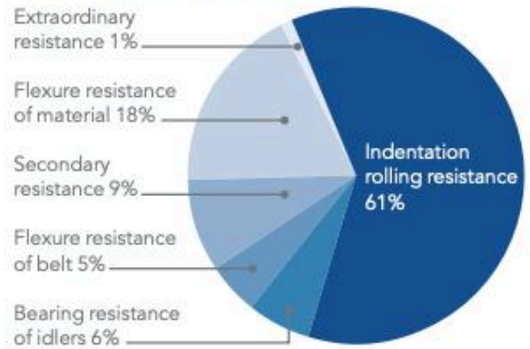
- Reduced energy consumption and thus lower operating costs
- Depending on the installation, reduction of belt strength is possible in the design phase, due to lower tension forces in the belt and thus lower belt costs

Benefits of new installations with TransEvo:

- Reduced energy costs and thus lower operating costs
- Reduction of conveyor drive nominal power due to lower indentation rolling resistance
- Lower belt forces requires a lower nominal strength and thus lighter belt constructions and thinner carcasses along with higher splice efficiency
- Thinner carcasses lead to reduced pulley diameters and therefore smaller gear boxes and drives
- As a result, TransEvo belting allows significant savings in both operational as well as capital cost of a conveyor belt installation

TransEvo covers focus on decreasing the indentation rolling resistance which comprises the biggest share of total energy consumption in a conveyor installation. The result is a reduction of total required energy and costs without compromising on the belt service life.

Typical split of running resistances on long horizontal conveyors of 1000 m and above



Source: Hintz, A.: Einfluss des Gurtaufbaus auf den Energieverbrauch von Gurtförderanlagen. Dissertation University of Hannover 1993

APPLICATIONS

- Overland conveyors
- Open-pit and underground mining
- Lignite and hard rock mining
- Cement industry
- Port operations

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Sempercord
- Autostable M
- Transpipe
- Ripstop M

TECHNICAL DETAILS

The TransEvo range has been extended from the initial application in open-pit lignite mines to applications with sharp, lumpy and abrasive materials. In addition to its power reducing ability, TransEvo-X matches the X-Cover of DIN 22131 (ISO 15236 "H" also possible)

ENERGY-SAVING EXAMPLE

Conveyor data:

Capacity:	25,000 t/h
Length:	1,205 m (horizontal)
Conveying speed:	6.0 m/s
Work time:	24 h at 350 days

Standard-X cover:

Conveyor belt:	2250 ST 3150 14T+7 X
Power required:	~1,250 kW

TransEvo-X cover:

Conveyor belt:	2250 ST 3150 14T+7 TransEvo-X
Power required:	~1,020 kW

- Energy savings: 1.9 million kWh per year
- Cost savings: EUR 170,000 per year*

DATA
Mechanical characteristics of TransEvo covers

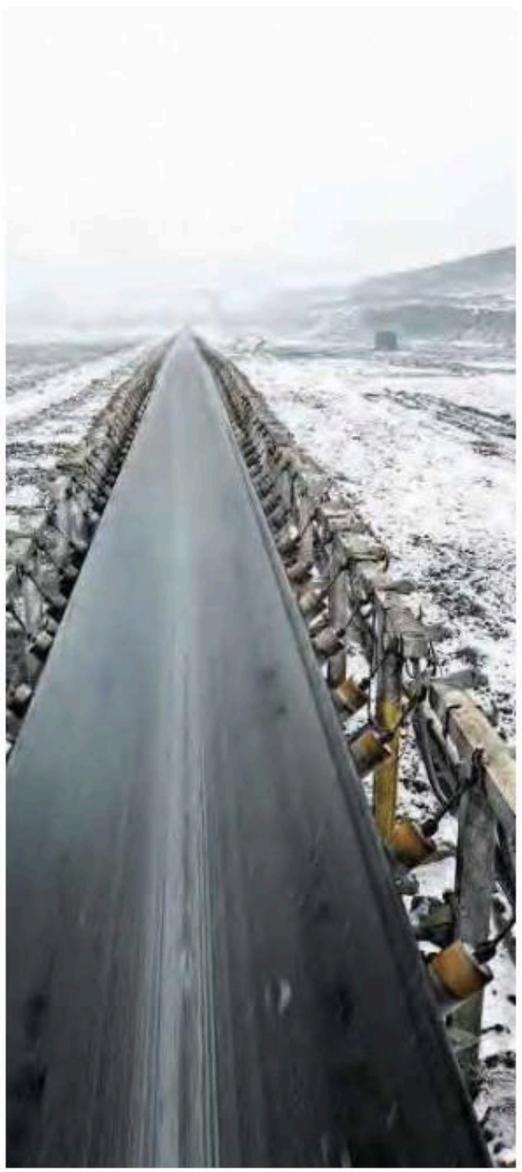
Cover Grades	Energy-saving	Impact resistance	Abrasion resistance	Underground usage	Applicable for	Alternative to standard grades
TransEvo Ultra	++++	+++	+++	-	Normal abrasion purposes. Highest energy savings among TransEvo family	D, Y, L ...
TransEvo-P	++++	+++	+++	-	Pipe applications. Normal abrasion purposes	Y
TransEvo-K-P	+++	+++	+++	-	Pipe applications. Flame retardant with cover (ISO 340 and EN 12882)	K
TransEvo-K	+++	+++	++	-	Flame retardant with cover (ISO 340 and EN 12882)	K
TransEvo-R	+++	++++	+++	-	Tough applications with cutting resistance and low abrasion requirements	X, W, ...
TransEvo-D60	+++	+++	++++	-	Highly abrasive conditions	D60

* Taking into account an energy price of EUR 0.08602 per kWh. Price for one kWh in December 2014 for Poland. http://de.statista.com/statistik/daten/studie/13020/umfrage/strompreise-in-ausgewaehlten-laendern/

TRANSCOLD™

MINING · HEAVY INDUSTRY · GENERAL INDUSTRY

The cover grade beating the cold to ensure belt flexibility even at the lowest temperatures down to -50 °C.



In some regions, conveyor belts are exposed to extremely large temperature ranges. The belt structure can get brittle and be subject to cracks at temperatures below -30 °C.

Transcold covers have been especially designed by our engineers to keep their flexibility until -50 °C, enabling a maximum belt lifetime under such harsh climate conditions.

APPLICATIONS

- Open-pit mining
- Lignite and hard rock mining
- Aggregates
- Overland conveyors
- Mineral processing plants
- Port operations
- Power and heating plants

AVAILABLE FOR THE FOLLOWING BELT TYPES

- Multitrans
- Sempercord
- Metalcord
- Metaltrans
- Autostable
- Ripstop

TECHNICAL DETAILS

Sempertrans has designed a full range of Transcold covers to match the distinct needs of our customers under the most extreme environmental conditions.

The main features of Transcold covers are:

- Exceptional cold resistance
- High elasticity kept at low temperature
- Excellent shock resistance
- All properties maintained down to -50 °C as the basis for efficient performance
- Suitable for conveying various types of materials under extreme temperatures
- Available in an oil resistant version
- Available in a special anti-abrasive version

DATA
Mechanical characteristics of Transcold covers

Cover grades		Resistance to very low temperatures	Tensile strength	Elongation at break	Abrasion resistance	Flame retardant according to DIN EN ISO 340
R	Anti-abrasive cover with excellent mechanical properties and resistance to extremely low temperatures down to -50 °C	+++	+	+	++	-
GMR	Oil resistant, anti-static and low temperature resistant down to -45 °C	++	+	+	++	-

4

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

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GENERAL SOLUTIONS
ENGINEERED SOLUTIONS
SEMPERTRANS COVERS
TECHNICAL SPECIFICATIONS

COVER GRADES

	Cover grade	Main relevant standard (other standards may apply)	Characteristics	Main applications	Temperature min	Maximum permanent surface Temperature	Temperature short time peak
Transudra (Anti-abrasive)	D50	Exceeding Standards	Excellent abrasion resistance, very good cut and gouge resistance	Very high abrasive material with sharp edges e.g. ore and hard rock mining	-35°C	60°C	80°C
	D30	Exceeding Standards	Excellent abrasion resistance, good cut and gouge resistance	Absolute high abrasive material with small lump sizes e.g. ore processing	-35°C	60°C	80°C
	Sempertrans IronShield	Exceeding Standards	Unparalleled abrasion resistance for maximum performance	Redefine durability and efficiency in handling abrasive materials such as iron ore, aggregates, and minerals.	-35°C	60°C	80°C
	D (ISO)	EN ISO 15236 / ISO 14890	High wear resistance for large, sharp materials	Heavy duty rock transport with large sharp lumps	30°C	60°C	80°C
	W	DIN 22131 / DIN 22102	Very good abrasion resistance, good cut and gouge resistance	Very abrasive material with small lump sizes e.g. ore preparation	-35°C	60°C	80°C
	Y	DIN 22131 / DIN 22102	Standardised cover, good abrasion resistance	Abrasive material with small lump sizes e.g. ore preparation	-35°C	60°C	80°C
	YW	Exceeding Standards	Standardised cover with improved abrasion resistance	Abrasive material with small lump sizes e.g. ore preparation	-35°C	60°C	80°C
	RMA-I	CEMA	Standardised cover, good abrasion and wear resistance	Standard application e.g. broken gravel	-35°C	60°C	80°C
	RMA-II	CEMA	Standardised cover for standard applications	Standard application sand and gravel	-35°C	60°C	80°C
	N17	IS 1891	Basic wear resistance for general use	Sand, gravel, soft or rounded material	-25°C	60°C	80°C
	L	EN ISO 15236 / ISO 14890	Good wear resistance for abrasive and medium lump sizes	Ore prep, sharp abrasives with less impact	-35°C	60°C	80°C
TransTough (Cut & Gouge)	X+	Exceeding Standards	Good cut and gouge resistance, for sharp and heavy impact conditions	Large sharp-edged lumps, high impact (e.g. hard rock mining)	-35°C	60°C	80°C
	UCG	Exceeding Standards	Ultra cut and gouge resistance, built for extreme conditions	Extreme impact zones, large and sharp lump material	-35°C	60°C	80°C
	XCG-M	Exceeding Standards	Extra cut and gouge resistance, with improved abrasion protection	Crushers, rock drop zones, very sharp and aggressive material handling	-35°C	60°C	80°C
	H	EN ISO 15236 / ISO 14890	Cut and gouge resistant, standardized performance	Sharp-edged ore handling, general impact	-35°C	60°C	80°C
	X	DIN 22131 / DIN 22102	Cut and gouge resistant under standard conditions	Sharp ore or gravel processing	-35°C	60°C	80°C
	M24	IS 1891	Good cut and gouge resistance with abrasion protection	Sharp-edged ore prep and loadout	30°C	60°C	80°C
	AS-M	AS 1332 / AS 1333	Standardised cover, cut and gouge resistant, abrasion resistant	Abrasive material with sharp edges e.g. ore preparation	-35°C	60°C	80°C
CleanShield (non-stick)	CleanShield	Exceeding stadard	Special non-stick cover compound designed to minimize material build-up	Copper leaching, high-moisture and sticky material transport in mining	-25°C	60°C	80°C

Transflam (flame retardant)	K	DIN 22131 / EN ISO 15236 / ISO 340	Standardised cover, flame retardant	Standard application e.g. conveying coal on the surface	-30°C	60°C	80°C
	K+	Exceeding Standards	Flame retardant, improved abrasion resistance	Standard application e.g. conveying hard coal on the surface	-30°C	60°C	80°C
	S	DIN 22102 / ISO 340	Standardised cover, flame retardant	Standard application e.g. conveying coal on the surface, with or without cover	-30°C	60°C	80°C
	T	EN 14973	Standardised cover, flame retardant	Tunnelling	-25°C	60°C	80°C
	TG(V)	EN 14973 / EN 12882	Standardised cover, flame retardant	Underground mining	-25°C	60°C	80°C
	FRAS-S	AS 4606	Standardised cover, flame retardant	Underground mining	-25°C	60°C	80°C
	FR	IS 1891	Standardised cover, flame retardant	Standard application e.g. conveying coal on the surface	-15°C	60°C	80°C
Transtherm (heat resistant)	CW	ISO 284 / ISO 340	Flame retardant, heat resistant, good abrasion resistance	Coke transport	-30°C	110°C	120°C
	TEA	Exceeding Standards	Heat resistant, good abrasion resistance	Transport of hot and abrasive material	-35°C	120°C	160°C
	TEB	Exceeding Standards	Heat resistant	Transport of hot material	-35°C	150°C	250°C
	TEC	Exceeding Standards	Heat resistant, good abrasion resistance	Transport of hot and abrasive material	-40°C	200°C	400°C
Transoil (oil and grease resistant)	G	Exceeding Standards	Oil resistant, good abrasion resistance	Transport of abrasive material with high percentage of mineral oil and standard hydrocarbons	-15°C	60°C	80°C
	GM	Exceeding Standards	Oil resistant	Transport of material with vegetable and animal oils and oleaginous products e.g. recycling	-15°C	60°C	80°C
	GMK	ISO 284 / ISO 340	Oil resistant, flame retardant	Transport of material with vegetable and animal oils and oleaginous products	-15°C	100°C	110°C
	GMS and GMSG	ISO 284 / ISO 340	Oil resistant, flame retardant	resistance to vegetable and animal oils and to oleaginous products, with or without cover	-15°C	100°C	110°C
	GK	ISO 284 / ISO 340	Oil resistant, flame retardant	Transport of abrasive material with high percentage of mineral oil and standard hydrocarbons	-15°C	100°C	110°C
	GS	ISO 284 / ISO 340	Oil resistant, flame retardant	Transport of abrasive material with high percentage of mineral oil and standard hydrocarbons	-15°C	100°C	110°C
	OR	Exceeding Standards	Oil resistant	Transport of material with high percentage of mineral oil and standard hydrocarbons	-15°C	60°C	80°C
TransEvo (energy saving)	TransEvo-Ultra	Exceeding Standards	Excellent low rolling resistance	Conveyor lengths > 1000 m e.g open pit mining	-35°C	60°C	80°C
	TransEvo-X	DIN 22131 / DIN 22102 SANS M	Low rolling resistance, good abrasion resistance, excellent cut and gouge resistance	Conveyor lengths > 1000 m e.g. hard rock mining	-35°C	60°C	80°C
	TransEvo-D50	Exceeding Standards	Low rolling resistance, excellent abrasion resistance, very good cut and gouge resistance	Conveyor lengths > 1000 m, very high abrasive material with sharp edges e.g. ore mining	-35°C	60°C	80°C
	TransEvo-K	ISO 284 / ISO 340	Low rolling resistance, flame retardant	Conveyor lengths > 1000 m e.g. power plants	-25°C	60°C	80°C
Transcold (cold resistant)	R	Exceeding Standards	Cold resistant, very good abrasion resistance	Cold environmental conditions	-50°C	60°C	80°C
	GMR	Exceeding Standards	Cold resistant, oil resistant	Transport of material with vegetable and animal oils and oleaginous products in cold environmental conditions	-45°C	80°C	100°C

MINIMUM DIAMETER OF PULLEYS

The minimum diameters of the pulleys of belt conveyors are determined by taking into account the construction of the belt, its weight and the type of splicing.

Three types of pulleys are distinguished:

Pulley Group A: Drive pulleys and other pulleys located in the area of highest tension of the belt.

Pulley Group B: Tail or tension pulleys and other pulleys located in the area of lowest tension of the belt.

Pulley Group C: Snub or bend pulleys which do not change the direction of the belt by more than 30°. The minimum diameter of a pulley also varies according to the tension in the belt.

For belts not indicated in this table, please consult our Global Application Engineering team.

Multitrans PP Construction	Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 8 - 10)								
	61% - 100 %			30 % - 60 %			< 30%		
	Pulley Group			Pulley Group			Pulley Group		
	A	B	C	A	B	C	A	B	C
630/3	400	315	250	315	250	200	250	250	200
800/3	500	400	315	400	315	250	315	315	250
800/4	630	500	400	500	400	315	400	400	315
1000/3	500	400	315	400	315	250	315	315	250
1000/4	630	500	400	500	400	315	400	400	315
1000/5	800	630	500	630	500	400	500	500	400
1250/3	500	400	315	400	315	250	315	315	250
1250/4	800	630	500	630	500	400	500	500	400
1250/5	800	630	500	630	500	400	500	500	400
1600/4	800	630	500	630	500	400	500	500	400
1600/5	1000	800	630	800	630	500	630	630	500
2000/4	1000	800	630	800	630	500	630	630	500
2000/5	1000	800	630	800	630	500	630	630	500
2500/4	1000	800	630	800	630	500	630	630	500
2500/5	1250	1000	800	1000	800	630	800	800	630
3150/5	1250	1000	800	1000	800	630	800	800	630

- For standard belts with Transdura covers.
- Smaller pulley diameters available on special request.
- Special belts may require other pulley diameters, please contact us.

Multitrans Multitrans PP Multitrans HD	Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 8 - 10)								
	61% - 100 %			30 % - 60 %			< 30%		
	Pulley Group			Pulley Group			Pulley Group		
	A	B	C	A	B	C	A	B	C
250/2	250	200	160	200	160	125	160	160	125
315/2	315	250	200	250	200	160	200	200	160
400/3	315	250	200	250	200	160	200	200	160
500/3	400	315	250	315	250	200	250	250	200
630/3	500	400	315	400	315	250	315	315	250
630/4	630	500	400	500	400	315	400	400	315
800/3	500	400	315	400	315	250	315	315	250
800/4	630	500	400	500	400	315	400	400	315
800/5	800	630	500	630	500	400	500	500	400
1000/3	630	500	400	500	400	315	400	400	315
1000/4	800	630	500	630	500	400	500	500	400
1000/5	800	630	500	630	500	400	500	500	400
1250/3	800	630	500	630	500	400	500	500	400

Multitrans Multitrans N Multitrans HD Polyester / Polyamide		Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 8 - 10)								
		61% - 100 %			30 % - 60 %			< 30%		
		Pulley Group			Pulley Group			Pulley Group		
		A	B	C	A	B	C	A	B	C
EP	1250/4	800	630	500	630	500	400	500	500	400
EP	1250/5	1000	800	630	800	630	500	630	630	500
EP	1600/4	1000	800	630	800	630	500	630	630	500
EP	1600/5	1000	800	630	800	630	500	630	630	500
EP	2000/4	1250	1000	800	1000	800	630	800	800	630
EP	2000/5	1250	1000	800	1000	800	630	800	800	630
EP	2500/4	1250	1000	800	1000	800	630	800	800	630
EP	2500/5	1400	1250	1000	1250	1000	800	1000	1000	800
EP	3150/5	1600	1400	1250	1400	1250	1000	1250	1250	1000

- For standard belts with Transdura covers.
- Smaller pulley diameters available on special request.
- Special belts may require other pulley diameters, please contact us.

Metalcord or Metaltrans with M-Cords		Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 8 - 10)								
		61% - 100 %			30 % - 60 %			< 30%		
		Pulley Group			Pulley Group			Pulley Group		
		A	B	C	A	B	C	A	B	C
MCM / MTM	500	400	315	250	315	250	200	250	250	200
MCM / MTM	630	400	315	250	315	250	200	250	250	200
MCM / MTM	800	500	400	315	400	315	250	315	315	250
MCM / MTM	1000	500	400	315	400	315	250	315	315	250
MCM / MTM	1250	630	500	400	500	400	315	400	400	315
MCM / MTM	1400	630	500	400	500	400	315	400	400	315
MCM / MTM	1600	630	500	400	500	400	315	400	400	315
MCM / MTM	1800	800	630	500	630	500	400	500	500	400
MCM / MTM	2000	800	630	500	630	500	400	500	500	400

- For standard belts with Transdura covers.
- Smaller pulley diameters available on special request.
- Special belts may require other pulley diameters, please contact us.

Metalcord or Metaltrans with E-Cords		Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 8 - 10)								
		61% - 100 %			30 % - 60 %			< 30%		
		Pulley Group			Pulley Group			Pulley Group		
		A	B	C	A	B	C	A	B	C
MCE / MTE	800	630	500	400	500	400	315	400	400	315
MCE / MTE	1000	630	500	400	500	400	315	400	400	315
MCE / MTE	1250	800	630	500	630	500	400	500	500	400
MCE / MTE	1400	800	630	500	630	500	400	500	500	400
MCE / MTE	1600	800	630	500	630	500	400	500	500	400
MCE / MTE	1800	800	630	500	630	500	400	500	500	400
MCE / MTE	2000	800	630	500	630	500	400	500	500	400
MCE / MTE	2250	800	630	500	630	500	400	500	500	400
MCE / MTE	2500	1000	800	630	800	630	500	630	630	500
MCE / MTE	2800	1000	800	630	800	630	500	630	630	500
MCE / MTE	3150	1250	1000	800	1000	800	630	800	800	630
MCE / MTE	3500	1250	1000	800	1000	800	630	800	800	630

- For standard belts with Transdura covers.
- Smaller pulley diameters available on special request.
- Special belts may require other pulley diameters, please contact us.

Sempercord (DIN-Construction)		Recommended pulley diameter in mm, related to utilisation in % of belt strength (safety factor 6,7 - 8)								
		61% - 100 %			30 % - 60 %			< 30%		
		Pulley Group			Pulley Group			Pulley Group		
		A	B	C	A	B	C	A	B	C
ST	630	500	400	315	400	315	250	315	315	250
ST	800	630	500	400	500	400	315	400	400	315
ST	1000	630	500	400	500	400	315	400	400	315
ST	1250	800	630	500	630	500	400	500	500	400
ST	1600	800	630	500	630	500	400	500	500	400
ST	2000	800	630	500	630	500	400	500	500	400
ST	2500	1000	800	630	800	630	500	630	630	500
ST	3150	1250	1000	800	1000	800	630	800	800	630
ST	3500	1250	1000	800	1000	800	630	800	800	630
ST	4000	1400	1250	1000	1250	1000	800	1000	1000	800
ST	4500	1400	1250	1000	1250	1000	800	1000	1000	800
ST	5000	1600	1400	1250	1400	1250	1000	1250	1250	1000
ST	5400	1800	1600	1400	1600	1400	1250	1400	1400	1250

- For standard belts with Transdura covers.
- Smaller pulley diameters available on special request.
- Special belts may require other pulley diameters, please contact us.

TENSION TRAVEL NECESSARY FOR CONVEYOR BELTS

The adjustment of the tension travel depends on:

- The centre distance of the conveyor and its working tension
- The conveyor starting and stopping system
- The position of the tension system
- The carcass of the belt

In certain cases it is possible to reduce the tension travel by complying with certain procedures:

- Either during manufacturing
- Or during placing of the belt in endless configuration on the operating site.

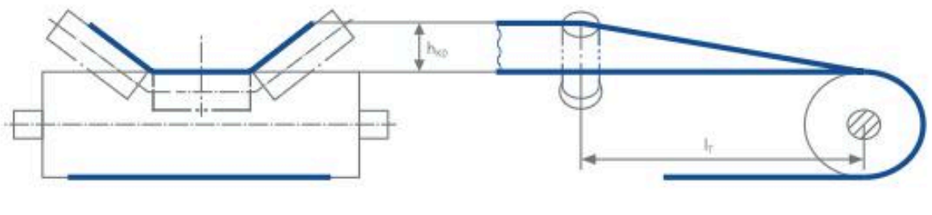
For steel cord belts the elongation consists of approximately 20% permanent elongation and 80% elastic elongation. Tension travel to be provided according to the conveyor belt.

On conveyors with small centre distances, it is necessary to allow a minimum tension travel in order to be able to place the belt in endless configuration.

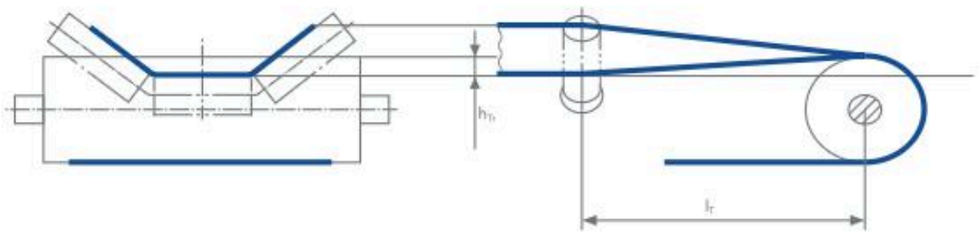
TROUGH TRANSITION LENGTH

The distance l_T between the first full trough station and the drive pulley or the tail pulley must be adjusted to avoid an excess tension of the edges in the transition area or compression of the central part if the tension is weak. There are two trough transition length possibilities depending if the pulley is elevated or not.

1. No pulley elevation: Pulley surface on the same height as the centre idler surface.



2. With pulley elevation h_{Tr}: Pulley surface higher than the surface of the centre idler (example h_{Tr} 1/3rd of h_{KO}).



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Sempercord / Metaltrans E / Metalcord E

Troughing Angle	Minimum Transition Length	
	Pulley Elevation	
	$h_{Tr} = 0$	$h_{Tr} = 1/3\ h_{KO}$
20°	1.5 x B	1.0 x B
25°	1.8 x B	1.3 x B
30°	2.2 x B	1.5 x B
35°	2.5 x B	1.8 x B
45°	3.0 x B	2.3 x B

Metaltrans M / Metalcord M

Troughing Angle	Minimum Transition Length	
	Pulley Elevation	
	$h_{Tr} = 0$	$h_{Tr} = 1/3\ h_{KO}$
20°	1.3 x B	0.9 x B
25°	1.6 x B	1.2 x B
30°	1.9 x B	1.3 x B
35°	2.2 x B	1.6 x B
45°	2.6 x B	2.0 x B

Multitrans (EP Carcass)

Troughing Angle	Minimum Transition Length	
	Pulley Elevation	
	$h_{Tr} = 0$	$h_{Tr} = 1/3\ h_{KO}$
20°	0.9 x B	0.7 x B
25°	1.1 x B	0.8 x B
30°	1.3 x B	0.9 x B
35°	1.5 x B	1.0 x B
45°	1.9 x B	1.3 x B

Contact us if shorter transition lengths are required.

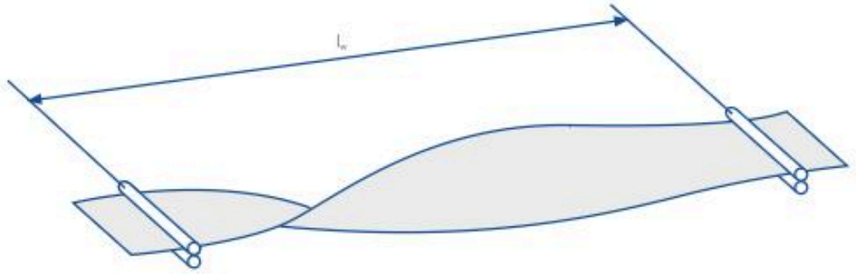
TURNOVER

For some conveying systems it is necessary to turn the belt in order to have the top cover up also in the return strand. Certain minimum lengths for a belt turnover must be kept as otherwise this procedure can lead to increased tensions in the edges and/or compression in the belt centre. The following values are to be seen as guideline, but can vary for specific applications.

	Type of Turnover	Maximum belt width in mm	Guiding values for Minimum Length of Belt Turning (lw), related to belt width (B)			
			Multitrans	Metalcord M Metaltrans M	Metalcord E Metaltrans E	Sempercord
1	free	1200	10.0 x B	-	-	-
2	guided	1600	12.5 x B	16.0 x B	20.0 x B	22.0 x B
3	supported	2400	10.0 x B	13.0 x B	15.0 x B	15.0 x B

Contact us if you require different lengths or belt dimensions.

1.



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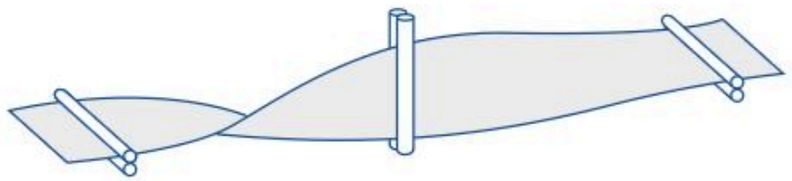

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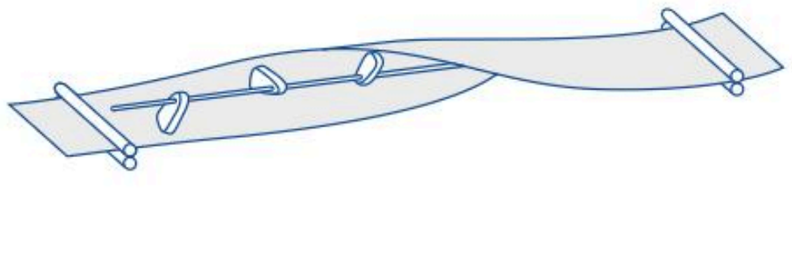

FIELD SERVICE

After the product has been manufactured and shipped there will often be a need for Field Service support. The Sempertrans Field Service team is able to assist as and where our customers require, be it supervision of local service partners or total project management. All we have learnt over the years is that after putting so much effort into making a high quality conveyor belt product, there has to be the same attention to detail to ensure that they are joined together correctly. Two essential aspects to achieving that are the use of correct Sempertrans materials and following Sempertrans splicing procedures.

Sempertrans Field Service cover the following:

- Splicing material (kits) production & delivery
- Support during belts installation
- Splice supervision (QA) of local service partners
- Belt repairs
- Theoretical and practical training in splicing
- Conveyor audit & inspections

SPLICING MATERIALS/KITS

For the hot vulcanization of any Sempertrans conveyor belt we recommend the use of our own approved Splicing Materials & Splicing Procedures.

Components of a splicing kit for steel cord belts (depending on the type of the conveyor belt):

1. Core (Bonder) Rubber in sheet form
2. Cover Rubber in sheet form
3. Intercord rubber in strips or noodles
4. Hot vulcanizing rubber solution
5. Release fabric and silicon paper
6. Textile or Steel reinforcement (Breaker) for belts with marking STB or STW

Components of a splicing kit for textile belts (depending on the type of the conveyor belt):

1. Skim (adhesive) rubber in sheet form – quantity, thickness and type depends on type of the belt;
2. Strip of cover rubber – quantity, thickness and type depends on type of the belt;
3. Hot vulcanizing Solution – quantity and type depends on type of the belt;

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INTERNATIONAL STANDARDS

Extract of common standards fulfiled by Sempertrans conveyor belts, many other standards available:

Standard	Description	Content
AS 1332	Australian Standard	Conveyor belts – textile reinforcements
AS 1333	Australian Standard	Conveyor belts – steel reinforcements
AS 4606	Australian Standard	Grade S flame retardant and anti-static requirement for conveyor belts and conveyor accessories
CEMA	Conveyor equipment manufacturers association	
DIN 22102	German Institution for Standardisation	Conveyor belts with textile plies
DIN 22131	German Institution for Standardisation	Steel cord conveyor belts
DIN 22721	German Institution for Standardisation	Conveyor belts of textile construction for underground
DIN 22110	German Institution for Standardisation	Conveyor belt splices
DIN 22123	German Institution for Standardisation	Indentation Rolling Resistance
EN 12882	European Standard	Conveyor belts for general purpose use – electrical and flammability safety requirements
EN 14973	European Standard	Conveyor belts for use in underground installations – electrical and flammability safety requirements
EN ISO 15236	European Standard	Steel cord conveyor belts
EN ISO 14890	European Standard	Textile conveyor belts
IS 1891	Indian Standard	Conveyor and elevator textile belts – specification
ISO 284	International Organisation for Standardisation	Conveyor belts – electrical conductivity – specification and test method
ISO 340	International Organisation for Standardisation	Conveyor belts – laboratory scale flammability characteristics – requirements and test method
MSHA	Mine safety and health organisation	
SANS 1366	South Africa National Standard	Steel cord conveyor belts
SANS 1173	South Africa National Standard	Textile Conveyor Belts

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