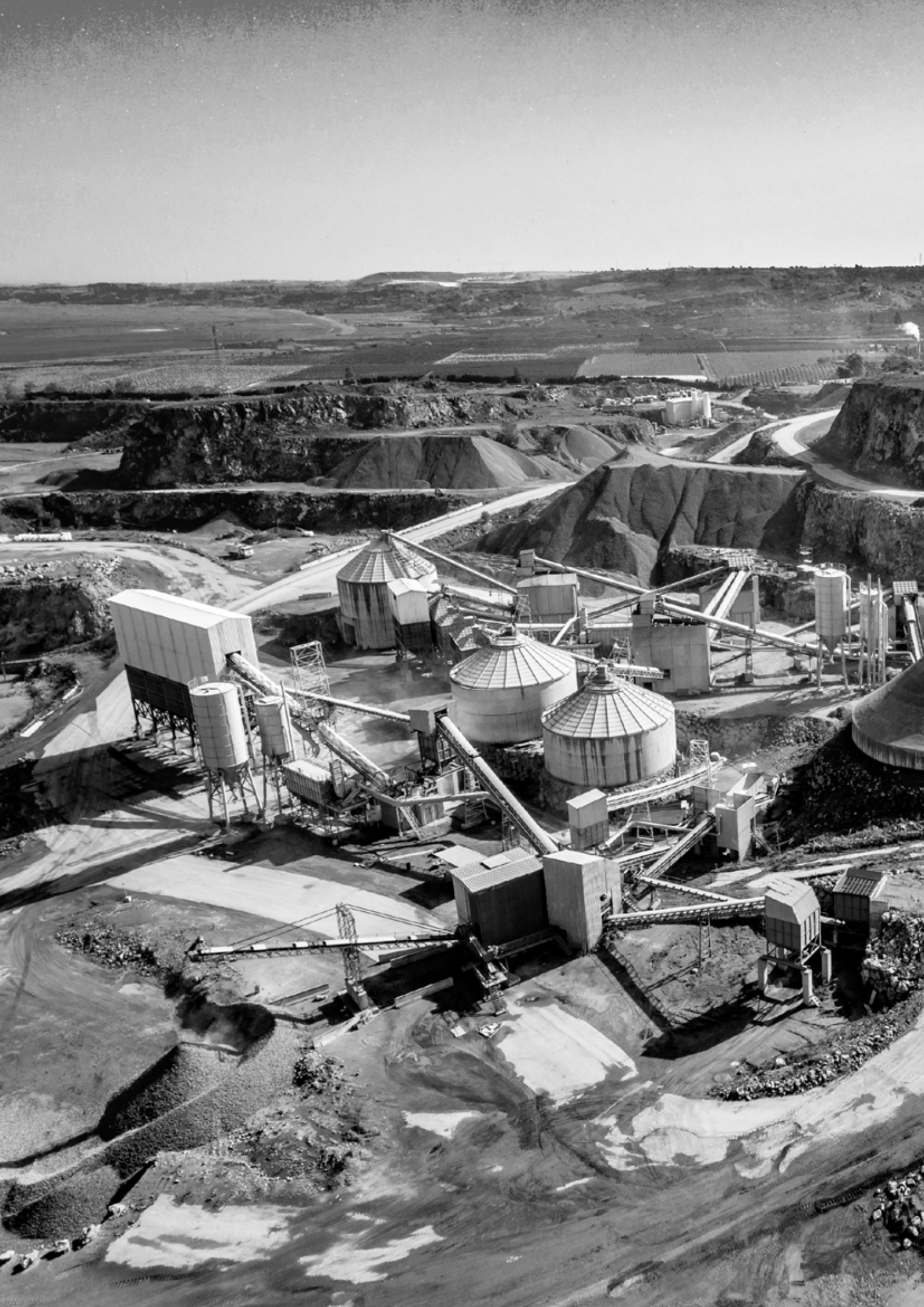




# Conveyor Belts





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**CONVEYBELTS** — A MICHELIN GROUP COMPANY

# Our history

**We are a manufacturer of top quality fabric-ply and steel cord conveyor belts.** Located In Sao Paulo, Brazil, our company, CVB Produtos Industriais Ltda, trades under the name “Conveybelts”. Following its acquisition from our previous owner, Teak Capital Corporation, we are now proud to be a Michelin Group company.

With operations based in Sao Paulo since 1942, Conveybelts has a long tradition of providing products with the highest levels of reliability to its customers in South America. For many years, it was the only conveyor belt producers in Brazil. Today, as part of the Michelin Group, CVB maintains its leadership in the quality and safety of fabric-ply and steel cord reinforced belts in Brazil.

## **THE MICHELIN GROUP**

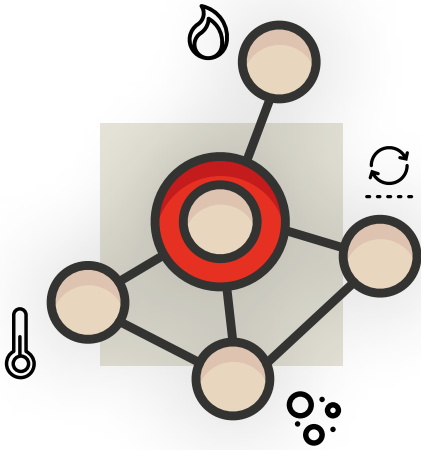


The Michelin Group is dedicated to developing the mobility of its customers in a sustainable way by investing and increasingly expanding its participation in the mining industry. With the acquisition of leading companies such as Conveybelts and Fenner, it has also become a leader in conveyor belts, aiming for a complete portfolio of rubber products and always bringing the most innovative, cost-effective and best performance to your conveyor system.





**TRADITION  
AND QUALITY  
YOU KNOW  
AND TRUST**



# ConVeyBelts Cover Compounds

## Abrasion

The wear (abrasion) resistance of the covers is the factor that has the greatest influence on the life of a belt. There are two sets of internationally recognized standards: the ISO 10247 (H, D and L) and DIN 2102 (Y, W and X).

The most accepted and best recognized are those of the DIN standard because they have been in force the longest. Generally speaking, DIN Y refers to “normal” service conditions, DIN W to more abrasive materials and DIN X to resistance to cutting, impact abrasion, and cracks resulting from large objects from heavy materials and sharp materials.

In addition to the five options listed in the quick reference guide, we also have covers from other lines that have excellent abrasion resistance. The FLAME-10 cover, for example. Besides having excellent fire resistant characteristics, it also has abrasion resistance values that meet the DIN X standard. In addition to its excellent resistance against tearing, cutting and impact, the CORT-20 cover also has the same first-class abrasion resistant properties.

### ABRASION COMPOUNDS

Our line of abrasion compounds was developed for applications where material friction causes excessive wear of the belt.

### A quick reference guide to abrasion resistant covers from CVB

Ideal for conveying ores and other abrasive materials, our range consists of the following cover compounds:

Name	Loss by abrasion
ABR-30	≤ 30 mm <sup>3</sup>
ABR-50	≤ 50 mm <sup>3</sup>
ABR-70	≤ 70 mm <sup>3</sup>
ABR-90	≤ 90 mm <sup>3</sup>
ABR-120	≤ 120 mm <sup>3</sup>

### DEGREE OF ABRASION

#### 1. Lightly Abrasive ◆

Lime, Charcoal, Cereals, Wood, Firewood, Talc.

#### 3. Very abrasive ◆◆

Bauxite, Gravel (sharp edges), Limestone, Clinker, Dolomite, Slag, Copper Ore Boulder (sharp-edged), Phosphate rock Sinter, Shale.

#### 2. Abrasive ◆◆

Sand, Borax, Coal, Grit, Cement, Gravel, Salt.

#### 4. Extremely abrasive ◆◆◆

Basalt, Glass shards, Cassiterite, Granite, Iron Ore, Manganese Ore, Crushed Stone, Quartz.

**IMPORTANT NOTE:** When analyzing the mechanical properties of rubber used in abrasion resistant covers, higher values assume better performance qualities, except in the case of the specific abrasion test, where higher values represent greater loss of rubber on the surface, and therefore lower abrasion resistance.



# Cut and impact

In some industries, the most frequent reason for the repair or replacement of a belt is cut, tear or impact damage rather than everyday wear and tear. Under more extreme conditions such as heavy, sharp objects falling from height onto the surface of the belt, it is essential to have an inner carcass that is specifically designed to dissipate impact energy and to offer a much higher level of resistance against trapped objects that can rip or tear a belt. It is also important to have rubber compounds that can protect the carcass as much as possible against impact and the propagation of rips and tears. For these types of conditions we recommend the CORT-10 and CORT-20 covers.

## CORT-10

This compound provides maximum protection on applications where materials are cutting and gouging the belt surface. It also has a great capacity to absorb impact from large sized, sharp rocks and aggregates.

## CORT-20

The CORT-20 cover has extremely good resistance to cuts and gouges combined with very good abrasion resistance (120 mm<sup>3</sup>)

# Compounds for Coal and Chemical Attack

## CARBON-10

Carbon-10 covers provide excellent resistance to the harmful chemicals in coal that extract the plasticizers from rubber and cause irreparable damage. This amazing cover compound also provides excellent resistance against abrasion and surface cuts resulting in an above-average, more cost-effective working lifetime. The most suitable applications are for belts conveying alumina up to 80°C and mineral coal impregnated with dust suppressant.



## **Fire (flame)**

Fire safety is an important and complex issue with different classifications and international standards for which different tests are used to measure performance. The basis of most of these tests involves exposing six individual samples of belt to a naked flame causing them to burn. The source of the flame is then removed and the combustion time (duration of flame) of the test piece is recorded. A current of air is then applied to the test piece for a specified time after the removal of the flame. The flame should not re-ignite.

The time it takes for the belt sample to self-extinguish after the flame has been removed is then measured. The duration of continued burning (visible flame) should be less than 15 seconds for each sample with a maximum cumulative duration of 45 seconds for each group of six tests. This means that the average allowable time per sample is 7.5 seconds. This factor is of paramount importance because it determines the distance that the fire can be effectively carried by a moving belt.

### **FLAME-10**

Designed for surface and underground mining systems (except coal), meeting ASTM D378 applications. It has good abrasion resistance (120 mm<sup>3</sup>).

### **FLAME-20**

Cover designed for surface and underground systems (except coal). Withstands materials with temperatures up to 100°C. Meets ASTM D378 standards.

## **Heat**

Of all the demands to which conveyor belts are subjected, high temperatures are usually the most damaging and unforgiving. When rubber is heated by the hot materials it is carrying, the ageing process is accelerated causing hardening and cracking.

The TEMP-175 cover was specially developed to withstand very high temperatures for a much longer time thereby ensuring optimum belt life.

**TEMP-175** — Temperatures at 175 °C





# Oil

Materials that contain oil and grease can have a very detrimental effect on the performance and operational life of a conveyor belt. This is because when oil penetrates rubber it causes it to soften, swell and deform, reducing its mechanical strength, ability to resist wear and producing steering and handling problems. Although there are no international standards for oil resistance, there are two recognised oil resistance test methods, both of which involve almost identical test procedures. The two test methods are ISO 1817 and the comparable, slightly less elaborate but very stringent American ASTM 'D' 1460.

Oil resistance can be divided into two classes – mineral oil and vegetable/animal oil. Despite their different characteristics, most manufacturers only work with one type of oil-resistant compound whereas we have developed two compounds, each designed to provide the best possible protection against the different needs.

## OIL-G *(in development)*

This cover is developed especially for the transport of grains where there is a presence of vegetable oils and dust suppressants.

## OIL-Q *(in development)*

This compound provides excellent resistance to the chemicals present in materials such as fertilizers.



# Low rolling resistance compound

**ENERGY-20** compound has the lowest rolling resistance of all available covers. The compound has reduced energy loss created by its ability to compress as it comes into contact with the conveyor rollers and drums. This feature, which produces saving in energy consumption is ideal for long-distance conveyors from 1000 meters in length.

Alternatively, our customers can choose to use the extra power available to increase the tonnage being carried with the same drive motor. This potential increase in productivity can be as high as 17%.

## ENERGY-20 *(in development)*

Lower application cost (up to 20% energy consumption reduction)

# Textile conveyor belts

The high quality of our products is based on many decades of experience in the most diverse and demanding applications around the world. We are able to use this knowledge and understanding to meet the needs of our customers.

## Fabric conveyor belt construction

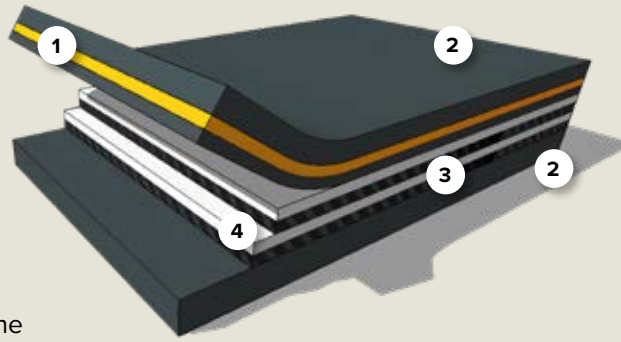
### 1. Shock Absorbers (textile or steel) and Wear Indicator.

Upon request

- ✓ Protection against cuts, tears and impacts
- ✓ Indicates belt life
- ✓ Prevents emergency changes

### 3. Bonding rubber

- ✓ Promotes adhesion between the covers and the fabric linings.
- ✓ Improve carcass flexibility.



### 2. Upper and lower covers

- ✓ Protects textile linings
- ✓ Wide range of compounds for any application

### 4. Textile linings

- ✓ Increase the strength of the belt.
- ✓ Available in several structures, adapting the tensions to the application.



Conveybelts textile belting is designed from the inside out to withstand the heaviest of treatment when transporting materials such as coal, aggregates, timber and ore. The special inner fabrics compressed between layers of rubber have excellent adhesion and strength. The top and bottom covers are engineered to provide maximum protection of the carcass.



— POLYESTER/NYLON

# EP Conveyor Belts



## CARCASS CONSTRUCTION

Our EP belts are made using hi-strength polyester/nylon fabric plies that have been created using the 3T process (Time, Tension and Temperature) which ensures that it can handle the most varied field applications.

## CONNECTION/BONDING RUBBER

For the best load-bearing results, the carcass is also produced using a suitably thick bonding rubber to optimize efficiency and longevity.

## RUBBER COVERS

The full range of cover compounds available for use on even the most diverse applications are detailed in this catalogue. The effectiveness of the covers in protecting the inner carcass is essential in order to achieve the ultimate performance and reliability.

## INTEGRATED BORDER

The borders of our EP belts are an integral part of their construction because they ensure that side pulling and wear is avoided.

— NYLON/NYLON *(in development)*

# NN Conveyor Belts



## LOAD CAPACITY

With their high tensile strength, nylon/nylon (NN) carcass belts are ideally suited for conveying over long distances and/or high elevations. NN belts use a high strength nylon fabric with an extra layer of rubber between the plies allowing them to support heavier than usual loads, even at large widths.

Having an NN construction also allows for a reduction in the number of plies (layers) which creates greater flexibility, reduced dynamic stress and consequently, greater durability and lower running costs.

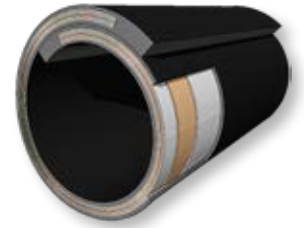
## RESISTANCE TO IMPACT, CUTS AND MOISTURE

Thanks to their nylon carcass, NN belts have excellent resistance to impact and damage caused by the penetration of hard, sharp material that becomes trapped between the belt and the drum. The all nylon carcass also has good resistance to moisture.

## HIGHER ADHESION WITH LESS WEIGHT

Due to the 3T process treatment (Time, Tension and Temperature), NN belts have high levels of adhesion between the plies and are therefore much less prone to delamination. Another advantage of having fewer layers is that the belts are lighter and therefore require less motor power.

Available also in **Tubular Belts** (p. 16)



## Markets:

- Mining
- Cement Plants
- Carbon Plants
- Quarries
- Thermoelectric Power Plants

## Carriers:

- Long-distance
- Primary
- Ship loaders
- Stacker/Reclaimer



<<<

Scan and download the detailed specifications



## Markets:

- Cement Plants
- Carbon Plants
- Quarries
- Thermoelectric Power Plants
- Steel Plants
- Ports

## Carriers:

- Long-distance
- Primary
- Ship loaders
- Forklifts
- General heavy duty applications
- Stockyard
- Reclaimers



<<<

Scan and download the detailed specifications



# Super Resistant Conveyor Belts



Our range of super-strength belts can withstand even the most aggressive and demanding treatment.



# UsFlex®

Fenner Licensed

On some applications, especially primary and secondary crushers, even the thickest, heaviest belts can be seriously damaged by heavy, sharp objects falling from height or becoming trapped. In extreme cases, conventional belts can be destroyed in a matter of months or even weeks. CVB's solution to this problem is UsFlex. Thanks to its unique 'straight warp' fabric design, UsFlex has up to five times the resistance to ripping and tearing compared to textile belts of a comparable tensile strength. UsFlex also has up to three times the resistance to impact than conventional textile belts. This unrivalled strength means that UsFlex provides a much longer working life, even in the most adverse conditions. Some of the most important advantages of UsFlex include:

- ✓ **Exceptional rip resistance.**
- ✓ **Outstanding impact resistance.**
- ✓ **Unrivalled tear strength.**

## APPLICATION AREAS

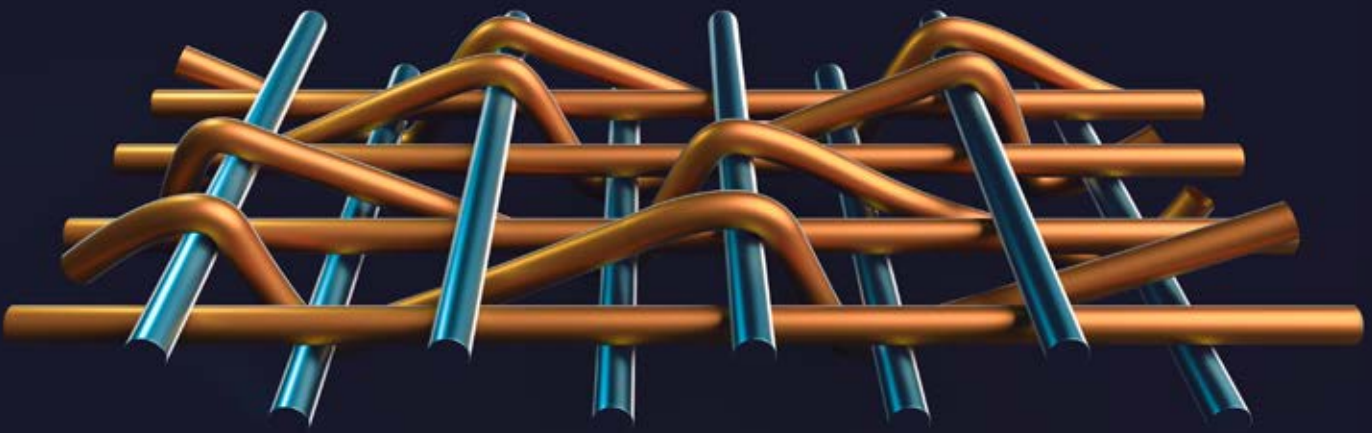
Suitable for use in all areas including mining, quarrying, wood, paper & pulp, recycling, road building, steel and bulk handling.

## AVAILABILITY

UsFlex belts can be supplied in all CVB compounds and is available with breaking strength values from 245 up to 1800 PIW and in widths from 762mm up to 2200mm.

## CARCASS CONSTRUCTION

The UsFlex carcass is based on the 'straight warp' principle and can be supplied in either single or dual ply construction. More information on UsFlex is available to download on our website.



Scan and download  
the detailed  
specifications



# Steelcord Conveyor Belts

Since the world's first steel-cord reinforced belt was introduced to the material handling industry in 1976, we have continuously advanced the technology in order to meet challenges of even the most demanding of applications. The aim of that continual development has always been to provide the lowest cost per ton of material transported. Steel Cord belts remain our global premium product and our experience means that we can guarantee superior design and maximum performance for our customers.

## “ST” CONVEYOR BELT CONSTRUCTION

### 1. Upper and Lower

- ✓ Covers Protect the steel cables
- ✓ Wide range of compounds for any application

### 4. Steel Cable

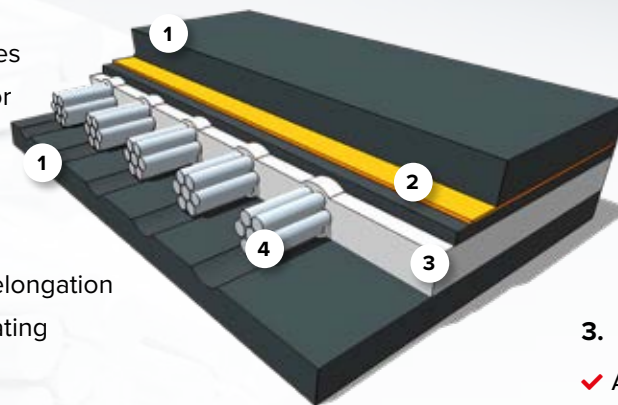
- ✓ Combines flexibility and low elongation
- ✓ Galvanized anti-corrosion coating

### 2. Shock Absorbers (textile or steel) and Wear Indicator

- ✓ Protection against cuts, tears and impacts
- ✓ Indicates belt life
- ✓ Prevents emergency changes

### 3. Bonding Rubber

- ✓ Aids cable adhesion
- ✓ Protects against corrosion
- ✓ Improved splicing efficiency



STEELCORD CONVEYOR BELTS



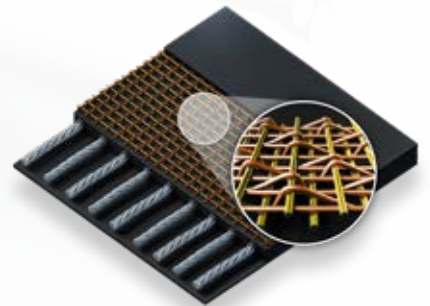
Scan and download  
the detailed  
specifications





The outstanding rip and tear resistance of UsFlex and combined with the strength of steel cord belt provides the longest belt life even under the most demanding conditions imaginable, guaranteed!

**Exceptional tear strength / Excellent tear resistance**



## Coverages

**Abrasion**

— ABR-30, ABR-50, ABR-70, ABR-90, ABR-120

**Impacts**

— CORT-10, CORT-20

**Fire**

— FLAME-10, FLAME-20

**Chemical attack**

— CARBON-10

**Low bearing**

— ENERGY-20

**Heat**

— TEMP-175



### Markets:

- Mining
- Cement plants
- Carbon plants
- Quarries
- Thermoelectric power plants
- Steel mills and ports

### Transporters:

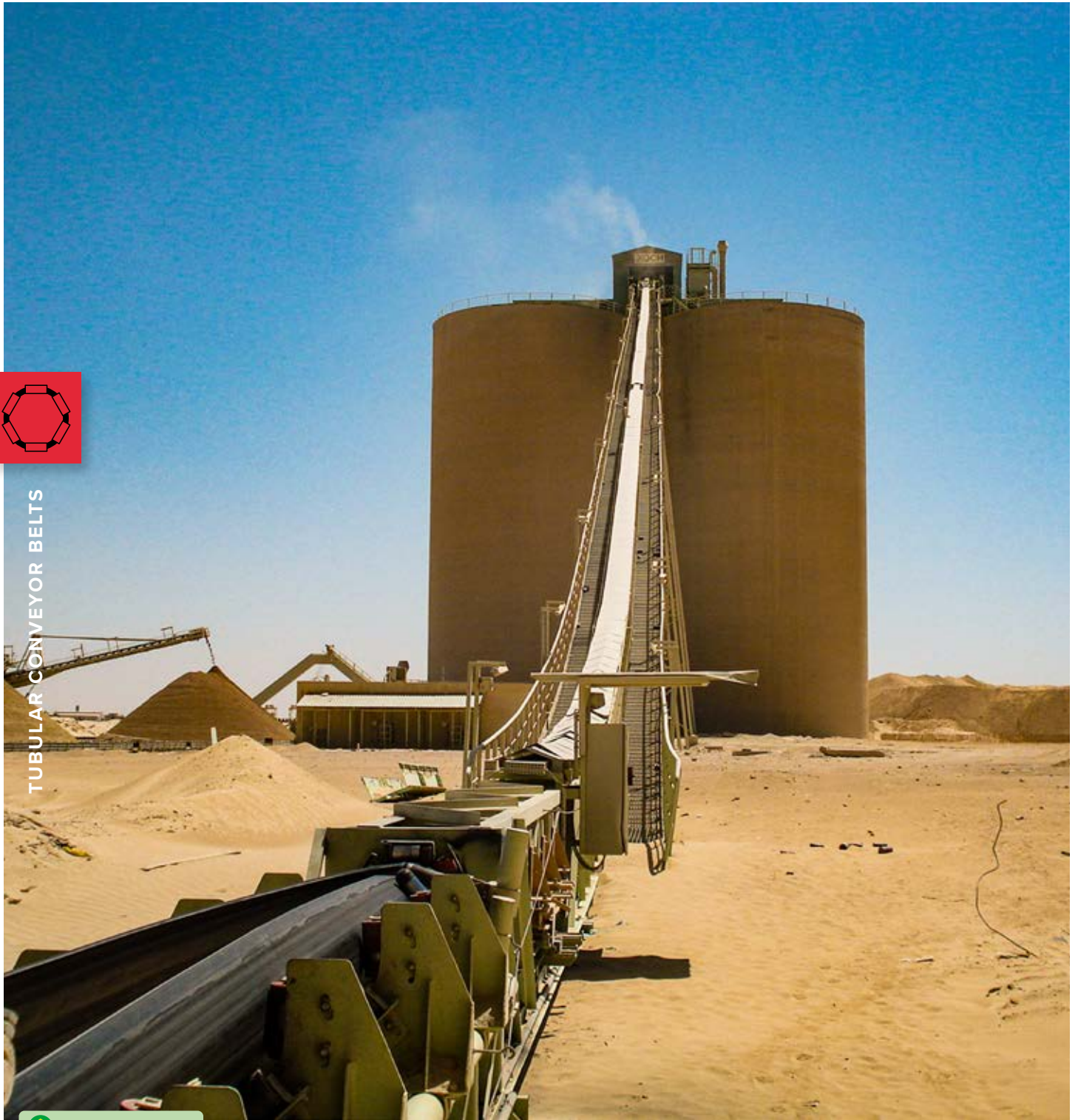
- Long distance
- Primary crushers
- Ship loaders
- General heavy-duty applications
- Stockyards
- Forklifts/Reclaimers

Also available in **tubular conveyor belts (p. 16)**





TUBULAR CONVEYOR BELTS



 Made in Brazil

# Tubular Conveyor Belts

**STEEL AND TEXTILE CABLE**

## Main applications:

- Copper
- Coal
- Rock
- Cement
- Paper and Cellulose
- Limestone
- Iron Ore
- Fertilizers
- Glass
- Lumber





Most tubular belt conveyors use technology that is more than 15 years old. This creates numerous conveying problems such as an opening of the seal overlay and even rotation of the seal. The reinforcement used in CVB tubular belts is unique and provides greater transverse rigidity, allowing greater resistance against collapse, optimum sealing when closed and a high level of resistance to rotation regardless of the operational contours of the conveyor system.

## Tubular Steel Conveyor Belt Construction

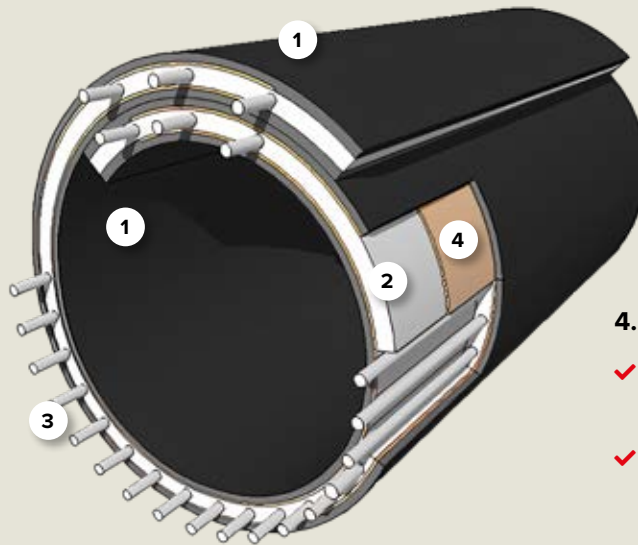
UPON REQUEST

### 1. Upper and Lower Covers

- ✓ Protect the steel cables.
- ✓ Wide range of compounds for any application.

### 3. Steel Cable

- ✓ Combines flexibility and low elongation.
- ✓ Galvanized coating against corrosion.



### 2. Bonding Rubber

- ✓ Promotes cable adhesion
- ✓ Protects against corrosion
- ✓ Improves splicing efficiency.

### 4. Shock Absorbing Fabrics

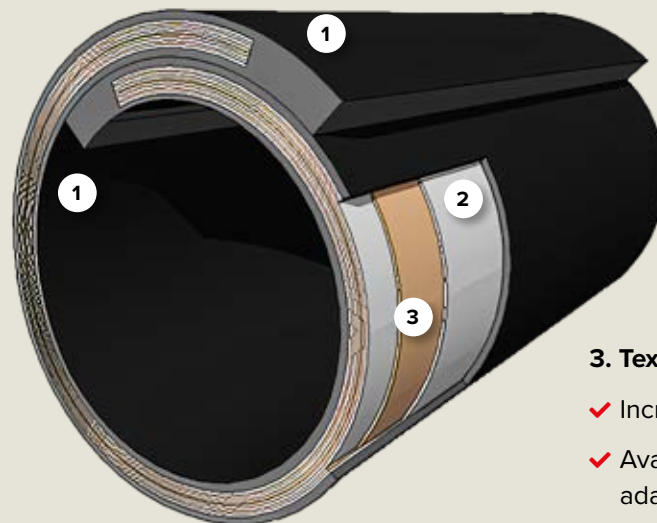
- ✓ **Top:** Protects the carcass and absorbs loading impact.
- ✓ **Bottom:** Protects the carcass and provides resistance against dynamic stress caused by the cyclic bending of the tube.

## Textile Tubular Belt Construction

UPON REQUEST

### 1. Upper and Lower Covers

- ✓ Protects the textile carcass
- ✓ Wide range of compounds for any application



### 2. Bonding Rubber

- ✓ Promotes adhesion to lining or fabrics
- ✓ Protects the textile carcass
- ✓ Improves splice efficiency

### 3. Textile linings

- ✓ Increased belt strength
- ✓ Available in several constructions, adapting the tensions to the application.

1. COVER COMPOUND PROPERTIES TABLE

	Compound	Carcass	Resistance to abrasion	Resistance to temperature	Chipping and cut resistance	Resistance to oil	Resistance to fire	Anti-static (ISO 284)	Shore A hardness
Abrasion	ABR-30	Textile and Steel Cable	"Ultimate (30 mm <sup>3</sup> )"	-50°C a 80°C	Good	No	No	Sim	54-64
	ABR-50	Textile and Steel Cable	"Superior (50 mm <sup>3</sup> )"	-50°C a 80°C	Very Good	No	No	Sim	54-64
	ABR-70	Textile and Steel Cable	"Superior (70 mm <sup>3</sup> )"	-50°C a 80°C	Excellent	No	No	Sim	55-65
	ABR-90	Textile and Steel Cable	"Excellent (90 mm <sup>3</sup> )"	-50°C a 80°C	Excellent	No	No	Sim	55-65
	ABR-120	Textile and Steel Cable	"Excellent (120 mm <sup>3</sup> )"	-50°C a 80°C	Excellent	No	No	Sim	54-64
Cut	CORT-10	Textile and Steel Cable	"Very Good (180 mm <sup>3</sup> )"	-50°C a 80°C	Ultimate	No	No	Sim	63-73
	CORT-20	Textile and Steel Cable	"Excellent (120 mm <sup>3</sup> )"	-50°C a 80°C	Superior	No	No	Sim	54-64
Flame/Fire	FLAME-10	Textile and Steel Cable	"Excellent (120 mm <sup>3</sup> )"	-40°C a 65°C	Very Good	No	ASTM D 378-13.2	Sim	53-63
	FLAME-20	Textile and Steel Cable	"Fair (210 mm <sup>3</sup> )"	-40°C a 100°C	Good	No	ASTM D 378-13.2	Sim	56-66
High temperature	TEMP-175	Textile and Steel Cable	"Very Good (150 mm <sup>3</sup> )"	-40°C a 175°C	Very Good	No	No	Sim	55-65
Oil	OIL-G	Textile	"Fair (250 mm <sup>3</sup> )"	-35°C a 65°C	Fair	Very Good	ASTM D 378-13.2	Sim	59-69
	OIL-Q	Textile	"Fair (250 mm <sup>3</sup> )"	-35°C a 65°C	Fair	Very Good	No	Sim	60-70
Special	CARBON-10	Textile and Steel Cable	"Excellent (125 mm <sup>3</sup> )"	-40°C a 100°C	Very Good	No	No	Sim	56-66
	ENERGY-20	Textile and Steel Cable	"Excellent (100 mm <sup>3</sup> )"	-50°C a 80°C	Excellent	No	No	Sim	63-73



2. COVER AND CARCASS COMPATIBILITY

✓ Compatible  
✗ Not compatible

Cover	Carcass	
	Textile	Steel cable
ABR-30	✓	✓
ABR-50	✓	✓
ABR-70	✓	✓
ABR-90	✓	✓
ABR-120	✓	✓
CORT-10	✓	✓
CORT-20	✓	✓
FLAME-10	✓	✓
FLAME-20	✓	✓
CARBON-10	✓	✓
ENERGY-20	✓	✓
TEMP-175	✓	✓
OIL-Q	✓	✗
OIL-G	✓	✗



# Lowest Cost per Material Ton Transported

## Splicing material

To make strong, reliable splices it is important to use only the best quality products available. Ideally, these materials should be supplied by the manufacturer of the belt so that they are compatible with the rubber used to make the belt. At Conveybelts, our splicing materials have the very best formulation for each type of compound and are guaranteed to provide the very best adhesion possible.

 Made in Brazil





**Conveybelts Produtos Industriais Ltda**

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