



SPECIALISTS IN  
CONVEYOR BELTS  
SINCE 1983



“flextrench” in movement

# Kauman across the globe



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CONVEYOR BELTS  
SINCE 1983

With a history stretching back over 75 years, Kauman, S.A.U. (España) has become a truly international company, present in more than 55 different countries. This is largely as a result of its policies relating to quality, service and innovation. The Kauman group still remains faithful to its institutional policies: quality, with customer satisfaction as its main goal; service, providing rapid, expert advice; and also customised solutions and innovation, striving to develop new, better products. In this manner Kauman has strengthened its position in the market of conveyor belts and similar products, becoming an outstanding brand and point of reference on an international level. In the Kauman group one of our objectives is an increased market share.



### **Kauman K Quality System (KQS)**

The KQS® system includes all of the technical procedures for products. From the design itself, with a series of extremely rigorous tests in our technical centres to product production and delivery, all of these processes form part of a demanding TOTAL QUALITY system. The system is unique amongst the most important world producers, and allows us to satisfy the needs of our customers.

The KQS system also includes a comprehensive after-sales service.

The Kauman group has all of the most important Quality and Environmental Management certificates and is compliant with the following standards:

- ISO 9001:2008 Quality Assurance System.
- ISO 14001:2004 - Environmental.
- LOM Certificate for Manufacturers of Conveyor Belts for Mining.

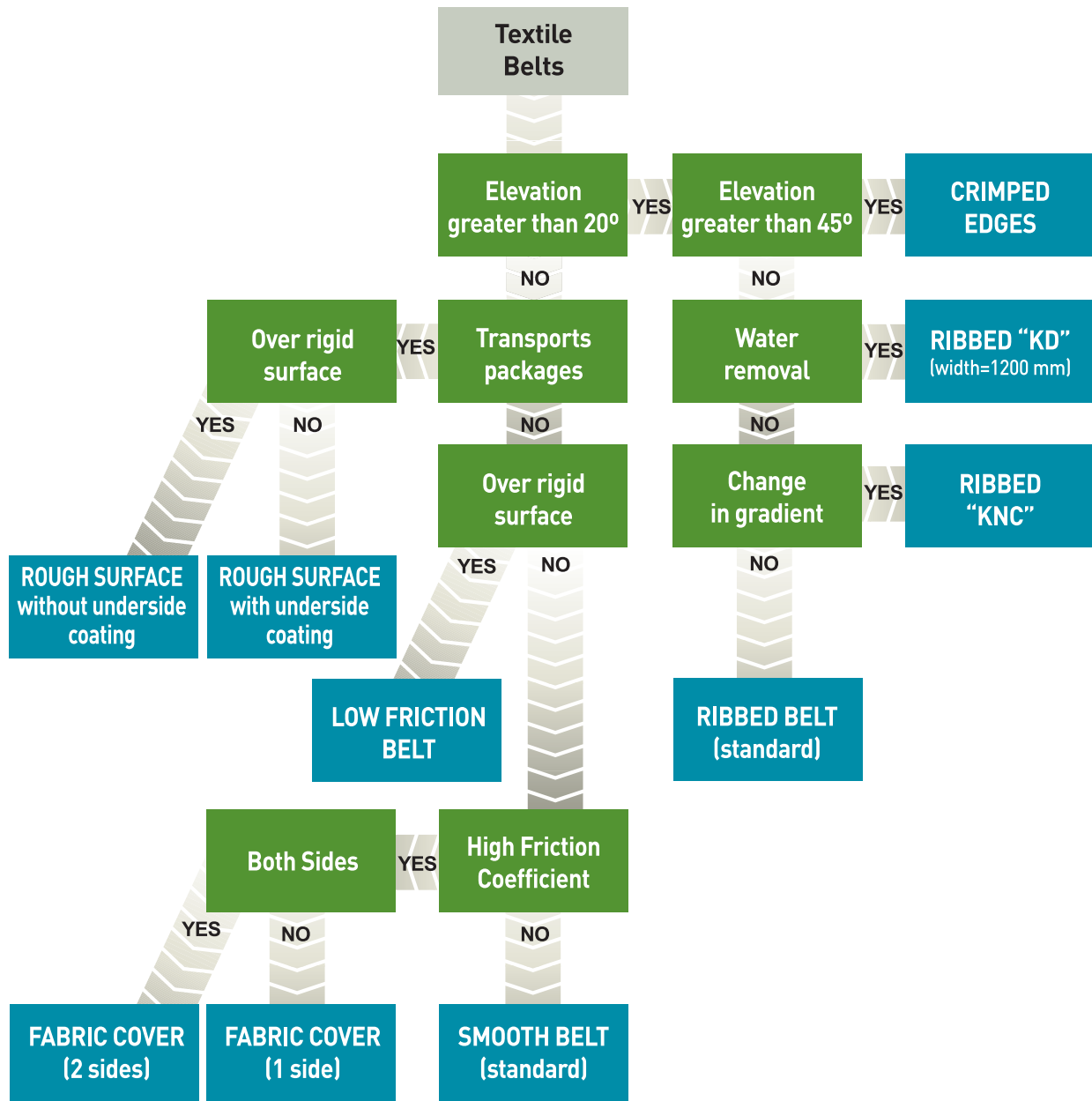
## Our products



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- These are the most commonly used belts. They consist of several layers of rubberised fabric, to ensure excellent adherence. These are separated by an intermediate layer of rubber to improve flexibility. These in turn are covered by a layer of rubber, of a thickness and quality appropriate for the type of function that the belt will have and the material that it will be used to transport.
- The edges may be covered with rubber or directly cut off in the case of fabrics which are not affected by humidity (as in the case of EP materials).
- EP fabrics are those which are most often employed when manufacturing conveyor belts. These are formed by Polyester (E) fibres along the length of the fabric (warp) and polyamide or nylon (P) fibres interwoven across the width of the fabric (weft). This type of fabric gives the conveyor belt high resistance to breaking or impact, elevated flexibility, and a reduced weight.
- Given that this type of fabric is not affected by humidity, these belts may be used with their edges cut off (the fabric is visible along the edges) for any type of use. This results in lower costs whilst still ensuring excellent operation.
- In some cases the weft may be reinforced, for example belts which have to be clipped together, bucket elevator belts, or any belt which requires increased resistance to longitudinal wear and tear for whatever reason. This reinforcement may be added to the fabric itself or by using an additional metallic or textile weave.
- If the conveyor belts require increased transversal rigidity, metallic or textile weaves may be incorporated, or fabrics with a monofilament polyester weft may be used.
- Belts may also be manufactured using other fabrics such as cotton (B), rayon (R), nylon-nylon (PP), etc.





These are the belts which, due to their versatility and economic price, are most often used. The possible variants, both in terms of the reinforced centres and the quality of the covering rubber mats, means that the belts can be adapted to practically any type of transportation use.

They may be manufactured in two variants:

### Molded edge belt

Rubber is used on the sides of the textile centre protecting the belt from potential chafing against the conveyor belt structure and from aggressive agents which may come into contact with the belt. Maximum width of manufacture: 2.200 mm.

### Cut edge belt

The belt is supplied to a maximum width of 2.200 mm and then may be cut to the required width either by the user or by Kauman on request from the customer. The cut belt is still fully guaranteed for operational use.

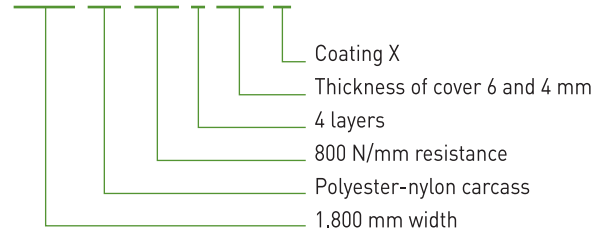
The use of smooth conveyor belts may be restricted depending on the angle of inclination of the conveyor belt (the limit being between 18 and 20°). When the angle is greater than this we recommend the use of belts which incorporate some kind of transversal support for the material (ribbed belts, with cleats, etc).

The lengths of the belt rolls are only restricted by their dimensions for transporting and the user's ability to handle the rolls.

### Designation names of textile belts

The complete designation of textile belts includes the definition of the belt width in mm, the type of carcass, thickness for cover, and a letter which identifies the type of coating. For example:

#### 1800 EP 800/4 6+4 X





## N14 Standard Model Chevron Belt

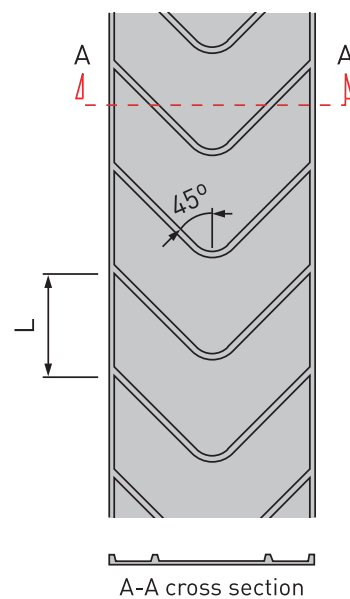
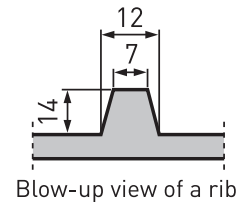
To transport materials over moderate gradients, which depending on the type of material in question, the material grading, and above all the shape of the material, may reach an angle of up to  $45^\circ$  in inclination, we recommend the use of the N14 Standard Model Chevron Belt, which has 14 mm chevron. This type of belt, with a specific centre and coating for each type of use and material to be transported, is the most commonly used belt. It is the first in the ribbed series and has a proven track record for the general inclined transportation of materials.

The ribs on the belt are both longitudinal and transversal. The transversal ribs are "V" shaped, and cover the entire width of the belt.

The belts are normally manufactured in rolls of 150 meters in length. The standard widths are:

Belt Width (mm)	L (mm)
400	200
500	200
600	250
650	200
800	200
1.000	200
1.200	200
1.400	200

Intermediate widths can be manufactured at 50 mm intervals. Often belts are manufactured without an underside coating for systems which do not use rollers – low friction belts.





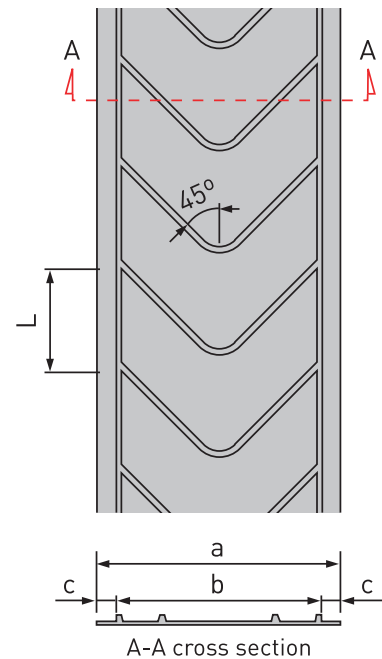
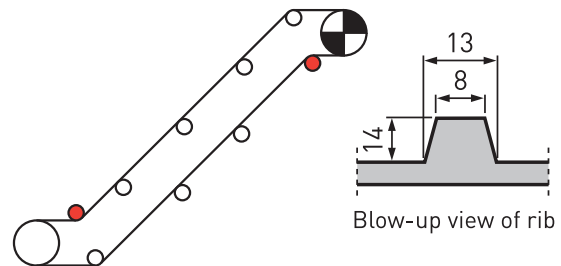


Depending on the type of material to be transported and the maximum inclination of the conveyor belt – up to a 45° angle of inclination (depending on the material) – the use of chevron conveyor belts is recommended. Their edges and “V” shaped ribs are better suited to prevent material slippage.

## KNC Chevron Belts

In those installations which have sections with changes in gradient, up to a maximum angle of inclination of around 45 degrees, KNC belts are an excellent solution. In these belts the ribs do not extend to the edges of the belt. This allows a side guide to be installed on the working face of the belt, which allows the belt to be adapted to the changes in gradient, as shown in the figures. For this kind of use the belts are normally manufactured with rigid sections to avoid the potential deformation of the belt in the changes of gradient.

This type of belt is also used when side guides are installed to hold material in.



Belt Width "a" (mm)	Chevron Width "b" (mm)	Width of Edges "c" (mm)	Distance Between Chevron "L" (mm)
400	From 250 to 1,150 mm	From 25 to 175 mm each 50 mm	210 mm
500			
600			
650			
800			
1,000			
1,200			
1,400			
Can also be made in steps of 50 to 50 mm			



## Chevron Belt Model KS15

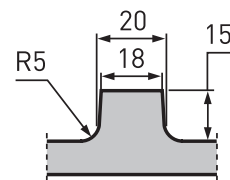
For multiple conveyor belts with moderate gradients up to 25 or 30%, depending on the type of material to be transported, the material's grading, the material's shape, and the angle of inclination, the most appropriate belt is the Chevron Belt Model KS15, which has 15 mm high ribs, which lean at an angle of 55° relative to the belt's axis. It only has central ribs, so that side guides can be used.

As in all of the Kauman chevron belts, the ribs on the KS15 model are hot molded, using appropriate pressure. This means that they cannot come loose as they form an integral part of the conveyor belt body.

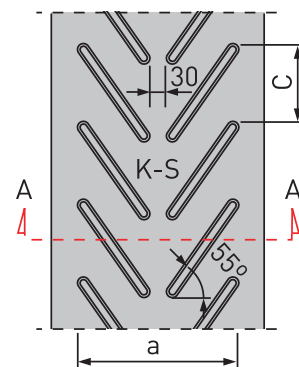
Its most common uses are in conveyor belts of all kinds: both outdoor and indoor belts; fixed or mobile conveyor belts; belts installed on vehicles used for demolition; belts used to clear material from roads; uses in agriculture; and the loading and unloading of lorries, etc. They prove to be resistant in the transportation of all types of materials. The central channel on the belt, which runs between the ribs, allows water to drain off conveyor belts located outdoors.

Section	Name	Mold I	Mold II	Mold III	Mold IV
a	Ribbed zone width (mm)	300	450	490	600
b	Maximum product width (mm)	600	800	800	1.200
c	Distance between ribs (mm)	146	219	225	328,5
d	Average rib length (mm)	200,5	331,2	370	462

Belt Width mm.			
Mold I	Mold II	Mold III	Mold IV
400	600	600	800
450	650	650	1.000
500	700	700	1.200
600	750	750	
	800	800	



Blow-up view of a rib



A-A Cross section



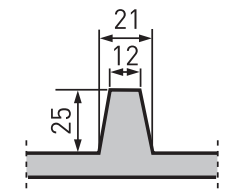
## Chevron Belt Model N25

For extreme gradients when transporting materials, we recommend the use of the N25 belt, with 25 mm ribs, as shown in the figures below.

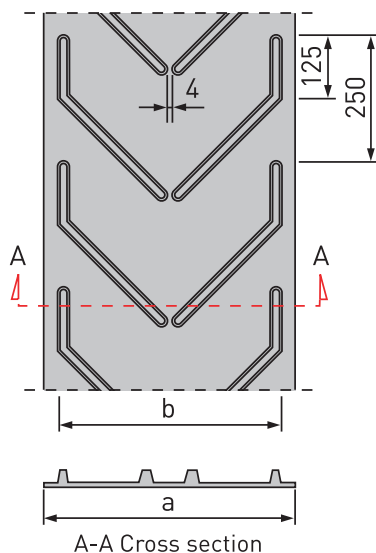
These belts are formed by a textile core of EP fabric, Polyester (E) in the warp and nylon (P) in the direction of the weft. The core consists of two or three layers of fabric, with an outer rubber cover which is ozone and abrasion resistant, making the belt suitable for outdoor operations.

The design of this type of belt means that it is suitable for the transportation of materials at angles greater than 30°, and the belt has two important additional features:

- The belt allows for the fitting of side guides, thus preventing the loss of material.
- Water is removed via a 4 mm wide separating channel between the central cleats.



Blow-up view of a rib.



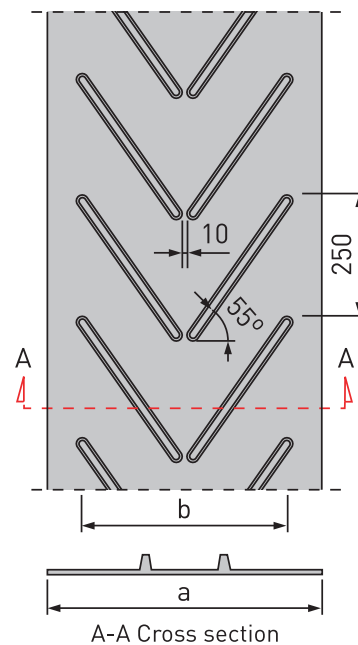
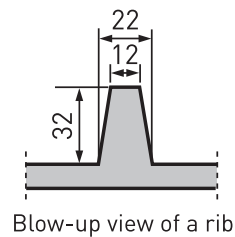
Belt Width "a" (mm)	Chevron Width "b" (mm)
500	445
550	445
600	445
650	445
700	650
750	650
800	650
850	650
900	650
950	850
1,000	850
1,050	850
1,200	850
1,100	850
1,150	1,050
1,200	1,050

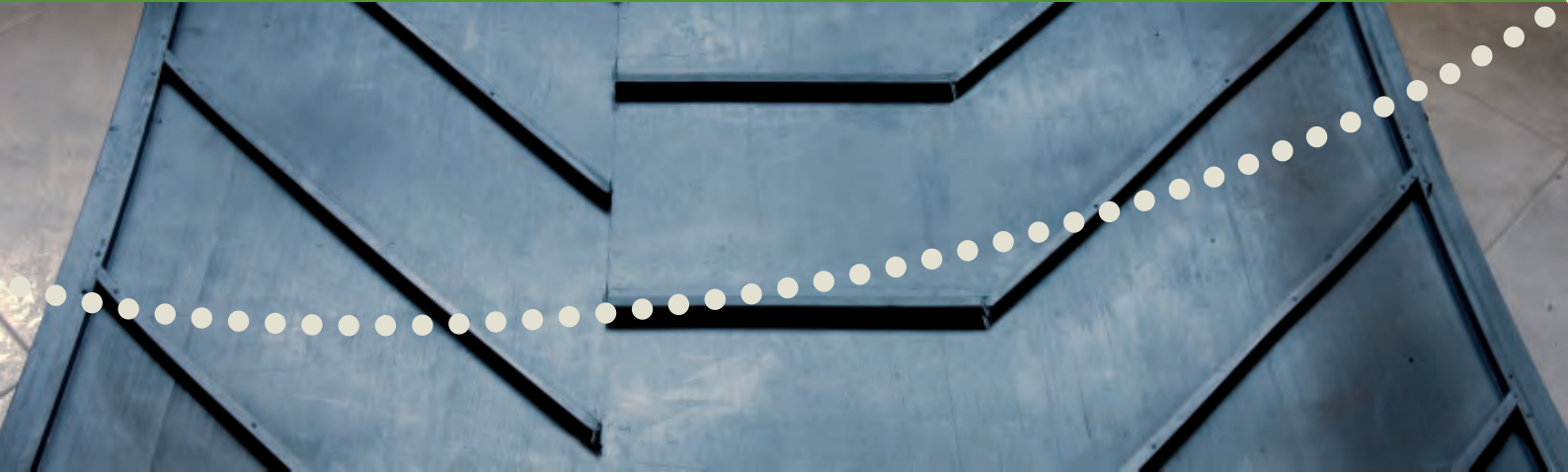


## Chevron Belt Model N32

If the size of the material to be transported is less than 80 mm we recommend that you use a chevron belt with 32 mm high ribs. The normal angles of inclination when using the belt vary from 30 to 45 degrees (bearing in mind that the greater the inclination, the less distance the material has to be transported). The recommended trough angle is 10° for materials which move easily and 20° for materials which are more sticky. Between the ribs in the centre of the belt, there is a small 10 mm gap through which water may run.

Belt Width "a" (mm)	Chevron Width "b" (mm)
600	450
650	450
750	450
800	450

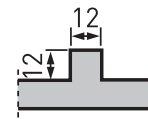




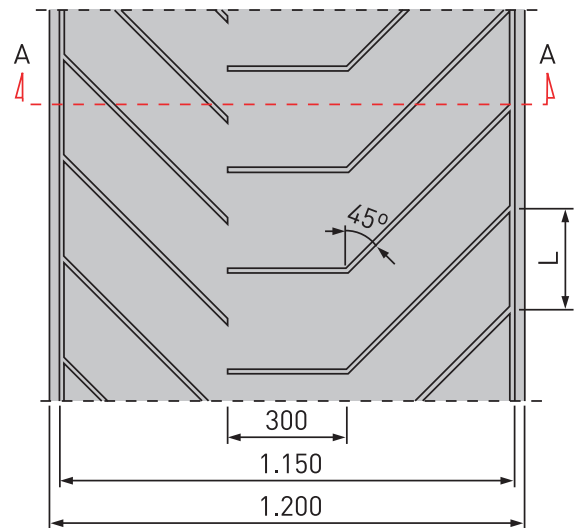
### Especial KD Chevron Belt

For some inclined transportation operations with 1.200 mm wide belts we have a special mold which allows water to drain off when working outdoors or with wet materials.

Belt Width (mm)	Observations
1.200	Dimensions shown in figure



Blow-up view of a rib



A-A Cross section

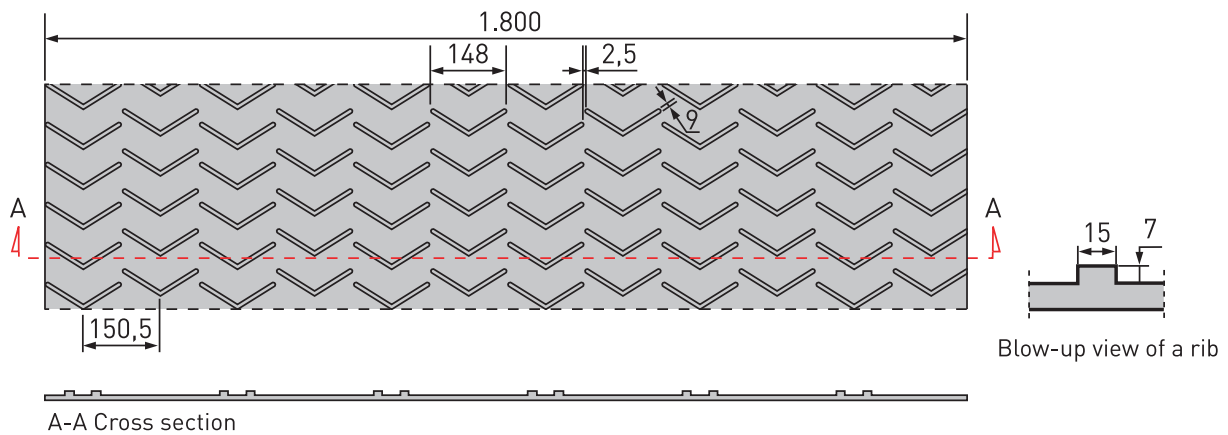


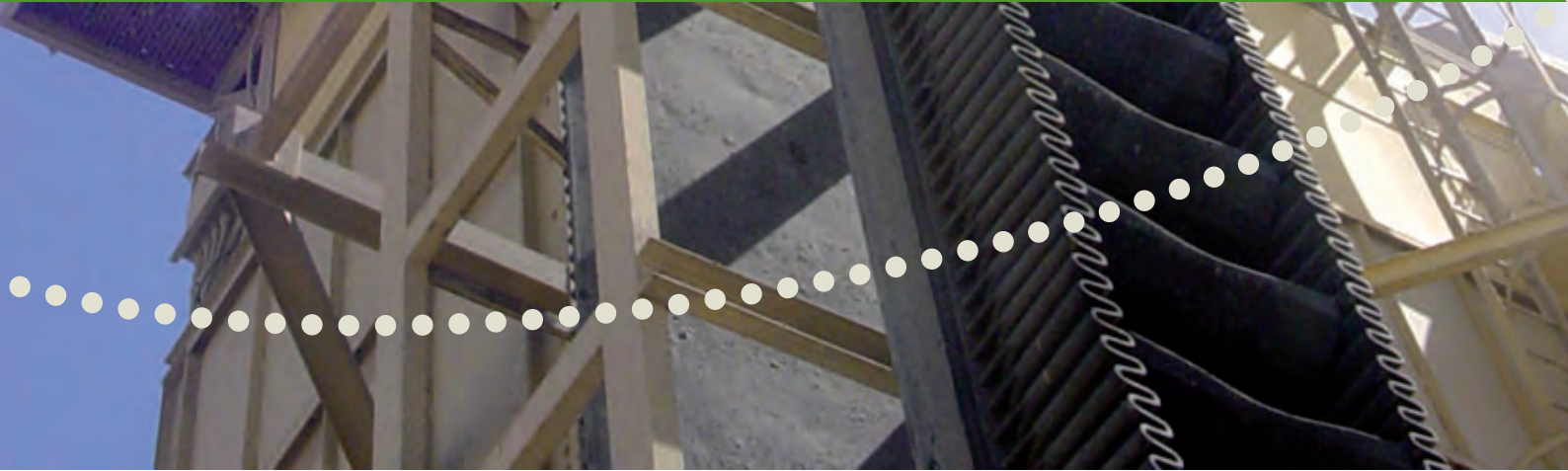
## N7 Model Chevron Belt

The N7 Chevron Belt has been specifically designed for the transportation of wood chips. Thus it is often supplied with covers which are moderately resistant to vegetable oils (though the belt can have other characteristics if so requested by the customer).

The belt's manufactured width is 1.800 mm, and can be cut to other widths as required.

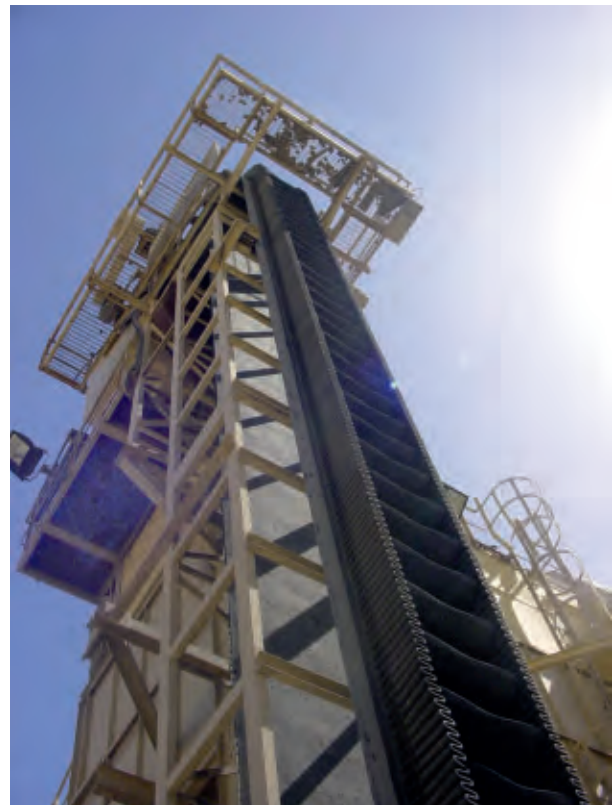
Belt Width (mm)	Observations
1.800	Dimensions shown in figure





## Sidewall Belts

- Conveyor belts with sidewalls and horizontal cleats have been developed for the transportation of materials at extreme gradients (up to 90° - vertical plane).
  - The belts are highly flexible, allowing them to move from the vertical to horizontal plane and vice versa. They may even be used on other shapes of system configuration.
  - They increase transportation capacity by a factor of 4 in comparison with other conventional conveyor belts of the same width.
  - They save space, as the material may be raised vertically at an angle of inclination of 90°.
  - The system is more economic: this system allows you to use one single conveyor belt (depending on the height of elevation) instead of the (minimum) three conventional conveyor belts that used to be required.
  - Lower maintenance costs than those for a system using several conveyor belts.
  - The belt is manufactured using a hot vulcanisation process, making it safe, stable and durable, and differentiating it from others on the market.
  - The degree of adherence achieved through the hot vulcanisation process is 15 times greater than that achieved through traditional cold adherence methods. This eliminates the risk of elements of the belt coming loose - a problem with traditional belts.
- This belt offers a series of advantages. One is the possibility of operating in reduced diameters. A second advantage is that the elements do not come unstuck from the base of the belt even during long periods of storage.





## Sidewalls

- Retaining edges are manufactured in a wide series of differing heights: starting from 40 mm and reaching up to 500 mm.
- All of the retaining edges may be manufactured using a reinforced textile, specially recommended in heights greater than 160 mm, and essential for heights greater than 250 mm.
- The design of the retaining edges offers excellent vertical resistance, making the belt more stable, and maintaining a high degree of flexibility, which allows the belt to adapt to lower pulley diameters.



## Transversal sections / Cleats

- Transversal cleats or sections are manufactured using a press moulding process, and range from 40 to 460 mm.
- The characteristics of the rubber used in their manufacture varies depending on the characteristics of the product to be transported. The most demanding tolerances for resistance to wear and tear are always observed.
- The sections can be manufactured with reinforced textile inserts. These should be used when the height of the sections is greater than 140 mm and must be used from 230 mm upwards.
- The use of belts with cross-rigid weft presents a series of advantages:
  - In the return section the belt is better supported.
  - It avoids the wear and tear of edges and ribs;
  - Avoids cambers in the belt's carrying surface across curved sections.
  - Avoids losses in the use of drive energy.
  - For smaller installations, where there are no curved sections, the standard belt may be used.





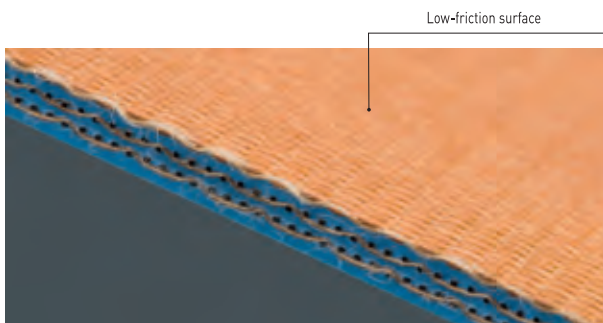
## Low-friction Belts

When the belt has to operate over a rigid surface (metal, wood sheeting etc.), we recommend the use of belts which reduce the friction coefficient between both surfaces, resulting in longer-lasting belts and a saving in energy.

The belts may be manufactured with a special underside low-friction coating, protecting the textile centre from aggressive agents (grease, oils, acids, etc.). Alternatively they may have no underside coating, as in the case of rough belts, where the fabric is visible and not covered in rubber or even an additional cover to reduce friction.

The belts are normally manufactured in widths of 1.400 to 1.800 mm, although they may be supplied in other widths. They are normally supplied in rolls of 200 meters in length.

The resistant centre depends on the material to be transported, the distance to cover, the capacity for transportation, etc. The centre may be either textile or metallic, in accordance with the specifications and requirements of our customers.



## Rough Top Belts

These belts are recommended for the horizontal or inclined transportation of manufactured products, packages, bags, etc. The roughness of the belt's surface increases friction with the transported product and acts as a shock absorber of potential impacts or vibrations. They are also used in a series of diverse applications, such as the raising of boats, or braking systems in amusement parks.

They are normally manufactured in black, grey or honey colours (the latter two colours are used when the transported product must not be stained in any way), depending on the use that they will be put to.

When the belt is installed over rollers, the underside is usually coated in rubber. If it is installed over metallic sheets or any other flat surface, then the belt is manufactured without any underside cover, and the fabric is left uncovered and rubber is not used to reduce friction with the surface.

Colour	Width (mm)	Length (M)	Use
Black	1.200:1.800	100:200	Packages, luggage, airports
Grey	1.200:1.380	75:150	Packing, bags
Honey-coloured	900	60:120	Boxes, abrasive materials



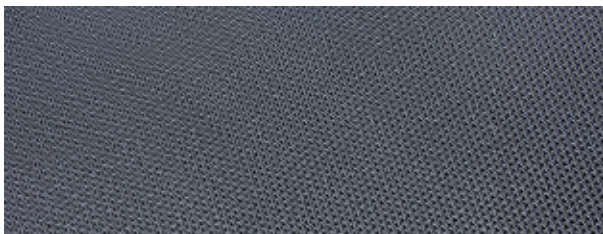


## Fabric Covered Belts

In contrast to the case of the low-friction belts, when we wish to increase the friction coefficient between the belt and the drive drum, belts are manufactured with a rough fabric on the belts' underside. These belts are also manufactured with a fabric covering on the upper face if we wish to increase adherence of the transported material. Alternatively, both faces of the belt may be finished in fabric, if so desired. The belts are manufactured in widths up to 2.000 mm, and can be cut to measure on request.

The centres and coatings are added on request from the customer, with a wide-range of solutions on offer, suitable for each particular case.

You can choose between fine, medium and thick fabric finishes, depending on the type of operations required and the class of material to be transported by the belt.



## Bucket Elevators Belts

When conveyor belts are used as bucket elevators then there are a series of different possibilities, depending on the particular system in question. The belt width ranges from 180 to 2.200 mm. The standard manufactured width is 1.400 mm.

The different possible types of centres are:

a) EP (polyester –polyamide) fabric textiles, consisting of 3 to 7 plies, with the most common resistances being:

EP 500/3 -EP 630/4 – EP 800/5

b) Single layer EPP textile fabrics, with the most common resistances being:

EPP 500 -EPP 630 – EPP 800

c) SW metallic type centres (see Kauflex belt section), consisting of two normally rigid wefts and with a warp resistance of:

SW 630 RE - SW 800 RE - SW 1000 RE - SW 1250 RE

d) 28 ounces to 32 ounces, rubber impregnated cotton textile with no outer coating. The warp resistance is the same as the above cases. From 3 to 6 plies.

The most commonly used covers are 2 + 2 mm thick for general cases and 3 + 3 mm for heat-resistant belts (150°C and 200°C respectively).

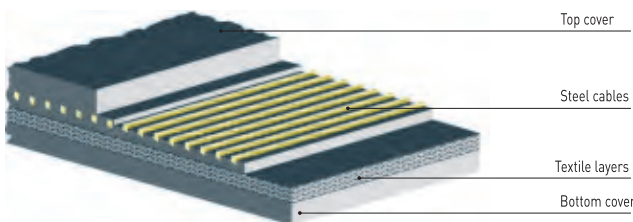
As for the characteristics of the rubber cover, see the "Quality Covers" section, as the most appropriate class of rubber for each case will be used.



## NoRip Anti-Tear Belt

In installations where the height from which material falls on to the belt is significant, where the grading of material is high, or the material has sharp edges, we recommend that a "breaker" layer be fitted on the upper surface above the textile centre. The breaker is normally metallic, though may have textile inserts.

The upper cover normally varies from between 4 and 8 mm, including the breaker. The class of rubber that should be used is special, anti-tear rubber, though grade X or Y rubber may also be employed.



## Cross-Rigid Belt

Certain systems require this type of conveyor belt when transversal rigidity of the belt is needed, for example belts with crimped edges and cleats.

The rigidity of the belts helps support the belt on the return side of the system. This characteristic is achieved by using special monofilament fabrics and increasing the thickness of the rubber used between fabric layers.

The belts are constructed using one or two EP Polyester-Nylon sheets or metallic meshes, if required, with the inclusion of special fabrics to achieve greater rigidity (for example textile monofilaments or steel cords). The types of belt most often used are:

EP 400/3-4+2 +2MN

EP 630/4-4+2 +2MN

They are manufactured with standard characteristics, though the customer may request other additional characteristics such as flame-resistance, resistance to oils, white coloured belts, etc..

The edges of the belts may be cut or molded.



## Wood Transportation Belts

We have designed several belt models for the transportation of wood in all of its different states: logs, boards, and woodchips. The belts are resistant to vegetable oils and resins.

We have used EP Polyester-Nylon fabrics in the design of these belts, with a differing number of plies, depending on the belt tension required in the system in question.

They are manufactured with special oil-resistant rubber, with the underside of the belt either covered in low-friction fabric or a special, 1 mm thick, low-friction, grey rubber. This type of compound has been designed to help the belt slide over the underlying table and helps protect the lower fabric layer from wear and tear.

The belts are manufactured in widths up to 2.000 mm, with cut edges for belts with low-friction fabric. Belts with underside coatings may have sealed or cut edges, depending on the requirements of the customer.

For the transportation of woodchips along gradients, we recommend the use of the multi-ribbed belt, with grade G characteristics of moderate oil resistance. This belt is manufactured with a width of 1.800 mm, with a low-friction black or grey rubber underside coating, or with no cover and the fabric left directly visible.

## Hot Stock and Water

This belt consists of a cotton carcass with a rubber coating on the underside of the belt.

It is highly resistant to heat and does not adhere to the transported hot rubber. This belt is therefore the ideal product for tire industry facilities or any other production chain which requires conveyor belts for hot untreated rubber.

The cotton used can easily withstand the temperatures of the transported material and prevents the material from sticking to the belt, making it easier to handle.



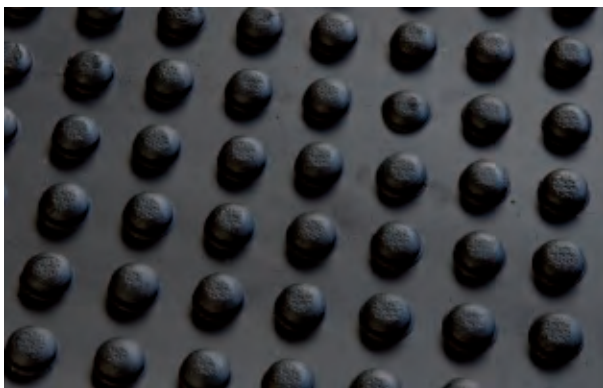


## Button Belt

This belt consists of a textile centre with two covers. The upper cover has a series of button-shaped, semispherical protuberances.

The characteristics of the upper cover means that this belt is suitable for any surface where we wish to increase adherence or grip between the belt and the transported material, thus preventing material from slipping or sliding.

Used in vehicles which transport livestock or animals, especially in the transportation of horses.



## Kauman Fish Belt

The Kauman Fish Belt is a special conveyor belt for the transportation of fish in factory ships. The shape of the belt, with small angular rises, helps facilitate the removal of water during transportation.

Rubbers which are suitable for contact with food are used, ensuring that the belt does not contaminate the flavour or smell of the products.

The conveyor belt is formed by a textile carcass consisting of two or three plies, and has a 2 to 3 mm coating on the topside and a 1,5 mm coating on the underside of the belt.

It is supplied in 100 meters rolls with a width of 1.350 mm. The belts may be cut to other widths on request from the customer.





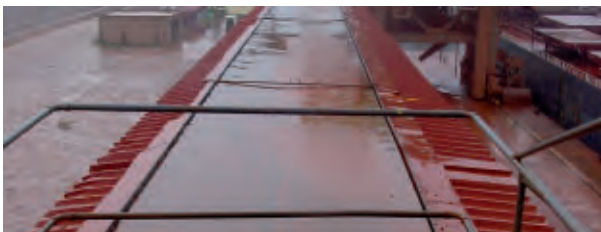
## Kauman CoverKau

CoverKau sealing belts are used to protect items which are transported underneath them. They are extremely rigid and offer excellent longitudinal flexibility. This facilitates loading and unloading operations of the material covered by the belt. These belts are formed from an EP textile carcass, with (E) polyester in the warp direction and (P) Nylon in the weft, consisting of two to three layers. It includes two outer metallic BF lines which assist rigidity. The outer covers are made from ozone and abrasion resistant rubber, suitable for outdoor operations.

The construction of this type of belt means that it can be kept rigid by supporting both ends, its main characteristics are:

- Longitudinal flexibility for the fitting of a tripper along the belt.
- Protection of the lower belt from dust, wind, rain and solar radiation.

For particular cases the belts may be manufactured using special rubber compounds, or using flame-resistant or anti-static compounds to avoid the risk of fire (for example when unloading bulk loads such as seeds or coal).



## Homologated conveyor belt anti-flame self-extinguishing B1

As a manufacturer approved by the Ministry of Industry through LOM (Madariaga Official Laboratory), we recommend the use of type B1 to underground facilities, particularly those with presence of coal mine gas to prevent flammability risks.

This is a rubber conveyor belt with a textile carcass "EP" Polyester (E), in longitudinal and polyamide (P) transversally with rubber coatings in accordance with the needs of the installation.

This product is according Standard **EN 14973:2006+A1:2008. "Conveyor belts for use in underground installations. Electrical safety requirements and inflammability protection"** Successfully passed tests specified by the Standard, such as:

- Surface electrical resistance according to EN ISO 284 < 300 MΩ.
- Resistance to drum friction according to EN 1554:1998, Method B2.
- Inflammability according to EN ISO 340.
- Flame propagation method according to EN 12881-1 : 2005 Method B or C.



## Molded Belt

Kauman manufactures special belts for specific uses on request from customers. Such is the case of this type of belt used in the continuous manufacturing process of reinforced concrete for the construction of prefabricated industrial warehouses.



## Port Belt

Another special application is a longitudinal sheet with metallic reinforcement. This is used to protect electrical power cables for cranes in harbour facilities.

The sheets are manufactured from a neoprene rubber compound, which offers outdoor resistance and resistance to marine environmental conditions.

The metallic sections used improves the flexibility of the sheet so that cables may be extracted without difficulty.

## White or Coloured Belt

The manufacture of white belts is one of our specialities. The wide range of characteristics and types of belt we offer mean that we are the market leaders for this type of product.

They are used in a series of different applications, though they are most often used in the transportation of food.

The following characteristics can be offered for these belts:

- "BL" white.
- "BLF" white sanitary.
- "BLW" White extra abrasion-proof.
- "BLGT" White oil and heat resistant.
- "BLS" White fire and static resistant.

We recommend manufacture of the belts with cut edges to a maximum width of 1.600 mm.

## NPVC Rubber Belt

We manufacture a belt for smaller systems using a mixture of nitrite rubber and PVC.

The belt is black in colour and consists of 2 to 3 plies. It is used in systems with small diameter rollers, generally for operations on work tables. The underside of the belt is therefore an uncoated ply.



## Kaustromg Belt

This is a belt which is designed to offer excellent resistance to tears, impacts and scratching. It is one of the most resistant belts on the market.

Its longitudinal fibres offer:

- High resistance when transporting large loads.
- Resistance to longitudinal tear.
- Excellent load support.
- High resistance to impacts.

The exclusive fibre centre of this belt offers better impact resistance than conventional multi-ply belts (up to 3 times more resistant). This means that the loads are better supported, thus considerably reducing damage to the belt. Products such as hard rocks, logs, minerals etc. may be safely transported using this belt.

This makes our single-layer belt the best choice for severe operating conditions:

- Heavy metal mining operations.
- Primary and secondary grinding operations.
- Bucket wheel excavators.
- Recycling operations.
- Bucket elevators.

They are manufactured with one or two plies with the following specifications:

EPP500/1, EPP630/1, EPP800/1, EPP1000/1,  
EPP800/2, EPP1000/2, EPP1250/2, EPP1600/2

## Snow Belt

Compared with other types of belt, snow belts have a series of very interesting characteristics:

- Low maintenance requirements.
- Low noise levels.
- High bolt retention.
- Reduced energy consumption.
- Permit higher speeds.
- High resistance to lower temperatures.

All of these characteristics are very attractive for many machines. The belts have a wide series of potential uses: the farming industry; chain conveyors and the transportation of material in snow-bound mountain areas.

The belt is especially resistant to low temperatures and UV radiation, and is therefore recommended for high-altitude use.







## Belts for trough conveyance systems

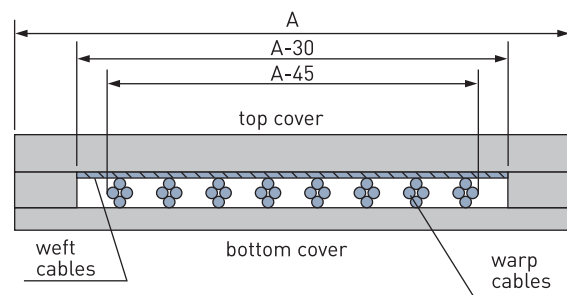
We recommend the use of KAUFLEX belts with a Fleximat® metallic mesh core where belts are needed which do not stretch, offer maximum flexibility, and require high or medium resistance to impacts and tearing.

The Fleximat® metallic mesh consists of steel cables in the longitudinal, warp direction. In the transversal direction the mesh consists of one or two wefts of steel cords. All of the cables have a brazed protective covering.

This design offers great flexibility during the manufacturing process in terms of the manufacture of short sections of belt, etc. as the belt does not require special installations or preparation. It also offers advantages to the user, as the belts offer greater resistance, are longer lasting and more flexible, weigh less, stretch less, and offer a greater ability to absorb impacts etc. than the equivalent multi-ply textile belts. The belts are also resistant to longitudinal tears, which may be of great importance in many cases.

Within the range of cores which we offer, there are standard models with one or two transversal wefts. These wefts may be rigid, for uses such as bucket elevators or for flat belts which are resistant to impact and longitudinal tearing (when transporting logs, etc.). This core may also be applied to the conventional range of EP textile belts, this improving their resistance to wear and tear. The belts may also be used for longer transportation distances, given that, besides there being little difference in cost, the length of the tensors can be reduced, along with the diameter of the drums and the energy consumed by the system.

## Fleximat® mesh Type "IW" (impact) with single weft





## Steel Buckets Elevator Belts

KAUFLEX is a conveyor belt made from a steel mesh with transversal rigidity, manufactured for metallic elevators where high traction resistance is required and low levels of belt stretching.

The minimum cover used for this type of belt is 3 + 3 mm. The construction of the KAUFLEX belt means that it may be used with relatively small diameter drums and long length elevators.

The most important characteristics of the metallic meshes used are:

- Maximum elongation of 0.3% at full working load, even for the longest belts.
- Greater resistance to wear and tear of the buckets due to the staggered formation of the double weft plies on each face, thus ensuring that the belt is not torn by the crews.
- Possibility of constructing the mesh with "free zones" (the standard construction of the mesh does not include free zones).

Belts for metallic elevators are used in: power stations, fertilizer plants, smelting works, cement plants, silage grain elevators and harbour elevators.

The KAUFLEX belt for metallic elevators is constructed from Fleximat® mesh with a rigid weft. The cables used in the warp direction along with the weft direction cables form a compact mesh with a structure which is resistant to deformation and offers excellent resistance to potential damage. The open construction of the cables allows high-adherence rubber to penetrate the structure, thus avoiding the potential corrosion of the cables in the case of accident and guaranteeing its operation in an excellent state of repair.

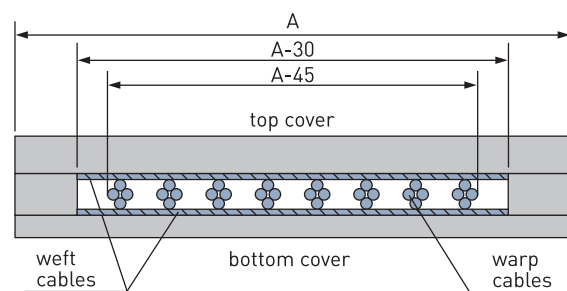
The cables of the structure offer the following advantages: improved behaviour under compression; reduced stretching; excellent penetration of the rubber protective layer and high levels of resistance to external forces.

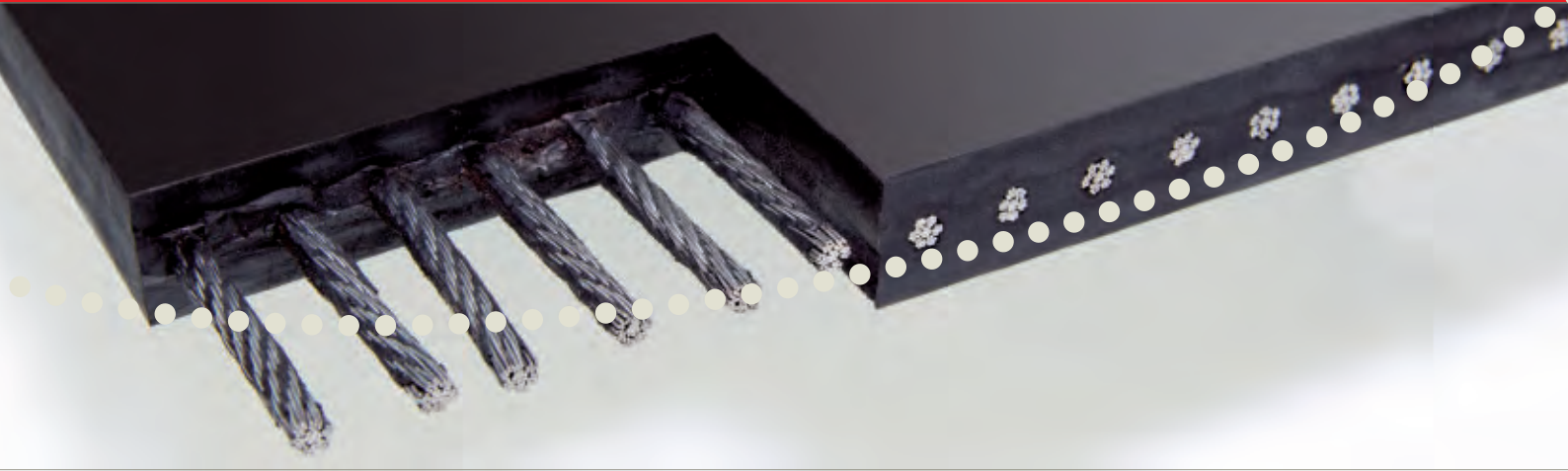
The high elasticity weft cables act as a barrier against wear and tear and increase the adherence of the screws to the buckets. They also offer increased transversal rigidity, which in turn results in improved operation.

The joints for this type of belt may be realised in a series of different ways:

- Joints using staples: We recommend that specially resistant joints be used for this type of belt, made from high resistance aluminium. Kauman supplies these types of joints in accordance with the width of the belt and the working stress for the belt.
- Vulcanization: In this case the guidelines established by our Technical Department must be followed to the letter and the materials provided must be used.

## Fleximat® mesh type "SW" with double weft





## Belts for covering large distances

The steel cord belt KAUSTEEL is the perfect solution for covering large distances, supporting huge tensions and carrying larger loads. Due to its small elongation (close to 0,3%) and high impact resistance, KAUSTEEL may face without any problem to a several kilometers installation.

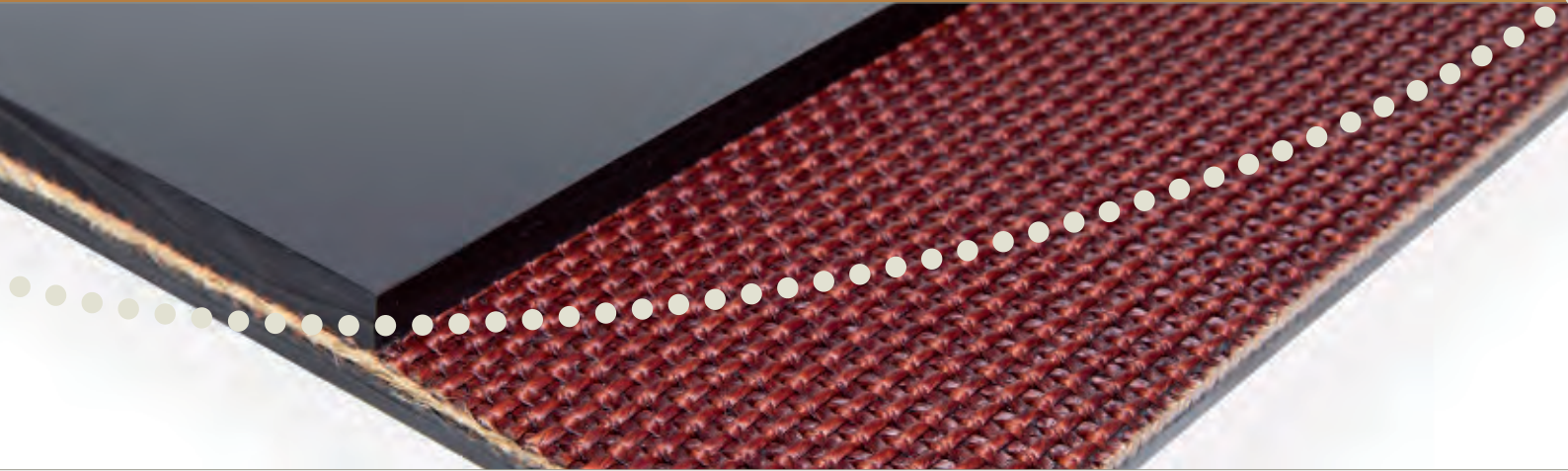
Warp wires are galvanized and fully embedded in rubber. Twisted wires alternating right and left hand to ensure the belt goes straight-ahead. The transverse stiffness is achieved by the rubber, and being more flexible than fabrics used in EP belts, provides better throughability. Its great flexibility allows the use of drums with a smaller diameter than textile belts.

When the installation needs more longitudinal tear resistance, Kauman can produce KAUSTEEL including in weft a textile layer (T) or steel wires (S) - with less resistance than longitudinal ones -. A layer can be added on one or both sides of the carcass. KAUSTEEL belt can be manufactured with resistance of 500 N/mm to 5.400 N/mm and in different rubber qualities, depending on the material to be transported.

Typical construction according DIN 22131:

Type	Cable Diameter (mm)	Cable Construction	Pitch between Cables	Minimum Top Cover (mm)
St-1000	3,6	7x7	12	4
St-1250	4,4	7x7	14	4
St-1600	5,4	7x7	15	4
St-2000	5,4	7x7	12	4
St-2500	6,9	7x19	15	5
St-3150	7,6	7x19	15	5,5
St-3500	8,2	7x19	15	6
St-4000	8,8	7x19	15	6,5
St-4500	9,6	7x19	16	7
St-5000	10,7	7x19	17	7,5
St-5400	11,2	7x19	17	8





## Aramid Belts

Used for military, aerospace, marine and industrial purposes, the aramid is the latest technological advancement.

The KAUFORT belts that Kauman produces use this fiber that has the same weight of polyester but with the strength of steel.

The high impact resistance (similar to steel mesh or steel cord), its tear resistance and its resistance to moisture and chemical agents are some of the KAUFORT advantages.

As there is a single fabric, the carcass is light and flexible and enables longer lengths of rolls, which reduces the number of splices.

KAUFORT belts combine lightweight and resistance reinforcement (600 to 3.000 N/mm) with a wide range of covers.

The strength-weight ratio is unmatched and unsurpassed. Its main properties are:

- Less thickness.
- Longer rolls.
- Better energy efficiency.
- Longer durability.
- Faster and longer splices.
- Higher melting point.
- Greener / More Ecological.
- High resistance.
- Low weight.

Its use in marine environments is not a problem because the aramid doesn't wear in contact with water. It's ideal for magnetic separators.

The behavior of a textile belt with steel performance.



**Kaufort belt type with aramid fabric**

## Standard grading in compliance with DIN 22102

Nomenclator	Breaking strength (N/mm <sup>2</sup> )	Ultimate Elongation (%)	Abrasion (mm <sup>3</sup> )
W	>18	>400	< 90
X	>25	>450	<120
Y	>20	>400	<150
Z	>15	>350	<250

## Special Grading

### “AA” - Extra Abrasion-proof

For belts which have to operate with highly abrasive materials, there is a special grade of material (corresponding to an improved version of grade W in the above table) with a breaking strength higher than 20/N mm<sup>2</sup> and abrasion lower than 80 mm<sup>3</sup>.

### “AC” – Tear resistant

For uses where the characteristics of the transported materials cause frequent rips and tears in the belt surface coating there is a special tear resistant grade of coating (similar to the material used on the wheels of large four-wheel drive vehicles which operate under extreme conditions).

### “AAA” - Extreme abrasion

In cases of extreme abrasion, we propose the use of the AAA grade, with an abrasion loss of less than 60 mm<sup>3</sup>. This type of coating is suitable for the transport of materials such as salt, sugar or crystals.

### “S” - Flame-proof underground use

For uses in underground mines in compliance with current laws and regulations, we supply a series of “S” grade fire-proof, anti-static belts, which conform to the DIN and ISO standards. Said belts avoid the propagation of fire, the generation of electrical charges, or the generation of heat as a result of friction, which could cause inflammable gases to ignite.

### “K” - Flame-proof for above ground

For uses in outdoor installations (such as mines, coal yards, or power stations, etc.) we recommend, due to the constant risk of fire, the use of “K” grade fire-proof, anti-static covers (DIN standard) which avoid the propagation of fire.

### “KT15” - Anti-flame and Heat resistant

This Anti-flame conveyor belt for exterior installations is recommended for use in also temperature resistant conditions up to 150°C in picks (120°C continuous) depending of granulometry and the cycle time of conveyor.

### “L” - Homologated Anti-flame

Conveyor belt for use in underground installations, class B1, approved by LOM (Madariaga Official Laboratory) according Standard EN 14973:2006+A1:2008 concerning electrical safety requirements and inflammability.

### “KG” – Flame-proof and oil resistant, for above ground

For the transportation of carboniferous materials or similar, with a high content of oil-based substances, and in order to prevent chemical agents in said materials from attacking the rubber cover of the fire-proof, anti-static conveyor belt, we recommend the application of special compounds which make the coating more resistant to degradation. For such cases we recommend the use of “KG” belts.

### “SG” - Flame-proof and oil resistant, for underground use

Used in installations where oil-bearing materials are transported and protection is required to prevent possible fires and their propagation. These belts are frequently used for bucket elevators employed with all kinds of cereals and in maritime terminals for the unloading of grain.

## Heat Resistance

	Temperature of the material to be transported	Sporadic temperature peaks
T15	120° C	150° C
T18	150° C	180° C
T20	180° C	200° C

The T15 conveyor belt, with SBR rubber covers, is suitable for the transportation of solid materials of a high or medium grading, with maximum temperatures of 120°C and sporadic peaks of 150°C.

The T18 conveyor belt, with EPDM rubber covers, is suitable for the transportation of solid materials of a high or medium grading, with maximum temperatures of 150°C and sporadic peaks of 180°C.

The T20 conveyor belt, with EPDM rubber covers, is suitable for the transportation of solid materials of a medium grading, with maximum temperatures of 180°C and sporadic peaks of 200°C.

For these types of uses and in both cases (a. and b.) we recommend that the textile core, the diameters of the drums and the thickness of the covers all be oversized, in order to compensate for wear due to the ageing of the materials. We recommend minimum thickness for the covers of around 5+2 mm.

In the special case of transporting fine and extremely fine graded materials we recommend that the upper covers be increased in thickness by at least 2 mm (and should never be less than 6 mm).

### “C” – Resistant to Chemical Products

Any type of transportation operation which involves contact with products which could affect the characteristics of general use rubber may be resolved by employing a more suitable grade of rubber. In each particular case our Laboratory will recommend the best possible solution.

### **“NITER” – Moderate Heat Resistance and Resistance to Animal and Vegetable Oils (MOR)**

In order to address ever more complex transportation requirements Kauman has developed a rubber compound which in addition to possessing excellent physical-mechanical characteristics, also demonstrates correct behaviour when exposed to the following elements (due to the materials transported or due to environmental conditions): the presence of moderate oils; and medium-high temperatures up to a maximum of 130°C.

#### **Neoprene**

For use in working conditions where moderate resistance to oils, temperature, acids and marine atmospheric conditions is required.

#### **Resistance to Oil and Grease**

When the belt comes into contact with lubricants, grease, waste, etc. the rubber used must demonstrate appropriate resistance to contact with these materials.

Kauman offers two types of oil resistant belts: “type “G” and type “GG”.

#### **“G” – MOR**

Specifically for use in the continuous transportation of solid materials which contain or may contain oils, or their derivatives of an animal or vegetable origin.

#### **“GG” – SOR**

Specifically for use in the continuous transportation of solid materials which contain or may contain oil derivatives or mineral greases: diesel, kerosene, demoulding agents, etc.

#### **“GPVC”**

Specifically for use in the continuous transportation of solid materials containing oil or grease derivatives, manufactured in black, blue or white. Other colours are available on request from the customer.

Both belts are manufactured with acrylonitriles of different content, in accordance with the different kinds of operations to be performed.

Depending on the work conditions and the type of material, our Laboratory will recommend the most suitable grade of material for each specific use.

### **WHITE RUBBER**

In addition to the above, and for diverse transportation motives, white or coloured, non-toxic belts are also manufactured, in order to address a multiplicity of potential uses and requirements. Taking all of this into account, we have classified the belts as follows:

#### **“BL” - WHITE**

To avoid possible staining of the transported materials (as in the case of the manufacture of detergents). These belts are generally manufactured in light colours or in blue, grey or cream.

#### **“BLF” – SANITARY WHITE**

For this type of transportation, we use grades of rubber which cannot transmit flavours to the transported materials, and which involve no risk of intoxication, as per the international regulations governing these types of products. These belts are normally manufactured in light colours, though they may also be manufactured in black.

#### **“BLW” – White Extra Abrasion-proof**

Belt recommended for the transportation of oil-bearing materials and/or where high temperatures are present.

#### **“BLGT” – White Oil Resistant and High Temperature**

Recommended for the transport of material that contains oils and works with temperature.

#### **“BLS” – White Flame-proof and Anti-static**

Recommended for use in installations where there is a risk of explosion or combustion, to prevent the belt from catching fire.

#### **“BLGP” – White PVC Oil**

Type of belt which is a mixture between nitrile PVC and rubber, allowing it to be used for the transportation of materials with a moderate presence of oils, such as animal fats, cereals, etc. This type of belt is manufactured at very low thicknesses and is suitable for small diameter drums.

The belt may be manufactured in light colours or even black, whilst still retaining all of its original properties.

In addition to the described characteristics, and in keeping with all of the belts which are manufactured by Kauman, our conveyor belts are: rotproof, highly resistant to temperatures, resistant to cold, stable and long-lasting, abrasion-proof, and have a controllable amount of elongation, etc.

Kauman S.A.U. manufactures a wide range of technical rubber sheets in a series of different colours, with differing compositions, characteristics etc. The aim of these products is to meet the needs of the market with regard to protective sheets, coatings, manufacture of parts, etc.

## Characteristics of rubber sheets

NAME	Reference	Colour	Density	Hardness ° Shore A	Breaking strength (Kg/cm <sup>2</sup> )	Ultimate elongation (%)	Temperature Range	Abrasion resistance (mm <sup>3</sup> )	Impacts	Grease and oil	Acids and alkalis	Ageing	Dielectric	Flame resistance
Rubber Only	KP-1001	Black	1.50	60	>70	>300	-30;+70		D	X	D	D	D	X
Loading guide	KP-1011	Black	1.15	55	>150	>400	-30;+70	<250	C	X	C	C	D	X
Loading guide	KP-1012R	Red	1.25	55	>100	>600	-30,+70	<350	C	X	C	C	C	X
	KP-1012V	Green											C	
	KP-1012B	White											C	
Abrasion-proof II	KP-1013R	Red	1.10	50	>130	>550	-40;+70	<200	B	X	C	C	C	X
	KP-1013V	Green							B	X	C	C	C	
	KP-1013A	Yellow							B	X	C	C	C	
	KP-1013M	Brown							B	X	C	C	C	
	KP-1013N	Black							B	X	C	C	D	
Abrasion-proof I	KP-2001	Black	1.17	65	>170	>400	-30;+70	<140	C	X	C	C	D	X
Transparent	KP-2002 C	Caramel	1.04	45	>90	>450	-40;+70	<200	B	X	C	C	C	X
Abrasion-proof III	KP-2002 N	Black	1.04	45	>90	>450	-40,+70	<200	B	X	C	C	C	X
Impact shock	KP-2003	Black	1.11	60	>250	>450	-40;+70	<110	A	X	B	C	D	X
Super Abrasion-proof	KP-2004	Black	1.12	60	>200	>400	-40;+70	<80	B	X	C	C	D	X
Floating	KP-2005	Cream	0.98	40	>200	>600	-40;+70	<150	A	X	B	C	C	X
Extreme Hardness	KP-2008	Black	1.20	80	>175	>350	-30,+70	<200	C	X	D	C	D	X
Food	KP-3001	White	1.15	55	>80	>700	-20;+70	<200	C	C	C	C	C	X
Non-toxic	KP-3002	White	1.15	65	>100	>500	-30;+70	<200	C	B	D	C	C	X
Abrasion-proof IV	KP-3003B	White	1.14	60	>175	>600	-30;+70	<100	A	X	B	C	C	X
Abrasion-proof V	KP-3003C	Cream	1.12	60	>170	>500	-30;+70	<110	A	X	B	C	C	X
Oil-grease resistant	KP-4001	Black	1.18	65	>150	>350	-20;+90	<200	C	B	D	C	D	X
Oil resistant "gg"	KP-4002	Black	1.22	75	>140	>300	-15;+90	<150	C	A	D	C	D	X
Oil resistant white	KP-4003	White	1.15	65	>100	>500	-20;+90	<200	C	B	D	C	C	X
Oil resistant T-110	KP-4004	White	1.15	65	>100	>500	-20,+110	<200	C	B	D	C	C	X
Niter	KP-4005	Black	1.18	65	>130	>300	-20,+120	<175	C	B	D	B	D	X

GRADING: A= Excellent; B = Very Good; C = Good; D = Average; X = Not Applicable  
 Thicknesses: from 2 to 50 mm.

## Characteristics of rubber sheets

NAME	Reference	Colour	Density	Hardness ° Shore A	Breaking strength (Kg/cm <sup>2</sup> )	Ultimate elongation (%)	Temperature Range	Abrasion resistance (mm <sup>3</sup> )	Impacts	Grease and oil	Acids and alkalis	Ageing	Dielectric	Flame resistance
Oil and static resistant	KP-4007	White	1.20	65	>150	>550	-20;+90	<175	C	B	D	C	C	X
Oil resistant -PVC	KP-4010 A	Blue	1.20	85	>165	>500	-20;+90	<200	C	B	D	C	C	X
	KP-4010B	White	1.20	85	>165	>500	-20;+90	<200	C	B	D	C	C	X
	KP-4010V	Green	1.20	85	>165	>500	-20;+90	<200	C	B	D	C	C	X
Neoprene	KP-5001	Black	1.20	65	>150	>350	-30;+120	<150	C	C	B	C	D	D
Heat-resistant, T 120 / 150	KP-6001	Black	1.15	65	>170	>450	-30;+150	<150	C	X	D	B	D	X
T-130 / 180	KP-6002	Black	1.12	60	>120	>500	-40;+180	<200	C	X	A	A	D	X
T-150 / 200	KP-6003	Black	1.10	60	>120	>400	-40;+200	<200	C	D	A	A	D	X
EPDM	KP-6004	Black	1.30	80	>70	>320	-40;+130		D	D	A	B	D	X
EPDM	KP-6005 B	White	1.30	65	>70	>300	-40;+130		D	D	A	B	C	X
EPDM	KP-6005R	Red	1.30	65	>70	>300	-40;+130		D	D	A	B	C	X
EPDM	KP-6005V	Green	1.30	65	>70	>300	-40;+130		D	D	A	B	C	X
Butyl	KP-6006	Black	1.30	65	>70	>300	-40;+130		D	C	A	B	C	X
Flame-proof	KP-7001	Black	1.32	70	>175	>350	-20;+80	<200	C	X	D	C	D	A
Flame-proof Oil resistant	KP-7004	Black	1.26	70	>170	>450	-20;+80	<200	C	B	D	C	D	A
Sandwich	KP-8001R	Two colours	1.15	65	>170	>400	-30;+70	<140	A	X	D	C	D	X
Sandwich	KP-8001V	Two colours	1.17	65	>170	>400	-30;+70	<140	A	X	D	C	D	X
Diamonds	KP-9002	Black	1.17	65	>170	>400	-30;+70	<140	C	X	D	C	D	X
Grid	KP-0010C	Black	1.17	65	>170	>400	-30;+70	<140	B	X	C	C	D	X
			1.20	80	>175	>350		<200						

GRADING: A= Excellent; B = Very Good; C = Good; D = Average; X = Not Applicable

Thicknesses: from 2 to 50 mm.



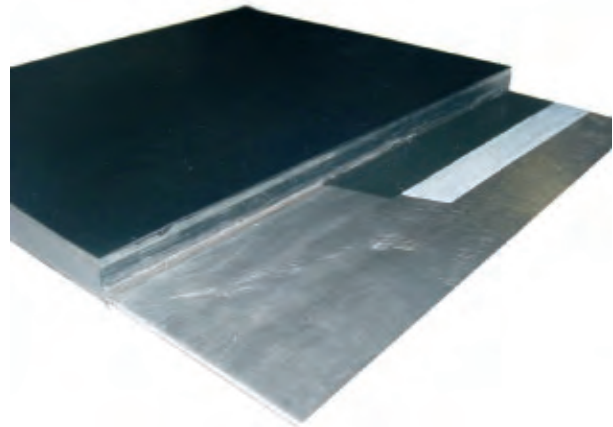


## Rubber-coated Metal Panels

Rubber-coated metal panels are manufactured to facilitate the protection of areas in systems which are subject to a great deal of wear and tear. The use of rubber with excellent mechanical properties ensures greater durability of both the panel itself and the area which it is designed to protect.

The panels are manufactured using a hot vulcanisation process on a granulated metal plate which has been pre-treated with elements to improve the adherence of the rubber to the metal. The metal plate has a thickness of 3 mm.

The production dimensions are 3 meters in length and 1.5 meters in width. The total thickness includes the high quality rubber layer, with manufacturing thickness of 10, 13, 15, 20, 25 and 30 mm. Other thickness can be manufactured by request.





## **Kauvac Matting**

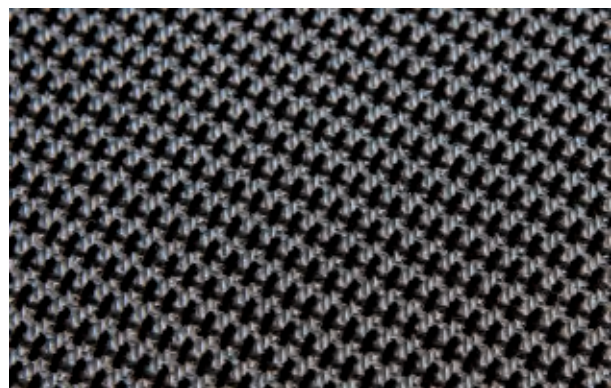
Kauvac is a paving material with textile inserted between the two rubber layers, thus combining non-slip qualities with the ability to be cleaned with great ease. This makes it ideal for covering the ground of stables.

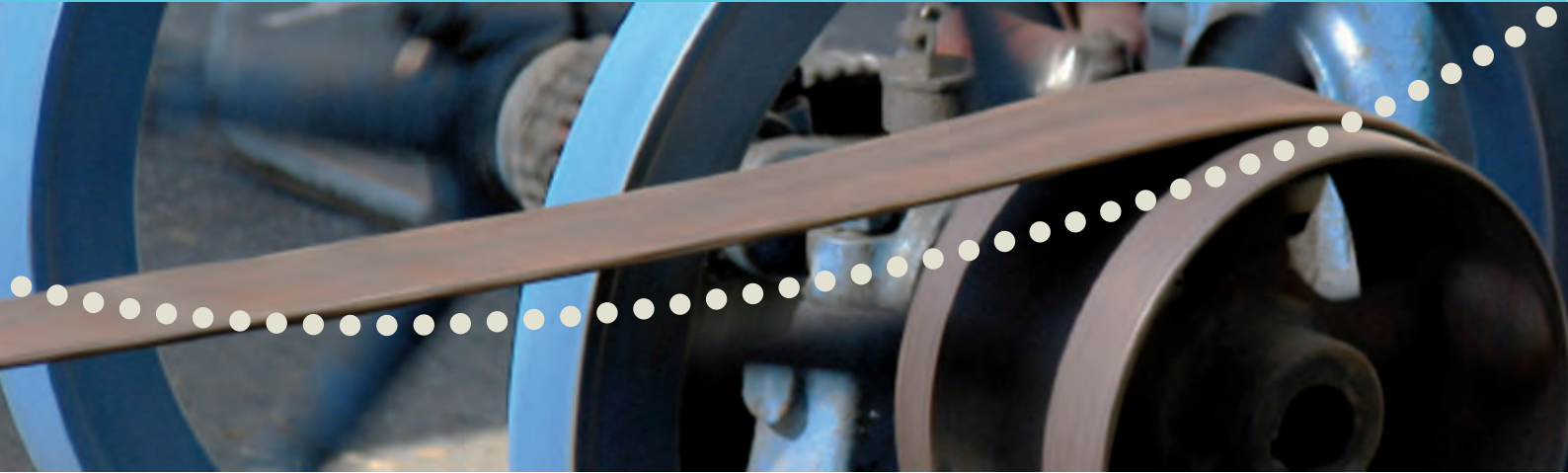
## **Kaumat Matting**

Kaumat is a paving which has been specially designed for its comfort for animals in stables and transport vehicles, providing livestock with comfortable flooring conditions.

Thanks to the prominent pattern on the upper surface animals enjoy a comfortable, supportive surface. The pattern on the underside of the Matting is highly non-slip, thus avoiding potential injury to the animals.

This product is sold in widths ranging from 1.200 mm to 1.800 mm, and thicknesses of 6, 8 and 10 mm. The inner reinforcing textile layer guarantees the stability of the Matting.





Transmission belts reinforced with cotton sheets, were, in the past, extremely common elements used for the transmission of power. Nowadays they are still used for that end, though they are also utilised for bucket elevators and for low-abrasion transportation in general.

The transmission belts are made from rubberised fabric layers placed one on top of the other, without any outer cover in rubber. They are supplied with their edges cut to the required dimensions. The typical manufacturing width is 1.400 mm.

In the past they used to be manufactured exclusively using cotton fabrics. At present, they are also manufactured using polyester-nylon sheets, with a special fabric designed for this type of use.



Cotton fabric belts are normally brown in colour, whilst the polyester-nylon belts are either black or manufactured in other colours.

The characteristics of the fabrics normally used are as follows:

Fabrics used in the manufacture of Transmission Belts				
Fabric	Minimum Breaking Strength (Kg/cm)	Warp		Weft Minimum Breaking Strength (Kg/cm)
		Elongations (%) Maximum	Working	
"L" cotton (28 oz)	60	20	4	25
"M" cotton (32 oz)	70	20	3	30
Polyester-Nylon	100	15	1,5	50



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