KAUMAN®
Conveyor belts - European manufacturer

EXPERTS IN THE CEMENT INDUSTRY

KAUMAN: OVER 40 YEARS OF EXPERIENCE AT YOUR SERVICE

Our mission is to deliver real value to the cement industry by offering conveying solutions that make a difference in quality, safety, and profitability.

Do you work at a cement plant and are looking for a reliable, efficient, and tailored solution for the continuous transport of bulk materials? Discover why Kauman is the leading partner in the cement industry.

With more than 40 years dedicated to the cement industry, Kauman has an in-depth understanding of your work environment's challenges and demands. Our track record has made us specialists in designing, manufacturing, and supplying rubber conveyor belts that can withstand the toughest conditions and meet the highest requirements of cement plants.

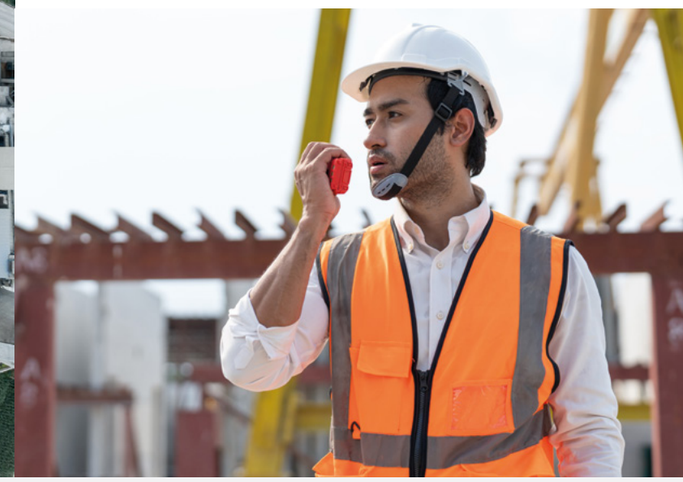
Proven Quality, Innovation, and Efficiency

- **In-house development:** We formulate our own compounds in our laboratory to guarantee maximum resistance to heat, abrasion, and impact, all of which are crucial in the cement sector.
- **Proven reliability:** Our belts are present in hundreds of cement plants, operating continuously and handling abrasive materials and extreme temperatures.
- **Innovative solutions:** Products like ANTI CUT NORIP®, KAUPIPE®, and KAULEV® ensure protection against cuts, safe enclosed conveying, and high-capacity bucket elevator transport.

An Expert Team, Always by Your Side

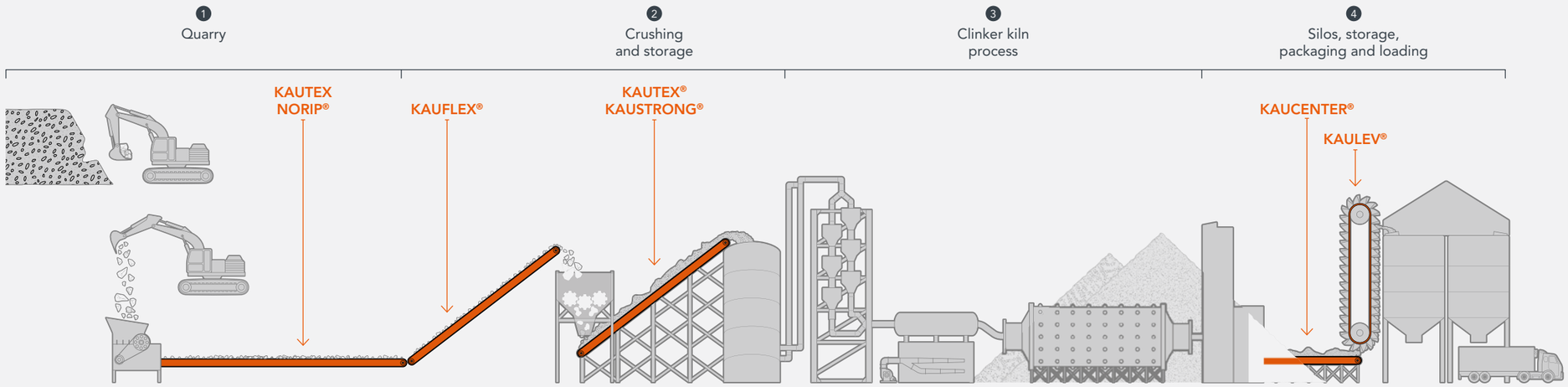
At Kauman, we believe in close, personalized support. Our team of engineers and technicians will assist you at every stage, from the initial analysis to commissioning and after-sales service, ensuring your plant always operates at peak performance.

Trust in Kauman's experience, flexibility, and adaptability. If you are looking for a continuous bulk material conveying solution that meets your cement plant's demands, count on us. Contact Kauman and take the next step toward operational excellence.



Tailor-Made Solutions for Every Cement Process

Every plant is unique, and every process—from raw material extraction to the shipment of finished cement—requires a specific solution. That's why Kauman develops fully customized conveyor belts, adjusting qualities, reinforcements, and designs to the precise needs of each application. Our technical department studies your case to provide the belt that maximizes efficiency, minimizes downtime, and ensures the longest possible service life.



QUARRY
KAUTEX NORIP®
HI ANTI-CUT RUBBER

KAUTEX NORIP®

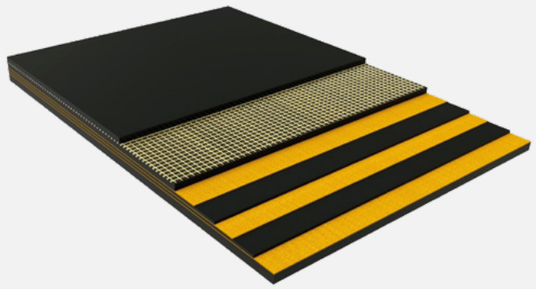
A conveyor belt must be able to operate in extreme conditions in the initial phases of cement production. During the extraction process, rocks are crushed and transported by a belt that must withstand heavy impacts and large stones with sharp edges. Kauman has developed for that use case a special reinforcement for textile or metal belts called KAUTEX NORIP®, consisting of a metal breaker inserted in the upper cover of the belt, normally a BF125HE, or depending on the drop distance and material, a stronger breaker than the BF125. Kauman recommends the insertion of the breaker (or a textile breaker) in the subsequent process to the first crushing in cement plants.

With a KAUTEX NORIP®, the belt carcass is protected from impacts by the absorption of the impact of drops when transporting limestone or clay. The KAUTEX NORIP® also prevents longitudinal cuts in the belt carcass by sharp materials.

(HI) Anti-Cut Rubber Compound High Impact (High Impact Resistance)

Given the scope for breakage of the rubber when transporting sharp-edged materials, Kauman recommends a specially formulated rubber to prevent tearing and cuts.

We have therefore specially formulated and developed a (HI) cut-resistant rubber compound for the initial extraction process, in which cuts and tears in the rubber covers can be a common occurrence. The tensile strength of the compound is a minimum of 22 MPa, and the abrasion specifications are a minimum of 90 mm, giving an extremely cut-resistant rubber compound with good abrasion resistance. The HI cover compound can be used in any of our textile or metal belts.



HI rubber compound properties

Code	HI
Name	High Impact
Break (MPa)	22
Elongation to break (%)	450
Abrasion (mm³)	90
Operating temp. (°C)	-30 / +60

CRUSHING AND STORAGE
KAUFLEX® / KAUSTRONG® / KAUPIPE®

High-quality belts

Materials extracted from the quarry are crushed and fall onto a series of belts that transport them to limestone storage areas. It is critical to select the correct conveyor belts for this application in function of distance and the size of the material. Generally, this conveyor section spans long distances, and it is crucial to select a high-quality belt to avoid frequent replacement.

KAUFLEX®

The most commonly used conveyor belts in this process are the KAUFLEX®, with metal mesh to prevent longitudinal cuts. Based on our experience at Kauman, and as an alternative, we recommend a textile conveyor with a fabric that has polyester and nylon (polyamide) fibres in the warp and nylon in the weft, known as EPP, on account of the differences in weight, cost, and resistance to transport of heavy material.

KAUSTRONG®

During this phase, the material still has sharp edges and is bulky. Kauman recommends using a KAUSTRONG®, an EPP textile belt capable of covering long distances with very low stretch, which is lighter than a steel conveyor and has a structure that is four times as absorbent as normal reinforcements. We can manufacture the KAUSTRONG® belt in one-ply or two-ply. The strongest type is the EPP2500/2 with a belt strength of 2500 N/mm, which can be produced in widths up to 2200 mm. In summary, the main reasons for using this belt for transport for storage are:

- → Low stretch.
- → Better belt alignment than steel cord or EP belt.
- → High resistance to longitudinal cuts and breaks.
- → High impact absorption.
- → Lower weight.

KAUPIPE®

In cement plants where crushed limestone is transported over a long distance from the mine to the plant, special precautions are required due to the siting of the conveyors and to prevent dust and dirt from spilling.

At such plants, our customers use a tubular conveyor belt. Kauman recently launched is KAUPIPE®, an EP conveyor belt that adapts to form a circular section.

KAUPIPE® can be adapted to form a conveyor with a diameter of 600 mm, with a large load-carrying capacity. Please contact our engineers for advice on your particular application at **kauman@kauman.com**.

The main advantages of this conveyor belt for the cement industry are:

- → Elimination or reduction of transfer points, and therefore of maintenance and time taken.
- → Flexible design with tight horizontal and vertical curves.
- → Better adaptation to changes of level in the terrain.
- → Enclosed transport which protects the material from rain, snow and wind.
- → Prevents spillage of material and reduces dust at the plant, so protecting the environment.

CLINKER KILN PROCESS

KAULEV®

KAULEV®

Pyroprocessing includes the preheater tower and the kiln, which heat the crushed raw material (called "raw meal") and sinters it to form clinker. The "raw meal" is transported to the pyroprocessing phase using a bucket elevator.

A bucket elevator is generally used to transport smaller granular material, such as "raw meal" before calcination and silos for storage of finished cement prior to dispatch. Kauman has shown its reliability in hundreds of cement facilities in continuous operation, such as feeding silos and preheater towers.

Within those processes, Kauman has specialised in the design and production of a complete bucket conveyor belt solution to ensure operational continuity and optimal elevator belt operational lifespan.

Our rubber conveyor belt for cement industry bucket elevators is called KAULEV®. It has been designed to transport fine bulk material, with a large transport capacity of up to 2500 cubic metres per hour to achieve that performance. Kauman uses its FLEXIMAT® steel mesh in the warp and rigid cords in the weft. The principal advantages of steel mesh cords are improved compression, low stretch and excellent rubber penetration; the weft cords provide a strong barrier against longitudinal cuts and tears.

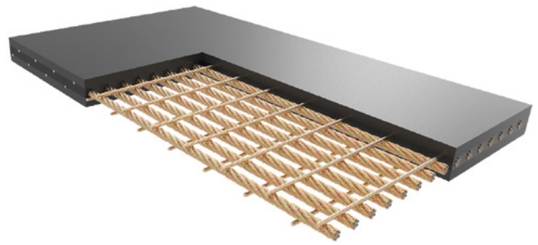
The KAULEV® is designed for heights above 200 metres, with steel mesh strength reaching up to 4000 N/mm.

Kauman has developed a heat-resistant EPDM rubber compound for bucket elevators that transport hot material for different cement plant processes. The material withstands a continuous temperature of the material carried by bucket elevators of up to 130°C.

- → Steel bands for resistances up to 4000 N/mm.
- → Heights above 200 metres.
- → Continuous temperatures of material of up to 150°C.
- → Minimal stretch of 0.3% under maximum working load, even in long belts.

Kauman has innovations for crucial parts of elevator belts, particularly in areas where belts experience the greatest fatigue and risk of breaking: the clamp area.

- → We reinforce the clamp area of the elevator belt with a special lining fabric to prevent the rubber from breaking or tearing in this area.
- → We have improved the characteristics of the rubber compound to enhance the performance of the clamp and prevent breaking of the rubber.
- → We make openings for the buckets and clamps using CNC water cutting.



Importance of cover compounds in the clinker process

At Kauman, we realise the importance of selecting the correct cover compound for each belt and process. That is why we have a range of improved cover compounds that are resistant to oil, grease and high temperatures.

Oil and fat-resistant rubber compounds

The clinker combustion process uses fuels such as coal or oil to provide energy. Conveyor belt covers therefore have to be protected against oils and grease. Kauman has developed various durable conveyors that adapt to the different temperatures and the condition of the material during the burning process.

It is important to select the correct rubber quality to match the material and its levels of fat and oil. The most important variables to consider are the working temperature and the temperature of the material, the type of oil or grease and the abrasiveness of the material. An ATEX assessment should also be carried out if necessary.

Contact us to determine out the right cover compound for your processes.

Code	Name	Break (MPa)	Elongation to break (%)	Abrasion (mm^3)	Operating temp. (°C)	Max. temp. (°C)
G	Resistant to oil and fat	13	350	200	-15 / +60	-30 / +60
GR	Resistant to oil and fat for use at low temperatures	12	350	150	-30 / +60	-30 / +60
GG	Resistant to vegetable and mineral oil and fat	14	300	150	-10 / +60	-30 / +60
Niter G	MOR heat resistant	13	350	175	-20 / +100	120
Niter GG	SOR heat resistant	11	300	175	-20 / +100	130
Niter GG No flame	No flame, SOR and heat resistant	15	400	250	-10 / +100	130
KG	No flame and MOR for outside use	12	400	175	-20 / +80	-30 / +60

Heat-resistant rubber compounds

The transport of hot clinker after the combustion process requires conveyor belts to meet the thermal requirements to carry hot material that can reach 225°C. Kauman ensures the protection of the belt by providing special covers that can withstand temperatures up to 225°C.

We divide our heat-resistant compounds into three categories: T15, T18, T20. Kauman's compounds for the cement industry can be used in different conditions in function of:

- → Size of pieces of material.
- → Belt speed.
- → Belt length.
- → Ambient temperature.

We recommend analysis of the clinker temperature and the transport combinations at each step in a plant, along with material sizes, to determine the right cover.

However, it is important to distinguish the surface temperature of the belt and the temperature of the transported material.

The temperature of material in different cement plants varies in function of the conditions listed above.

Materials to carry	Granulometry ≤ 50 mm (cement, clinker, foundry sand, etc.)				Granulometry > 50 mm (metallurgical coke, pellets, etc.)			
Max. temperature of material (°C)	150	180	180	200	200	225	225	225
Average temperature of material (°C)	100	120	150	160	120	140	150	200
Max. temp. of belt surface in movement (°C)	90	110	140	150	100	120	130	150
Quality T15								
Quality T18								
Quality 20								

Temperature range (°C)	T15	T18	T20
Max. temp. of surface in movement (°C)	100	130	150
Max. temp. granulometry < 50 mm	150	180	200
Max. temp. granulometry >50 mm	200	225	225
Quality T15			
Quality T18			
Quality 20			

SILOS, STORAGE, PACKAGING AND LOADING

KAUCENTER® / KAULEV® → SEE PAGE 8

KAUCENTER®

When clinker is transported to storage or finish mills, material falling off the belt is a significant problem. The dust is very fine and tends to get into rollers and pulleys, and to damage the conveyor belt components. In many cases, belt misalignment is the reason why the dust damages belt edges, splices and structure, besides just leading to spillage. To avoid that, working with cement industry experts, Kauman launched KAUCENTER®, its self-centring conveyor belt.

KAUCENTER® consists of a textile or metal conveyor belt with an additional transversal stiffness weave of the same width as the conveyor's central roller.

Different degrees of flexibility at the centre and on the edges of the belt keep the belt centred and sitting correctly on the three rollers at all times.

The performance characteristics of the self-centring belt make it the perfect solution for the common problem of misaligned belts.

Among other problems, this can lead to a loss in load capacity, material spillage, and system blockages, reducing operating time and deteriorating the edges of the belt.

For long-distance mill storage or dust spillage, Kauman generally recommends a KAUCENTER® with a BF800RE Breaker to significantly increase the transversal rigidity of the belt and prevent transversal movement.

SIZING AND OPTIMISATION OF THE BELTS IN YOUR CEMENT PLANT

Optimal performance

For the optimal performance of your cement plant, the selection of the right conveyor belt for each use case is essential. In most plants, rubber belts are selected on the basis of prior history or just repeat ordering.

At Kauman, we recommend that you should redo the calculations for your conveyor belts taking account of the available upgrades and optimise the solutions implemented to increase capacity, reduce energy consumption, lower maintenance costs, avoid downtime, oversize your conveyor belts or even increase your belts' safety factor.

Kauman acquired one of the best programmes on the market for calculating and sizing conveyor belts for cement plants: Overland Conveyor Belt Analyst. Thanks to the new software and data such as geometries, capacities and materials, we can precisely determine the ideal conveyor belt for your plant process.

Send us your completed questionnaire and we will do the calculations to determine the exact conveyor belt you need.

Splicing experts

With over 35 years' experience in the cement industry, we know that conveyor belt splicing has become a critical point for installations.

Kauman has its own splicing method that is ISO-compliant. We provide a complete splicing kit with the right materials for each rubber compound. Particular care must be given in the cement industry to the splicing of temperature compounds in terms of compatibility of compounds and to belt splices for abrasive or large-sized materials in belts that operate in very demanding conditions.

Kauman provides an after-sales service for the installation of lifts, fasteners and the splicing of steel and textile cable belts, because we know that splices are critical. We offer methods to ensure complete reliability of splices. Ask our engineering department to design the splicing kit for your belt.

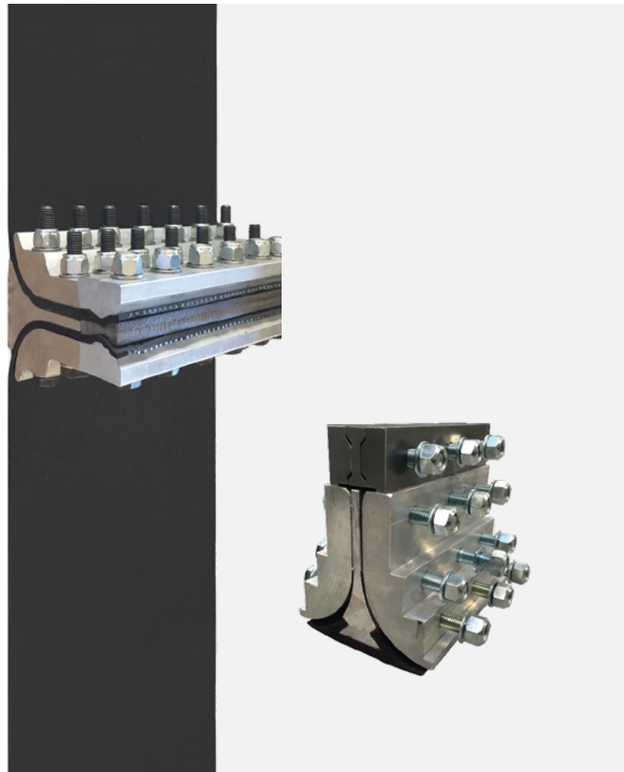
Training

The cement industry is increasingly professionalising, and businesses are demanding ever more information from manufacturers and manuals and training for the installation, maintenance and after-sales services of conveyor belts. Kauman offers courses for different industries that address industry-specific topics.

Fasteners

The lifting process is essential in cement plants to keep conveyor belts operating without critical failures or breakages. We know that splice fasteners are the weak point of these systems. Consequently, Kauman supplies the right fastener system for each elevator conveyor, in function of the conveyor's capacity, the materials transported and the type of belt.

To create the openings for the attachment of buckets and fasteners, Kauman uses a perforation system that provides clear attachment openings accurately aligned with the belt so as to prevent failure in operation.



WHY CHOOSE KAUMAN?

Over 40 Years of Proven Experience

We understand the challenges and unique demands of the working environment because we have been solving them, day after day, alongside our customers for over 40 years.

Innovation Driven by R&D

Innovation is part of Kauman's DNA. Our R&D department works constantly on the development of new rubber compounds, reinforcements, and technical solutions tailored to the most demanding environments of cement plants. Every belt we supply is the result of continuous research, rigorous testing, and a commitment to always delivering maximum performance.

Tailor-Made Solutions for Every Process

No two cement plants are the same, and neither are their conveying needs. Our technical team works closely with you to ensure that each belt is optimized for your application, maximizing efficiency and extending its service life.

Quality and Reliability Backed by Success Stories

Our commitment to quality goes far beyond a promise: it is proven in the field. One example is Cementos Cosmos in Toral de los Vados, where the longest conveyor belt in the facility is from Kauman and has been operating for years with exceptional reliability and performance [→ Learn more at **kauman.com**]. This is just one of many success stories that demonstrate our ability to deliver solutions that stand the test of time.

KAUMAN®
Conveyor belts - European manufacturer

For us, quality is efficiency.
Put us to the test.

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KQS® Kauman Quality System

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001