# CONVEYOR BELTS

DESIGN, FABRICATION AND SUPPLY OF CONVEYOR BELTS

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LUFH

# INDEX

# LUFH Conveyor Belt Systems

**LUFH Conveyor Belt Systems** supplies high quality and top performance conveyor belts and conveyor system components, with excellent follow-through technical support and after-sales service. Our products are specialized for the oil, mining, industrial and construction fields, thus fulfilling the applicable requirements of the interested parties for the client's satisfaction. **LUFH** seeks excellence through continuous improvement of the Quality Management System by employing highly competent motivated human talent, and by having adequate facilities and instruments that allow us to meet quality standards.

The purpose of our company is to meet customers' expectations in terms of quality, timely delivery, a long warranty period and a trustworthy after-sales service, as well as to offer an excellent price for our conveyor belt production and other conveyor system products.

Our production site annual manufacturing capacity is approximately 1,000 km of belts, with different types of reinforcements: fabric, both aramid and steel cord, widths that go from 400 mm to 2600 mm and a temperature resistance that ranges from -60°C to 400°C.

Additionally we have our own fabric production center, with a production capacity of installed machines that satisfies 100% of the demand for fabric of different characteristics, **(PP) polyamide - polyamide, (EP) polyamide - polyester and aramid fabric**, which have different structures and resistances, ranging from 100 to 1600 kN/m and widths from 800 to 2600 mm. All fabrics are impregnated and stabilized.

Our Technical Department is able to provide proposals for improvements based on an innovative approach and adapting to the customer's needs or demands, with special emphasis on meeting customer requirements with reliability and timeliness. Warranty and after-sales service are provided.

**"The purpose of our company is to meet customer's expectations in terms of quality, timely delivery, a long warranty period and a trustworthy after-sales service"**

## General characteristics

# OF LUFH CONVEYOR BELTS

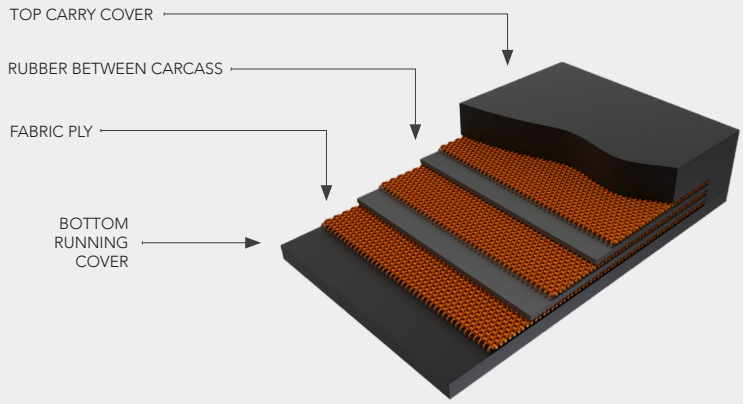
The carcass or core that makes up the conveyor belt is the element that resists the tensions or loads to which the conveyor belt is subjected and is made of high quality and resistant materials, both fabric and steel cords.

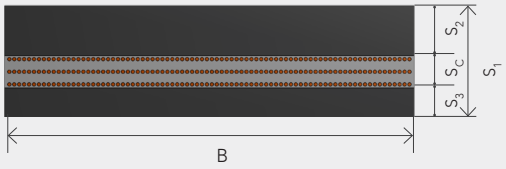
We supply cover qualities or grades according to **DIN, ISO, CEMA, JIS, AS, BS, RMA, EN, SANS or GOST**.

We can supply covers with higher qualities than the standard, through our special applications having properties of high tensile strength, super abrasion resistance, tear, cut, impact resistance, acid or alkali resistance, oil, grease, high temperature and fire resistance, , and energy saving bottom cover.

**"We can supply covers with higher qualities than the standard"**

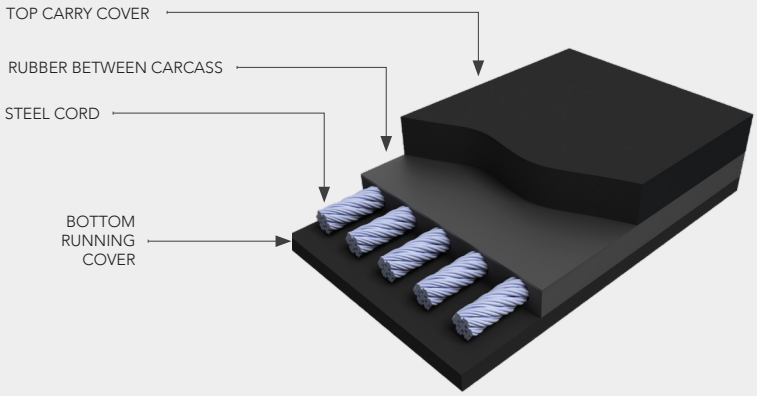
## General structure fabric rubber belts

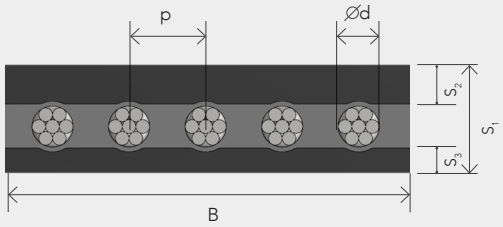



$S_1$ Approximate total belt thickness [mm]
$S_C$ Thickness of the belt carcass
$S_2$ Thickness of top or carry cover [mm]
$S_3$ Thickness of bottom or running cover [mm]
B Belt width [mm]

## General structure belts with steel cords




$S_1$ Approximate total belt thickness [mm]
$Ø_d$ Wire cord diameter [mm]
$S_2$ Thickness of top or carry cover [mm]
$S_3$ Thickness of bottom or running cover [mm]
B Belt width [mm]
P Cord pitch or spacing [mm]

**TABLE 1** Qualities of rubber covers supplied by **LUFH.**

| COVER QUALITY LUFH-CBS | Fabric | | Steel Cord | | TECHNICAL FEATURES |
|---|---|---|---|---|---|
| | ISO 14890 | DIN 22102 | DIN 22131 | DIN EN ISO 15236 | |
| Sturdy™ | H, D, L | W, X, Y, Z | W, X, Y, Z | H, D, L | Belts with certain mechanical resistance values, for the transport of bulk materials under certain conditions of abrasion and impact. |
| Thermik™ Thermik™ Optium | - | T | T | T | For conveying hot materials such as ash and slag, moulding sand, limestone, cement clinker, coke, etc.; with a temperature from 120 to +280 °C or in special applications with peaks up to 400 °C. |
| FireProof Belt | - | S, K, V | S, K, V | S, K, V | Flame-resistant, flame-retardant and antistatic properties, suitable for ground or underground transportation of flammable materials, especially in coal mining. Can be oil resistant for transport of material from 100 to 120°C. |
| OGR® | - | G | G | G | With oil and grease resistant covers, they can be combined with properties of anti-flame, antistatic, as well as resistant to material temperatures of 100 to 120 ° C. |
| SuperA25™ Sturdy™ Plus Sturdy™ Optium | H*, D* | X*,W* | X*,W* | H*, D* | Higher than standard abrasion resistance properties (*), applied when the conveyed material generates high abrasion on the belt cover, affecting its performance and causing premature belt change. |
| EIG™ | H* | X* | X* | H* | This is a technological development that combines fabric and covers specially formulated to resist high impact and cutting, in special applications, for mineral handling in primary crushing areas. Surpassing the standard (*) |

* Strength properties superior to standard.

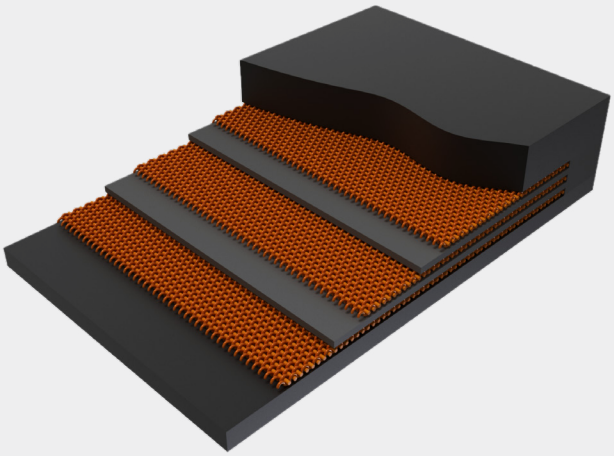
FABRIC

# CONVEYOR BELTS

**LUFH FABRIC conveyor belts** are composed of plies of woven fabric and rubber that form the carcass, from 1 to 5 or more plies, protected with special rubber covers for the carry and running sides of the belt, as well as rubber edges that allow it to withstand the demands of operation. A layer of special rubber is placed between the fabric plies of the carcass. In addition, the covers can have cross reinforcement (breaker) which acts as a stop or a tear protector for the fabric or steel cords.

The fabric plies are made of woven layers of EP (polyester-polyamide) fabric, for material temperatures below 280°C, PP (polyamide-polyamide), special tri-cord fabric EBPB, EPP, PPP or DPP with Aramid weft, for special applications, resistant to high impacts, cuts and tears.

**"Protected with special rubber covers for the carry and running sides of the belt, as well as rubber edges that allow it to withstand the demands of operation"**



We manufacture according to **EN ISO 14890 or DIN 22102** standards. In order to ensure the safe operation of the conveyor and the installed belts, it is recommended to transport materials with a grain size of no more than 300 mm. The types and widths of the belts, other than those determined to the standards, must be agreed with the Technical Department of **LUFH-CBS**.

# Sturdy ™

## GENERAL PURPOSE

**LUFH Sturdy**, the general purpose conveyor belts are used for the transport of loose materials, where no particular requirements apply to the working conditions and properties of the transported materials.

These belts are used in almost all branches of industry, agriculture, construction and places where there is no risk of fire. The belts can be used for conveying stones, gravel, sand, cold clinker, neutral chemicals, coke, crops, building materials and others, within the ambient temperature range of -40°C] to +60°C. The covers and edges can be manufactured in different kinds of rubber; TABLE 1.1.

**"These belts are used in almost all branches of industry, agriculture, construction"**

TABLE 1.1. Physical and mechanical properties of rubber covers for the Sturdy™ conveyor belt.

| LUFH VALUES | | | | Equivalent DIN 22102 | Equivalent ISO 14890 | TECHNICAL FEATURES |
|---|---|---|---|---|---|---|
| LUFH QUALITY | Tensile Strength, min. (TS) [Mpa] | Elongation at break, min. [%] | Abrasion Resistance, max. [mm$^3$] | | | |
| **SA** | 18 | 400 | 90 | W | D | Excellent abrasion and wear resistance, suitable for carrying highly abrasive material. |
| **SI** | 25 | 450 | 120 | X | H | High impact resistance and good abrasion resistance, for conveying large and heavy materials. |
| **SN** | 20 | 400 | 150 | Y | - | Moderate abrasion resistance under normal operating conditions. |
| **SG** | 15 | 350 | 200 | Z | L | For applications without special requirements. |

**TABLE 1.2** Range of **Sturdy™** conveyor belts manufactured for general purpose, includes standard width, weight, carcass thickness and recommended minimum pulley diameters.

| BELT STRENGTH / N°. OF PLIES | Width min. [mm][1] | Width max. [mm][1] | Approximate Carcass Thickness $S_c$ [mm] | | Approximate Carcass Weight [Kg/m²] | | Minimum Pulley Diameters [mm] EP Carcass | | | Minimum Pulley Diameters [mm] PP Carcass | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | EP | PP | EP | PP | A | B | C | A | B | C |
| **400/3** | 500 | 1400 | 3,6 | - | 4,9 | - | 400 | 315 | 250 | - | - | - |
| **500/3** | 500 | 1400 | 3,6 | - | 4,9 | - | 400 | 315 | 250 | - | - | - |
| **630/3** | 500 | 1800 | 4,5 | 4,2 | 5,4 | 5,1 | 500 | 400 | 315 | 400 | 315 | 250 |
| **630/4** | 500 | 1400 | 4,8 | - | 6,5 | - | 500 | 400 | 315 | - | - | - |
| **800/3** | 500 | 1800 | 5,1 | 4,8 | 5,8 | 5,5 | 630 | 500 | 400 | 400 | 315 | 250 |
| **800/4** | 500 | 1800 | 6 | 5,6 | 7,2 | 6,8 | 630 | 500 | 400 | 500 | 400 | 315 |
| **800/5** | 500 | 1400 | 6 | - | 8,2 | - | 630 | 500 | 400 | - | - | - |
| **1000/3** | 650 | 1800 | 5,4 | 5,1 | 6,5 | 6 | 630 | 500 | 400 | 500 | 400 | 315 |
| **1000/4** | 650 | 1800 | 6,8 | 6 | 7,8 | 7 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1000/5** | 650 | 1800 | 7,5 | 7 | 9 | 8,5 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/3** | 650 | 1800 | 6,9 | 6,3 | 8,3 | 7,5 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/4** | 650 | 1800 | 7,2 | 6,4 | 8,7 | 7,4 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/5** | 650 | 1800 | 8,5 | 7,5 | 9,7 | 8,8 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1400/4** | 800 | 1800 | 8,4 | 6,8 | 10,3 | 8 | 1000 | 800 | 630 | 630 | 500 | 400 |
| **1600/4** | 1000 | 1800 | 9,2 | 8,4 | 11,1 | 10 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1600/5** | 1000 | 1800 | 9 | 8,5 | 10,9 | 10 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1800/4** | 1200 | 1800 | 9,6 | 10,4 | 11,5 | 11,5 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **1800/5** | 1200 | 1800 | 10,5 | 10,5 | 12,9 | 12,5 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2000/4** | 1200 | 1800 | 9,6 | 10,4 | 11,5 | 11,5 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **2000/5** | 1200 | 1800 | 11,5 | 10,5 | 13,9 | 12,5 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2500/4** | 1200 | 1800 | 12,8 | 11,2 | 14,5 | 12,8 | 1400 | 1250 | 1000 | 1000 | 800 | 630 |
| **2500/5** | 1200 | 1800 | 13 | 13 | 15,5 | 14,4 | 1400 | 1250 | 1000 | 1250 | 1000 | 800 |

[1] The types and widths of the belts, other than those determined in Table 1.2, must be agreed with our factory. The minimum recommended pulley diameters [mm] for belts in the tension range of 60-100% are specified according to DIN 22101: **A:** Drive pulleys and other pulleys in the high belt tension range. **B:** Deflection pulleys and other pulleys in the low belt tension range. **C:** Support pulleys (change in the direction of belt movement ≤ 30 degrees).

# Thermik™

## RESISTANT TO HIGH TEMPERATURES

**LUFH** high temperature resistant conveyor belts are designed for the transport of hot materials with a maximum temperature of +280°C or in special applications up to 400°C.

**Thermik™** conveyor belts are resistant to high temperatures and can transport different hot materials: ashes and slag, molding sand, limestone, cement clinker, coke, chemical fertilizers (e.g. urea, ammonium nitrate and others). For conveying materials with temperatures up to +200°C, the belt surface temperature may not exceed +180°C. For conveying materials with temperatures up to +280°C, the belt surface temperature may not exceed +200°C.

To protect the core or carcasses against high temperatures, the T120, T150 and T200 belts are manufactured with rubber covers of the recommended minimum thickness of 4 + 2 mm, while the T400 belts with covers of the recommended minimum thickness of 6 + 2 mm. High temperature resistant conveyor belts are manufactured under the strictest quality controls and within the regulatory standards.

For special applications we offer the **Thermik Optium** belt, which features superior high temperature resistance in the special material conveying applications bearing temperatures of 280 °C, with peak temperatures up to 400°C, manufactured with a high performance polyester fiber carcass called HMLS (High Modulus Low Shrinkage), which maintains a high modulus, high dimensional stability and low shrinkage at high temperatures.

**LUFH-CBS** adopts new materials and performance in high temperature resistant rubber covers as well as its high-tech casings such as nylon, polyester/nylon, aramid/nylon and basalt fiber.

The basalt fiber or aramid fiber is recommended to be used in extreme heat situations where the conveyor belt can be burned. Since different carcass materials have different heat resistance properties, the rubber cover and carcass materials should be reasonably selected according to the specific job. Please consult our LUFH Technical Department for further information.

Heat-resistant fabric and rubber conveyor belts are manufactured on the basis of fabric:

PP - polyamide-polyamide.

EP - polyester-polyamide (does not apply to T280 type belts).

**TABLE 2.1** Physical and mechanical properties of **Thermik™** conveyor belt with high-temperature rubber covers.

| LUFH VALUES | | | | Equivalent DIN 22102 | ISO 4195 test methods | TECHNICAL FEATURES |
|---|---|---|---|---|---|---|
| LUFH QUALITY | Tensile Strength, min. (TS) [Mpa] | Elongation at break, min. (Eb) [%] | Abrasion Resistance, max. [mm³] | | | |
| **T120** | 15 | 350 | 150 | T | Class 2 | Heat-resistant, for transporting materials up to 120 °C. |
| **T150** | 15 | 350 | 150 | T | Class 2 | Heat resistance and thermal insulation performance, suitable for working conditions with material up to 150 °C. |
| **T200** | 12 | 400 | 150 | T | Class 3 | Heat-resistant, for transporting materials up to 200°C. |
| **T280** | 12 | 400 | 150 | T | Class 3 | Heat resistance, for transporting materials at high temperatures up to 280 °C. |

**TABLE 2.2** Range of **Thermik™** conveyor belts manufactured to withstand high temperatures, including standard widths, weights, carcass thicknesses and minimum pulley diameters.

| BELT STRENGTH / N°. OF PLIES | Width min. [mm][1] | Width max. [mm][1] | Approximate Carcass Thickness $S_C$ [mm] | | APPROXIMATE CARCASS WEIGHT [kg/m²] | | | | | | | Minimum Pulley Diameters [mm] EP Carcass | | | Minimum Pulley Diameters [mm] PP Carcass | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | T120 | | T150 | | T200 | | T280 | | | | | | |
| | | | EP | PP | EP | PP | EP | PP | EP | PP | PP | A | B | C | A | B | C |
| **400/3** | 500 | 1400 | 4,2 | - | 5,6 | - | 5,6 | - | 5,5 | - | - | 400 | 315 | 250 | - | - | - |
| **500/3** | 500 | 1400 | 4,2 | - | 5,6 | - | 5,6 | - | 5,5 | - | - | 400 | 315 | 250 | - | - | - |
| **630/3** | 500 | 1800 | 5,1 | 4,8 | 6,1 | 5,8 | 6,1 | 5,8 | 6 | 5,7 | 5,5 | 500 | 400 | 315 | 400 | 315 | 250 |
| **630/4** | 500 | 1400 | 5,6 | - | 7,5 | - | 7,5 | - | 7,3 | - | - | 630 | 500 | 400 | - | - | - |
| **800/3** | 500 | 1800 | 5,7 | 5,4 | 6,9 | 6,3 | 6,5 | 6,2 | 6,4 | 6,1 | 5,9 | 630 | 500 | 400 | 500 | 400 | 315 |
| **800/4** | 500 | 1800 | 6,8 | 6,4 | 8,2 | 7,8 | 8,1 | 7,7 | 8 | 7,6 | 7,4 | 800 | 630 | 500 | 630 | 500 | 400 |
| **800/5** | 500 | 1400 | 7,0 | - | 9,4 | - | 9,3 | - | 9,2 | - | - | 800 | 630 | 500 | - | - | - |
| **1000/3** | 650 | 1800 | 6,0 | 5,7 | 7,3 | 6,7 | 7,2 | 6,7 | 7,1 | 6,6 | 6,4 | 630 | 500 | 400 | 500 | 400 | 315 |
| **1000/4** | 650 | 1800 | 7,6 | 6,8 | 9,2 | 8 | 9,2 | 8 | 9 | 7,8 | 7,6 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1000/5** | 650 | 1800 | 8,5 | 8,0 | 10,2 | 9,7 | 10,2 | 9,7 | 10 | 9,5 | 9,2 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1250/3** | 650 | 1800 | 6,9 | 6,3 | 8,3 | 7,4 | 8,2 | 7,4 | 8,1 | 7,3 | 7,1 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/4** | 650 | 1800 | 8,0 | 7,2 | 9,7 | 8,3 | 9,6 | 8,3 | 9,5 | 8,1 | 7,9 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/5** | 650 | 1800 | 9,5 | 8,5 | 11,6 | 10 | 10,9 | 10 | 10,7 | 9,8 | 9,5 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1400/4** | 800 | 1800 | 8,4 | 7,6 | 10,2 | 8,9 | 10,2 | 8,9 | 10 | 8,7 | 8,5 | 1000 | 800 | 630 | 630 | 500 | 400 |
| **1600/4** | 1000 | 1800 | 9,2 | 8,4 | 11 | 9,9 | 11 | 9,9 | 10,8 | 9,7 | 9,5 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1600/5** | 1000 | 1800 | 10,0 | 9,5 | 12,1 | 11,2 | 12,1 | 11,1 | 11,9 | 11 | 10,6 | 1250 | 1000 | 800 | 800 | 630 | 500 |
| **1800/4** | 1200 | 1800 | 9,6 | 10,4 | 11,4 | 11,5 | 11,4 | 11,4 | 11,2 | 11,3 | 11 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **1800/5** | 1200 | 1800 | 10,5 | 10,5 | 12,8 | 12,4 | 12,7 | 12,4 | 12,6 | 12,2 | 11,8 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2000/4** | 1200 | 1800 | 9,6 | 10,4 | 11,4 | 11,5 | 11,4 | 11,4 | 11,2 | 11,3 | 11 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **2000/5** | 1200 | 1800 | 11,5 | 10,5 | 13,8 | 12,4 | 13,7 | 12,4 | 13,6 | 12,2 | 11,8 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2500/4** | 1200 | 1800 | 12,8 | 11,2 | 14,9 | 12,8 | 14,9 | 12,7 | 14,7 | 12,5 | 12,3 | 1400 | 1250 | 1000 | 1250 | 100 | 800 |
| **2500/5** | 1200 | 1800 | 13,0 | 13,0 | 15,4 | 14,3 | 15,4 | 14,3 | 15,2 | 14,1 | 13,7 | 1400 | 1250 | 1000 | 1400 | 1250 | 1000 |

[1] The types and widths of the belts, other than those determined in Table 2.2, must be agreed with our factory. The minimum recommended pulley diameters [mm] for belts in the tension range of 60-100% are specified according to DIN 22101: **A:** Drive pulleys and other pulleys in the high belt tension range. **B:** Deflection pulleys and other pulleys in the low belt tension range. **C:** Support pulleys (change in the direction of belt movement ≤ 30 degrees).

# OGR™
## OIL RESISTANT, OIL RESISTANT AND NON-FLAMMABLE, OIL AND HIGH TEMPERATURE RESISTANT

**LUFH OGR™**, conveyor belts are oil-resistant, non-flammable, oil and high-temperature resistant and are used for conveying bulk materials of any grain size containing oil or organic and mineral grease.

They are composed of 2 to 5 plies of fabric, protected with rubber covers on the carry and roller side surfaces, as well as rubber edges. A rubber layer is placed between the fabric plies in the carcass.

In terms of design, the belt dimensions, belt elements and dimensional tolerances, rubber-fabric ply joints and strength parameters, our belts comply with ISO 14890 standard. Depending on its type, the oil-resistant conveyor belt meets the requirements of the Safety Category 1 or 2A or 2B, as referred to in ISO 12882 standard.

To protect the carcass against temperature increase, the oil and heat resistant **OGR-T100** belts are manufactured with rubber covers of 4+2 mm as minimum recommended thickness and the oil and heat resistant **OGR-T150** belts with rubber covers of 5+2 mm as minimum recommended thickness.

Generally, oil resistant, oil proof and non-flammable rubber fabric conveyor belts are made of EP (polyester-polyamide) fabric plies. At customer's request, the belts can be made of PP (polyamide-polyamide) fabric.

**"LUFH OGR™, conveyor belts are oil-resistant, non-flammable"**

TABLE 3.1 Physical and mechanical properties of OGR™ conveyor belts, oil resistant, oil proof and non-flammable, oil and high temperature resistant.

| LUFH VALUES | | | | | | | Equivalent DIN 22101 | Equivalent ISO 14890 |
|---|---|---|---|---|---|---|---|---|
| LUFH QUALITY | Tensile Strength, min. (TS) [Mpa] | Elongation at break, min. (Eb) [%] | Abrasion Resistance , max. [mm³] | Security Category | Permissible Temperature [°C] | | | |
| OGR | 15 | 350 | 200 | 1 | - 25 | 60 | G | - |
| OGR-2 | | | | 1 | - 25 | 60 | G | - |
| OGR-K | | | | 2A | - 20 | 60 | G/S/K | - |
| OGR-2K | | | | 2A, 2B | - 20 | 60 | G/S/K | - |
| OGR-T100 | | | | 1 | - 25 | 100 | G/T | - |
| OGR-T150 | | | | 1 | - 25 | 150 | G/T | - |

| LUFH QUALITY | TECHNICAL FEATURES |
|---|---|
| OGR | Oil resistant covers. |
| OGR-2 | Oil resistant covers and carcasses. |
| OGR-K | Oil resistant and non-flammable covers, used in fire hazard surroundings. |
| OGR-2K | Oil resistant and non-flammable covers and carcasses, used in environments with fire hazards. |
| OGR-T100 | Oil resistant covers used to transport high temperature materials up to +100 °C, are manufactured with rubber covers of 4 + 2 mm as the minimum recommended thickness. |
| OGR-T150 | Oil resistant covers used for the transport of high temperature materials up to +150 °C, are made of rubber covers with a minimum recommended thickness of 5 + 2 mm. |

TABLE 3.2 Manufactured range of OGR™, conveyor belts, oil resistant and non-flammable, oil and high temperature resistant, EP type, includes standard width, weight, carcass thickness and minimum pulley diameters.

| BELT STRENGTH / N°. OF PLIES | Standard Belt Width [mm][1] | | Approximate Carcass Thickness S3, Max.[mm] | | Approximate Carcass Weight [kg/m²] | | | | | | Minimum Pulley Diameter EP [mm]. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OGR | | | OGR-2,OGR-K, OGR-2K, OGR-T100, OGR-T150 | | |
| | Min. | Max. | OGR OGR-2 | OGR-K, OGR-2K, OGR-T100, OGR-T150 | OGR | OGR-2 | OGR-K | OGR-2K | OGR-T100 | OGR-T150 | A | B | C | A | B | C |
| 400/3 | 500 | 1400 | 3,6 | 4,2 | 4,8 | 5,7 | 6,1 | 6,1 | 5,5 | 5,5 | 400 | 315 | 250 | 400 | 315 | 250 |
| 500/3 | 500 | 1400 | 3,6 | 4,2 | 4,8 | 5,7 | 6,1 | 6,1 | 5,5 | 5,5 | 400 | 315 | 250 | 400 | 315 | 250 |
| 630/3 | 500 | 1800 | 4,5 | 5,1 | 5,3 | 6,1 | 6,6 | 6,5 | 6 | 5,9 | 500 | 400 | 315 | 500 | 400 | 315 |
| 630/4 | 500 | 1400 | 4,8 | 5,6 | 6,4 | 7,5 | 8,2 | 8,1 | 7,3 | 7,3 | 500 | 400 | 315 | 630 | 500 | 400 |
| 800/3 | 500 | 1800 | 5,1 | 5,7 | 5,7 | 6,5 | 7 | 7 | 6,4 | 6,4 | 500 | 400 | 315 | 630 | 500 | 400 |
| 800/4 | 500 | 1800 | 6 | 6,8 | 7 | 7,1 | 8,8 | 8,7 | 7,9 | 7,9 | 630 | 500 | 400 | 800 | 630 | 500 |
| 800/5 | 500 | 1400 | 6 | 7 | 8 | 9,4 | 10,2 | 10,1 | 9,2 | 9,1 | 630 | 500 | 400 | 800 | 630 | 500 |
| 1000/3 | 650 | 1800 | 5,4 | 6 | 6,4 | 7 | 7,7 | 7,7 | 7,1 | 7 | 630 | 500 | 400 | 630 | 500 | 400 |
| 1000/4 | 650 | 1800 | 6,8 | 7,6 | 7,5 | 8,7 | 9,4 | 9,3 | 8,5 | 8,5 | 800 | 630 | 500 | 800 | 630 | 500 |
| 1000/5 | 650 | 1800 | 7,5 | 8,5 | 8,8 | 10,1 | 11 | 10,9 | 9,9 | 9,9 | 800 | 630 | 500 | 1000 | 800 | 630 |
| 1250/3 | 650 | 1800 | 6,9 | 6,9 | 8,1 | 8,2 | 8,8 | 8,8 | 8 | 8 | 800 | 630 | 500 | 800 | 630 | 500 |
| 1250/4 | 650 | 1800 | 7,2 | 8 | 8,5 | 9,3 | 10,3 | 10,3 | 9,4 | 9,4 | 800 | 630 | 500 | 800 | 630 | 500 |
| 1250/5 | 650 | 1800 | 8,5 | 9,5 | 9,4 | 10,8 | 11,7 | 11,6 | 10,6 | 10,5 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| 1400/4 | 800 | 1800 | 8,4 | 8,4 | 10 | 10,2 | 10,9 | 10,9 | 9,9 | 9,9 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| 1600/4 | 1000 | 1800 | 9,2 | 9,2 | 10,8 | 10,9 | 11,7 | 11,7 | 10,7 | 10,7 | 1000 | 800 | 630 | 1000 | 800 | 630 |

[1] The types and widths of the belts, other than those determined in Table 3.2, must be agreed with our factory.. La TABLE 3.2 shows the recommended minimum pulley diameters [mm] for belts in the 60 to100% tension range, specified according to DIN 22101 standard: **A:** Drive pulleys and other pulleys in the high belt tension range. **B:** Deflection pulleys and other pulleys in the low belt tension range. **C:** Support pulleys (change in the direction of belt movement ≤ 30 degrees).

# FireProof Belt
## NON-FLAMMABLE AND ANTI-ELECTROSTATIC

**FireProof Belt** non-flammable multi-ply conveyor belts are designed for the transport of loose materials under conditions of increased fire risk, e.g. for the transport of coal in plants during processing, on the surface in mining companies, in power plants and in combined (heat and electricity) power plants.

Depending on the belt type, it meets the safety requirements class 2A, 2B, 3A, 3B referred to in ISO 14890 standard. In accordance to DIN 22102 standard, the belts have a special property: "K": for non-flammable covers, or "S": for non-flammable, with and without covers, tested to ISO 340 standard. All types of non-flammable belts manufactured are also anti-electrostatic.

**"FireProof Belt non-flammable multi-ply conveyor belts are designed for the transport of loose materials under conditions of increased fire risk"**

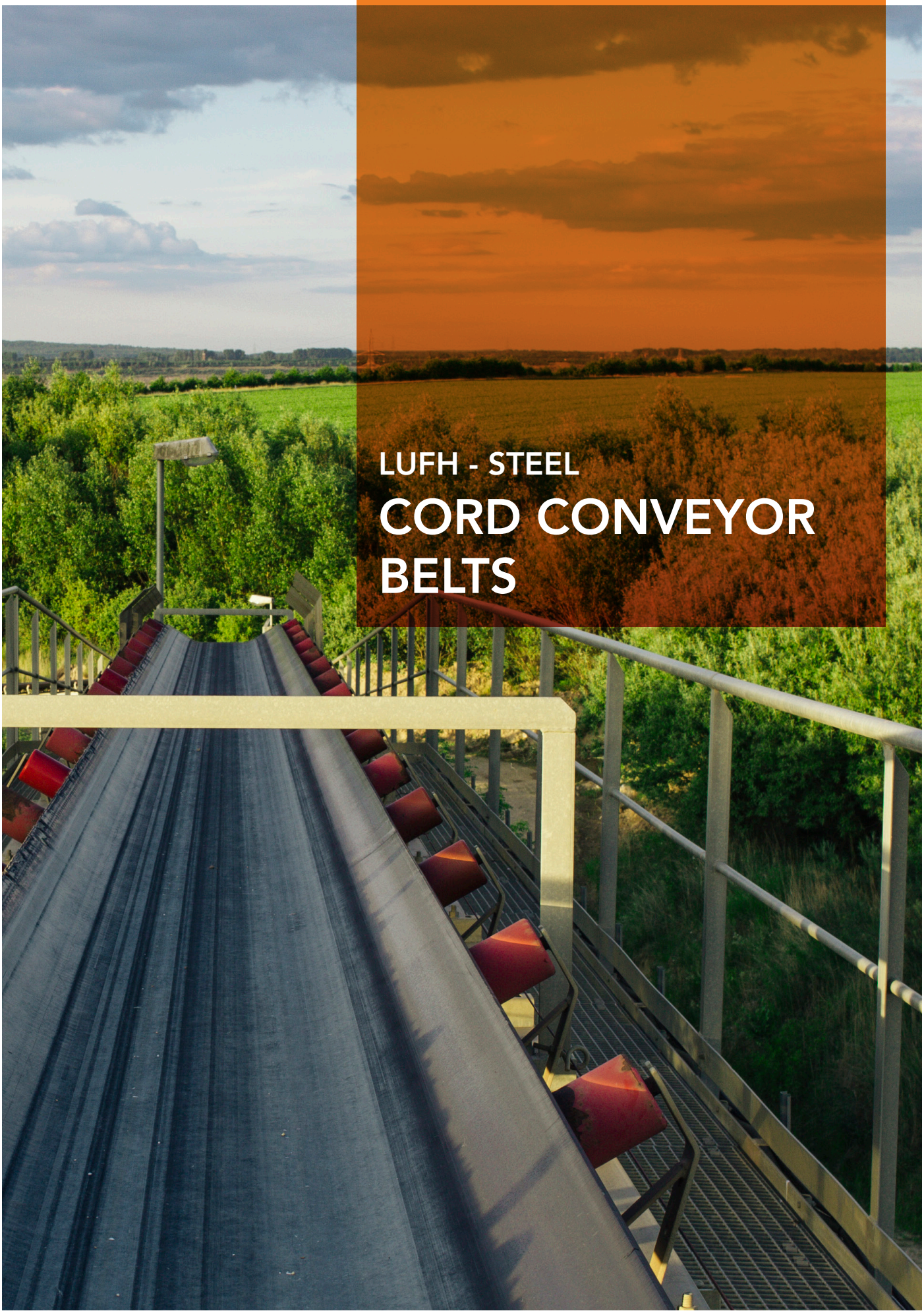
TABLE 4.1 Physical and mechanical properties of **FireProof** rubber conveyor belt with non-flammable covers.

| LUFH QUALITY | Tensile Strength, min (TS) [Mpa] | Elongation at break, min. (Eb) [%] | Abrasion Resistance , max. [mm³] | Equivalent ISO 14890 | Security Category referred to ISO 14890 | | | | Equivalent DIN 22102 | TECHNICAL FEATURES |
|---|---|---|---|---|---|---|---|---|---|---|
| **FA** | 18 | 450 | 90 | D | 2A | 2B | 3A | 3B | W/K/S | Fire resistant and anti-electrostatic cover with excellent abrasion resistance. |
| **FI** | 24 | 450 | 120 | H | 2A | 2B | 3A | 3B | X/K/S | Fire resistant and anti-electrostatic cover with excellent impact resistance. |
| **FN** | 20 | 400 | 150 | - | 2A | 2B | 3A | 3B | Y/K/S | Fire resistant and anti-electrostatic cover with moderate abrasion resistance. |
| **FG** | 15 | 350 | 200 | L | 2A | 2B | 3A | 3B | Z/K/S | Fire resistant and anti-static cover for secondary applications. |

**TABLE 4.2 FireProof** range of conveyor belts manufactured with non-flammable covers, includes standard width, weight, carcass thickness and minimum pulley diameters.

| BELT STRENGTH / N°. OF PLIES | Standard Belt Width [mm][1] | | Approximate Carcass Thickness Sc, Max.[mm] | | Approximate Carcass Weight [kg/m²] | | | | Minimum recommended pulley diameters [mm] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | EP | | PP | | | | | | | |
| | | | | | Safety Class EN 12882 / Special Characteristic DIN 22102 | | Safety Class EN 12882 / Special Characteristic DIN 22102 | | Carcass EP | | | Carcass PP | | |
| | Min. | Max. | EP | PP | 2A, 3A / K | 2B, 3B / S | 2A, 3A / K | 2B, 3B / S | A | B | C | A | B | C |
| **400/3** | 500 | 1400 | 4,2 | - | 6,1 | 6 | - | - | 400 | 315 | 250 | - | - | - |
| **500/3** | 500 | 1400 | 4,2 | - | 6,1 | 6 | - | - | 400 | 315 | 250 | - | - | - |
| **630/3** | 500 | 1800 | 5,1 | 4,8 | 6,6 | 6,5 | 6,3 | 6,2 | 500 | 400 | 315 | 400 | 315 | 250 |
| **630/4** | 500 | 1400 | 5,6 | - | 8,1 | 8 | - | - | 630 | 500 | 400 | - | - | - |
| **800/3** | 500 | 1800 | 5,7 | 5,4 | 7 | 6,9 | 6,7 | 6,6 | 630 | 500 | 400 | 500 | 400 | 315 |
| **800/4** | 500 | 1800 | 6,8 | 6,4 | 8,8 | 8,6 | 8,4 | 8,3 | 800 | 630 | 500 | 630 | 500 | 400 |
| **800/5** | 500 | 1400 | 7 | - | 10,2 | 10 | - | - | 800 | 630 | 500 | - | - | - |
| **1000/3** | 650 | 1800 | 6 | 5,7 | 7,7 | 7,7 | 7,2 | 7,1 | 630 | 500 | 400 | 500 | 400 | 315 |
| **1000/4** | 650 | 1800 | 7,6 | 6,8 | 9,4 | 9,3 | 8,6 | 8,5 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1000/5** | 650 | 1800 | 8,5 | 8 | 10,9 | 10,8 | 10,5 | 10,4 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1250/3** | 650 | 1800 | 6,9 | 6,3 | 8,8 | 8,7 | 8 | 7,9 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/4** | 650 | 1800 | 8 | 7,2 | 10,3 | 10,2 | 9 | 8,9 | 800 | 630 | 500 | 630 | 500 | 400 |
| **1250/5** | 650 | 1800 | 9,5 | 8,5 | 11,7 | 11,6 | 10,8 | 10,7 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1400/4** | 800 | 1800 | 8,4 | 7,6 | 10,9 | 10,8 | 9,6 | 9,4 | 1000 | 800 | 630 | 630 | 500 | 400 |
| **1600/4** | 1000 | 1800 | 9,2 | 8,4 | 11,7 | 11,6 | 10,6 | 10,5 | 1000 | 800 | 630 | 800 | 630 | 500 |
| **1600/5** | 1000 | 1800 | 10 | 9,5 | 12,9 | 12,7 | 12 | 11,8 | 1250 | 1000 | 800 | 800 | 630 | 500 |
| **1800/4** | 1200 | 1800 | 9,6 | 10,4 | 12,3 | 12 | 12,2 | 12 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **1800/5** | 1200 | 1800 | 10,5 | 10,5 | 13,7 | 13,5 | 13,3 | 13,1 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2000/4** | 1200 | 1800 | 9,6 | 10,4 | 12,3 | 12 | 12,2 | 12 | 1000 | 800 | 630 | 1000 | 800 | 630 |
| **2000/5** | 1200 | 1800 | 11,5 | 10,5 | 14,7 | 14,5 | 13,3 | 13,1 | 1250 | 1000 | 800 | 1000 | 800 | 630 |
| **2500/4** | 1200 | 1800 | 12,8 | 11,2 | 15,7 | 15,6 | 13,5 | 13,4 | 1400 | 1250 | 1000 | 1250 | 1000 | 800 |
| **2500/5** | 1200 | 1800 | 13 | 13 | 16,3 | 16,2 | 15,2 | 15 | 1400 | 1250 | 1000 | 1400 | 1250 | 1000 |

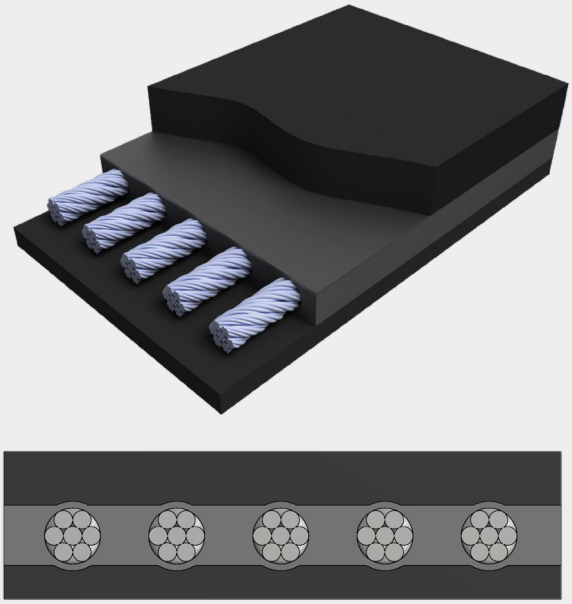
[1] The types and widths of the belts, other than those determined in Table 4.2, must be agreed with our factory **TABLE 4.2**, The recommended minimum pulley diameters [mm] for belts in the tension range of 60 to 100% are specified according to DIN 22101 standard: **A:** Drive pulleys and other pulleys in the high belt tension range. **B:** Deflection pulleys and other pulleys in the low belt tension range. **C:** Support pulleys (change in the direction of belt movement ≤ 30 degrees).



LUFH - STEEL

# CORD CONVEYOR BELTS

**LUFH STEEL CORD** conveyor belts are composed of a carcass consisting of galvanized steel cords with special rubber vulcanized on the carcass and special rubber covers for the carrying and running side, according to the required quality. In addition, the covers can have a cross reinforcement (breaker) which acts as a stop or a tear protector for the fabric or steel plies.



It's designed to transport loose materials of any grain size and can be operated (depending on the belt type) within the ambient temperature range of -40°C to +60°C. Considering the properties of the steel and rubber carcass, this type of belt is recommended for use on long and inclined routes, where an exceptionally low elongation percentage and a long service life are required.

These belts comply with Standards EN ISO 15236-1, -2 or DIN 22131 with regard to its structure, dimensions and individual elements, as well as their tolerances and strength parameters:

Depending on the type of belt manufactured, according to EN ISO 15236-2, the following types can be distinguished: type A1 or type A2, which differ from each other in the number of steel cords that make up the carcass in their cross section, the diameters of the cords and their physical-mechanical parameters. Depending on the longitudinal tensile strength of the belt, the following standard types of belts are manufactured: ST 1000, ST 1250, ST 1600, ST 2000, ST 2500, ST3150, ST3500, ST 4000, ST 4500, ST 5000, ST 5400.

# Sturdy ™

## GENERAL PURPOSE

Sturdy™ **General Purpose Conveyor Belts (GPC)** are used for conveying bulk materials under conditions that do not present special requirements in terms of working environment and properties of the conveyed material. They can be used in all industries, including mining of flammable and non-flammable materials, provided there are no fire hazards associated with such activity.

# FireProof Belt

## NON-FLAMMABLE, ANTI-ELECTROSTATIC AND FIREPROOF

FireProof Belt non-flammable, anti-electrostatic (FPS) conveyor belts are designed for the transport of bulk materials in mining operations or ports under conditions that present a higher risk of fire during operation, e.g. the transport of coal in power plants, coke plants and other hot material processing plants.

Fireproof conveyor belts (FPV) are used for transporting bulk materials in mining units that extract flammable materials (e.g. coal) and non-flammable materials (e.g. metal ores, salt, arid.

The properties of the rubber compounds used enable the FPV belt to meet the high requirements in terms of mechanical physics, electrical safety and fire protection.

"Sturdy™ can be used in all industries"

**TABLE 5.1** Range of steel cord conveyor belts, including belt widths, thicknesses, approximate carcass weights and recommended minimum pulley diameters.

| BELT STRENGTH[1] | Width [mm][1] | | Thickness [mm] | | | Approximate Weight [Kg/m²] | | | Minimum pulley diameter [mm] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Max. of carcass | Transport cover S2 | Tread cover S3 | SST | FPS | FPV | A | B | C |
| **1000** | 1000 | 2400 | 4,1 | 6 | 4 | 20 | 22 | 25 | 630 | 500 | 400 |
| **1250** | 1000 | 2400 | 4,9 | 6 | 4 | 22 | 24 | 27 | 800 | 630 | 500 |
| **1600** | 1000 | 2400 | 5,6 | 8 | 6 | 28 | 31 | 35 | 800 | 630 | 500 |
| **2000** | 1000 | 2400 | 5,6 | 8 | 6 | 30 | 32 | 36 | 800 | 630 | 500 |
| **2500** | 1000 | 2400 | 7,2 | 10 | 8 | 38 | 41 | 46 | 1000 | 800 | 630 |
| **3150** | 1000 | 2400 | 8,1 | 10 | 8 | 41 | 44 | 49 | 1250 | 1000 | 800 |
| **3500**[3] | 1000 | 2400 | 8,6 | 10 | 8 | 43 | 47 | - | 1250 | 1000 | 800 |
| **4000**[3] | 1000 | 2400 | 8,9 | 12 | 8 | 48 | 52 | 57 | 1400 | 1250 | 1000 |
| **4500**[3] | 1000 | 2400 | 9,7 | 12 | 8 | 49 | 53 | - | 1400 | 1250 | 1000 |
| **5000**[3] | 1000 | 2400 | 10,9 | 12 | 10 | 54 | 59 | - | 1600 | 1250 | 1000 |

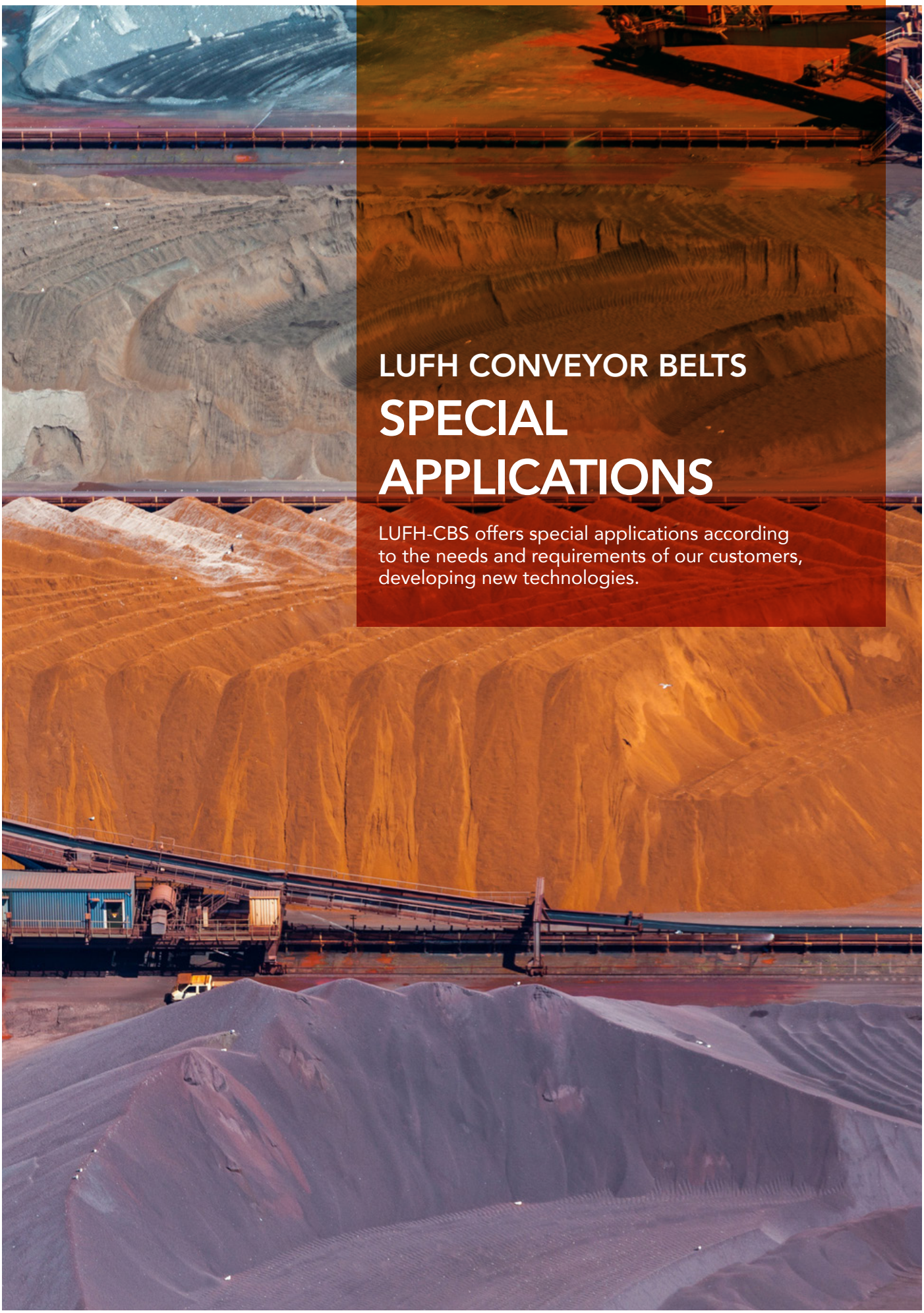
[1] The types and widths of the belts, other than those determined in Table 5.1, must be agreed with our factory .
[2] Does not apply to FPV belts.
[3] Does not apply to FPV belt.

La **TABLE 5.1** shows the recommended minimum pulley diameters [mm] for belts in the tension range of 60 to 100% are specified according to DIN 22101 standard: **A:** Drive pulleys and other pulleys in the high belt tension range. **B:** Deflection pulleys and other pulleys in the low belt tension range. **C:** Support pulleys (change in the direction of belt movement ≤ 30 degrees).

**TABLE 5.2** Physical and mechanical parameters for steel cord conveyor belts.

| PARAMETER | Unit | Belt Type Requirements | | | | | | | | | | Test Method[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 3500 | 4000 | 4500 | 5000 | 5400 | |
| **Tensile strength, min.** | [N/mm] | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 3500 | 4000 | 4500 | 5000 | 5400 | DIN 22131/ ISO 15236-2 |
| **Maximum cord diameter, d max.** | [mm] | 4,1 | 4,9 | 5,6 | 5,6 | 7,2 | 8,1 | 8,6 | 8,9 | 9,7 | 10,9 | 11,3 | DIN 22131/ ISO 15236-2 |
| **Minimum cord tensile strength min, Fbs** | [kN] | 12,9 | 18,4 | 26,2 | 25,5 | 39,7 | 50 | 55,5 | 63,5 | 75 | 90,3 | 96 | ISO 7622-2 |
| **Minimum adhesion of the cord to the carcass ply:** ·As delivered state Fa ·Resistance to thermal aging Fv (145 ±5[°C] x 150±1 [min] | [N/mm] | 80 75 | 95 90 | 105 95 | 105 95 | 130 120 | 140 130 | 145 140 | 150 145 | 165 160 | 175 170 | 180 175 | ISO 7623 |
| **Minimum adhesion strength:** ·Between the cover and the carcass | [N/mm] | 12 | | | | | | | | | | | ISO 8094 |
| **Belt electric resistance, max.** | [ Ω ] | $3 \times 10^8$ | | | | | | | | | | | EN ISO 284 |

[1] Tests are completed to current standards



## LUFH CONVEYOR BELTS

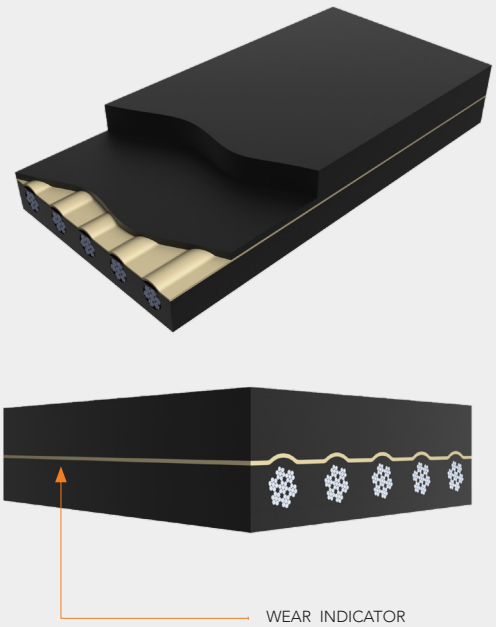
# SPECIAL APPLICATIONS

LUFH-CBS offers special applications according to the needs and requirements of our customers, developing new technologies.

# Wear Indicator

## CONVEYOR BELTS WITH WEAR INDICATORS

This type of conveyor belt is applied when a control of the cover wear is required, and to have an immediate and easy-to-identify warning about the belt abrasion. This presents advantages in terms of reducing the costs associated with inspection, as well as planning its replacement before its total wear.




# SuperA25™, Sturdy™ Plus, Sturdy™ Optium

## BELTS WITH SUPER-ABRASION COVER PROPERTIES

Our **LUFH SuperA25™** type of conveyor belt is applied when the conveyed material generates high abrasion on the belt cover, affecting its performance and causing premature belt change. The Super-Abrasion cover (≤25 mm3), has advantages in terms of reducing costs associated with the number of belt changes and longer life. This can be applied to both fabric and steel cord belts. Introducing the **Sturdy™** line with superior abrasion resistance properties: **Sturdy™ Plus** (≤100 $mm^3$), **Sturdy™ Optium** (≤60 $mm^3$).

| PARAMETERS | SuperA25 ™ | Sturdy ™ Optium | DIN W | Sturdy ™ Plus | DIN X |
|---|---|---|---|---|---|
| Tensile Strength, min. [Mpa] | ≥ 17 | ≥ 18 | ≥ 18 | ≥ 25 | ≥ 25 |
| Elongation at break, min. [%] | ≥ 500 | ≥ 400 | ≥ 400 | ≥ 450 | ≥ 450 |
| Abrasion Resistance, max. [$mm^3$] | ≤ 25 | ≤ 60 | ≤ 90 | ≤ 100 | ≤ 120 |

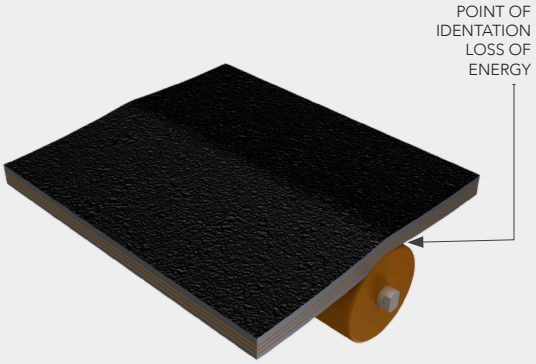
# ECOLUFH™
## ENERGY SAVING BELTS

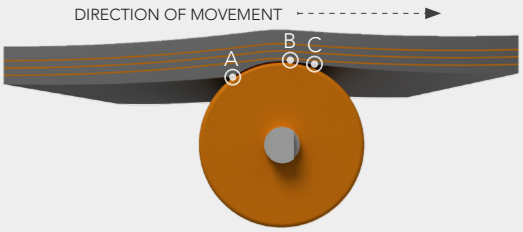
**LUFH-CBS** in collaboration with its customers promotes the efficient use of resources and energy, optimizing the design of its conveyors in terms of decreasing the weight of the carcass to reduce the belt weight, and in formulating rubber compounds that allow a longer lifetime and also decrease the associated energy requirements.

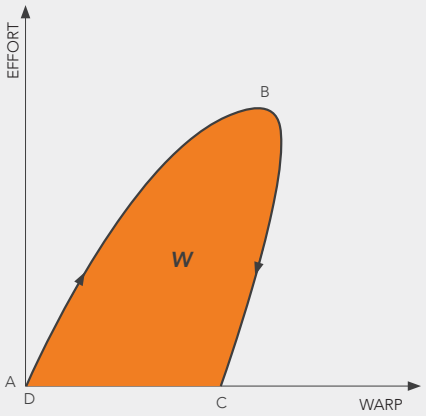
**ECOLUFH™** energy-saving conveyor belts are designed to reduce motor energy consumption, given the need to operate in regions where electricity generation is limited and/or the costs associated with it need to be optimized.

61% of the energy required by a conveyor is associated with the phenomenon of resistance (indentation) on the rollers, 18% from conveying the material, 9% from secondary resistances, 6% from bearing resistance, 5% from belt bending resistance, 1% from other resistances.

The rubber covers are specially formulated to reduce rolling resistance on the roller and the indentation effect of the belt, achieving energy savings of approximately 10 to 15%.




# ANTI STICK

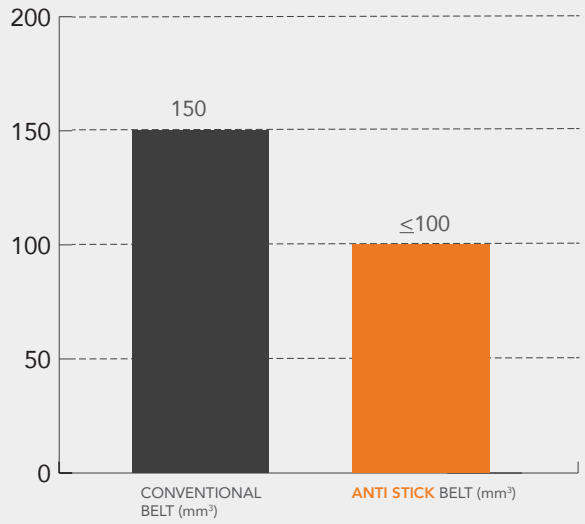
## ANTI-STICK CONVEYOR BELTS

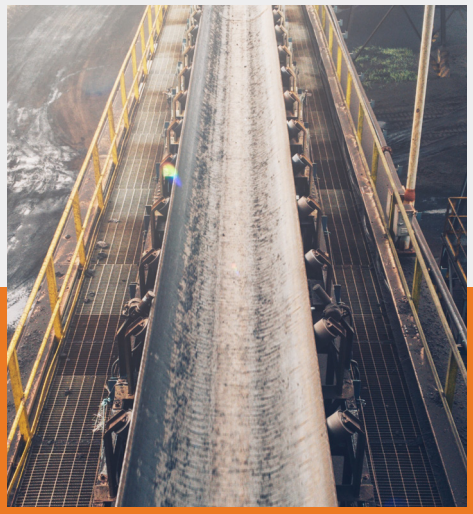
The conveyor belt **LUFH ANTI STICK** is applied when the transported material is wet and sticky, such as titanium dioxide, iron pyrites, silica, compound mixtures, wet ash, alumina, nickel and bauxite, iron ore, clay, brick and other building materials, recycling raw materials, chemical industry, fertilizer industry, animal feed that tends to adhere to the cover.

The rubber covers are specially formulated with non-stick additives that will last the entire life of the belt, offering advantages in the process of conveying wet and sticky materials. They promote a clean environment and an efficient operation of your facilities by reducing dust in suspension, by reducing spills and accumulation in the return areas of the belt by up to 50%, by a greater efficiency at the discharge points, and by reducing labor costs for cleaning up spilled material.

Test results indicate that belts with non-stick covers have an excellent abrasion resistance of less than 100 $mm^3$ and a reduction of material adhesion by at least 50% compared to a conventional belt.

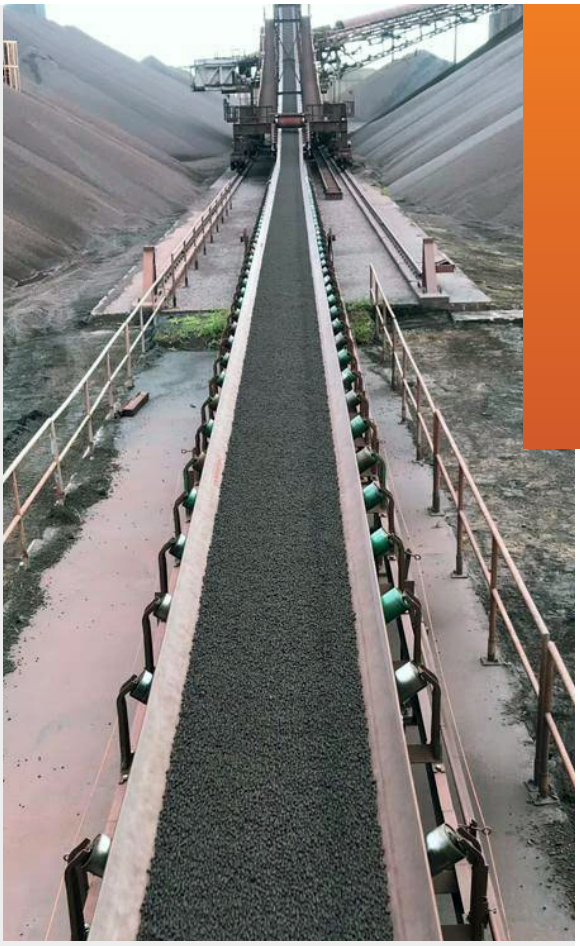
**Abrasion Resistance**



A) CONVENTIONAL BELT ΔM=3,78g

B) NON-STICK BELT (ANTI STICK) ΔM=0,47g



## RAA™
### ACID AND ALKALI RESISTANT CONVEYOR BELTS

**LUFH RAA™** conveyor belts are manufactured with acid and alkali resistant rubber covers and are used to transport material with chemical mixtures, paper, cement, copper ore, fertilizers, among others. This type of belt presents characteristics that allow foreseeing corrosion and a good adhesion in the rubber covers that prevents them from separating. They are built with a polyester and polyamide (EP) fabric carcass, polyester and other material.

With regard to specific operating conditions and certain conveyed materials, as well as special requirements of high temperature resistance, oil resistance, etc., please consult our **LUFH-CBS** Technical Department.

## ARAMLUFH™
### ARAMID CARCASS CONVEYOR BELTS

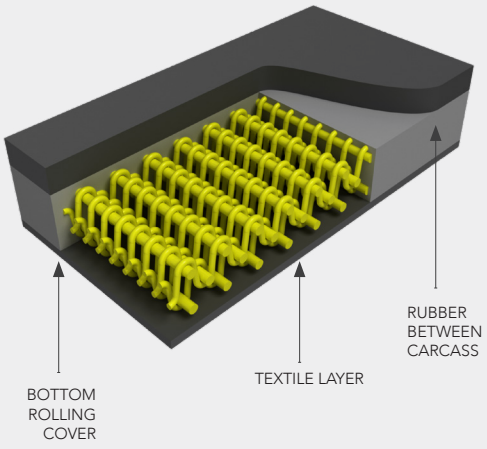
**ARAMLUFH™** conveyor belts are manufactured with a special DPP fabric carcass, aramid weft (D) with polyamide braid (P) and polyamide knit (P) and special rubber covers according to the needs of the application, with tensile strength from 500 to 3500 N/mm per ply used when long distances and high transport capacity are required. Aramid has excellent high temperature resistance and long life, so it can be used for general use, for high temperature resistant, for non-flammable on surface and in underground mining.

It's worth noting that its application in high temperature resistant belts increases the average life expectancy by up to three times that of a traditional belt.

An estimated 5.6% energy saving can be achieved in underground mining.

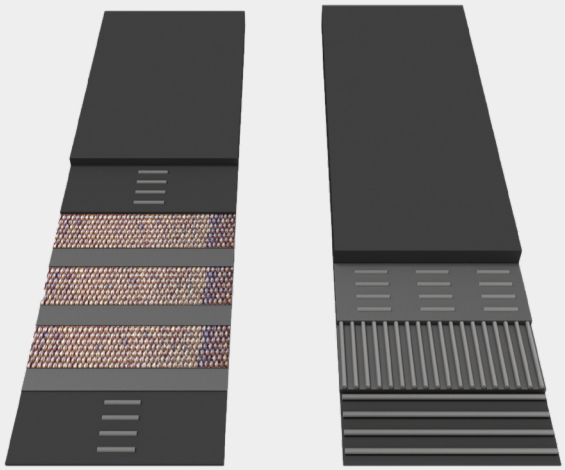
For the right choice according to the needs of the application, please consult our **LUFH-CBS** Technical Department.

CONVEYOR BELT WITH ARAMIDE CARCASS. **ARAMLUFH™**



# AUTO-TRACK BELT

## SELF-CENTERING CONVEYOR BELTS.

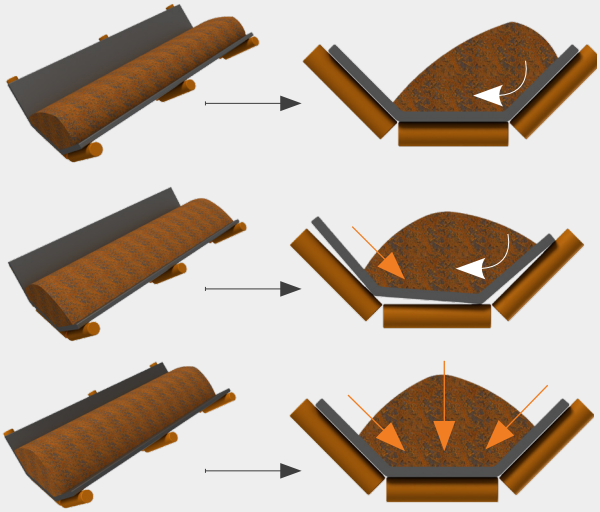


THE **LUFH AUTO-TRACK BELT** self-centering conveyor belt consists of a carcass made of EP, PP fabric or ST steel cord, with special rubber covers depending on the application requirements, with the particularity of having special cross inserts that allow the belt to be kept centered on the roller stations.

Its outstanding applications are in reversible belt conveyors or where there is curvature in its path, as well as where there is unevenness due to problems with the foundations.

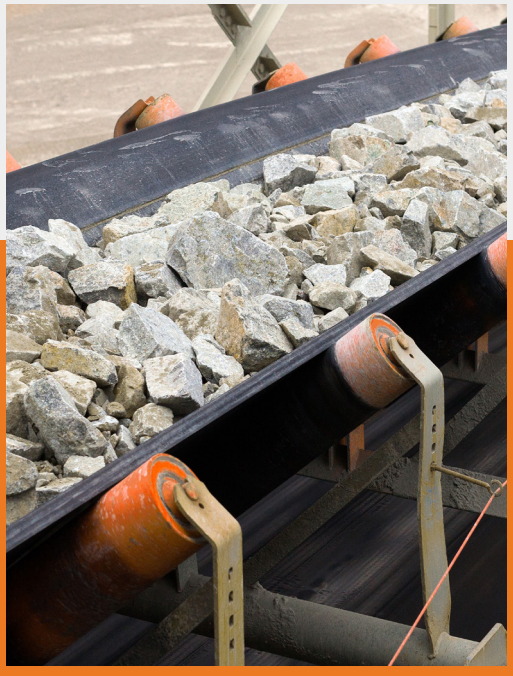
# EIG™

## CONVEYOR BELTS WITH HIGH IMPACT AND CUTTING RESISTANCE FABRIC AND COVER.



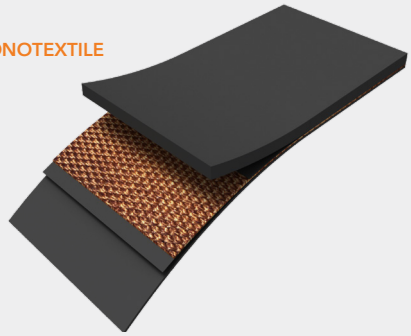
**LUFH-CBS** offers technological developments in fabric and covers with high impact and cut resistance These conveyor belts are made of fabric with one or two or more plies that make up their carcass. With a tensile strength from 500 to 1600 N/mm per ply, they use a special fabric that can be of the EPP polyester type, polyester weft (E) with polyamide braid (P) and polyamide knit (P); PPP, polyamide (P) weft with polyamide (P) braid and polyamide (P) weft; Twill Canvas (CFW); BT-Tri-Weave; BT-Tri-Warp. These are bonded with a special rubber layer placed between the plies of the fabric in the carcass, combined with specially formulated rubber covers to resist high impact(s) and a cut(s).

The special fabric carcass and special covers are used to support high impact and to avoid cutting. They have the advantage of high strength but are lighter. They have less total belt thickness and better impact resistance than the traditional EP or ST carcass belts, and also have an elongation, under load, of less than 1.5%.



For the right choice according to the needs of the application, please consult our **LUFH-CBS** Technical Department.

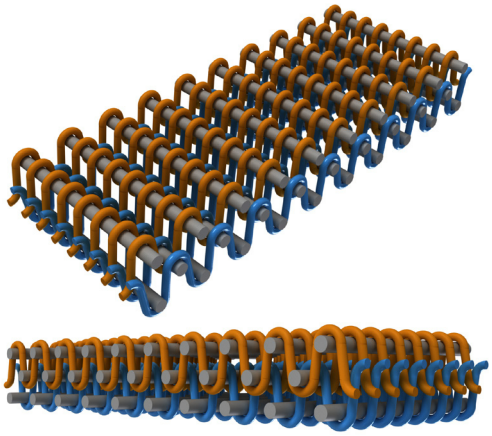
MONOTEXTILE



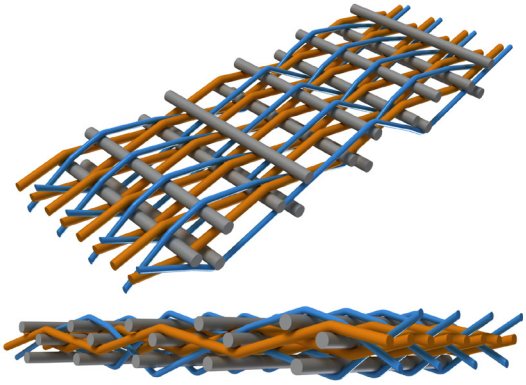
MULTITEXTILES

## Types of special fabrics for EIG™ Conveyor Belts.

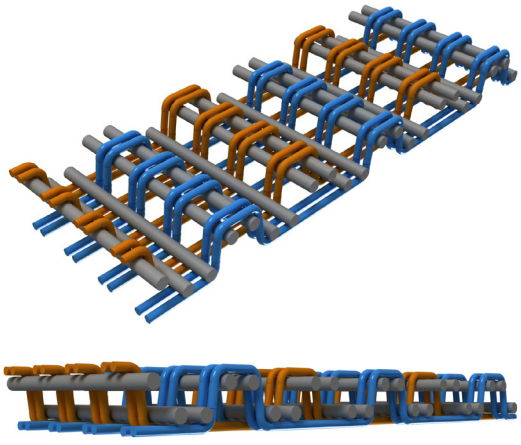
PLAIN



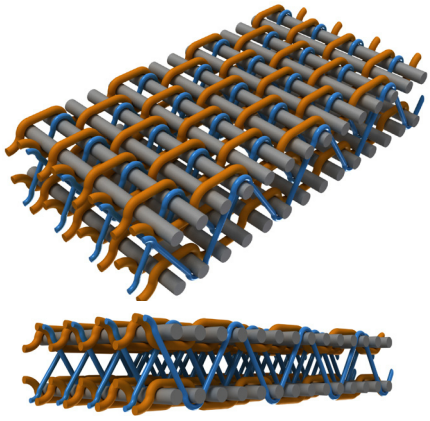
BT-TRI-WEAVE



CFW



BT-TRI-WARD



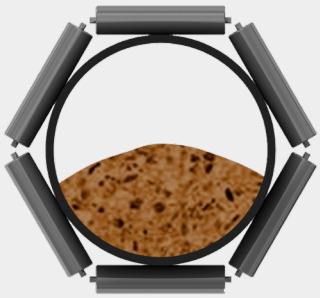
*For a suitable choice according to the needs of the application, please consult the LUFH-CBS Technical Department.

# PIPE Conveyor Belt

## TUBULAR CONVEYOR BELTS.

This type of tubular conveyor belt is applied when there is a need to reduce the dust in the material conveying process to protect the environment.

**LUFH-CBS** manufactures this type of conveyor belt, meeting the operational requirements in terms of fatigue, rigidity and load capacity. We therefore pay special attention to its manufacturing process in order to offer excellent performance and a high quality product. This belt can be manufactured with fabric carcasses or steel cords.

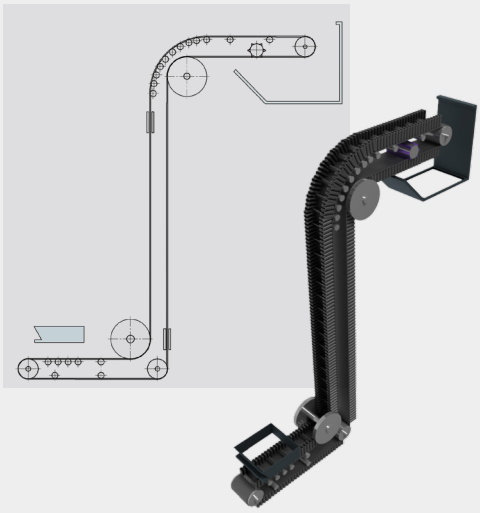


# FLEXOLUFH

## SIDEWALL CONVEYOR BELTS.

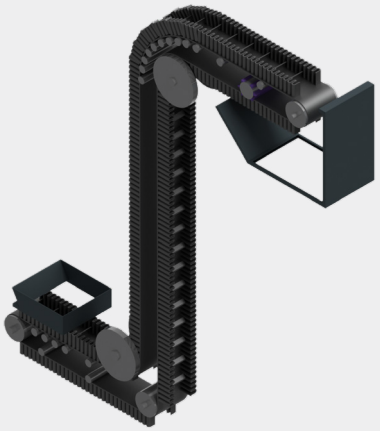
**LUFH-CBS** offers the latest developments in steep angle cargo transport using the sidewall conveyor system, **FLEXOLUFH**.

Our polyester fabric and steel cords used in LUFH's range of base belts with cross stabilizers have higher stiffness values and very low elongation, with special top and bottom rubber covers, in accordance with the quality required to meet the needs of the application, thus ensuring that they can withstand the high stresses to which an inclined angle conveying is subjected.



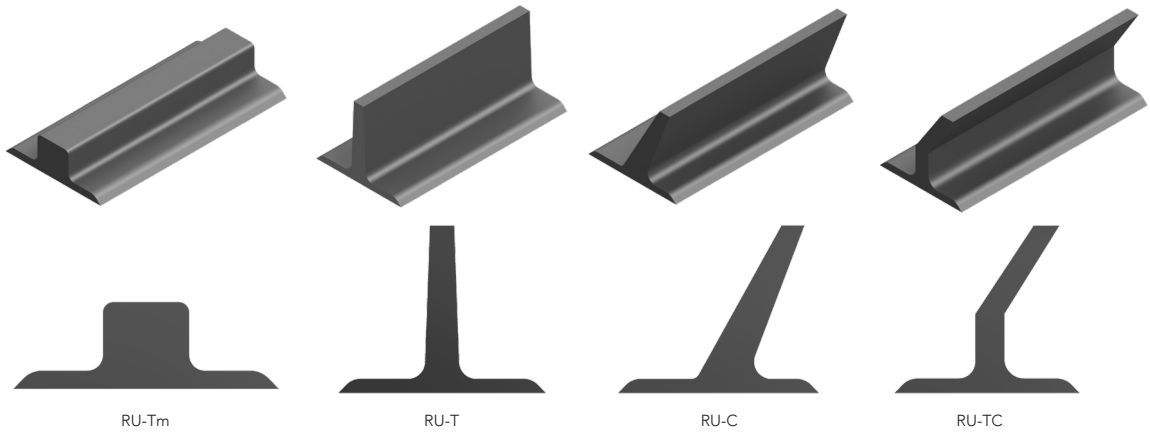
The corrugated sidewalls are produced from a highly elastic, high-strength rubber compound, offering excellent flexibility and maximum bending. The use of diagonal fabric for reinforcement within the sidewalls ensures maximum elongation of the fabric at the bending points and increases tensile strength, extending its life spand.

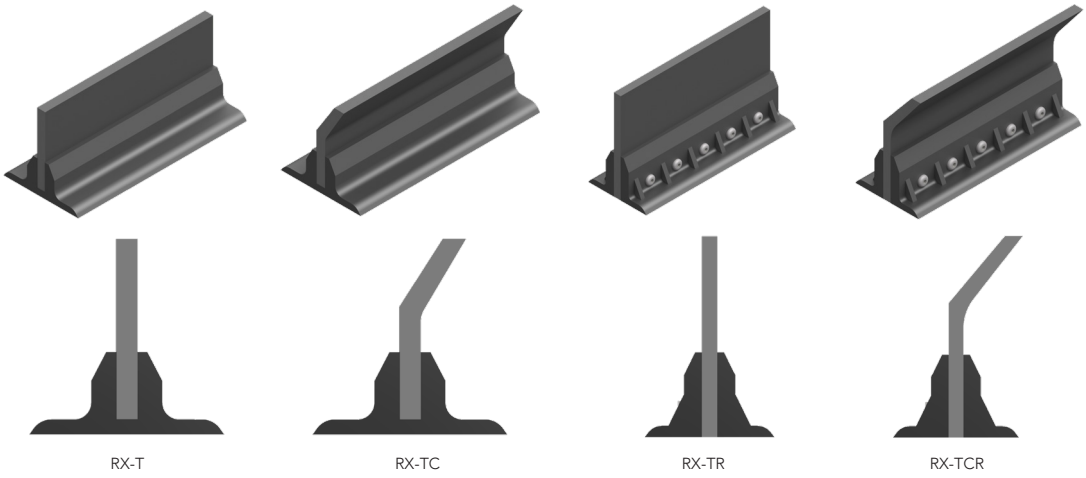
Our assembly lines for corrugated wall panels guarantee maximum product quality. The joint between the corrugated side and the pusher block or cleat to the base belt is either a cold or a hot vulcanized joint, depending on the need and application, ensuring the maximum strength of the joint.



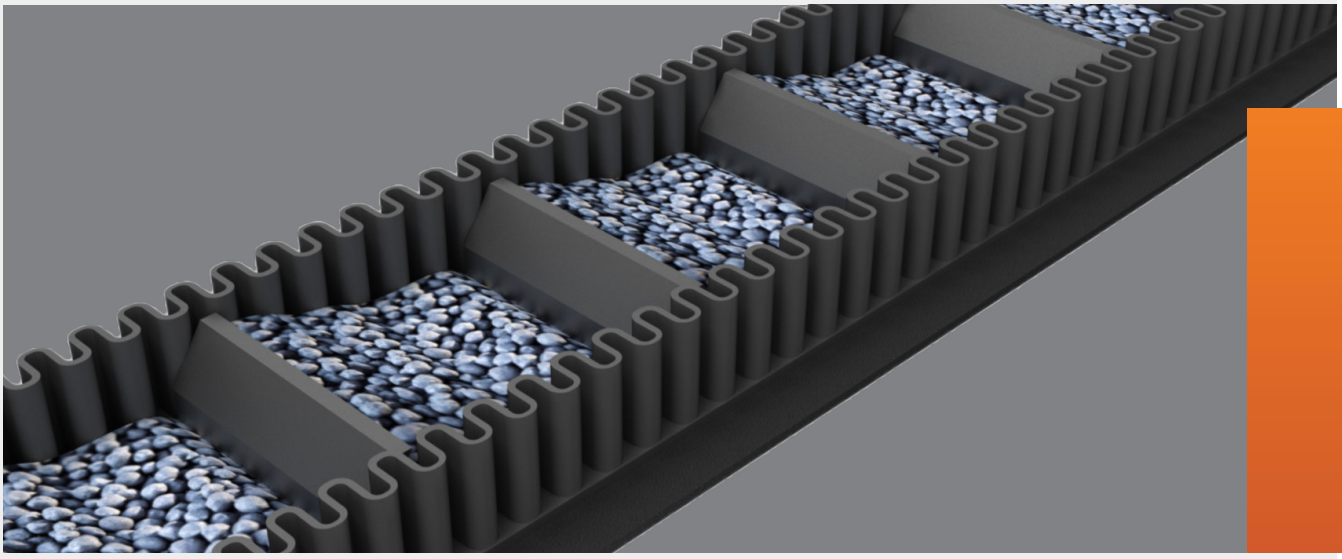
For the right choice according to the needs of the application, please consult our LUFH-CBS Technical Department.

## Types of Pusher Blocks or Cleats

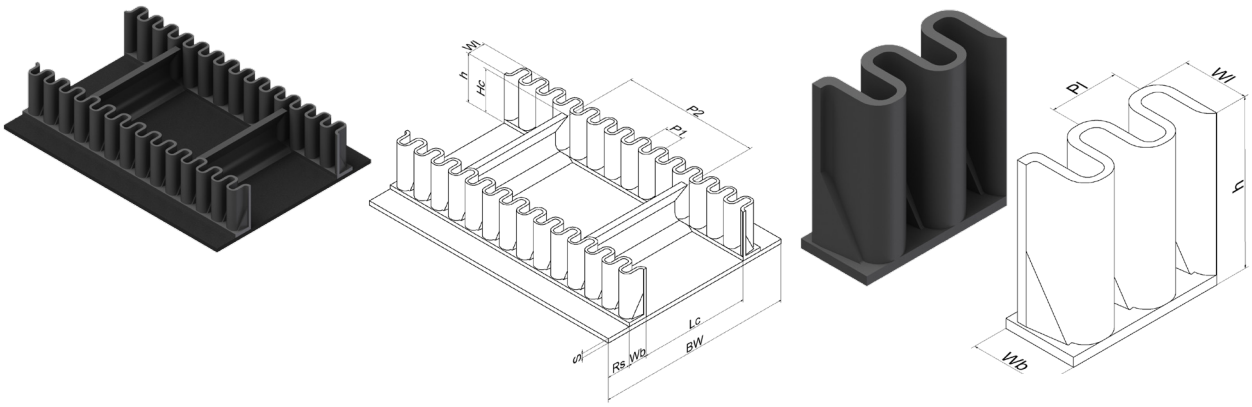



* For a suitable choice according to the needs of the application, please consult the **LUFH-CBS** Technical Department.



## Corrugated Sidewall Types




| Side Type | h | Wb | WL | Pl | Pulley Dia. (mm) | Weight (Kg/m) |
|---|---|---|---|---|---|---|
| LF-S(fr) | 40 | 35 | 30 | 30 | 125 | 0.6 |
| | 60 | 50 | 45 | 40 | 160 | 1.6 |
| | 80 | 50 | 45 | 40 | 200 | 1.8 |
| | 100 | 50 | 45 | 40 | 250 | 2.2 |
| | 120 | 50 | 45 | 40 | 315 | 2.7 |
| | 120 | 75 | 70 | 60 | 315 | 4.0 |
| | 160 | 75 | 70 | 60 | 400 | 4.7 |
| | 200 | 75 | 70 | 60 | 500 | 6.5 |
| LF-DS(fr) | 250 | 75 | 70 | 60 | 630 | 7.5 |
| | 280 | 75 | 70 | 60 | 800 | 8.6 |
| | 300 | 75 | 70 | 60 | 800 | 9.3 |
| LF-XDS-fr | 300 | 100 | 90 | 75 | 800 | 12.5 |
| | 400 | 100 | 90 | 75 | 1000 | 18.8 |

## Types of Base Belts

### TYPE: ECS

This base belt, consisting of two separate textile cross-stabilization (CS) plies as its tensioning carcass, is mainly used for medium duty.

### TYPE: ECS+2

This base belt consists of the multiply tension carcass with polyester weft (E) and two (2) fabric cross-stabilization (CS) plies, one located in its load cover and the other in its running cover. Its application is mainly for medium to heavy duty service.

### TYPE: ECS-ST+2

This base belt is made up of the multiply tension carcass with polyester weft (E) and two crossed plies of steel cords (ST), one in its load cover and the other in its running cover. Its high lateral stiffness allows this belt to be applied for high lifting heights and wide belts.

### TYPE: STCS-ST+2

This base belt is made up of the steel cord tension carcass (ST) and two crossed layers of steel cord (ST), one in its load cover and the other in its running cover. With this type of construction, high tensile strengths can be achieved making the belt ideal for high vertical lifting applications.

*The thickness of the covers are standard designs, these can be supplied with non-standard covers under special orders.

## CONVEYOR BELTS

# ADDITIONAL TECHNICAL SPECIFICATIONS

# Fabric belt weight

The approximate weight [kg/m²] of a rubber cover fabric belt with any thickness can be calculated using the following equation:

$$M = Sc + X^*( S_2 + S_3)$$

M = Approximate belt weight [kg / m²]

Sc = The weight of the belt carcass for a specific belt type [kg/m²]

S2 = Thickness of the top carry cover [mm]

S3 = Thickness of the bottom running cover [mm].

X = Rubber cover density.

X VALUE FOR GENERAL PURPOSE BELTS

| Sturdy ™ | Density [X] |
|---|---|
| SA | 1,115 [g/cm³] |
| SI | 1,12 [g/cm³] |
| SN | 1,14 [g/cm³] |
| SG | 1,155 [g/cm³] |

X VALUE FOR HIGH TEMPERATURE RESISTANT BELTS

| Thermik ™ | Density [X] |
|---|---|
| T120 | 1,15 [g/cm³] |
| T150 | 1,14 [g/cm³] |
| T200 | 1,08 [g/cm³] |
| T400 | 1,08 [g/cm³] |

X VALUE FOR OIL-RESISTANT BELTS

| OGR ™ | Density [X] |
|---|---|
| OGR, OGR-2 | 1,18 [g/cm³] |
| OGR-K, OGR-2K | 1,28 [g/cm³] |
| OGR-T100 | 1,18 [g/cm³] |
| OGR-T150 | 1,17 [g/cm³] |

X VALUE FOR NON-FLAMMABLE AND ANTI-ELECTROSTATIC BELTS

| FireProof | Density [X] |
|---|---|
| FA | 1,39 [g/cm³] |
| FI | 1,36 [g/cm³] |
| FN | 1,24 [g/cm³] |
| FG | 1,29 [g/cm³] |

# Steel cord belt weight

The approximate weights [kg/m²] of the normal steel-cord belt are shown in TABLE 5.1. The approximate weight [kg/m] of the belt of any width can be obtained from the following formula:

$$M = m_1 \times B$$

M = Approximate belt weight [kg/m²]
$m_1$ = Weight of the strap taken from Table 5.1 [kg/m²]
B = Belt width in
$M = m_1 \times B$

## Belt reel diameter

The approximate diameter of the belt reel D [m] is a function of its length L [m] and its thickness S [mm], and it can be calculated using the following equation:

$$D = \sqrt{0{,}25 + \frac{1{,}27 \times L \times S}{1000}}$$

## Belt labeling

Normally, the durable embossed label is printed on the rubber of the belt cover at a distance of 1 or 3 [m] from the beginning and end of the belt and at a spacing of approximately every 15 [m] referred to in EN ISO 14890 or approximately every 10 [m] referred to in DIN 22102. The label includes the information required according to EN ISO 14890 or DIN 22102.

**The durable label includes the following information:**

· According to EN ISO 14890: the manufacturer's name (brand), name of the standard, type of fabric, type of belt, number of plies, rubber class, safety category, the belt's serial number and two digits for the year of manufacture.

LUFH ISO14890 EP 1600/4 FGK 2A 0351 20

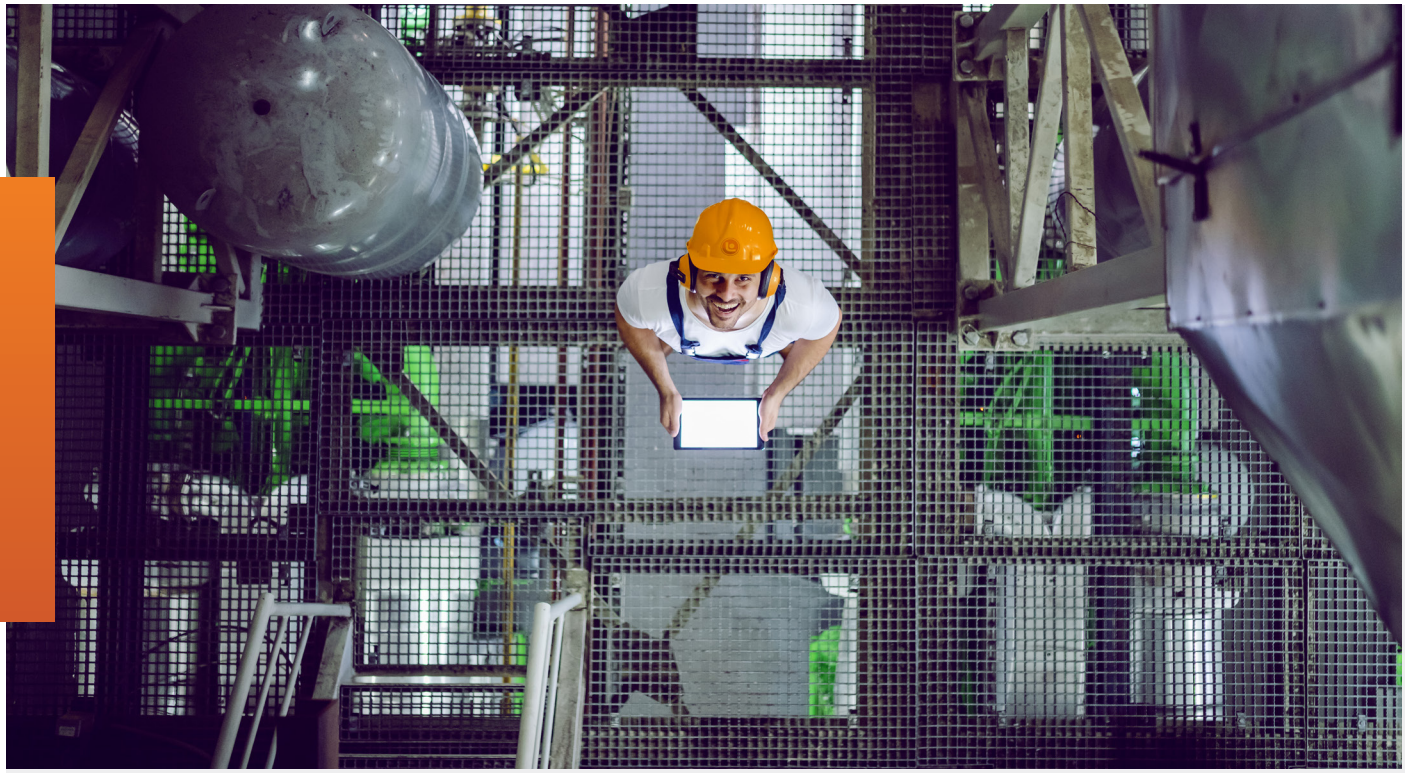
· According to DIN 22102: the manufacturer's name (brand), standard number, type of fabric, type of belt, number of plies, rubber class, serial number of the belt, and last two digits for the year of manufacture

LUFH DIN22102 EP 1600/4 SI 0351 20

# Packing

Normally, the belt is wound on a metal or wooden reel according to the required diameter It has an internal square or round hole measuring 230 [mm]. The belt coils are protected against unwinding during transport by wrapping them with polypropylene band. The **FLEXOLUFH**, special belts are supplied inside a metal frame and wrapped with a special canvas for their protection.

# AFTER-SALES SERVICE

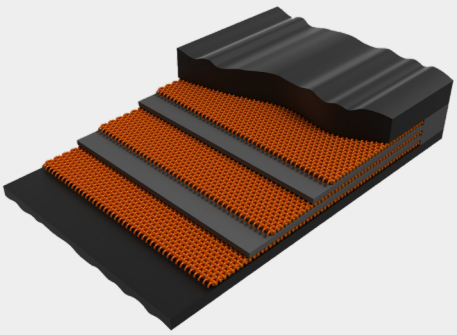


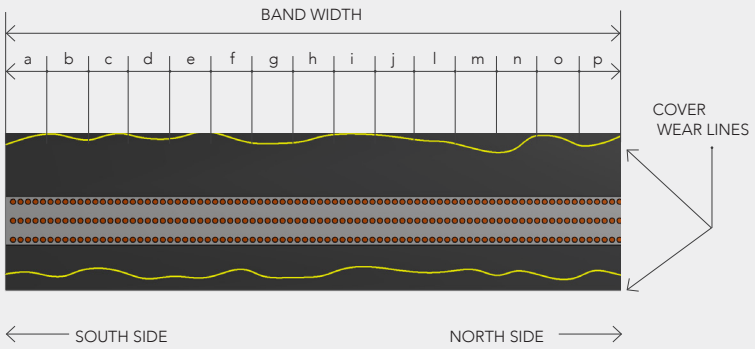
**LUFH Conveyor Belt Systems**, provides technical assistance and specialized after-sales service for the oil, mining, industrial and construction companies; complying with the applicable requirements of the interested parties for the satisfaction of the customer; seeking excellence through the continuous improvement of our Quality Management System, with our highly competent and motivated human talent, facilities and adequate instruments that allow us to meet the quality standards.

## Wear profile assessment

**LUFH-CBS** has ultrasonic thickness measuring equipment. The procedure applied to the conveyor belt consists of measuring the thickness of the covers every 5 or 10 cm in its cross section, depending on its width, obtaining a series of measurements with which a graph is generated and from this, the wear profile and the critical point or points can be defined.

Upon defining the wear profile and detecting the critical points, these are analyzed to estimate which may be the origin of the wear, either by natural load of the mineral (centered), irregular wear produced by components of the conveyor (locked rollers, skirts, sides), and/or accumulated mineral in certain areas of it. This information is useful for doing a new inspection of the system and to focus on the possible wear causes of the belt cover, in order to make the corrective actions.





## Hardness evaluation on rubber covers

The hardness measuring equipment allows us to verify its hardness value in the Shore A scale, determining if it is within its reference value. This can give an indication of loss of properties or an aging of the covers and so enable us to take preventive actions to guarantee the reliability of the system.

## Conveyor belt training courses

**LUFH-CBS** has qualified and trained technical personnel with proven experience. This allows us to offer our clients training in the use of our products, guaranteeing in this way the transfer of knowledge in general topics of conveyor belts, alignment, mechanical and vulcanized splices, and other topics related to the handling and transport of bulk material.

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