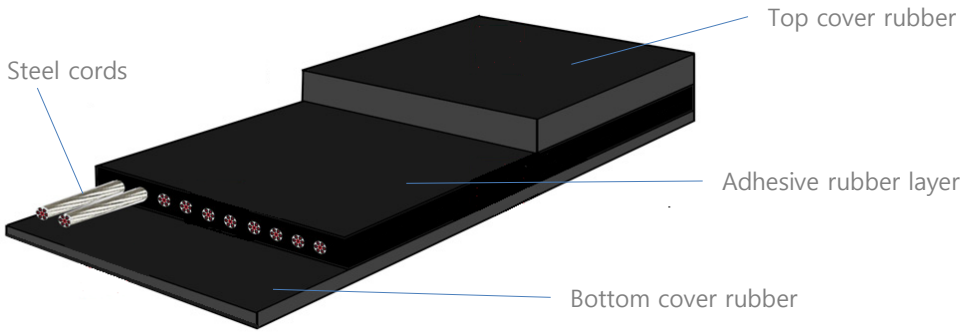
CONVEYOR BELT'S

TRS

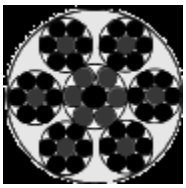
Contents

Steel Cord Conveyor Belt

Standard Structure



Steel cord designs



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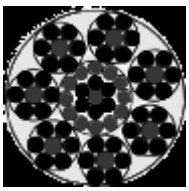
For ST500~ST2000



<7X19>
For ST2000~ST7000

Range of production

Tensile strength : ST500~ST7000
Belt width : 600mm~3000mm
Length : More than 50m

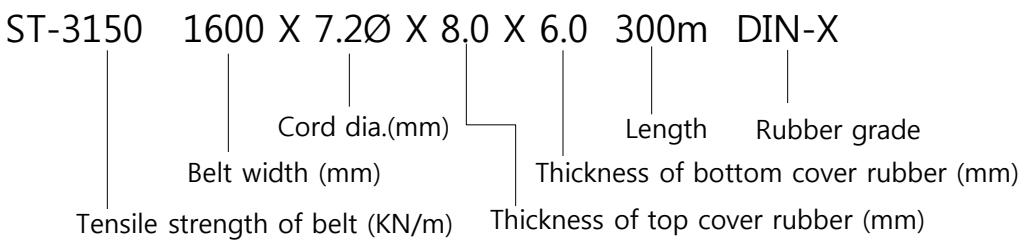
Possible fields of application

Underground mining
Above ground mining
Steel plants
Power plants
Hard rock quarries
Tunneling
Ports etc.

Standard specification

Tensile Strength (KN/m)	Pitch (mm)	Cord Diameter (mm)	Cord Tensile Strength (KN)
ST- 630	10	2.5	6.6
ST- 800	10	2.9	8.4
ST-1000	12	3.6	12.6
ST-1250	12	4.1	15.7
ST-1500	12	4.3	18.6
ST-1600	12	4.6	20.1
ST-2000	12	5.4	26.4
ST-2250	12	5.3	28.8
ST-2500	15	6.3	38.2
ST-2800	15	6.7	44.8
ST-3150	15	7.2	49.0
ST-3550	15	7.6	56.8
ST-4000	15	8.2	62.6
ST-4500	16	9.1	76.7
ST-5000	16	9.6	77.5
ST-5600	17	10.5	102.4

Designation



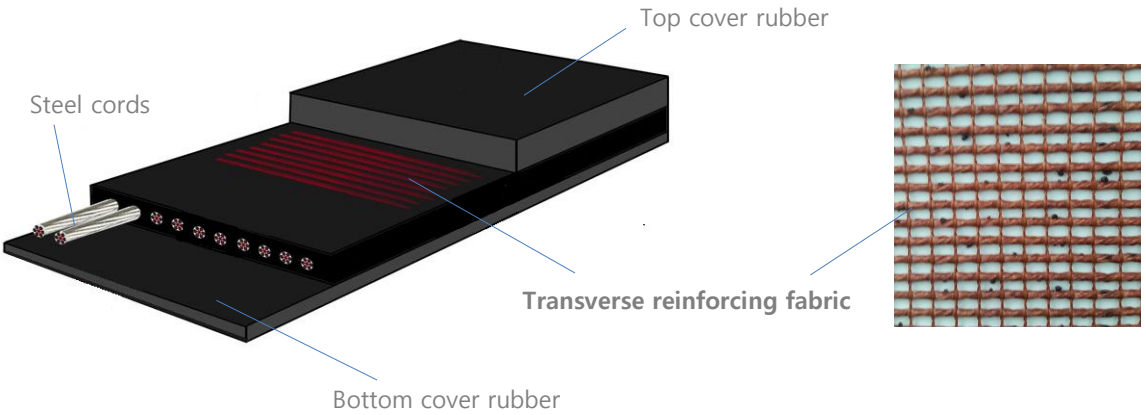
Features

- Long distance, high tensile strength, transport of large quantities
- Very low elongation
- Smaller pulley diameter

Comparison of take up stroke

Kind of carcass	Take up stroke(%)
Steel cord	More than 0.35
Nylon	More than 2.1
Polyester	More than 1.4
Aramid	More than 0.5

■TRF(transverse reinforcing fabric) type

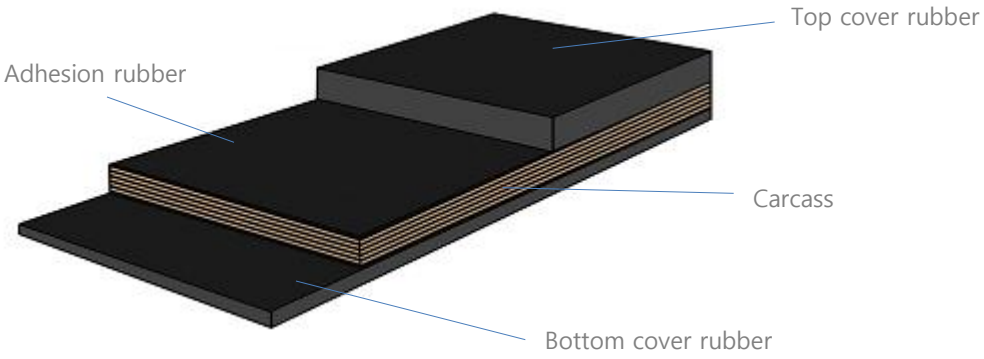


Features

- Prevention of longitudinal split caused by foreign materials or large objects with sharp edges.
- Prevention of standing(jumping-out) of broken steel cords.
- Less drop in pull-out force due to impact

Fabric Conveyor Belt

Standard Structure



Range of production

Tensile strength : 100~3150KN/m
Belt width : 300mm~3000mm
Length : More than 30m

Possible fields of application

Hard rock quarries
Sand and gravel pits
Concrete factories
Cement plants
Power plants
Silos
Foundries
Salt mining
Sugar refineries etc.

Features

■ NN fabric

- High durability
- Small pulley diameter
- High heat resistance
- High impact resistance
- Excellent adhesion to rubber

■ EP fabric

- Low elongation
- High impact resistance
- Excellent adhesive to rubber
- High durability
- Impossible to use over 140℃ (Over 140℃ hydrolysis reaction stars)

Standard specification

Strength (KN/m)	Plies	Carcass type	Belt width(mm)															
			300	400	500	600	750	800	900	1000	1050	1200	1400	1600	1800	2000	2200	2400	3000
160	2	NN / EP																	
250	2~3	NN / EP																	
315	2~4	NN / EP																	
400	2~4	NN / EP																	
500	2~5	NN / EP																	
630	3~6	NN / EP																	
800	3~6	NN / EP																	
1000	3~6	NN / EP																	
1250	3~6	NN / EP																	
1400	3~6	NN / EP																	
1600	4~6	NN / EP																	
2000	4~6	NN / EP																	
2500	5~6	NN / EP																	
3150	5~6	NN / EP																	

Designation

EP 1250/4 1600 X 6.0 X 3.0 300m DIN-X

- EP: Kind of fabric
- 1250/4: Tensile strength of belt (KN/m) / Nos. of ply
- 1600: Belt width (mm)
- 6.0: Thickness of top cover rubber (mm)
- 3.0: Thickness of bottom cover rubber (mm)
- 300m: Length
- DIN-X: Rubber grade

■ TRS Cover rubber grade for mining, quarrying and general service

General purpose

Grade	Tensile strength Min. (Mpa)	Elongation Min. (%)	Abrasion loss Max. (mm^3)	Characteristics
DIN-X	25	450	120	- Ozone resistant : very good - Cut/Tear resistant : excellent - Abrasion resistant : very good - Service temp range(℃) : -30 to 70
DIN-M	25	450	150	
AS-M	24	450	125	
RMA-1	25	450	150	

Grade	Tensile strength Min. (Mpa)	Elongation Min. (%)	Abrasion loss Max. (mm^3)	Characteristics
DIN-Y	20	400	150	- Ozone resistant : good - Cut/Tear resistant : good - Abrasion resistant : good - Service temp range(℃) : -30 to 70
DIN-N	20	400	200	
AS-N	17	400	200	
RMA-2	18	400	200	

Abrasion purpose

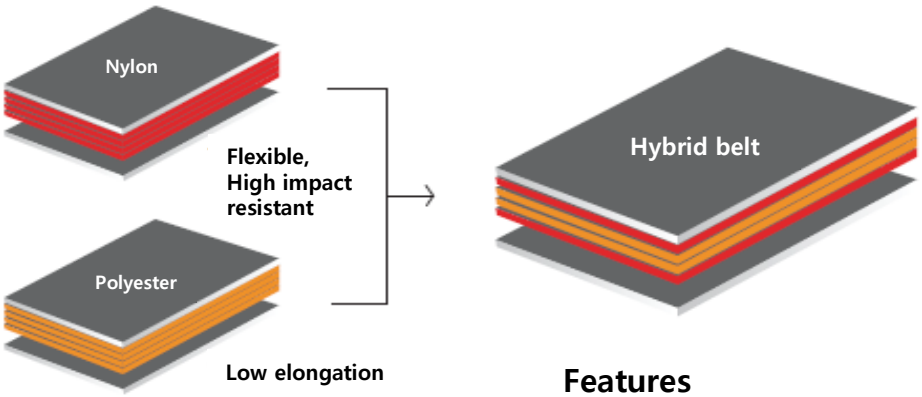
Grade	Tensile strength Min. (Mpa)	Elongation Min. (%)	Abrasion loss Max. (mm^3)	Characteristics
DIN-W	18	400	90	- Ozone resistant : good - Cut/Tear resistant : good - Abrasion resistant : excellent - Service temp range(℃) : -30 to 70
AS-A	17	400	70	
UAR	17	400	50	

Impact & cut resistant purpose

Grade	Tensile strength Min. (Mpa)	Elongation Min. (%)	Abrasion loss Max. (mm^3)	Characteristics
RS	20	450	130	- Ozone resistant : good - Cut/Tear resistant : excellent - Abrasion resistant : very good - Service temp range(℃) : -30 to 70

■ Hybrid fabric conveyor belt

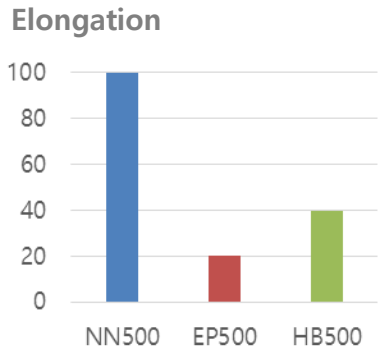
Due to the demerits of each fabric, TRS consider to develop new fabric belt that combine superior qualities of NN and EP Belt

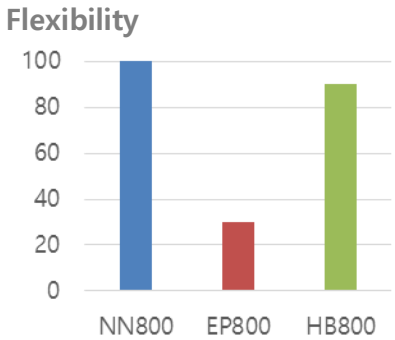


Features

- High durability
- Small pulley diameter
- Low elongation (short take up)
- Initial elongation problem solving

Belt performance





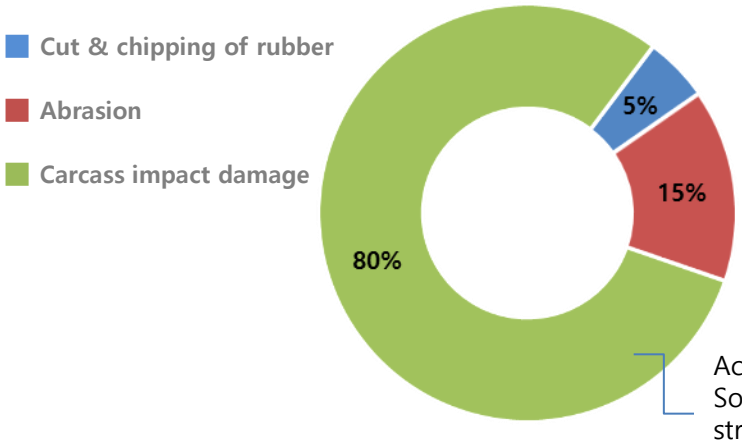
Standard specification

Normal type	NN400/4	NN500/3 NN500/4 NN500/5	NN630/3 NN630/4 NN630/5 NN630/6	NN800/4 NN800/5 NN800/6	NN1000/4 NN1000/5 NN1000/6	NN1250/4 NN1250/5 NN1250/6
Hybrid type	HB400/4	HB500/4	HB630/4	HB800/4	HB1000/4	HB1250/4

■ ROCK SUPER conveyor belt

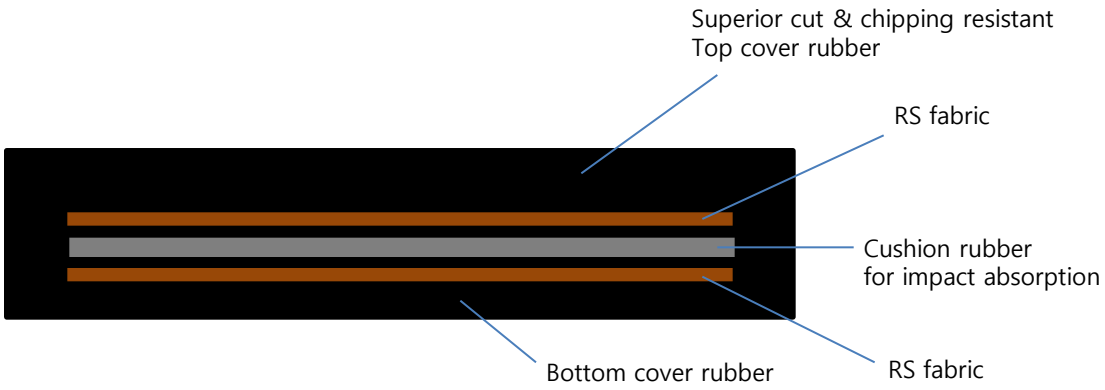
Rock super combines superior cut, impact and chipping resistance with excellent abrasion for most severe applications such as crushed ores, wood and glass etc. The combination of a special carcass structure with cushion rubber provides high impact resistance.

Belt failure mode of crushed ore operation

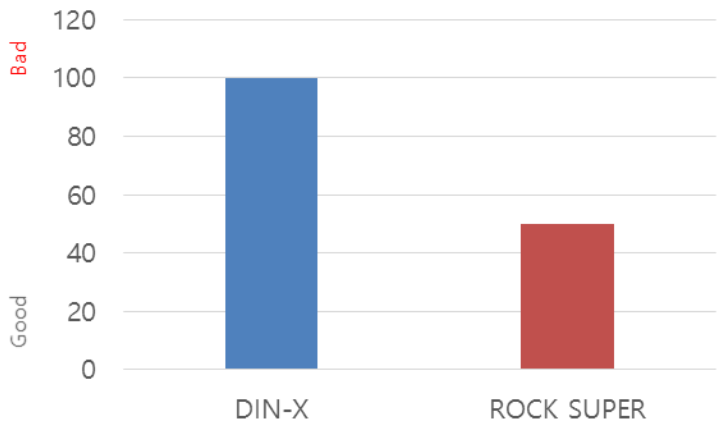


Actual failure mode is by impact. So we need developments in the structure of the belt with a strong impact resistance.

Special belt structure for impact absorption



Cut & Impact resistant performance

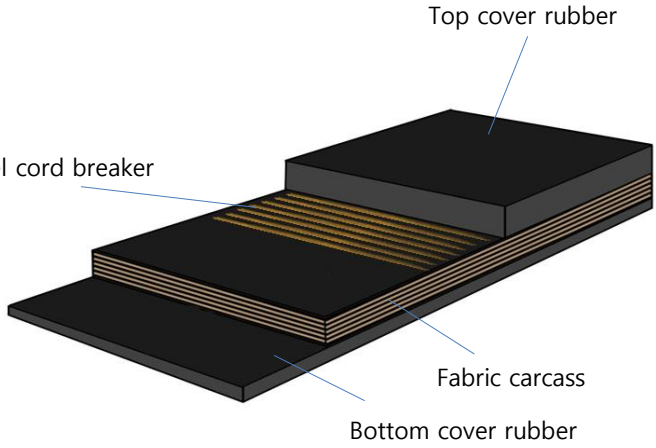


Standard specification

Item	Strength (KN/m)	Plies	Rubber grade	Carcass type	Cover rubber thickness (mm)	
					Top	Bottom
RS 315/2	315	2	Special Rock Super	NN / EP	6	3
RS 400/2	400	2		NN / EP	6	3
RS 500/2	500	2		NN / EP	6	3
RS 630/2	630	2		NN / EP	8	3
RS 800/2	800	2		NN / EP	8	3
RS 1000/2	1000	2		NN / EP	10	3

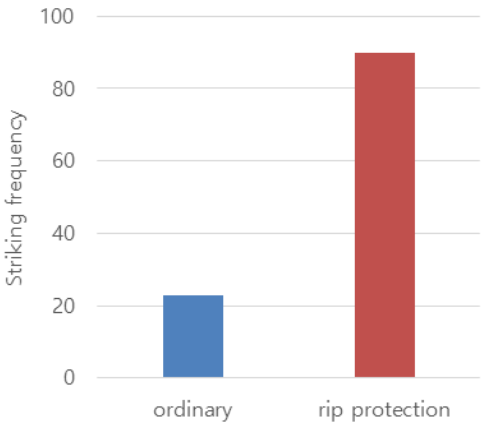
■ RIP protection conveyor belt

Rip protection conveyor belt of TRS has excellent impact penetration and longitudinal rip or tear resistant. This is ideally suited for heavy duty conveying of hard or sharp edged Materials with large lump sizes.

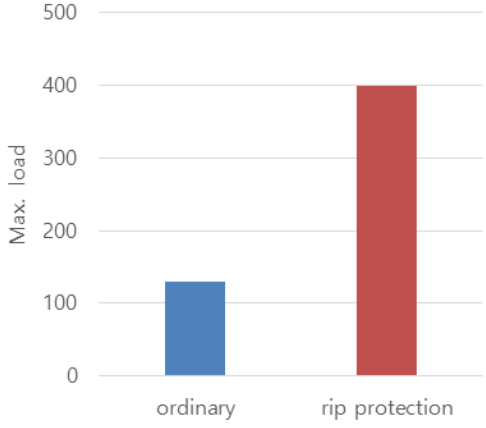


<Flexible, high elongation steel cord breaker>

Impact resistant performance



Longitudinal rip or tear performance



Ordinary : NN800/5 1200X8X3 VS Rip protection : NN800/5 1200X8X3 with steel cord breaker

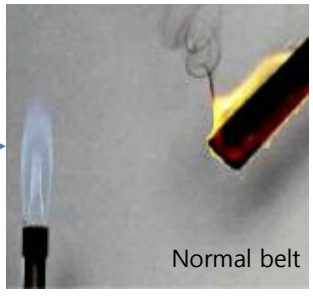
■ Flame resistant conveyor belt

When belts are used in places not easily accessible, it is very important that fire risks be eliminated whenever possible.
TRS can supply flame resistant conveyor belts to meet the following standards.

Item / Standard	Laboratory flame test		Drum friction	Electric	Others
	Flame	Glow			
JIS	Each less than 15sec. Total of 6 samples Less than 45sec.	None	None	None	None
ISO	Each less than 15sec. Total of 6 samples Less than 45sec.	None	None	Less than $3x10^8\Omega$	None
DIN	Each less than 15sec. Total of 6 samples Less than 45sec.	None	None	Less than $3x10^8\Omega$	None
MSHA(USA)	Avr. Less than 60sec.	Avr. Less than 180sec.	None	Less than $3x10^8\Omega$	None
AS(Australia)	Avr. Less than 10sec. Each less than 15sec	Avr. Less than 120sec. Each less than 180sec.	Less than 325℃ on drum surface & no glow	Less than $3x10^8\Omega$	Oxygen idex test (ISO 4589) Gallery flame test
CSA(Canada)	Avr. less than 60sec.	Avr. less than 180sec.	Less than 400℃ on drum surface & no glow	Less than $3x10^8\Omega$	None

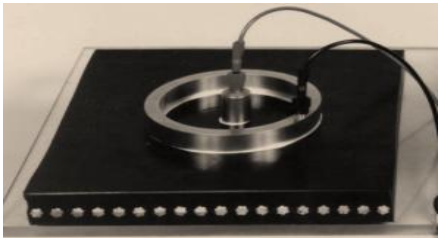
Laboratory flame test

After 1min.



Drum friction Test

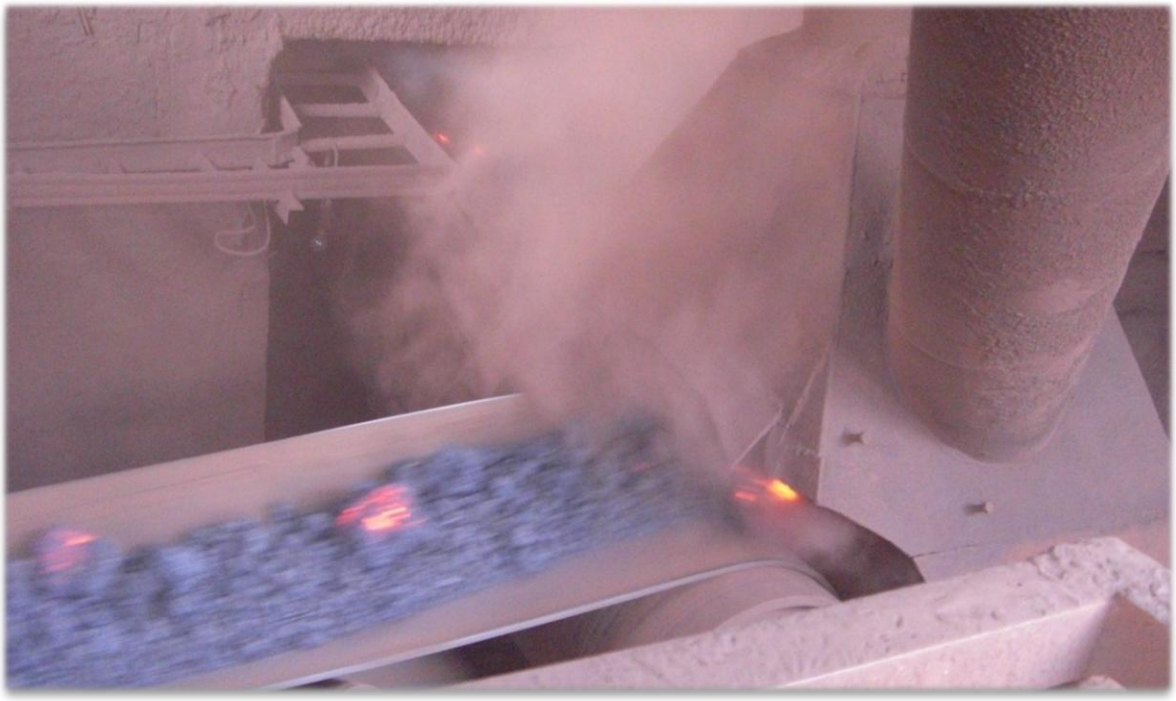
Electric resistant Test



■ HEAT resistant conveyor belt

Conveyor belts may be damaged by heat, develop cracks or undergo abrasion through stiffening or softening of the cover rubber and separation between piles or rubber and piles.
For this reason it is economical to adopt heat resistant belt when the temperature of materials being transported exceeds 60℃.
TRS can supply heat resistant conveyor belts to meet thermal conditions of different things.

Classification	Description	Rubber material	Main transport material	Characteristic features
Medium temp. range	H 110	SBR	- Sintered ore - Coke	- Abrasion resistant design - Suited for transport of materials up to a belt surface temperature of 110℃.
Medium to high temp. range	H 150	EPDM/Butyl	- Clinker - Coke - Sintered ore	- Suited for transport of materials up to a belt surface temperature of 150℃.
High temp. range	H 180	EPM	- Clinker - Coke - Sintered ore	- Excellent resistance to abrasion &cracking at high temperature - Suited for transport of materials up to a belt surface temperature of 180℃. - Highly durable to prevent ply separation

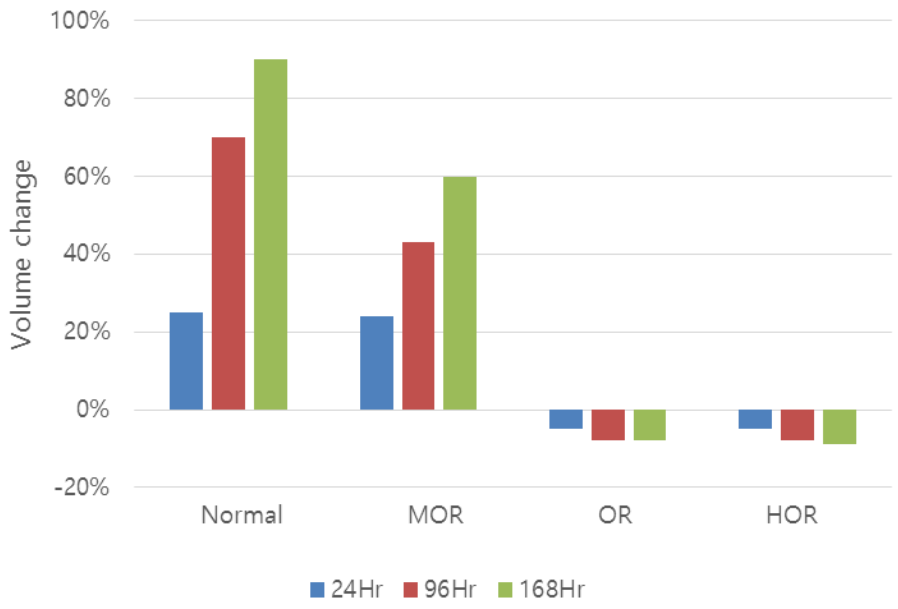


■ OIL resistant conveyor belt

Oil contaminated materials cause ordinary rubber covers to swell and peel off.
This swelling causes complete breakdown in the conveyor as the swollen belt prevent it from passing over idlers and around pulleys. Therefore, oil-resistant belts should be used to transport oily materials.

Description	Rubber material	Permissible temp.°C	Application area
OR	NBR	-20 ~ 80	- Oil and fat resistant for products containing mineral oils
MOR	NBR / SBR	-20 ~ 80	- Oil and fat resistant for most products with animal and vegetable oils and fats.
HOR	NBR	-20 ~ 120	- Hot asphalt

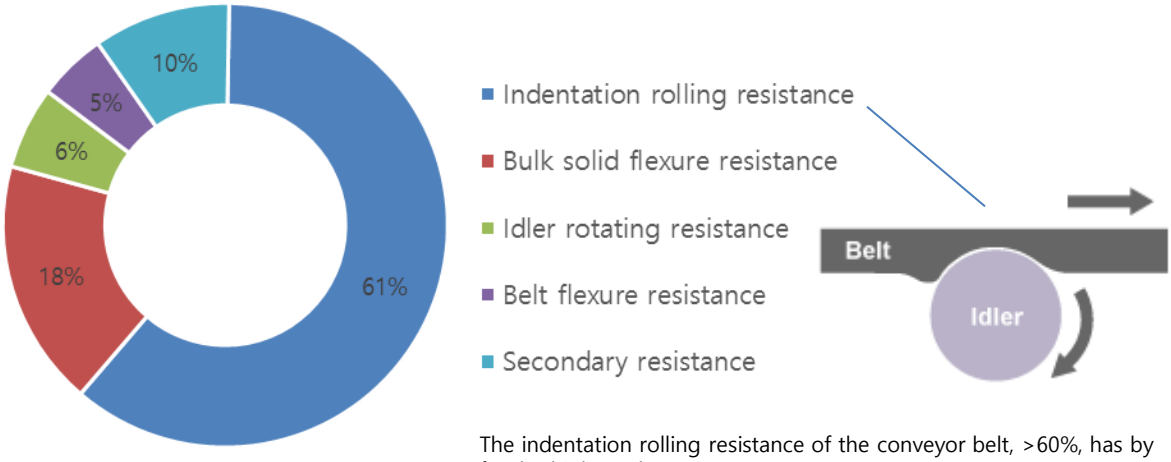
Volume change test (Test Oil: No.3, Test Temperature: 70°C)



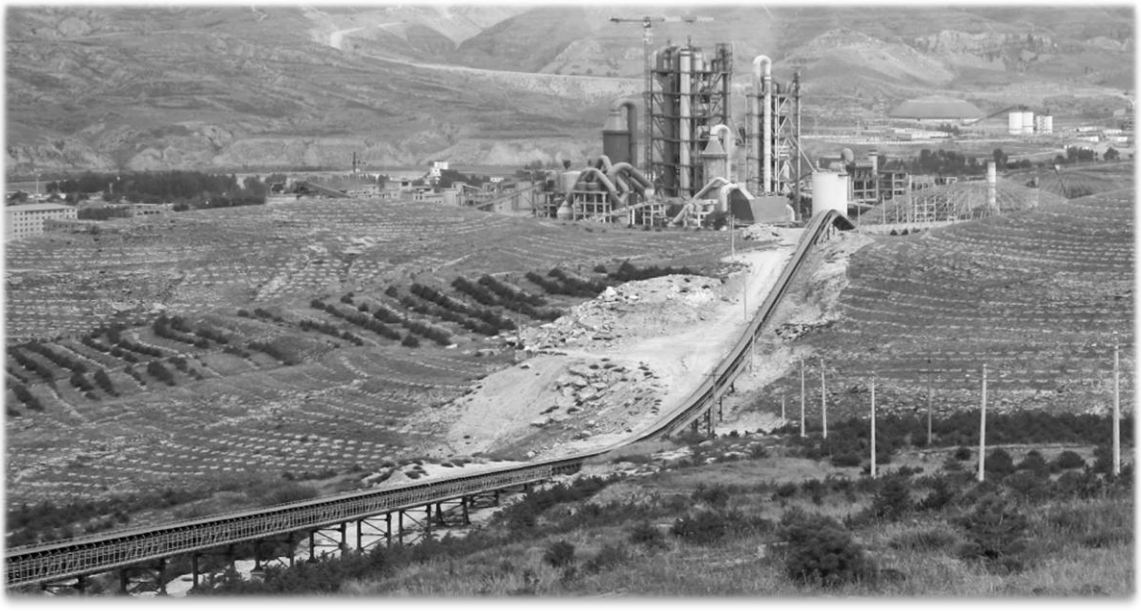
■ Energy saving conveyor belt

A conveyor belt is deformed when running over the idlers. This internal friction consumes energy. Special rubber compounds and belt designs - for instance an additional transverse reinforcement - reduce the indentation and let the belt run easier over the idlers. Such belt types, on long distance conveyors, can save a lot of money. They are known as EOB, XLL or LRR conveyor belts.

Mechanism of reduction of power consumption on a long horizontal conveyor (approx. c to c 1000m)



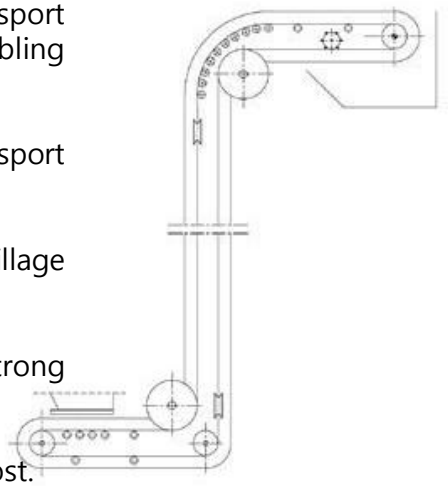
The indentation rolling resistance of the conveyor belt, >60%, has by far the highest share.

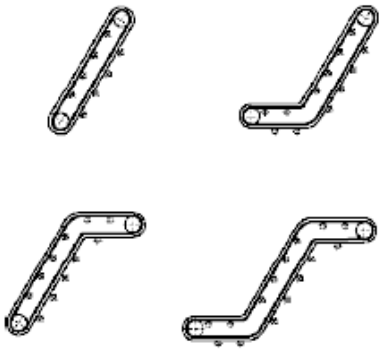


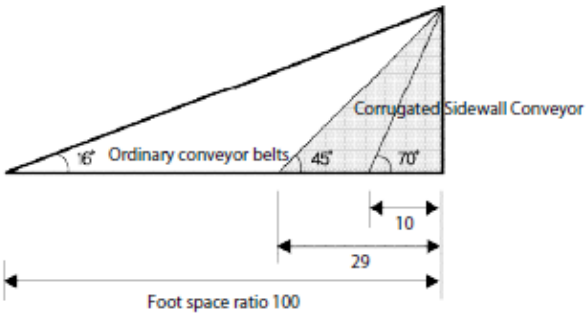
■ Corrugated sidewall conveyor belt

Features

- ▶Corrugated sidewall design allows for greater transport volume with increased sectional loading area, enabling a narrower conveyor design.
- ▶Reduces foot space as steep incline or vertical transport is possible with cleats attached belt widthwise.
- ▶No skirt board is required as transport materials spillage is prevented by high wavelike raised strips.
- ▶Incline angle can be easily adjusted with specially strong belts and press rollers.
- ▶Flat rollers may be used to reduce the equipment cost.







Range of production

Belt width : 300~1800mm
Sidewall height : 60~500mm
Cleat height : 55~460mm

* Please contact us about detailed specifications.

■ PIPE conveyor belt

Features

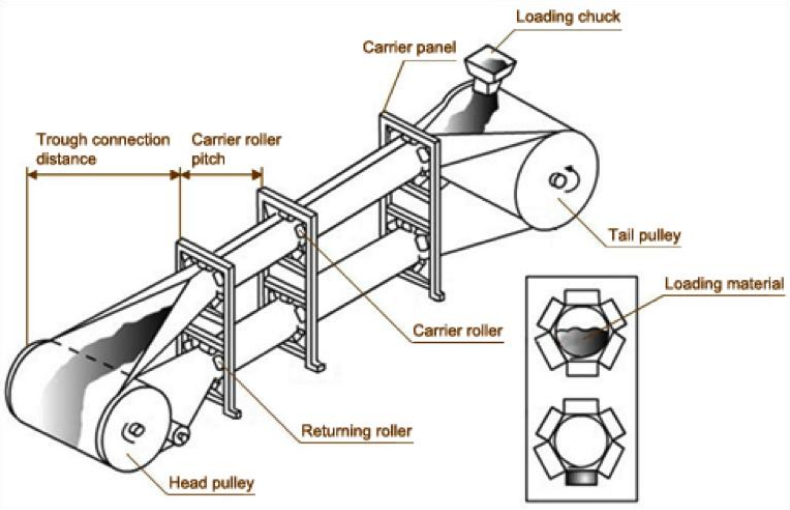
▶Completely enclosed and dust free

▶No spillage or scattering of material

▶Curved horizontally and vertically

▶Steep-inclined transport

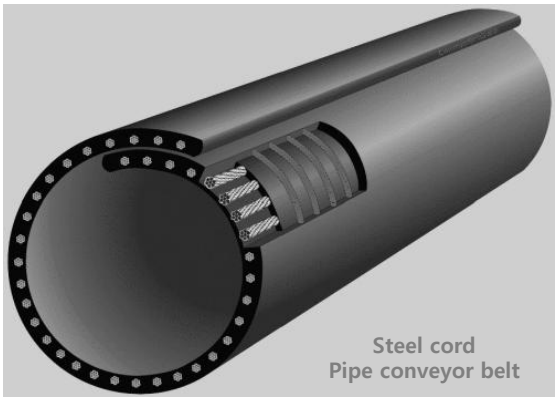
▶Return belt can also transport



Range of production

Pipe diameter: Ø150~Ø700

Type of carcass
- Nylon
- Polyester
- Steel cord



■ Bucket elevator belt

Features

▶Suitable for conveying material vertically

▶Convenient maintenance

▶High bucket attachment values

▶Great conveying capacity

▶Steady running

Range of production

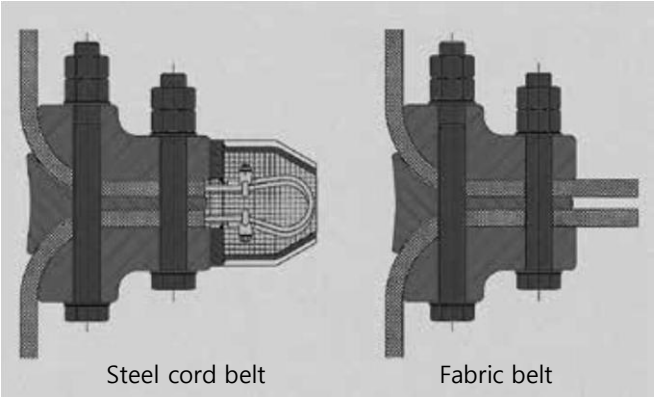
- Low to Medium capacity

  Tensile strength : 315~1250 KN/m
  Belt width: 300~600mm
  Carcass type : Polyester fabric

- High capacity

  Tensile strength : 500~5000 KN/m
  Belt width: 500~1800mm
  Carcass type : Steel cord (with transverse reinforcing)

Belt clamping



Steel cord belt　　Fabric belt

Possible fields of application

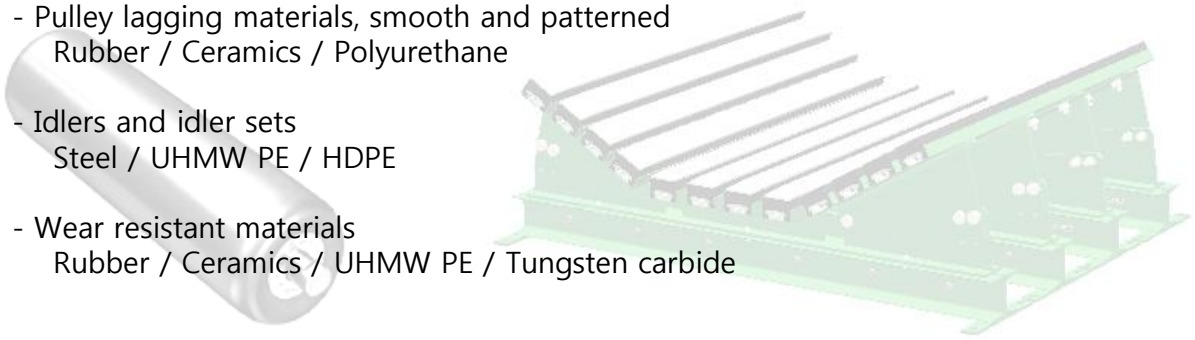
Limestone
Aggregates
Clinker
Slag
Cement
Gypsum
Coal
Ores
Fly ash
Raw meal
others

■ Other products

- Chevron belts
- Feeder belts
- Shot blast belts
- Magnet belts
- Rough top belts
- Filter belts
- C-loop belts
- Rubber sheet

■ Accessories for conveyor

- Covering systems for conveyors
  Galvanized steel / Polyester fiberglass
- Rubber scraper and skirting
- Drive motors and gears
- Impact bars and wear resistant components
- Elevator buckets and accessories
- Splicing and repair materials for conveyor belts
- Rubber profiles
  Cleats up to 280 mm height / Sidewalls up to 300 mm height
- Pulleys
  Drive pulleys / Take-up pulleys / Bend pulleys / Snub pulleys
- Pulley lagging materials, smooth and patterned
  Rubber / Ceramics / Polyurethane
- Idlers and idler sets
  Steel / UHMW PE / HDPE
- Wear resistant materials
  Rubber / Ceramics / UHMW PE / Tungsten carbide



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