HEAVY WEIGHT CONVEYOR BELT

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INDEX

Multi-Ply Fabric Conveyor Belt

Construction

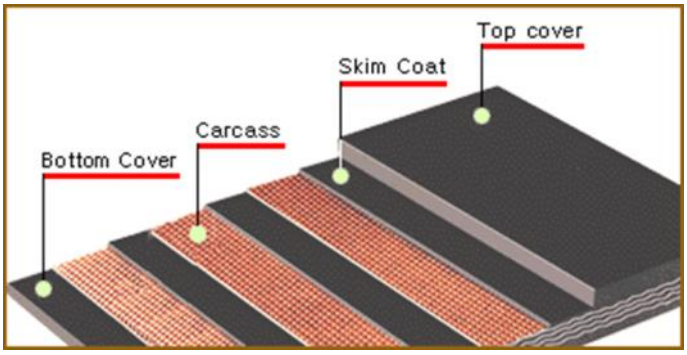
Multi-ply fabric conveyor belt consists of three parts:

Cover Rubber *— top & bottom cover rubber,*

Skim Coat *— an extra layer compound between plies,*

Carcass *— one or more plies EP or NN fabrics.*

It's widely used in the fields of Mine, Ports, Electric Power Plant, Metallurgy, Cement Plant, etc.



Production Flow

Compounding

Calendering

Forming/Vulcanizing

Polyester (EP) Conveyor Belt

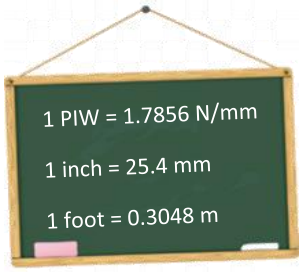
Fabric Type	Fabric Structure		Type	No.of ply	Cover Thickness (mm)		Belt Width
	Warp	Weft			Top	Bottom	
EP	Polyester	Nylon	EP 80	2-6	1.5-30	1.5-20	450-5000
			EP 100		1.5-30	1.5-20	
			EP 125		1.5-30	1.5-20	
			EP 150		1.5-30	1.5-20	
			EP 200		1.5-30	1.5-20	
			EP 250		1.5-30	1.5-20	
			EP 300		2-30	2-20	
			EP 350		2-30	2-20	
			EP 400		2-30	2-20	
			EP 500		2-30	2-20	
			EP 630		2-30	2-20	

Nylon (NN) Conveyor Belt

Fabric Type	Fabric Structure		Type	No.of ply	Cover Thickness (mm)		Belt Width
	Warp	Weft			Top	Bottom	
NN	Nylon	Nylon	NN 80	2-6	1.5-30	1.5-20	450-5000
			NN 100		1.5-30	1.5-20	
			NN 125		1.5-30	1.5-20	
			NN 150		1.5-30	1.5-20	
			NN 200		1.5-30	1.5-20	
			NN 250		1.5-30	1.5-20	
			NN 300		2-30	2-20	
			NN 350		2-30	2-20	
			NN 400		2-30	2-20	
			NN 500		2-30	2-20	
			NN 630		2-30	2-20	

Recommend Minimum Drive Pulley Diameter

BELT TYPE	Ø DRIVE PULLEY Over 60% to 100% Tension (mm)	BELT TYPE	Ø DRIVE PULLEY Over 60% to 100% Tension (mm)
EP 160/2 EP 200/2 EP 250/2 EP 315/2	250	EP 800/3 EP 400/4 EP 500/4 EP 630/4	500
EP 400/2	315	EP 800/4 EP 1000/4 EP 800/5	630
EP 250/3 EP 315/3 EP 400/3 EP 480/3 EP 500/3 EP 600/3	400	EP 1250/4 EP 1000/5 EP 1250/5	800



Standard of Cover Rubber

In accordance to international standards, such as DIN22102, RMA, AS 1332, SABS 1173/2000, JISK6322, etc.

German Standard

Standard	Cover Rubber			Adhesion		
	Tensile Strength	Elongation at Break	Abrasion Loss	Cover to Ply	Cover to Ply	Ply to Ply
DIN22102	MPa	%	mm^3	N/mm (≤1.5mm)	N/mm (>1.5mm)	N/mm
Z	15	350	250	3.5	4.5	5
Y	20	400	150	3.5	4.5	5
X	25	450	120	3.5	4.5	5
W	18	400	90	3.5	4.5	5

Australian Standard

Standard	Cover Rubber			Adhesion		
	Tensile Strength	Elongation at Break	Abrasion Loss	Cover to Ply	Cover to Ply	Ply to Ply
AS1332	MPa	%	mm^3	N/mm (≤1.9mm)	N/mm (>1.9mm)	N/mm
N	17	400	200	4	4.8	6
M	24	450	125	4	4.8	6
E	14	300	-	4	4.8	6
A	17	400	70	4	4.8	6

American Standard

Standard	Cover Rubber			Adhesion		
	Tensile Strength	Elongation at Break	Abrasion Loss	Cover to Ply	Cover to Ply	Ply to Ply
RMA	MPa	%	mm^3	N/mm (≤1.6mm)	N/mm (>1.6mm)	N/mm
RMA-I	17	400		3	4.4	4
RMA-II	14	400		3	4.4	4

South African Standard

Standard	Cover Rubber			Adhesion		
	Tensile Strength	Elongation at Break	Abrasion Loss	Cover to Ply	Cover to Ply	Ply to Ply
SANS 1173	MPa	%	mm^3	N/mm	N/mm	N/mm
A	18	400	70	5	5	7
C	20	400	150	5	5	7
M	25	450	120	5	5	7
N	17	400	150	5	5	7

Steel Cord Conveyor Belt

Features

Applications: Used in coal, ore, port, metallurgical, power and chemical industries, suitable for long distance and heavy load transportation of materials.

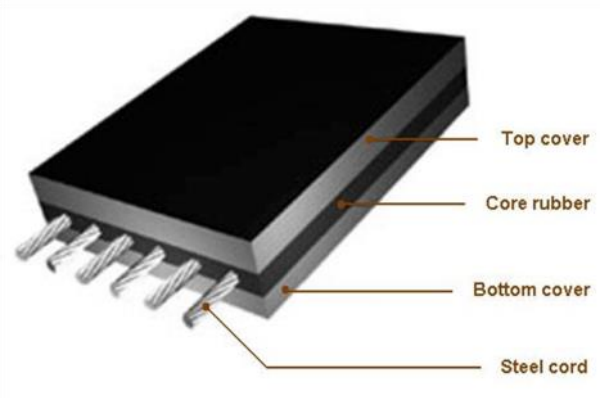
Standards offered: GB/T9770, DIN22131, EN ISO 15236, SANS1366, AS1333.

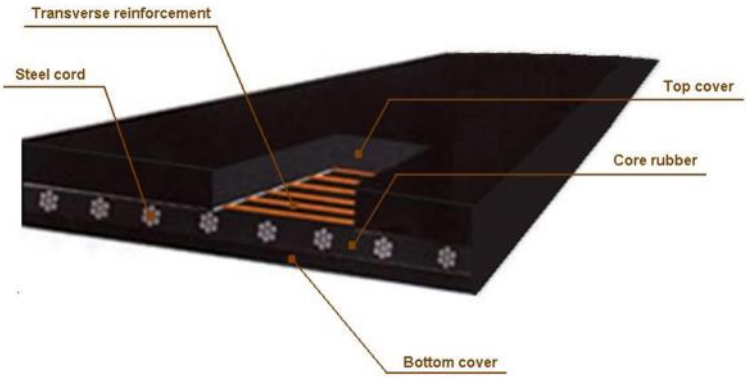
Special Grade: Heat resistant, LRR, FRAS, FRAS & Cold Resistant, Abrasion & Acid Resistant.

Breakers reinforced: NN breaker; Metal breaker; Kevlar breaker

Sensor loops (in bottom cover): Becker, Coal Control, Goodyear.

Construction





Recommend Minimum Drive Pulley Diameter

Belt Specifications	ST1000	ST1250	ST1600	ST2000	ST2500	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
Tensile Strength (N/mm)	1000	1250	1600	2000	2500	3150	3500	4000	4500	5000	5400
Max. Cord Diameter (mm)	4.1	4.9	5.6	5.6	7.2	8.1	8.6	8.9	9.7	10.9	11.3
Min. Pulley Diameter (mm)	630	800	1000	1000	1250	1250	1250	1400	1600	1600	1800

Standard DIN 22131

Belt Specification		ST1000	ST1250	ST1600	ST2000	ST2500	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
Tensile Strength (N/mm)		1000	1250	1600	2000	2500	3150	3500	4000	4500	5000	5400
Max. Cord Diameter (mm)		4.1	4.9	5.6	5.6	7.2	8.1	8.6	8.9	9.7	10.9	11.3
Pitch (mm, ±1.5)		12	14	15	12	15	15	15	15	16	17	17
Min. Rubber Cover Thickness (mm)		4	4	4	4	5	5.5	6	6.5	7	7.5	8
Width (mm)	**Tolerance**	**Number of cords**										
500	±5	39	34	—	—	—	—	—	—	—	—	—
650	±7	51	44	—	—	—	—	—	—	—	—	—
800	±8	64	55	50	64	—	—	—	—	—	—	—
1000	±10	81	69	64	81	64	64	64	64	659	55	55
1200	±10	97	84	77	97	77	77	77	77	71	66	66
1400	±12	114	98	90	114	90	90	90	90	84	78	78
1600	±12	131	112	104	131	104	104	104	104	96	90	90
1800	±14	147	127	117	147	117	117	117	117	109	102	102
2000	±14	164	141	130	164	130	130	130	130	121	113	113
2200	±15	181	155	144	181	144	144	144	144	134	125	125
2400	±15	197	169	157	197	157	157	157	157	146	137	137
2600	±15	214	184	170	214	170	170	170	170	159	149	149
2800	±15	231	198	170	214	170	170	170	170	159	149	149
3000	±15	247	212	197	247	197	197	197	197	184	172	172
3200	±15	264	227	210	264	210	210	210	210	196	184	184

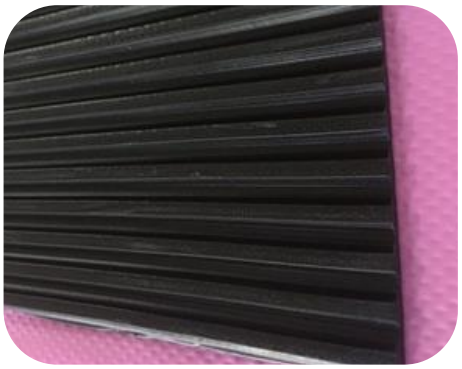
Standard GB/T 9770

Belt Specification		500	630	800	1000	1250	1400	1600	1800	2000	2250	2500	2800	3150	3500	4000	4500	5000	5400	6300	7000	7500
Tensile Strength (N/mm)		500	630	800	1000	1250	1400	1600	1800	2000	2250	2500	2800	3150	3500	4000	4500	5000	5400	6300	7000	7500
Max. Cord Diameter (mm)		3	3	3.5	4	4.5	5	5	5.6	6	5.6	7.2	7.2	8.1	8.6	8.9	9.7	11	11	13	14	15
Often used diameter		2.8	2.8	3	3.4	3.8	4.4	4.4	4.6	5	5.2	6.6	6.6	7.3	7.7	8.2	9	9.8	10	12	13	13
Pitch (mm, ±1.5)		14	10	10	12	12	14	12	14	12	11	15	14	15	15	15	16	17	17	20	20	21
Min. Rubber Cover Thickness (mm)		4	4	4	4	4	4	4	4	4	4	5	5	5.5	6	6.5	7	7.5	8	10	10	10
Width (mm)	**Tolerance**	**Number of cords**																				
500	+10 / -5	33	45	45	39	39	34	39	—	—	—	—	—	—	—	—	—	—	—	—	—	—
650	+10 / -7	44	60	60	51	51	45	51	46	52	56	41	46	41	41	41	39	36	—	—	—	—
800	+10 / -8	54	75	75	63	63	55	63	57	63	69	50	57	50	50	50	48	45	45	—	—	—
1000	±10	68	95	95	79	79	68	79	71	79	86	64	71	64	64	64	59	55	55	—	—	—
1200	±10	83	113	113	94	94	82	94	85	94	104	76	85	76	77	77	71	66	66	58	59	54
1400	±12	96	133	133	111	111	97	111	100	111	122	89	99	89	90	90	84	78	78	68	69	64
1600	±12	111	151	151	126	126	111	126	114	126	140	101	114	101	104	104	96	90	90	78	80	73
1800	±14	125	171	171	143	143	125	143	129	143	159	114	128	114	117	117	109	102	102	89	90	83
2000	±14	139	191	191	159	159	139	159	144	159	177	128	143	128	130	130	121	113	113	99	100	92
2200	±15	153	211	211	176	176	154	176	159	176	195	141	158	141	144	144	134	125	125	109	110	102
2400	±15	167	231	231	193	193	168	193	174	193	213	155	173	155	157	157	146	137	137	119	119	110
2600	±15	181	251	251	209	209	182	209	189	209	231	168	188	168	170	170	159	149	149	129	129	120
2800	±15	196	271	271	226	226	197	226	203	226	249	181	202	181	183	183	171	161	161	139	139	129
3000	±15	210	291	291	243	243	211	243	218	243	268	195	217	195	195	195	183	172	172	149	149	139
3200	±15	224	311	311	260	260	225	260	233	260	286	208	232	208	208	208	196	184	184	160	160	149

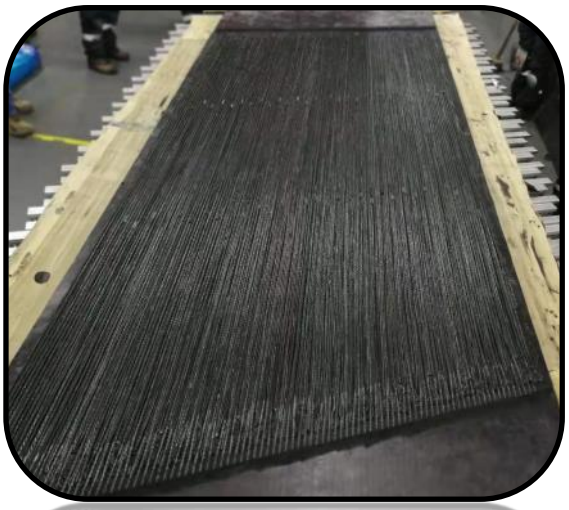
Splicing Kits For ST Belt

General splicing kits

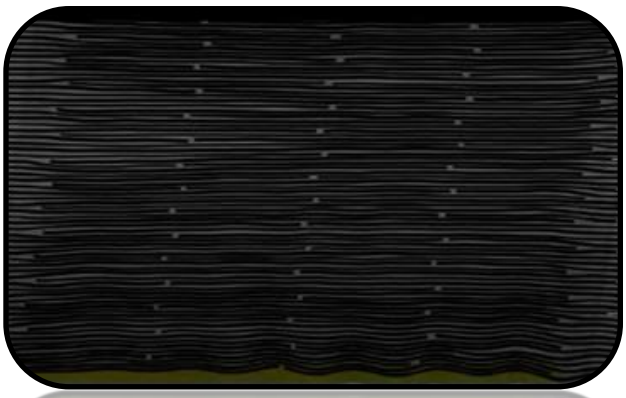
Preform splicing kits

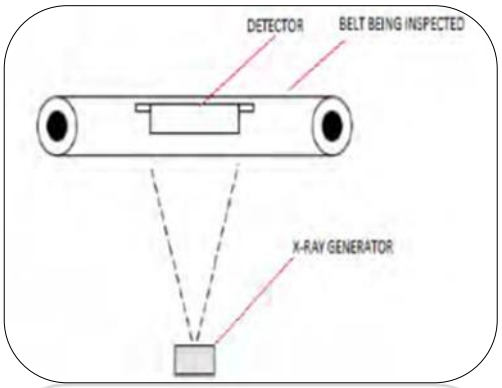


Splicing work on site



X-RAY inspection for splicing on site





Antenna Sensor Loop

Features

The Antenna Sensor Loops are used to induce the signal of the transmitter (TX) to the receiver (RX).

The transmitter (TX) and receiver (RX) shoes are positioned at the bottom of the conveyor belt.

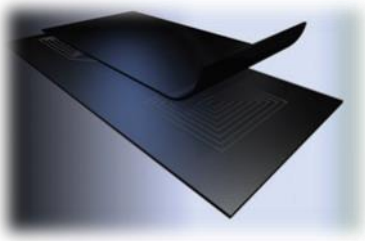
When the conveyor is running, the Antenna Sensor Loop moves past the TX and RX shoes and the signal is injected into the loop from the transmitter (TX), then detected by the receiver (RX) indicating a healthy Antenna Sensor Loop / No rip detected reading.

Should the Antenna Sensor Loop be cut or damaged by any foreign body, no signal will be transmitted by the damaged loop and the receiver sensor does not receive the system's sequence signal and thus shuts off the conveyor drive, thereby limiting damage to the conveyor belt.

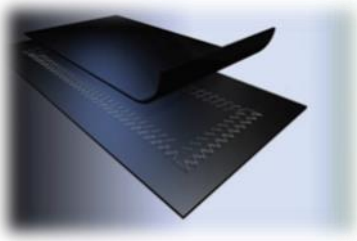
Construction

Cross–section of a conveyor with an embedded antenna

Goodyear Compatible Antenna Sensor Loop



Becker/Coal Control Compatible Antenna Sensor Loop



Our Antenna Sensor loops are compatible with the following Systems:

※ Becker BRS1 and BRS2 Detection Systems

※ Coal Control Detection System

※ Goodyear / ContiTech Detection System

Heat Resistant Conveyor Belt

Features

Conveying high temperature materials, like coke, sinter returns, quick lime, cement material…

Carcass: EP, high modulus low shrinkage EP, steel cord, or IW

Cover Compound: SBR or EPDM

Applications: Grains & Sugar Conveying, Foundries, Cement Industry, Recycling Plants, Steel Industry, Chemical Industry, Power & Petrochemical Industry, Coke Plants, etc..

Key Points: Type of carried material, Shape of carried material, Lump size of carried material, Temperature of carried material, Temperature of belt surface, Belt speed, Length of conveying system, etc.

Standard

Testing	COVER GRADE			
	T1/HR100°C	T2/HR125°C	T3/HR150°C	T4/HR175°C
Hardness (IRHD)				
Difference before and after aging	+20	+20	±20	±20
Maximum value after aging	85	85	85	85
Elongation at break (%)				
Variation in percentage of initial value	-50	-50	-55	-55
Minimum value after aging	200	200	180	180
Tensile Strength (N/mm^2)				
Variation in percentage of initial value	-25	-30	-40	-40
Minimum value after aging	12	10	5	5
Aging Conditions				
Temperature* x Duration	100°C x 168Hrs	125°C x 168Hrs	150°C x 168Hrs	175°C x 96Hrs
Wokring Temperature				
Normal Range	-20°C~+100°C	-20°C~+125°C	-20°C~+150°C	-20°C~+175°C

Flame Resistant Conveyor Belt

Features

Suitable for above ground and under ground environment (flammable or explosive)

Carcass: EP, Steel Cord, Solid Woven

Standard: fulfill the highest requirements acc. to ISO 340, EN14973, EN 12882, MSHA, AS1333, etc.

Applications: Underground Coal Mines, Mines & Tunnels, Cement Plants, Wood & Paper Industries, Recycling Plants, Chemical & Fertilizer Plants, Grains & Sugar Plants...

** In some environments where coal dust, gas, fertilizer or other combustible materials are involved, it is essential that the on-going conveyor belts cannot create static electricity which can ignite gases and dust in the atmosphere.*

Standard

STANDARD		Tensile Strength (MPa)	Elongation @break (%)	Abrasion Loss (mm^3)	SAFTY REQUIREMENT
DIN 22131	K	20	400	200	Cover intact, comply with ISO 340 & EN 12882
DIN 15236-1	K	15	350	200	Cover intact, comply with ISO 340 & EN 12882
DIN 22102	K	H: 20 L: 15	H: 400 L: 350	H: 200 L: 250	Cover intact, comply with ISO 340 & EN 12882
	S				Cover intact & removed, comply with ISO 340 & EN 12882
DIN 15236-3	V	17	350	175	Underground installations, comply with EN 14793

**SPECIAL GRADES AVAILABLE: K+HR130°C, K+MOR, etc.*

EN 14973	APPLICATION	SURFACE RESISTANCE	DRUM FRICTION (EN1554)			IGNITION (ISO340)		FIRE PROPAGATION METHOD (EN12881)
			FLAME	GLOW	MAX. DRUM	Aggregate of six test pieces	Max. for any one test piece	
A	General use, only hazard being limited access and means of escape	≤300MΩ	X	✓	No limited	45s	15s	EN 12881-1, Method A. if incomplete ignition achieved, use Method B or C
B1	As Class A plus potentially flammable atmosphere. No secondary devices	≤300MΩ	X	X	450°C	45s	15s	
B2	As Class A plus potentially flammable atmosphere. With secondary devices	≤300MΩ	X	✓	No limited	45s	15s	
C1	As Class B1 plus combustible dust or material conveyed. No secondary devices	≤300MΩ	X	X	325°C	Covers intact 3s / Covers removed 5s	Covers intact 10s / Covers removed 15s	EN 12881-1, Method B & C
C2	As Class B1 plus combustible dust or material conveyed and additional fuel sources. With secondary devices	≤300MΩ	X	✓	No limited	45s	15s	EN 12881-2
Note: (X)-No (✓)-Permitted								

EN 12882	APPLICATION	SURFACE RESISTANCE	DRUM FRICTION (EN1554)			IGNITION (ISO340)		FIRE PROPAGATION METHOD (EN12881)
			FLAME	GLOW	MAX. DRUM TEMP.	Aggregate of six test pieces	Max. for any one test piece	
1	General use, risk only through electrostatic discharge	≤300MΩ	-	-	-	-	-	-
2A	As Class 1, additional hazard from small open flames on the cover stock (additional causes of fire)	≤300MΩ	-	-	-	45s	15s	-
2B	As Class 2A, the additional risk is smaller, open flame on the carcass	≤300MΩ	-	-	-	Cover intact / removed 45s	Cover intact / removed 15s	-
3A	As class 2A, additional hazard of local heating due to friction	≤300MΩ	X	-	-	45s	15s	-
3B	As Class 3A, there is an additional risk due to small, open flame on the carcass	≤300MΩ	X	-	-	Cover intact / removed 45s	Cover intact / removed 15s	-
4A	As Class 1, additional risk of fire spreading caused by additional fire sources. Secondary safety device	≤300MΩ	-	-	-			EN12881-1 Method A, C or D
4B	As Class 4A, additional hazard of local heating due to friction. Secondary safety device	≤300MΩ	X	-	-			
5A	As Class 4B, there is however an increased risk of local heating due to friction. Secondary safety device	≤300MΩ	X	-	-			
5B	As Class 5A, with an additional risk from glowing. Secondary safety device	≤300MΩ	X	X	-			
5C	As Class 5B, with an additional risk when operating in a potentially combustible atmosphere. Secondary safety device	≤300MΩ	X	X	400°C			

MSHA Conveyor Belt

Introduction

Standard: MSHA 30 CFR Part 14

Applications: MSHA flame resistant conveyor belt is designed for all underground coal mine applications in the U.S.A.

Carcass: up to 3EP750 (EP2250/3)

Belt Width: maximum 3000mm

**Old MSHA 2G used in above ground surface applications where flame resistant conveyor belts is needed.*

Certificate

U.S. Department of Labor

Mine Safety and Health Administration
Approval and Certification Center
765 Technology Drive
Triadelphia, West Virginia 26059

DS09
File # CB27094
PAR 113496

In Reply Refer To:
MSHA:A&CC:PAR 113496
File No. CB27094
Approval No. 14-CBA180011

October 1, 2018

Mr. Tripp Song
Standard Industrial Inc.
No 310 Tianshan Road
Shanghai 200336
CHINA

Dear Mr. Song:

The review of your application dated August 15, 2018, Company Code No. SA0036, for **Standard A** conveyor belt is complete.

This conveyor belt construction meets the requirements of Part 14 of Title 30 Code of Federal Regulations (30CFR Part 14).

The following requirements apply to this approval:

1. This belt must be marked "**14-CBA180011-MSHA**" in characters at least 1/2 inch high, repeated at least once every foot across the width of the belt, at intervals not exceeding 60 feet for the entire length of the belt. The markings must be legible and permanent. Other marking methods may be used with prior approval of MSHA.
2. A prepaid sample of the product with the approval markings, having the construction specified above, is to be sent to the Chief, Quality Assurance and Materials Testing Division at the letterhead address for examination in a timely manner. The sample submitted must have a free border of at least 1 inch on all sides.
3. Approval of this product by MSHA obligates you, as the manufacturer, to meet the quality assurance requirements of 30CFR§14.8.
4. Any change in product composition or in any other factors that may affect an approval issued under Part 14 must not be made without prior authorization.
5. We have the right to revoke this approval for cause at any time.
6. **This approval applies only to the products listed on the attached specification sheet. An approved conveyor belt must be marketed only under the name specified.**

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7. We must be notified of any transfer of production or ownership of this product.

An invoice for the cost of processing this action will be forthcoming.

If you have any comments or questions relative to this letter, please refer them to Bill Kelly at 304-547-2022.

Sincerely,

Dennis L. Ferlich
Chief, Approval and Certification Center

Enclosure: Specification Sheet

Oil Resistant Conveyor Belt

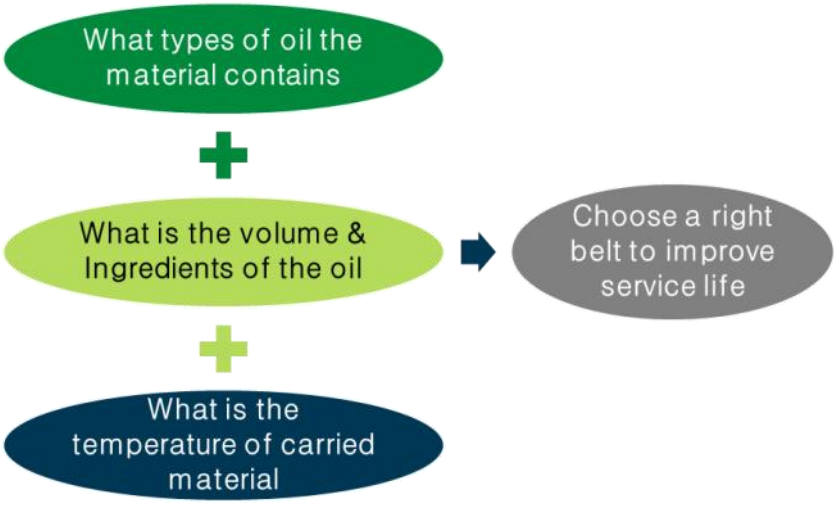
Features

Used in applications requiring resistances to oily or greasy materials

Applications: Grains & Sugar conveying, Food Industry, Paper Industry, Timber Industry and Sawmills, Chemical & Fertilizer Industries, Recycling Plants, Mineral Processing Plants, Harbors…

Carcass: multi ply EP or NN fabrics

Selection Of An Oil Resistant Belt



Quality Values Of Covers

Grade	Tensile Strength (MPa)	Elongation at break (%)	Abrasion (mm^3)	Test				Special Properties
				Oil Type	Soak Temp. (°C)	Soak Time (hrs)	Volume Change Rate (%, ≤)	
MOR	12	350	250	IRM903	$70_{\pm2}$	$72_{\pm1}$	+50	
OR	14	400	200	IRM903	$70_{\pm2}$	$72_{\pm1}$	+50	
HOR-100	12	350	250	IRM903	$70_{\pm2}$	$72_{\pm1}$	+50	Heat Resistant T1
HOR-125	12	350	250	IRM903	$70_{\pm2}$	$72_{\pm1}$	+50	Heat Resistant T2
FOR	12	350	250	IRM903	$70_{\pm2}$	$72_{\pm1}$	+50	Flame Retardant ISO 340 / EN 12882

Chemical Resistant Conveyor Belt

Features

Preventing the belt from acid or alkali corrosion.

Advantages: Good bonding property, No layers separation, Fine anti-chemical corrosiveness.

Applications: Chemical & Fertilizer Factories, Cement Plants, Paper Mill, Mining Industry…

Carcass: multi ply EP or NN fabrics

Technical Indexes

ITEM		Tensile Strength (MPa, ≥)	Elongation at Break (%, ≥)	Abrasion Loss (mm^3,≤)	Hardness (Shore A, +10 -5)	Ozone Deterioration
Physical Property	Before aging	14	400	250	60	no cracks
	After aging	12	340	-	65	-
Acid & Alkali Resistance	Class	Soak Liquid	Density	Soak conditions	Change rate before and after soak	
				°C x Hrs	Swelling rate	Change rate of tensile strength
	A1	HCl	18%	50°C x 96h	⩽+10%	⩽-10%
	A2	H_2SO_4	50%	50°C x 96h	⩽+10%	⩽-10%
	A3	NaOH	48%	50°C x 96h	⩽+10%	⩽-10%

Cold Resistant Conveyor Belt

Features

Applications: Suitable for conveying materials outdoors in freezing area, cold storage etc.

Working temperature: -40°C (-40°F) or lower

Cover Compound: high elasticity, shock resistance, cold resistance

Carcass: multi ply EP or NN fabrics

Technical Indexes

ITEM		Index		
		H	D	L
		Laceration Resistant	Abrasion Resistant	Ordinary Type
Tensile Strength (MPa, ≥)		24	18	15
Elongation At Break (%, ≥)		450	400	350
Aging Experiment (70°C x 7 days)				
Change rate of tensile strength (%)		±25	±25	±25
Change rate of elongation at break (%)		±25	±25	±25
Abrasion Loss (mm^3 , ≤)		120	100	200
Cold Resistant Coefficient At Elongation (≥)	C_1 (-45°C)	0.3		
	C_2 (-50°C)	0.2		
Note: C_1——working temperature -45~+50°C ; C_2——working temperature -60~+50°C .				

Cut & Gauge Resistant Conveyor Belt

Features

Application: Cut and Gauge resistant belt cover rubber has the performance of absorbing high energy impact, especially suitable for mine head break, second break. Material size can be 0 to 600mm.

Carcass: EP, Steel Cord, Kevlar

Classification

Grade	Tensile Strength (MPa)	Elongation at break (%)	Abrasion (mm^3)	Special Properties
I	20	550	140	For environment temperature above –15°C
II (M24+)	26	450	105	For low environment temperature no lower than –50°C

GRADE: DIN-X

GRADE: Impact resistant rubber

Abrasion Resistant Conveyor Belt

Features

Cover Quality	mm^3
Super Abrasion Resistant	30
High Abrasion Resistant	50
General Abrasion Resistant	90

Application: Used in port, mine, power , chemical industries, suitable for long distance , high speed and large capacity conditions.

Carcass: EP, Steel Cord, Kevlar

Non-Sticking Conveyor Belt

Features

Application: It's designed to handle damp and sticky material, not only repel dirt, also be resistant to oil and grease, such as titanium dioxide, iron pyrites, silica, compost, wetted fly ash, which will reduce costs for cleaning and servicing.

Carcass: EP, Steel Cord, Kevlar

Non–sticking belt

General belt

LRR Conveyor Belt

Features

Application: Low Rolling Resistant (LRR) Belt is used in port, mine, power, chemical industries, suitable for long distance conditions, which can save the conveyor system energy.

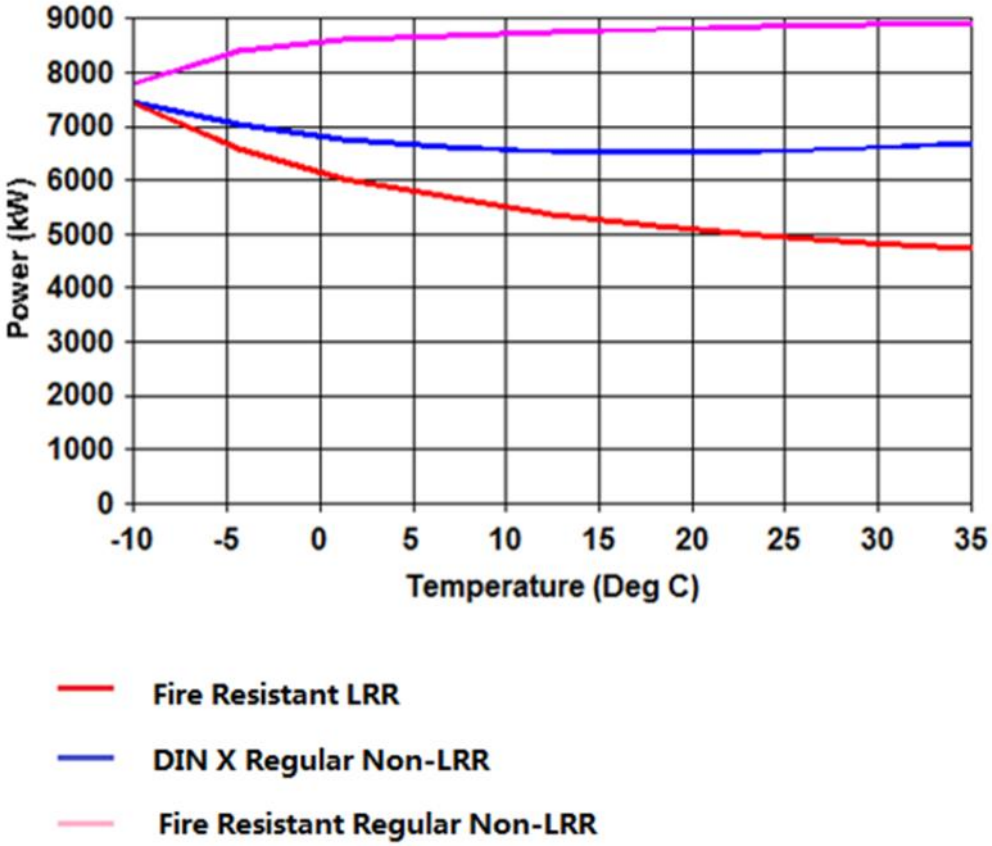
Carcass: EP, Steel Cord, Kevlar

The cover can be divided into the following types in accordance with its usage.

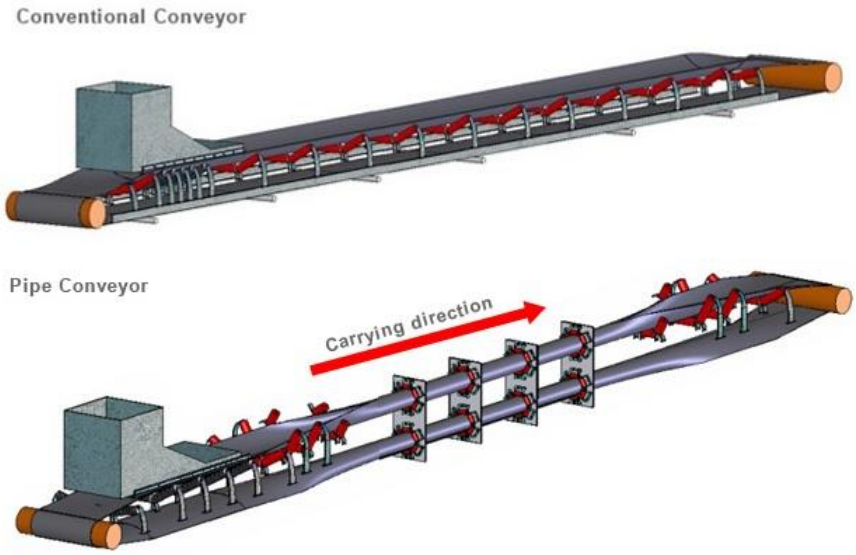
LRR: General low rolling resistance rubber, which will save approximately 15% of energy in entire conveying system.

SLRR: Super low rolling resistance rubber, which will save approximately 20% of energy in entire conveying system.

FLRR: A low rolling resistance rubber with general flame resistant property.



Pipe Conveyor Belt



Features

Application: Mainly used to transport bulk solids in the Cement, Fertilizer, Coal, Powder, Steel, Pulp and paper, Food grains etc. Pipe conveyors overcome some problems commonly associated with conventional conveyors, e.g. spillage of materials, belt training, limited angles conveyance, horizontal curves and multiple flights.

Carcass: EP, Steel Cord, Kevlar

Cover Grade: Abrasion Resistance, Chemical Resistance, Flame Resistance, Heat Resistance, LRR/SLRR…

Construction

※ *Maximal pipe belt width up to 3200mm*

※ *Maximal outer diameter of pipe belt up to 900mm*

※ *The pipe diameter should be min. 3 times the lump size.*

※ *The filling degree should be between 60 and 75 %.*

Design Data For Pipe Belt (1/2)

Standard A **Standard Industrial Inc.**

No.310 Tianshan Rd.,Shanghai,P.R.China 200336

Tel：+86-21-62901212 Fax：+86-21-62916022 www.Standard-A.com

Pipe Conveyor Belt Analysis

Customer:	Date:
Mine/Plant/Quarry:	Location:
Key Personnel:	Conveyor Description:

DATA REQUIRED		**TAKE-UP DATA**	
Pipe inside diameter	mm	Location	
Belt Width	mm	Hydraulic	MPa
Centre to centre	m	Rod diameter	mm
Horizontal length	m	Cylinder Bore diameter	mm
Vertical lift	m	Rope ratio	
Angle of incline	deg	Take-up pressure	kPa
Belt speed	m/s	Gravity	
Material		Weight	kgs
Material density	kg/m^3	Travel	m
Maximum lump size	mm	Type (Gravity, Fixed)	
Percent lumps	%	Tension	N
Refuse (% and type)		Extension	m
Tonnes per hour (max)	tph	Screw	
Chute drop distance		Travel	m
Enviromental condition(Clean, Moderate, Dirty)		Comments (include previous belt history)	
Hours in service per day	hrs		
Days in service per week	days	**LOADING**	
Top cover thickness	mm	Location	
Bottom cover thickness	mm	Load carry side	
Minimum temperature	°C	No. of loading pts	
Maximum temperature	°C	Impact idlers/slider bed	
Transition lengths		In line/angle to feed belt	deg
Head	m	Belt inclination at feed pt	deg
Tail	m	Vertical drop	m
Other	m	Chute bottom to belt	m
		Skirtboard length	m
PULLEY DIAMETERS			
Head	mm		
Tail	mm		
Drive	mm		
Take-up	mm		
Snub	mm		
Bend	mm		

Design Data For Pipe Belt (2/2)

Standard A

IDLERS			DRIVE DATA	
Idler name/Series			No. of drives	
No. of idler rolls			No. of motors per drive	
Idler Type (select one)	in-line	off-set	kW per motor	
Roller diameter		mm	Motor synchronous speed	
Load rating		N	Drive inertia	
Depth of material on skirtboard		mm	Drive efficiency	kg-mm^2
Vertical tolerance		mm	Acceleration time	
Carrying side spacing		mm	Brake time	s
Steel/rubber		rigid/ garland	Total brake torque	s
Return side spacing		m	Drive slip	N*M/NP%
Steel/rubber			Drive pulley(s)	%
Idler manufacturer			Lagged	
SPLICES			Yes/No	
Type			Degree of warp	
Mechanical (type and size)			Location	
Vulcanizing (step length)		mm		

CURVES

Vertical Curve-Location (distance from tail)		#1	#2	#3	#4
Vertical Curve Type (Convex/ Concave)					
Vertical Curve radius					
Horizontal Curve-Location (distance from tail)					
Horizontal radius					
Angle into curve					
Angle out of curve					
Length of curve					
Idler spacing on curve					

Note each curve individually

Note: Please provide Conveyor system profile in Autocad if available

Ceramic Conveyor Belt

Features

Application: Used in port, mine, steel industries, suitable for short distance conveyor, conveyor speed is fast, belt easy to wear, such as stacker hoist cantilever belt.

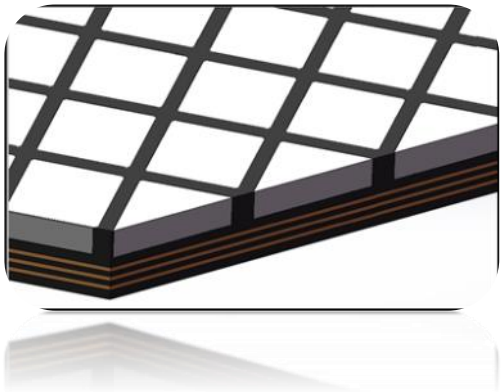
Carcass: EP, Steel Cord

Working Conditions:

※ Temperature of belt surface is not over 100°C

※ Elevating angle of conveyor up to 15°

※ Angle of roller trough up to 45°



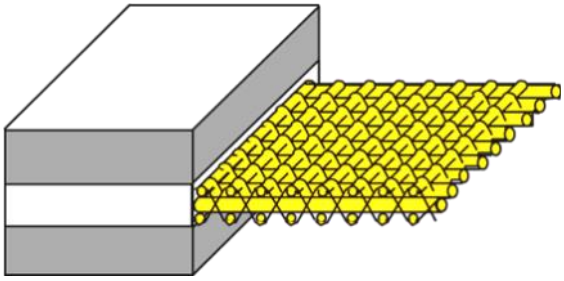
Construction

a. Use the ultra-high wear resistance of ceramics.

b. Combine the ceramic plate with the rubber surface by chemical, structural and other methods ,making it a kind of ceramic conveyor belt with ultra-high wear resistance.

c. The wear-resistant properties are more than 4 times that of ordinary wear-resistant conveyor belts.

Kevlar Conveyor Belt (DDP)



Features

The belt uses Kevlar as its reinforced layer which can replace original polyester or nylon canvas & steel cord. Suitable for heat resistant, flame retardant and high strength belt in long-distance material conveying.

Application: Coal Mine, Mining Field, Steel Plant, Cement, Wharf, Quarry, Power Station, Chemical Industry...

Cover Grade: Various grade incl. General Purpose, Heat Resistant, Oil Resistant, etc.

Advantages: Impact Resistance, Corrosion Resistant, Superior Heat & Fire Resistance, High Tensile Strength, Low Elongation, Excellent Troughability, Long Lifetime, Light Weight, and Cost Saving.

Technical Indexes

Item		DPP 500	DPP 800	DPP 1000	DPP 1250	DPP 1400	DPP 1600	DPP 1800	DPP 2250	DPP 2500	DPP 3150	DPP 3500
Tensile Strength (≥N/mm)	**Warp**	500	800	1000	1250	1400	1600	1800	2250	2500	3150	3500
	Weft	150	150	150	180	180	190	190	200	200	370	400
10% load elongation (≤ %)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Type	Aramid Belt	EP Belt	Steel Cord Belt
Impact resistance	Excellent	Moderate	Moderate
Anti-corrosion	Excellent	Moderate	Poor
Heat resistance	Excellent	Poor	Excellent
Fire resistance	Excellent	Poor	Excellent
Elongation at 10% strength	0.5	2.5	0.25
Elongation at break	4	14	2.5
Modulus	High	Moderate	High
Pully diameter	Small	Moderate	Big
weight	Light	Moderate	Heavy
Cost	*Expensive*	*Moderate*	*High*
Splice	*Very complicated*	*Convenient*	*Complicated*
max tension	*DPP3500*	*EP2500*	*ST10000*
Summary	Excellent performance and light, can save energy, but cost is expensive and splice is very complicated.	Moderate performance, but it's economic and splice is convenient, also weight is not heavy.	High performance, high tension and stable, just cost is higher, pulley diameter is bigger, with heavy weight and splice is complicated.
Recommendation	Long distance transport, not very high tension, with enough budget.	Small distance transport, not high tension status.	Long distance transport. Or short distance transport which request low elongation, or high tension, etc.

Chevron Conveyor Belt

Introduction

Chevron conveyor belt is designed to convey loose, bulky or bagged materials on inclined surface at angles of less than 40 degrees.

※ Anti-slip & Excellent drainage character

※ Cleats and top cover rubber are vulcanized integrally

※ Cleat patter, angle and pitch are designed elaborately

Selection

Selection of a type and height of cleats depends on the material to be conveyed and the angle of inclination:

Type of Material	Material example	Max. Angle of Inclination			
		Height of Cleats			
		14mm	16mm	25mm	32mm
Powdery	Flour, etc.	25°	25°	28°	30°
Loose flowing	Corn, barley, wheat, rye, etc.	20/25°	20/25°	25/30°	25/30°
Loose rolling	Gravel, ground stone, etc.	25°	25°	28°	30°
Sticky	Wet sand, ash, wet loam, etc.	30°	30/35°	35/40°	40/45°
Packed	Sacks, paper sacks, etc.	30/35°	30/35°	35/40°	35/40°

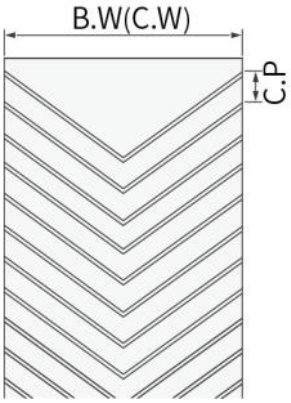
Specification

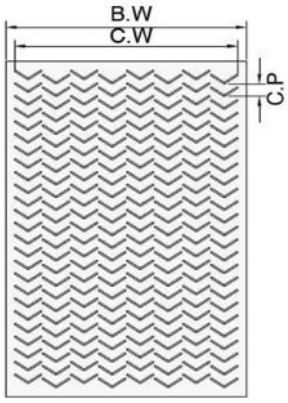
Cleat Height (mm)	Cleat Width (mm)	Available Belt Width (mm)
5	300 ~ 1200	300 ~ 1200
6	400 ~ 1800	400 ~ 1800
10	300 ~ 1200	300 ~ 1200
15	255 ~ 750	400 ~ 1200
17	300 ~ 950	400 ~ 1400
25	450 ~ 1000	500 ~ 1600
32	460 ~ 750	500 ~ 1400

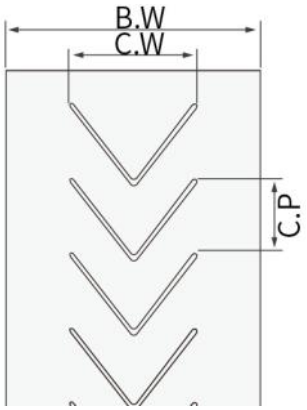
Minimum Pulley Diameter

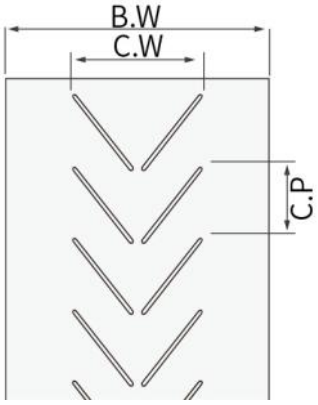
Cleat Height (mm)	Strength (kgf/cm)	Head Pully (mm)	Tail Pully (mm)	Snub (mm)
5 ~ 6	250/2	250	250	160
	400/3	315	250	200
	500/3	400	350	250
10 ~ 17	250/2	300	250	200
	400/3	350	315	250
	500/3	500	400	350
25 ~ 32	250/2	300	215	250
	400/3	400	350	315
	500/3	500	400	350
	630/4	600	500	400

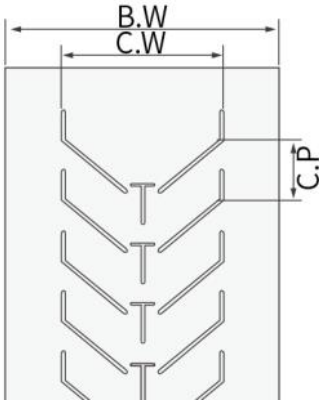
Popular Chevron Pattern

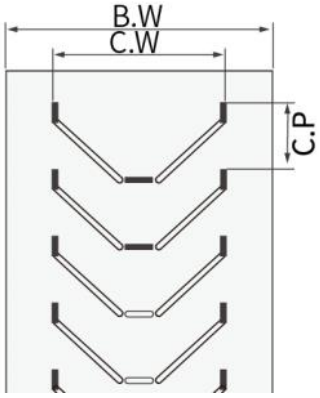


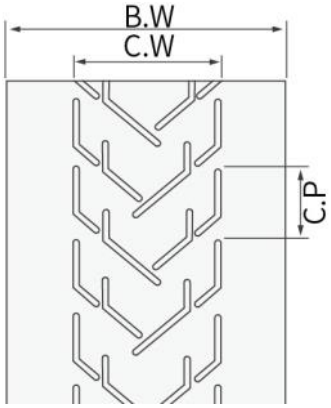


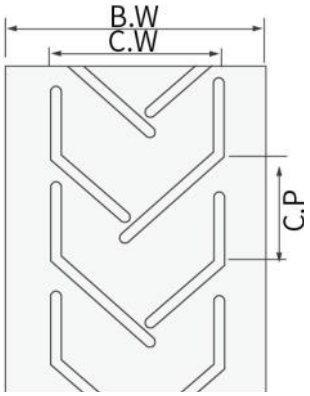


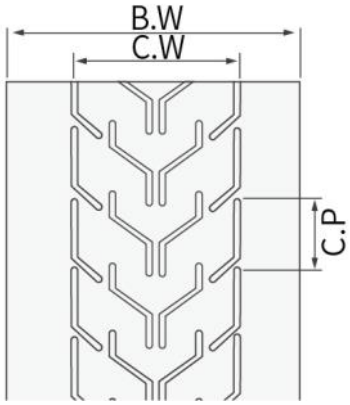


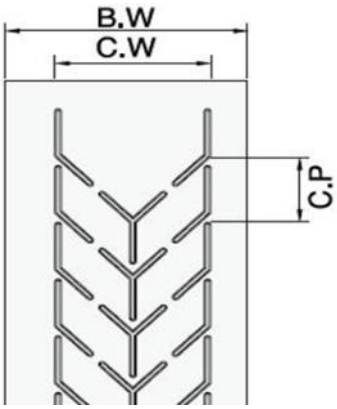


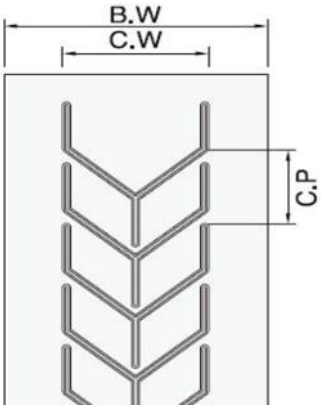




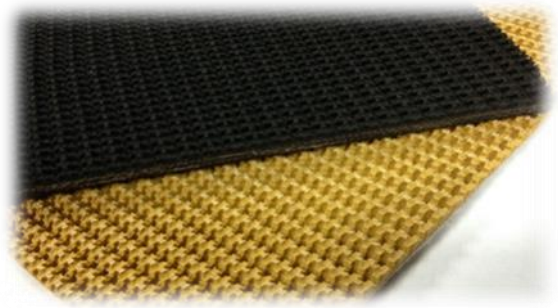








Rough Top Conveyor Belt



Application

Application: used for transporting light weight goods, e.g. belt flight loaders, lorry loaders, also suitable for fragile or deformed material, e.g. sacks, boxes & parcels, glass, on inclined surface at angles of maximal 35°.

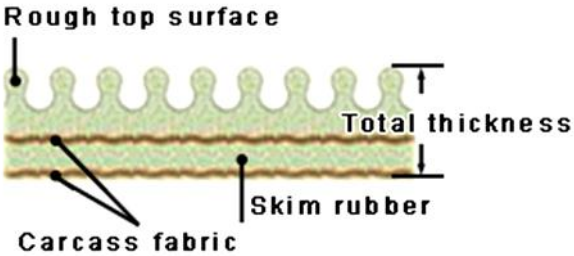
Construction

a. ***Top Cover*** *— made of wear-resistant rubber with a non-slip surface. It has cushioning effect, mollifies and absorbs vibrations and impacts given on transported materials and simultaneously prevents slipping.*

b. ***Carcass*** *— 2 or 3 plies EP fabrics.*

c. ***Bottom Cover*** *— Available with rubber cover or bare back for slider bed applications.*

d. ***Color*** *— The black top cover is recommended for utility type incline service while the tan cover is used for transporting packaged food products.*



WHY OUR ROUGH TOP CONVEYOR BELT:

※ Advantage in less friction coefficient

※ Feasible in running over table & flat panel

※ Presence of pattern that aids in generating relief effect

※ Designed to absorb generated process vibrations, thus preventing possibility of material slippage

Standard Specification

Edge	No. of ply	Top cover	Bottom cover	Color	Standard Width
C/E	2	1/8" (3.2 mm)	1/16" (1.6 mm)	Black Tan	48”~80”
C/E	2	1/8" (3.2 mm)	Bare back		
C/E	3	1/8" (3.2 mm)	1/16" (1.6 mm)		
C/E	3	1/8" (3.2 mm)	Bare back		

Corrugated Sidewall Belt

Features

Corrugated sidewall conveyor belt is considered as one of the most effective way of elevating materials. It is specially engineered to operate in the most demanding conditions and handle the most aggressive materials. We use the very best rubber compound to provide an extended operational lifetime.

Advantage:

※ Maximum utilization of space

※ Minimum maintenance, long belt life

※ Wide range of materials can be handled

※ Low power requirement, quiet smooth running

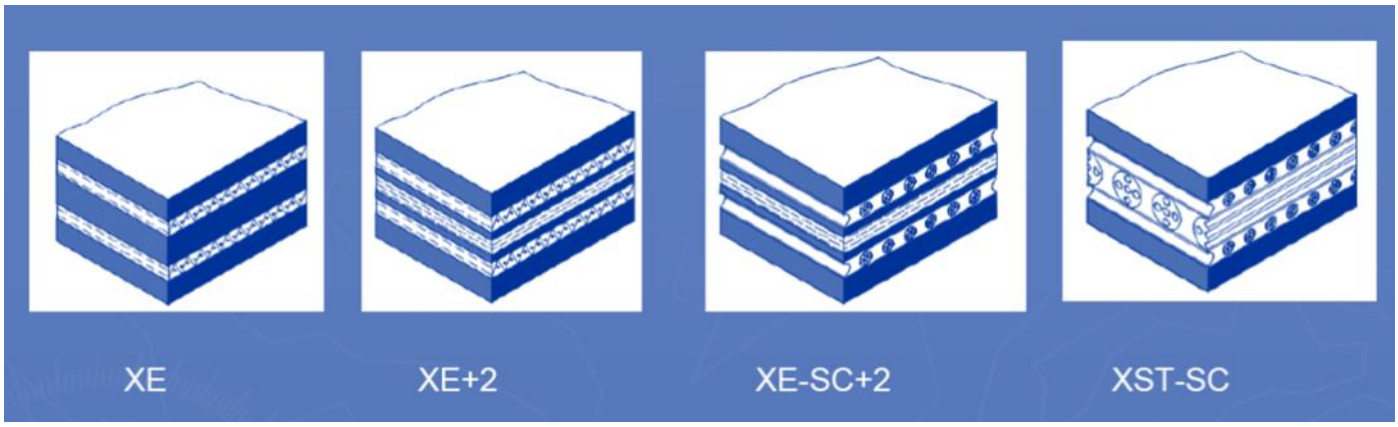
※ No transfer points

※ No spillage with steep angle conveying

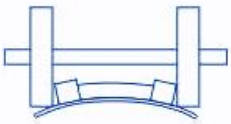
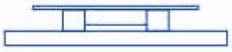
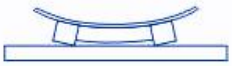
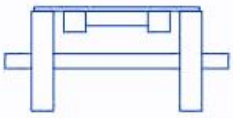
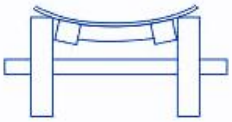
Rubber Quality

Cover Grade	Application
RMAI, RMAII, DIN-Z, DIN-Y, AS1332 N, SANS1173 N	General Application
DIN22102 X, AS1332 M, SANS1173 M	Good Abrasion Resistant, for high tension application
DIN22102 W, AS1332 A, SANS1173 A	Super Abrasion Resistant, for very harsh conveying or large size sharp material application
HR125°C, HR150°C, EPDM Compound	Hot Service for Steel Plant, Limekiln…
Moderate Oil Resistant	For carried materials soaked or containing with machine oil, vegetable oil and fat, etc.
Cold Resistant	Cold resistant - 45°C
Flame Resistant	Above ground application, DIN-K / ISO 340

Cross Rigid Base Belt



Sidewall belts require a certain tensile strength and abrasion resistance. For belt with lateral free space, the belt must have enough cross rigidity transversely and flexibility longitudinally to meet up with the requirement of deflection part of conveyor. The special designed base belt with cross rigidity solved the problem of belt collapse.

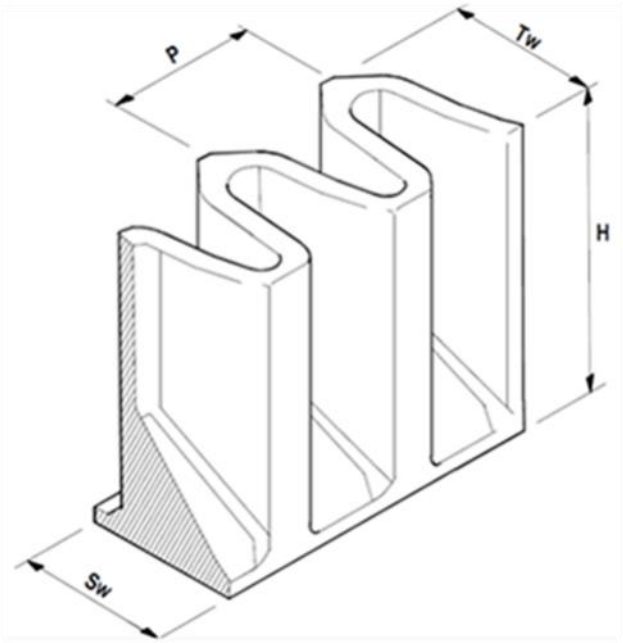
Cross rigid base belt	Conventional base belt
	
	
	
	

Sidewall

Our sidewall design ensures maximum flexibility, the profile has excellent vertical stability for load retention and return side support. The design allows for high compression to ensure smooth inner deflection around small radius.

Type	H (mm)	SW (mm)	P (mm)
S (Light Duty)	40	30	25
	60	50	40
	80	50	40
	100	50	40
	120	50	40
SF (Reinforcement)	160	75	63.5
	200	75	63.5
	240	75	63.5
	280	75	63.5
	300	75	63.5
DF (Heavy Duty)	300	100	83
	400	100	83
	500	100	83
	630	100	83

Note: diagonal fabric reinforcement for Sidewall ⩾120mm.



Our sidewalls and cleats are bonded to base belt by hot volcanizing. This ensures the highest adhesion strength.

Bonding method	Adhesion Strength
Traditional Cold Bonding	⩽10 N/mm
Hot Vulcanizing Bonding	⩾17 N/mm

Cleat

Our Cleats are designed with good features of impact resistant and hardness to avoid cleat distortion. The shape of C and TC type have been created to offer best conveying capacities along with self-cleaning properties. The smaller profile cleat are extruded, all large cleats are molded to give the best shape retention even when conveying high density materials.

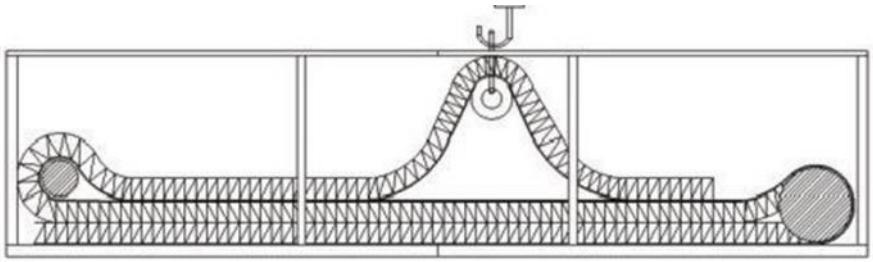
C, TC and TCS are normally used for conveyor angle over 40°, T type is used for angle less than 40°.

** Cleats (110mm and higher) have special fabric reinforcement in the vertical and angle parts.*

Type		Height (mm)	Bottom Width (mm)	Min. Pulley Diameter (mm)	Height (mm)	Bottom Width (mm)	Min. Pulley Diameter (mm)
	**C**	**55**	75	125	**90**	110	250
		75	100	150	**110**	110	315
	**T**	**55**	80	125	**140**	160	400
		75	100	150	**180**	160	500
		90	110	250	**200**	160	630
		110	110	315	**230**	160	630
	**TC**	**55**	80	125	**140**	150	400
		75	80	150	**180**	150	500
		90	110	250	**230**	157	630
		110	110	315	**280**	105	800
	**TCS**	**230**	105	630	**470**	225	1250
		280	105	800	**600**	225	1600
		360	225	1000	**-**	-	-

Package

Wrong Way

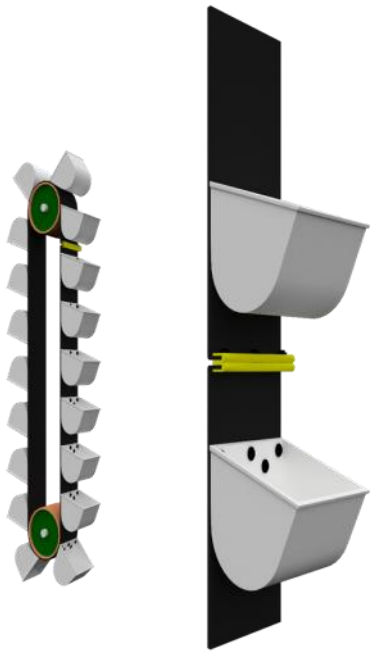


Correct method of removing an endless belt from a steel crate

PACKAGE OF SIDEWALL BELT

PACKAGE OF CLEATS / SIDEWALLS

Elevator Belt



Features

Designed for application of transportation of bulk material

Application:

- ※ Sand, Gravel and Stone Industry
- ※ Power Station
- ※ Cement & Concrete Plants
- ※ Farming
- ※ Silo Feeding
- ※ Sugar / Salt Industry

Types

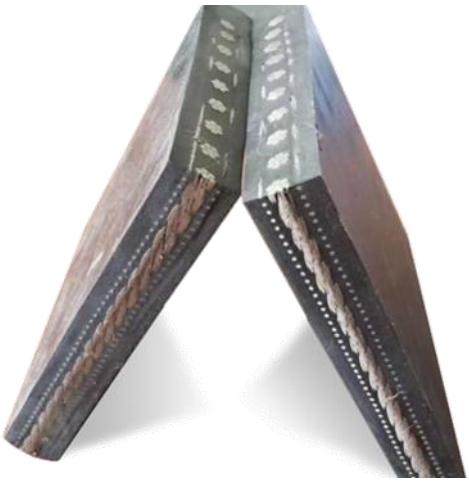
Material	Item	Construction	Cover Properties
RUBBER	Black Rubber Conveyor Belt	EP	MOR+E, HR, FR, RMA I, RMA II
		Steel Cord	
		Straight Warp	
		Steel Web	
	White Rubber Conveyor belt	EP	FDA, Not FDA, MOR+E+AS
		Straight Warp	
	Bare Back	EP	MOR, RMAI,RMAII
PVC	Solid Woven	Solid Woven	

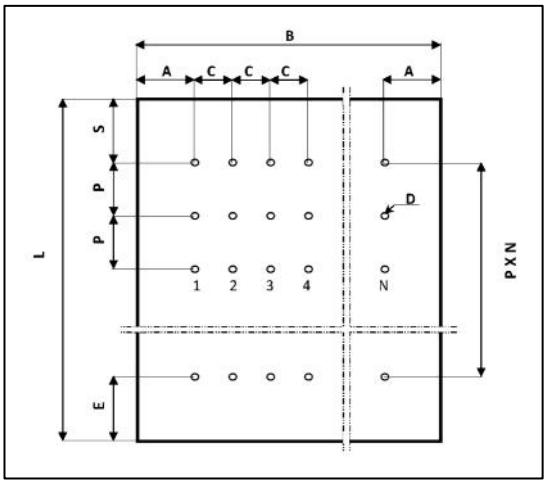
Accessories For Elevator Belt

- ※ Mechanical Jointing Complete with accessories
- ※ Bucket & Bolt
- ※ Rubber Sheet for elevator belt

Rubber Elevator Belt

EP:	2-8 plies, EP100~EP250, Cover thickness: 0~3mm
Steel Cord:	ST800, ST1250, with 1 or 2 plies metal breaker
Straight Warp:	SW400, SW630 etc.
Steel Web:	IW800,IW1000,IW1250, SW etc.

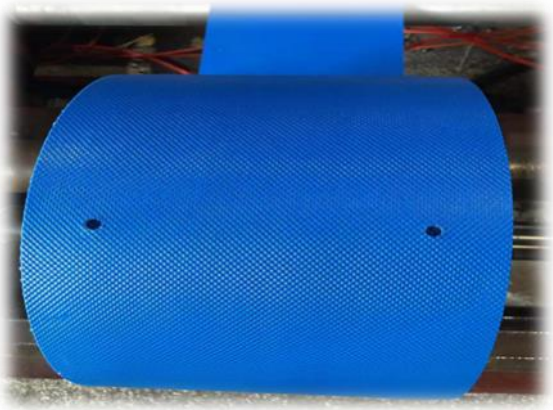




∗ hole punching service available according to customer's drawing

PVC Solid Woven Elevator Belt



＊ hole punching service available according to customer's drawing

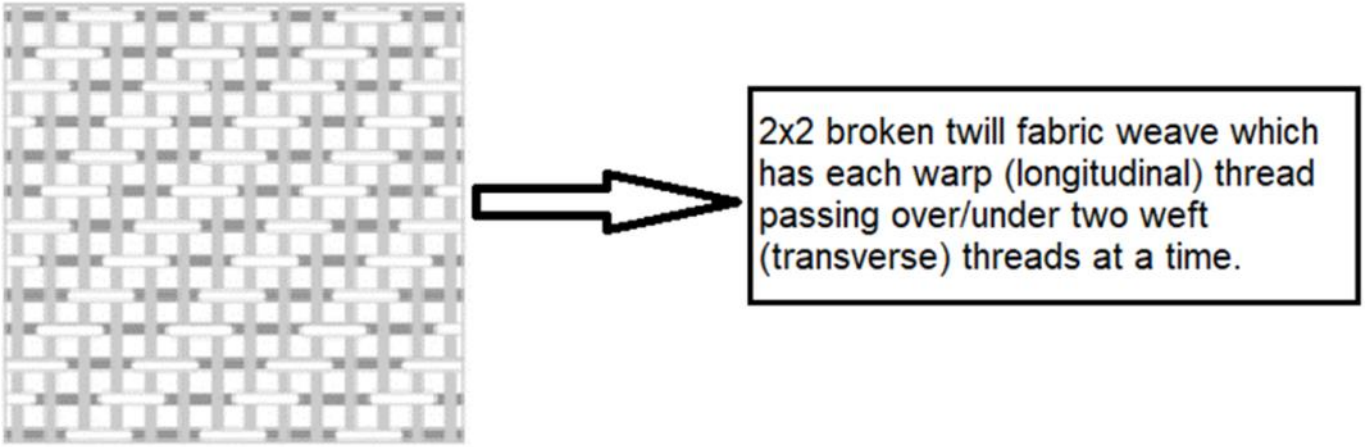
White Rubber Conveyor Belt

Carcass: EP, NN, Straight Warp

Cover Compound: FDA or Non-FDA (10MPa~20MPa), Oil / Heat / Flame Resistant cover, etc.

Applications: Suitable for agriculture and food processing industries, non-marking & non-staining.


Crows Foot Weave (CFW) Belt



Features

CFW Rubber Conveyor Belt, designed for arduous application, gives outstanding resistance to rip & tear, and has 5 times the strength of conventional belts. It is manufactured with a unique EP carcass, which with 50% more threads (ends) in the warp, 40% heavier weft yarn, 20% more weft threads (picks) and over twice the strength in the weft.

Advantage: Superior Rip & Tear Resistance, Low Elongation, High Strength & Adhesion, Good Impact Resistance.

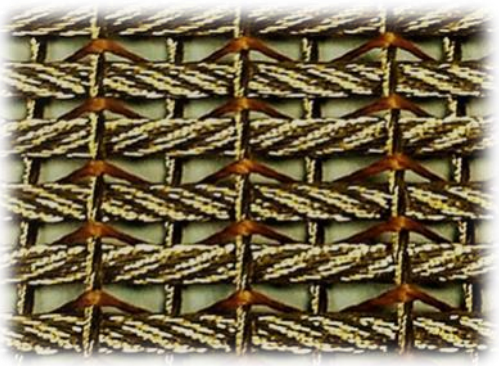
Cover Grade: Available in various cover grade, but due to the nature of applications where CFW conveyor belt is used, high grade covers are generally recommended.

Technical Indexes

Type		Tensile at Break	Elongation at Break
Unit		N/mm	%
EP200-CFW	Warp	240	≥14
	Weft	75	≤40
EP250-CFW	Warp	300	≥14
	Weft	90	≤45
EP300-CFW	Warp	350	≥14
	Weft	105	≤45
EP350-CFW	Warp	410	≥14
	Weft	115	≤45
EP400-CFW	Warp	480	≥14
	Weft	115	≤45
EP450-CFW	Warp	520	≥14
	Weft	115	≤45
EP500-CFW	Warp	610	≥14
	Weft	115	≤40

IW Conveyor Belt

IW/SW conveyor belt is constructed from high quality woven steel cord fabric with steel cord in longitudinal and transversal direction fixed together in 1 ply as carcass. The IW carcass has a single transversal layer of steel cords on top of the longitudinal steel cords, whereas the SW has two transversal layers of steel cords situated at both sides of the longitudinal steel cords. They can be used for universal application because they delivers trough ability with a high impact resistance.



Application:

※ Coal Mine, Mining Field, Steel Plant, Cement, Wharf, Quarry, Power Station, Chemical Industrial, etc.

※ **IW Conveyor Belt:** specially designed for solid material transportation and long-distance conveying system.

※ **SW Conveyor Belt:** particularly suitable for elevator belts, loading conveyors, various steel plant, etc.

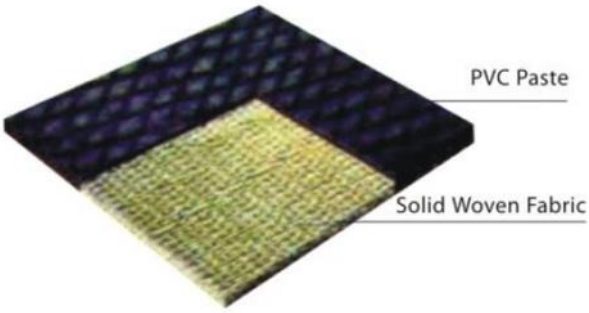
Advantages: High impact and tear resistance, Low elongation, Small pulley diameter.

Technical Indexes – Main Type

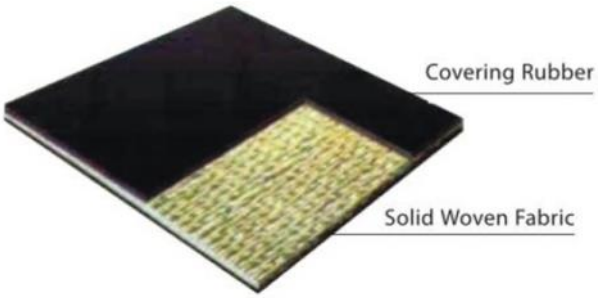
No.	Project content		unit	IW Strength Serial							
1	Warp strength		N/mm	350	500	630	800	1000	1250	1400	1600
2	Weft strength		N/mm	90			125		175		
3	Mass		Kg/m^2	1.85	2.45	2.95	4.15	5.00	6.35	7.05	7.90
4	Mesh thickness		mm	3.2			4.5		6.0		
5	Warp cords	Structure	/	4x7x0.25 E			4x7x0.35 E		4x(0.50+6x0.44) E		
		Dia.	mm	2.00			2.85		3.90		
		Break load min.	N	3075			5600		9600		
6	Weft cords	Structure	/	3x7x0.22 HE			4x(0.28+6x0.25) HE		4x7x0.30 HE		
		Dia.	mm	1.52			2.10		2.40		
		Break load min.	N	1720			2900		3775		

No.	Project content		unit	SW-HE Strength Serial									
1	Warp strength		N/mm	350	500	630	800	1000	1250	1400	1600	1800	2000
2	Weft strength		N/mm	125					175			200	
3	Mass		Kg/m^2	2.00	2.60	3.15	4.10	4.95	6.30	7.00	7.85	8.70	9.25
4	Mesh thickness		mm	4.7			5.4		7.1				
5	Warp cords	Structure	/	4x7x0.25 E			4x7x0.35 E		4x(0.50+6x0.44) E				
		Dia.	mm	2.00			2.85		3.90				
		Break load min.	N	3075			5600		9600				
6	Weft cords	Structure	/	3x7x0.22 HE					4x(0.28+6x0.25) HE				
		Dia.	mm	1.52					2.10				
		Break load min.	N	1720					2900				

PVC/PVG Solid Woven Belt



PVC



PVG

Advantages & Application:

※ High strength fabric with low elongation, light carcass, shock resistant, anti-tear, and good in trough ability.

※ Especially suitable for material conveying at inflammable of underground coal mines.

PVC Solid Woven Conveyor Belt:

※ Suitable for applications in dry conditions at a slope angle of no greater than 16°,

※ Cover thickness can be from 0.8 to 4 mm.

Nitrile Covered PVG type:

※ Suitable for applications at a slope angle of less than 20°, cover thickness can be from 1 to 10 mm.

※ Resistance to wetness, slip, low temperature, and wear resistance of the belt.

Standards: MT914, AS4606, SANS968:2013, BS3289, DIN22109, MSHA Certificated.

Width Range: 500mm to 2200mm (22 inches to 86 inches)

Technical Indexes

Type	Warp Strength	Weft Strength	Elongation at break		Tear Strength	Minimum Recommended Pulley diameter	
lbs/inch	N/mm	N/mm	Warp	Weft	N	High tension (mm)	Low tension (mm)
3500	630	275	15	18	1100	400	315
4000	710	300	15	18	1200	400	355
4500	800	300	15	18	1200	500	355
5000	875	300	15	18	1200	500	355
6000	1000	300	15	18	1200	630	400
7000	1250	350	15	18	1600	630	400
8000	1400	350	15	18	1600	750	450
9000	1600	400	15	18	1600	750	450
10000	1800	400	15	18	1600	800	600
12000	2000	400	15	18	1600	1000	750
15000	2500	450	15	18	1600	1250	800
16000	2800	450	15	18	1600	1500	1000
18000	3100	450	15	18	1600	1500	1000
19000	3400	450	15	18	1600	1600	1100

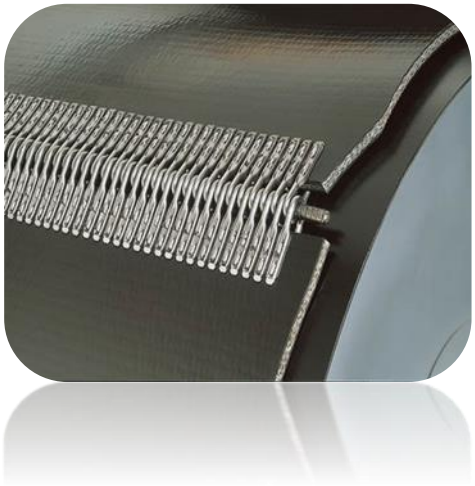
Joints Method

1.SPLICED FINGER JOINTING

Conventional vulcanizing presser are used for this process, in conjunction with a variety of polymeric jointing material developed for maximum joint efficiency. This type of splice enables good quality joints to be made with strengths approaching that of the original belts.

2. MECHNICAL FASTENERS

The thick, high textile content of the solid-woven carcass, combined with the superior PVC impregnation produced by unique process, gives excellent fastener holding properties. A wide range of fasteners including MATO, GORO, FLEXCO and TITAN are suitable for use with Mechanical fasteners.

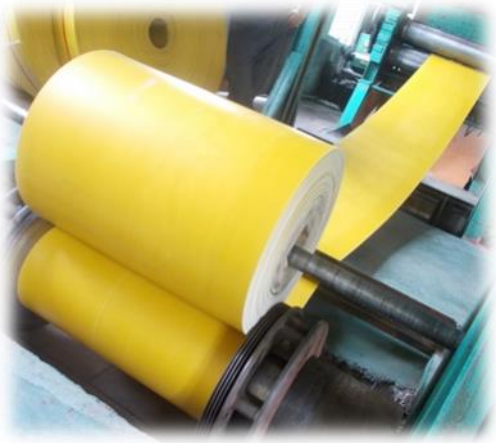


Wide Conveyor Belt

Maximum Width: 6000mm (with fabric joints)

Surface Pattern: Flat, Bareback, Filter

Flat Transmission Belt



Features

Flat transmission belt is a common flat rubber belt, also called transmission belt, usually uses high-quality cotton canvas as its skeleton layers.

Application: It is mainly used in factories, mines, docks, metallurgical industry, ordinary mechanical power transmission, great power processing of grains like rice and wheat, irrigation equipment, wood cutting and other power transmitting equipment for industry and agriculture.

Characteristics:

1. The flat rubber belt has the characteristics of high strength, good flexibility and small elongation.
2. Innovative design, adopting advance rubber compound with good adhesion at opposite joint of surface fabric with fillet, delaminating will not occur during operation.
3. Adopting high quality pure cotton canvass, the duck plies have good endurance and will not easily deform.

Classification

1. Category: 28 OZ(ounce), 30 OZ(ounce), 32 OZ(ounce), 34 OZ(ounce) and 36 OZ(ounce).
2. Cut edge flat rubber belt: Cut edge flat rubber belt is manufactured by adhering several layers of full width canvas together, the sides of the belt are surfaces formed by cutting, the belt edge surfaces are coated with rubber paste.

Cut Edge

Mould Edge

3. Round / Mould edge flat rubber belt: Round edge flat rubber belt is folded by the outer ply or plies of canvas, and the sides of the belts are curved surfaces.
4. Available in variety of colors, mainly of them have four colors: light brown, yellow, orange and black.

Filter Conveyor Belt

Features

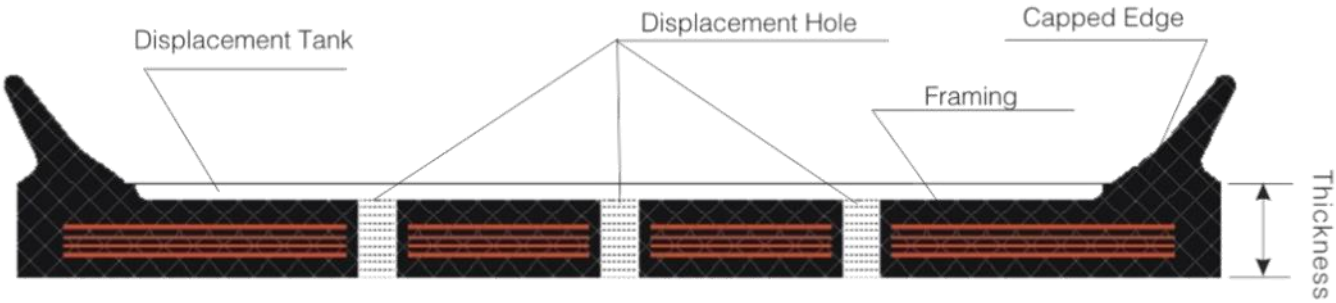
Rubber filter belt, also called vacuum belt or carrier belt, is designed for solid-liquid separation. It is the critical part of rubber belt vacuum filter and vacuum belt stock washer.

Cover Grade: Heat resistant, Acid & Alkali Resistant, Oil resistant, Cold Resistant, Abrasion & Acid Resistant.

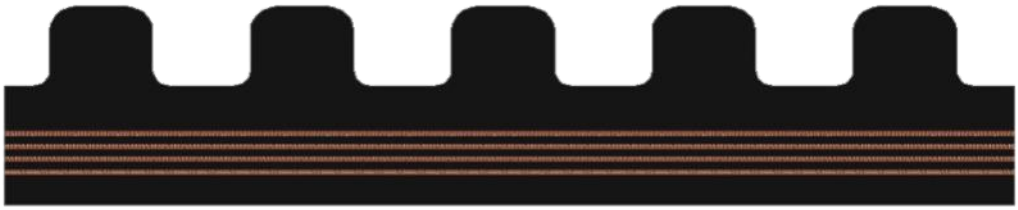
Belt width: max. 6800mm

Construction

Structure Diagram



Cross Section of Groove



Planar Graph of Filter Belt




Sidewall Bond Way:

a. **Cold bonding:** It's easy to operate in local workshop, and convenient for transportation.

b. **Hot vulcanizing:** Has longer lifetime, need be very careful in transportation.

Filter Press Fabrics (Filter Press Cloths):

※ **Material:** Polyester monofilament.

※ **Composition:** 100% Polyester.

※ **Use:** Filter press fabrics used for filter and filter press, paper mills dryer and conveying.

※ **Application:** It's widely used in sludge desiccation, paper pulp washing, coal washing, chemicals, dehydration of wine bran, vinegar bran dehydration and other industries.