

# Conveyor Belt



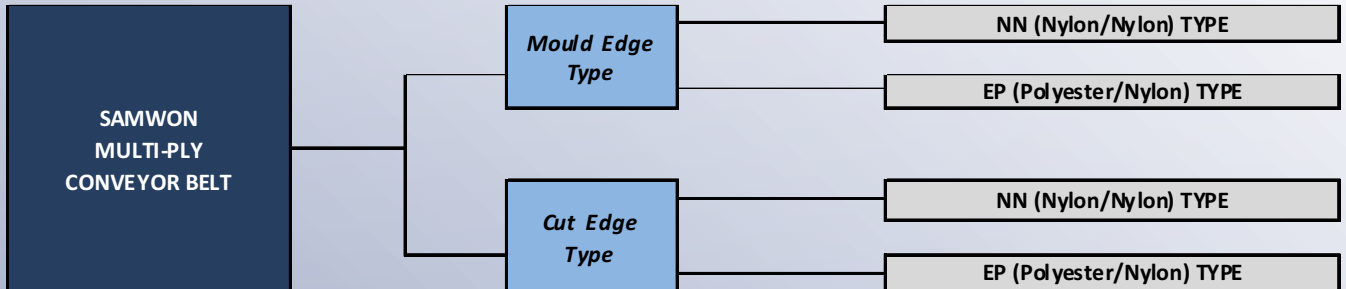
삼원 samwon®

**Application:**

Commonly found in application for conveying of materials in industries such as cement, chemical, paper mills, stone and quarry plants, mining such as coal, iron ore etc.

**Classification**

Two types of fabric or canvas available ie NN and EP which can be supplied in either cut edge or moulded edge.



**Standards**

On request by demand, belt can be manufactured to conform to DIN 22 102, JISK 6322 or AS 1332.

**NN (Nylon/Nylon) Type**

It has good elasticity, high strength and resilient to shock. Flexibility and troughability with minimum elongation. Suitable for conveying materials at high speed and high load over middle and long distance.

**EP (Polyester/Nylon) Type**

It has good heat stability and shock resistant. The modulus of belt is high and elongation during service is small. Suitable for conveying materials at high speed and high load over middle and long distance.

**Grade of Cover Rubber**

Grade	Equivalent	Min. Tensile Strength kg/cm <sup>2</sup>	Min. Elongation %	Max. Temp. °C	Use
<b>M</b>	DIN-M BS-M24 RMA-1 AS-M	250	500	60 °C	Highest resistance to abrasion. Tearing caused by impact load
<b>N</b>	BS-N17 RMA-2 JIS-S AS-N DIN-N	180	400	60 °C	Superior in abrasion resistance but inferior to Grade M
<b>A</b>	RMA-2 JIS-G	180	450	60 °C	Standard industry standard which is commonly used.
<b>B</b>	RMA-2 JIS-G	140	400	60 °C	Normal standard but lower to Grade A in resistance to cutting.
<b>SAR</b>	Super Abrasion Resistant	140	400	60 °C	Suitable for conveying material that is highly abrasive and wear on belt
<b>OHR</b>	Oil & Heat Resistant	120	350	Max Temp of Material Handled 100 °C	Not suitable for conveying of hot materials. Oil and heat resistance.
<b>OR</b>	Oil Resistant	120	350	60 °C	Excellent in oil resistance for conveying of mineral, vegetable and animal fats.
<b>HR</b>	Heat Resistant	140	400	Belt Surface 180°C. Material Handled 400°C	Suitable for hot cement, clinker, powder etc Superior in heat resistant and abrasion

**NN (Nylon/Nylon) Type**

**NN Specification**

Belt Type	Strength Per Ply N/mm	Number of Ply Available	Width Available mm	Max Length Per Roll (m)	Carcass weight (kg/m <sup>2</sup> )			
					3 plies	4 plies	5 plies	6 plies
NN 100	100	2 ~ 10	300 to 2800	200	3,0	4,1	5,2	6,4
NN 125	125				3,1	4,4	5,5	6,8
NN 150	150				3,3	4,5	5,8	7
NN 200	200				4,0	5,5	7	8,5
NN 250	250				4,5	6,1	7,8	9,4
NN 300	300				4,8	6,5	8,3	10
NN 400	400				6,0	8,1	10,3	12,4
NN 500	500				6,8	9,1	11,5	13,9

**Minimum Pulley Diameter**

Belt Type	Number Of Ply								
	2	3	4	5	6	7	8	9	10
	Pulley Diameter (mm)								
NN 100	200	250	315	400	500	630	800	1000	1250
NN 125	200	250	315	400	500	630	800	1000	1250
NN 150	200	250	315	400	500	630	800	1000	1250
NN 200	250	315	400	500	630	800	1000	1250	1400
NN 250	315	400	500	630	800	1000	1250	1250	1400
NN300	400	500	630	800	1000	1250	1400	1400	1600
NN 400	500	630	800	1000	1250	1400	1600	1600	1800
NN 500	630	800	1000	1250	1400	1600	1800		
NN 600	800	1000	1250	1400	1600	1800	2000		

# Multi-ply Conveyor Belts

## Multi-ply Conveyor Belts

### EP (Polyester/Nylon) Type

#### EP Specification

Belt Type	Strength Per Ply N/mm	Number of Ply Available	Width Available mm	Max Length Per Roll (m)	Carcass weight (kg/m <sup>2</sup> )			
					3 plies	4 plies	5 plies	6 plies
EP 100	100	2 to 8	300 to 2800	200	2,90	4,00	5,10	6,30
EP 125	125				3,40	4,60	5,90	7,10
EP 160	160				4,00	5,50	7,00	8,50
EP 200	200				4,50	6,10	7,80	9,40
EP 250	250				4,90	6,60	8,40	10,10
EP 300	300				5,40	7,40	9,30	11,30
EP 350	350				5,60	7,60	9,60	11,60
EP 400	400				6,60	9,00	11,30	13,60
EP 500	500				7,00	9,50	11,90	14,40

#### Minimum Pulley Diameter

Belt Type	Number Of Ply								
	2	3	4	5	6	7	8	9	10
	Pulley Diameter (mm)								
EP 100	200	250	315	400	500	630	800	1000	1250
EP 125	200	250	315	400	500	630	800	1000	1250
EP 160	250	400	500	630	800	1000	1250	1000	1250
EP 200	315	500	630	800	1000	1250	1400	1250	1400
EP 250	400	630	800	1000	1250	1400	1600	1250	1400
EP 300	500	630	800	1000	1250	1400	1600	1400	1600
EP 400	630	800	1000	1250	1400	1600	1800	1600	1800
EP 500	800	1000	1250	1400	1600				
EP 600	1000	1250	1400	1600	1800				



**Multi-ply Conveyor Belts**

**AR -- High Performance Type**

**Application:**

Suitable for long distance, high speed, large capacity and high tension conveyor.

**Features & Characteristics:**

The AR is a single ply belt with aramid (kelvar) cord fabric that ensure high performance with the followings

features & characteristics:

- ▶ High Impact Resistance
- ▶ Low Elongation
- ▶ Corrosion Proof
- ▶ Prevent Flammable Material
- ▶ Non-Transforming
- ▶ Heat Resistance
- ▶ High Flexibility
- ▶ Fatigue Resistance
- ▶ Excellent Toughness
- ▶ Light Weight & Non Conducting
- ▶ Impact Penetration & Slit Resistance
- ▶ Good Adhesion Between Ply And Rubber Cover

**Belt Technical Data**

Belt Type	AR-630	AR-800	AR-1000	AR-1250	AR-1400	AR-1600	AR-1800	AR-2000	AR-2500
Wrap Strength (N/mm)	800	970	1200	1600	1600	1900	2200	2400	3000
Weft Strength (N/mm)	150	180	180	180	180	180	180	180	180
Thickness (mm)	2,1	2,3	2,7	2,9	3,35	3,35	3,4	3,45	3,5
Top Cover Thickness (mm)	6	6	8	8	8	8	8	10	10
Bottom Cover Thickness (mm)	3	3	3	4	4	4	4	5	5
Belt Thickness (mm)	11,1	11,3	13,7	15	15,35	15,35	15,4	18,45	18,5
Elongation @ 10% Ref. Load	1	1	0,4	0,4	0,5	0,5	0,5	0,5	0,5

**Recommended Minimum Pulley(mm)**

Belt Type	Tensile Strength (N/mm)	Minimum Pulley Diameter		
		Head Pulley	Tail Pulley	Snub Pulley
AR - 630	630	500	400	300
AR - 800	800	600	450	350
AR - 1000	1000	600	450	350
AR - 1250	1250	650	500	400
AR - 1400	1400	700	500	450
AR - 1600	1600	750	550	500
AR - 1800	1800	750	550	500
AR - 2000	2000	800	600	500

**Ordering Code:**

AR -1000 1200 1P 5/3 500 M



# Multi-ply Conveyor Belts

## Multi-ply Conveyor Belts

### Solid Woven Belt

**Application:**

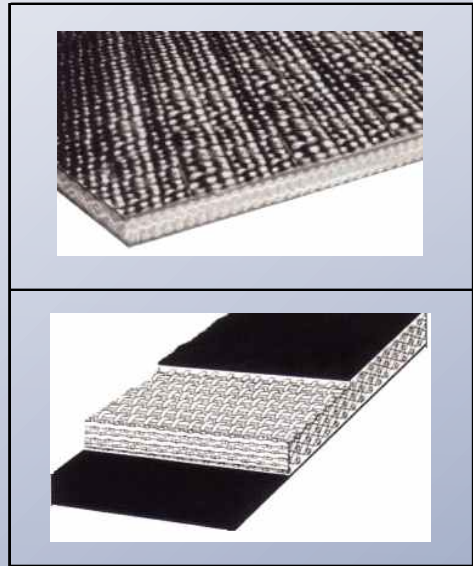
Mainly used in underground coal mining.

**Features & Characteristic**

There are many strong points such as no ply separation, small elongation anti-impact and tear resistance. Good mechanical fastening property. The PVC (plastic) cover solid woven conveyor belt is used in dry operation application with incline angle up to 16°. The PVG (rubber) is suitable for wet operation where the incline angle is up to 20°

**Standard:**

- ▶ Conform to BS 3288
- ▶ Burner test - Flame resistant belt is self-extinguish within the standard time after the withdrawal of burner.



**Type of Textile Reinforced Conveyor Belt (Solid Woven Type)**

Type	Full Thickness Belt Tensile Strength N/mm		Full Belt Elongation At Break % (not less than)		Belt Width mm	Length Per Roll m.	Reference Mass kg/m <sup>2</sup>	
	warp	weft	warp	weft			PVC	PVG
SW 580	580	245						
SW 680	680	265					11,2	16,8
SW 800	800	280					12	17,1
SW 1000	1000	300					14	17,6
SW 1250	1250	350					15,5	19,6
SW 1400	1400	350	15	18	650 ~ 1400	200	16,5	20,8
SW 1600	1600							
SW 1800	1800							
SW 2000	2000							
SW 2240	2240							
SW 2500	2500							

**Minimum Pulley Diameter**

Type	580S	680S	800S	1000S	1250S	1400S	1600S	1800S	2000S	2240S	2500S
Min. Pulley Dia. Mm	500	630	630	630	800	800	1000	1000	1250	1250	1400

**Belt Identification Code**

**Rubber Cover (PVG) Resistant Woven**

MA	S	1000	2 + 2	SW	9908	628
Safety Symbol	Code for Flame Retardant & Anti-Static	Belt Strength	Top. Bottom Cover Thickness	Trade Mark	Production Date	Quality Certification Code

**Plastic Cover (PVC) Resistant Woven**

MA	S	1000	SW	9908	628
Safety Symbol	Code for Flame Retardant & Anti-Static	Belt Strength	Trade Mark	Production Date	Quality Certification Code

# Multi-ply Conveyor Belts

## Multi-ply Conveyor Belts

### HT - High Temperature Belt

**Application:**

The burning-through resistant conveyor belt are widely used in metallurgical, chemical, casting and cement industries for conveying of materials whose temperature of material can reach 150° and 250°

**Feature:**

The belt is reinforced with a special glass fabric (GF Fabric) ply on the top cover to act as a "breaker". It is heat resistant and is stable in conveying materials of high temperature thereby ensuring a long service belt life. In addition, it employed DS/EP fabric instead of standard normal EP fabric. The DS/EP fabric is much stronger in strength than the normal fabric.

**GF :** *glass fibre reinforcement in the top cover before the 1st ply as a "breaker"*

**DS/EP :** *Double Six EP fabric which has higher strength in weft side than the normal EP (single) fabric.*



Type of Fabric		Reinforcement D.S. EP	Cover Thickness (mm)		No. of Ply Available		Width Range (mm)
GF	EP	Strength Per Ply N/mm	Top	Bottom	GF	DE/EP	
GF	DS/EP 100	100	? 7	? 3	1	2 - 6	450~2800
GF	DS/EP 150	150					
GF	DS/EP 200	200					
GF	DS/EP 250	250					
GF	DS/EP 300	300					
GF	DS/EP 350	350					
GF	DS/EP 400	400					



## Multi-ply Conveyor Belts

### Profile & Side Wall

**Application:**

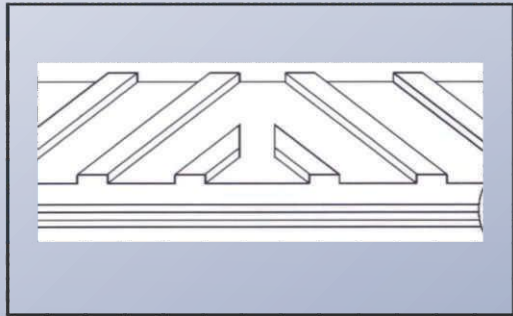
Inclined conveyor can be widely used in coal mining's, power and metallurgical industries, chemical industry, light industries, grain and material transporting conveyors.

### Chevron & Column Profile

**Feature:**

The belt can operate at inclined angle of 0° to 45°. It is useful for prevention of material from sliding downward.

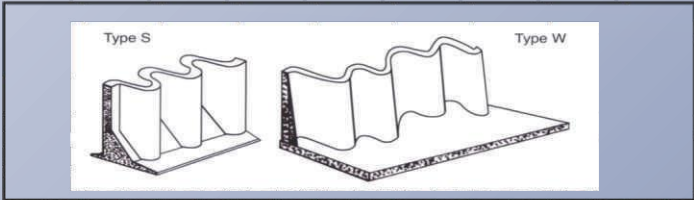
Type of Pattern	Pattern Parameter mm	Belt Width mm	Ply Material	Per roll/m
Chevron	5, 10 (height)	500-1200	Fabric	100
Column	25 (height)	500-1200	Fabric	100



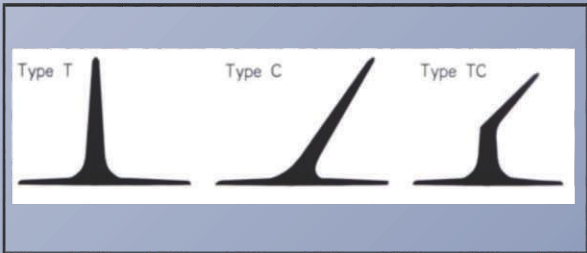
### Corrugated Side Wall

**Feature:**

The belt can conveyor at an angle of 0° to 90°. It occupies small land area.



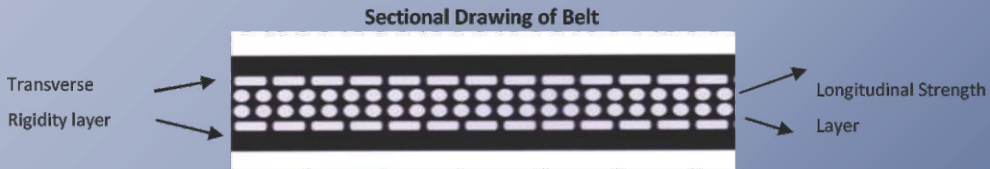
### Cleats



**Belt Design**

Sidewall Height mm		60	80	120	160	200	240	300	400
Sidewall Mass kg/m		1,1	1,3	2,9	4,6	5	7	12	15
Cleat Height mm		40	75	110	140	180	220	280	360
Cleat Mass kg/m		1,2	1,4	2,8	3,5	5,4	7,5	12	15
Width of base belt mm		500 -- 1600							

The selection of base belt can be refer to the multiple ply, steel cord conveyor belt



**Recommended Pulley Dia.**

Sidewall Height mm		60	80	120	160	200	240	300	400
Min. Pulley Dia. Mm		300	400	500	630	800	1000	1250	1250



# Multi-ply Conveyor Belts

## Multi-ply Conveyor Belts

### Bucket Elevator Belt

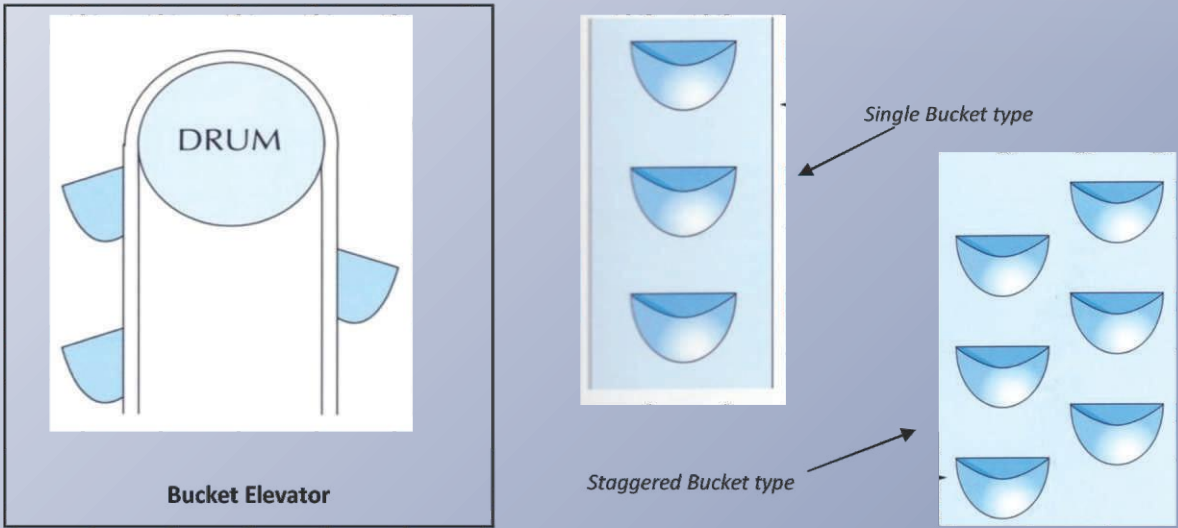
**Application:**

For transfer of materials in a vertical position and it is widely used in construction industries. They are also commonly found in light and food industries for carrying of material in a vertical position.

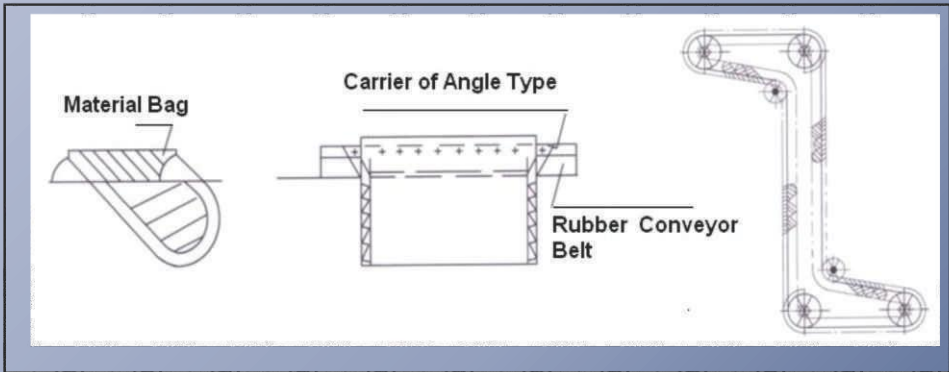
**Feature:**

As holes are punched onto the belt to bolt the bucket, this weakens the belt considerably and belts are liable to break easily under load from filling of the buckets. In addition, unlike normal application, the bucket elevator belts are subjected to various forces including lever action during the projection of the buckets and extracting force when belt articulates the pulleys. Hence in view of these difficult operation requirements, the carcass of the elevator belts are reinforced with various material to prevent it from breakage.

### Bucket Type



### Bag Type



Multi-ply Conveyor Belts

Applicational Pictures



# Steel Cord Conveyor Belts

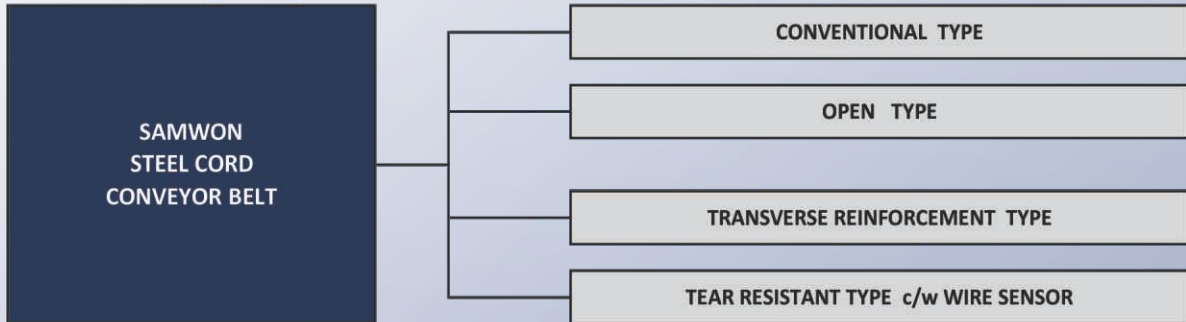
## Steel Cord Conveyor Belts

### Application:

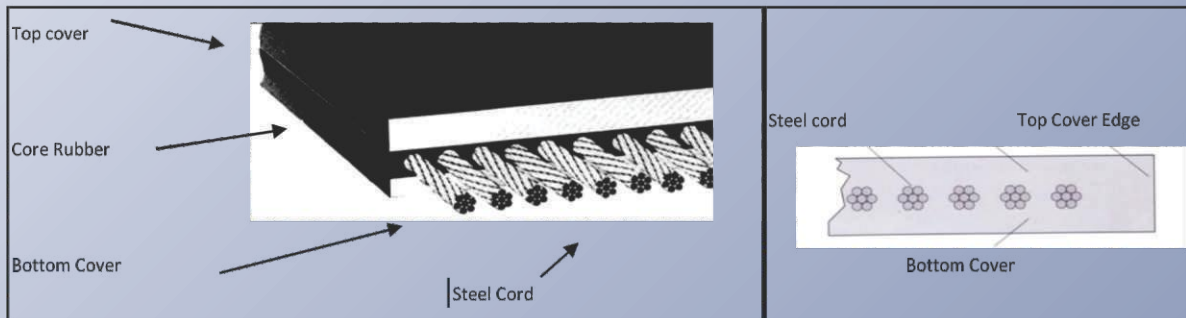
Widely used in chemical, power plants, coal and other mineral minings and in ports for conveying of materials.

### Classification

There are four (4) types of belt construction to meet the demands of most applications.

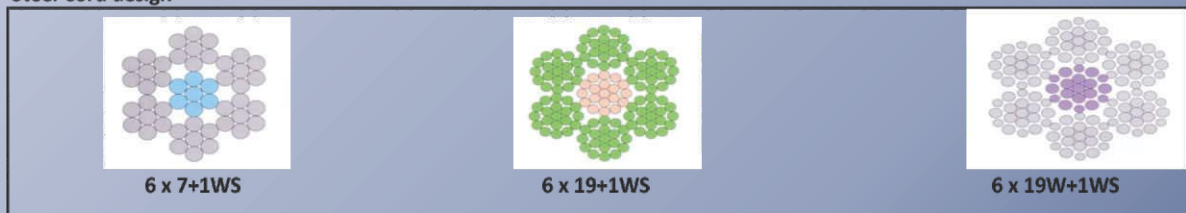


### BASIC STEEL CORD BELT



### CONVENTIONAL TYPE

#### Steel Cord design



### Structure & Feature

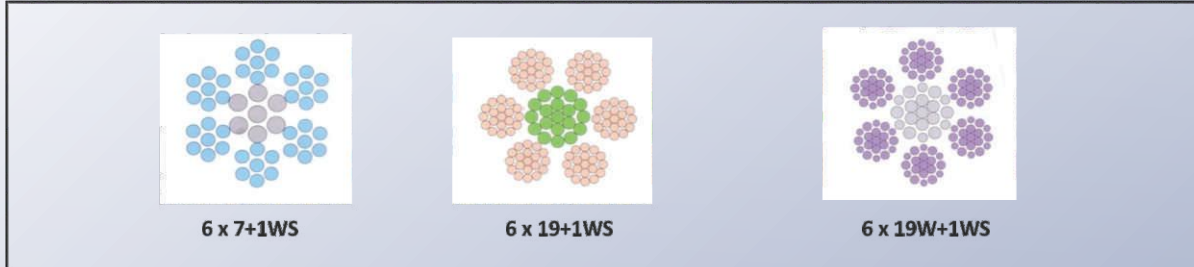
Galvanised steel cord is comprised of left and right twisted wire and arranged evenly pitch and longitudinally in the belt. With core rubber providing superior adhesive property, it ensures better service life, small elongation, excellent troughability and greater tensile strength. This allows the belt to carry heavy loads at higher speed over a long distance.



Steel Cord Conveyor Belts

OPEN TYPE

Steel Cord design



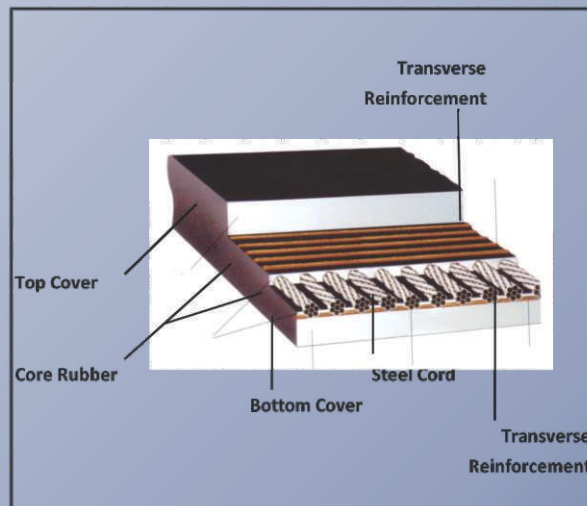
Structure & Feature

Unlike in conventional steel cord belt, the Open Type is different as each strand of steel cord has enough room for the core rubber to penetrate and bond with the steel cord. This bonding greatly strengthens the bonding area between the rubber and steel cord. As such, it improved the anti-corrosive resistance to the steel cord, it too increase the mutual sharing force and the twisting strength of strand wire can be flexible too. Dynamic fatigue resistance is extremely good thereby providing better service life to the belt.

TRANSVERSE REINFORCEMENT TYPE

Structure & Feature

Reinforcement is placed transverse one side both sides of the longitudinal steel cord. This provide good impact and tear resistance.



TEAR RESISTANT TYPE with WIRE SENSOR

Structure & Feature

There is a shift phase sensor (wire) embedded between the core rubber and the bottom cover of the steel cord conveyor belt. This sensor is placed at a fixed distance along the longitudinal direction of the conveyor belt.

- a: The sensor is programmed to a computer and when tear in the belt is detected, it will set of an alarm signal and this will stop the conveyor belt automatically
- b: The conveyor can be set to stop at preset speed. If speed fluctuated or operate under the preset speed, an alarm signal will set off and it will then automatically stop the conveyor.
- c: It has memory function that show the conditions and data of the conveyor belt in operation.



**SPECIFICATIONS**

Technical Data for Standard Steel Cord Conveyor Belt \* (see notes 1)

Belt Type Technical Data	SST 630	SST 800	SST 1000	SST 1250	SST 1600	SST 2000	SST 2500	SST 3150	SST 3500	SST 4000	SST 4500	SST 5000	SST 5400
Longitudinal Tensile Strength N/mm	630	800	1000	1250	1600	2000	2500	3150	3500	4000	4500	5000	5400
Max.Dia. of Cord	3	3,5	4	4,5	5	6	7,2	8,1	8,6	8,9	9,7	10,9	11,3
Pitch of Cord mm+ 1.5	10	10	12	12	12	12	15	15	15	16	16	17	17
Top Cover Thickness	5	5	6	6	6	8	8	8	8	8	8	8,5	9
Bottom Cover Thickness	5	5	6	6	6	6	6	8	8	8	8	8,5	9
Belt Mass kg/m2 (see notes 2)	18	19,5	21,5	22,2	26,1	33,1	35,3	41,1	45	45	51	59	62
<b>BELT WIDTH (mm)</b>	<b>ENDS OF STEEL CORD</b>												
800	75	75	63	63	63	63	50	50	50				
1000	95	95	79	79	79	79	64	64	64	64	59	55	55
1200	113	113	94	94	94	94	76	76	77	77	71	66	66
1400	133	133	111	111	111	111	89	89	90	90	84	78	78
1600	151	151	126	126	126	126	101	101	104	104	96	90	90
1800		171	143	143	143	143	114	114	117	117	109	102	102
2000			159	159	159	159	128	128	130	130	121	113	113
2200						176	141	141	144	144	134	125	125
2400						193	155	155	157	157	146	137	137
2600						209	168	168	170	170	159	149	149
2800									194	194	171	161	161

Notes:

- 1) Belts can be made to DIN 22121, JISK 6389 (Japanese) and AS 1333 (Australian) Standard.
- 2) The belt mass will changed accordingly to the cover thickness and density of the belt.
- 3) Standard Belt length per roll is 200m, please check with us if belt length required is above 200m/roll

Minimum Pulley Dia.

Type of Belts	ST 630	ST 800	ST 1000	ST 1250	ST 1600	ST 2000	ST 2500	ST 3150	ST 3500	ST 4000	ST 4500	ST 5000	ST 5400
Minimum Pulley Dia.	500	500	630	800	1000	1000	1250	1400	1600	1600	1600	1800	1800

**Steel Cord Conveyor Belts**

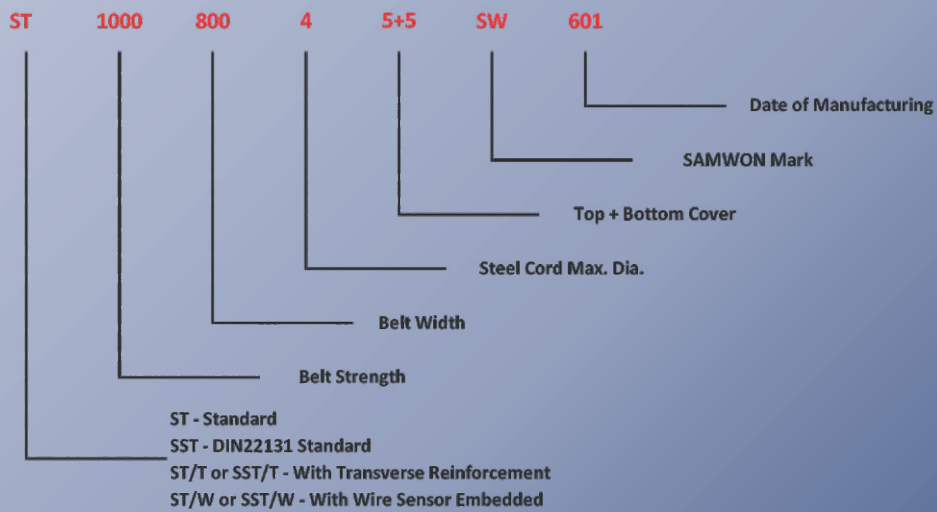
**SPECIFICATIONS**

**Technical Data for DIN22131**

Belt Size	ST 1000	ST 1250	ST 1600	ST 2000	ST 2500	ST 3150	ST 3500	ST 4000	ST 4500	ST 5000	ST 5400
<b>Min. Tensile Strength N/mm</b>	1000	1250	1600	2000	3150	3500	4000	4500	4500	5000	5400
<b>Dia. Of Cord (Max.) mm</b>	4,1	4,9	5,6	5,6	7,2	8,1	8,6	8,9	9,7	10,9	11,3
<b>Pitch Of Cord, mm +/- 1.5</b>	12	14	15	12	15	15	15	15	16	17	17
<b>Cover Thickness (Min) mm</b>	4	4	4	4	5	5,5	6,5	7	7,5	8	

Belt Width		Ends of Steel Cord											
mm	Tolerance												
500	+/- 5	39	34	-	-	-	-	-	-	-	-	-	-
650	+/- 7	51	44	-	-	-	-	-	-	-	-	-	-
800	+/- 8	64	55	50	64	-	-	-	-	-	-	-	-
1000	+/- 10	81	69	64	81	64	64	64	64	59	55	55	55
1200	+/- 10	97	84	77	97	77	77	77	77	71	66	66	66
1400	+/- 12	114	98	90	114	90	90	90	90	84	78	78	78
1600	+/- 12	131	112	104	131	104	104	104	104	96	90	90	90
1800	+/- 14	147	127	117	147	117	117	117	117	109	102	102	102
2000	+/- 14	164	141	130	164	130	130	130	130	121	113	113	113
2200	+/- 15	1181	155	144	18	144	144	144	144	134	125	125	125
2400	+/- 15	197	169	157	197	157	157	157	157	146	137	137	137
2600	+/- 15	214	184	170	214	170	170	170	170	159	149	149	149
2800	+/- 15	231	198	170	214	170	170	170	170	159	149	149	149
3000	+/- 15	247	212	197	247	197	197	197	197	184	172	172	172
3200	+/- 15	264		210	264	210	210	210	210	196	184	184	184

**Belt Identification**



**Conveyor Belts**

**Data Required**

NAME OF COMPANY			
<b>Conveyor</b>			
Station name			
Centers of conveyor	Horizontal	m (feet)	Inclined
Lift	m (feet)		
Angle of Inclination	Max. Deg.	Average Deg.	Min. Deg.
<b>Belt</b>			
Belt Width	mm (in)		
Belt Speed	m/min (feet/min)		
Surface Temperature	Max. °C / °F	Min.	°C / °F
<b>Material</b>			
Type of Material / Size	mm Ø (in Ø)		
Ratio of max.lump size contained	%		
Specific gravity	T/m3 (lbs/in3)		
Temperature	Max. °C / °F	Min.	°C / °F
Capacity	Max. t/h	Min.	t/h
<b>Drive</b>			
Type	Single Drive / Single Drive (Tandem Type) / Tandem Drive		
Surface of pulley	With rubber lagging / without rubber lagging		
Angle of wrap	Deg.		
Friction factor			
<b>Carrier Roller</b>			
Angle of trough			
Spacing of carriers			
Spacing of return idlers			
Weight of moving parts (other than material transported)	Carrier Roller	kg/m (lb./in)	Return Roller
			kg/m (lb./in)
<b>Take - up</b>			
Type	Screw take-up / Gravity take-up / Carriage take-up		
Effective length of take up			
Weight of take-up			
Position of take-up	Head		Tail
<b>Diameter of Pulley</b>			
Drive Pulley	mm Ø (in Ø)		
Head Pulley	mm Ø (in Ø)		
Tail Pulley	mm Ø (in Ø)		
Take-up Pulley	mm Ø (in Ø)		
Snub Pulley	mm Ø (in Ø)		
<b>Drive Unit</b>			
Motor rating/speed	kW (hp)		rpm
Type Gear or drive unit /output speed			rpm

**Calculation of belt roll diameter**

$$D = \sqrt{\frac{Gd \cdot Gl}{0,785} + Ka^2}$$

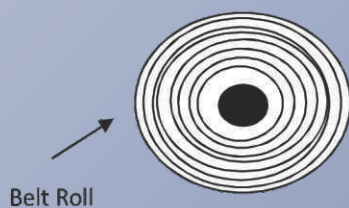
D = Belt roll diameter in cm

Gd= Belt thickness (cm)

Gl= Belt length (cm)

Ka= Core diameter (cm)

( core diameter generally in 25cm, 32cm, 50cm)

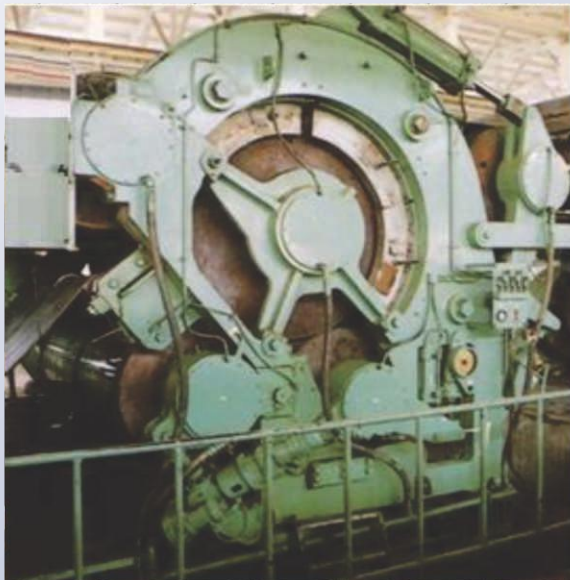




Conveyor Belts

Equipments

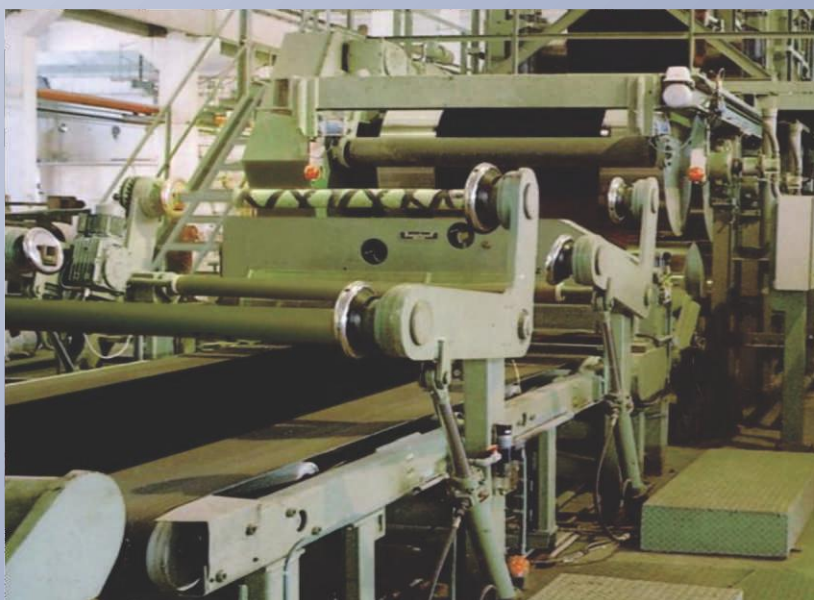
Rotary Cure Machine



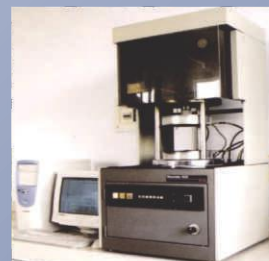
Constant Tension Press



Calender 4 rolls



Rheometer



Electronic Tension Meter







**삼원 samwon®**  
**Conveyor Belt**

Please Contact Us



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