

# 布層心體輸送帶

## PLY CONSTRUCTION CONVEYOR BELTS

ISO 9001:2000 REGISTERED & ISO 14001 CERTIFICATE



三五  SWR

**SWR****技術創新 永續經營**

三五橡膠廠股份有限公司於民國35年創立，是台灣橡膠帶製造業的先驅，擁有50多年的製造經驗，一向以精益求精的態度，追求高機能製品與新產品的開發，並以豐富的經驗技術提供範圍更廣更完善的服務，配合顧客的提昇經濟效益計劃。這些服務包括輸送機設計安裝與維護，及其周邊設備之供應。三五公司於民國83年11月領先同業榮獲經濟部商檢局ISO 9002國際標準品質保證制度的認可登錄並於民國91年1月獲經濟部標準檢驗局 ISO 9001:2000 版國際標準品質管理系統認可登錄。在追求技術創新永續經營之餘，仍保有對大自然之愛心，民國87年9月亦領先同業取得SGS ISO 14001環境管理系統認證。

San Wu Rubber Mfg. Co., Ltd., founded in 1946, has had over 50 years experience in the production of rubber belts. To make the best of the best, we devote much we could in R&D for new items. Except that many extra services to your belts, such as: Belt Commencing, Splicing, Maintenance and the supply of affixed parts, are also available from this company. In November of 1994, we awarded the certificate of ISO-9002, and then ISO-14001 in September of 1998. Furthermore, in January of 2002 we got the approval of ISO-9001 2000 year version. All of these show this is a company that you can rely on.

在確保生產設備的恆常運轉上  
物料供應系統為最重要的一環  
洗練的搬運高手—三五輸送帶  
贏得信賴活躍穿梭於各個角落

In a flow-production, material-supply always plays the most important role. "San Wu" conveyor belts are reputed and actively being working in every corner of the world.



# Technology Innovation & Always Growing

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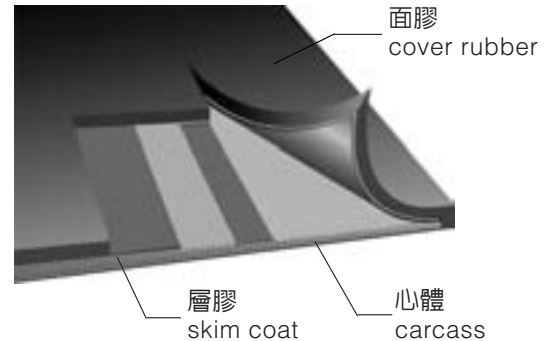


**SWR**

# 三五輸送帶之構造與特點

輸送帶由面膠，心體及層膠所構成。另外對高落差衝擊之使用，可加上一層緩衝布，使更耐衝擊。

Belt is built-up from 3 components: Cover Rubber, Carcass and Skim Coat. In some severe applications like big dropping height, an additional reinforced fabric could be inserted into the belt to ensure a better impact resistance could be got.



## ■ 面膠 Cover Rubber

以天然橡膠、合成橡膠為原料，為強化耐磨耗性、耐龜裂性、耐老化性等性質，配合各種化學藥品，具有耐磨耗、耐切割、耐熱、耐燃、耐寒、耐酸鹼、耐油、防靜電等各種不同的特性。

By our own unique formulas, we mix those very good Natural Rubbers, Synthetic Rubbers and some special chemicals altogether as the cover rubber. These cover rubber can meet any your application, for example: wear-resistance, tear-resistance, heat-resistance, fire-resistance, cold-resistance, chemical-resistance, oil-resistance and anti-static, etc.

## ■ 布層心體 Carcass

布層由天然纖維或化學纖維之單獨或兩者之組合構成，由關係企業—三五紡織提供。布層經由美裝 C. A. LITZLER 上糊機浸糊及定伸處理品質一致，與橡膠有最佳之結合。

Our carcasses are woven and supplied from our sister company, San Wu Textile Co., Ltd. All of them are treated through a state-of-art dipping machine, which made by M/s. C.A. Litzler, U.S.A., in order to acquire a good RFL dipping and constant stretch, thus a good adhesive effect between carcass and rubber could be got.

## ■ 層膠 Skim Coat

對於反覆屈曲運轉的輸送帶，心體各層間的粘著力非常重要。尤其高拉力輸送帶，必須採用屈曲內應力少，因內應力而發生疲勞度少的層膠才能適用。

Additional layers of Skim Rubber have been applied between fabric and fabric. This is important for increasing belt's flex life and preventing failure from ply separation.

## 規格表示例 Specification example

1000-S : 1200 x 3P x 6 x 3 x 200

1000 : 強度標稱 ( kgf/cm )

S : 面膠性能

1200 : 帶寬度 ( mm )

3P : 布層數

6 : 上面膠厚度 ( mm )

3 : 下面膠厚度 ( mm )

200 : 輸送帶長度 { m }

Strength code

The grade of cover rubber

Belt width

No. of ply

Top cover rubber thickness

Bottom cover rubber thickness

Belt length

# Construction and Features of San Wu Conveyor Belts

## ■ 低延伸 Low Stretch

獨特的心體，由關係企業"三五紡織" 精心編織提供，具有著良好的抗拉強度，及最少的初期延伸。可減少輸送帶的衝程。

Our unique carcasses, supplied from our sister company: San Wu Textile Co. Ltd., bear with the advantages of good tensile strength and minimum initial elongation. Both allow our customers to shorten their length of take-up stroke, thus a cost down can be got.



## ■ 抗拉強度佳 High Tensile Strength

長距離及大量輸送，依然保持良好的抗拉強度。

Once belts are run in long distance and/or heavy load application, our belts still keep very good tensile strength.

## ■ 耐衝擊性佳 High Impact Resistance

輸送帶心體，有絕佳的彈性，可吸收並分散高度衝擊所產生的震動。

Our carcasses own excellent elastic properties that protect belts against sudden shock during transportation by the way of absorbing and/or dispersing impact load.

## ■ 有較佳的抗霉及濕氣 Better Mildew and Moisture Resistance

水氣將不會損及輸送帶，心體亦不會因濕氣而受損。

With this property, neither belts nor carcasses will be damaged easily by moisture and mildew.

## ■ 防水性佳 Highly Waterproof

由於心體和面膠之間有著絕佳的黏結力，不易發生剝離，防水性佳。

適用在潮濕的場所，而可耐化學藥品性亦佳，心體不易發生腐蝕等現象。

As the excellent adhesion between carcass and rubber, belts are waterproof and will not be separated easily while running. They are quite good to be used in the soggy place and also are not easy to be corroded, because of the feature of good chemical resistance.

## ■ 使用壽命長 Long Service Life

三五牌輸送帶使用壽命長。

A longer service life of San Wu's conveyor belt is expected.



輸送帶依面膠之特性分類如下，選擇適當面膠等級及厚度，可增加輸送帶的使用壽命。

A proper selection to the grade and thickness of cover rubber is important to belt's service life. Many different grades of cover rubber are available from San Wu for your special application.



### ■ 耐磨輸送帶 Abrasion Resistant Conveyor Belts

輸送帶運轉時得承受運送物之磨擦與衝擊，我們提供特殊耐磨耗面膠，用於磨耗較大，而保養不易之場所。

While running, cover rubber should be strong enough to protect belt against the excessive wearing and impact load that come from carried materials. Here we offer you very good abrasion resistant rubber to meet your application for the transportation of highly abrasive materials and also for the conveyor line which locate in a place where is not easy to access for maintaining.

### ■ 耐油輸送帶 Oil Resistant Conveyor Belts

輸送油類物質易使膠帶面膠剝離及隆起，耐油面膠能保護輸送帶並防止受到損害，適合浸油金屬、食物、豆類、魚類及有油物料之搬運。

Oily materials will make the ordinary cover rubber to be swelled and peeled off easily that cause an overall breakdown to the system finally. Our special oil resistant cover rubber could protect belt from this damage. It is very suitable for transporting the materials like oiled metal, food, bean, fish and material sprayed with oils.

### ■ 防靜電輸送帶 Anti-static Conveyor Belts

防靜電面膠之設計目的，在避免運送物黏著於輸送帶表面產生靜電，甚至引起火花導致起火。

This special cover rubber is compounded in preventing electrostatic occurred while belt running, so that no materials will stick onto belt surface to cause a burst.

### ■ 耐化學藥品輸送帶 Chemical Resistant Conveyor Belts

根據輸送物之化學特性，輸送帶應採用耐酸鹼面膠。

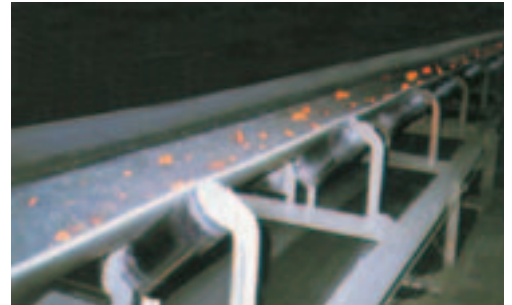
Acid or alkali resistant cover rubber is available depends on the chemical nature of transported material.

# Classifications and Applications of Conveyor Belts

## ■ 耐熱輸送帶 Heat Resistant Conveyor Belts

運送的物質溫度，若超過攝氏60°C時（華氏140°F），最好使用耐熱輸送帶。面膠的選擇，端賴運送物之溫度與特性，針對使用場所，選擇適當的輸送帶。此型輸送帶，係用來運送水泥熟料、焦炭、礦、蘇打灰、肥料及其他等。

In general, it is wise and economical to use a Heat Resistant Conveyor Belt if the temperature of carried material is over 60°C(140°F). Two types of Heat Resistant Conveyor Belt are available depends on temperature and nature of material. They are popular for transporting Cement, Cokes, Sintered Ores, Soda Ash, Fertilizers, etc.



### 適用範圍 Applications

Type	適用溫度 Temperature		面膠厚度 Cover Thickness	
	載 物 Materials	帶 面 Belt Surface	上面膠厚 Top Cover	下面膠厚 Bottom Cover
HR500 (高耐熱) High Heat Resistant	150°C~200°C	120°C~150°C	4.8 mm ↑	3.2 mm ↑
HR300 (耐熱) Heat Resistant	80°C~140°C	60°C~120°C	3.2 mm ↑	1.6 mm ↑

## ■ 耐燃輸送帶 Fire Resistant Conveyor Belts

耐燃輸送帶具自己消燃性，符合CNS 10026 K4078標準。此種輸送帶多半用於礦坑或易於燃燒之處。

This unique belt is made by a special rubber compound that will be extinguished itself in a short time once belt is fire. It is suitable for being used in underground mining system in prevention of fire risk.

## ■ 耐寒輸送帶 Cold Resistant Conveyor Belts

在寒冷地區，所特別研發而成的耐寒膠帶，最大可承受達攝氏零下50°C的低溫。

This special belt is made to be used in the frigid-zone where temperature probably down to minus 50°C that an ordinary belt can't be used there.



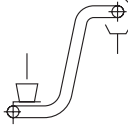
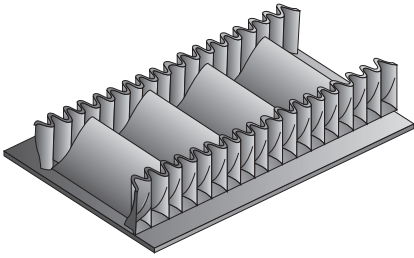
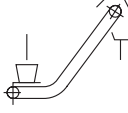
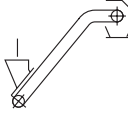
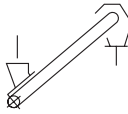
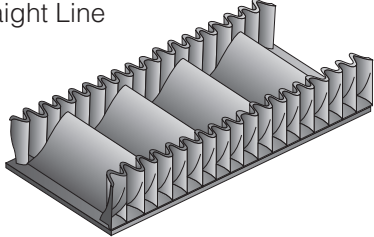
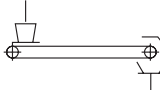
## ■ 裙邊檔板輸送帶 Corrugated Sidewall Conveyor Belts

有裙邊及橫向檔板輸送帶，能夠承受重負荷，及最大裝載傾角為90°，可增加輸送帶在水平輸送系統的搬運量。此種輸送帶可使用在空間有限的場合中。

With reinforced corrugated sidewalls and transverse cleats, the maximum surcharge angle of this belt can reach up to 90 degree that transported volume could be increased. It is welcome in the application that working space is restricted.

### 構造 Structure:

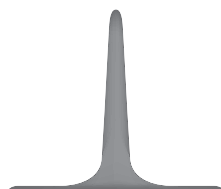
寬度 (Width) 300~1600mm

形 狀 Shape	輸 送 線 圖 Conveyor Drawing	最大傾斜角度 Max Inclined Angle	輸 送 型 式 Conveyor Type
S Type		90°	變角輸送型 Angle Changeable  
L Type		60°	
Anti-L Type		45°	
I Type		45°	直線輸送型 Straight Line  
O Type		15°	

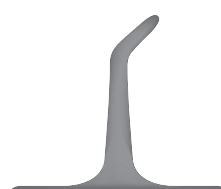
C 型檔板  
C Type Cleat



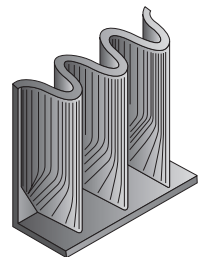
T 型檔板  
T Type Cleat



TC 型檔板  
TC Type Cleat



裙邊  
Corrugated Sidewall





# Vertical Conveyor Belts

## ■ 提運機皮帶 Bucket Elevator Conveyor Belts

提運機輸送帶，適合垂直搬運石灰原料、砂、碎石、鹽、稻穀等 50mmØ以下之零散物。

This belt is ideal to perform a vertical transportation. Materials with a diameter of 50mm below are well popular to be transported through it, such as: crushed limestone, sand, gravel, salt, grains, etc.



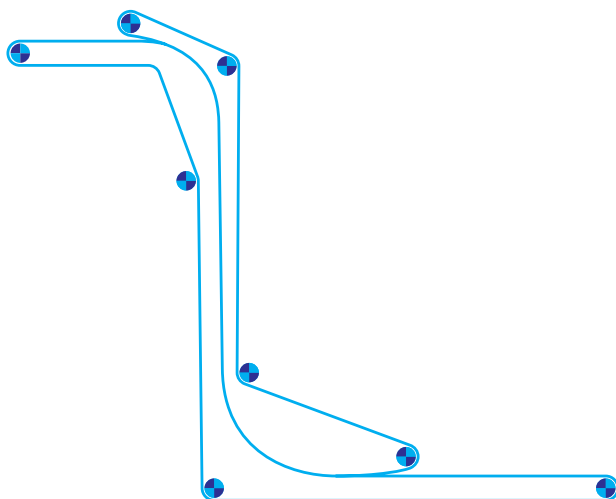
### 一般規格 General Specifications

布層數 No. of Ply	表面膠x裡面膠 face x bottom (cover)	膠帶厚度 belt thickness	皮帶寬度 belt width
3	1 x 1 mm	5.5 mm	5" ~ 11"
4	1 x 1 mm	6.5 mm	6" ~ 13"
5	1 x 1 mm	7.5 mm	6" ~ 15"

## ■ 夾運帶 Clamped Elevation Conveyor Belts

兩條皮帶之兩側，由滾輪壓緊密合，呈筒狀密閉型輸送帶，可垂直搬運節省用地降低投資成本，並可防止環境污染。

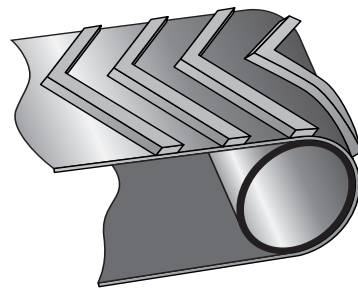
With belts rollers as clampers, we press the edges of these 2 belts firmly and shape them into a form like a sealed tube for the transportation purpose. This unique belt can do a vertical transportation that give you benefits of low investment in conveyor structure as well as a better environmental protection.



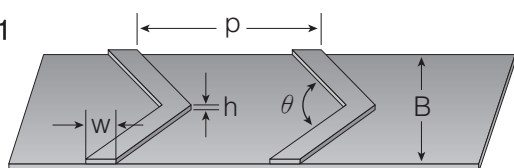
## 人字型輸送帶 Chevron Conveyor Belts

檔條及面膠以熱硫化一體成型，不會剝離。輸送行進中，載物會朝膠帶中央靠，不易掉落。適合袋物及砂、煤屑及穀物等50mm以下零散物之傾斜搬運。

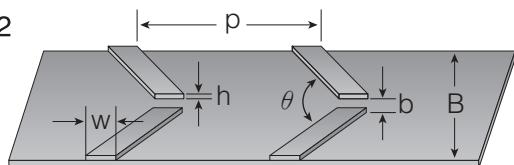
Belt protrusions and belt itself are molded together at same time in preventing separation risk. These protrusions own a special function for keeping materials toward belt center so less leakage will occur. It is suitable for the transportation of materials which less than 50mm in size, such as: ore, sand, fine coal, grains and packaged goods.



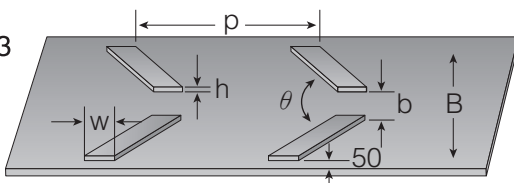
Type 1



Type 2



Type 3



(mm)

TYPE	p	w	h	$\theta$	B
A	100	12.5	6.5	120°	→1050
B	125	10	5	90°	1000→1200
C	380	10	10	120°	1200→1600

(mm)

TYPE	p	w	h	b	$\theta$	B
D	100	13	6	10	90°	→880
E	140	12	5	10	90°	→500

(mm)

TYPE	p	w	h	b	$\theta$	B
F	175	17	23	223	90°	→750

## 小人字型輸送帶

### Cleat-Top conveyor Belts

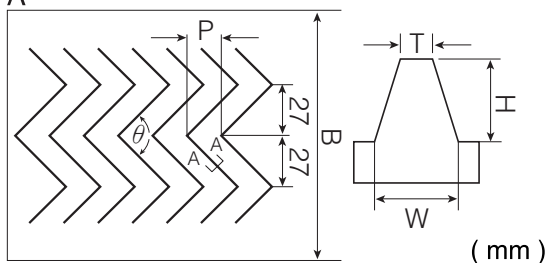
特點：

1. 最大爬坡搬運角度30°。
2. 適合搬運物：小粒狀物或稻草類之捆包塊狀物。
3. B型輸送帶具排水功能，適合搬運潮濕物。

Features:

1. Max, incline angle up to 30°.
2. Ideal transportation for granular and/or loose materials such as straw bales.
3. Type B conveyor belts are particularly suitable for wet materials such as wet sand and gravel as these cleats function very well like ditches.

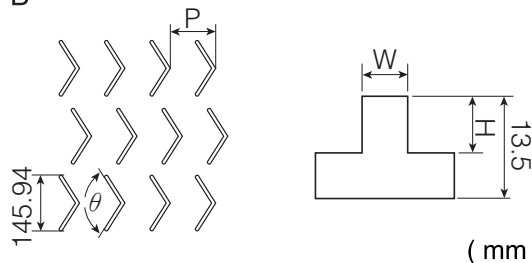
Type A



(mm)

TYPE	P	T	W	H	$\theta$	B
A	18.0	1.0	4.0	3.94	90°	800

Type B



(mm)

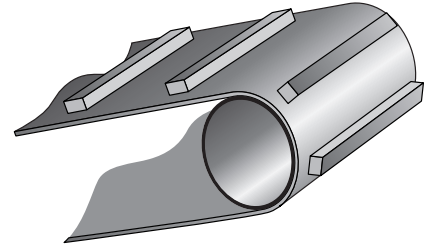
TYPE	P	W	H	$\theta$	B
B	76.14	8	6.35	114°	1200

# Inclined Conveyor Belts

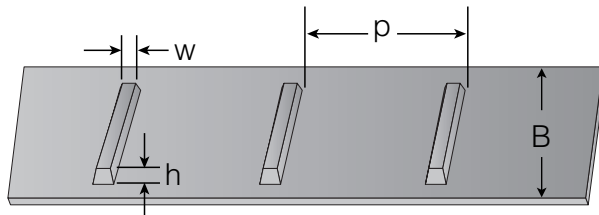
## ■ 一字型輸送帶 Cleats Conveyor Belts

適合運送袋型物及箱型物等之傾斜搬運用。可視運送狀況及載物大小，選用適當之檔條高度及檔條間距。

Commonly used in conveyor on packages and boxes at a steep inclines. Different shapes and cleat pitches are available depends on your different applications.



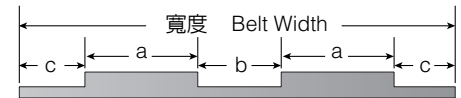
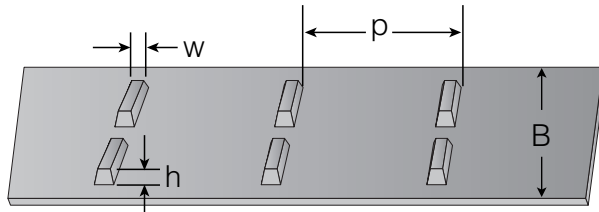
Type 1



(mm)

TYPE	p	w	h	B	L
A	300	35	25	→880	800
B	400	25	30	→880	710

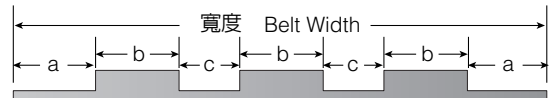
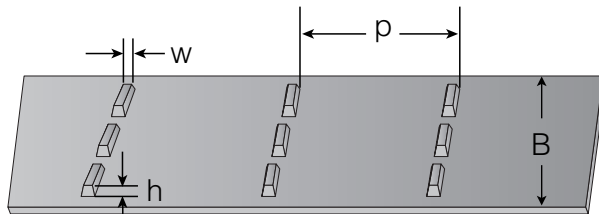
Type 2



(mm)

TYPE	p	a	b	c	w	h	B
C	300	100	150	225	15	25	→880
D	300	235	190	70	15	25	→880
E	400	170	50	160	15	30	→880
F	400	200	120	95	15	30	→880

Type 3



(mm)

TYPE	p	a	b	c	w	h	B
G	300	50	150	100	15	25	→880
H	400	115	125	50	20	30	→880

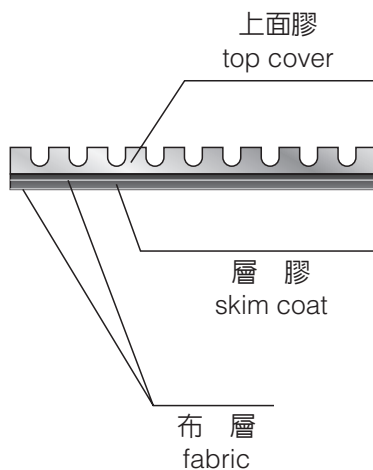
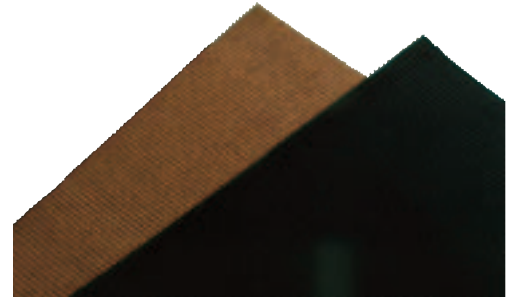
**SWR**

# 傾斜輸送帶

## ■ 花紋輸送帶 Rough Top Conveyor Belts

面膠表面柔軟及高低規則構造具有緩衝及止滑的作用，適合運送易碎物或扭曲物及箱物等，並可增加輸送帶之傾角。

Soft and corrugated belt surface acts as a buffer with the function of anti-slippery effect. It allows the fragile, deformed and packed goods to be transported at a steep inclines.



### 規格 Specification

上面膠厚 Top Cover	布 層 No. of Ply	皮帶總厚 Belt Thickness	皮帶寬度 Belt Width
4.5mm	2ply	7mm	→1200mm
4.5mm	3ply	8 mm	→1200mm

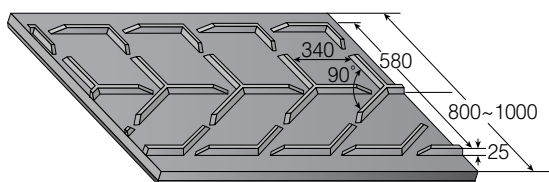
### 許可傾斜角度 Permissible Inclined Angle

搬運物 Materials		形狀 Shape		傾斜角度 Angle
小麥	Wheat	零散	Bulk	27°
大豆	Soy Bean	零散	Bulk	20°
鹽	Salt	粉末	Powder	28°
袋物	Bag			35°
紙箱	Carton			28°
木箱	Wooden Case			31°

## ■ Y字型輸送帶 High Chevron Conveyor Belts

Y字型輸送帶，可用來運送細粒狀物之傾斜搬運，最大傾斜角度35°。例如刮除柏油路面刨路機。

Widely used in scraper in transportation for scraped asphalt, the inclined angle could be increased up to 35 degree.



### 規格 Specification

上面膠 Top Cover	下面膠 Bottom Cover	布 層 No. of Ply	皮帶厚度 Belt Thickness
3.2 mm	1.6 mm	3 p	8.4 mm

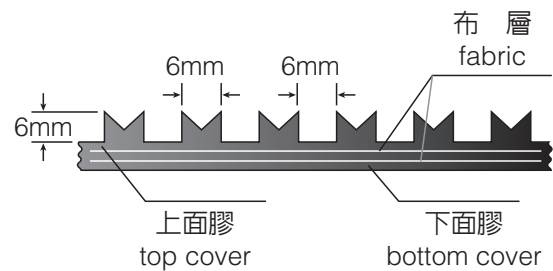
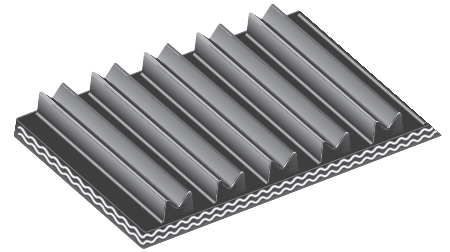


# Inclined Conveyor Belts

## ■ M型輸送帶 M-Shaped Conveyor Belts

M字型輸送帶，適合袋物或箱物之較重物品之傾斜。上面膠斷面呈M型，物品從兩側裝卸容易，輸送帶表面之清掃亦容易。

This belt is popular to be used for conveyor on packaged goods, boxes that are a little bit heavier at a high inclination. M-shaped ridges allow materials to be easily loading and unloading from either sides of belt and will self clean itself while running.



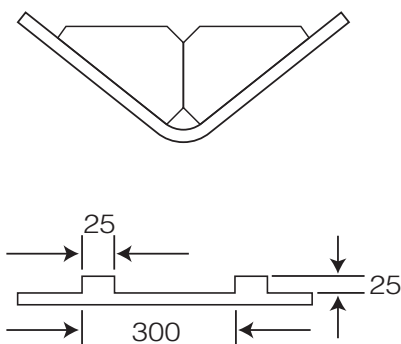
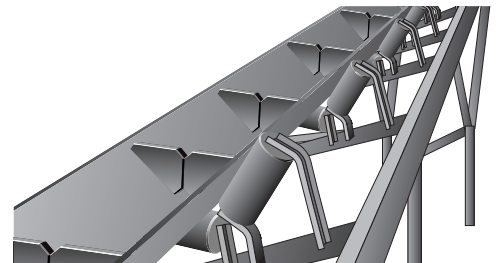
### 規格 Specification

抗拉強度 Tensile Strength kgf/ply/cm	上面膠 Top Cover mm	下面膠 Bottom Cover mm	布層 No. of Ply	總厚度 Total Thickness mm	皮帶寬度 Belt Width mm
100 or 150	3.2	1.6	2~3	10	→1200

## ■ 翅型輸送帶 Finned Type Conveyor Belts

此型輸送帶，適合運送輕型物或急傾斜之搬運。搬運傾角為35°~45°。

A special designed belt that is suitable for light transportation with a steep angle up from 30 to 45 degree.

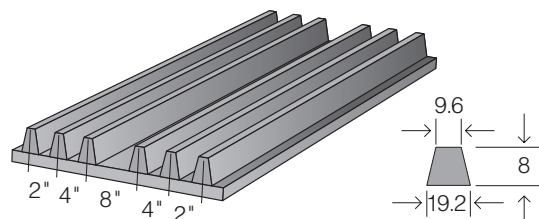


帶寬 belt width (mm)	翅高度 fin height (mm)	有效寬 effective width (mm)	翅間距 pitch (mm)
350	90	240	300 or 400
400	100	280	
500	125	365	
600	144	425	
750	160	520	

## ■ 山型輸送帶 Lug Cleats Conveyor Belts

鞋類廠製造輸送用，與鞋面黏劑接觸面小。

Popular be used in shoe industry. Lug construction features minimal its contact with shoe solvent.

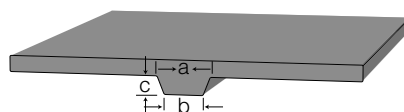


Pitch : 50.8mm - 101.6mm - 203.2mm - 101.6mm - 50.8mm  
( 2" - 4" - 8" - 4" - 2" )  
Width : 610

## ■ 內V型輸送帶 V-Guide Conveyor Belts

輸送帶底面有V型導引，運轉時不偏行不蛇行，載物不會偏移。

A V-Belt, molded to belt underside, acts as a tracking guide to keep belt runs always in proper alignment.



### 規格 Specification

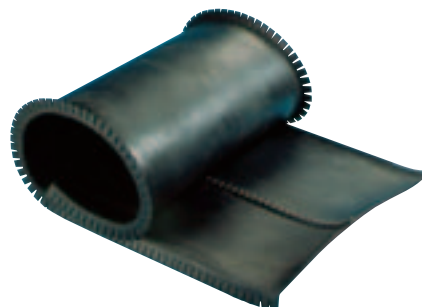
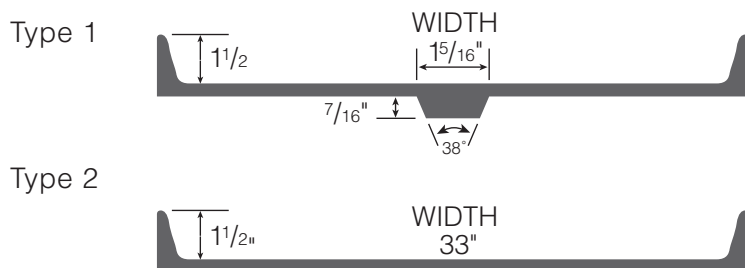
Unit : mm

TYPE	V 型導引尺寸 V-Belt dimensions			V型輪溝尺寸 V-Pulley dimensions			滾輪直徑 Pulley diameter	皮帶寬度 Belt Width
	a	b	c	a	b	c		
VA型	12.5	6.5	8	20	14	12	250	→690

## ■ 邊凸型輸送帶 Flanges Conveyor Belts

符合美國MSHA標準。邊凸型構造可防止煤粉、煤塊散落。V型導引設計可確保輸送帶直線行走。緊急狀況時，可行金屬夾具接合減少停機時間。適合電廠、氣電共生系統之飼煤機，及水泥廠秤量機等之使用。

Special design for coal feeding system that used widely in Power Station. Molded flanges on both sides of belt prevent material from spilling. Two different types, with or without V-guide belt on underside, are available depends on your requests.



規格 specification	840mm x 2 ply x 3.2mm x 3.2mm x 4m ↑ 1155mm x 3 ply x 5mm x 2mm x 4m ↑	46" x 2 ply x 5/32" x 3/32" x 4m ↑ 838mm x 2 ply x 5/32" x 3/32" x 4m ↑
強度 tensile strength	200kgf / cm ply ~400 kgf / cm ply	

## Other Application Conveyor Belts

### ■ 管狀輸送帶 Pipe Conveyor Belts

密閉性搬運方式最適合對環境清潔及空氣品質要求嚴格之場所，曲線輸送最大45度，爬坡搬運能力達30度，能簡化輸送系統減少設備空間。

Sealed transportation is ideal for the application that clean environment and air are required strictly. Allowable curved line of this belt is high up to 45 degree and inclines angle is 30 degree that could reduce your conveyor line and save your place.



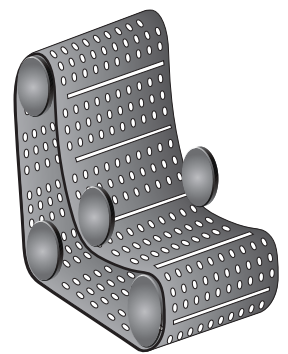
#### 標準規格 standard specifications

管狀直徑(mm) diameter	帶之寬度(mm) belt width	抗拉強度(kgf/cm) tensile strength	內面膠(mm) inner cover rubber	外面膠(mm) outer cover rubber
100	400	200 ~ 300	3.0	2.0
150	600	200 ~ 400	3.0	2.0
200	750	200 ~ 400	3.0 5.0	2.0
250	950	400 ~ 600	3.0 5.0	2.0
300	1100	400 ~ 600	3.0 5.0	2.0
350	1300	900 ~ 1200	5.0	2.0
400	1500	900 ~ 1200	5.0	2.0
500	1800	900 ~ 1200	5.0	2.0

### ■ 輥筒帶 Blast Cleaning Tumbling Belts

輥筒帶向上移動時，表面之檔條能使帶面上之鑄件翻動而互相磨擦達到研磨的效果。皮帶上之孔能排出研磨所生落屑，維持輥筒機的研磨效率。孔之直徑有 3/16", 7/32", 1/4", 5/16", 3/8"等。

For purpose to clean and deburr materials, metal products, cleats on upside of belt could keep materials turning over and rubbing with one and another while belt is moving upwards. The radish from materials will expel themselves from those holes on the belt to keep blast cleaning system always in a good condition. A variety of holes diameter, 3/16", 7/32", 1/4", 5/16", 3/8", are available for your special design.



### ■ 浪板帶 Roofing Board Conveyor Belts

浪板輸送帶使用在浪板加上隔熱材的搬運與貼合作業，依浪板之形狀尺寸配合設計。

Used in Roofing Board Factory for building-up insulation materials onto roofing board. Made particularly according to your order.



Table 1 被覆橡膠之特性 Performance of Cover Rubber  
工廠加工用被覆橡膠 For General Application

試驗項目 Test Items.			被覆橡膠之種類及特性 Grades and Performance of Cover Rubber			
			P	G	S	A
抗拉試驗 Tensile Test	老化試驗前 Before Aging	抗拉強度 Mpa {kgf/cm²} Tensile Strength	8.0 以上 {80}	14.0 以上 {140}	18.0 以上 {180}	14.0 以上 {140}
		伸延 % Elongation Rate	300 以上	400 以上	450 以上	400 以上
	老化試驗後 After Aging	抗拉強度變化率 (%) Changes in Tensile Strength	± 40 以內	± 30 以內	± 25 以內	± 25 以內
		伸延變化率 % Changes in Elongation Rate	± 40 以內	± 30 以內	± 25 以內	± 25 以內
磨耗試驗 Abrasion Test	磨耗量 mm³ Volume of Abrasion		400 以下	250 以下	200 以下	150 以下
臭氧劣化試驗 Ozone Test Resist.			----	----	無龜裂 no cracks	

採礦用被覆橡膠 For Mining Application

試驗項目 Test Items.			被覆橡膠之種類及特性 Grades and Performance of Cover Rubber		
			L	D	H
抗拉試驗 Tensile Test	老化試驗前 Before Aging	抗拉強度 Mpa {kgf/cm <sup>2</sup> } Tensile Strength	15.0 以上 {150}	18.0 以上 {180}	24.0 以上 {240}
		伸延 % Elongation Rate	350 以上	400 以上	450 以上
	老化試驗後 After Aging	抗拉強度變化率 (%) Changes in Tensile Strength	± 25 以內	± 25 以內	± 25 以內
		伸延變化率 % Changes in Elongation Rate	± 25 以內	± 25 以內	± 25 以內
磨耗試驗 Abrasion Test	磨耗量 mm <sup>3</sup> Volume of Abrasion		200 以下	100 以下	120 以下
臭氧劣化試驗 Ozone Test Resist.			無規定 Not Required		

Table 2 布層特性 Performance of Fabric

標稱輸送帶強度及布層特性 Belt Code and Performance of Fabric									
試驗項目 Test Items.			100	125	160	250	315	400	500 630
拉伸 試驗 Stretch Test	抗拉強度 Tensile Strength N/mm {kgf/cm}		100 {100} 以上	125 {125} 以上	160 {160} 以上	250 {250} 以上	315 {315} 以上	400 {400} 以上	500 {500} 以上 630 {630} 以上
	伸長率 Elongation Rate	規定抗拉強度之10%時 10% of Specific Tensile Strength Load	4 以下						
		拉斷時 At Break	10 以上						

標稱輸送帶強度及布層特性 Belt Code and Performance of Fabric									
試驗項目 Test Items.			800	1000	1250	1500	1800	2000	2500 3150
拉伸 試驗 Stretch Test	抗拉強度 Tensile Strength N/mm {kgf/cm}		800 {800} 以上	1000 {1000} 以上	1250 {1250} 以上	1500 {1500} 以上	1800 {1800} 以上	2000 {2000} 以上	2500 {2500} 以上 3150 {3150} 以上
	伸長率 Elongation Rate	規定抗拉強度之10%時 10% of Specific Tensile Strength Load	4 以下						
		拉斷時 At Break	10 以上						



# Chinese National Standard of Conveyor Belt ( CNS 10023K4076 )

Table 3 接著強度 Adhesion

低強度用（標稱輸送帶強度500以下） Low Tension (Belt Code beolw 500)

試驗項目及接著層之區分 Items		標稱輸送帶強度及接著強度 Belt Code and Adhesive Strength	
		100~500	
		平均值 Average	最小值 Minimum
接著強度 Adhesive Strength N/mm {kgf/25mm}	厚度1mm以上，未滿3mm之被覆橡膠及布 Cover rubber from 1mm to 3mm thick with Fabric	2.0 以上 { 5 }	1.6 以上 { 4 }
	厚度3mm以上之被覆橡膠及布 Cover rubber over 3mm thick with fabric	2.4 以上 { 6 }	1.6 以上 { 4 }
	布與布 Fabric and Fabric	2.4 以上 { 6 }	2.0 以上 { 5 }

高強度用（標稱輸送帶強度630以上） High Tension (Belt Code over 630)

試驗項目及接著層之區分 Items		標稱輸送帶強度及接著強度 Belt Code and Adhesive Strength	
		630~3150	
		平均值 Average	最小值 Minimum
接著強度 Adhesive Strength N/mm {kgf/25mm}	厚度0.8mm以上，未滿1.5mm之被覆橡膠及布 Cover rubber from 0.8mm to 1.5mm thick with Fabric	3.2 以上 { 8 }	2.4 以上 { 6 }
	厚度1.5mm以上之被覆橡膠及布 Cover rubber over 1.5mm thick with fabric	3.5 以上 { 8.75 }	2.9 以上 { 7.25 }
	布與布 Fabric and Fabric	4.5 以上 { 11.25 }	3.9 以上 { 9.75 }

Table 4 輸送帶寬度與其許可差 Belt Width and Tolerance (mm)

輸送帶寬度 Belt Width	許可差 Tolerance	輸送帶寬度不同處 Max. width deviation in a belt	輸送帶寬度 Belt Width	許可差 Tolerance	輸送帶寬度不同處 Max. width deviation in a belt
300	±5	5 以下	1200	±12	12 以下
350	±5	5 以下	1400	±14	14 以下
400	±5	5 以下	1500	±15	15 以下
450	±5	5 以下	1600	±16	16 以下
500	±5	5 以下	1800	±18	18 以下
600	±6	6 以下	2000	±20	20 以下
650	±6.5	6.5 以下	2200	±22	22 以下
750	±7.5	7.5 以下	2400	±24	24 以下
800	±8	8 以下	2600	±26	26 以下
900	±9	9 以下	2800	±28	28 以下
1000	±10	10 以下	3000	±30	30 以下
1050	±10.5	10.5 以下	3200	±32	32 以下

**SWR**

# 面膠標準與等級

## The Standard and Grade of Cover Rubber

面膠等級 Cover Grade	最小抗拉強度 min.T.S Mpa {kgf/cm <sup>2</sup> }	最小斷點伸長 min.Elong. at Break (%)	最大磨耗 Max. Abrasion (mm <sup>3</sup> )	輸送條件 Service Condition	同級標準 Equivalent Standard
A	14 {140}	400	150	主要適用於易磨耗之輸送線 Good for abrasion resistant Conveyor line.	JIS-A
S	18 {180}	450	200	主要適用於易割傷之輸送線 Suitable for cut resistant Conveyor line.	JIS-S RMA-N
D	18 {180}	400	100	主要適用於礦山採掘用途高磨 耗之輸送線 Good for highly abrasion resistant Conveyor line in mining industry.	ISO-D JIS-D DIN-W
H	24 {240}	450	120	主要適用於礦山採掘用途易磨 耗之輸送線 Good for abrasion resistant Conveyor line in mining industry.	ISO-H JIS-H DIN-X RMA-M
HR-300	18 {180}	450	200	耐熱性佳、適合運送熱物 max 120°C Heat Resist. Suitable for conveying hot materials.	San Wu
HR-500	10 {100}	450	250	耐熱性極佳、適合運送高 溫運物max 150°C Superior Heat Resist. Suitable for conveying high temperature materials.	San Wu
NC-200	17 {170}	450	150	耐油性佳。耐潤滑油、脂肪油 、礦物油、穀類油。 Highly Oil Resist. to Lubricant oil, Animal fat, Mineral oil, Corn oil, etc.	San Wu
FL-19	17 {170}	450	200	耐燃性佳。可防止火苗蔓 延，適合使用在地底下。 Highly Fire Resist. to flame propagation, suitable for underground operation.	CNS 10026 K4078

若您需要其他等級之面膠，請不吝告知。  
For more information, please consult us.

# 參考資料

## Reference Information

面膠厚度之決定 Selection of Cover Rubber Thickness (inch)

輸送物種類 Material Carried	上面膠 Top cover			下面膠 Bottom cover		
	機長 Line length			機長 Line length		
	40m ↓	40~150m	150m ↑	40m ↓	40~150m	150m ↑
木屑、木炭、穀類、細粉等 wood chips, ash, grain, fine powder, etc.	1/8~3/16	1/16~1/8	1/16	1/16	1/16	1/16
砂、小碎石、水泥粉、礦粉等 sand, gravel, clay, etc.	3/16~1/4	1/8~3/16	1/8~3/16	1/16	1/16	1/16
石灰石、中碎石、煤炭等 limestone, crushed stone, coke, etc.	1/4~3/8	3/16~1/4	3/16~1/4	1/8	1/16~1/8	1/16~1/8
鐵礦、礦石、炭礦等 ores, slag, etc.	3/8	1/4~3/8	1/4~3/8	3/16	1/8~3/16	1/8~3/16

標準速度與最大速度 Standard Speed & Maximum Speed of Conveyor Belts (m/min)

帶寬 mm Belt Width	石灰 Gravel	粉灰 Fine Powder	土砂 Fine Sand		穀物 Grain		煤炭 Coal		礦石,碎石(大) Ore, Crushed Ore	
400	75	75	90	120	90	150	----	----	----	----
600	75	90	100	180	120	200	90	180	90	120
900	90	120	150	300	180	250	150	300	120	200
1500	90	150	180	----	200	300	180	300	150	200
1600 ↑	90	150	200	----	240	300	200	----	180	200

附註：重量大及有銳角之礦石、碎石等，其磨耗性，切割性強。基於前述考量，輸送帶之最大設計速度不可過大，否則輸送帶易磨耗、割裂，及使用壽命短。

Remark : Heavy, sharp or crushed ore are highly abrasive and could cut belt easily, thus, the designated speed of belt shall not be fast to protect belt from damages of early worm, cut and short service life.

布層數與標準輪徑 Plies of Carcass and Standard Pulley Diameter (mm)

滾輪名稱 Pulley Name	主動輪、頭輪 Main Drive Pulley、Head Pulley					尾輪、張緊輪、緊彎輪 Tail Pulley、Tensioning Pulley、Snub Pulley				
布 種 Kind of Fabric	層數 No. of Plies									
	3	4	5	6	7	3	4	5	6	7
EP100	350	450	500	600	700	300	350	450	550	600
EP150	350	450	550	650	750	300	400	500	600	650
EP200	400	500	600	750	850	350	450	550	650	700
EP250	400	550	650	750	850	350	450	550	650	750
EP300	450	550	700	800	950	400	500	600	700	800
EP350	500	650	800	950	1100	450	600	700	850	950
EP400	550	700	850	1050	1200	450	600	750	900	1000

附註：棉布、TN及NN布種與輪徑之圖係可比照上表。

Remark : Other types of fabric, such as: Cotton, TN, NN, please refer to above table too.



起先若無良好的預防保養計畫，則新設輸送系統帶給您無故障麻煩極高效率的蜜月期將很短暫。

## ■ 一般清掃及結塊去除

- 能使系統運轉平順最重要的一件事就是定期清潔設備。清掃週期依粉塵掉物情況和各種操作及環境因素而異。每一輸送操作須有定期的檢點及清掃計畫。
- 滑輪及滾輪表面的結塊會使輸送帶蛇行。若完全偏離滑輪，可能摩擦甚至摺入機台結構，將使輸送造成損害。
- 輸送機之清掃，尤其滑輪及滾輪只能在停車時進行。

## ■ 搬運物溢出及清掃

- 搬運物可能由輸送帶表面溢出，其中有些是沿回程線掉落。大多數掉落物在輸送線下方可收集到，特別是在裝載區，槽型滾輪極易因觸及溢出物而受損。
- 滾輪被溢出物塞住至無法轉動時，不斷受到帶面摩擦，使得滾輪外殼磨成尖銳鋸齒狀，反而使輸送帶的被覆橡膠及心體遭受嚴重的損害。此外，各壓緊輪及滑輪受溢出物阻塞，也會增耗能源。

## ■ 防護輸送帶免受外物侵擊

- 在尾輪及張緊輪區常發生塊物進入輸送帶及滑輪表面之間的侵擊現象。當塊物掉入輸送帶及滑輪之間，使得心體局部張力超過其額定張力而致穿破。此破壞現象將持續至塊物破碎或消失為止。滑輪表面於此過程常受損害。在壓緊輪或緊彎輪處，塊物粘附於裝載搬運面，可能使輸送帶造成同樣的損害。
- 避免溢出物侵擊的根本防護是適當的管理裝載環境：
  1. 正確的裝載角度及落料。
  2. 裝載速與帶速及裝載方向對輸送帶方向之適切配合。
  3. 必要時網羅掉落物。

## ■ 避免滾輪連會點劣化

- 槽型滾輪之連會點所受之緊迫力具有危險的影響。若力量作用於輸送帶，使其陷入滾輪連會處斷面，輸送帶可能經向斷裂，或於滾輪連會點之軌跡部位層間分離。空氣及砂粒會由輸送帶鼓起的氣泡滲入離層內部。結果，通常輸送帶在沿著滾輪連會點軌跡完全離層前，部分輸送帶將擠入輸送機支架，而由輸送帶本體完全扯裂。
- 許多因素形成滾輪連會點的緊迫力。凹槽角越深越能感受連會點的緊迫力，減少滾輪角度往往可使輸送帶減少在連會點的緊迫力。
- 輸送帶由平面轉為凹槽型(反之亦然)，此轉變距離或間格在每一終端滑輪務須足夠，否則輸送帶可能於滾輪連會區感受嚴重壓迫力，此壓迫力可能導致輸送帶於極短時間內損壞。



# Maintenance

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To get a high efficiency & free of troubles of belt conveying system, it is important that a preventive maintenance program has been well performed since belt installed.

## 1. Cleaning & Removal of Build-up

- To keep a well operation in belt conveying system, a good, periodical housekeeping to the belt is necessary and essential.
- Material build-up on pulleys & idlers will spark belt being misaligned . If build-up is large enough, belt will strongly touch to or even fold into the steel structure of conveyor line and be damaged heavily.
- Unless belt has been stopped completely, no one is allowed to access to the belt for cleaning.

## 2. Spillage of Material

- While running, some materials will spill off and drop along the belt from return side. Most of these drops could be removed and cleaned, but some, particularly those spilled nearby the loading zone, probably have a risk to damage the idler rollers thus a special attention has to be paid.
- If idlers are frozen by spillages, they will turn to be sharpen as keep on wearing with running belt and finally cause a badly damage to the cover rubber & the carcass of belt, meanwhile, the power consumption will be increased too.

## 3. Impingement

- In tail pulley & take-up zone, impingement occurred often between belt and pulleys. Once this situation occurred, belt's carcasses as well as pulley's surface will be broken as parts of their tensions now are over the rated tension of the belt. This impingement will be vanished only until the material build-up is broken or disappeared. Same damages to the belt in areas of jammed idlers & bending pulleys will be happened when a material build-up sticky on the belt's carried side.
- A proper management to the loading will be helpful for preventing the impingement.
  - 1) Accurate surcharge angle and loading.
  - 2) Appropriate match to the running direction between loading speed and belt speed.
  - 3) Try to catch spillage if necessary.

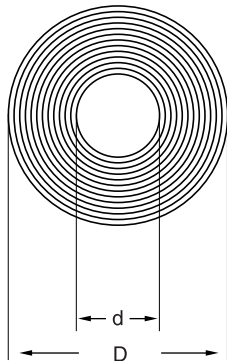
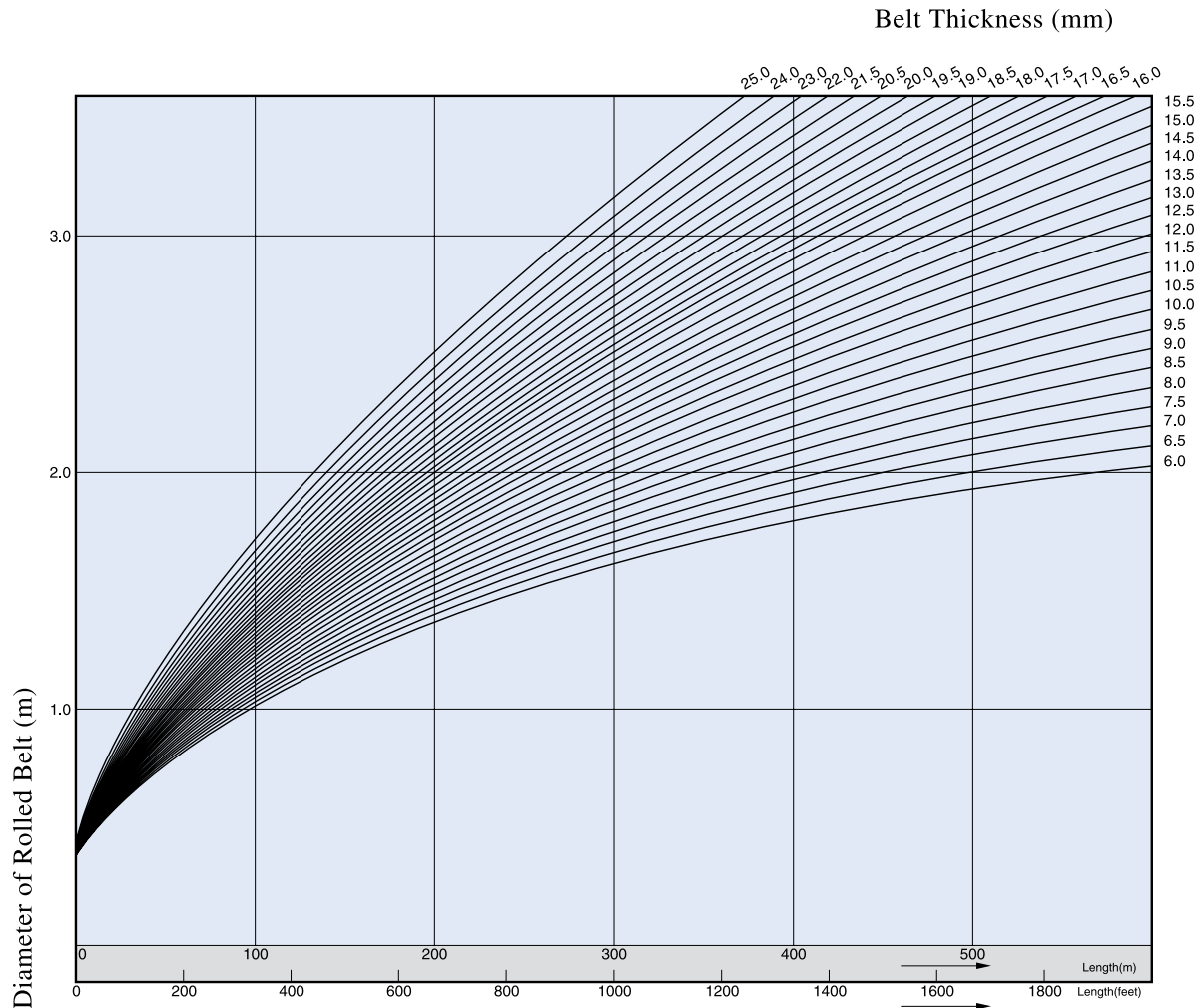
## 4. Junction Points Protection

- For trough idlers, the strain that occur in the Junction Points will be a dangerous influence to the belt and mire it into the space of these points. This influence will cause belt a longitudinal break or separate it into plies in the zone that corresponding to the Junction Points tracing area. Air, sands will easily enter into the belt from these separating bubbles. In the end, parts of belt will mire into the idlers and be destroyed by conveyor machine before they are separating along the tracing area.
- Many factors will cause the strain being occurred in the Junction Points. Larger angle of trough idlers, more strain will be occurred. It will be much helpful to lessen the strain, if the angle can be reduced.
- Transition Distance also is an important factor. If this distance is not big enough, belt will suffer strong strains in these points and probably will be destroyed in a very short time.

**SWR**

# 輸送帶長度與捲起直徑

## Length of Finished Belt and Diameter of Rolled Belt.



### Calculation Method of Finished Belt Length

$$L = \frac{(D + d) \pi}{2} N$$

L : Finished Belt Length (m)

d : Dia. of Core (m)

D : Dia. of Rolled Belt. (m)

N : No. of Times Rolled

t : Belt Thickness (m)

### Method of Calculating the Dia. of Rolled Belt.

$$D = \sqrt{\frac{4}{\pi} t \times L + d^2}$$

Belt Thickness	Dia. of Core
6.0 ~ 10.0mm	0.18m
10.5 ~ 20.0mm	0.30m
20.5 ~ 25.0mm	0.40m

# 值得信賴的輸送帶來源

## A Trustworthy Factory of Conveyor Belts

無論何時，三五產品之質優、價實及服務確實等，將儘可能地減少您的長期購置成本。就如同工廠就在您家的隔壁一樣，三五分佈在全省的服務據點，將隨時提供您各種不同尺寸的橡膠帶，讓您的生產不會中斷，並節省您的損失。並隨時提供您訓練有素及配備齊全的專業接合人員，以解決現場任何有關輸送帶的問題。當您看到輸送帶註明有"三五"的字樣時，您大可放心，因為無論是現在或者是未來，三五牌輸送帶的價值，將遠超過對手的產品甚多。三五牌輸送帶，即是像做為以價值為主要考量的您，所期望選用的品牌。



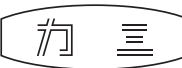
No matter when, no matter what kind of problem you have in conveyor system, San Wu' s staff, with company's policy of supplying superior products & services to satisfy every customers, are here to serve to you and solve your problems. There are many experienced technicians and most-up-to-date machines in this factory to make good belts for you. You can be assured that the overall value of using of San Wu's belts is much higher than those of competitors'. In spite of this, a series of extra services are available also for your belt, such as belt maintenance, belt repairing, belt splicing and belt consultation, etc. For more information, please contact us right now. You will know it is worthy, because this is a factory that can fulfill your every need.

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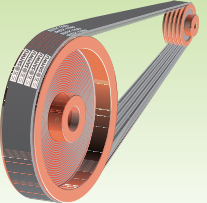

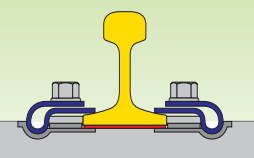
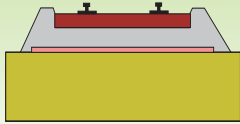
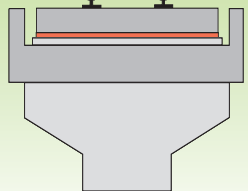




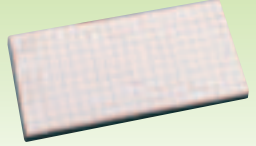





超 儕  
TRANSMATE

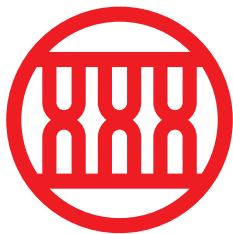
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\* 本型錄的數據資料僅供參考，不具保證責任。

All information contained in this catalogue is based on reasonable researches, but does not guarantee any result.

## 三五產品 San Wu's Products:

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汽車帶 Automotive V-Ribbed Belt 	農機帶 Agricultural V-Belt 	強力環帶 Superior Endless Belt 	強力粗布環帶 Endless Belt With Bare Duck 	陶瓷襯墊 Ceramic Liner 
機車變速帶 Motorcycle Variable Speed Belt 	同步齒型帶 (進口銷售) Timing Belt (Imported) 	同步齒型帶 (進口銷售) Timing Belt (Imported) 	陶瓷驅動輪 Ceramic Drive Pulley 	陶瓷落料槽 Ceramic Hopper 



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