

A close-up photograph of industrial machinery, likely a rubber extrusion line. It features several horizontal rollers of different materials and colors (blue, yellow, and metal) with a black belt running through them. The rollers are supported by metal frames with bolts. The background is a dark blue gradient with a white dashed line curving across the image.

BELTING FOR DOWNSTREAM EXTRUSION

Specialty Belting for
Specific Applications

RAINBOW
RUBBER AND PLASTICS



RAINBOW BELTS

Rainbow Rubber and Plastics, Inc. is a leading supplier of truly endless belting and rubber accessories for the North American market. Specializing in high wear applications, Rainbow supplies a range of products for the wire, cable, and plastic industries. Working closely with end users and original equipment manufacturers, our family of industry specific rubber components has been proven in durability and reliability. Over the past 30 years Rainbow has become the leading supplier of original equipment and replacement belting for downstream Caterpuller, Capstan, and Haul-Off equipment.



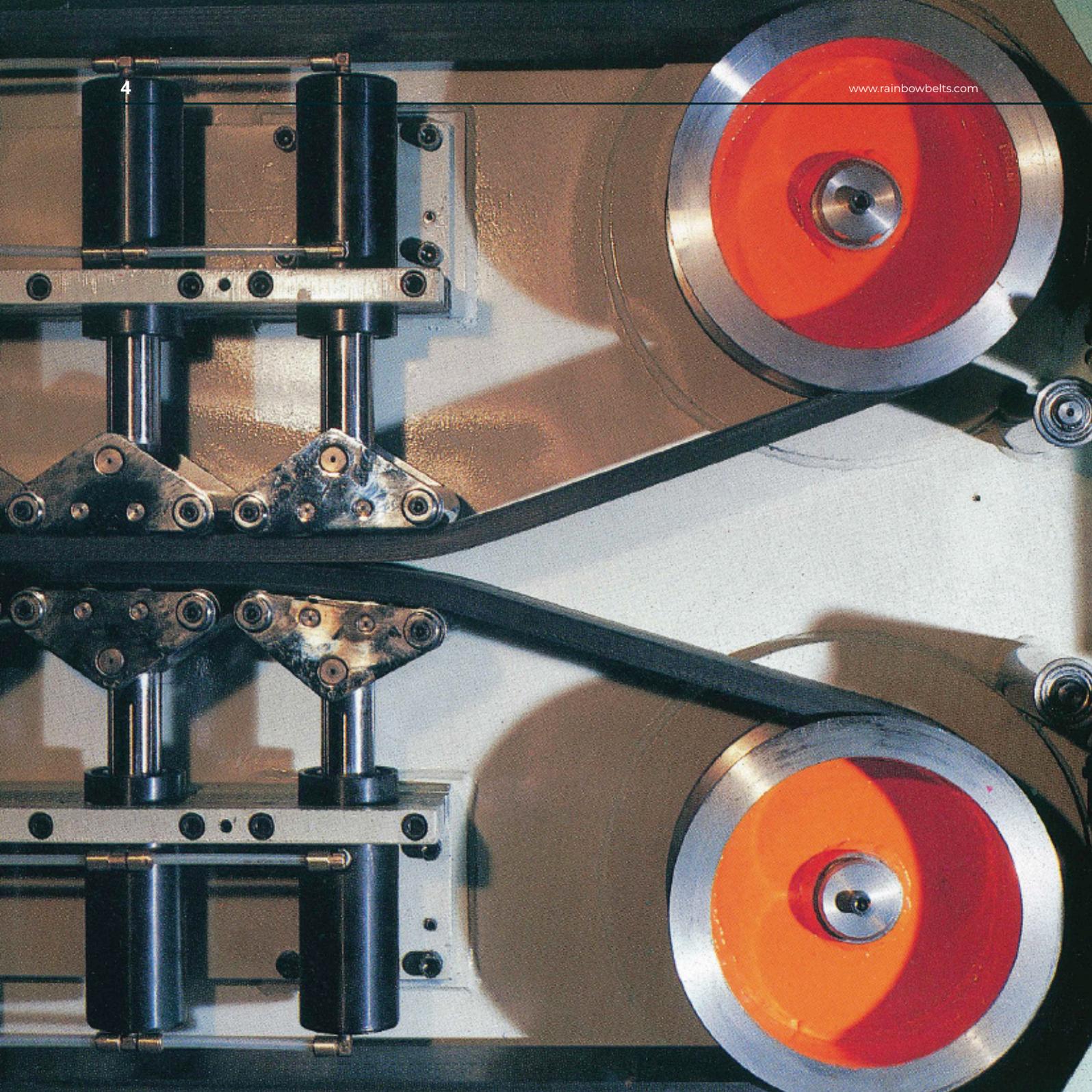


OUR ADVANTAGES

50 years of Quality
and Reliability

Largest Caterpillar
belt inventory in
North America

Outstanding
Customer Service
including in-plant
surveys and training



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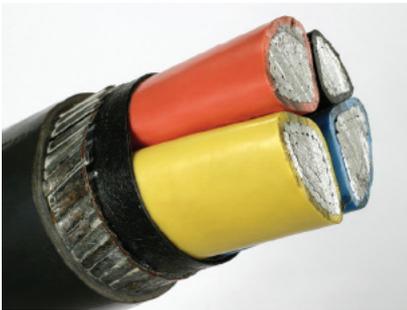
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APPLICATIONS

Rainbow belts are truly endless belts designed for downstream extrusion equipment. Rainbow belts ensure the material does not slip or pull, avoiding damaged product or production loss as a result of belt failure.

Caterpuller equipment monitors conveying speed and tension throughout the manufacturing process used primarily in the production of:

WIRE & CABLE



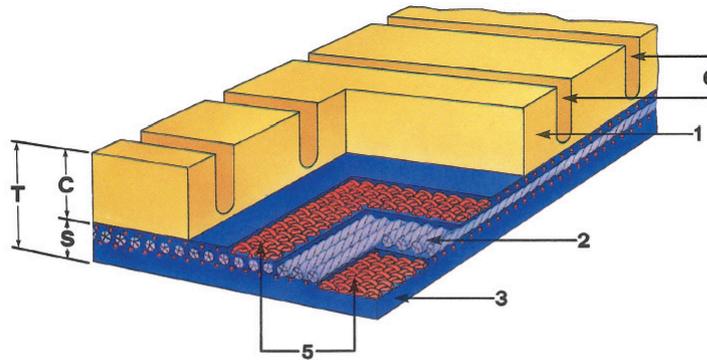
EXTRUDED PROFILES



PIPING



CONSTRUCTION



- | | |
|------------------------------------|---------------------------------|
| 1. Top rubber cover | 6. Transverse Notches (SP220) |
| 2. Tensile core | 7. Longitudinal grooves (SP222) |
| 3. Bottom rubber cover | T. Overall Thickness |
| 4. Sliding fabric (may replace 3.) | C. Top Cover Thickness |
| 5. Retaining "breaker" fabric | S. Thickness of Base |

Rainbow belts are manufactured truly endless without seams or splices. The rubber cover is assembled with the textile fabric core in a raw state then vulcanized. This process creates a single piece belt with greater wear characteristics, high tensile strength, and longer belt life than similar products which have been glued or spliced together.

Rubber Compounds

Our rubber covers have excellent wear, high abrasion, and are tear resistant. For special applications, rubber compounds are used with heat, and oil resistance. The quality of rubber compound have characteristics which allow Rainbow belts to operate on small pulleys without cracking or separation. Durometer (hardness) can be adjusted between 20 and 80 durometer per the customer's specifications.

Textile Core

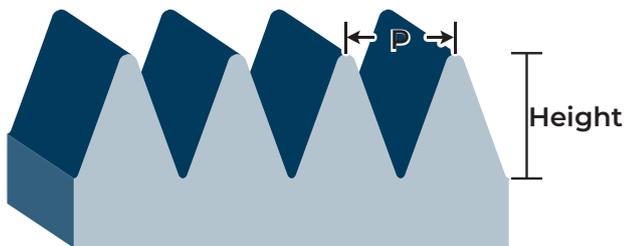
The core of a Rainbow belt is made with a layer of synthetic fiber cords, wrapped tightly along the belts spiral axis which ensure high tensile strength and low elongation. Additional layers of "breaker" fabrics are included to protect the cord structure. These breaker fabrics disperse pressure at the point of contact across the width of the belt, and eliminates lengthwise splitting. Tensile strength can be adjusted to meet the manufacturing demands of the customer.

MULTI-V BELTS & POLY-V BELTS

Rainbow belts are made as a single piece. The rib sections are machine grooved into the base of the belt after the components have been vulcanized, unlike most belt manufacturers who will glue or vulcanize a rubber cover to a molded base belt.

**Custom ribs can be grooved per the customer's specifications.*

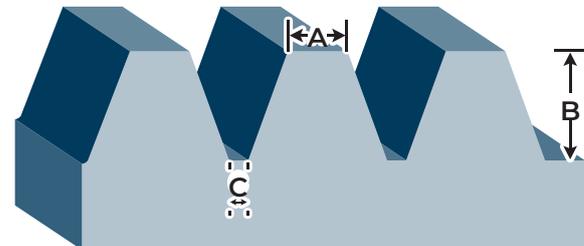
FOR POLY-V BELTS:



Pulley Category	Pitch (p) mm	Minimum Belt Height mm
J	2.34	12.00
L	4.70	14.00
M	9.40	21.50

Pitch and Height rates

FOR MULTI-V BELTS:



Pulley Category	A mm	B mm	C mm
5V/x*	7.00	15.80	1.17
5VN/x*	5.08	15.24	10.16

* x = number of ribs

Other dimensions are available upon request.

TECHNICAL DATA

TOP RUBBER COVER					
Type	Color	Hardness °ShA	Abrasion resistance*	Grip	Features
NA	BLACK	65-75	● ● ● ●	● ● ○ ○	Good balance between properties
M	BLACK	65	● ● ● ●	● ● ● ○	As NA compound with better grip
PA	GREY	40-50-60	● ● ● ○	● ● ● ●	Improved tear resistance - no staining
HB	WHITE	65	● ● ● ○	● ● ○ ○	HYPALON rubber: Good oil, chemical and heat resistance - no staining
NC	BLACK	65	● ● ○ ○	● ● ○ ○	NITRILE rubber: Very good oil and good heat resistance
NCB	WHITE	65	● ● ○ ○	● ● ○ ○	NITRILE rubber: Very good oil and good heat resistance - no staining

* Data related to Compounds with comparable Hardness

Upon request: Excellent abrasion resistance, Nitrile low hardness and FDA compounds

TEXTILE CORE						
Type	Material	Tensile strength N/mm	Elongation at break	Safety Factor	Max Elongation at 400 N/Wire	Max Elongation at 1000 N/Wire
SME 400	POLYESTER	400	11 %	10	4.13 %	n.a.
SME 800	POLYESTER	800	12 %	8	1.08 %	n.a.
SMC1250	PVA	1050	6 %	6	0.80 %	1.70 %
SMK1250	KEVLAR	1600	5 %	4	0.60 %	1.20 %
TED 100/4	POLYESTER	200	15 %	12	n.a.	n.a.

MINIMUM PULLEY DIAMETER					
Core Code	Carcass + bottom cover*	Top Cover Thickness	Minimum pulley diameter** mm		
	mm		mm	40 °ShA	50 °ShA
SME 400	8	7	100	120	150
		12	120	140	160
		17	140	160	200
SME 800	9	6	160	180	240
		11	190	220	280
		16	220	250	320
SMC1250	10	5	200	220	240
		10	230	260	280
		15	280	320	350
SMK1250	9	6	240	280	340
		11	260	300	360
		16	280	320	380

* Minimum: 3 mm ** Only typical data for selection purposes. Not to be used for part or tool design.

TOLERANCES			
INNER LENGTH		%	
Up to 5000 mm / 196.85 in		± 0.5	
Over 5000 mm / 196.85 in		± 0.75	
WIDTH		mm	
Up to 200 mm		3 max	
Over 200 mm		4 max	
THICKNESS		mm	
Not Grinded	With Respect to Nominal Value		-0/+2
	With Respect to Uniformity	Top Cover > 60 °ShA	± 0.8
		Top Cover < 60 °ShA	± 1.2
Grinded	With Respect to Nominal Value		± 0.5
	With Respect to Uniformity		± 0.1

TECHNICAL DATA, continued

Recommended Working Load Tensions:

TENSION			
TENSILE CORE	SME	SMC	SMK
FLAT BELT	0.50 %	0.40 %	0.30 %
POLY-V BELT	0.40 %	0.30 %	0.25 %

*The thickness of the belt and the hardness of the rubber are not related to the % of tension.

Measuring ½% Tension

1. Belt must be installed on machine with no tension applied.
2. Draw two parallel marks on the belt, at a distance of exactly 100"

100 inches | ----- | -----100.5"

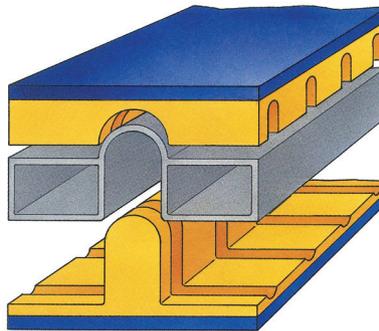
3. Apply tension (with belt running) until the distance between the two marks is exactly 100.5" apart.
4. Belt is now tensioned to ½ %

PROFILING

Per the customer's specifications, Rainbow belts can be made with different surface profiles to aid in the manufacturing process.

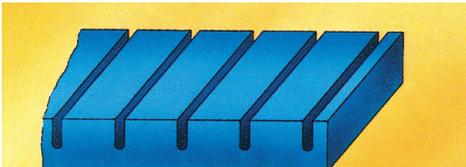
SP 222 - Longitudinal Grooves

For specialty wire, tubing, or extruded profiles, longitudinal grooves can be ground into the surface of the belt. This creates greater contact space and increases pulling force without adjusting pressure. "V" or radius grooves are most common, but custom profiling is available.



SP 220 - Crosswise Grooving

There are some instances where cover thickness dictate transverse grooves must be applied to the belt surface. These transverse notches are cut with a radius groove to prevent spider cracking within the belt cover.



ADDITIONAL SERVICES & ACCESSORIES

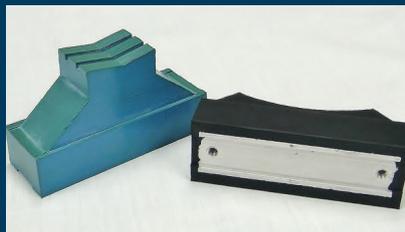
Rainbow has a number of products to aid and complement our Rainbow belting. Drawing on 30 years of experience and industry knowledge these products have been developed to serve specific applications. Each has been tested and proven in the wire, cable, and plastic industries.



CV Gaskets/Wire Wipes: CV seals for water boxes. Wire wipes replace rags and sponges and have high wear characteristics.



End Caps: These parts protect the cable ends during storage and shipping. Available in a variety of sizes and styles.



Rubber Cleats: Used for chain-style caterpullers. Manufactured with or without steel/aluminum plates.



Pulleys and Rollers: New and replacement rollers, pulleys and guides.

CUSTOMER SERVICE

Rainbow Promise:

Rainbow Rubber and Plastics, Inc. is committed to providing our customers the highest quality products and service. We stand behind our belts 100% and work to meet the individual needs of every customer. Rainbow offers the following services:

- **In-Plant Survey:** Our highly qualified and experienced Rainbow technicians will complete an in-plant survey. These in-depth surveys allow us to identify problem areas and offer customized long term solutions.
- **Store Room Solution:** Our experienced technicians are also available to identify and provide current and future requirements and needs.
- **Training:** Rainbow technicians offer in-house, customized product training for production, engineering, and maintenance staff. Offering a full range of training programs related to product application, and best practice strategies.



Customer Service and Distribution Center, located in Reading, Pennsylvania.



Rainbow supplies belting for the World's Leading
Manufacturers of Caterpuller and Capstan
Equipment for the wire, cable,
and plastic industries.

AW MACHINERY
BARTELL
BOSTON MATTHEWS
CALMEC
CDS
CEECO
CM CABALLÉ
CONAIR/GATTO
CORTINOVIS
DAVIS STANDARD
ESI
FARRIS

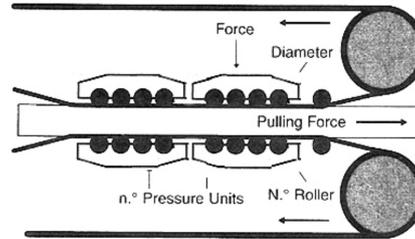
FRANCIS SHAW
GAUDER
KALMARK
MALI
MFL
MGS-HALL
NEXTROM
NOKIA MAILLIER
PIONEER
POURTIER
RDN
ROSENDAHL

ROTEQ
ROYLE
SKET
SMD
STOLBERGER
TENSOR
TROESTER
TULSA EQUIPMENT
VERSA
VITEK
WATSON
WEBSCHER

RAINBOW BELT ENGINEERING

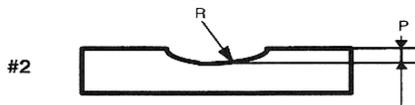
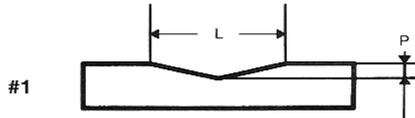
Machine Type

Manufacture: _____
 Speed: _____ ft/min
 Minimum Pulley Dia.: _____ inches
 Pressure Roller Dia.: _____ inches
 Pulling Force: _____ lbs
 Pressure Roller/Unit: _____ "n"
 Total Pressure Units: _____ "n"
 Force/Unit: _____ pressure

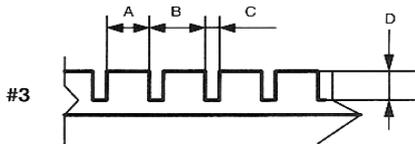


Belt Specifications

Top Cover: Smooth _____
 Transversal Grooves _____
 Top Grooves _____
 Hardness _____ sh/A
Bottom Cover: Smooth _____
 Poly-V _____ type
 Timing Belt _____ type
Size: Width _____ inch
 Length _____ inch
 Total Thickness _____ inch
 Total Cover _____ inch



PROFILE 1	PROFILE 2	PROFILE 3
L _____ Inch	R _____ Inch	A _____ Inch
P _____ Inch	P _____ Inch	B _____ Inch
		C _____ Inch
		D _____ Inch



Pulled Material

Covered Cable _____ PVC _____ Rubber _____ Metal
 Tube-Pipe Wire _____ PVC _____ Rubber _____ Other
 Extruded Profile _____ PVC _____ Rubber _____ Other
 Pressure of Oil _____ yes _____ type _____
 Pressure of Solvent _____ yes _____ type _____
 Temperature _____ °C / °F
 Size/Diameter _____ inch

Current Belt

Manufacture: _____
 Type: _____
 Current Life: _____
 Failure: abrasion _____
 separation _____
 break _____
 Other: _____

Customer Name: _____

Address: _____

Contact Name: _____

Email: _____

Telephone: _____

Haul-Off Units in Plant: _____

Fax: _____

Yearly requirement: _____

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www.rainbowbelts.com

A photograph of three workers in a warehouse setting. On the left, a man with a beard and a grey shirt is shaking hands with a woman on the right. In the center, another man in a white shirt and yellow safety vest looks on. The woman is wearing a dark blue shirt and an orange safety vest, holding a clipboard. The background shows industrial shelving and bright overhead lights.

GET IN TOUCH

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