CALCULATE ELEVATOR BELT WORKING TENSION

B = Belt weight in pounds per lineal foot. Start with belt that is adequate for bucket projection given, obtain belt weight in pounds P.I.W. and multiply times belt width

C = Weight of each bucket in pounds

D = Discharge height of elevator (use 1/2 of belt length if discharge height is not given).

K = Capacity of each bucket in CUBIC FEET.

S = Bucket spacing in inches

W = Weight of material being elevated in pounds per cubic foot.

1. Tension due to weight of belt B x D = _____
2. Tension due to weight of buckets (12 x C x D) ÷ S = _____
3. Tension due to load in each bucket (12 x K x D x 2) ÷ S = _____
4. Tension due to scoop factor {(12 x K x W) ÷ 12 } X 25 = _____

TOTAL TENSION = Add lines 1 thru 4 = _____

Divide by belt width to obtain MINIMUM belt tension rating. Check rating selected to be sure maximum bucket projection is not exceeded.

NOTE: For belts with more than one row of buckets, calculate the tension for one row only using the appropriate percentage of belt width in step 1. Ex. A 30" wide belt with 2 rows of buckets should figure the tension using 15" of belt width.

Information Needed for Ordering Correctly Sized Belt

1. Pulleys Center-to-Center: _____ Ft.
2. Head Pulley Diameter: _____ Inches
3. Tail Pulley Diameter: _____ Inches
4. Head Shaft RPM: _____
5. Belt Width: _____ Inches
6. Material Handled _____
7. Material Weight _____ Lb./cu ft
8. Rows of Bucket on Belt: _____
9. Bucket Spacing _____ Inches

BUCKET DETAIL

A. Manufacturer _____
B. Construction Material _____
C. Size _____
D. Style _____
E. Number of Bolt Holes _____
F. Bolt Size _____
G. Bolt Hole Centers _____
H. Bucket Capacity _____

GENERAL TECHNICAL INFO

For best results, the diameter of the head pulley should be at least 5 times the projection of the bucket - with the diameter increasing for taller legs.

The chute or discharge box should be located at least 2 inches below the bottom of the head pulley. The throat to the down-leg should be closed as much as possible with a piece of rubber. Venting on the roof is optional but some form of air relief is recommended. The head pulley to tail pulley ratio also affects the performance of an elevator. A small tail pulley decreases the loading efficiency as well as increases the wear and tear on the buckets and belt. Feeding on the up leg above the tail shaft is preferred.

TABLE OF SPEED - CC BUCKETS

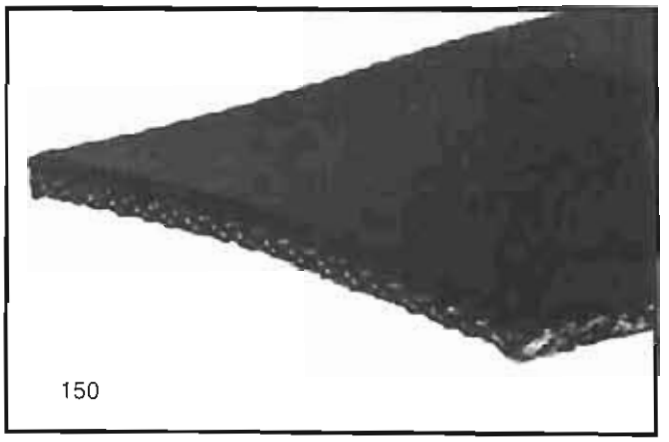
Pulley Inch Dia	RPM Range	FPM - Belt Range
8	85-170	176-352
10	85-170	224-448
16	55-100	230-418
20	55-85	286-443
22	55-80	316-460
24	42-80	264-502
30	42-80	330-628
36	42-80	395-753
42	40-70	439-769
48	40-65	503-817
54	40-65	565-919
60	40-60	628-942
72	40-55	754-1036

All formulas and charts are for reference only and does not necessarily mean that the calculations will represent actual results.

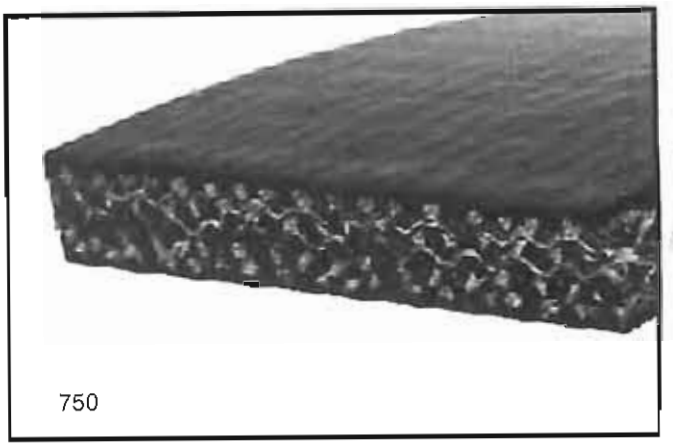
PVC Belting

PVC provides an economical solution for elevator and conveyor service. This specification is ideal for light to medium applications including grain or fertilizer.

Some of PVC's characteristics include fire retardant, oil and moisture resistant, and static conductive properties, excellent fastener and bolt holding capabilities, durable and long-wearing with low stretch.

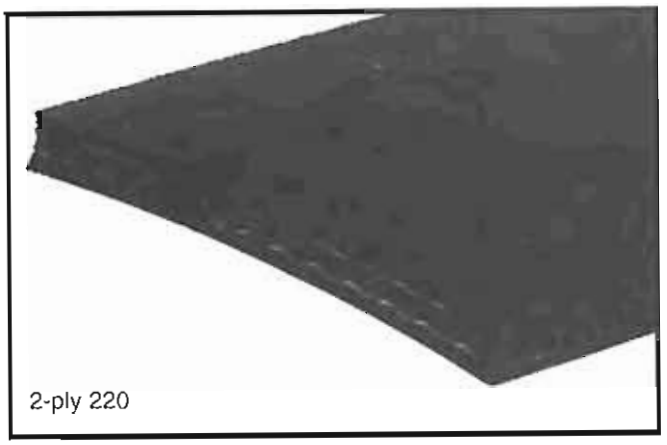

150

Some agricultural applications require a heavier duty belt. These high-performance, high-value elevator belts allows for 7 - 10" bucket projections.

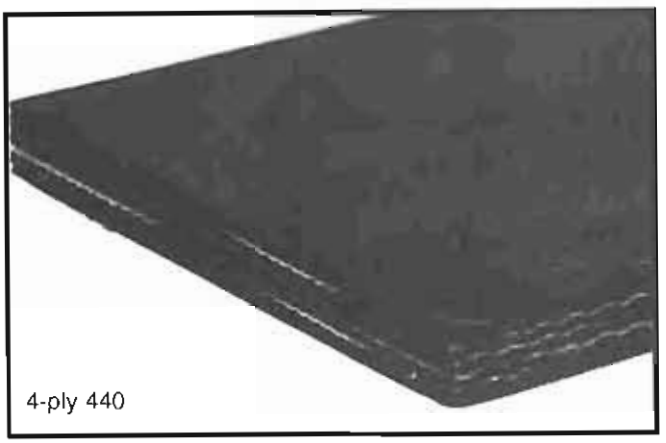

750

Style	Description	Tension Rating lbs. / P.I.W (per in.width)	Nominal Thickness Inches	Nominal Weight lbs. / PIW	Minimum Pulley Diameter Inches	Maximum Bucket Projection
PVC 150	Black, Cover Both Sides	150	0.185	.0100	2.5	5
PVC200	Black, Cover Both Sides	200	0.230	0.140	4	6
PVC250	Black, Cover Both Sides	250	0.250	0.150	6	7
PVC300	Black, Cover Both Sides	300	0.280	0.150	8	7
PVC350	Black, Cover Both Sides	350	0.300	0.160	8	8
PVC450	Black, Cover Both Sides	450	0.350	0.180	10	9
PVC650	Black, Cover Both Sides	650	0.380	0.200	14	9
PVC750	Black, Cover Both Sides	750	0.400	0.210	18	10

Rubber Belting



2-ply 220



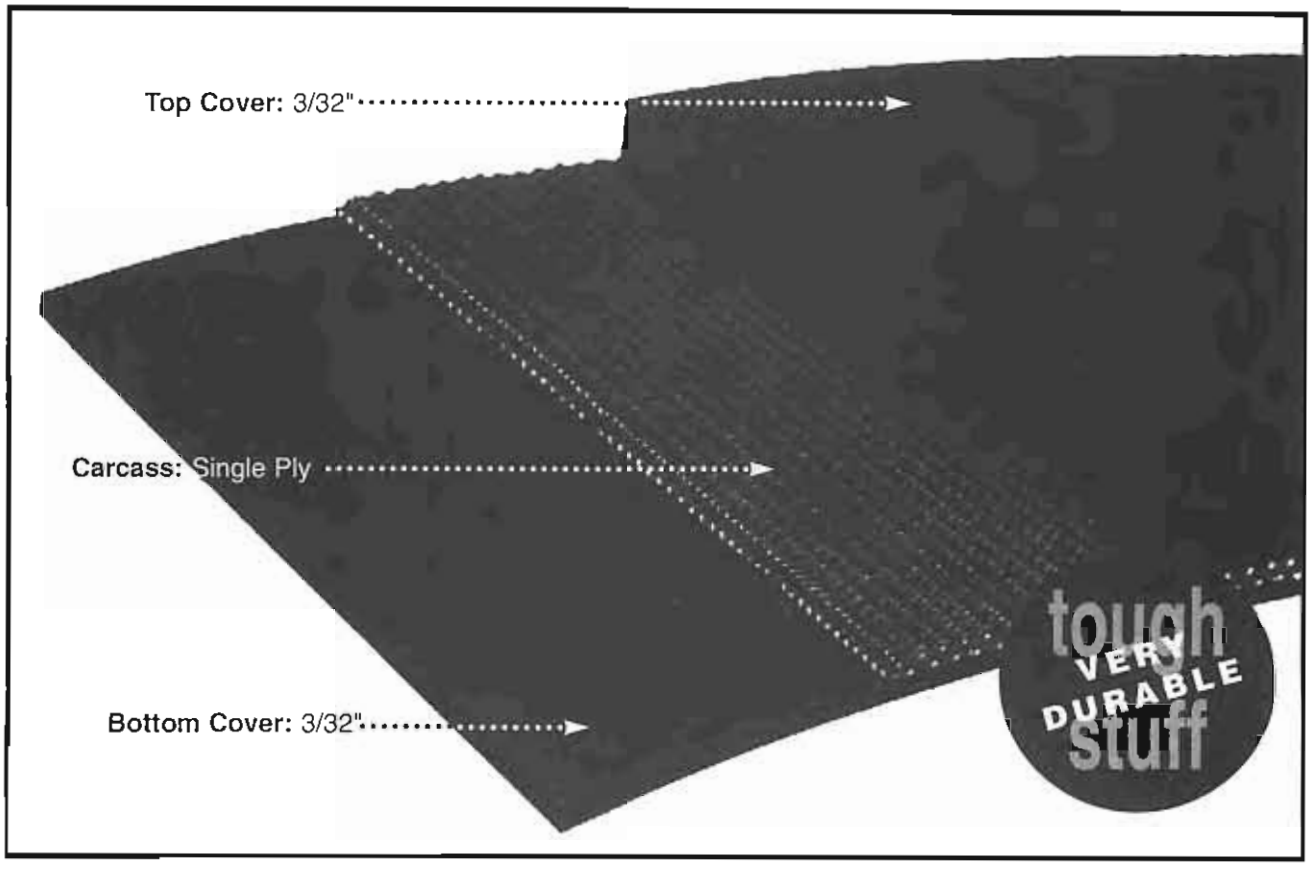
4-ply 440

A high performance belting design suitable for grain and grain processing industries. Rubber belting is ideally suited for colder climates since it is less likely to crack due to temperature extremes. Also, small pulleys are a perfect fit for rubber belting.

The covers are static conductive (SC) with a surface electrical resistivity far exceeding OSHA mandates. The fire retardant (FR) construction meets OSHA specifications. Superior Oil Resistance (SOR) is used for handling oily grain or grain treated with dust suppressing oils.

Style	Description	Tension Rating lbs. / P.I.W.* (Per In. Width)	Nominal Thickness Inches	Nominal Weight lbs. / P.I.W.	Minimum Pulley Diameter Inches	Maximum Bucket Projection
For Conveyors						
2-ply 220	Black, 1/16 x 1/16 SOR-SC-FR	220	0.250	0.132	10-16	N/A
3-ply 330	Black, 1/16 x 1/16 SOR-SC-FR	330	0.313	0.157	12-18	N/A
4-ply 440	Black, 1/16 x 1/16 SOR-SC-FR	440	0.344	0.182	16-24	N/A
For Elevators *(Punching decreases strength)						
2-ply 220	Black, 1/16 x 1/16 SOR-SC-FR	190	0.250	0.132	12-16	6
3-ply 330	Black, 1/16 x 1/16 SOR-SC-FR	280	0.313	0.157	14-18	8
4-ply 440	Black, 1/16 x 1/16 SOR-SC-FR	370	0.344	0.182	18-24	10
3-ply 600	Black, 1/16 x 1/16 SOR-SC-FR	520	0.344	0.172	20-30	10

Feedmill Belting



FMB 440

Our Feedmill Belt is resistant to heat, moisture, animal fat, vegetable oil, and mineral oil. It is specifically designed for pellet legs and other tough applications in which heat, animal fats and oils, and moisture tend to degrade standard belting. This single-ply, 440# PIW Feedmill Belt has exceptional dimensional stability resulting in greater tracking characteristics and minimal stretch. It is static conductive with a surface electrical resistivity far exceeding OSHA mandates. The temperature rating is -10ºF to +350ºF. The Feedmill Belt is available in all popular widths, and can be cut to any required length. Elevator cup holes are custom punched for each order.

Style	Cover	Ag. Elevator Tension Rating lbs./P.I.W.	Nominal Thickness Inches	Nominal Weight lbs/P.I.W.	Min. Pulley Diam. Inches	*Actual Max. Elevator Cup Projection In.
1-ply 440	Black, 3/32 X 3/32 HORSC	370	.345	.161	18-24	10

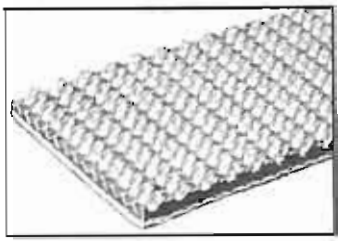
1.800 KC SUPPLY (527.8775)
www.kcsupply.com
Phone 816.753.7676
Fax 816.753.0444
email: kcsupply@kcsupply.com

White PVC Food Grade Belting

PVC - 100 White Roughtop x MSK

The rough-textured non-skid surface enables packages, boxes, cases and other products to be conveyed on incline or decline. Best resistance to oils, greases, water, chemicals, abuse and stretch. FDA accepted.

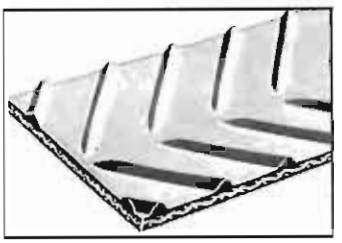
PVC - 100 Roughtop x MSK



PVC - 100 White Chevron Top II x MSK

The herringbone pattern of alternating rows of solid PVC chevrons forms a cover highly capable of moving bulk, free-flowing materials such as grains, food stuffs, feeds, and fertilizers up steep inclines. Made of SOR (Super Oil Resistant) PVC compounds with high resistance to grease, fat, vegetable and mineral oil exposure. FDA and USDA accepted.

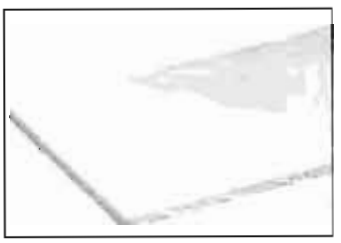
PVC - 100 Chevron Top II x MSK



PVC - 120 White C x MSK

Heavier duty version of our PVC - 90. Good value belt for most food processing and harvesting uses. Features smooth, easily cleanable cover of SOR PVC compounds. USDA and FDA approved.

PVC - 120 C x MSK



PVC - 120 White Crescent Top

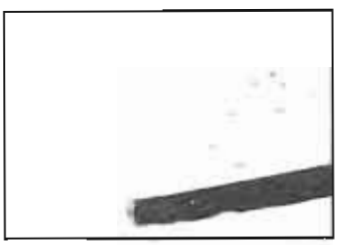
Aggressive scoop crescent shape is ideal for incline conveying, as well as creating a multitude of tiny "buckets" for moving wet materials. The versatile pattern can also be reversed to drain a product while conveying on the incline. Unique pattern is self cleaning, and since the crescents overlap, there is constant contact with return rolls virtually eliminating bumping and thumping. SOR belt is FDA and USDA approved.

PVC - 120 Crescent Top

PVC - 200 White C x C

Ideal belt for conveying or elevating flour, sugar or other bulk food materials requiring FDA white belting. Low stretch, high bolt-holding ability. SOR compound is not affected by grain oils.

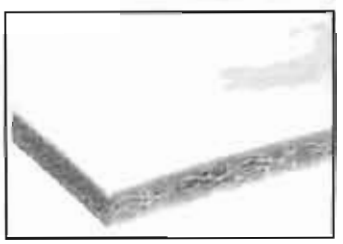
PVC - 200 C x C



PVC - 450 White C x C

Good heavy-duty belt for conveying or elevating flour, sugar or other bulk food materials requiring FDA white belting. Low stretch, high bolt-holding ability. Not affected by grain oils.

PVC - 450 C x C



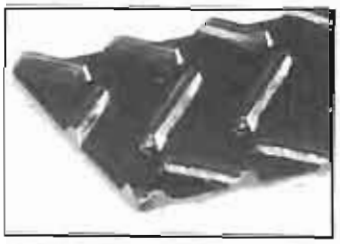
Incline Belt

These belts feature deep tread, non-skid surfaces that have high grip impressions which minimize or eliminate slideback of load.

PVC - 100 Black Chevron Top

The herringbone pattern of alternating rows of solid PVC chevrons forms a cover highly capable of moving bulk, free-flowing materials such as grains, food stuffs, feeds and fertilizers up steep inclines.

PVC - 100 Black Chevron Top x FS

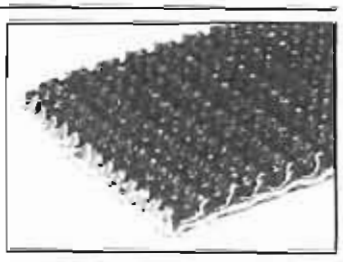


PVC Roughtops

Rough textured, non-skid surface enables packages, boxes, cases and other products to be conveyed on incline or decline. Uni-ply construction and PVC compounds result to combine all the best properties for high-traction conveying and best resistance to oils, greases, water, industrial chemicals, abuse and stretch. The Green Supergrip is softer durometer for highest grab and steepest inclines.

PVC - 100 Black Roughtop x FS

PVC - 120 Green Supergrip Roughtop x FS

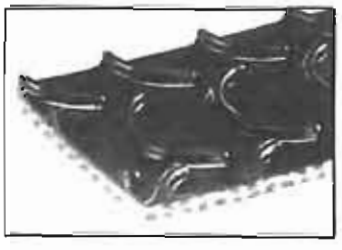


PVC Black Crescent Top

Aggressive scoop pattern for high incline conveying. Crescent pattern creates hundreds of tiny "buckets" capable of conveying liquids along with solids. Conversely, the belt can be run the opposite direction, and the upside-down crescents convey solids while draining off liquids.

PVC - 120 Black Crescent Top

PVC - 200 Black Crescent Top

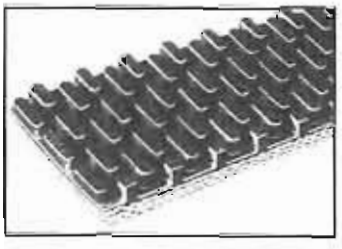


3 Ply Black and Tan Gum Steepgrade

Features soft, oval-shaped nubs for gripping packages and product for very steep inclines. The molded projections prevent slip-back, providing a cushioning pocketing effect for all types and shapes of boxes, cartons, etc. The tan genuine gum specification is softer durometer for the very highest inclines. Has a standard friction surface bottom for slider beds.

3 Ply CN40 Black Steepgrade x FS

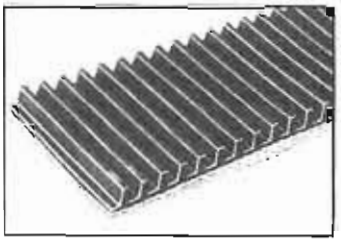
3 Ply CN40 Tan Genuine Pure Gum Steepgrade x FS



3 Ply Black Ribflex

Top surface features soft flexible parallel ribs enabling it to convey on the steepest of inclines. The ribs are serrated to form thousands of high-grip fingers which self clean. Maintains full incline ability throughout life of belt.

3 Ply CN40 Black Ribflex x FS



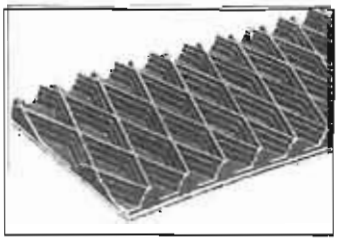
Black and Tan Wedgegrip

Constructed of plies of high-strength flexible synthetic carcass and features a diamond-top surface molded in a diagonal rib design with unusually high coefficient of friction for conveying packaged and bagged goods up the very steepest of inclines. Tan Wedgegrip is non-marking.

2 Ply 100 Black Wedgegrip x Bare

2 Ply 100 Tan Wedgegrip x Bare

3 Ply 135 Tan Wedgegrip x Bare



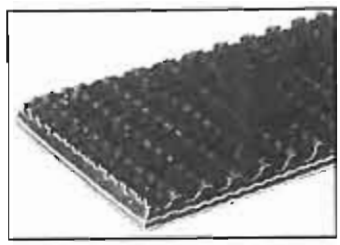
Incline Belt

2 Ply 150 Black and Tan Roughtop

Construction is two plies of high strength, all-synthetic fabrics. Very flexible, yet stretch and moisture resistant. Tan roughtop is non-marking.

2 Ply 150 Black Roughtop x Bare

2 Ply 150 Tan Roughtop x Bare

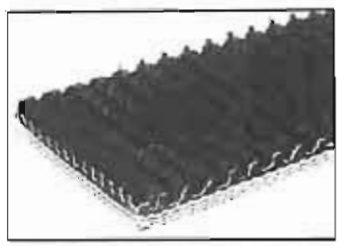


28 oz. Black Roughtop

Long popular standard in the industry. Often used as pulley lagging. The 28 oz. plies give a hefty appearance and cushioning effect.

3 Ply 28 oz. Black Roughtop x FS

4 Ply 28 oz. Black Roughtop x FS



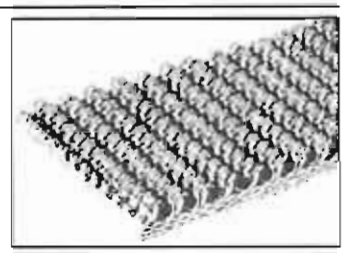
Tan Rubber and Pure Gum Roughtop

Tan color is non-marking. The genuine gum is soft durometer for highest grab, steepest inclines and long wear when required. The tan rubber is more economical, yet highly serviceable. Four ply construction is popular for sanding machinery applications.

3 Ply CN40 Tan Rubber Roughtop x FS

3 Ply CN40 Tan Genuine Pure Gum Roughtop x FS

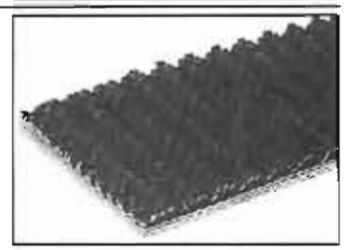
4 Ply 240 3/32" Tan Pure Gum Roughtop x Bare



Poly Brown Nitrile Roughtop

Nitrile construction resists oil, heat, grease and chemical exposure. Our specification is made of 135 lb.-rated all polyester for high strength and stretch resistance, yet is very flexible for small pulleys.

3 Ply Poly 135 Brown Nitrile Roughtop x FS

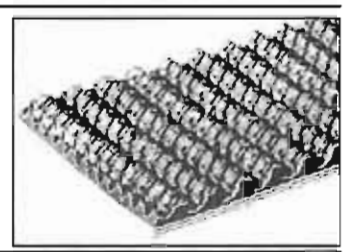


3 Ply Tan and Blue Carbox Nitrile Roughtop

Carbox nitrile roughtop yields vastly longer service life than rubber roughtop. Is ideal where regular roughtop surfaces wear down quickly and must be replaced. Number 61 features a strong all-polyester carcass, while #61a is a cotton/nylon construction.

3 Ply Poly 135 Tan Carbox Nitrile Roughtop x FS

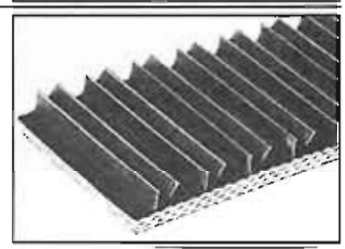
3 Ply CN40 Blue Carbox Nitrile Roughtop x FS



3 Ply Black V-Ridge

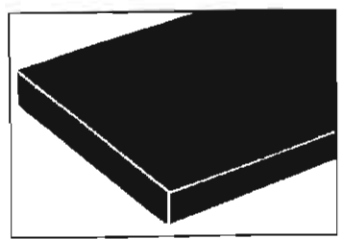
Cross corrugated peaks are equivalent to small cleats; will convey on high incline. M-shaped ridges are soft, yet durable, and will self clean as they go around pulleys.

3 Ply CN40 Black V-Ridge x FS



SKIRTBOARD RUBBER / CHUTE LINING

Used at the point of loading for guiding product onto the center of the belt and for protecting metal parts. Also useful as lining for protecting metal and wood chutes, hoppers, and troughs. Range of thicknesses include 1/4", 3/8", 1/2", 3/4" and 1".

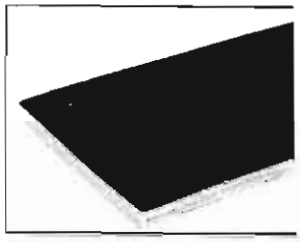


Light Duty Conveying Belt

Brown Nitrile FBS

Construction features tightly woven blend of cotton and polyester plies impregnated with nitrile, producing a belt suitable for light- and medium-weight conveying for a multitude of applications. Particularly popular for oily conditions, especially the conveying of metal parts; also as carrying tapes for folding machines. Commonly used for power transmission belting in the heavier weights for conditions involving oil and heat. Economical. Very flexible.

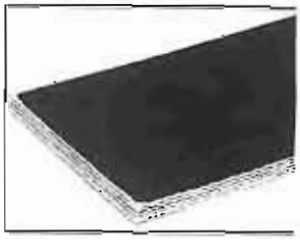
3 Ply Brown Nitrile FBS
5 Ply Brown Nitrile FBS
7 Ply Brown Nitrile FBS
9 Ply Brown Nitrile FBS



Poly Heavy Duty Black Nitrile FBS

These belts are recommended for handling metal stampings, automotive pans, sheet steel, and any application requiring very high oil resistance. Features rugged, high-strength polyester carcass; is suitable for medium-capacity transmission belt where oil, grease or chemicals are present. Flexible, yet will withstand cutting, gouging and abrasion.

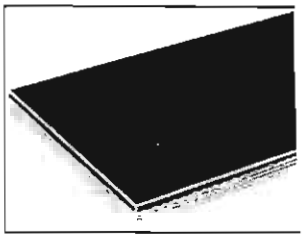
4 Ply Poly 180 Black Heavy-Duty Nitrile FBS
5 Ply Poly 225 Black Heavy-Duty Nitrile FBS



Black Nitrile COS

An all-purpose conveyor belt with smooth nitrile top cover for assembly line, packaging and a wide variety of industrial uses. Flexible, yet strong, the 3 ply features a 135 lb. rated all-polyester carcass for added stretch resistance. Two ply is 15 oz. cotton-polyester blend. Both have superior oil, grease and animal fat resistance, and good heat capability.

2 Ply 15 oz. C-P Black Nitrile COS
3 Ply Poly 135 Black Nitrile COS



Transmission Belting

Flat Leather Transmission Belting

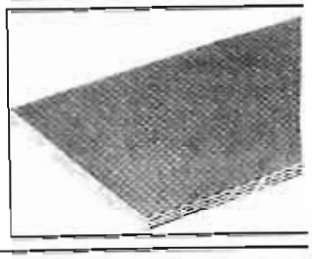
Leather is preferred for many applications because of its combined characteristics of high tensile strength, high coefficient of friction and great flexibility. Leather is very durable and usually outlasts plied rubber belting. Available in many thicknesses and also in a chrome tanning process for oily conditions.

Single Leather
Double Leather

Rubber Transmission -- FS x FS

Commonly known as friction surface and/or transmission belting, this belt has long been a standard for a wide variety of conveyor applications for both slider bed and roller applications. Construction is cotton/polyester fabric plies bonded with resilient rubber compounding. Either side to pulley, vulcanized endless or metal laced. For applications where rubber covers are not necessary or desirable.

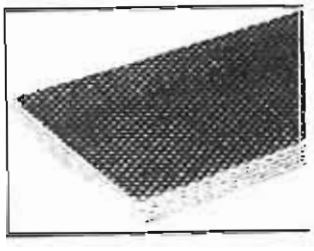
3 Ply 28 oz. Black FS x FS
3 Ply CN40 Tan (32 oz.) FS x FS
4 Ply CN40 Tan (32 oz.) FS x FS
5 Ply CN40 Tan (32 oz.) FS x FS



35 oz. Hard Silver Duck Transmission Elevator FS x FS

Constructed of rugged silver hard duck fabric plies with heavy skim coats between and friction surface both sides. This belt is formulated for severe conditions and rugged service. Excellent fastener-holding ability. Can be spliced endless or metal laced.

4 Ply 35 oz. Tan FS x FS
5 Ply 35 oz. Tan FS x FS
6 Ply 35 oz. Tan FS x FS
8 Ply 35 oz. Tan FS x FS



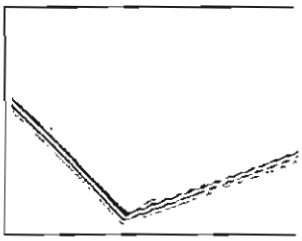
Package Handling for Slider Beds

Baretop (Hot Stock and Water)

Bare duck surface down for lowest possible friction for slider bed use, and up for deflector bar applications; also ideal as slip-top belt for "stall" operations. Its true "hot stock and water" use is for conveying uncured rubber in tire plants. Construction is 1 ply of bare hard silver duck, and the rest of 28 oz. cotton.

3 Ply Hot Stock and Water

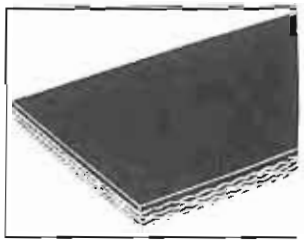
4 Ply Hot Stock and Water



28 oz. 1/16" x FS -- Smooth

Popular general-purpose utility belt featuring tough rubber top cover and friction surface bottom for slider bed use. Heavy duck plies give belt good rigidity and body. Commonly used in the lumber industry. Is often found as 4-inch-wide belts on V-guided APC conveyors.

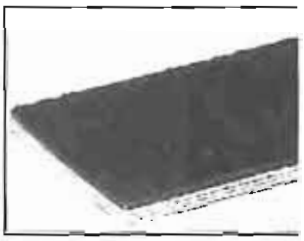
3 Ply 28 oz. 1/16" x FS



28 oz. 1/16" x FS -- Pebbletop

This belt features the same rugged construction as #48 above, but has a "pebbletop" rippled textured pattern for increased traction. Is a popular replacement belt for 4-inch-wide V-guided APC conveyors.

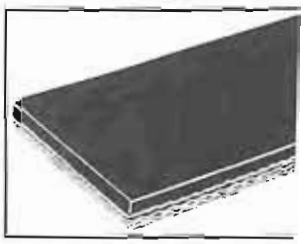
3 Ply 28 oz. 1/16" Pebbletop x FS



1/8" Urethane Cover x FS

This is a premium belt featuring a cast polyurethane cover 1/8" thick. Recommended where highly abrasive cutting action would destroy a rubber-covered belt in short order. Particularly suitable for wear pads, cutting blocks, stamping operations, die cutting, roof tile manufacturing and belt sanding units. Excellent for sharp steel parts and scrap. Oil, grease and chemical resistant. Available in various colors for special orders.

3 Ply CN40 Black 1/8" Urethane x FS

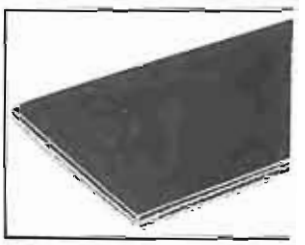


2 Ply Bare Bottom

Bare top and bottom make #51 an ideal belt for applications requiring a low coefficient of friction on both the top and bottom of the belt. Used for side loading, deflector bar and accumulating applications. Number 52 is an economical general purpose belt for package handling and parts conveying. Also popular for a variety of agricultural purposes.

2 Ply 220 Tan Bare x Bare

2 Ply 150 1/32" x Bare



2 and 3 Ply 1/8" x Bare MOR

For heavier-duty uses requiring a tough cover, yet low-friction bottom for slider beds. The belt is moderate oil resistant and commonly used in processing wood chips, paper and scrap.

2 Ply 160 1/8" x Bare MOR

3 Ply 225 1/8" x Bare MOR