

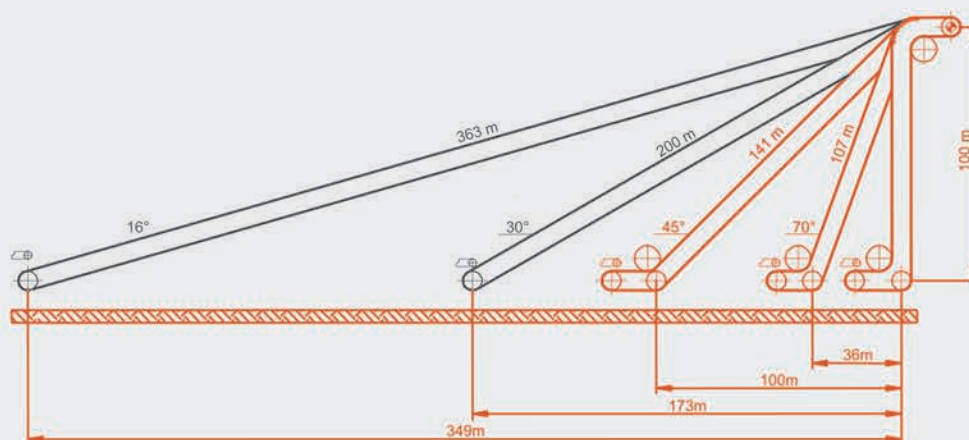
FLEXOWELL®

Steep Incline and Vertical Conveying

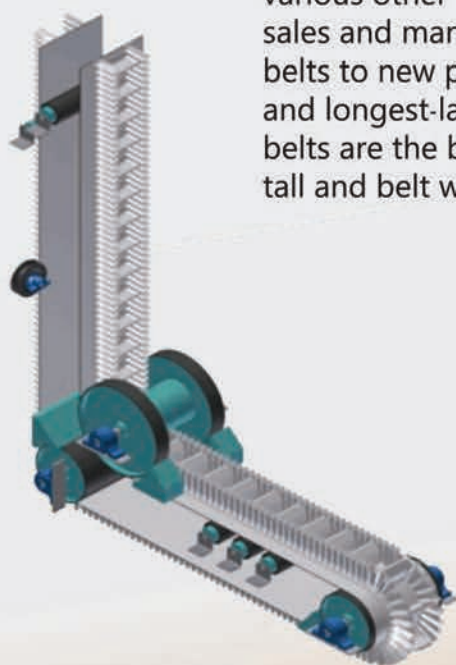


www.BISTATERUBBER.com

FLEXOWELL®



FLEXOWELL belts are ideal for power and cement plants, steel mills, scrap recycling, pulp and paper mills, mine processing, grain and various other industries. **Bi-State Rubber Inc.** is the only Flexowell sales and manufacturing company in North America. From replacement belts to new projects, we provide the highest quality, cleanest running, and longest-lasting belt available. Flexowell steep incline pocket belts are the biggest in the industry with sidewall heights up to 24" tall and belt widths up to 98" wide.



- Coal • Steel • Biomass • Cement • Recycling • Frac Sand
- Various Minerals / Metals
(Iron Ore, Copper Concentrate, Aluminum, Zinc, Gold, Etc...)

Benefiting customers around the globe.



FLEXOWELL is the original name in steep incline conveying with practical operation **since 1964!** With well over 50 years of design, engineering, and application experience, Flexowell has proven to be the cleanest-running, longest-lasting, and toughest belts on the market worldwide. Here in North America **Bi-State Rubber Inc.** (Flexowell's only joint partners for sales and manufacturing) has almost 50 years of hands-on experience, working directly with you, the end user. This allows us to be your sole source for conveying expertise!

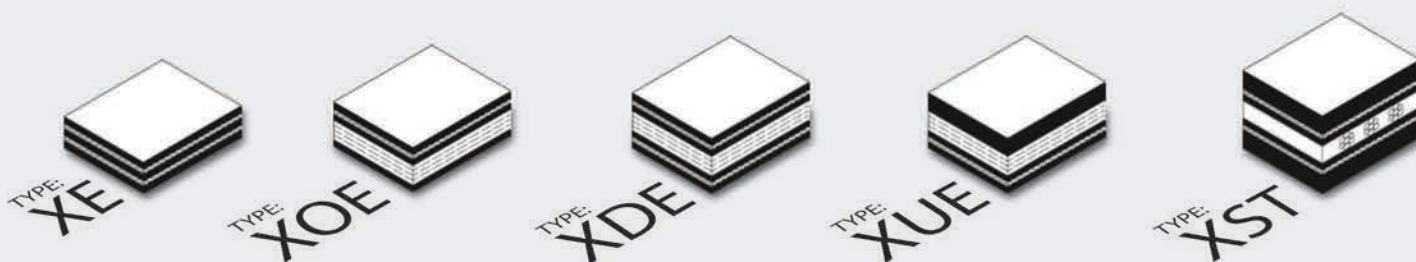
Over 63,000 installations world-wide!



FLEXOWELL®

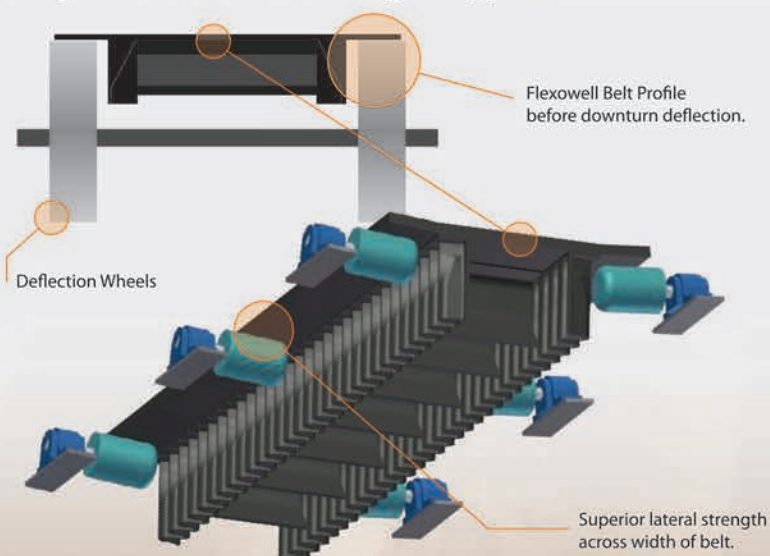
CROSS RIGID BASE BELT:

FLEXOWELL patented, cross-rigid base belt can be deflected from horizontal to an incline and back again without bowing or sagging, even under the heaviest loads. It is available in a full spectrum of widths and tension ratings, with fabric or steel cord construction. **Available Rubber Qualities include: Black Standard, Oil Resistant, Heat Resistant, Flame Resistant, MSHA approved Flame Retardant.**



- XE** Light Duty Flexowell Applications
- XOE** Heavy Duty with excellent reduction of transverse deflection at the wheels and stub idlers.
- XDE** Heavy Duty Special Applications only
- XUE** Reduces transverse deflection at return strand when carried on discs or inside idlers.
- XST** Heavy Duty Steel Cord applications only. Requiring belt tensions above 1000 N/mm with ES-type Flexowell sidewalls.

Example of Flexowell Cross Rigid Support:



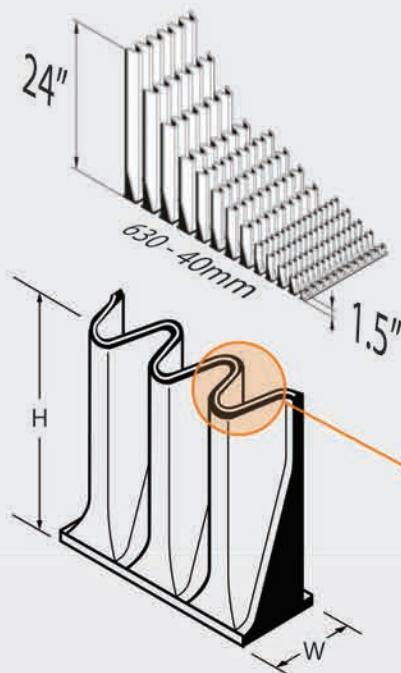
Common CROSS-RIGID BASE BELTING

Type	Working Strength		Belt Thickness	Cover Thickness	
	PIW	N/mm		Top	Bottom
XE200/2	115	200	$11 \frac{1}{32}$ (9mm)	$5 \frac{1}{64}$ (2mm)	$5 \frac{1}{64}$ (2mm)
XOE315/2+1	180	315	$13 \frac{1}{32}$ (10.2 mm)	$5 \frac{1}{32}$ (4 mm)	$5 \frac{1}{64}$ (4 mm)
XOE500/3+1	285	500	$15 \frac{1}{32}$ (11.6 mm)	$5 \frac{1}{32}$ (4 mm)	$5 \frac{1}{64}$ (4 mm)
XOE630/4+1	360	630	$17 \frac{1}{32}$ (13.1 mm)	$5 \frac{1}{32}$ (4 mm)	$5 \frac{1}{64}$ (4 mm)
XOE800/5+1	455	800	$9 \frac{1}{16}$ (14.6 mm)	$5 \frac{1}{32}$ (4 mm)	$5 \frac{1}{64}$ (4 mm)
XOE1000/6+1	570	1000	$5 \frac{1}{8}$ (15.9 mm)	$5 \frac{1}{32}$ (4 mm)	$5 \frac{1}{64}$ (4 mm)



FLEXOWELL Corrugated Sidewall:

SIDEWALLS			
Type		Height (in)	Width (in)
L	40	1.574	1.181
N	60	1.362	1.968
	80	3.149	1.968
	100	3.937	1.968
	120	4.724	1.968
NV*	80	3.149	1.968
	100	3.937	1.968
	120	4.724	1.968
S*	120	4.724	3.070
	160	6.299	3.070
	200	7.874	3.070
	240	9.448	3.070
	280	11.023	3.070
	320	12.598	3.070
ES*	300	11.811	3.070
	400	15.748	3.937
	500	19.685	3.937
	630	24.803	3.937



Diagonal Fabric Reinforcement

Flexowell Fabric Reinforced side-walls are specifically manufactured with fabric inset into the sidewall on a diagonal. The advantage is that the fabric naturally stretches around the pulleys, rather than pulling against itself. This, along with being a much stronger and tighter weave than the competition, makes Flexowell sidewalls the **longest lasting and most durable** in the industry. Additionally, the fabric is sewn together in one continuous run, so there are **no gaps in coverage** over the full length of your belt. Diagonally Fabric Reinforced Side-wall is available in 3" and taller!

Rubber Compounds: *Sidewall / Cleats*

Black Standard | MOR - Oil Resistant | Heat Resistant | Flame Resistant | MSHA approved Flame Retardant

FLEXOWELL Cleats:

Flexowell Cleats are designed to be the toughest in the industry. With the **largest variety of profiles available**, we can engineer your belt to run more efficiently and cleaner than any other brand. Flexowell has over **50 years of design improvements** that have shaped the industry standards and we continue to improve upon others' poorly-designed systems. With a unique design for every style of belt, we can help with the **toughest of applications imaginable**.

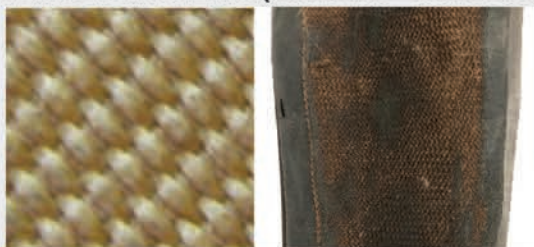
CLEATS					
Type	Height		Type	Height	
T 20	0.787"	20mm	C 35	1.375"	35 mm
T 35	1.378"	35	C 55	2.165"	55
TK 40	1.574"	40	C 75	2.952"	75
T 55	2.165"	55	CK 75	2.952"	75
TK 60	2.362"	60	C 90	3.543"	90
T 75	2.952"	75	C 110	4.330"	110
TK 75	2.952"	75	C 140	5.511"	140
T 90	3.543"	90	TY-G 150	5.905"	150
T 100	3.937"	100	TY-G 190	7.480"	190
T 110	4.330"	110	TY-G 230	9.055"	230
T-G 110	4.330"	110	TY-G 240	9.448"	240
T-G 120	4.724"	120	TC-G 110	4.330"	110
T-G 140	5.511"	140	TC-G 140	5.511"	140
T-G 160	6.299"	160	TC-G 180	7.086"	180
T-G 180	7.086"	180	TC-G 220	8.661"	220
T-G 200	7.874"	200	TC-G 260	10.236"	260
T-G 220	8.661"	220	TC-G 280	11.023"	280
T-G 240	9.448"	240	TC-GS 280	11.023"	280
T-GS 280	11.023"	280	TC-GS 320	12.598"	320
T-GS 300	11.811"	300	TC-GS 360	14.173"	360
T-GS 400	15.748"	400	TC-GS 470	18.503"	470
T-GS 500	19.685"	500	TB-GS 500	19.685"	500
T-GS 600	23.622"	600	TB-GS 600	23.622"	600



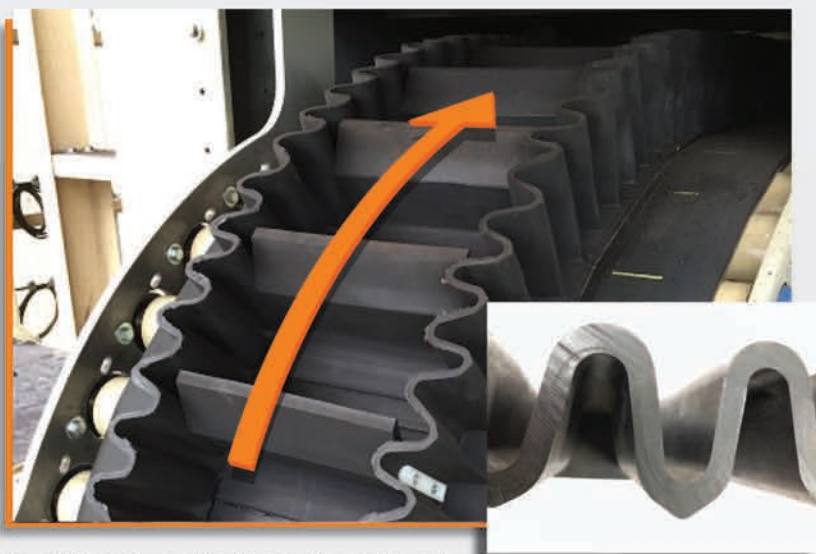
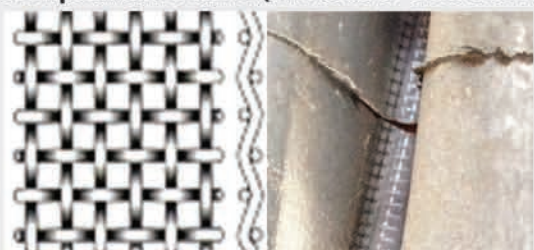
FLEXOWELL Pocket Belt Features and Benefits:

FLEXOWELL Sidewall is the longest lasting and most flexible in the industry. It has been developed over the last **50+ years** and holds up to the abusive demands of our customers in all different industries. Each part of the design and profile on the **FLEXOWELL** sidewall is specifically engineered to get you longer life out of your belt while running cleaner and more efficiently than ever before.

FLEXOWELL FABRIC (starts at 3" and above)



Competitions Fabric (starts at 6" and above)



The fabric is molded into the sidewall on a diagonal which naturally stretches around each bend.

FLEXOWELL Cleats are also specifically designed to be the toughest and longest lasting option out there. For cleats less than 12" tall Flexowell is a **one-part all rubber and fabric** reinforced piece. With the most profile options available, we can meet the needs of our customers' unique systems. Flexowell one part cleats do not need to be replaced like other two-part type cleats. They are strong enough and flexible enough to withstand abuse.



By design, Flexowell cleats are a single part. Through years of testing, one part cleats are longer lasting and cleaner running than two-part cleats that need constant replacement and typically cause more spillage. **ALL FLEXOWELL components are made in Contitech factories under their strict quality control standards. This ensures the components work together in harmony.**



FLEXOWELL Engineering and Design is one of the most beneficial resources for our customers. When looking to replace your belt, have us run our engineering to determine the best way to improve your design. This can result in drastically less spillage / carry back and much longer life out of your belt. Design improvements can cut downtime out, while not making expensive or drastic structural changes to the system. Call today to have one of our In-House Pocket Belt Specialists schedule a visit or complete system survey.

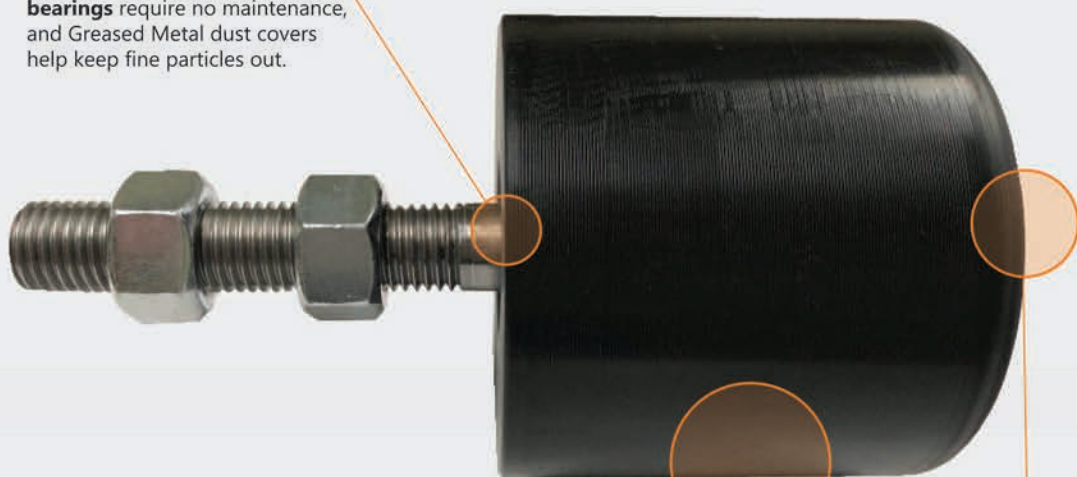
We also provide for our customers:

- **Tracking and Training recommendations** - Either over the phone or in person we can help a team or individual improve the way the belt tracks on your specific system.
- **Splicing and installation advice** - Originally started as a splicing and service company in 1970, Bi-State Rubber has almost 50 years of experience in the field and in our production facility. We can help with proper splicing procedures with your plant or your install company.
- **After Sale value** - Once you have installed your new Flexowell belt, we prefer to continue to help with any questions or recommendations we can offer going forward. Our sales and technical specialists all work out of our St. Louis office. This means we communicate and act on anything our customers need as quickly as possible. We also schedule visits throughout the year to check on our products you use.
- **Overall system diagnostics** - Many of our customers get added value by having us provide a full system survey. This includes a full walkthrough of the system, on-site, by one of our Flexowell technical specialists, and a multi-page report with findings, immediate fixes, and future recommendations.



Bi-State Rubber UHMW Stub Idlers:

Dual internal sealed bearings require no maintenance, and Greased Metal dust covers help keep fine particles out.



Solid **UHMW Shell** has a very low coefficient of friction allowing the belt to slide gently across the face, in the event of a failure. This means no damage caused to the Pocket Belt as seen on steel can idlers.

Completely smooth **Radius Nose** helps protect sidewall and base belt when tracking too heavy on one side.



Bi-State Rubber Stub Idlers are the result of technological advancements and design improvements that vastly improve their function over traditional, steel can idlers. To start, the UHMW surface has a much lower coefficient of friction that prevents any damage done to the sidewall and base belt of a Flexowell system. This is a solid UHMW part and not an overlay on top of steel. This means in a worst case scenario if the idler were to lock up, the belt glides gently across the surface. The front nose has a solid UHMW radius curve that protects the sidewall if the belt were to track off, which is a common cause of heavy sidewall damage when using steel can idlers. The bearings are packed and sealed inside the unit and do not require any maintenance. We custom make to your specific needs, or choose from the in-stock sizes listed below!

Common Stock Sizes [Custom sizes by request]

6" dia x 6" face x 1-1/8" dia shaft
(CEMA-D RATING)

5" dia x 5" face x 3/4" dia shaft
(CEMA-C RATING)

5" dia x 5" face x 1" dia shaft
(CEMA-C RATING)



Custom made Mounting Brackets Available!



Bi-State Rubber Guide Wheels:

FLEXOWELL Guide Wheels are made to protect your belt and provide the longest life possible out of your system. One of the largest contributors leading to pocket belt replacement is the belt tracking off into structure and damaging the sidewall or belt edge. **BSR Guide Wheels** are offered in **12" diameter rubber**, or **8" dia urethane**, and are designed to run along the belt edge protecting it from damage. Along with the Guide Wheels, we also offer custom made **adjustable Mounting Brackets**. These allow you to move the wheel closer or farther from the belt edge, in order to correct a stubborn area or properly keep the belt in place. The rubber-on-rubber contact is much less abrasive to the belt edge than conventional metal wheels.

8" dia Urethane Guide Wheel



12" dia All Rubber Guide Wheel
BSR-FRG-260



Mounting Bracket Options:

8" Urethane GW Brackets



Screw Take-up Design

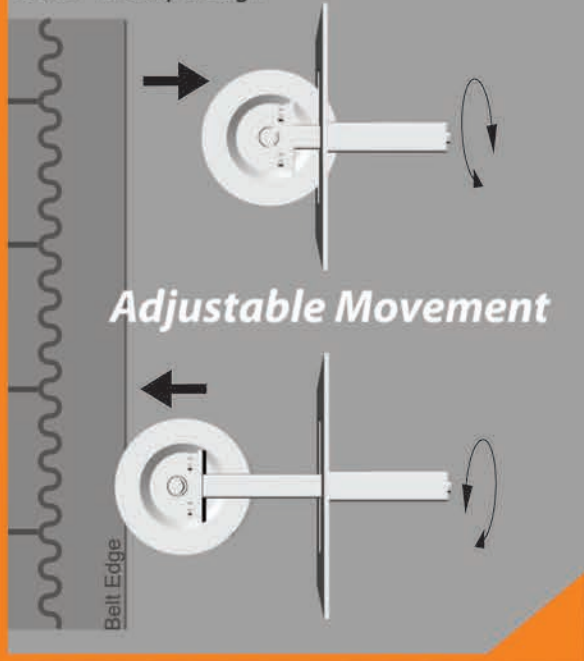


Open Frame Design

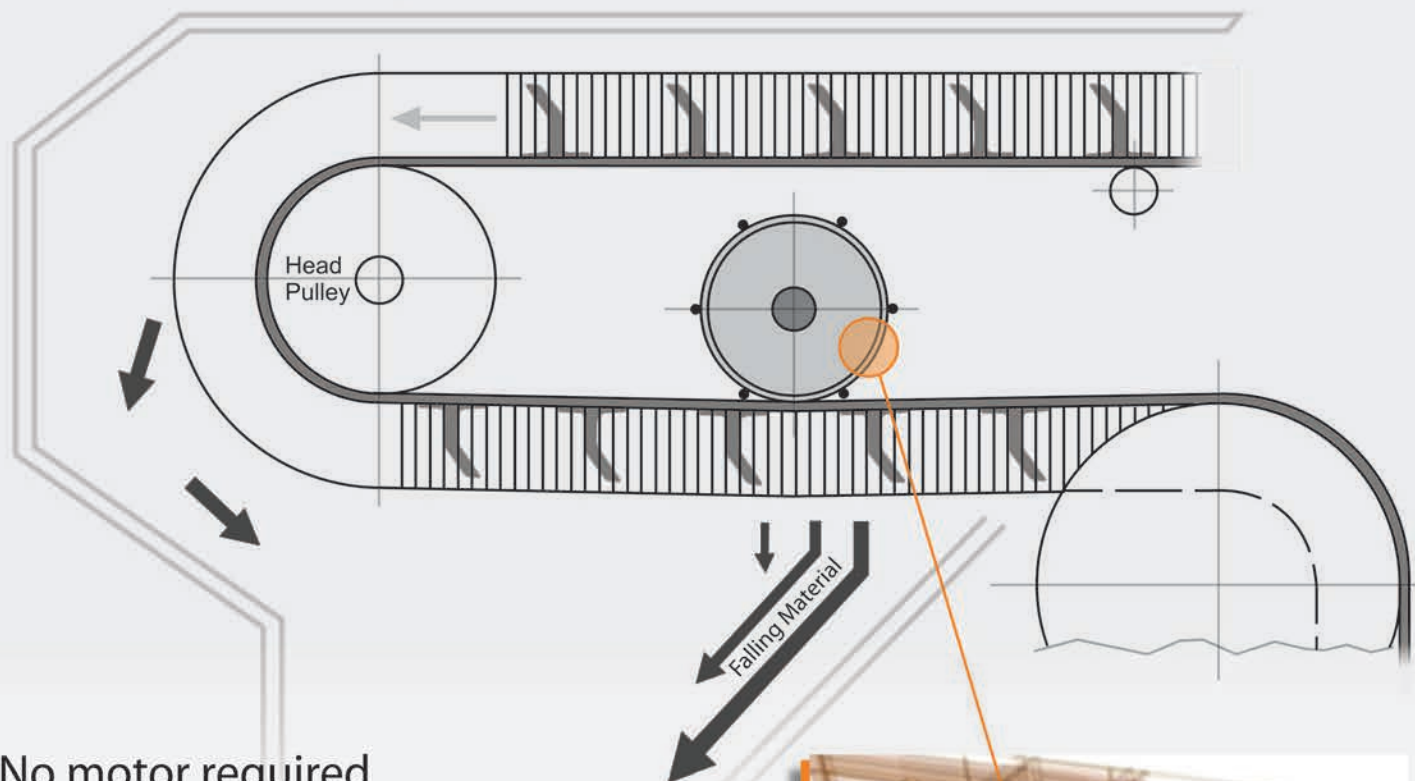
12" Rubber Guide Wheel Screw Take-up Bracket



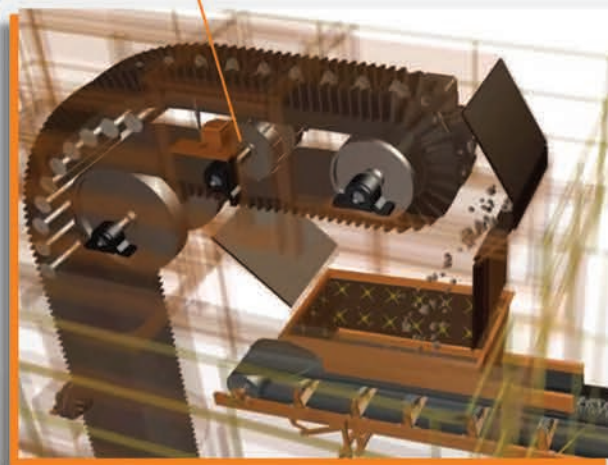
Screw Take-up Design



FLEXOWELL Cleaning / Beater Pulley:



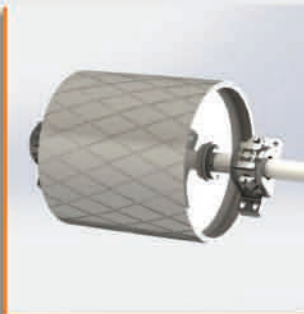
- **No motor required**
Driven by contact with base belt
- **Least abrasive to base belt**
Will not deteriorate base belt by like other cleaners
- **No extra moving parts**
Compared to other cleaning devices with multiple bearings, rollers, and moving parts that often fail.
- **Side to side rocking and thumping**
Alternating lugs help to stretch out sidewall convolutions getting more material out of the pocket.
- **Custom made to fit your system**
Based on your belt design, speed, and head pulley diameter



Pocket Belt Pulleys / Deflection Wheels:

Bi-State Rubber offers a full line of Pulleys, Idlers, and Wheels, to keep your Pocket Belt system running smoothly. Pulleys are engineered specifically for each system and are custom made to fit.

Head / Tail / Bend Pulleys



Head Pulley

Engineered Class Drum pulley with rubber lagging. Must meet minimum diameter to protect sidewall.

Nose Over Rollers



Nose Over Rollers

Cema rated with live shaft or dead shaft bearings. It is important to have the correct number of rollers per your incline angle.

Guide Wheels



Guide Wheels

Help to keep belts from tracking off into structure that could damage the edge and sidewall.

Deflection Wheels

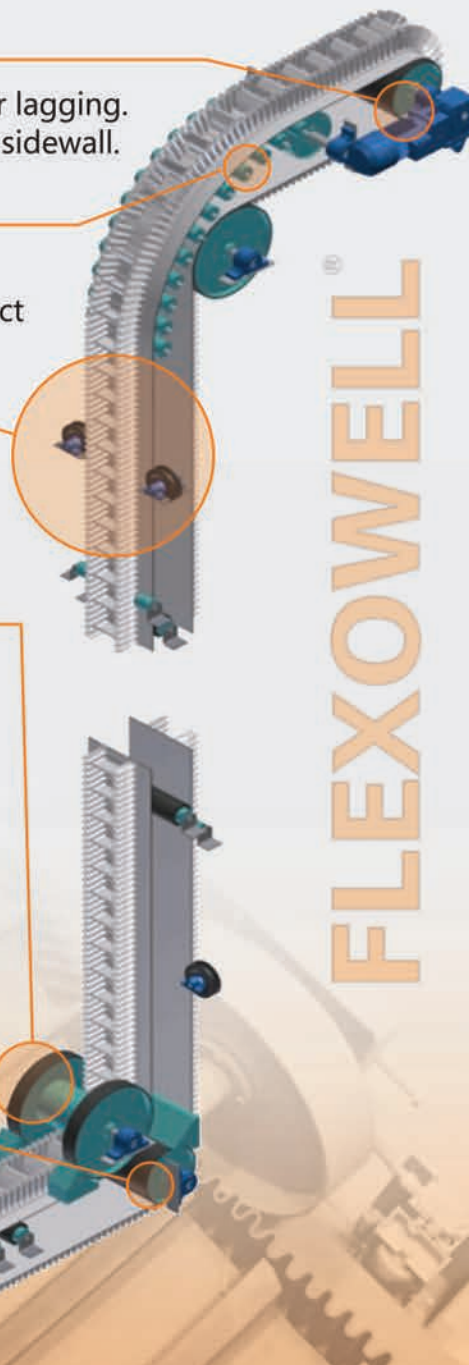
Deflect the belt from a horizontal plane into either an incline or vertical. Base belt must be sufficient quality to support the weight across these wheels.

Deflection Wheels



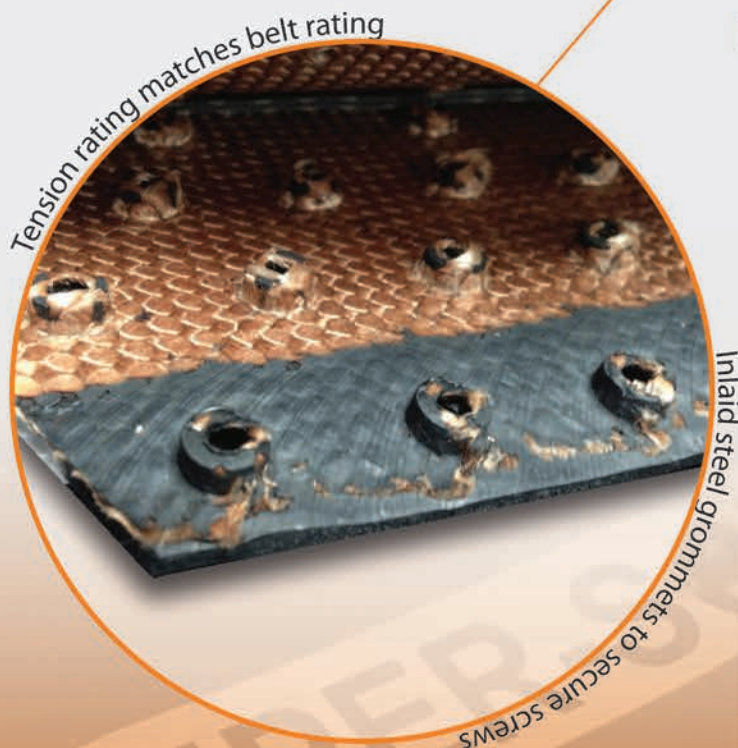
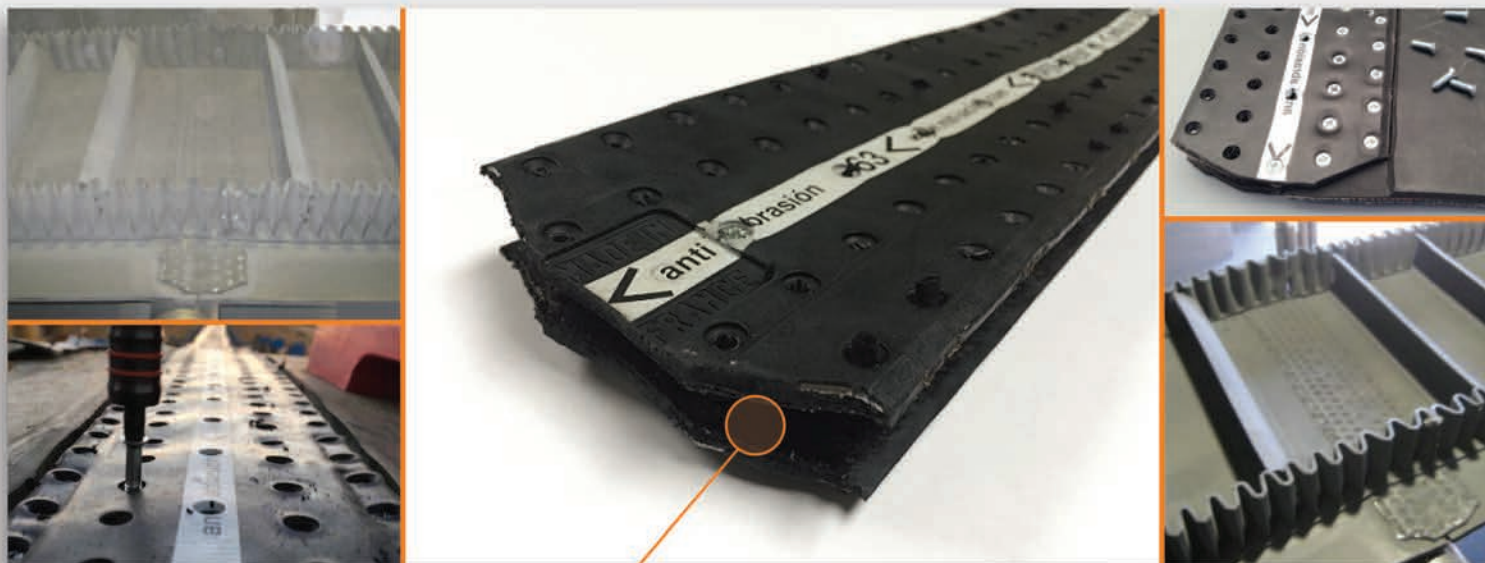
Tail and Bend pulley

Like our other pulleys, these must be the correct minimum diameter in order to protect the sidewall, and prevent unnecessary spillage.



Super Screw Flexible Fastener:

Super Screw Fastener is a mechanical rubber fastener, reinforced with a multi-ply textile carcass and steel inserts. The fastener is attached to the belt using self-tapping screws, and no special tools required. This is a leakproof joint with no hinge, which means no material can sift through the splice. Screws reach farther back into the belt which provides for better holding strength. Splice strength is comparable to a vulcanized splice, yet can be installed in hours.



Key Points:

- Made to match the tension of your belt
- Can be ordered in width needed or in rolls to keep on hand
- Angled or Perpendicular splice
- Common Rubber Compounds available
 - Abrasion Resistant - MOR - MSHA
 - HOT 400 F - Stainless Steel
 - Food Grade - Slider Bed -
- Used as main splice or Repair patch
- Highly Flexible and leak proof
- Longer lasting than metal fasteners
- As strong as Vulcanized splice but installed mechanically using hand drill.

Packaging:

1. All Steel Frame Crate

- Custom made to fit your exact belt. Can also be made to fit in tight installation areas or storage areas.
- Over engineered so that it can be picked up and moved with forklift or crane. Lifting lugs can be added on top rails.



2. Optional UV Resistant Snow load Cover

- Keeps belt new for long-term storage.
- Protects belt from all outside elements including snow, rain, sun.
- We also offer complete shrink wrap with heat sealed plastic.
- Steel reinforced roof protects from cave-ins. Grommets along bottom keep secure.



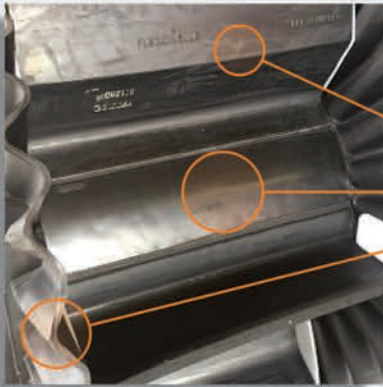
3. Weather Resistant HD Cores

- No Styrofoam or cardboard to rot and fail causing crushed sidewall.
- Core diameter exceeds our minimum pulley diameter for sidewall stretch.



FLEXOWELL®

The number 1 choice, worldwide!



All FLEXOWELL made components

Base Belt, Sidewall, and Cleats are all made to work together giving you the longest belt life in the industry.



UHMW Spill Plates and Special Screw Reinforcement

UHMW Spill plates prevent un-needed wear to the belt that is caused by thin flimsy steel plates. Special screws grab ahold of the fabric reinforcement and prevent backing out.



Flexowell branded components

Flexowell products are branded so that you know they are made to work together.



- Most installations - 63,000+
- Most Experienced - Since 1964
- Highest lift - 905ft vertical
- Highest Tension - 4560 PIW
- All FLEXOWELL® made components
- Branded FLEXOWELL® components
- Presence in 45 countries
- Tallest Sidewall at 24.8"

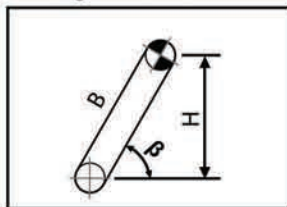
FLEXOWELL

Steep Incline and Vertical Conveying

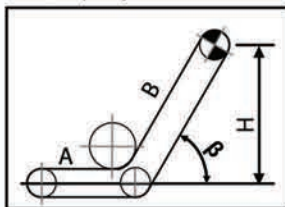
Belt Worksheet

Company: _____ Date: _____ Phone: _____
Address: _____ City / State: _____ Postal Code: _____
Contact: _____ Email: _____ Fax: _____

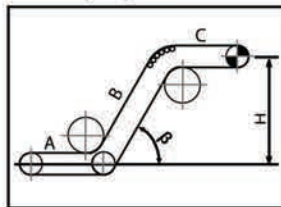
1. Straight inclined



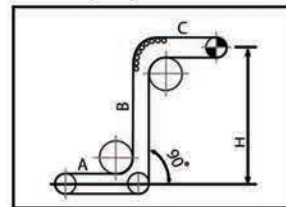
2. L-shape system



3. S-shape system



4. S-shape system vertical



Layout above (Circle #): 1. 2. 3. 4. 5. Other _____

'A' Feeding: _____ ft 'C' Discharge: _____ ft 'β' Incline Angle: _____ deg

'B' Incline Length: _____ ft 'H' Lift Height: _____ ft Vert. Belt twist (Yes / No): _____ ft

Type of material: _____
(list all if more than one)

Capacity: _____ stph Max Lump Size: _____ in. Density: _____ lbs/ft Moisture: _____ %

Temperature: _____ deg F. Rubber Comopund: Circle all that apply below

Black Standard | MOR - Oil Resistant | Heat Resistant | Flame Resistant | MSHA Flame Retardant

Splice Area: Circle One

Open Ended: extra feet needed _____ | Vulcanized Endless | Mechanical: Type _____

Base Belt Discription: _____ # of Plys in Base Belt / Tension rating: _____

Belt Width (Bw): _____ Belt Length: _____ Sidwall height (Sh): _____

Sidwall Recess (From belt edge) (in): _____ Inside sidewall dist. (Ew): _____

Sidwall Fabric Reinforced? Yes / No Sidwall width (Sw): _____

Sidwall screw Reinforced (into cleats)? Yes / No

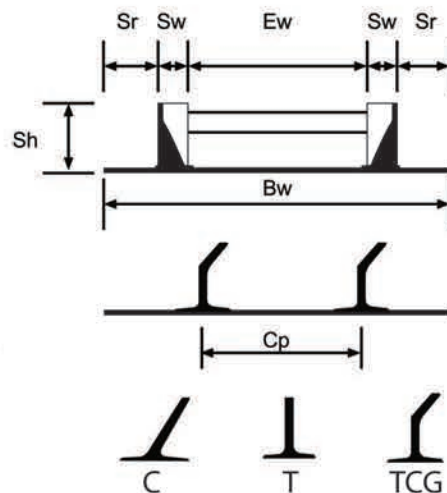
Cleat height: _____ Center to center Cleat Spacing (Cp): _____

Cleat profile type: 'C' --- / 'T' --- ⊥ 'TCG' --- ∩ Other: _____

Pulley Diameters: Head: _____ Tail: _____ Deflection: _____

Winged Pulleys: Yes / No Current Belt Speed: _____

Additional Information: _____





BI-STATE RUBBER

1611 Headland Dr. Fenton, MO 63011

Phone: (1+) 636-349-2388

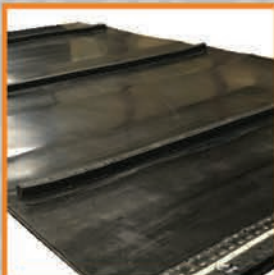
Fax: (1+) 636-349-2393

Other Items offered by Bi-State Rubber:



Weigh Feeder Belts

Vacuum and Material Handling Hoses



Magnetic Separator Belts

Flue Duct and Spool Type Expansions Joints



Tumble / Shot Blast Belts

Conveyor Flat Belting



Argonics Belt Scrapers and Skirting

Air Slide Materials - Needled and Woven



Van Gorp Pulleys

Boots and Bellows



www.BISTATERUBBER.com