

From: Mike Stanton <mstanton@anchor-technical.com>
Sent: Tuesday, July 14, 2020 8:02 PM
To: Jeremy Weinstein
Subject: FW: Anchor - Silo Conveyor
Attachments: Copper Plant_Upturn Bend.MOV; Beltwall_Web.pdf

External Sender: Use caution with links/attachments

Hi Jeremy,

We took another look at the incline conveyor to silo application and came up with good option. It would have a much smaller footprint while providing the necessary capacity. The sidewall belt video which I attached is moving copper ore up a 50 degree incline. But it gives you an idea of the concept. The video is looking down on the lower horizontal section, up-turn deflection wheels and incline section. We've already put together a design for the belt based on 500 TPH. That capacity and corresponding belt width can be changed as necessary. I know you looked at Cambelt but this manufacturer, Beltservice, has some different fabrication capabilities. I worked for Beltservice for a few years and I am very familiar with this type of belt and conveyor. I would like to get their Engineer on a Teams meeting with you and I if you can spare a few minutes. When would be a good time for you?

Thanks Jeremy,

Mike Stanton
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Cell# 817-223-2155
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Fort Worth, TX 76179
mstanton@anchor-technical.com



www.anchor-technical.com

From: Mike Stanton
Sent: Thursday, July 2, 2020 7:13 PM
To: Jeremy Weinstein <Jeremy.Weinstein@solarisoilfield.com>
Subject: FW: Anchor - Belt Pulley Scale

Hi Jeremy,

Last time I bother you today. I believe you said that you tested a new conveyor belt with flanges/sidewalls. I come from a belting background and maintain good relationships within the industry. We would appreciate the opportunity to source that belt for you. We can even put together a turnkey proposal to include the belt, load cells/weigh components and installation most likely done at a Solaris location. Please let me know if that appeals to you and/or any of your folks.

Have a great weekend!

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From: Mike Stanton
Sent: Thursday, July 2, 2020 11:43 AM
To: Jeremy Weinstein <Jeremy.Weinstein@solarisoilfield.com>
Subject: Anchor - Belt Pulley Scale

Hi Jeremy,

Thanks again for taking time out this morning. As we discussed, we would be willing to send you a pulley belt scale for testing at no cost to Solaris. Below is a list of features and benefits. Something I don't believe we discussed is that you can run all of the scales into a single RD3 display.

- Measures amp draw off of the conveyor's electric drive motor
- Run up to 16 scales into a single RD3 display (can be wireless)
- 1-2% accuracy
- No maintenance required
- No moving part
- No mechanical modifications to the conveyor
- Minimal installation time
 - Might require modification to method of discharge of the silo
- Cost is comparable to your current system

Thanks!

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BELTWALL

CORRUGATED SIDEWALL BELTING



Design Data Form

Email Completed Form To: beltwall@beltservice.com

Customer Name: _____
Street Address: _____
City / State / Zip: _____
Reference: _____

Contact Name: _____
Contact PH / Cell: _____
Contact Email: _____
New Project ☐ Replacement Belt ☐

Material Data (circle imperial / metric dimensions)

Material: _____
Max. Design Capacity: _____ STPH / MTPH
Bulk Density: _____ lb/ft³ / t/m³
Angle of Repose: _____ °
Lump Size: Min. _____ Max. _____ (in / mm)

Ambient Temperature: Min. _____ Max. _____ (°F / °C)
Material Temperature: Min. _____ Max. _____ (°F / °C)
Oily Condition: YES ☐ NO ☐
Moisture: _____ %
Belt Width Preference: _____ (in / mm)
Belt Speed Preference: _____ (ft/min / m/s)

* Provide sieve analysis if available. If sieve analysis not available, indicate % of min/max. Measure max lump size in any dimension.

Conveyor Configuration (New or Existing)

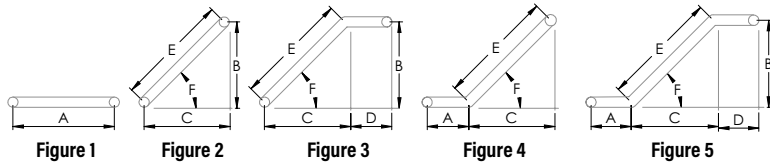


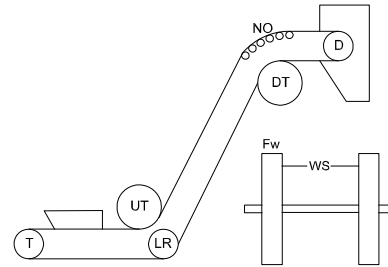
FIG. NO. _____ (Include unit of measure)

A _____ C _____ E _____
B _____ D _____ F _____

Existing Conveyor and Belt Information (if applicable)

Conveyor:

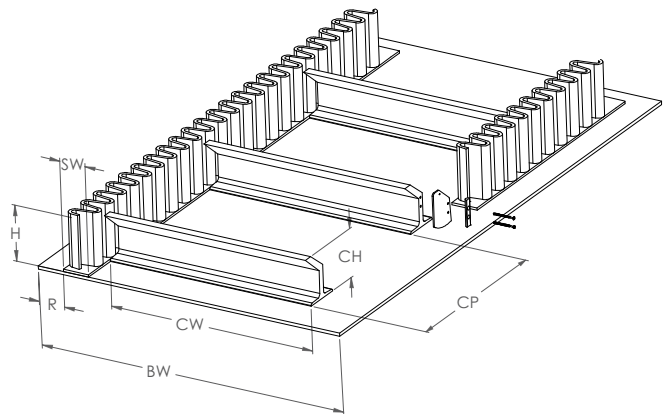
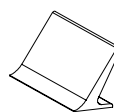
Drive (D): _____
Tail (T): _____
Lower Return Bend (LR): _____
Noseover (NO): _____ (Pulley or Roller Curve)
Downtime Deflection (DT): _____ x FW _____ x WS _____
Upturn Deflection (UT): _____ x FW _____ x WS _____



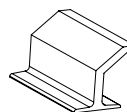
Belt:

include units of measure

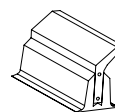
Belt Endless Length: _____
Belt Width (BW): _____
Belt rating (PIW, N/mm): _____
Top Cover Gauge: _____
Bottom Cover Gauge: _____
Cover Compound: _____
No. of Tension Plies: _____
Type of Cross Rigid Plies: _____
Cut Edge or Molded Edge: _____
Splice Type: _____
End Preparation: _____
Sidewall Height (H): _____
Sidewall Base Width (SW): _____
Sidewall Recess (R): _____
Cleat Type (C, I, S, 2 Piece): _____
Cleat Height (CH): _____
Cleat Pitch (CP): _____
Cleat Width (CW): _____
Sidewall bolted to cleat (Y/N): _____
Spill Plate Installed (Y/N): _____
Spill Plate Material: _____



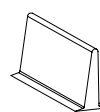
C - Rubber



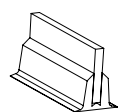
S - Rubber



S - 2 Piece



I - Rubber



I - 2 Piece

Notes: _____

HIGH-INCLINE CONVEYING

Beltwall has over 40 years of design and fabrication experience producing the highest quality steep incline conveyor belts in the market. Large savings make steep incline conveyors an economical alternative to conventional trough conveyors.



Beltwall's engineering team reviews each application to ensure efficiency and the lowest cost per ton conveyed. Optimum service and support are provided for new projects including:

- ▶ Initial Layout and design review
- ▶ Belt specification and calculations
- ▶ Top of foundation budget cost studies

Site surveys are commonly performed on existing systems. Recommendations can be made for enhancing the belt specification as well methods to improve the system's performance.

Features:

- ▶ Increased splice service factor through the use of two high strength, low stretch cross-rigid plies
- ▶ Reduced sidewall crack propagation through special fiber loaded compound
- ▶ Strongest cleat and sidewall bond through vulcanization
- ▶ Replaceable urethane cleat blades that maintain carrying capacity under heavy loads for the life of the belt

COMPOUNDS

SBR

Black Standard High Abrasion Resistant (*SBR*) Rubber

HR

Black Heat Resistant (*HR*) Rubber

OR

Black Moderately Oil Resistant (*MOR*) and Super Oil Resistant (*SOR*) Rubber

FDA

White FDA Rubber

FR

Black Flame Retardant (*FR*) Rubber

OTHER

Other compounds meeting specific DIN standards available

BASE BELTS

BWX-MI

Fabric PP(*EE*) or PN(*EP*) tension plies with monofilament or fiberglass cross rigid plies.
Typical belt ratings: 220PIW - 1000PIW (*EP400-EP1750*).

Stocked Specs:

BWX2222MI - 220PIW, 2+2 Ply - SBR, MOR, HR

BWX3332MI - 330PIW, 3+2 Ply - SBR, MOR, HR

BWX4442MI - 440PIW, 4+2 Ply - SBR



BWX-SC

Fabric PP(*EE*) or PN(*EP*) tension plies with special steel breaker (*SC*) cross rigid plies.
Typical belt ratings: 220PIW - 1000PIW (*EP400-EP1750*).

For applications involving wider belts yet still within the tension demand of an EE/EP belt. Also used in harsh applications for cut and puncture resistance.

Special Order



BWX-ST+SC

Steel Cords with special steel breaker (*SC*) cross rigid plies.
Typical belt ratings: ST1600 to ST4000.

For high vertical lift applications requiring ST belt ratings.

Special Order



CLEATS



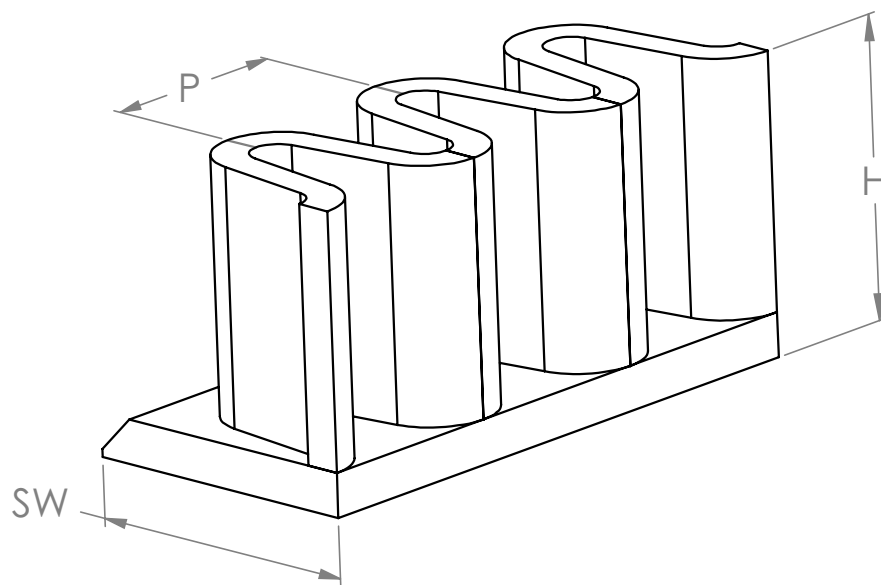
	Height		I-Cleat	C-Cleat	S-Cleat	Minimum Pulley	
	in.	mm.				in.	mm.
Single Piece Rubber Cleat	0.5	13	✓			3	75
	1	25	✓	✓		4	100
	1.5	38	✓	✓		6	150
	2	51	✓	✓		6	150
	2.5	64	✓	✓		8	200
	3	76	✓	✓		10	255
	3.5	89	✓	✓	✓	10	255
	4	102	✓	✓		10	255
	4.5	114	✓		✓	12	305
	5	127	✓			12	305
	5.5	140			✓	16	400
	6	152	✓			20	500
	7	178	✓		✓	20	500
	9	229	✓		✓	24	610
	11	279			✓	36	915
Two Piece Rubber Base Urethane Blade	5.5	140	✓		✓	16	400
	7	178	✓		✓	16	400
	7.5	191	✓		✓	16	400
	9	229	✓		✓	16	400
	9.5	241	✓		✓	16	400
	11	279	✓		✓	16	400
	11.25	286	✓		✓	36	915
	14.5	368	✓		✓	36	915
	15.25	387	✓		✓	36	915

Note: All Cleats are hot vulcanized, 6" I-Cleat available in standard and heavy duty

SIDEWALL

							SBR / HR		OR / FR / FDA	
	Height (H)		Base Width (SW)		Pitch (P)		Min. Pulley		Min. Pulley	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.
Non-Fabric Reinforced	1	25	1.5	38	1	25	4	102	8	203
	1.5	38	1.5	38	1	25	4	102	8	203
	2	51	1.5	38	1	25	6	152	8	203
	2.5	64	1.5	38	1	25	8	203	12	305
	2.5	64	2.0	51	1.5	38	8	203	12	305
	3	76	2.0	51	1.5	38	10	254	12	305
	4	102	2.0	51	1.5	38	10	254	14	356
	5	127	2.0	51	1.5	38	12	305	16	406
	6	152	2.0	51	1.5	38	16	406	20	508
Fabric Reinforced	6	152	3.125	79	2.5	64	16	406	20	508
	8	203	3.125	79	2.5	64	20	508	24	610
	10	254	3.125	79	2.5	64	24	610	30	762
	12	305	3.125	79	2.5	64	36	914	48	1219
	12	305	4.125	105	3.5	89	36	914	48	1219
	16	406	4.125	105	3.5	89	42	1067	54	1372

Notes: White FDA available in 1.5" and 2.1875" base widths and 1" - 5" heights. | Fabric reinforcement available in 2.0" base width and metric heights 60mm, 80mm, 100mm, and 120mm. | Fabric reinforcement available in 3.0" base width and metric heights 160mm, 200mm, and 240mm.



SIDEWALL BOLTED TO CLEATS

Sidewalls can be bolted to the ends of the cleats using an insert and two screws. This minimizes gaps between the sidewall and cleat thus reducing potential for product entrapment. For taller sidewall and cleat combinations, bolting prevents sidewall from leaning outward and cleats flexing backwards under heavy loads. Standard hardware: galvanized, stainless, and Grade 8. Standard inserts: aluminum and plastic.



SPILL PLATES

Designed to contain small, granular, or free-flowing materials conveyed at steep incline angles. Spill plates are installed on each end of the cleat, effectively blocking the adjacent sidewall convolution and preventing flow past the cleat into the following cleat pocket.

Spill plates can also minimize product entrapment in the sidewall convolutions and subsequent carryback. The plates are available in mild steel, stainless steel, and polyethylene (*Tivar*®, *UHMW*)



PACKAGING

STANDARD



Best if belt will be installed within one year from shipment.

Recommended for indoor storage.

Standard diameter tubes and reels and Styrofoam used to support the belt laps on the skid.

Can be stacked/lapped double wide on the skid if necessary and if overall belt width permits.

Optional export grade wood panels installed on sides and top to protect the belt during shipment.

OPTIONAL LONG TERM INDOOR / OUTDOOR



Best if belt will be stored for greater than one year from shipment.

Oversized tubes and reels and Styrofoam are used to support the belt laps on the skid and prevent sidewall deformation.

Belt stack is wrapped in heat shrink black UV protection film.

Belt stack should be single wide in order to avoid belt twist that is necessary if stacked double wide.

Certain belt configurations may dictate that double wide stack is more practical.

Export grade wood panels are installed on sides and top to protect the belt and custom fitted tarp is installed over the top of the skid. (*Outdoor Only*)

REPLACEMENT BELTS

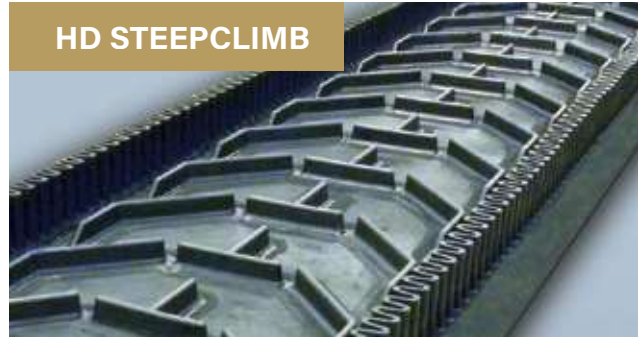
OEM and replacement sidewall belts for the frac sand industry are available in cross rigid and non-cross rigid multi-ply construction with vulcanized sidewalls and cleats. Below are several of the more common configurations.

SIDEWALL ONLY



- Belt: 2-ply 220PIW Black Standard, 1/8" x 1/16"
- Widths: 24", 30", and 36"
- Sidewall: 2-1/2" or 3" tall and flush to belt edge
- Min. pulley diameter 10"

HD STEEPClimb



- Belt: 4-ply 220PIW Black Standard cross rigid, 1/8" x 1/16"
- Widths: 24", 30", and 36"
- Sidewall: 3" or 4" tall and recessed from belt edge
- Min. pulley diameter 12"

(call for dimensions)

I-CLEAT



- Belt: 4-ply 220PIW Black Standard cross rigid, 1/8" x 1/16"
- Widths: 24", 30", and 36"
- Sidewall: 3" or 4" tall and recessed from belt edge
- Min. pulley diameter: 10"

HD NUB BELT



- Belt: 2-ply 220PIW Black Standard, 3/16" x 1/16"
- Widths: 24", 30", and 36"
- Sidewall: 3" tall and hot bonded to belt edge
- Min. pulley diameter 10"



beltservice.com

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