

Flex-Lag[®] Hot Vulcanised Pulley Lagging

Installation, Operation and Maintenance Manual

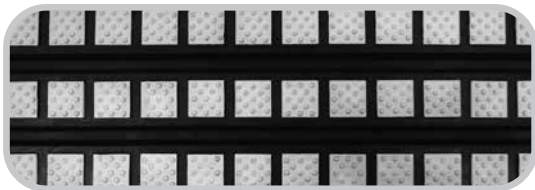
Diamond-Pattern Rubber



Diamond-Pattern Ceramic (15%)



Medium Ceramic (39%)



Full Ceramic (80%)



Flex-Lag® Hot Vulcanised Pulley Lagging

Purchase Date: _____

Purchased From: _____

Installation Date: _____

This information will be helpful for any future inquiries or questions about replacement parts, specifications or trouble shooting.

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Section 1 – Important Information

1.1 General Introduction

We at Flexco are very pleased that you have selected Flex-Lag® Hot Vulcanized Pulley Lagging for your conveyor system.

This manual will help you to understand the operation of this product and assist you in making it work to its maximum efficiency over its lifetime of service.

It is essential for safe and efficient operation that the information and guidelines presented be properly understood and implemented.

If, however, you have any questions or problems that are not covered, please contact your local field representative or customer service department.

Customer Service: 612-8818-2000

Visit www.flexco.com for other Flexco locations and products.

Please read through this manual thoroughly and pass it on to any others who will be directly responsible for installation, operation and maintenance of this pulley lagging. While we have tried to make the installation and service tasks as easy and simple as possible, **it does require correct installation and regular inspections to maintain top working conditions.**

1.2 User Benefits

Correct installation and regular maintenance will provide the following benefits for your operation.

- Eliminate belt slippage
- Reduced conveyor downtime
- Reduced man-hours
- Lower maintenance budget costs
- Increased service life for the lagging and pulley
- This method provides the sealing of joints and edges, to reduce ingress of moisture and other contaminants. Suitable for standard and crowned pulleys.
- Increased Metal to Rubber adhesion.
- Suitable for Ceramic, Diamond and Crowned Lagging

Section 2 – Safety Considerations and Precautions

Before installing and operating Flex-Lag® Pulley Lagging, it is important to review and understand the following safety information.

2.1 Stationary Conveyors

The following activities are performed on stationary conveyors:

- Installation

WARNING

Use Personal Protective Equipment (PPE):

- Safety eyewear (splash goggles optional)
- NIOSH-approved air respirator with organic vapor cartridge (if ventilation is not available as recommended in enclosed Safety Data Sheets)
- Hardhat
- Long-sleeve shirt
- Safety footwear
- Apron (optional)
- Nitrile gloves

Close quarters and heavy components create a worksite that compromises a worker's eyes, feet and skull. PPE must be worn to control the foreseeable hazards associated with conveyor lagging. Serious injuries can be avoided.

Section 3 – Pre-installation Checks and Options

3.1 Checklist

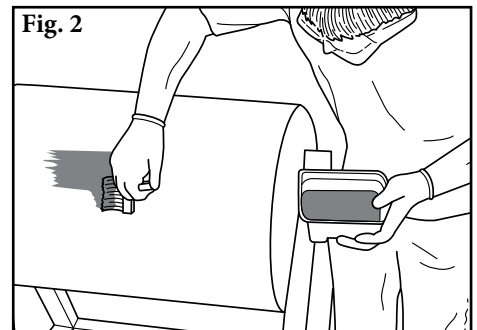
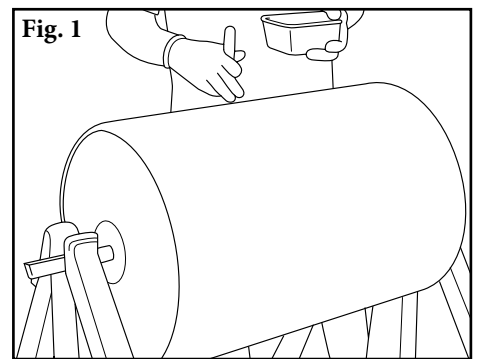
- Check that the lagging size is correct for the pulley width
- Check that the correct amount of lagging strips are available to lag the pulley
- Review the “tools needed” list on the top of the installation instructions
- Check that the correct amount of adhesive and primer are available

Section 4 – Installation Instructions

Equipment Needed:

- Metal Primer, Chemlok® 205
- Chemlok® 220
- Ty-Ply®
- 1612 Rubber to Rubber Bonding Solution
- Solvent
- Pressure/Packing Strips
- 75mm Silk Curing Tape
- Silicon Paper
- Staple Gun
- Paint Brushes
- Paint Roller
- Heavy Duty Knife or Oscillating Tool
- Rubber Hammer
- Lagging Knurled Stitcher and 50mm Flat Roller
- Electric Buff (low RPM recommended)
- 24 Grit Flap Disc

1. **Metal Preparation.** Ensure the pulley face is sandblasted prior to using the hot vulcanising method to adhere lagging to the pulley. The added abrasion that sandblasting provides allows the bonding chemicals to absorb into the pulley shell, creating the strongest bond possible.
2. **Prior to beginning work,** clean the surface of the pulley using a brush and non-oil-based metal solvent to clean any remaining particles from the pulley surface (Fig. 1).
3. **Paint the pulley surface** with metal primer, Chemlok® 205. Leave for half an hour or until dry (Fig. 2).
4. **Coat pulley with Chemlok® 220.** Leave for half an hour or until dry.
5. **Coat pulley with Ty-Ply®.** Leave for half an hour or until dry. Not essential but allows strips to be repositioned.
6. **Apply first coat of brushing solution** 1612 Rubber to Rubber Bonding Solution onto the pulley. Leave for half an hour or until dry.



Hot Vulcanization Lagging Strip requirement

Pulley Diameter	Strips req.	Pulley Diameter	Strips req.
320-381	6	1083-1145	18
382-445	7	1146-1210	19
446-510	8	1211-1273	20
511-573	9	1274-1336	21
574-636	10	1337-1400	22
637-700	11	1403-1463	23
701-764	12	1466-1527	24
765-827	13	1529-1590	25
828-891	14	1593-1654	26
892-955	15	1656-1717	27
956-1018	16	1720-1781	28
1019-1082	17	1783-1844	29

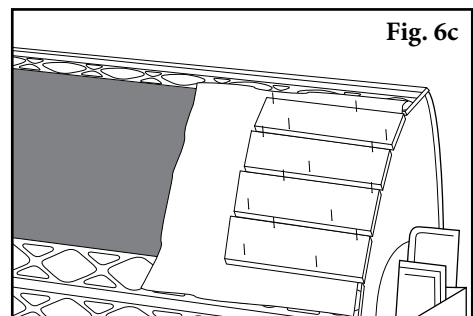
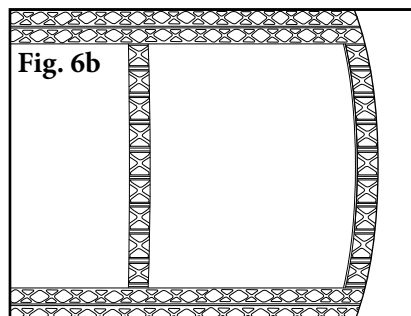
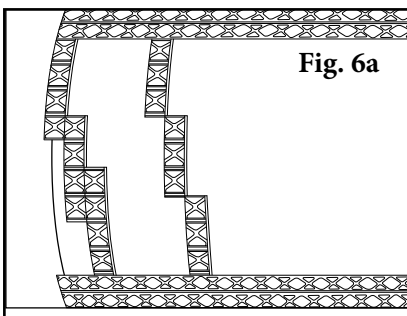
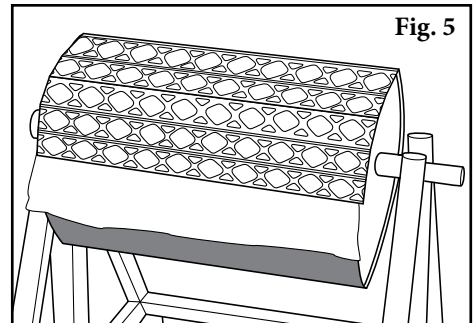
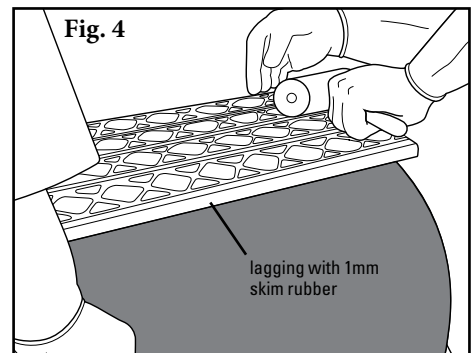
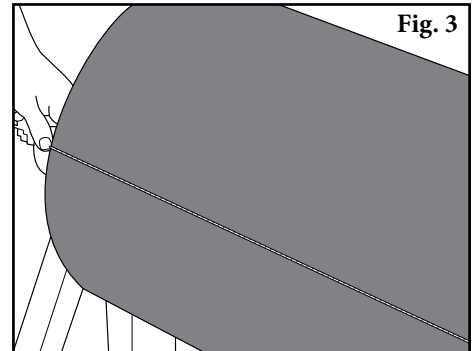
Section 4 – Installation Instructions

7. **Whilst waiting for the solutions to dry**, prepare the lagging. Check the backing for imperfections and foreign bodies.
8. **Use a solvent to clean** the back and edges of the lagging.
9. **After the adhesive has dried completely**, mark a line across the pulley face using a chalk line or scribe, ensuring the line is parallel to the shaft's centreline and square to the edge of the pulley (Fig. 3).
10. **Install one strip of lagging**, using the perpendicular line to assure the strip is square to the pulley. Working out from the centre of the strip, use a dead blow rubber hammer for tamping to remove air gaps (Fig. 4), ensuring all surface area receives at least one hammer blow. Use a 6mm stitcher to remove air gaps from drainage grooves and sipes. Be sure to check edges to verify seal.

Continue to apply adjacent strips around the pulley paying particular attention to the joins and centering the strips accurately. The silicon paper can assist with this step. The silicon paper must be removed after edges are aligned and before the rest of the strip is hammered down (Fig. 5).

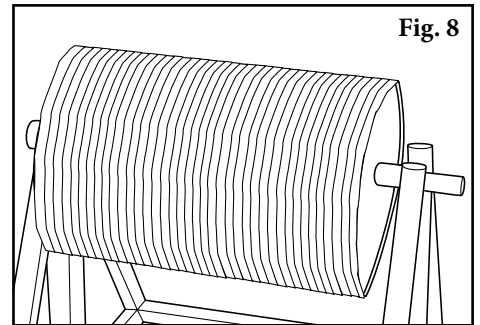
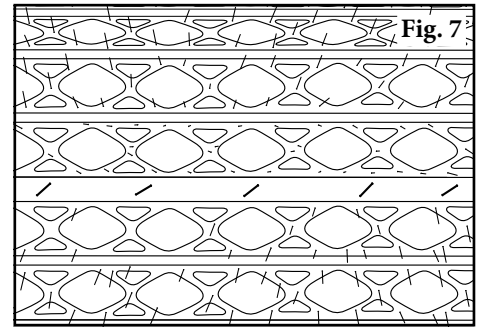
11. **Trim the excess lagging from applied strips**, leaving 20-30mm of overlap at the edge of the pulley. This can be done with an Olfa knife or oscillating tool. The final trim should be done after the autoclave process.
12. **To apply the last 3-4 strips**, position cut off pieces of lagging from step 14 in the unlagged portion of the pulley. Manipulate the pieces (Fig 6a-c) to determine trim requirements for the last few strips. Trim the pieces in the sipes to find the proper fit. Use the pieces as templates to trim the last few strips of lagging.

Note: Final strips should not consist of less than three strips of Lagging.



Section 4 – Installation Instructions

13. Follow steps 13 and 14 to install the last 3-4 strips. The final piece of lagging (largest of final pieces) should be manipulated into position.
 14. Apply pressure/packing strips into butt joints and staple into place. The packers are to apply pressure to the joints and stop any spewing of rubber during the curing process (Fig. 7).
 15. Wrap the lagged pulley with a 75mm silk curing tape as tightly as possible, secure with staples. The silk should be wet and applied under tension to create a good amount of pressure, to achieve the best result (Fig. 8).
 16. Bond the lagging to the pulley shell by curing in autoclave as per below chart.
- Note:** The curing times start when the autoclave comes up to the minimum curing temperature.
17. Remove the pulley from the autoclave. Allow to cool before removing the silk.
 18. Once the silk tape and packing has been removed, trim the edges flush with the pulley edge. Inspect all joints and edges for correct adhesion before completing a final inspection before shipping.



Curing Methodology

Pulley Weight	Curing Time	Pressure	Temperature
Up to 1000Kg	3 hrs	450-500kpa	130-140 Celsius
1000 – 4999kg	4 hrs	450-500kpa	130-140 Celsius
5000kg and above	5 hrs	450-500kpa	130-140 Celsius

Section 5 – Maintenance

5.1 Lagging Maintenance Checklist

Site: _____ Inspected by: _____ Date: _____

Lagging: _____

Beltline Information:

Beltline Number: _____ Belt Condition: _____

Belt Width: 450mm (18") 600mm (24") 750mm (30") 900mm (36") 1050mm (42") 1200mm (48") 1350mm (54") 1500mm (60") 1800mm (72")

Head Pulley Diameter (Belt & Lagging): _____ Belt Speed: _____ fpm or m/s Belt Thickness: _____

Belt Splice: _____ Condition of Splice: _____ Number of Splices: _____ Skived Unskived

Material conveyed: _____

Days per week run: _____ Hours per day run: _____

Lagging Life:

Date installed: _____ Date inspected: _____ Estimated life: _____

Lagging Thickness: _____

Lagging: Side Lag Ceramic Rubber Other None

Condition of lagging: Good Bad Other _____

Cleaner's Overall Performance: (Rate the following 1 - 5, 1 = very poor - 5 = very good)

Appearance: Comments: _____

Location: Comments: _____

Maintenance: Comments: _____

Performance: Comments: _____

Other comments: _____

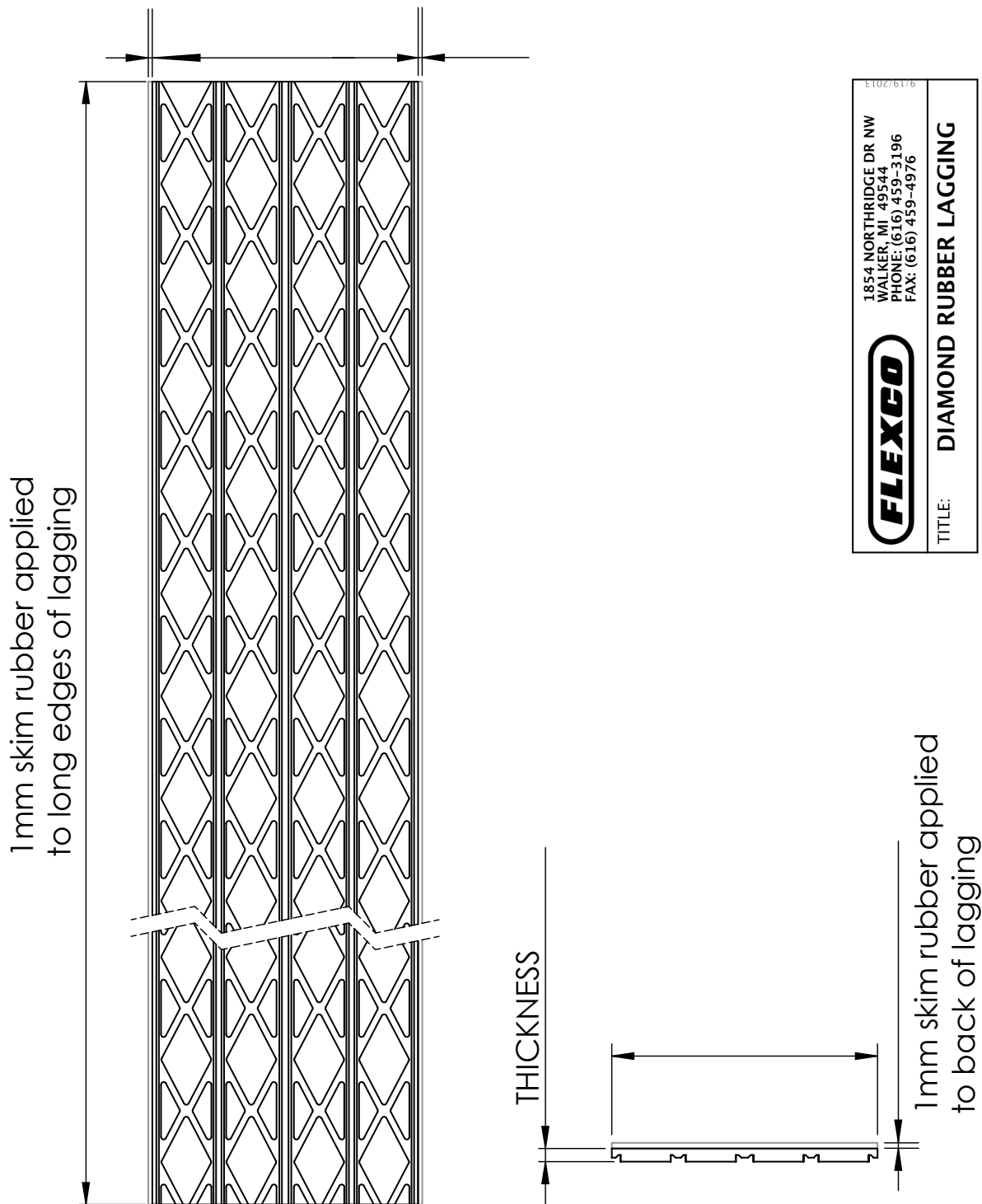
Section 6 – Troubleshooting

Problem	Possible Cause	Possible Solutions
Uneven wear in rubber lagging	Belt Tension	Change to ceramic lagging
	Short Transition	Increase distance to full trough idler
	Wrong Lagging for Application	Increase thickness or change to ceramic lagging
Delaminating	Insufficient wrapping pressure	Refer to instructions on p. 5-8 for proper installation instructions
	Pulley surface not prepped correctly	Refer to instructions on p. 5-8 for proper installation instructions

For additional troubleshooting questions, please contact Customer Service or your territory manager.

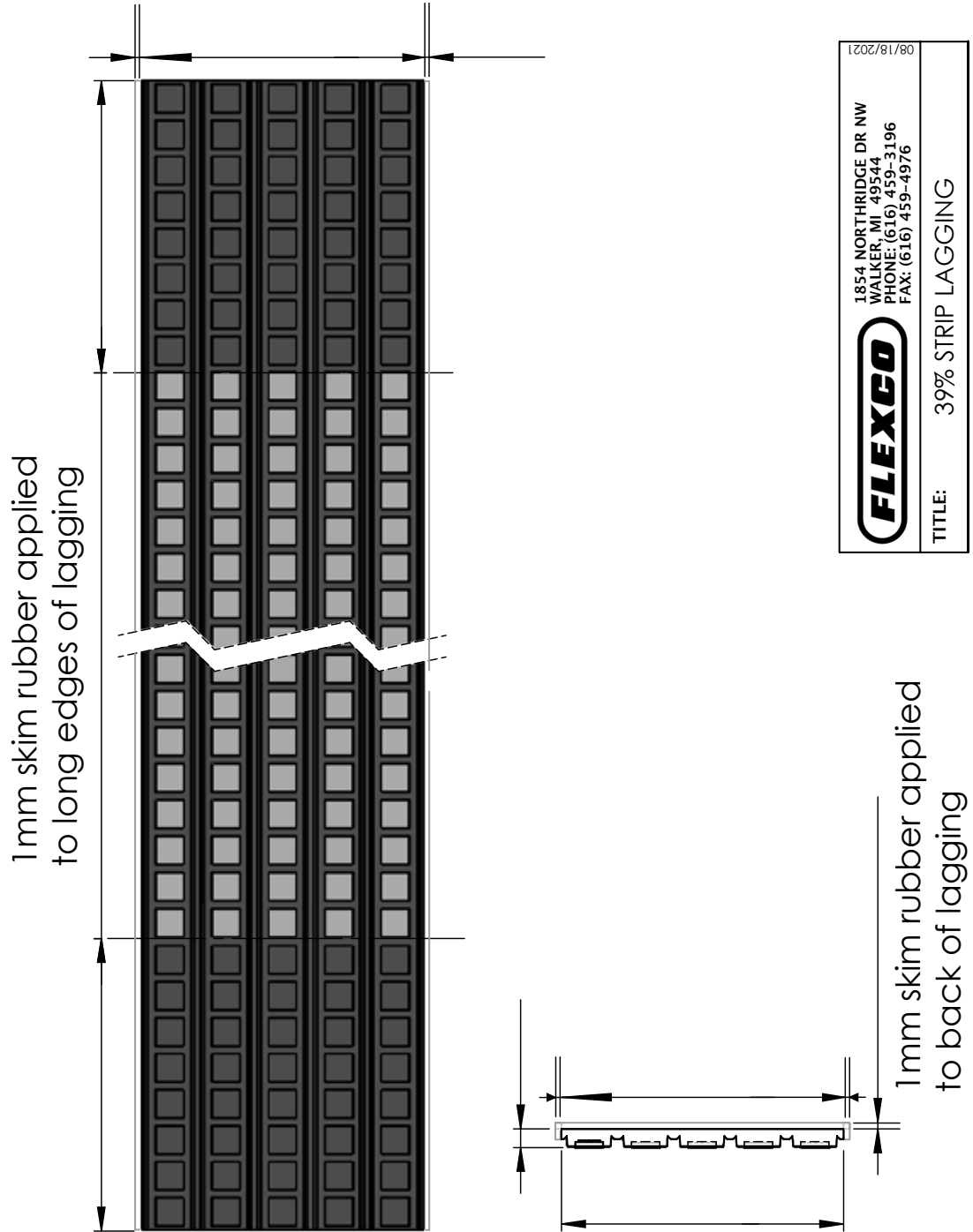
Section 7 – Specifications and CAD Drawings

7.1 Lagging - Diamond Rubber Lagging



Section 7 – Specifications and CAD Drawings

7.2 Lagging - Medium Ceramic



Section 8 – Other Flexco Conveyor Products

Flexco provides many conveyor products that help your conveyors to run more efficiently and safely. These components solve typical conveyor problems and improve productivity. Here is a quick overview on just a few of them:

EZP1 Primary Cleaner



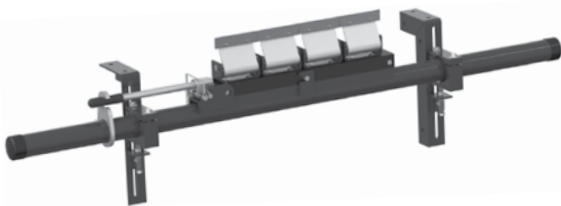
- Patented ConShear™ blade renews its cleaning edge as it wears
- Visual Tension Check™ for optimal blade tensioning and simple retensioning
- Quick and easy one-pin blade replacement Material Path Option™ for optimal cleaning and reduced maintenance

Flexco Slider/Impact Beds



- Adjusting troughing angles for easy installation and adjustability
- Long-wearing UHMW for sealing the load zone
- Offered in both Light & Medium duty designs to affordably fit your application

MHS SAC Secondary Cleaner



- Long-wearing tungsten carbide blades for superior cleaning efficiency
- Patented PowerFlex™ cushions, the proven design found on our industry-leading MHS Secondary Cleaner
- Service Advantage Cartridge can be easily removed and replaced, even in the dirtiest conditions
- Works with Flexco mechanical belt splices

PT Max™ Belt Trainer



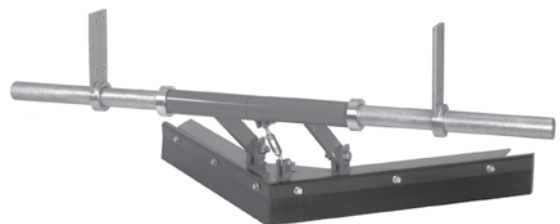
- Patented “pivot & tilt” design for superior training action
- Dual sensor rollers on each side to minimise belt damage
- Pivot point guaranteed not to freeze or seize up
- Available for topside and return side belts

Flexco Specialty Belt Cleaners



- “Limited space” cleaners for tight conveyor applications
- Cleaners for severe, high heat applications
- A rubber fingered cleaner for chevron and raised rib belts
- Multiple cleaner styles in stainless steel for corrosive applications

Belt Ploughs



- A belt cleaner for the tail pulley
- Exclusive blade design quickly spirals debris off the belt
- Economical and easy to service
- Available in vee or diagonal models

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