

# FLEX-LAG® FULL CERAMIC Pulley Lagging

## The Reliable Solution For Belt Slippage

Flex-Lag® Ceramic Pulley Lagging is the reliable solution for belt slippage problems that conventional rubber lagging often can't correct. In fact, with 80% tile coverage, it features the highest coefficient of friction available in lagging materials – two to three times the friction of rubber in wet, muddy, or dry conditions.



### *High-performance design*

Flex-Lag® Ceramic Pulley Lagging is constructed from hundreds of individual ceramic tiles molded into a durable rubber backing. Each tile features a raised profile of molded ceramic buttons. Under normal belt compression, thousands of molded ceramic buttons grip the belt's underside, for positive traction and no slippage. Also available in smooth for non-drives.

Plus, the unique design of the buttons eliminates the sharp, abrasive edges associated with ordinary ceramic lagging and helps ensure increased belt life.

### *Easy installation*

Flex-Lag® installation saves time because it doesn't require removing the pulley from the conveyor system! The Flex-Lag Ceramic application requires only a time- and labor-saving cold vulcanisation process. So it installs easily on-site. Simply determine the number of continuous-pattern strips needed to cover the pulley (see Strip Selection Chart on back) and apply. High waste factors encountered with conventional sheet materials are eliminated.



## FLEX-LAG® CERAMIC Pulley Lagging

Flex-Lag® can be ordered directly from stock in standard strip lengths and easy-to-handle rolls. The 200 mm (7.875") wide strips can be custom fit on-site for any size pulley. Custom lengths are available through special order.

Pulley Diameter		Strips Required
mm	in	
305 to 319	12.0 to 12.5	5
320 to 381	12.6 to 15.0	6
382 to 445	15.1 to 17.5	7
446 to 510	17.6 to 20.0	8
511 to 573	20.1 to 22.5	9
574 to 636	22.6 to 25.0	10
637 to 700	25.1 to 27.5	11
701 to 764	27.6 to 30.0	12
765 to 826	30.1 to 32.5	13
827 to 891	32.6 to 35.1	14
892 to 955	35.2 to 37.6	15
956 to 1018	37.7 to 40.1	16
1019 to 1082	40.2 to 42.6	17
1083 to 1145	42.7 to 45.1	18
1146 to 1210	45.2 to 47.6	19
1212 to 1273	47.7 to 50.1	20
1275 to 1336	50.2 to 52.6	21
1339 to 1400	52.7 to 55.1	22
1403 to 1463	55.2 to 57.6	23
1466 to 1527	57.7 to 60.1	24
1529 to 1590	60.2 to 62.6	25
1593 to 1654	62.7 to 65.1	26
1656 to 1717	65.2 to 67.6	27
1720 to 1781	67.7 to 70.1	28
1783 to 1847	70.2 to 72.7	29

Coefficients of Friction (Pressure on surface 3 kg/CM(2) V=50 M/Min.)	
Condition	Flex-Lag® Ceramic Lagging
Dry	0.74 to 0.83
Wet	0.48 to 0.78
Wet with Mud	0.42 to 0.51

Note: a dry, bare steel or iron pulley has a coefficient of friction of approximately .25

Ordering Information				
Flex-Lag® Ceramic				
Belt and Ceramic Width		Rubber Width		Ordering Number
mm	in	mm	in	
460	18	860	34	CL460
600	24	1000	40	CL600
760	30	1160	46	CL760
800	32	1200	48	CL800
900	36	1300	52	CL900
1060	42	1500	60	CL1060
1200	48	1600	64	CL1200
1360	54	1800	72	CL1360
1400	56	1900	76	CL1400
1520	61	2000	80	CL1520
1600	64	2100	84	CL1600
1700	68	2200	88	CL1700
1800	72	2300	92	CL1800
1900	76	2400	96	CL1900
2000	80	2500	100	CL2000
2100	84	2600	104	CL2100
2200	88	2700	108	CL2200
2300	92	2800	112	CL2300
2400	96	2900	116	CL2400
2500	100	3000	120	CL2500
2600	104	3000	120	CL2600
2800	112	3300	132	CL2800
3000	120	3300	132	CL3000
FRAS				
460	18	860	34	CLFR460
600	24	1000	40	CLFR600
760	30	1160	46	CLFR760
800	32	1200	48	CLFR800
900	36	1300	52	CLFR900
1060	42	1500	60	CLFR1060
1200	48	1600	64	CLFR1200
1360	54	1800	72	CLFR1360
1400	56	1900	76	CLFR1400
1520	61	2000	80	CLFR1520
1600	64	2100	84	CLFR1600

## Combat Belt Mistracking with Crowned Pulley Lagging

Flex-Lag® Crowned Pulley Lagging features tapered end pieces that are perfect for improving mistracking belts, specifically on tail and bend pulleys. This lagging is optimal for pulleys operating in low-to-medium belt tension applications and belt widths from 450mm – 1800mm.



**Thickness of end pieces is tapered** - 1:150 ratio

**Tapered end pieces** hot vulcanised to the center lagging section to form crowned lagging strip. End pieces extend past the pulley end and are trimmed flush with the shell

**Flat center lagging section** - length can be varied to suit pulley size



**Diamond Pattern** - Natural and FRAS compounds available

### Features and Benefits:

- **Divided into three equal sections along the pulley face.** Middle section is flat, while end sections taper at a ratio of 1:150.
- **Optimal for improving mistracking** on tail and bend pulleys.
- **Available in both Natural and FRAS compounds,** in a diamond pattern.
- **Crown lagging has minimal effect on very slow conveyors,** contrary to faster rotating pulleys which generate higher gyroscopic force to pull the belt back to the centre.
- **Not for use with drive pulleys or head pulleys,** as the lagging can adversely affect tension and cause belt shift or can affect the trajectory of the product into transfer chutes and negatively affect cleaner performance.
- **Not to be used on pulleys that run steel cord belts.**

## Specifications

<b>Specifications:</b>	
<b>Temperature Rating</b> -15° C to 85° C (5° F to 185° F)	<b>Rubber Hardness</b> 68 ± 3 Shore A
<b>Rubber Compound</b> SBR (Styrene-Butadiene-Rubber)	<b>FRAS (Fire Resistant Anti Static)</b> <b>MSHA Certification # - MSHA NO. IC-190 Available</b> (see below)

## Strip Selection Chart

<b>Strip Selection</b>					
<b>Pulley Diameter</b>		<b>Strips Required</b>	<b>Pulley Diameter</b>		<b>Strips Required</b>
<b>mm</b>	<b>in.</b>		<b>mm</b>	<b>in.</b>	
320-381	12.6-15.0	6	1083-1145	42.6-45.0	18
382-445	15.1-17.5	7	1146-1210	45.1-47.5	19
446-510	17.6-20.0	8	1211-1273	47.6-50.1	20
511-573	20.1-22.5	9	1274-1336	50.2-52.6	21
574-636	22.6-25.0	10	1337-1400	52.7-55.1	22
637-700	25.1-27.5	11	1403-1463	55.2-57.6	23
701-764	27.6-30.0	12	1466-1527	57.7-60.1	24
765-827	30.1-32.5	13	1529-1590	60.2-62.6	25
828-891	32.6-35.0	14	1593-1654	62.7-65.1	26
892-955	35.1-37.5	15	1656-1717	65.2-67.6	27
956-1018	37.6-40.0	16	1720-1781	67.7-70.1	28
1019-1082	40.1-42.5	17	1783-1844	70.2-72.6	29

### Strip Selection Instructions

**Step 1:** Measure the diameter of your pulley.

**Step 2:** See Strip Selection Chart to determine the number of strips you will need to lay lengthwise across the pulley.

## Ordering Information

<b>Flex-Lag<sup>®</sup> Natural Rubber - Taper 1:150</b>					
<b>Thickness</b>	<b>Belt Width</b>	<b>Center Flat Section</b>	<b>Strip Length</b>	<b>Item Code</b>	<b>Ordering Number</b>
15	450	317	850	69263	15ND-450-T150
15	600	367	1000	69264	15ND-600-T150
15	750	417	1150	69265	15ND-750-T150
15	800	433	1200	69266	15ND-800-T150
15	900	467	1300	69267	15ND-900-T150
15	1050	517	1450	69268	15ND-1050-T150
15	1200	567	1600	69269	15ND-1200-T150
15	1350	617	1750	69270	15ND-1350-T150
15	1400	633	1800	69271	15ND-1400-T150
15	1500	667	1900	69272	15ND-1500-T150
15	1600	700	2000	69273	15ND-1600-T150
15	1700	733	2100	69274	15ND-1700-T150
15	1800	767	2200	69275	15ND-1800-T150

All items are non-stock. Lead time 2 weeks

<b>Flex-Lag<sup>®</sup> FRAS Rubber - Taper 1:150</b>					
<b>Thickness</b>	<b>Belt Width</b>	<b>Center Flat Section</b>	<b>Strip Length</b>	<b>Item Code</b>	<b>Ordering Number</b>
15	450	317	850	69276	15FRD-450-T150
15	600	367	1000	69277	15FRD-600-T150
15	750	417	1150	69278	15FRD-750-T150
15	800	433	1200	69279	15FRD-800-T150
15	900	467	1300	69280	15FRD-900-T150
15	1050	517	1450	69281	15FRD-1050-T150
15	1200	567	1600	69282	15FRD-1200-T150
15	1350	617	1750	69283	15FRD-1350-T150
15	1400	633	1800	69284	15FRD-1400-T150
15	1500	667	1900	69285	15FRD-1500-T150
15	1600	700	2000	69286	15FRD-1600-T150
15	1700	733	2100	69287	15FRD-1700-T150
15	1800	767	2200	69288	15FRD-1800-T150

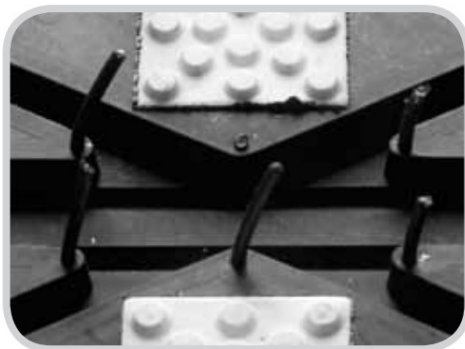
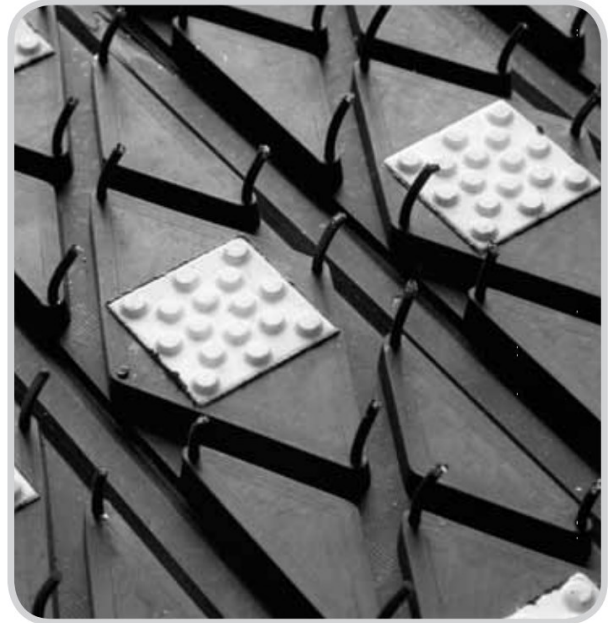
# FLEX-LAG<sup>®</sup> DIAMOND CERAMIC Pulley Lagging

## The Reliable and Economical Solution for Belt Slippage

Flex-Lag<sup>®</sup> Diamond Ceramic Lagging has been developed to provide a ceramic lagging option for customers with medium tension belt drive applications and all other non-drive pulley lagging applications who want the added advantages of a ceramic product, at a more affordable cost.

Flex-Lag Diamond Ceramic Lagging is manufactured in the same pattern as the existing Flex-Lag Diamond Rubber Lagging. A large ceramic tile is molded into the diamond section of the lagging, providing an increased coefficient of friction. The diamond pattern drainage grooves allow for excellent dispersement of water and renegade materials allowing for improved water shedding capabilities.

The product is also suitable for existing rubber pulley lagging applications that experience higher than expected lagging wear.



*The tiles in Diamond Ceramic Lagging are surrounded by multiple channels to disperse water and renegade materials allowing for improved water shedding capabilities.*

### **Easier.**

Flex-Lag Diamond Ceramic Lagging is available in both natural rubber and FRAS approved rubber in convenient 6.5M (21 ft.) cut-to-fit rolls with minimal waste. Simply determine the number of continuous-pattern strips needed to cover the pulley (see Strip Selection Guide) and apply. High waste factors encountered with conventional sheet materials are eliminated.

Flex-Lag Diamond Ceramic provides an economical option for increasing conveyor belt life and reducing pulley lagging wear.

### **Faster.**

The in situ installation of Flex-Lag Diamond Ceramic Lagging eliminates the need to remove the pulley from the conveyor system.

### **Smarter.**

## How to determine the proper quantity of Flex-Lag® material for the application.

**Step 1:** Measure the diameter of your pulley.

**Step 2:** See Strip Selection Chart to determine the number of strips you will need to lay lengthwise across the pulley.

**Step 3:** Choose the material and pattern best suited to your application.

**Step 4:** Determine the number of rolls required to cover pulley face:

**A. Determine Length of Strip**  
Pulley face plus 100 mm (4")

**B. Calculate Strips per Roll**  
 $6.5 \text{ M (252")} \div \text{length of strip}$

**C. Number of Rolls Required**  
 $\text{Number of strips required} \div \text{strips per roll}$

Flex-Lag® Diamond Ceramic Lagging provides increased wear over standard rubber lagging and greater versatility in a variety of applications. The increased tile dimensions in Diamond Ceramic allow for a higher coefficient of friction and help keep belt slippage under control. At 40% less cost than full tile ceramic lagging, Flex-Lag Diamond Ceramic is an economical choice for increased pulley lagging life, improved water and renegade material shedding characteristics, as well as enhanced conveyor productivity.

### Coefficients of Friction

Condition	Flex-Lag® Grooved Rubber	Flex-Lag® Diamond Ceramic	Flex-Lag® Ceramic
Dry	0.4 to 0.5	0.46 to 0.56	0.74 to 0.83
Wet	0.23 to 0.26	0.28 to 0.36	0.48 to 0.78
Wet with Mud	0.18 to 0.22	0.23 to 0.27	0.42 to 0.51

Pressure on surface 3 kg/CM (2) V=0M/Min.

Note: A dry, bare steel or iron pulley has a coefficient of friction of approximately 0.25

Note: When specifying Diamond Ceramic for a drive application, care should be taken not to exceed relevant coefficient of friction ranges.

### Strip Selection

Pulley Diameter		Strips Required	Pulley Diameter		Strips Required
mm	in.		mm	in.	
305 to 319	12.0 to 12.5	5	1083 to 1145	42.7 to 45.1	18
320 to 381	12.6 to 15.0	6	1146 to 1210	45.2 to 47.6	19
382 to 445	15.1 to 17.5	7	1212 to 1273	47.7 to 50.1	20
446 to 510	17.6 to 20.0	8	1275 to 1336	50.2 to 52.6	21
511 to 573	20.1 to 22.5	9	1339 to 1400	52.7 to 55.1	22
574 to 636	22.6 to 25.0	10	1403 to 1463	55.2 to 57.6	23
637 to 700	25.1 to 27.5	11	1466 to 1527	57.7 to 60.1	24
701 to 764	27.6 to 30.0	12	1529 to 1590	60.2 to 62.6	25
765 to 826	30.1 to 32.5	13	1593 to 1654	62.7 to 65.1	26
827 to 891	32.6 to 35.1	14	1656 to 1717	65.2 to 67.6	27
892 to 955	35.2 to 37.6	15	1720 to 1781	67.7 to 70.1	28
956 to 1018	37.7 to 40.1	16	1783 to 1847	70.2 to 72.7	29
1019 to 1082	40.2 to 42.6	17			

### Ordering Information

#### Diamond Ceramic Lagging

Rubber Grade	Ordering Number	Item Code
Natural	71155	12NDC
FRAS	71159	12FRDC

\* All material is 200 mm (8 inches) wide in 6.5M (21 foot) rolls

# FLEX-LAG<sup>®</sup> RUBBER Pulley Lagging

## Improved Water Shedding Helps Eliminate Belt Slippage and Boosts Productivity

And it installs in a fraction of the time required for conventional lagging. That's because Flex-Lag<sup>®</sup> installation does not require removing the pulley from the conveyor system! A labor-saving cold vulcanisation process makes on-site installation fast, simple, and efficient.



### ***Flex-Lag<sup>®</sup> Diamond-Pattern Rubber Lagging***

Constructed from high durometer rubber for abrasion resistance. The Flex-Lag<sup>®</sup> Diamond pattern is based on rain tire tread designs for superior water-shedding characteristics. Helps keep belt slippage to the absolute minimum.



### ***Flex-Lag<sup>®</sup> Plain-Pattern Lagging***

Helps prevent belt slippage in extremely dirty environments. Rubber flexes during use to shed excess materials and prevent material build-up as well as premature belt and pulley wear. Horizontal grooves trap and deflect water, resulting in a coefficient of friction superior to plain-sheet lagging.



### ***Flex-Lag<sup>®</sup> Light-Duty Lagging***

Specially designed for pulleys with diameters as small as 50 mm (2"). Moisture is channeled between small raised buttons that support and grip the belt and deliver superior traction.

### How to determine the proper quantity of Flex-Lag® material for the application.

**Step 1:** Measure the diameter of your pulley.

**Step 2:** See Strip Selection Chart to determine the number of strips you will need to lay lengthwise across the pulley.

**Step 3:** Choose the material and pattern best suited to your application.

**Step 4:** Determine the number of rolls required to cover pulley face:

#### A. Determine Length of Strip

*For Light-Duty and*

*Plain-Pattern Lagging:*

Pulley face plus 50 mm (2")

*For Diamond-Pattern Lagging:*

Pulley face plus 100 mm (4")

#### B. Calculate Strips per Roll

*For Light-Duty Lagging:*

3.3 M (129") ÷ length of strip

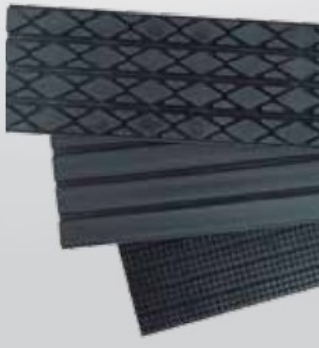
*For Diamond-Pattern and*

*Plain-Pattern Lagging:*

6.5 M (252") ÷ length of strip

#### C. Number of Rolls Required

Number of strips required ÷ strips per roll



Strip Selection Chart		
Pulley Diameter		Strips Required
mm	in.	
305 to 319	12.0 to 12.5	5
320 to 381	12.6 to 15.0	6
382 to 445	15.1 to 17.5	7
446 to 510	17.6 to 20.0	8
511 to 573	20.1 to 22.5	9
574 to 636	22.6 to 25.0	10
637 to 700	25.1 to 27.5	11
701 to 764	27.6 to 30.0	12
765 to 826	30.1 to 32.5	13
827 to 891	32.6 to 35.1	14
892 to 955	35.2 to 37.6	15
956 to 1018	37.7 to 40.1	16
1019 to 1082	40.2 to 42.6	17
1083 to 1145	42.7 to 45.1	18
1146 to 1210	45.2 to 47.6	19
1212 to 1273	47.7 to 50.1	20
1275 to 1336	50.2 to 52.6	21
1339 to 1400	52.7 to 55.1	22
1403 to 1463	55.2 to 57.6	23
1466 to 1527	57.7 to 60.1	24
1529 to 1590	60.2 to 62.6	25
1593 to 1654	62.7 to 65.1	26
1656 to 1717	65.2 to 67.6	27
1720 to 1781	67.7 to 70.1	28
1783 to 1847	70.2 to 72.7	29

#### Coefficients of Friction (Pressure on surface 3 kg/CM(2) V=50 M/Min.)

Condition	Grooved Rubber
Dry	0.4 to 0.5
Wet	0.23 to 0.26
Wet with Mud	0.18 to 0.22

Note: a dry, bare steel or iron pulley has a coefficient of friction of approximately .25

Diamond-Pattern and Plain-Pattern Rubber Flex-Lag® are available pre-buffed in both natural rubber and in flame-resistant anti-static rubber for applications where additional resistance to fire or oils is desired.

Flex-Lag Rubber Pulley Lagging is manufactured and packaged in 6.5 M (21') rolls, 200 mm (7.875") wide.

Ordering Information			
Flex-Lag® Natural Rubber			
Pattern	Thickness		Ordering Number
	mm	in.	
Diamond	10	13/32	10ND
	12	15/32	12ND
	15	19/32	15ND
	20	25/32	20ND
Plain	10	13/32	10NP
	12	15/32	12NP

Ordering Information			
Flex-Lag® Flame-Resistant Rubber			
Pattern	Thickness		Ordering Number
	mm	in.	
Diamond	10	13/32	10FRD
	12	15/32	12FRD
	15	19/32	15FRD
	20	25/32	20FRD
Plain	10	13/32	10FRP
	12	15/32	12FRP

Ordering Information	
Flex-Lag® Light-Duty Rubber	
Description	Ordering Number
Black (SBR)	6BLD
White (nitrile)	6WLD



# FLEX-LAG® WELD-ON™ Pulley Lagging

## Minimise Problems Associated With Vibration and Belt Cleaner Chatter

Flex-Lag® Weld-On™ Pulley Lagging features a patented gear tooth design. This eliminates the wide gutters present in conventional weld-on lagging products and also helps minimise problems associated with vibration, cleaner chatter, and overall belt cleaner compatibility.

Available in both ceramic for drive pulleys, and rubber, for drive and non-drive pulleys, Flex-Lag Weld-On Pulley Lagging is pre-cut to standard CEMA pulley widths for fast, easy installation.



### ***Gear tooth design.***

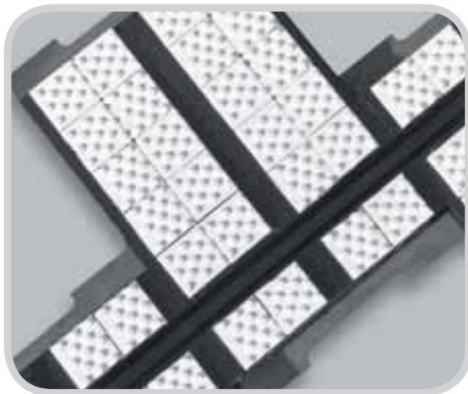
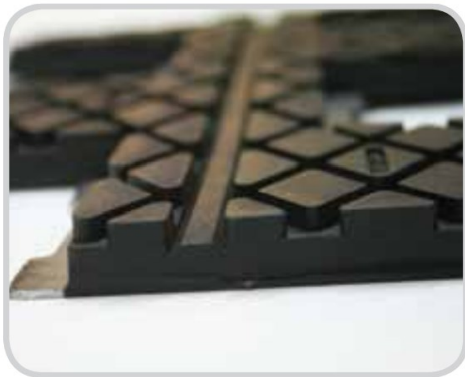
Eliminate the belt vibration and belt cleaner chatter often caused by ordinary welded lagging products. Flex-Lag® Weld-On™ Pulley Lagging features a gutterless design with easily installed gear tooth segments. The wide gaps between strips of conventional weld-on lagging products are eliminated. Additionally, it is engineered to ensure simple, on-site installation.

### ***High-performance.***

Flex-Lag Weld-On Ceramic features one of the highest coefficients of friction available in lagging materials – two to three times the friction of rubber in wet, muddy, or dry conditions. Weld-On Rubber provides a high durometer rubber for improved abrasion resistance and water shedding characteristics.

### ***Easy installation.***

Flex-Lag Weld-On lagging can be easily installed by your own maintenance crew – without removing the pulley and often with the belt still in place. Lagging strips are designed to CEMA (Conveyor Equipment Manufacturing Association) pulley width standards which eliminates waste and reduces installation time by up to 50% over similar weld-on lagging products.



# FLEX-LAG® WELD-ON™

## Pulley Lagging

Strip Selection Chart		
Pulley Diameter		Strips Required
mm	in.	
400	16	8
450	18	9
500	20	10
600	24	12
750	30	15
900	36	18
1050	42	21
1200	48	24
1350	54	27
1500	60	30
1800	72	36

Ordering Information					
Flex-Lag® Weld-On™ Ceramic					
Belt Width		Strip Length		Ordering Number	
mm	in.	mm	in.	For Pulley Diameters 400-725 mm (16" - 29")	For Pulley Diameters 750 mm (30") and over
450	18	500	20	WCN18-16	
600	24	650	26	WCN24-16	WCN24-30
750	30	800	32	WCN30-16	WCN30-30
900	36	950	38	WCN36-16	WCN36-30
1050	42	1100	44	WCN42-16	WCN42-30
1200	48	1275	51	WCN48-16	WCN48-30
1350	54	1425	57	WCN54-16	WCN54-30
1500	60	1575	63	WCN60-16	WCN60-30
1800	72	1875	75	WCN72-16	WCN72-30



Flex-Lag® Weld-On™ Pulley Lagging is available in two radii to conform to CEMA standard pulley diameters. It is offered in ceramic, natural rubber, and in flame-resistant, anti-static FRAS rubber where additional resistance to fire or oils is desired.

Coefficients of Friction (Pressure on surface 3 kg/CM(2) V=50 M/Min.)		
Condition	Ceramic	Rubber
Dry	0.74 to 0.83	0.4 to 0.5
Wet	0.48 to 0.78	0.23 to 0.26
Wet with Mud	0.42 to 0.51	0.18 to 0.22

Note: a dry, bare steel or iron pulley has a coefficient of friction of approximately .25

Flex-Lag® Weld-On™ Rubber					
Belt Width		Strip Length		Ordering Number	
mm	in.	mm	in.	For Pulley Diameters 400-725 mm (16" - 29")	For Pulley Diameters 750 mm (30") and over
450	18	500	20	12RD18-16	12RD18-30
600	24	650	26	12RD24-16	12RD24-30
750	30	800	32	12RD30-16	12RD30-30
900	36	950	38	12RD36-16	12RD36-30
1050	42	1100	44	12RD42-16	12RD42-30
1200	48	1275	51	12RD48-16	12RD48-30
1350	54	1425	57	12RD54-16	12RD54-30
1500	60	1575	63	12RD60-16	12RD60-30
1800	72	1875	75	12RD72-16	12RD72-30

Flex-Lag® Weld-On™ Flame-Resistant Rubber					
mm	in.	mm	in.	Ordering Number	Ordering Number
450	18	500	20	12FD18-16	12FD18-30
600	24	650	26	12FD24-16	12FD24-30
750	30	800	32	12FD30-16	12FD30-30
900	36	950	38	12FD36-16	12FD36-30
1050	42	1100	44	12FD42-16	12FD42-30
1200	48	1275	51	12FD48-16	12FD48-30
1350	54	1425	57	12FD54-16	12FD54-30
1500	60	1575	63	12FD60-16	12FD60-30
1800	72	1875	75	12FD72-16	12FD72-30