

# U S F L E X <sup>®</sup>



**FENNER  DUNLOP**

ONE BRAND

ONE COMPANY

ONE PRODUCT LINE



**Conveying Performance to the Power of 3**

## You Need UsFlex® High Performance Series Conveyor Belts

FENNER DUNLOP introduces a revolutionary new concept in straight-warp conveyor belting—the UsFlex® “S” and “D” Series—incorporating both carcass style and tension rating. The “S” Series represents the UsFlex® Single Unit belts and the “D” Series represents the UsFlex® Dual Unit belts.

UsFlex® is manufactured within a high performance Series of specifications that meets the needs of the conveyor belt industry’s toughest applications.

**S** TRENGTH

**E** NGINEERED SOLUTIONS

**R** IP & TEAR RESISTANCE

**I** MPACT RESISTANCE

**E** XTREME APPLICATIONS

**S** UPERIOR VALUE

The UsFlex® Tension rating is now represented with the following series of numbers:

- ▲ Series 2 = 245 PIW
- ▲ Series 3 = 330 PIW
- ▲ Series 4 = 440 PIW
- ▲ Series 5 = 550 PIW
- ▲ Series 6 = 660 PIW
- ▲ Series 8 = 800 PIW
- ▲ Series 10 = 1000 PIW
- ▲ Series 12 = 1250 PIW
- ▲ Series 15 = 1500 PIW

When combined to indicate the exact specification, the new UsFlex® carcass and tension series alpha/numeric designations appear as:

- ▲ S2 = Single Unit, 245 PIW
- ▲ S3 = Single Unit, 330 PIW
- ▲ S4 = Single Unit, 440 PIW
- ▲ S5 = Single Unit, 550 PIW
  
- ▲ D 5 = Dual Unit, 550 PIW
- ▲ D 6 = Dual Unit, 660 PIW
- ▲ D 8 = Dual Unit, 800 PIW
- ▲ D10 = Dual Unit, 1000 PIW
- ▲ D12 = Dual Unit, 1250 PIW
- ▲ D15 = Dual Unit, 1500 PIW

S = Single Unit carcass

D = Dual Unit carcass

# Vector Rating System...Creating Value!

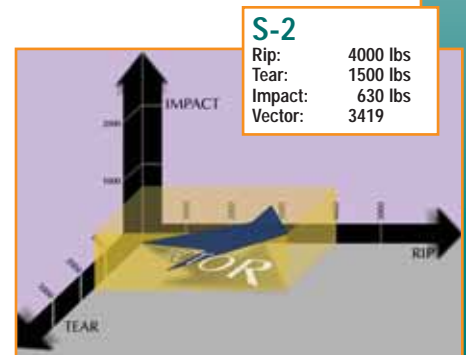
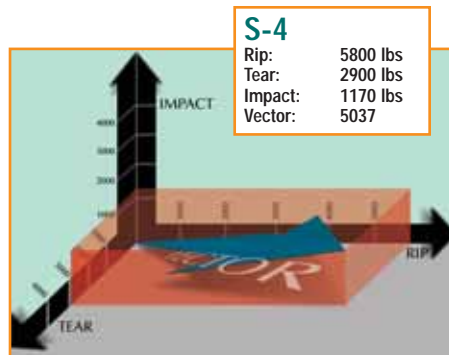
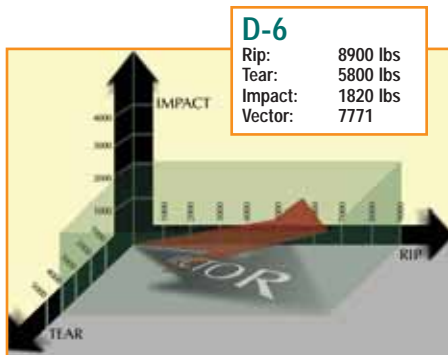
VECTOR RATING SYSTEM was developed to demonstrate the effect Rip, Tear and Impact resistance can have on the overall value of your purchase of conveyor belting. The higher the Vector Rating and the longer the Vector line, the more value you realize from your highly engineered UsFlex® belting.

**V**ALUE TO THE POWER<sup>3</sup>  
**E**LIMINATING EXCUSES  
**C**REATING SOLUTIONS  
**T**OUGH APPLICATIONS  
**O**PERATIONAL SAVINGS  
**R**ESISTANT TO ABUSE



The value you get from UsFlex® equates to:

- ▲ Longer belt life in rough service
- ▲ Greater cost savings per ton conveyed
- ▲ Lowest operating cost
- ▲ More tonnage produced due to less down time
- ▲ Greater rip, tear & impact resistance – **Value to the POWER<sup>3</sup>**
- ▲ High strength and low stretch
- ▲ Excellent load support, troughability, and tracking
- ▲ Increased insurance against damaged belt
- ▲ Impact resistance up to three times greater than traditional plied belt constructions
- ▲ Longitudinal rip resistance more than five times of the equivalent rated multi-ply belts
- ▲ More balanced conveyor belt
- ▲ Fenner Dunlop's Network of Certified Splicers available to install UsFlex using approved materials and procedures

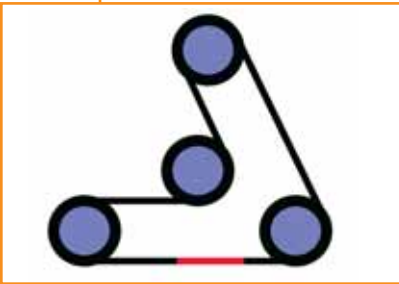
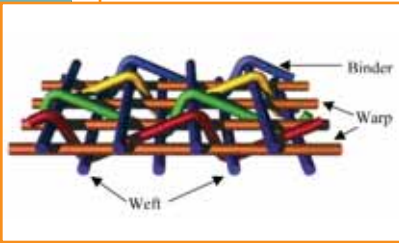


# Finger Splicing Conveyor Belting

## Creating Solutions, Not Excuses!

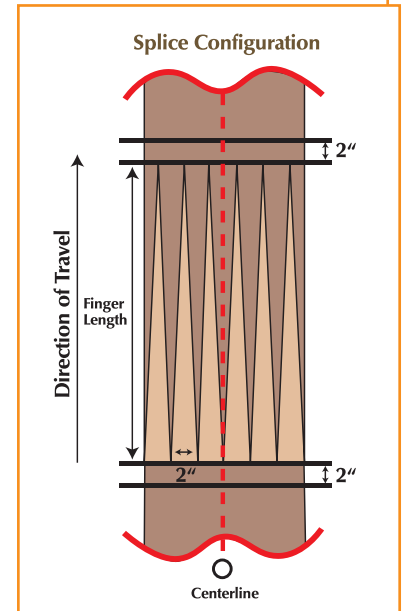
CONSISTENTLY ON THE CUTTING EDGE of Splicing Technology, **Fenner Dunlop** has taken its **Finger Splicing Technique** one step further by developing a procedure that makes Finger Splicing straight-warp belts less time consuming, less expensive and easier to perform.

When Fenner Dunlop Certified Splice Technicians install Fenner Dunlop belting utilizing proper techniques, tools and splice materials, the Finger Splice will deliver:



- ▲ A dynamically lab tested and field proven method of splicing that will result in optimum operating capacity.
- ▲ Excellent performance in serpentine or "S" type drives.
- ▲ Greater splice flexibility than any other splicing method in the industry.
- ▲ Less chance of damage due to cutting and buffing the strength members of the fabric plies when preparing and stripping the belt ends.
- ▲ Life cycle four times greater than conventional step splices done on conventional multi-ply or straight-warp conveyor belt constructions.

- ▲ Versatility in installing the Finger splice on a bias or square.



## Certified Splicing Program

VALUE ADDED SERVICES CONTINUE to make the difference in winning and maintaining customer business in a competitive market.

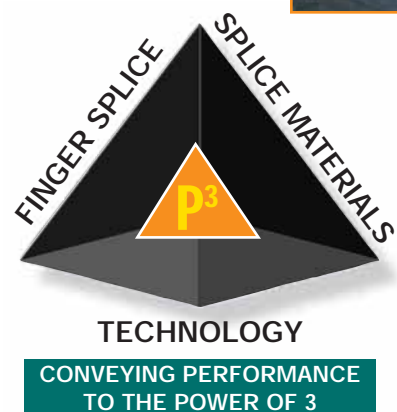
Fenner Dunlop has established a **Certified Splicing Program** geared to educate its distributor network. The Fenner Dunlop Splice Management team customizes each training session to ensure that participants increase their skill level and knowledge base in the areas needed to improve their level of service to their customers.

Highly skilled Certified Splice Technicians are on call to assist and to supply the end-users with the latest technology, materials and full endorsement from Fenner Dunlop when proper procedures, techniques and materials are used.

# Certified Splice Network Advantages

*There are numerous advantages to being a member of Fenner Dunlop's Certified Splice Network.*

- ▲ Guaranteed **Performance to the Power of 3**.
- ▲ Participation in Fenner Dunlop National Contracts.
- ▲ Partnership with the conveyor belting industry leader in technology and support.
- ▲ Member of Fenner Dunlop Distributor Gold Crown splicing support network.
- ▲ Increased skills, education and training in the most advanced rubber technology and splicing science for Belt Technicians.
- ▲ Fenner Dunlop Training includes but is not limited to the following:
  - ▲ Basic Splice Technology.
  - ▲ Splice material uses & limits.
  - ▲ Why special compounding for splicing?
  - ▲ Dynamic & static properties of splice materials.
  - ▲ Fundamentals of splice design & failure analysis.
  - ▲ The vulcanization process.
  - ▲ Splicing of multi-ply and straight-warp conveyor belt constructions.
  - ▲ Fenner Dunlop Finger Splice Technology for Straight-warp I & II constructions.
  - ▲ Current Plyed belt step splicing processes.
  - ▲ Fundamentals of Steel Cable splice design & failure analysis.
  - ▲ Current Steel Cable belt splicing techniques and procedures.
- ▲ Less customer downtime due to decreased splice failures and proper installations.
- ▲ Premium for highly skilled and educated service Technicians.



## Engineered to Provide Unrivaled Rip, Tear and Impact Resistance

Fenner Dunlop's unique straight-warp UsFlex® carcass is constructed to provide:

- ▲ High strength and minimal stretch or elongation when conveying large loads
- ▲ Excellent load support combined with outstanding troughability due to its lightweight, flexible design
- ▲ Longitudinal rip resistance five times that of multi-ply belts of equivalent rating
- ▲ Impact resistance up to three times greater than that of conventional plied belting resulting in less damage to the belt.

- ▲ Performance to the Power<sup>3</sup>

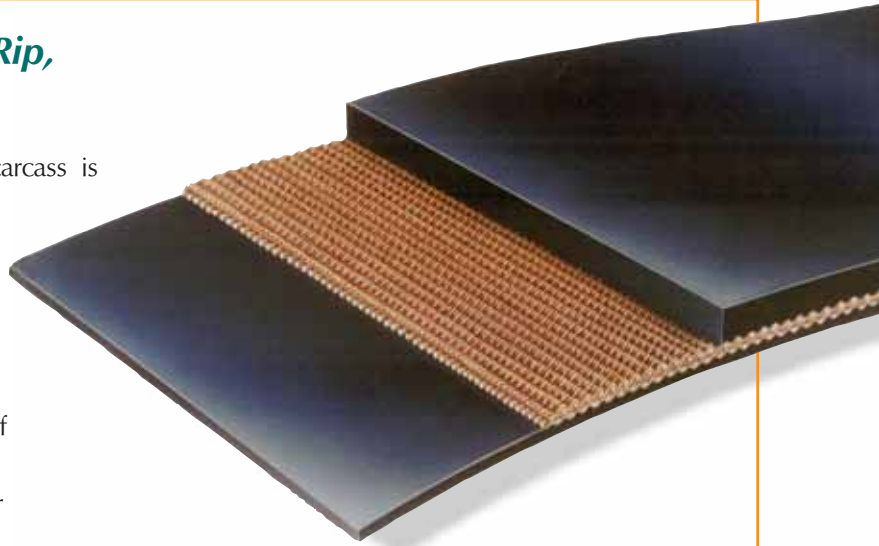
The combination of our straight-warp UsFlex® carcass with specially compounded rubber covers creates the toughest conveyor belt available today.

### Straight-warp Construction

While traditional plied belting utilizes a conventional crimp-weave fabric in plain or crow's foot patterns the UsFlex® straight-warp carcass construction incorporates a completely different concept. The lengthwise and crosswise belt strength is concentrated in parallel planes of heavyweight, high-tenacity straight yarns which are then locked together by a unique binder system. Each of these planes provides the reinforcing effect of multiple plies of conventional fabric with no crimping to weaken the yarns and cause stretch. The carcass binder system acts as a built-in breaker to resist impact and puncture.



A new state-of-the-art loom located in the Atlanta facility is fully dedicated to weaving Fenner Dunlop's UsFlex® straight-warp fabric. This technology allows us to react quickly to our customers' needs.



### Balanced Covers

Balanced cover ratios are extremely important in conveyor belt manufacturing. Conveyor belt cupping, curling and tracking problems are greatly reduced with a well-balanced conveyor belt. UsFlex® takes this concept a step further by incorporating a top to bottom cover thickness ratio that will insure correct troughability in the most stringent applications.

#### UsFlex® "S" Series (single unit construction):

Available in widths to 84" with tension ratings to 550 PIW (96 kN/m) and manufactured with pulley cover gauge at least one half of the carry cover gauge.

#### Example –

1/16" x 1/16", 1/8" x 1/16", 3/16" x 3/32", 1/4" x 1/8"

#### UsFlex® "D" Series (dual unit construction):

Available in widths to 84" with tension ratings to 1500 PIW (262 kN/m) and manufactured with pulley cover at least one third of the carry cover gauge.

#### Example –

3/16" x 1/16", 1/4" x 3/32", 3/8" x 1/8"

### The Right Belt for the Job

A wide variety of rubber covers can be applied to the UsFlex® carcass to safely convey products like hard rock, coal, impact minerals, ores, logs, aggregate and grain.

USFLEX® SPECIFICATIONS		USFLEX®		USFLEX®			USFLEX®			USFLEX®		
BELT STYLE		S2	S3	S4	S5	D4	D5	D6	D8	D10	D12	D15
NUMBER OF PLYS		1	1	1	1	2	2	2	2	2	2	2
TENSION RATINGS <sup>3</sup>		245	330	440	550	440	550	660	800	1000	1250	1500
APPROX CARCASS GAUGE <sup>4</sup> (INCHES)		.107	.139	.151	.169	.210	.234	.269	.301	.321	.380	.390
APPROX CARCASS WEIGHT <sup>5</sup> (LBS/IN/FT)		.049	.068	.074	.083	.091	.098	.123	.132	.148	.165	.168
IMPACT RATING <sup>1</sup> (FT-LBS)		630	920	1170	1375	1460	1560	1820	2185	2450	2745	3050
<b>MINIMUM PULLEY DIAMETER</b>												
<b>81% - 100% TENSION</b>		16"	18"	20"	20"	24"	24"	30"	36"	36"	36"	36"
<b>61% - 80% TENSION</b>		14"	16"	18"	18"	20"	20"	24"	24"	30"	30"	30"
<b>UP TO 60% TENSION</b>		12"	14"	16"	16"	18"	18"	20"	20"	24"	24"	24"
<b>MINIMUM BELT WIDTH (INCHES) FOR EMPTY BELT TROUGHING<sup>2</sup></b>												
<b>IDLER TYPE</b>	20°	16"	20"	24"	24"	24"	24"	24"	30"	30"	30"	30"
	35°	20"	24"	30"	30"	30"	30"	30"	36"	36"	36"	36"
	45°	24"	30"	36"	36"	36"	36"	36"	42"	42"	42"	42"
<b>MAXIMUM BELT WIDTH (INCHES) FOR LOAD SUPPORT<sup>2</sup></b>												
<b>20° IDLERS</b>	0 – 40 # /CU.FT.	60"	72"	84"	84"	84"	84"	84"	84"	84"	84"	84"
	41 – 80 # /CU.FT.	48"	66"	72"	72"	84"	84"	84"	84"	84"	84"	84"
	81 – 120 # /CU.FT.	42"	60"	66"	72"	84"	84"	84"	84"	84"	84"	84"
	OVER 120 # /CU.FT.	36"	48"	60"	66"	72"	72"	72"	84"	84"	84"	84"
<b>35° IDLERS</b>	0 – 40 # /CU.FT.	48"	66"	72"	72"	84"	84"	84"	84"	84"	84"	84"
	41 – 80 # /CU.FT.	36"	54"	60"	66"	72"	72"	84"	84"	84"	84"	84"
	81 – 120 # /CU.FT.	36"	48"	54"	60"	66"	66"	72"	84"	84"	84"	84"
	OVER 120 # /CU.FT.	30"	42"	48"	54"	60"	60"	72"	84"	84"	84"	84"
<b>45° IDLERS</b>	0 – 40 # /CU.FT.	42"	54"	60"	66"	72"	72"	84"	84"	84"	84"	84"
	41 – 80 # /CU.FT.	36"	48"	54"	60"	72"	72"	84"	84"	84"	84"	84"
	81 – 120 # /CU.FT.	30"	42"	48"	54"	60"	60"	72"	84"	84"	84"	84"
	OVER 120 # /CU.FT.	24"	36"	42"	48"	54"	54"	66"	72"	72"	84"	84"
<b>ELEVATOR</b>												
<b>TENSION RATING<sup>3</sup></b>												
<b>ELEVATOR SERVICE</b> (GRAIN, WOOD, CHIPS, ETC)		195	280	370	440	370	440	550	690	870	1060	1150
<b>ELEVATOR SERVICE</b> (INDUSTRIAL MINING, ETC)		175	250	330	400	330	400	480	620	775	940	1050
<b>MINIMUM PULLEY DIAMETER</b>	81% - 100% TENSION	16"	18"	20"	20"	24"	24"	30"	36"	36"	36"	36"
	61% - 80% TENSION	14"	16"	18"	18"	20"	20"	24"	24"	30"	30"	30"
	UP TO 60% TENSION	12"	14"	16"	16"	18"	18"	20"	20"	24"	24"	24"
<b>MAX BUCKET PROJECTION</b>	CENTRIFUGAL	8"	10"	10"	10"	12"	12"	14"	15"	16"	17"	18"
	CONTINUOUS	7"	9"	10"	12"	12"	13"	15"	16"	18"	20"	22"

1 Maximum impact is based on 10% lumps, with 90% fines (or sized material, up to 4" lumps), plus the use of the appropriate rubber idlers and good design of the loading and transfer conditions. If these conditions are not met fully, down-rate the impact to one-half (or less) that is shown in the table.

2 Troughability and Load Support Tables can be influenced by certain cover gauge and compound combinations used.

3 Tension ratings reflect a minimum 10:1 per ply safety factor. With appropriate selection & installation, a minimum 4:1 safety factor can be applied with mechanical fasteners.

4 Add gauge of both covers to carcass gauge to obtain the overall gauge.

5 Add carcass weight to appropriate cover weight to obtain the total belt weight (in pounds per inch of width per linear foot of length).

## Distributor Networks

**Fenner Dunlop** is proud to partner with distributors that are focused on providing quality conveyor belts and superior service to the industry. For this reason, **Fenner Dunlop** has one of the strongest distributor networks in the belting industry. To promote and distinguish **Fenner Dunlop** distributors as conveyor belt professionals, we have three distributor classifications.



Total Conveyor Solutions Distributors (TCS D) are authorized distributors of **Fenner Dunlop** products that service all aspects of the conveyor belt industry. The TCS D distributor provides not only conveyor belt and technical expertise, but also conveyor components and in-house factory trained field service personnel. The TCS D offers a complete conveyor system service package.



Advanced Service Distributors (AS D) are authorized distributors of **Fenner Dunlop** products that have completed **Fenner Dunlop's** comprehensive Sales and Technical Training Program. The AS D has been factory trained and certified in belt constructions, selection, trouble shooting and conveyor maintenance.



**Fenner Dunlop** Associate Dealers actively call on and work with belt users in their business area. They must have an operating slitter, sufficient inventory to service their customers, delivery capability, a professional sales force and financial stability. The **Fenner Dunlop** Associate Dealer is vital to promoting, selling and delivering our products to the market.



NOTICE: Fenner Dunlop Americas provides data and specifications, written and verbal, as a service to our customers. As operating conditions and conveyor designs vary, system to system, no representation or warranty is made or implied by Fenner Dunlop Americas that the representative data and specifications provided herein are applicable to any individual system. Fenner Dunlop does not assume any liability whatsoever in regard to its use. The buyer of Fenner Dunlop products should determine for itself the suitability of such products for the particular purpose of the buyer or the specific uses to which the product will be applied. Please contact Fenner Dunlop Americas for determination of data and specifications for specific applications and designs.

Contact your authorized Fenner Dunlop Distributor for any and all of your conveyor and elevator belting applications.

A member of



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(404) 297-3170

### Mining Sales:

(800) 537-4483  
(419) 635-4068

### Steel Cord and Export Sales:

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