FENNER DUNLOP
CONVEYOR BELTING

Up to date as of March 2023

Premium Conveyor Belting Technology

Fenner Dunlop is committed to manufacturing the most durable, longest-lasting conveyor belts in the world.

LONGEST LASTING **HEAVIEST LOADS** **NORTH AMERICAN MADE**
USA WEAVING & TREATING **150 YEARS OF TRADITION**

Fenner Dunlop's Conveyor Belt Manufacturing Plant in Port Clinton, OH

FENNER DUNLOP
CONVEYOR BELTING

We are proud to offer you the hardest working & longest lasting conveyor belts!

We make all of our belts in North American Fenner Dunlop factories – we do not import from other manufacturers in Asia or elsewhere. By weaving and treating our own fabric and pressing our own belts, we can ensure the integrity of our conveyor belts by monitoring each step of the production process.

MEMBER CEMA CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION

ARPM ASSOCIATION FOR RUBBER PRODUCTS MANUFACTURERS

We set the standard for conveyor belts through our involvement with various organizations.

All Fenner Dunlop belts exceed International Standards. Every belt is ozone resistant to withstand premature aging and cracking.

We employ globally recognized experts who provide first-class support. Our qualified technical team ensure your belts will achieve the best performance.

Welcome to Fenner Dunlop

The leader in serving all of your industrial conveyor belt demands!

North American Facilities

UNITED STATES & CANADA

Manufacturing Plants

Port Clinton, OH, Toledo, OH & Bracebridge, CA

CALENDERING / LAMINATING / CURING

Production is then passed on and completed at our conveyor belt manufacturing plants.

State-of-the-Art Weaving Facility

Lavonia, GA

BEAMING / WEAVING / TREATING

The conveyor belt manufacturing process begins here.

Diagnostics and Monitoring Plant

Bluefield, VA

We offer leading edge software and equipment to keep your belt in motion.

Weaving Facility
Lavonia, GA

Manufacturing Plants
Port Clinton, OH / Toledo,OH / Bracebridge, Ontario

Diagnostics and Monitoring Plant
Bluefield, WV

WE MAKE OUR OWN BELTS RIGHT HERE IN NORTH AMERICA

We have invested more than $150MM in our North American plants, and are proud to have the longest press in the world. Each of our 4 ISO 9001 Certified manufacturing facilities delivers measurable, sustainable results in the field, day in and day out.

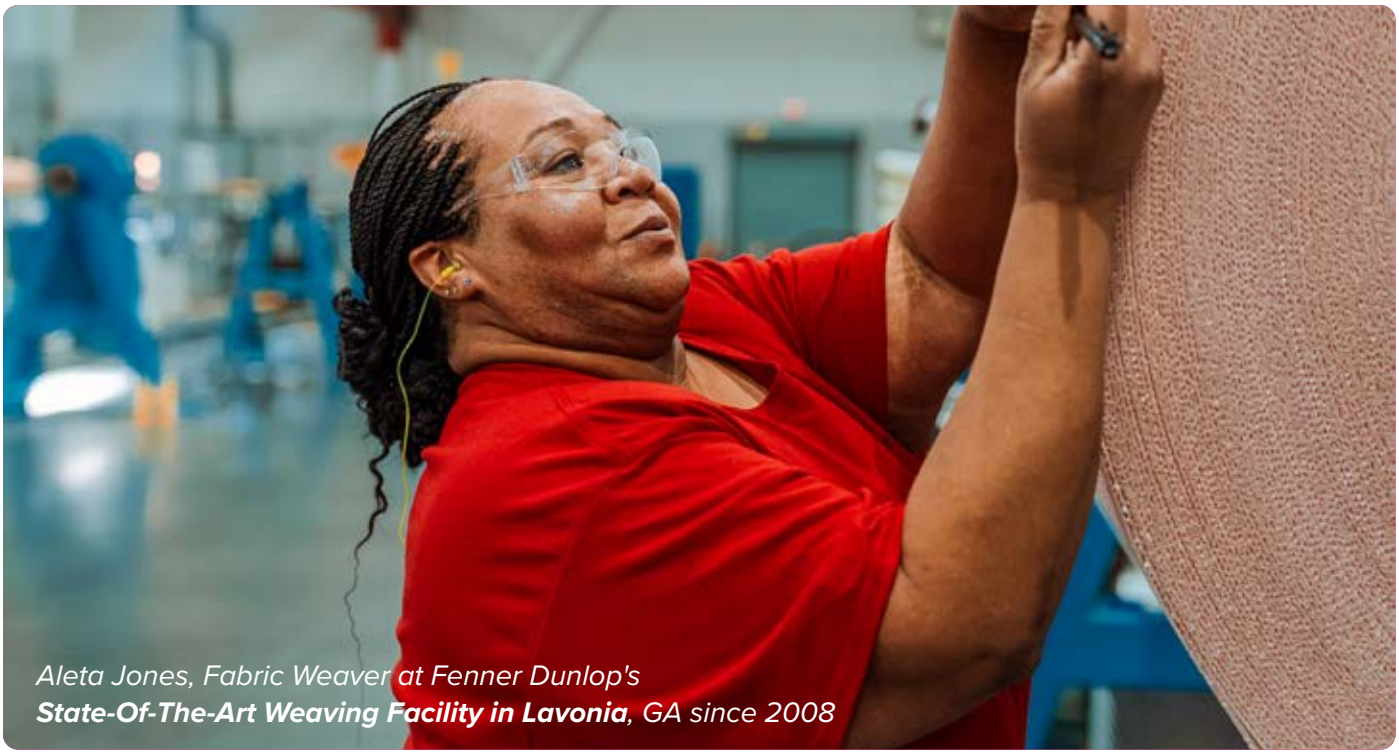
We research, test and develop using our own facilities. Every compound batch is quality tested in the laboratory before it is used in belt production. Every foot of Fenner Dunlop belt undergoes the toughest quality checks throughout the production process.

We use only the very best materials in the production of each of our belts. We specially design all our rubber compounds to deliver maximum performance.

We are the only manufacturer to use a state-of-the-art fabric treating process to maximize rubber to fabric adhesion, eliminating belt delamination failures. We pair this technology with advanced production equipment in our three facilities in Ohio and Ontario.

We are proud of our new calender machine that has the latest high-pressure rollers to finish and smooth our carcass and cover compounds.

The Result = Unmatched Conveyor Belting Performance



Aleta Jones, Fabric Weaver at Fenner Dunlop's ***State-Of-The-Art Weaving Facility in Lavonia****, GA since 2008*

Focused attention is given to each belting order to ensure that the materials and processes used to produce a belt will assist the end-user in reducing operation costs, maximizing uptime, and improving revenue.

At Fenner Dunlop, we hold quality control in the highest regard. Because we are a vertically integrated company, we accomplish this by having complete control of each step of the production process. This approach allows us to eliminate potential defects in our conveyor belting that conveyor belts manufactured overseas are often flawed with.

We weave our own fabric in America at our state-of-the-art, climate-controlled weaving facility, using high quality yarn in the weaving process. We treat our own fabric at the same facility in America. And by weaving and treating our own fabric, we can ensure the integrity of our conveyor belts.

Did you know ply separation (inadequate adhesion strength) is the number one reason belts fail? You will not find a conveyor belt with higher adhesion strengths than Fenner Dunlop conveyor belts.

We monitor and test each belt during every step of the production process. Every compound batch is quality tested in our lab. Every foot of Fenner Dunlop belt undergoes the toughest quality checks throughout the production process to ensure the completed conveyor belt meets industry standards and customer specifications.

Fenner Dunlop is completely committed to producing conveyor belts that will assist the end-user in reducing operation costs, maximizing uptime and improving revenue.

Did you know ply separation is the number one reason belts fail?

You will not find a conveyor belt with higher adhesion strengths than Fenner Dunlop conveyor belts.

1861

Company founded by Joseph Henry Fenner in Hull, UK.

1920's

Production of woven transmission belting.

1937

Fenner becomes a public company traded on the London Stock Exchange.

1939 – 1945

Wartime production of fire hose and military webbings.

1960's

Straight warp belt UsFlex Patented.

1961

New Research and Development facility opened in Hull.

1996

Acquisition of Scandura Conveyor Belting.

OVER 150 YEARS OF MANUFACTURING EXPERTISE AND EXCELLENCE

HISTORY

OF FENNER DUNLOP

2001

Acquisition of UniPoly (Dunlop/Georgia Duck) Conveyor Belting.

2009

Expansion at Port Clinton, Ohio with two new high capacity belt presses.

2010

Dual Crimp weave belt Nova-X patented.

2017

Ultra X dual crimp weave for lighter applications patented.

2018

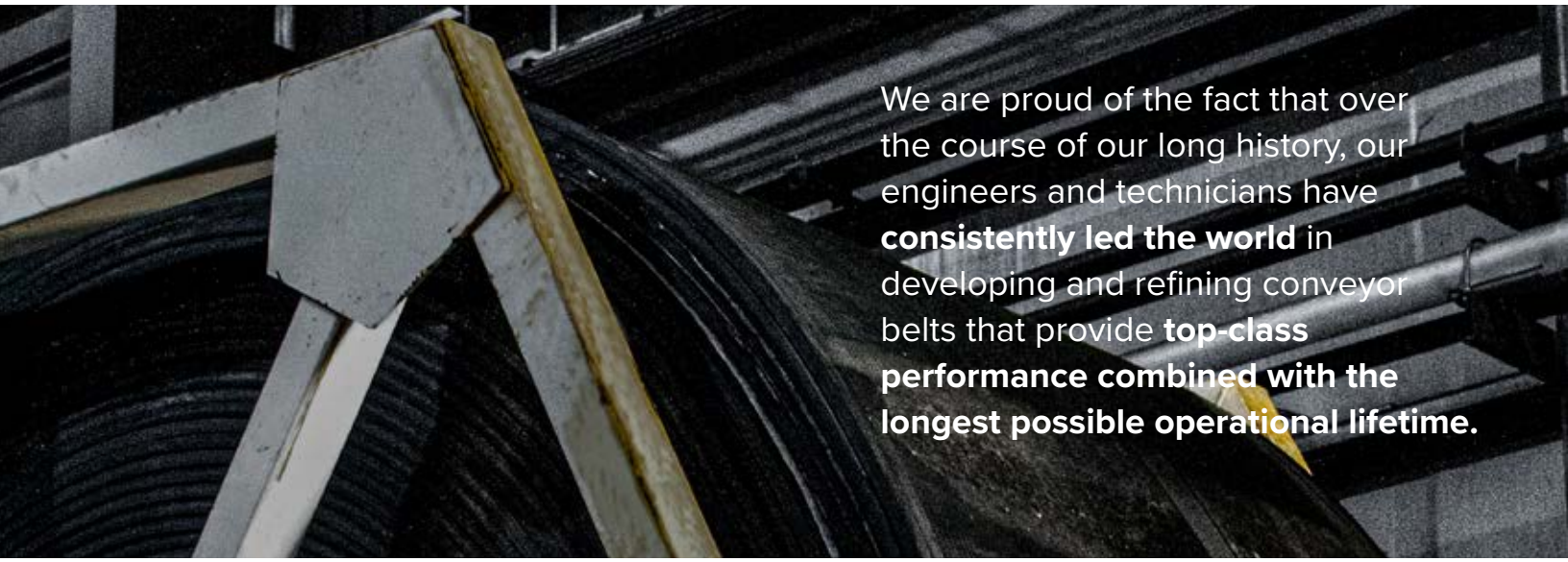
Fenner Dunlop became part of the Michelin group of companies, headquartered in Clermont-Ferrand, France

2007

Opened new state-of-the-art weaving facility in Lavonia, Georgia.

2023 Today

Fenner Dunlop delivers measurable, sustainable results in the field day in and day out. We make all of our own carcass materials and specially design our rubber compounds to outperform the competition. We are mindful of the materials for a more robust product and a better environmental footprint.



We are proud of the fact that over the course of our long history, our engineers and technicians have **consistently led the world** in developing and refining conveyor belts that provide **top-class performance combined with the longest possible operational lifetime.**

More with less

Conveying a Sustainable Future

Historically, conveyor belts have been manufactured using two or more plies of fabric that are adhered to each other using inner layers of rubber. When additional rip, tear and impact resistance was required for a more demanding bulk material handling application, the obvious answer seemed to be fitting a belt with even more plies with even thicker covers. Which was proved to be very rarely the best solution.

The best solution is to fit belts that are specifically engineered for the purpose, which is the philosophy that Fenner Dunlop's ***X Series*** is based on. The ***X Series*** is comprised of unique, single unit (dual unit in some circumstances) carcasses weaved and treated at our state-of-the-art weaving facility in Lavonia, Georgia. Here we have total control of the weaving process, which ensures the integrity and quality of the belt vs. the common practice of purchasing standard belt weaves in the textile commodity marketplace – which are predominantly manufactured overseas.

Along with many operational advantages,
Fenner Dunlop's ***X Series*** offers great sustainability benefits as well:

- Fenner Dunlop is proud to manufacture the longest lasting conveyor belts in the world. This means our customers benefit from requiring fewer replacements belts, which creates less unnecessary waste.
- Our ***X Series*** products remove the need for multiple plies and rubber skims which saves valuable resources and creates a more robust product.
- We optimize the consumption of nylon and polyester in our carcass constructions to manufacture the best product possible product with the least amount of physical materials needed.

HERE ARE SOME OTHER SUSTAINABILITY INITIATIVES WE ARE PROUD OF:

Since we have the conveyor belt manufacturing process down to a science, we can run manufacturing equipment meaningfully to conserve energy and electricity at our plants.

We proudly use as much recycled materials in our rubber covers as we can.

We produce conveyor belts that are used to move recyclable materials.

Our X Series belting products are designed to outperform comparable plied offerings using less materials in production and weighing less in operation. Combined with low rolling resistant bottom covers, significant energy savings can be achieved.

Our conveyor belts are produced domestically which means less carbon emissions are produced in transportation to a customer site.

Our employees have volunteered to plant over 4,000 trees and counting.

.people .planet .profit

WE HAVE THE BEST COMBINATION OF CARCASS AND COVER COMPOUNDS TO MEET THE MOST DEMANDING APPLICATIONS!

Conveyor belts have to withstand an enormously wide range of physical and environmental conditions as well as increasingly tough safety demands.

To meet these demands requires conveyor belts that have a carcass construction that is capable of handling extreme strains and forces.

At the same time, the rubber covers must have the resistance and durability needed to protect that carcass over a long period of time.

It is the combination of top quality carcass construction and rubber cover compounds that will ultimately determine the operational lifetime of a conveyor belt and, overall, its cost effectiveness.

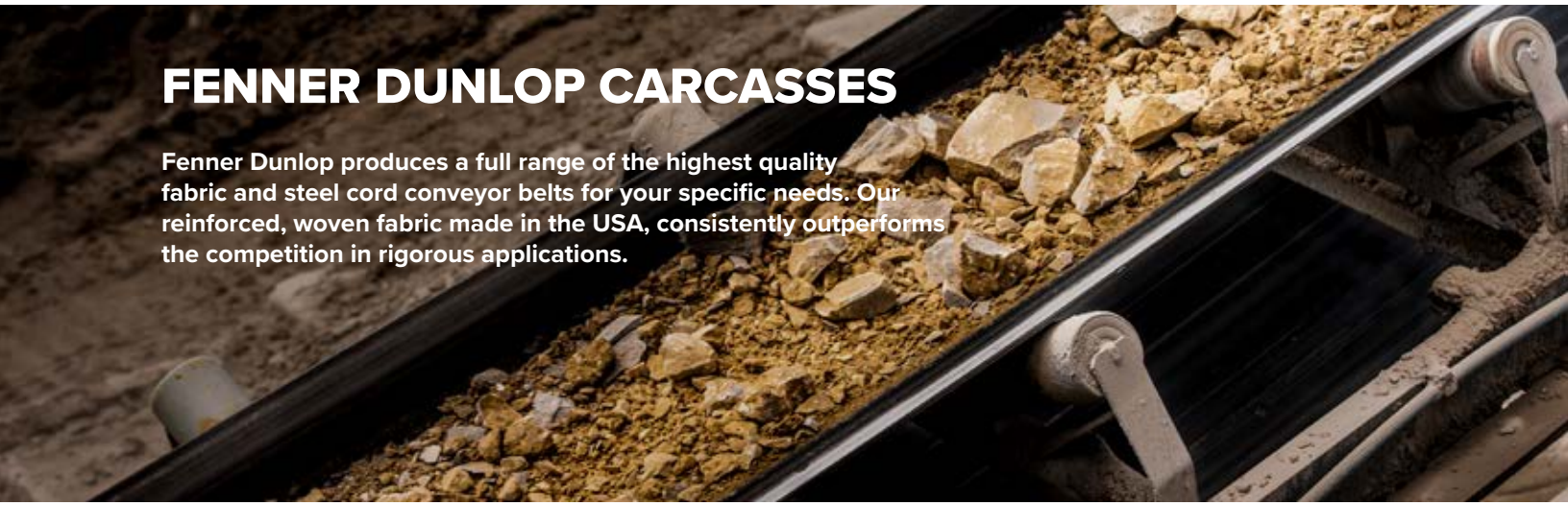
You need both the cover compound and the carcasses to work together to create the optimal product for your specific needs.

You need conveyor belts that provide the highest productivity for your operation.

You need Fenner Dunlop on your team.

Selecting the most suitable belt construction and cover compound quality depends on several different factors. The final choice from the available options for each application will depend on the actual working conditions.

> **"We've got about a mile of overland conveyor systems and we have put Fenner Dunlop on every one of those conveyor systems. It has really, really helped our operation in reducing downtime and saving money."**
>
> — **Plant manager**
> Aggregates operation



FENNER DUNLOP CARCASSES

Fenner Dunlop produces a full range of the highest quality fabric and steel cord conveyor belts for your specific needs. Our reinforced, woven fabric made in the USA, consistently outperforms the competition in rigorous applications.

XSERIES

1st to market, best in class.
Straight warp + patented dual crimp weave.
Stronger & tougher than standard plied belts.
Best rip, tear, and impact resistance in the market.

USFLEX · KORDFLEX · DYNAFLEX

Ultra-strength, best in class straight warp fabric.

NOVAX · ULTRAX · NOVA-XTREME

Only Dual Crimp weave carcasses on the market!

PLYLOK GROUP

The best engineered plied belting for a wide range of rigorous applications.

PLYLOK SUPREME

Tough fabric plies vulcanized together with premium rubber skims, creating superior adhesions.

PLYLOK MASTER

Superb product for less demanding applications.

SPECIALTY

Best in class, one of a kind carcasses designed with your special application needs.

DYNAFLIGHT, HOTSHOT & ROYALON

*Fenner Dunlop Belting has been nothing but phenomenal for us. **I can run 8,000-9,000 tons per day** on my belts and not ever have to worry about system performance... that is saying something. With Fenner Dunlop, I get the job done and have zero down-time.*

— Korey Kibodeaux, Quarry Plant Manager

4 primary conveyors:
— 1 with UsFlex D6
— 3 with Nova-X F6

For his light to medium duty conveyors, he uses Ultra X®

BLUE WATER INDUSTRIES

FENNER DUNLOP
CONVEYOR BELTING

XSERIES

Our premium, longest-lasting fabric belts

- Straight warp + patented dual crimp weave
- Stronger and tougher than standard plied belts
- Best rip, tear and impact resistance in the market!

Our high-performance manufacturing specifications meet the needs of your toughest applications.

Members of the **X Series™ Group**

USFLEX NOVAX ULTRAX

NOVA-XTREME KORDFLEX DYNAFLEX

Find out more on the next pages

UsFlex® is a member of the X Series™ Group

USFLEX

Ultra Strength. Ultimate Solution.

2x More Rip Resistant Vs. Competitors

Meet the UsFlex® Family

UsFlex covers almost every application, with specific Flex versions for Mining, Grain Handling, and Power Generation.

- UsFlex®
- UsFlex W™ (low stretch)
- Double UsFlex™
- KordFlex™
- MineFlex™
- LongFlex™
- LongFlex W™
- GrainFlex™
- PowerFlex™

Choose either Single Unit S or dual unit D series for outstanding carcass style and tension rating

DynaFlex™
BREAKER SYSTEM

USFLEX®

US
Ultra strength

FLEX
Best in class straight warp fabric

Not only are we the first to market straight warp, we are also **2x more rip resistant vs. competitors.**

Heavy weight straight warp weave with binding cords that are the most durable.

MARKETS

- Aggregates
- Heavy Metals
- Phosphate
- Hard Rock
- Recycling

Applications:

High abuse operations like conveyors under primary crushers.

UsFlex® is a revolutionary concept in straight-warp conveyor belts.

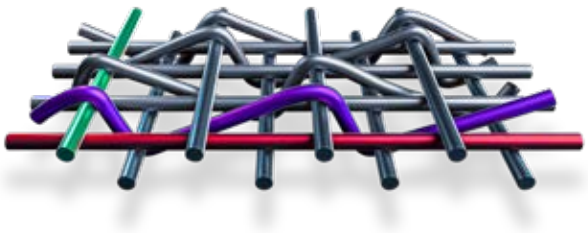
UsFlex is different from the competition. We use heavyweight straight yarns in parallel planes – lengthwise and crosswise – locked together with a unique binder to concentrate belt strength.

Our parallel planes reinforce like the multiple plies of traditional belts but without the crimping that weakens and stretches the yarn. Our binder is a built-in breaker to resist impacts and punctures.

For applications that require lower stretch, UsFlex W is available.

3x

IMPACT RESISTANCE UP TO THREE TIMES GREATER



Straight-warp construction

Weft · Binder Warp · Straight Warp

- Get longer belt life in tough service
- Greater cost savings per ton conveyed
- Greater rip, tear and impact resistance
- High strength
- Excellent load support, troughability, and tracking
- Increased insurance against belt damage
- Impact resistance up to three times greater than traditional plied belt construction
- Longitudinal rip resistance more than three times equivalent-rated multi-ply belts

WATCH USFLEX IN ACTION

Scan here!

UsFlex® Technical Data

USFLEX

Fenner Dunlop Usflex® Belting

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
Number of Plies	1	1	1	1	1	2	2	2	2	2	2	2	2
Carcass Gauge (in)	0.075	0.095	0.132	0.146	0.175	0.244	0.278	0.320	0.340	0.388	0.446	0.468	0.468
Carcass Weight (lbs/in/ft)	0.020	0.024	0.041	0.044	0.056	0.103	0.113	0.130	0.140	0.162	0.188	0.212	0.212
Elastic Modulus (lbs/in)	25 000	30 000	40 000	40 000	45 000	50 000	60 000	65 000	70 000	85 000	90 000	150 000	213 000

Conveyor Belt Specifics

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
Max Tension Rating (PIW)	200	245	330	440	550	550	660	800	1 000	1 250	1 500	1800	2 000

Troughing/Empty – Min Belt Width (in)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
20 degree idlers	14	16	20	24	24	24	24	30	30	30	30	36	36
35 degree idlers	18	20	24	30	30	30	30	36	36	36	36	42	42
45 degree idlers	0	24	30	36	36	36	36	42	42	42	42	48	48

Load Support – Max Belt Width (in)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
20 deg idlers 0 – 40 lbs/ft³	42	60	72	84	84	84	84	84	84	84	84	96	96
20 deg idlers 41 – 80 lbs/ft³	36	48	66	72	72	84	84	84	84	84	84	96	96
20 deg idlers 81 – 120lbs/ft³	30	42	60	66	72	84	84	84	84	84	84	96	96
20 deg idlers over 120 lbs/ft³	0	36	48	60	66	72	72	84	84	84	84	96	96
35 deg idlers 0 – 40 lbs/ft³	36	48	66	72	72	84	84	84	84	84	84	96	96
35 deg idlers 41 – 80 lbs/ft³	30	36	54	60	66	72	84	84	84	84	84	96	96
35 deg idlers 81 – 120 lbs/ft³	24	36	48	54	60	66	72	84	84	84	84	96	96
35 deg idlers over 120 lbs/ft³	0	30	42	48	54	60	72	84	84	84	84	96	96
45 deg idlers 0 – 40 lbs/ft³	0	42	54	60	66	72	84	84	84	84	84	96	96
45 deg idlers 41 – 80 lbs/ft³	0	36	48	54	60	72	84	84	84	84	84	96	96
45 deg idlers 81 – 120 lbs/ft³	0	30	42	48	54	60	72	84	84	84	84	96	96
45 deg idlers over 120 lbs/ft³	0	24	36	42	48	54	66	72	72	84	84	96	96

Minimum Pulley Diameters (in)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
81 – 100% belt rated tension	8	10	14	16	20	24	30	36	36	36	36	42	42
61 – 80% belt rated tension	7	8	12	13	16	20	24	24	30	30	30	36	36
Up to 60% belt rated tension	5	6	9	10	12	15	18	20	22	24	24	30	30

“We used to replace our belts every three to six months before we started fitting UsFlex belts. UsFlex really is an amazing belt.”

— **Quarry manager**
Aggregates quarry

Elevator Belt Specifics

Maximum Tension Rating (PIW)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
Aggregates Service	170	208	280	374	468	468	560	680	850	1 063	1 275	1 530	1 700
Industrial Service	150	184	248	330	413	413	495	600	750	938	1 125	1 350	1 500

Minimum Pulley Diameters (in)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
81 – 100% belt rated tension	8	10	14	16	20	24	30	36	36	36	36	42	42
61 – 80% belt rated tension	7	8	12	13	16	20	24	24	30	30	30	36	36
Up to 60% belt rated tension	5	6	9	10	12	15	18	20	22	24	24	30	30

Maximum Bucket Projection (in)

Carcass Style	S1	S2	S3	S4	S5	D5	D6	D8	D10	D12	D15	D18	D20
Centrifugal Elevators	7	8	10	10	10	12	14	15	16	17	18	18	18
Continuous Elevators	6	7	9	10	12	13	15	16	18	20	22	22	22

UsFlex® W Technical Data

Fenner Dunlop Usflex® W Belting

Carcass Style	W5	W6	W8	W10	W12	W15
Number of Plies	2	2	2	2	2	2
Carcass Guage (in)	0.228	0.264	0.298	0.334	0.368	0.404
Carcass Weight (lb/in/ft)	0.092	0.114	0.126	0.139	0.163	0.175
ElasWc Modulus (lbs/in)	60 000	65 000	70 000	80 000	100 000	120 000

Conveyor Belt Specifics

Carcass Style	W5	W6	W8	W10	W12	W15
Max Tension Rating (PIW)	500	600	800	1 000	1 250	1 500

Troughing/Empty – Min Belt Width (in)

Carcass Style	W5	W6	W8	W10	W12	W15
20 degree idlers	24	24	30	30	30	30
35 degree idlers	30	30	36	36	36	36
45 degree idlers	36	36	42	42	42	42

Load Support – Max Belt Width (in)

Carcass Style	W5	W6	W8	W10	W12	W15
20 deg idlers 0 – 40 lbs/ft³	84	84	84	84	84	84
20 deg idlers 41 – 80 lbs/ft³	84	84	84	84	84	84
20 deg idlers 81 – 120lbs/ft³	84	84	84	84	84	84
20 deg idlers over 120 lbs/ft³	66	84	84	84	84	84
35 deg idlers 0 – 40 lbs/ft³	84	84	84	84	84	84
35 deg idlers 41 – 80 lbs/ft³	84	84	84	84	84	84
35 deg idlers 81 – 120 lbs/ft³	84	84	84	84	84	84
35 deg idlers over 120 lbs/ft³	60	66	84	84	84	84
45 deg idlers 0 – 40 lbs/ft³	66	84	84	84	84	84
45 deg idlers 41 – 80 lbs/ft³	66	84	84	84	84	84
45 deg idlers 81 – 120 lbs/ft³	60	84	84	84	84	84
45 deg idlers over 120 lbs/ft³	54	60	66	84	84	84

Minimum Pulley Diameters (in)

Carcass Style	W5	W6	W8	W10	W12	W15
81 – 100% belt rated tension	25	30	32	36	40	42
61 – 80% belt rated tension	20	24	26	29	32	34
Up to 60% belt rated tension	15	18	20	22	24	26

Elevator Belt Specifics

Maximum Tension Rating (PIW)

Carcass Style	W5	W6	W8	W10	W12	W15
"Grain, Wood Chip" Service (50 lbs/ft3)	425	510	680	850	1 063	1 275
"Industrial" Service (100 lbs/ft3)	375	450	600	750	938	1 125

Minimum Pulley Diameters (in)

Carcass Style	W5	W6	W8	W10	W12	W15
81 – 100% belt rated tension	25	30	32	36	40	42
61 – 80% belt rated tension	20	24	26	29	32	34
Up to 60% belt rated tension	15	18	20	22	24	26

Maximum Bucket Projection (in)

Carcass Style	W5	W6	W8	W10	W12	W15
Centrifugal Elevators	11	13	13	14	15	16
Continuous Elevators	11	13	13	14	15	16

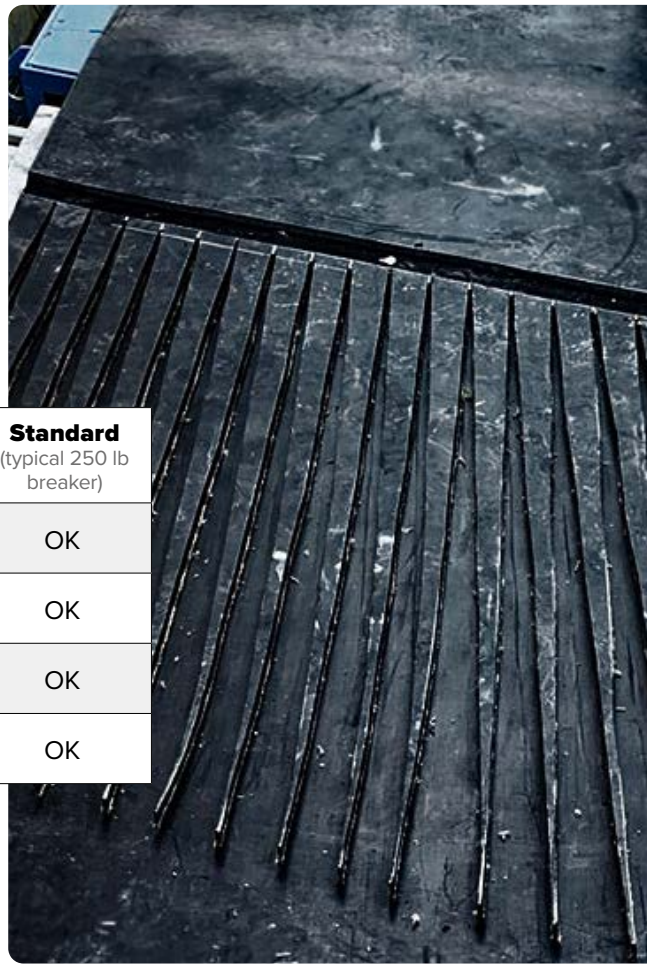
DYNAFLEX

BREAKER FABRICS

DynaFlex™ breaker fabrics are engineered with the properties and characteristics of our premium UsFlex® carcass construction.

DynaFlex™ is used primarily as a breaker fabric for our DynaFlight™ steel cord belting and in some cases for select fabric carcasses.

For protection beyond detection use the new standard in breaker fabrics: DynaFlex™.



Property	DYNAFLEX		Standard (typical 250 lb breaker)
	DynaFlex I	DynaFlex II	
Rip Resistance	Excellent	Good	OK
Lengthwise Tear Resistance	Excellent	Good	OK
Crosswise Tear Resistance	Excellent	Good	OK
Impact Energy	Excellent	Good	OK

DynaFlex is compatible with KordFlex and DynaFlight. For more information on KordFlex, see below. For more information on DynaFlight, see ***page 36****.*

KORDFLEX

ARAMID REINFORCED

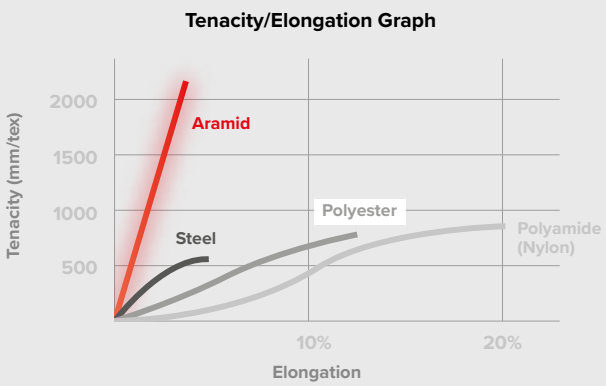
Premium aramid reinforced straight warp carcass

Like steel, Aramid fibers offer high tenacity, low elongation, and good thermal stability. But unlike steel, Aramid retains low density, chemical and fatigue resistance, and the positive handling qualities of synthetic fiber.

We use heavyweight straight yarns in parallel planes-lengthwise and crosswise. The carcass binder is a built-in breaker that resists impact & puncture.

KordFlex is used in overland conveyors where low stretch fabric belt is required.

Tensile Properties of Different Materials



- Longer belt life in tough service
- Low stretch belt with elongation similar to that of steel cord.
- Lighter weight for more energy savings/ton
- Less downtime, faster splicing than steel cord
- Greater rip, tear and impact resistance
- Excellent load support, troughability and tracking
- Longitudinal rip resistance more than five times plied or steel cord belts

KordFlex® Technical Data

Fenner Dunlop Kordflex® Belting

Carcass Style	K8	K10	K12	K16	K20
Number of Plies	1	1	1	1	1
Carcass Guage (in)	0.150	0.150	0.170	0.190	0.200
Carcass Weight (lb/in/ft)	0.043	0.044	0.055	0.062	0.066
ElasWc Modulus (lbs/in)	213 000	230 000	333 000	425 000	500 000

Conveyor Belt Specifics

Carcass Style	K8	K10	K12	K16	K20
Max Tension Rating (PIW)	800	1 000	1 250	1 600	2 000

Troughing/Empty – Min Belt Width (in)

Carcass Style	K8	K10	K12	K16	K20
20 degree idlers	36	36	36	36	36
35 degree idlers	36	36	36	36	36
45 degree idlers	36	36	36	36	36

Load Support – Max Belt Width (in)

Carcass Style	K8	K10	K12	K16	K20
20 deg idlers 0 – 40 lbs/ft^3	60	72	84	84	84
20 deg idlers 41 – 80 lbs/ft^3	60	72	84	84	84
20 deg idlers 81 – 120lbs/ft^3	48	72	84	84	84
20 deg idlers over 120 lbs/ft^3	48	60	72	84	84
35 deg idlers 0 – 40 lbs/ft^3	54	72	84	84	84
35 deg idlers 41 – 80 lbs/ft^3	54	72	84	84	84
35 deg idlers 81 – 120 lbs/ft^3	42	60	84	84	84
35 deg idlers over 120 lbs/ft^3	42	54	60	72	84
45 deg idlers 0 – 40 lbs/ft^3	48	60	72	84	84
45 deg idlers 41 – 80 lbs/ft^3	48	60	72	84	84
45 deg idlers 81 – 120 lbs/ft^3	42	60	72	84	84
45 deg idlers over 120 lbs/ft^3	36	48	60	72	84

Minimum Pulley Diameters (in)

Carcass Style	K8	K10	K12	K16	K20
81 – 100% belt rated tension	24	24	28	30	36
61 – 80% belt rated tension	20	20	24	24	30
Up to 60% belt rated tension	18	18	22	20	24

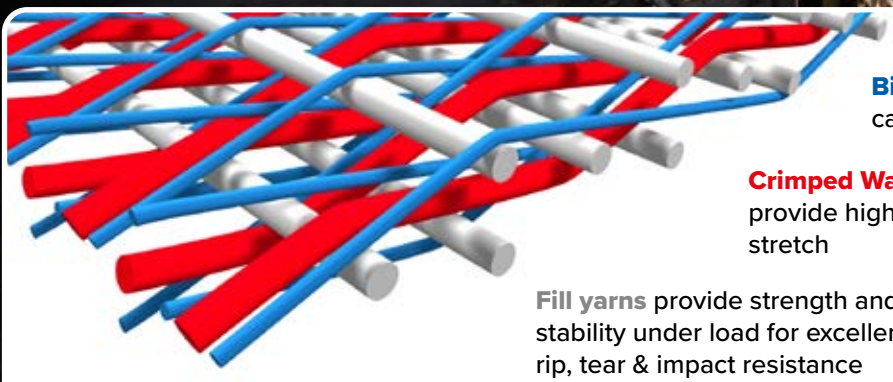
KordFlex Application Success Story

NOVAX

Our Nova-X® carcass can handle the toughest aggregate applications from sand and gravel to primary crushers where premium products are required. Nova-X® offers unsurpassed impact and tear resistance, excellent load support, and longer service life than other premium belts.

Markets

- Aggregates
- Hard Rock
- Sand & Gravel
- Ready Mix
- Cement
- Phosphate
- Recycling
- Wood, pulp and paper
- Foundry and Steel
- Hard Rocks
- Precious Metals Mining
- Power Generation
- Ports and Transloading
- Chemical and Fertilizers



Binder yarns lock the carcass together

Crimped Warp polyester yarns provide high strength and low stretch

Fill yarns provide strength and stability under load for excellent rip, tear & impact resistance

DUAL CRIMP WEAVE CARCASS

Convey bulk materials more reliably with this advanced flexible core.

- ✔ **Excellent resistance to rips, tears, impacts and punctures using a technologically advanced and patented belt fabric design.**
- ✔ **Patented dual crimp weave for higher strength and low stretch applications.**
- ✔ **Unique fabric weave allows for improved mechanical fastener retention & splice life.**
- ✔ **Smaller gauge carcass allows for smaller diameter pulleys, as well as superior troughability, tracking and load support.**

XSERIES

Nova–X® *and* ***Nova–Xtreme™*** *are members of the X Series™ Group*

FENNER DUNLOP CONVEYOR BELTING

Nova-X® Technical Data

NOVAX

Fenner Dunlop Nova-X® Belting

Carcass Style	F3	F4	F6
Belt Style	1- 300	1 - 400	1 - 600
Number of Plies	1	1	1
Carcass Gauge3 (in)	0.115	0.146	0.186
Carcass Weight (lb/in/ft)	0.038	0.044	0.067
Elastic Modulus (lbs/in)	30 000	35 000	40 000
Carcass Safety Factor	10:1	10:1	10:1

Conveyor Belt Specifics

Carcass Style	F3	F4	F6
Max Tension Rating (PIW)	300	400	600

Troughing/Empty - Min Belt Width (in)

Carcass Style	F3	F4	F6
20 degree idlers	18	20	24
35 degree idlers	20	24	30
45 degree idlers	24	30	36

Load Support – Max Belt Width (in)

Carcass Style	F3	F4	F6
20 deg idlers 0 – 40 lbs/ft3	72	84	84
20 deg idlers 41 – 80 lbs/ft3	66	72	72
20 deg idlers 81 – 120 lbs/ft3	60	66	72
20 deg idlers over 120 lbs/ft3	48	60	66
35 deg idlers 0 – 40 lbs/ft3	66	72	72
35 deg idlers 41 – 80 lbs/ft3	54	60	66
35 deg idlers 81 – 120 lbs/ft3	48	54	60
35 deg idlers over 120 lbs/ft3	42	48	54
45 deg idlers 0 – 40 lbs/ft3	54	60	66
45 deg idlers 41 – 80 lbs/ft3	48	54	60
45 deg idlers 81 – 120 lbs/ft3	42	48	54
45 deg idlers over 120 lbs/ft3	36	42	48

Minimum Pulley Diameter (in)

Carcass Style	F3	F4	F6
81 – 100% belt rated tension	14	16	20
61 – 80% belt rated tension	12	13	16
41 – 60% belt rated tension	9	10	12

Elevator Belt Specifics

Maximum Tension Rating (PIW)

Carcass Style	F3	F4	F6
"Grain, Wood Chip" Service (50 lb/ft3)	255	340	510
"Industrial" Service (100 lbs/ft3)	225	300	450

Minimum Pulley Diameter (in)

Carcass Style	F3	F4	F6
81 – 100% belt rated tension	14	16	20
61 – 80% belt rated tension	12	13	16
40 – 60% belt rated tension	9	10	12

Maximum Bucket Projection (in)

Carcass Style	F3	F4	F6
"Centrifugal" Elevators	10	10	12
"Continuous" Elevators	9	10	13

"We use the Nova-X on our overland conveyor systems for bringing our surge rock over from the mine. It works really well just holding up against abrasion and impact."

— **Plant manager**
Aggregates operation

Key Markets

- Cement Plants
- Steel Production/Foundries
- Lime Plants
- Coking Plants
- Iron Ore Plants
- Taconite Processing Plants

OptimaHeat XTREME

Next Generation Single Unit Carcass
Designed for High Heat Applications

Carcass: Nova-Xtreme® Dual Crimp Weave Carcass

We Beat the Heat!

Patented Dual Crimp Weave Carcass

New Rubber Compound with Peak Temperates up to 750 °F

Of all the demands placed on conveyor belts, heat is usually the most unforgiving and damaging. High-temperature environments accelerate the aging process, which hardens the fabric and causes damage to the belt. Heat also has seriously harmful effects on the belt carcass. It progressively reduces the adhesion between the rubber compounds and the fabric plies. Extreme heat hardens the carcass effectively destroying its operational strength and flexibility. Nova-Xtreme eliminated the fabric plies by employing a single unit design and utilizes a specially designed flexible fabric.

OptimaHeat Xtreme is the Total Package

Carcass + Cover combination provides for longest life & lowest cost per ton conveyed in higher heat applications!

OH OptimaHeat — COVER

OptimaHeat cover compound retains its heat resistance after continuous operation up to 400 °F, with minimal abrasion degradation. This new proprietary cover resists hardening and cracking while retaining its flexibility when running under extreme and high heat conditions.

- **Better heat aging**
- **Better abrasion resistance**
- **Improved cracking resistance**
- **400°F/200°C of maximum continuous operating temperature**
- **Peak temperature of 750 °F and 400 °C**

NOVA-XTREME — CARCASS

Nova-X Family of carcasses can handle the toughest aggregates applications from sand and gravel to primary crushers where premium products are required. Our brand new patented dual crimp weave carcass, Nova-Xtreme, was designed specifically for high heat applications.

- **Stronger adhesions due to both the elimination of between ply skim rubber and a special weave to increase surface area**
- **More flexible around pulleys due to specially designed carcass made for higher heat applications**
- **Maintains impact, rip and tear resistance of an X Series carcass under extreme and high heat conditions**

Carcass	Trough Angle (deg)	Min. Belt Width (in)	Max Belt Width for Load Support (in)				Pulley Diameter (in)		
			0-40 (lbs/ft³)	40-80 (lbs/ft³)	80-120 (lbs/ft³)	>120 (lbs/ft³)	High Tens.	Med Tens.	Low Tens.
H3	20	18	72	66	60	48	11	9	7
	35	20	66	54	48	42			
	45	24	54	48	42	36			

Cover Compounds

Abrasion ARPM Grade II

Cut/Gouge ARPM Grade I

Cold Resistant

Fire Retardant

Heat Resistant

Oil Resistant

Power Saver

Low Extraction

Non-Stick

OptimaHeat XTREME

ULTRAX

Application: **General light and medium duty bulk material handling applications**

Carcass: **Dual crimp weave carcass**

Single unit construction with patented dual crimp weave design offers superior carcass adhesion in both wet and dry applications.

Improved rip, tear, and impact resistance compared to import and typical domestic belting products.

Excellent mechanical fastener retention and can utilize Fenner Dunlop finger splice technology.

Great replacement for import belts: similar price point, but better quality and longevity.

Best for the following markets

- Aggregates
- Cement
- Sand & Gravel
- Recycling

Ultra X® Technical Data

ULTRAX

Fenner Dunlop Ultra X® Belting

Carcass Style	X2-275	X3-350
Number of Plies	1	1
Cover Thickness (in)	3/16 x 1/16	3/16 x 1/16 or 1/4 x 1/16
Carcass Gauge (in)	0.095	0.12
Carcass Weight (lb/in/ft)	0.054	0.064
Elastic Modulus (lbs/in)	30 000	35 000
Max. Tension Ratings (PIW)	275	350
Designated Belt Rating (N/mm)	—	—
Minimum Belt Tensile Strength	—	—

Operating Tension (PIW)
Troughing/Empty – Min Belt Width (in)

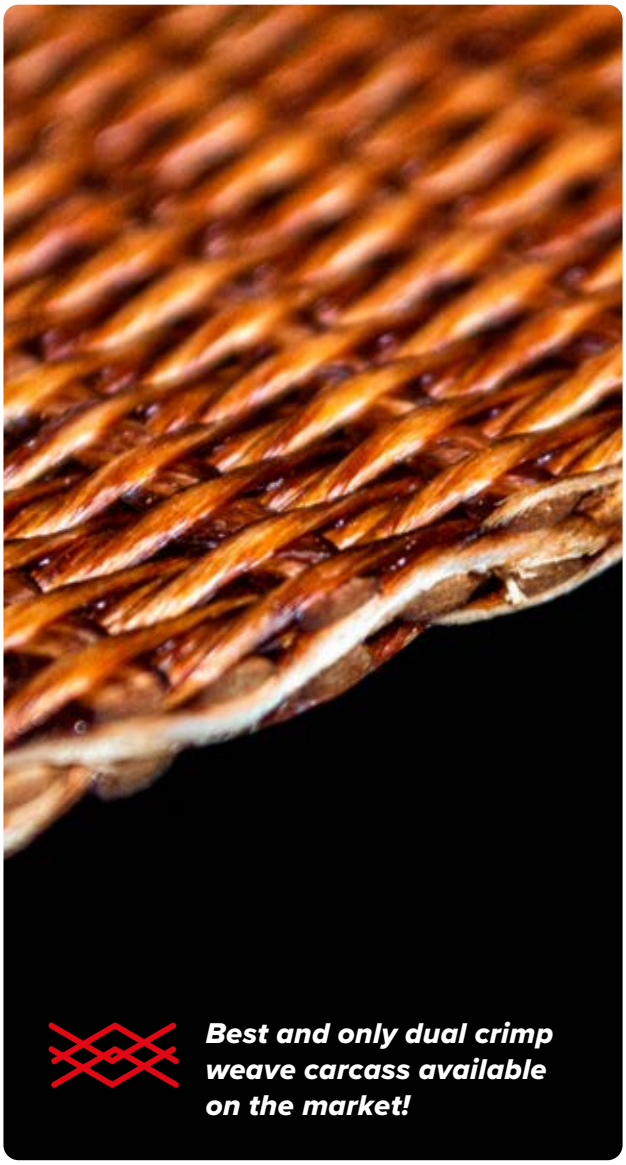
Carcass Style	X2-275	X3-350
20° Idlers	16	20
35° Idlers	20	24

Load Support Max Belt Width (in)

Carcass Style	X2-275	X3-350
20° Idlers (0–40 lbs/ft)	54	72
20° Idlers (41–80 lbs/ft)	48	66
20° Idlers (81–120 lbs/ft)	42	54
35° Idlers (0–40 lbs/ft)	48	54
35° Idlers (41–80 llbs/ft)	42	48
35° Idlers (81–120 lbs/ft)	36	42

Minimum Pulley Diameters (in)

Carcass Style	X2-275	X3-350
81–100% Belt Rated Tension	10	14
61–80% Belt Rated Tension	8	12
Up to 60% Belt Rated Tension	7	10



Best and only dual crimp weave carcass available on the market!

Fenner Dunlop will help you maximize your uptime by reducing belt damage, premature wear and costly repairs.

THE BEST ENGINEERED PLIED BELTING FOR A WIDE RANGE OF RIGOROUS APPLICATIONS.

PLYLOK GROUP

Plylok Group™ covers almost every application, with specific Supreme versions for Mining, Grain Handling, Wood, and Power Generation

Markets

- Aggregates
- Crushed Stone
- Hard Rock
- Sand & Gravel
- Ready Mix
- Cement
- Phosphate
- Recycling
- Grain
- Wood
- Power Generation

PLYLOK SUPREME

Plied belting that provides maximum performance and superior adhesion values for heavy-duty applications.

High impact and tear resistance, plus better fastener holding vs. PlylokMaster™ and competitors.

Heavier weft construction allows for enhanced load support.

Available in these industry-specific designs:

- Plylok**Supreme**™
- MineHaul **Supreme**™
- LongHaul **Supreme**™
- LogDeck **Supreme**™
- Grain**Supreme**™
- Wood**Supreme**™
- Power**Supreme**™

Custom engineered for each application

Heavy duty weft for better rip, tear and impact resistance as well as better mechanical fastener holding

PLYLOK MASTER

Plied belting with superb performance for general purpose applications.

Increased rubber gauge between plies enhances energy absorption and belt load support.

Greater than 4:1 mechanical fastener retention.

Available in these industry specific designs:

- Rock**Master**™
- Grain**Master**™
- Wood**Master**™

Multi-ply construction

Weft design for better rip, tear and impact resistance as well as better mechanical fastener holding

PylokSupreme™ Technical Data

Fenner Dunlop PylokSupreme™ Belting

Standard Carcass Styles	PSR 80		PSR 110				PSR 125			PSR 150			
Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
Number of Plies	2	3	2	3	4	5	2	3	4	2	3	4	5
Carcass Gauge (in)	0.114	0.164	0.118	0.170	0.208	0.266	0.128	0.182	0.226	0.150	0.183	0.252	0.321
Carcass Weight (lb/in/ft)	0.052	0.078	0.054	0.083	0.103	0.133	0.060	0.089	0.113	0.066	0.080	0.114	0.148
Elastic Modulus (lbs/in)	26 000	29 000	35 000	45 000	55 000	65 000	30 000	45 000	55 000	37,000	47,000	57,000	67,000
Max Tension Rating (PIW)	160	240	220	330	440	550	250	375	500	300	450	600	750

Troughing/Empty – Min Belt Width (in)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
20 degree idlers	14	20	14	20	24	30	14	20	30	18	24	30	36
35 degree idlers	18	24	18	24	30	30	18	24	30	20	30	36	36
45 degree idlers	N/A	N/A	24	30	36	36	24	30	36	28	36	42	42

Load Support – Max Belt Width (in)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
20 deg idlers 0 – 40 lbs/ft3	36	60	54	60	72	72	54	72	84	60	72	84	84
20 deg idlers 41 – 80 lbs/ft3	30	54	48	54	66	72	48	60	72	54	60	84	84
20 deg idlers 81 – 120 lbs/ft3	30	42	42	48	60	66	42	54	66	48	54	72	84
20 deg idlers over 120 lbs/ft3	N/A	N/A	36	42	54	60	36	48	60	42	48	66	72
35 deg idlers 0 – 40 lbs/ft3	36	54	48	54	72	72	48	60	72	54	60	84	84
35 deg idlers 41 – 80 lbs/ft3	24	48	42	48	60	72	42	60	66	48	60	72	72
35 deg idlers 81 – 120 lbs/ft3	24	36	36	42	54	60	36	54	60	42	54	66	66
35 deg idlers over 120 lbs/ft3	N/A	N/A	30	36	48	54	30	42	54	36	42	54	60
45 deg idlers 0 – 40 lbs/ft3	30	N/A	48	48	60	72	48	60	72	48	60	72	84
45 deg idlers 41 – 80 lbs/ft3	24	N/A	36	42	54	66	36	54	60	42	48	66	72
45 deg idlers 81 – 120 lbs/ft3	N/A	N/A	30	36	48	54	30	48	54	36	48	60	60
45 deg idlers over 120 lbs/ft3	N/A	N/A	N/A	30	42	48	N/A	36	48	30	36	54	54

Minimum Pulley Diameters (in)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
81 – 100% belt rated tension	14	18	14	18	22	30	14	20	24	16	22	28	32
61 – 80% belt rated tension	12	15	12	15	18	24	12	16	20	13	18	24	26
Up to 60% belt rated tension	9	11	9	11	14	20	9	12	15	10	14	17	22

Elevator Belt Specifics

Maximum Tension Rating (PIW)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
"Grain, Wood Chip" Service (50 lbs/ft³)	136	204	187	280	374	468	213	319	425	255	383	510	638
"Industrial" Service (100 lbs/ft3)	120	180	165	248	330	413	188	281	375	225	338	450	563

Minimum Pulley Diameters (in)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
81 – 100% belt rated tension	14	18	14	18	22	30	14	20	24	16	22	28	32
61 – 80% belt rated tension	12	15	12	15	18	24	12	16	20	13	18	24	26
Up to 60% belt rated tension	9	11	9	11	14	20	9	12	15	10	14	17	22

Maximum Bucket Projection (in)

Fabric Ply	2-160	3-240	2-220	3-330	4-440	5-550	2-250	3-375	4-500	2-300	3-450	4-600	5-750
"Centrifugal" Elevators	6	N/A	6	8	10	10	7	9	11	7	10	11	11
"Continuous" Elevators	N/A	N/A	5	7	10	12	6	8	11	6	9	12	14

	PSR 200					PSR 250				PSR 300				PSR 500	
	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	2	3	4	5	6	2	3	4	5	2	3	4	5	3	4
	0.182	0.231	0.316	0.401	0.486	0.198	0.255	0.348	0.441	0.180	0.282	0.384	0.486	0.455	0.620
	0.083	0.114	0.152	0.197	0.241	0.089	0.118	0.166	0.212	0.079	0.133	0.187	0.241	0.205	0.256
	44,000	72,000	82,000	105,000	132,000	62,000	72,000	90 000	98 000	63 000	94 000	100 000	108 000	108 000	134 000
	400	600	800	1 000	1 200	500	750	1 000	1 250	600	900	1 200	1 500	1 500	2 000

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	20	28	30	36	42	24	30	36	42	28	30	36	48	42	48
	24	30	36	42	48	30	36	42	48	30	36	42	54	48	54
	30	36	42	48	54	36	42	48	54	36	42	48	60	54	60

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	66	72	84	84	84	72	84	84	84	72	84	84	84	84	84
	60	72	84	84	84	66	72	84	84	72	84	84	84	84	84
	54	60	84	84	84	60	72	84	84	60	72	84	84	84	84
	48	54	84	84	84	54	60	72	84	54	66	72	84	84	84
	60	72	84	84	84	66	72	84	84	72	84	84	84	84	84
	54	60	84	84	84	60	66	84	84	60	72	84	84	84	84
	48	54	72	72	84	54	60	72	84	54	60	72	84	84	84
	42	48	60	66	84	48	54	66	72	48	54	66	84	72	84
	54	72	72	84	84	60	72	84	84	66	72	84	84	84	84
	48	60	72	84	84	54	66	72	84	54	66	72	84	84	84
	42	48	60	72	84	48	54	60	84	48	60	66	84	72	84
	36	42	54	66	72	42	48	54	72	42	54	60	72	72	72

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	20	24	30	36	48	20	28	36	42	20	30	40	50	42	48
	16	20	24	32	40	16	23	30	36	16	24	32	40	36	42
	12	15	20	26	32	12	17	22	30	12	18	24	32	30	36

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	340	510	680	850	1 020	425	638	850	1 063	510	765	1 020	1 275	1 275	1 700
	300	450	600	750	900	375	563	750	938	450	675	900	1 125	1 125	1 500

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	20	24	30	36	48	20	28	36	42	20	30	40	50	42	48
	16	20	24	32	40	16	23	30	36	16	24	32	40	36	42
	12	15	20	26	32	12	17	22	30	12	18	24	32	30	36

	2-400	3-600	4-800	5-1,000	6-1,200	2-500	3-750	4-1,000	5-1,250	2-600	3-900	4-1,200	5-1,500	3 -1,500	4 -2,000
	10	10	11	12	12	10	11	12	12	10	11	12	12	12	14
	9	12	14	16	20	8	14	14	18	8	14	14	18	14	16

PlylokMaster™ Technical Data

PLYLOK MASTER

Fenner Dunlop PlylokMaster™ Belting

Carcass Style	2-220	3-330	4-440
Number of Plies	2	3	4
Carcass Gauge (in)	0.097	0.133	0.172
Carcass Weight (lb/in/ft)	0.046	0.063	0.083
Elastic Modulus (lbs/in)	26,000	29,000	46,000
Max Tension Rating (PIW)	220	330	440

Troughing/Empty - Min Belt Width (in)

Carcass Style	2-220	3-330	4-440
20° idlers	14	20	24
35° idlers	18	24	30
45° idlers	18	-	-

Load Support – Max Belt Width (in)

Carcass Style	2-220	3-330	4-440
20 deg idlers 0 – 40 lbs/ft³	42	60	72
20 deg idlers 41 – 80 lbs/ft³	36	54	60
20 deg idlers 81 – 120 lbs/ft³	30	42	54
35 deg idlers 0 – 40 lbs/ft³	36	54	60
35 deg idlers 41 – 80 lbs/ft³	30	48	54
35 deg idlers 81 – 120 lbs/ft³	24	36	48

Minimum Pulley Diameters (in)

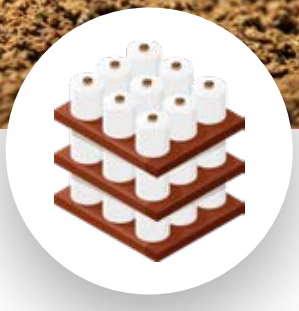
Carcass Style	2-220	3-330	4-440
81 – 100% belt rated tension	14	18	22
61 – 80% belt rated tension	12	15	18
Up to 60% belt rated tension	9	11	14

Standard Constructions Available

Carcass Style	2-220	3-330	4-440
1/8" X 1/16" Platinum & Abrader covers	Yes	—	—
3/16" X 1/16" Platinum & Abrader covers	Yes	Yes	—
1/4" x 1/16" Platinum & Abrader covers	—	Yes	Yes

SPECIALTY CARCASSES

Royalon™ / HotShot™ / DynaFlight®



Nylon warp and weft design for durability and flexibility.

Royalon belting is comprised of a special nylon fabric that provides adaptability for applications that have small curve radiuses.

HotShot is specially designed for the hottest applications. It has a fiberglass carcass built into a solid-woven design, maximizing the heat resistance of the belt carcass. It is protected by Delta Heat 2.0®, the industry's best high-heat cover compound. HotShot will help protect your conveyor system against:

- Belt burn through
- Carcass meltdown
- Burned-away splices and carcasses

Even in contact with isolated pockets of extremely hot materials, your belt integrity is assured with **HotShot**.

Fiberglass carcass for the hottest applications

Applications:

- **Cement clinker**
- **Ore pelletizing**
- **Sintering and coking**
- **Calcined lime**
- **Smelting and refining**
- **Hot foundry/casting**

- ✔ Unique fiberglass carcass, resists burn-through to 1,000 °F.
- ✔ No ply separation due to solid weave.
- ✔ Premium cover compound DeltaHeat 2.0® gives optimal heat resistance and adhesion.
- ✔ Minimal belt elongation.


DynaFlight™
Measures up to your toughest challenge.
Perfect solution for slope belts in deep mines and open-pit mines

DynaFlight™ / STEELCORD BELTING

DynaFlight belts are designed for the highest tension applications. Using a single plane of carefully constructed, pre-tensioned steel cords, DynaFlight conveys the toughest loads over the longest distances and at the highest tensions.

A century of belt design and manufacturing experience, enhanced by today's technology, goes into every Fenner Dunlop DynaFlight belt. No wonder customers worldwide have such confidence in our DynaFlight steel cord belting.

DynaFlight™
Production Process

Reasons to count on DynaFlight™

Tension capabilities
Highly efficient, precision-engineered steel cords with belt operating ratings up to ST10,000.

Product quality
Superior results come from the finest materials, meticulous testing, and the best quality control.

Product design
Thanks to individually pre-tensioned cords with alternating twists, we position cables uniformly in-plane for optimum belt tracking.

Adhesion & corrosion protection
Cable corrosion protection is assured with zinc plated steel cords and high-pressure curing.

Minimal elongation
Belt elongation less than 0.25% of conveyor centers.

Energy efficient
Low rolling resistant compounds available.

EagleEye®, BIRDSi™, and Rip Ranger®
Highly sophisticated electronic monitoring and rip protection options available.

Unsurpassed performance
The finest materials, design, manufacturing and quality control make a problem-free belt.

DynaFlight™ Technical Data

Fenner Dunlop DynaFlight™ Belting

Standard Carcass Styles	ST500	ST630	ST800	ST1000	ST1250	ST1400	ST1600	ST1800
Elastic Modulus (lbs/in)	206,000	259,000	329,000	411,000	514,000	576,000	658,000	740,000
Cord Pitch (in)	0.551	0.433	0.472	0.472	0.551	0.551	0.591	0.531
Carcass Weight (lbs/in/ft)	0.092	0.097	1.164	1.127	1.584	1.644	1.944	2.052
Max. Cord Diameter (in)	0.118	0.118	0.146	0.165	0.193	0.197	0.220	0.220

Operating Tension (PIW)

Standard Carcass Styles	ST500	ST630	ST800	ST1000	ST1250	ST1400	ST1600	ST1800
Max Tension Rating (PIW)	430	535	685	860	1 070	1 195	1 370	1 535

Troughing/Empty - Min Belt Width (in)

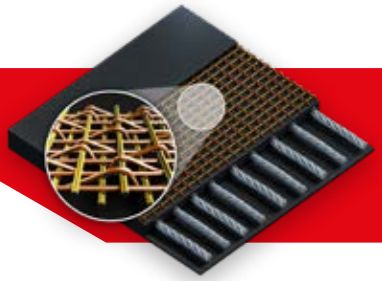
Standard Carcass Styles		ST500	ST630	ST800	ST1000	ST1250	ST1400	ST1600	ST1800
Troughing/Empty Minimum Belt Width (in)	**20° idlers**	24	24	24	24	24	24	24	30
	35° idlers	24	24	24	24	30	30	30	30
	45° idlers	24	24	30	30	36	36	36	36

Minimum Pulley Diameter (in)

Standard Carcass Styles		ST500	ST630	ST800	ST1000	ST1250	ST1400	ST1600	ST1800
Minimum Pulley Diameter % Rated Belt Tension (in)	**81 – 100%**	24	24	36	36	42	48	48	48
	61 – 80%	20	20	30	30	36	36	36	36
	up to 60%	16	16	18	18	20	20	24	24

Splice Pattern

Standard Carcass Styles	ST500	ST630	ST800	ST1000	ST1250	ST1400	ST1600	ST1800
Splice Pattern	1-Step	1-Step	1-Step	1-Step	1-Step	1-Step	1-Step	1-Step



DynaFlight is available with DynaFlex I and II

Engineered with the properties and characteristics of our premium **UsFlex**® carcass construction, that resists impacts, tears and rips in your toughest applications.

	ST2000	ST2250	ST2500	ST2800	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
	822,000	925,000	1,030,000	1,151,000	1,295,000	1,439,000	1,640,000	1,850,000	2,055,000	2,220,000
	0.472	0.433	0.591	0.531	0.591	0.591	0.591	0.630	0.669	0.669
	2.196	2.316	2.724	2.784	3.564	3.912	4.080	4.644	5.160	5.568
	0.220	0.220	0.283	0.283	0.319	0.339	0.350	0.382	0.429	0.445

	ST2000	ST2250	ST2500	ST2800	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
	1 720	1 920	2 140	2 390	2 690	2 985	3 440	3 840	4 280	4 605

	ST2000	ST2250	ST2500	ST2800	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
	30	30	30	30	30	30	36	36	36	36
	30	30	30	30	36	36	42	42	48	48
	36	36	36	36	36	36	42	42	48	48

	ST2000	ST2250	ST2500	ST2800	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
	48	48	54	54	54	60	60	66	72	78
	36	36	42	42	48	48	48	54	60	66
	24	24	36	36	36	36	42	48	54	54

	ST2000	ST2250	ST2500	ST2800	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400
	2-Step	2-Step	2-Step	2-Step	2-Step	2-Step	3-Step	3-Step	3-Step	3-Step

FENNER DUNLOP COVER COMPOUNDS

While the actual construction and physical properties of the carcass are very important, it is the combination of the carcass with the physical strength and durability of the cover compounds that ultimately determines the operational lifetime of a conveyor belt and thus, its cost-effectiveness.

At Fenner Dunlop, extensive research and development, rigid quality control and years of experience, give you the most suitable compounds for your increasing demands to move more material.

Fenner Dunlop cover compounds are some of the most innovative, offering superior ultraviolet and ozone protection, plus a range of properties that outperform the competition!

We are proud to be the only rubber manufacturer with CSA-A2 approval: with one of the most stringent fire and anti-static testing in the world!

And thanks to our engineers, Fenner Dunlop cover compounds keep getting better!

OUR COVER COMPOUNDS EXCEED ARPM STANDARDS

ARPM
ASSOCIATION FOR RUBBER PRODUCTS MANUFACTURERS

THE BEST SUPER-TOUGH ‘LONG LIFE’ COVER GRADES

Depending on the kind of materials being conveyed and the environments in which they are used, conveyor belts need to withstand a wide range of operational demands. Our cover compounds are designed to protect your carcass from the harshest conditions.

No matter what demands you have, we have you covered!

- **Cut / Gouge**
- **Abrasion**
- **Cold Resistant**
- **Fire Retardant**
- **Heat Resistant**
- **Oil Resistant**
- **Low Extraction**
- **Power Saver**

CUT/GOUGE

In some industries, the most common reason for having to repair or replace a belt is due to rip or impact damage rather than day-to-day wear. In more extreme conditions where heavy and sharp materials and/or large drop heights are involved, it is essential to have rubber covers that protect the carcass as much as possible against rip, tear and impact.

For these kind of conditions, we recommend the following cover compounds.

Matchless Plus™

- Designed to resist the most severe cut, gouge, and impact applications, plus good abrasion resistance
- Complies with DIN standard 'X'
- Performs well in cold temperatures

Platinum Plus™

- Ultimate high tensile compound that combines the best impact and abrasion resistance

Black Diamond™

- Performs best in high impact application

Titanium™

- Best for abrasion resistance
- Get more life with less cover thickness
- Performs well in high-impact applications, including cold temperatures

Platinum™

- Good abrasion resistance
- Good endurance against combined cutting, gouging and heavy impact
- Recommended for transporting large, heavy lump ores and trap rock

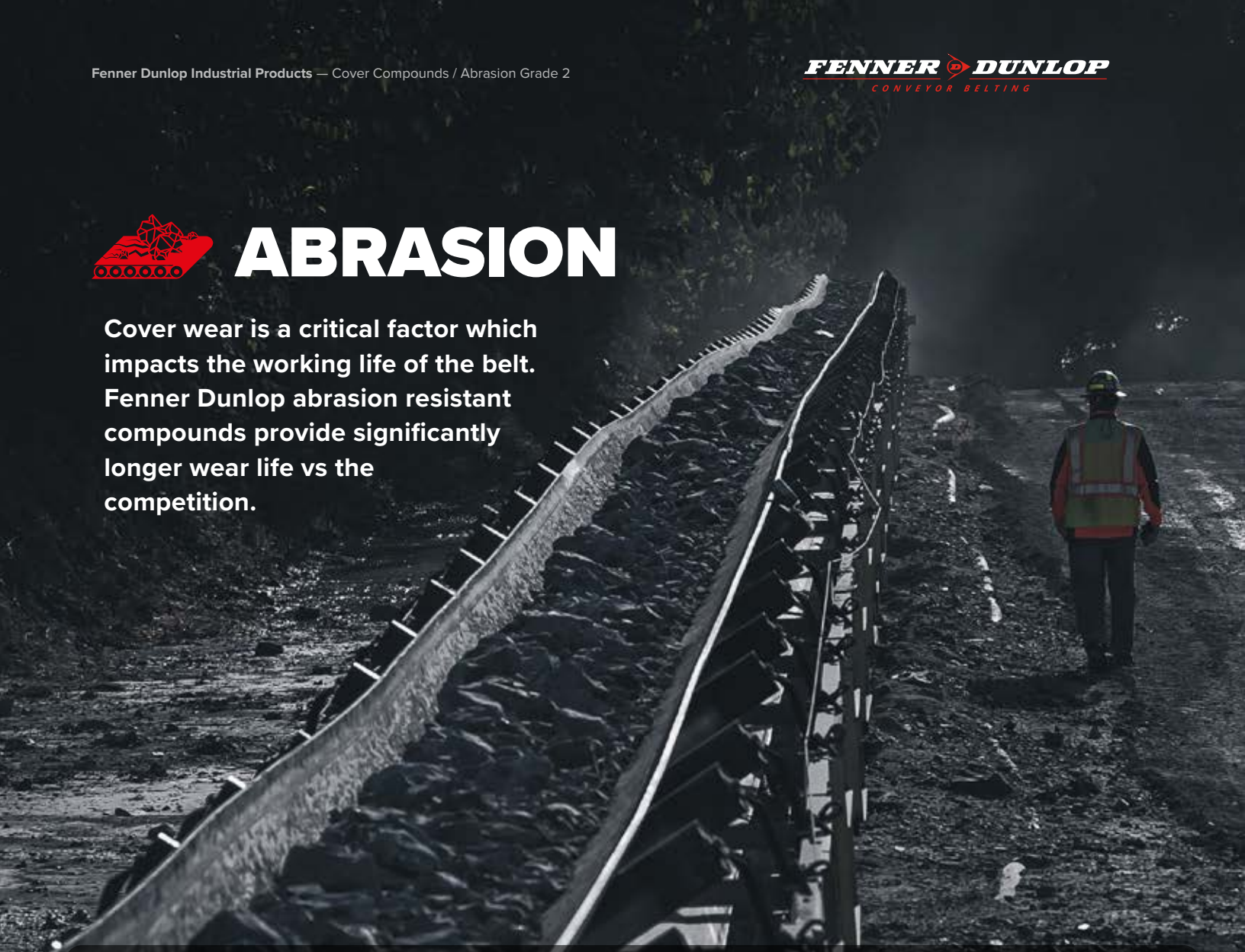
INCREASED INSURANCE AGAINST DAMAGED BELT

ABSOLUTELY RELIABLE IN THE TOUGHEST CONDITIONS

FENNER DUNLOP CONVEYOR BELTING

ABRASION

Cover wear is a critical factor which impacts the working life of the belt. Fenner Dunlop abrasion resistant compounds provide significantly longer wear life vs the competition.



We offer a variety of abrasion resistant compounds, but the compounds listed below are some of our most popular.

ZR3™

- Highest abrasion resistance
- Increased service life without increasing cover thickness
- Good resistance to cutting and gouging + frigid temperatures

Granite™

- A popular choice for abrasive material handling applications
- Good resistance to cutting and gouging
- Exceeds ARPM grade 2 standards

Platinum™

- Good abrasion resistance
- Good endurance against combined cutting, gouging and heavy impact
- Recommended for transporting large, heavy lump ores and trap rock

Titanium™

- Best for abrasion resistance
- Get more life with less cover thickness
- Performs well in high-impact applications, including cold temperatures

Other abrasion resistant cover compounds:

— Sahara™ SAR
— Sahara™ DS
— Giant XE™
— GUARDIAN™ SAR
— ZR™ family

COLD RESISTANT

When the ambient temperature descends below 32°F (0°C) rubber begins to lose its elasticity. As the temperature falls, the rubber continues to lose flexibility and its ability to resist abrasion, impact and cutting. Eventually the belt is unable to trough and pass around pulleys and the belt begins to break down. Most cover compounds can usually withstand -22 °F to -40°F (-30°C / 40°C) Other cover qualities (such as oil or fire) are usually only able to withstand a minimum temperature of -20°C. For temperatures lower than this, conveyors should be installed with belts specially designed to withstand extreme cold.

Other cold resistant cover compounds:

— **CGH**™ — **ZR3**™ — **CSA**™ — **Granite**™

ZR2 ORB™

- Resists combined effects of cold, abrasion and petroleum or oil-based products
- Performs in cold conditions -50° F (-46° C)
- Great for conveying oil sands, bitumen, oil-sprayed coal and similar materials

CWOR™

- Designed for cold weather applications (up to -50 °F/-45.5 °C), abrasion and petroleum or oil based products

ZR1™

- Highest resistance to heavy, continuous abrasion
- Good resistance to cutting and gouging
- Great in extreme temperatures

FIRE RETARDANT

Conveyor belts have the ability to spread a fire along the path of the conveyor and belt may even transfer fire throughout the facility from one building to another. The consequences can be catastrophic to life and property. Fenner Dunlop offers a range of conveyor belting specifications that can meet any global standard in place today. This includes ignition and propagation resistant grades which may also offer friction and static electricity safety. Regulatory and corporate requirements such as MSHA, OSHA and CSA will determine belt selection.

FIREBOSS™

- Exceeds MSHA 30 CFR Part 14 requirements
- Meets or Exceeds ARPM FR class 1
- Ideal when an increased fire retardant level is desirable, as well as resistance to abrasion and cover wear

Other FIREBOSS™ covers:

Fireboss AR — Abrasion Resistant
Fireboss SAR — Super Abrasion Resistant;

GUARDIAN™

- Exceeds MSHA 30 CFR Part 18 requirements
- Meets OSHA anti-static requirement (300 megohms)
- Excellent resistance to de-dusting agents
- Ideal for power plants, coal terminals and surface applications where fire retardance is required or non-coal underground applications.

FIREBOSS™ CSA

- Fireboss CSA-C is underground non explosive environment and surface (surface can be explosive)
- Exceeds CSA M422-14 requirements
- Ideal for surface application where fire retardance is required or non-explosive underground applications.
- FIREBOSS CSA-A2 is ideal for underground explosive environments and applications that require the most stringent CSA standard for conveyor belts.

Other fire retardant cover compounds:

— CGH™ — UGH™ — SAHARA™ FR

Compound	ARPM Class	CSA Standards	Oil Resistant	Abrasion Resistant	DIN Standard
Guardian	Class 2	–	–	–	–
Guardian AR	Class 2	–	–	✓	–
Guardian SAR	Class 2	–	–	✓	–
Guardian HF Halogen Free	Class 2	–	–	–	–
Guardian OR	Class 2	–	Medium	–	–
Guardian ORX	Class 2	–	Superior	–	–
DIN-K	Class 2	–	–	✓	✓
FireBoss AR	Class1, Class 2	B2	–	–	–
FireBoss SAR	Class 1, Class 2	–	–	✓	✓
FIREBOSS CSA-C AR	Class 2	C	–	✓	–
FIREBOSS CSA-C OR	Class 2	C	Medium	–	–
FIREBOSS CSA-B2	Class 2, Class 1	C, B2	–	–	–
FIREBOSS CSA-A2	Class 2, Class 1	C, B2, A2	Medium	✓	–

HEAT RESISTANT

Of all the demands placed on conveyor belts, heat is usually one of the most challenging. High temperature environments accelerate the aging process, which causes the rubber to harden and crack. Our heat resistant cover compounds are superb for prolonged exposure to hot payloads and abrasive materials.

OH OptimaHeat New!

- Premium compound for high-temperature materials
- Temperature resistant to 400° F (205° C) for coarse lumps (2 in/ 50mm) and 350 °F (175 °C) for fines
- Resists the cover cracking, hardening, abrasion and tearing in high temperature environments

SAHARA™

- Good abrasion resistance in hot environments
- Temperature resistant to 300 °F (150 °C) for coarse lumps (>2 in/50mm) and 250 °F (120 °C) for fines
- Ideal for medium heat requirements

Available in several versions for your specific application:

Sahara™ SAR	— Super Abrasion & Heat Resistant;
Sahara™ OR	— Oil, Abrasion & Heat Resistant;
Sahara™ FR	— Fire Retardant & Heat Resistant;
Alumina	— Tailor Made to Handle Hot Alumina
Sahara™ DS	— Low extraction resistant for frac sand processing

Photo: Example of cracking caused by hot materials conveyed on a belt cover not designed for heat resistance.

OIL RESISTANT

Conveying materials that contain oil, fat and grease can have a detrimental effect on the performance and life cycle of a conveyor belt. These materials penetrate the rubber causing it to swell and distort, resulting in premature failure.

Oil resistance can be divided into three sources — mineral, vegetable, and animal oils. Despite the different characteristics, most manufacturers produce a limited range of oil resistant cover compounds. However, Fenner Dunlop has developed several cover compounds that provide the best possible protection for your specific needs.

In order to minimize the swelling and distortion caused by oil, we apply stringent American ASTM D 1460 standard test methods.

MOR

- Great for specialized service – wood chips, waste disposal, sewage, sludge and lightly oil-treated materials
- Resists moderately oily materials and terpenes

ORP (Oil Resistant Premium)

- Superior Resistance to materials containing high concentrations of fats and oils.
- Recommended for use involving heavy exposure to aromatic hydrocarbons such as petroleum based oily coke, benzol, and toluene.

UGH

- Maximum resistance to grain oils and oil-based dust suppressant additives with a temperature range of -30° to 200 °F (-34°C to 93°C)
- Surpasses U.S. OSHA specifications for static conductivity; Fire-retardant, meets ARPM-FR Class 2

Other oil resistant cover compounds:

— CGH™
— CSA A2™
— CWOR™
— SAHARA™ OR
— GUARDIAN™ OR + ORX
— ZR2 ORB™

Low extraction

- Resists leaching agents and dust suppressants
- Reduces durometer creep and related tracking issues
- Stops belts from hardening and cracking
- Combined with balanced cover gauge, cupping and curling can be minimized

GUARDIAN™

- Fire-retardant, abrasion resistance compound that meets ARPM-FR Class 2
- Increased resistance to abrasion and cover wear

Other Guardian™

- **AR** exceeds ARPM Grade 2
- **HF** halogen (chlorine) free
- **SAR** Superior abrasion resistance
- **OR** Excellent oil resistance
- **ORX** Superior oil resistance

GIANT XE™

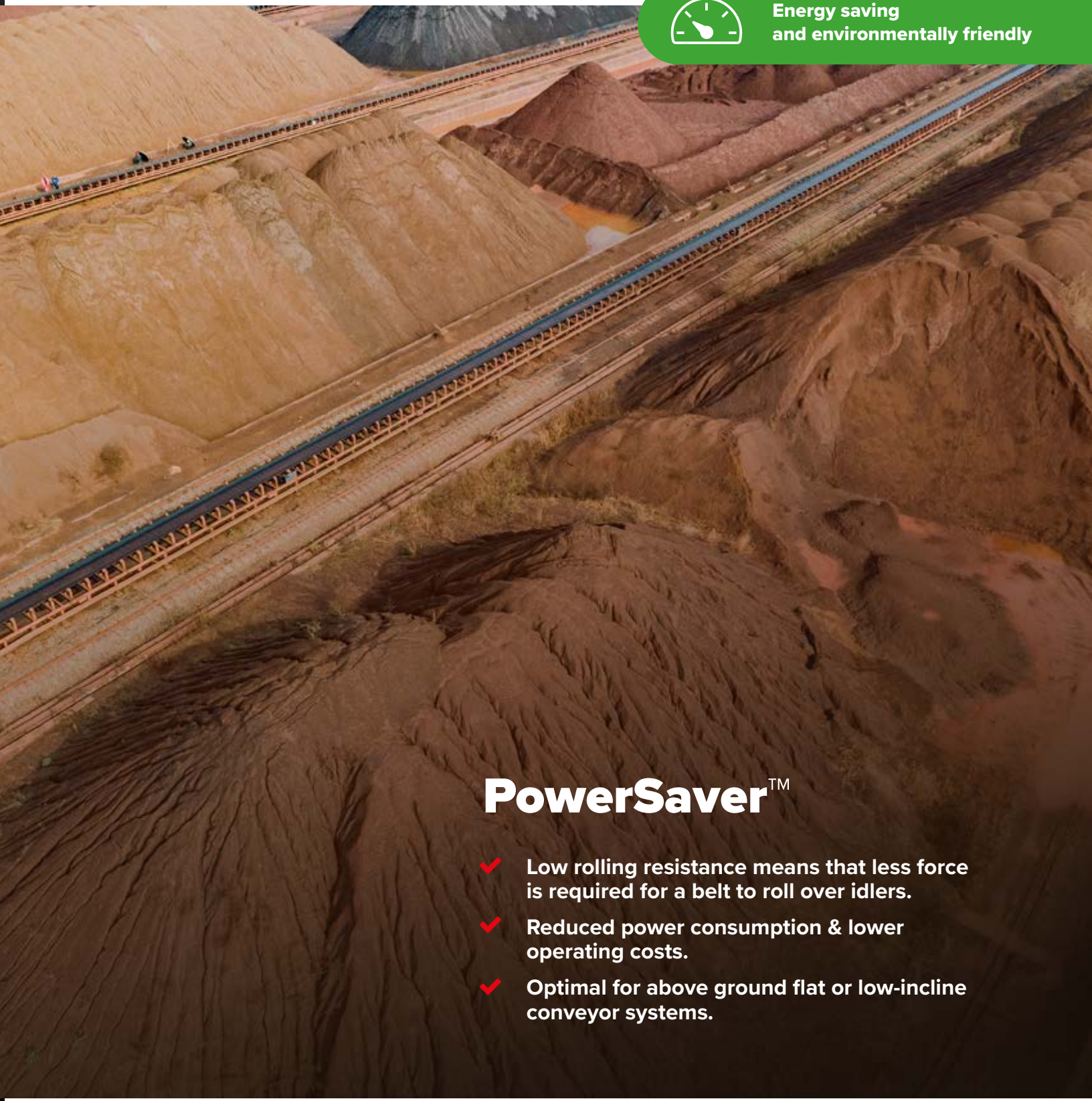
- Ideal for heavy and abrasive materials in dry and dusty applications
- Excellent abrasion resistance
- -40 °F to 200 °F operating temperature
- Exceeds ARPM Grade 1 Specifications

Sahara™ DS

- Provides good abrasion resistance in elevated operation temperature environments
- Temperature resistant to 300 °F for abrasive coarse lumps (2 inches/50 mm) and 250 °F for abrasive fines

FENNER DUNLOP
CONVEYOR BELTING

Energy saving and environmentally friendly



PowerSaver™

- **Low rolling resistance means that less force is required for a belt to roll over idlers.**
- **Reduced power consumption & lower operating costs.**
- **Optimal for above ground flat or low-incline conveyor systems.**

CleatLine

Applicable in the following markets:

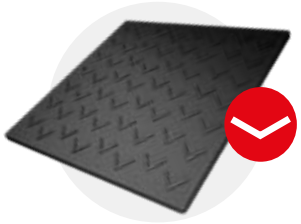
- Grain
- Bark
- Light aggregates
- Wood chips
- Cement
- Road Construction Equipment

Cleated products for **free flowing material** transport

Our Cleatline ensures efficient and quick pick up at loading points. Made for aggressive transfer and elevation of material on steep slope and high incline conveyors, our molded cleats ensure years of trouble free service. A variety of Cleatline patterns are available.

7 AVAILABLE CLEAT PATTERNS

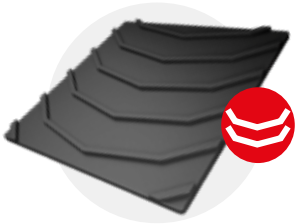
Chevron 24 & 42



V-Top

Great for aggregates

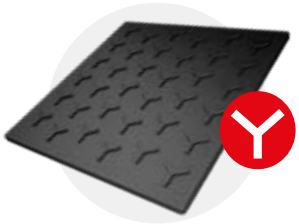
F-18 & F-36



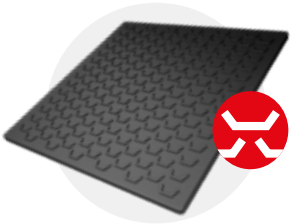
B-Top

Bucket Top

Ideal for Grain transport



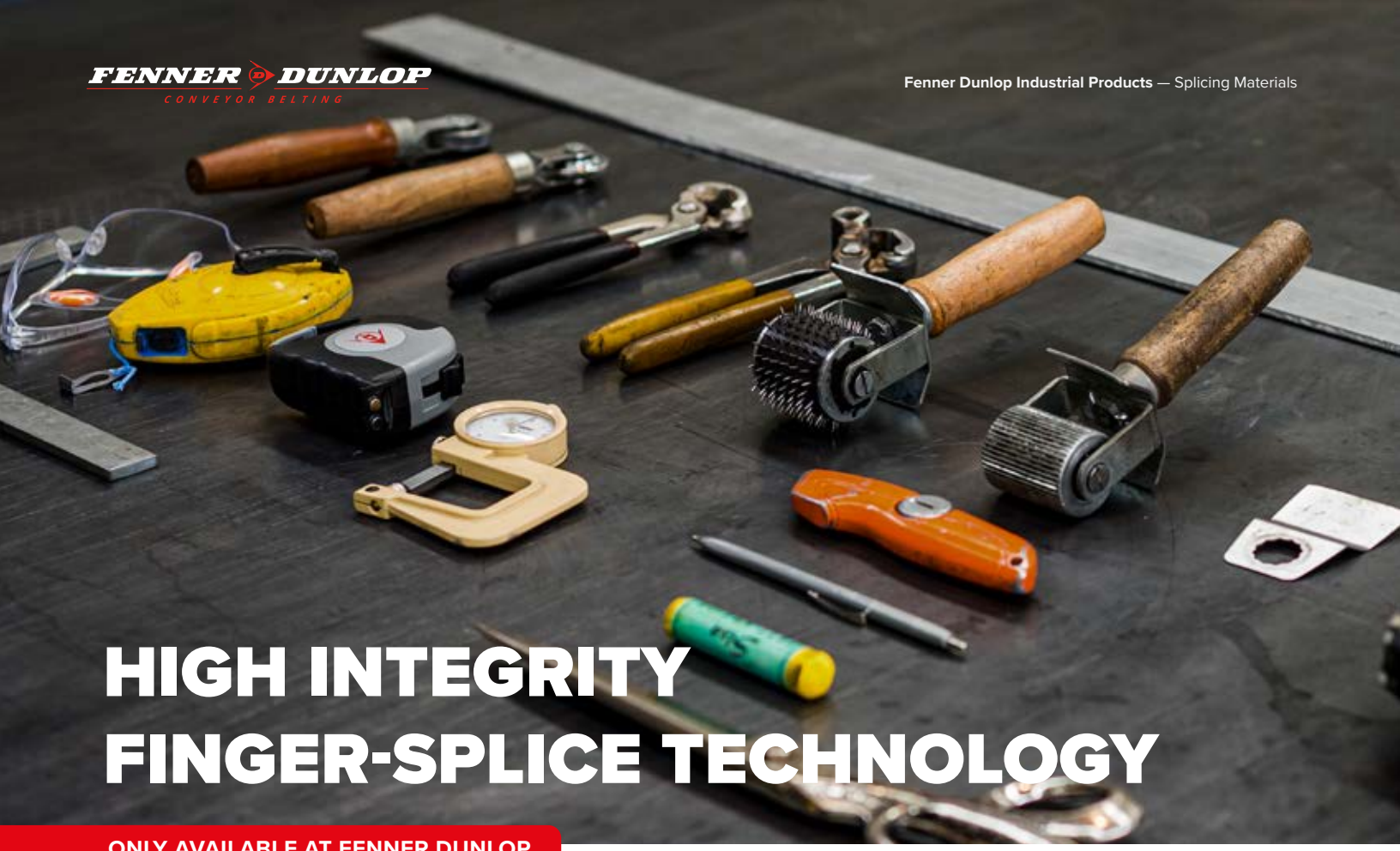
Y-Top



Mini-Bucket

Ideal for Grain transport

Cleat patterns are integrated into the belt cover. No separation problems or post production vulcanizing of cleats to the belt.



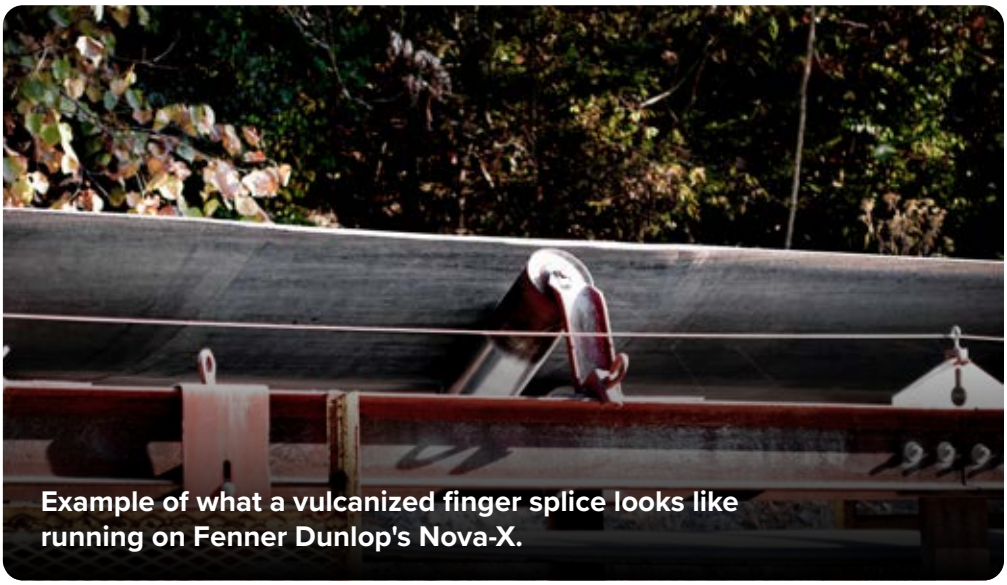
HIGH INTEGRITY FINGER-SPLICE TECHNOLOGY

ONLY AVAILABLE AT FENNER DUNLOP

The conventional step splice or mechanical fastener will always create a proportional loss of tensile strength within the belt. At Fenner Dunlop, we recommend the finger splice method that creates the strongest and most reliable joint possible (up to 100% of the belt's original rated tension).

Our premium tie gum and noodle compounds are designed for use within the finger splice design to provide maximum adhesions. Our cover stocks are specifically designed for use with our finger splice procedure resulting in the best possible wear, resistance and durability.

Strongest Splice, Longest Life



Example of what a vulcanized finger splice looks like running on Fenner Dunlop's Nova-X.

To maximize splice performance always use Fenner Dunlop splice materials

Splices are a critical component of any conveyor belt. A strong, long-lasting splice relies on the following factors:

- The skill / workmanship of the technician making the splice
- The actual quality of the splicing materials being used
- The splice design
- Quality of the belt

To get the best results, it is essential that the rubber being used in the splice joint has exactly the same (or better) qualities as the rubber used to make the belt. Using Fenner Dunlop splicing material will ensure the longest lasting splice possible.

In order to help our customers achieve the best possible results, Fenner Dunlop supplies a wide range of splicing materials that have been designed and developed to provide optimum performance.

As a leader in conveyor belt splicing technology, Fenner Dunlop's certified technicians have been extensively trained on numerous splicing procedures and techniques to ensure the best possible splice. Our technicians offer a wide array of splicing services for belts up to 102" wide, up to 2,500 PIW for fabric belts and up to ST8500 for steel cord belts.

Fenner Dunlop certified technicians can install steel cord, finger, step or mechanical splices. Each splice is assembled with the highest quality materials. Fenner Dunlop and our distributor team can perform the perfect splice for your application maximizing the life of the splice and your conveyor belt.

CONVEYOR DIAGNOSTICS & MONITORING

Fenner Dunlop will help you maximize your uptime by reducing belt damage, premature wear and costly repairs.

MOBILE SCANNING SOLUTIONS

FIXED SCANNING SOLUTIONS

Belt Diagnostics

Our periodic & permanent monitoring and diagnostic solutions are best-in-class not only for the data rich insights that help you elongate the life of your belt, but also for their ease of use.

Ask your Fenner Dunlop Account Manager for more information on our comprehensive line of Fenner Dunlop conveyor monitoring & diagnostics solutions.

MOBILE SCANNING SOLUTIONS

No Hardware Permanently Mounted to Conveyor

Steel Cord Scanning
(Cord Break & Corrosion)

Splice Analysis
(Failure & Elongation)

Belt Thickness Evaluation
(Predicting Life of Belt)

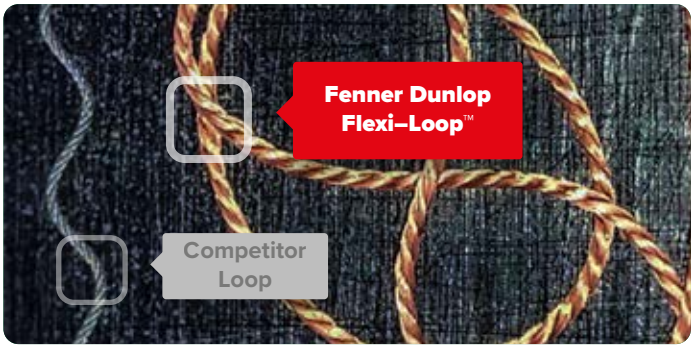
Hidden Damage X-Rays
(Internal Events)

- Extended belt life, reduced down time and improved productivity.
- Around the clock protection.
- Prevents hazardous belt failures before they occur.
- Dedicated team of diagnostic engineers for support and service after the sale with a proven history of excellence.
- Periodic and 24/7 support contracts available to maintain your investment and protection.
- Comprehensive system training for each product offering.
- Extensive service offering including steel cord scanning with splice analysis, cover wear surveys, and X-rays to uncover hidden damage.
- All Diagnostic services are supported by our network of Fenner Dunlop Service centers.

Flexi Loop *Advanced Rip Detection Technology*

Patent-pending fabric design

High performance product



Most loop technology brands have one main flaw that affects your uptime and revenue: Material Fatigue — Several hours of down time as a result of numerous belt stoppages + the time required to install new loops. Fenner Dunlop's patent-pending Flexi-Loop™ Technology solves these common issues. Flexi-Loop™ is a robust product that offers **superior performance** and up to **2.5x better life expectancy** vs. typical loops.

EAGLE EYE

*Most Complete **Steel Cord** Monitoring System*

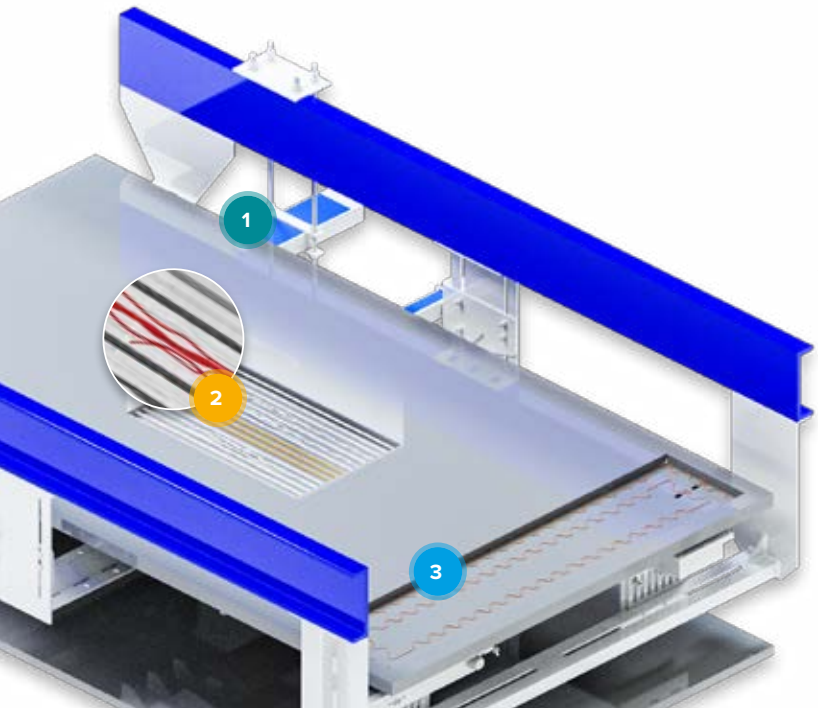
The leading-edge of conveyor diagnostics with the latest breakthrough in the industry.

Eagle Eye Advanced is the most state of the art combination steel cord condition monitoring and rip detection system available in the market. While the system provides proven 24/7 protection through seamless integration with the conveyor control, it also allows users on demand access to information about conveyor belt condition. Eagle Eye Advanced allows for the extraction of historical data to provide users insight on conveyor trends so predictive analytics can be a realization.

Components:

Steel Cord Condition Monitoring Array with precise Encoder feedback, Magnetic Array, RF Sensors to analyze Inductive Loops embedded at set distances in the belting.

- 24/7 protection with steel cord condition monitoring, splice analysis, and rip detection.
- Advanced real time belt graphics to keep an eye on your investment with the ability to select multiple view points and zoom levels.
- New multicore processing to couple technical belt data with an intuitive interface for simplified user interaction and experience.
- Historical data collection for cradle-to-grave analysis.
- Automatic reporting, extensive smart log messages and information filters.
- Remote connectivity to other devices such as smart phones, tablets and control room computers.
- User defined email and text message available.
- Superior internal diagnostics for ease of system maintenance.
- Proven Allen Bradley PLC processing for reliable conveyor protection and ease of conveyor control integration.
- Multiple rip detection locations can be added to create up to four monitoring stations.
- Custom engineered product to conveyor specifications manufactured in the USA at a certified Rockwell/Fenner Dunlop Facility.
- Mark events such as splices or damage events in specific locations along the conveyor for inspection or maintenance on demand or by schedule.



Upgrade your existing Eagle Eye Systems

Retrofit Kits are available to integrate with your existing Eagle Eye technology. Any existing Eagle Eye can be upgraded to our next generation system.

EagleEye® is fully customizable, scans any brand of belt and the ownership is for life.

HOW IT WORKS

The system collects data from ***multiple sensors*** 1 to build a detailed map of events. Once the map of data is complete it continuously monitors each splice and ***steel cord damage*** 2 events for real time changes and trends the data so the user is able to forecast potential issues through an intuitive interface. The system also continuously monitors ***inductive loops*** 3 at up to four points to ensure belting continuity and minimize risk.

RIP RANGER

Protect your operation with rip detection technology

A conveyor breakdown can often involve huge costs, both in terms of repairs as well as lost productivity. When belts have to be replaced because of accidental damage then the financial implications can be disastrous. Although incorporating rip stop breaker plies will reduce the risk, Fenner Dunlop's Rip Ranger 'incident alert' technology will significantly reduce the extent (and cost) of the damage by switching off the conveyor as soon as a rip is detected.

BIRDSi

REAL-TIME, REMOTE ACCESS TO YOUR BELT PERFORMANCE

BIRDSi is a premium online application that identifies potential issues before they create the need for larger, more time-intensive and expensive action.

Join Satisfied Users

More than 100 companies use Fenner Dunlop's Belt Monitoring Solutions. Join them!

> One of the biggest wins for us purchasing the Eagle Eye System is the technical support we have received. The Fenner Dunlop group have been excellent to deal with.
>
> GOLDCORP

> I attended a two day training on the system that gave me a very good understanding of the system and how to use it. The Eagle Eye System is a great system that does what it advertises.
>
> CONSOL ENERGY

TECHNICAL SUPPORT & FIELD SERVICES SUPPORT

At Fenner Dunlop, you get more than just conveyor belts. If you have conveyors where belts need to be replaced at frequent intervals, require constant maintenance, or are performing poorly, Fenner Dunlop's highly experienced engineers can provide advice and practical assistance to help you.

> "Fenner Dunlop – Their customer support system is just unreal. I mean they sent employees from Fenner Dunlop up here before we ever put the belt on and to spec out what we really needed to make sure we were buying the right product to meet our demands and our needs for what issues we were having. They came out after we were running the belt to check it periodically to make sure we were getting our money out of what we spent. It was a big cost for us upfront, but we got our return of investment on the back end because the belt lasted so long and it reduced downtime so much."
>
> — **Plant manager**
> Aggregates operation

Belt Wizard

Belt Wizard is a belt conveyor modeling tool used exclusively by Fenner Dunlop Americas. It is a powerful engineering program developed to determine the precise conveyor belt recommendation based on the unique criteria of a conveyor system. Formulas used in this program follow the calculations found in the 7th Edition of "Belt Conveyors For Bulk Materials" published by the Conveyor Equipment Manufacturers Association (CEMA).

belt wizard

Fenner Dunlop provides an unrivaled level of customer service

- visiting our customers on-site, providing advice, guidance and practical support including:

- Site visits and surveys
- Belt calculation service
- Technical training (on site and Fenner Dunlop based)
- Splice training
- Troubleshooting and problem solving
- In-house research, testing and development
- After-sales support

We are here to help!

If you have any concerns or questions, please call.

(800) 661-2358
Industrial and Mining Conveyor Belting Sales

BEST IN CLASS DISTRIBUTION NETWORK

FULL MARKET COVERAGE

We are proud to work alongside our world-class distribution network to deliver the best in class total conveyor solutions to our end users

BEST IN CLASS

Our distributors carry a full line of best in class Fenner Dunlop conveyor belts, matched with top of the line service capabilities.

Key Distributor Capabilities

- Conveyor Belt Inventory
- Technical Training
- Diagnostics Services
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