FENNER DUNLOP

CONVEYOR BELTING

XSERIES

ULTRAX **NOVAX** **USFLEX**

Manufactured in
The Netherlands, Europe

MOVING YOUR BUSINESS FORWARD

.people .planet .profit

THE ENVIRONMENT COMES FIRST

Our Commitment to Sustainability

Single and Dual-Ply Belts – Better for the Environment

Single and dual-ply belts significantly reduce environmental impact by cutting energy consumption and maximizing production efficiency with fewer calendering runs. They also use less rubber, chemicals, and additives, while dramatically reducing the use of non-biodegradable synthetic fabrics like nylon and polyester. The superior toughness of Ultra X, Nova X, and UsFlex belts means fewer replacements, minimizing the need for additional manufacturing and shipping.

Safety and Regulation Compliance

We proudly comply with strict European regulations, including REACH, which controls hazardous substances. As the first conveyor belt manufacturer to achieve REACH compliance, we ensure the safe management of chemicals. Additionally, we adhere to the EU's POPs Regulation, designed to limit the use of persistent organic pollutants, protecting both human and environmental health.

REACH COMPLIANT
European Chemicals Agency

LESS ENVIRONMENTAL IMPACT – LESS ENERGY, LESS RUBBER, LESS SYNTHETIC FABRICS, LESS CHEMICALS.

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XSERIES

ULTRAX NOVAX USFLEX

SINGLE AND DUAL-PLY

– the future of industrial rubber conveyor belts

Many find it hard to believe that single and dual-ply belts can outperform thicker, heavier multi-ply belts in terms of wear and damage resistance. However, the success of UsFlex, Ultra X, and Nova X belts proves otherwise. These belts are increasingly becoming the go-to choice across industries throughout the world.

> ***“ Conventional wisdom would seem to indicate that a higher number of inner plies will result in a stronger belt, but this is not the case. The greatest influence on the strength and other essential physical properties of a conveyor belt is the design and quality of the ply material used to create the carcass. ”***

At Fenner Dunlop, we believe single and dual-ply belts represent the future of industrial conveying. Our X Series delivers significant cost savings and productivity improvements while maintaining exceptional performance and durability.

We take pride in our legacy of innovation, consistently developing belts that perform in the toughest conditions. The X Series is our latest breakthrough in high-performance belting.

THE CONVEYOR BELTS MADE TO LAST

History in the making

Most modern conveyor belts still fall short in terms of cost-efficiency, with up to 75% needing replacement sooner than expected. After decades of little change in belt construction, we set out to create a super-tough, more reliable, and environmentally sustainable belt.

Building on our world-leading wear-resistant rubber compounds, our R&D team focused on the carcass, drawing inspiration from the highly durable UsFlex single and dual-ply construction. With in-house fabric weaving capabilities in the USA, we developed fabrics that are proven to withstand even the harshest treatment. This innovation led to the Ultra X and Nova X belts, which, alongside UsFlex, make up the X Series—stronger, lighter, longer-lasting, and more eco-friendly than traditional multi-ply belts.

THE SECRET BEHIND ITS SUCCESS

Throughout this brochure you will find many references to the very special fabrics that provide not only the core strength but also the amazing rip, tear and impact resistance of Ultra X, Nova X and UsFlex. The fabrics we use are unique to our company and are the key to the success of the X Series.

Weaving their magic — the Fenner Dunlop fabric weaving facility in Lavonia, USA

All the fabrics have been developed and are entirely manufactured within our own weaving facilities located in Lavonia, USA. For those who may not necessarily be familiar with the technology involved, we are happy to explain the different types, their development and their unique characteristics and properties.

RIP & TEAR RESISTANCE TESTING

The tear resistance of Ultra X, Nova X, and UsFlex is measured according to the EN ISO 505 standard. Testing is conducted on the belt carcass without top and bottom covers to ensure accurate results. These tests confirm that all X Series fabrics significantly outperform conventional multi-ply belts.

FENNER DUNLOP
CONVEYOR BELTING

SINGLE-PLY

ULTRAX

Ultra X features a specially woven "Crimped warp" carcass, combining crimped polyester warp yarns with strong binder and filler yarns, delivering exceptional strength, stability, and impact resistance.

SINGLE-PLY

NOVAX

Nova X uses an even stronger crimped warp fabric with binder yarns to lock the carcass, providing excellent rip, tear, and impact resistance under load.

SINGLE-PLY / 2-PLY

USFLEX

UsFlex employs a "Straight warp" carcass, made of high-tenacity polyester fibers and protected by polyamide weft lines. Its unique design dissipates impact energy over a larger area, offering up to five times the rip resistance and three times the impact resistance of conventional belts.

UNEQUALLED TOUGHNESS

No. of plies	Maximum tensile strength
1	90%
2	50%
3	67%
4	75%
5	80%

Splice strength advantages

X Series are best joined using the finger splice method. This creates the strongest and most reliable joint possible by retaining up to 90% of tensile strength. This is because a step splice will always create a proportional 'loss' of tensile strength that is the equivalent of one ply.

XSERIES ULTRAX

Ultra X is a super strength abrasion resistant breaker weft construction single-ply belt that is exclusively made by Fenner Dunlop Conveyor Belting including the patented super-tough fabric, which is made in our in-house fabric weaving facility.

ULTRA X – MAKING THE RIGHT SELECTION

Ultra X1 is designed to replace 250/2, 315/2 and 400/3 abrasion resistant multi-ply belts

Ultra X3 is designed to replace 500/3, 500/4, 630/3 and 630/4 abrasion resistant multi-ply belts

REACH COMPLIANT

2 YEAR THE FENNER DUNLOP GUARANTEE OF QUALITY

ISO 1431 O_3 OZONE & UV RESISTANT

Scan & See a Real Customer Story!

Crimp-Weave carcass

Read about the crimp-weave on p. 9

ECONOMICAL› SOLUTIONS TO EXPENSIVE PROBLEMS

ADVANTAGES OF ULTRA X COMPARED TO TYPICAL 3-PLY BELTING

- More than double the longitudinal rip resistance
- At least twice the level of tear resistance
- Far superior impact resistance
- Up to 90% splice efficiency (using finger splice method)
- Excellent mechanical fastener retention and splice life
- Greater flexibility – can be used on smaller than usual pulleys

SUPER-TOUGH 'LONG LIFE' ANTI-ABRASION COVERS

In addition to their outstanding rip, tear, puncture and impact resistance, Ultra X belts also provide the extended wear-life that our customers have come to expect from all Fenner Dunlop "Made in The Netherlands" conveyor belts. Ultra X belts are produced with Fenner Dunlop AA anti-abrasion covers as standard. This ensures excellent resistance against cutting and gouging with a resistance to abrasion that outperforms typical DIN Y (ISO 14890 L) requirements (average loss of less than 150 mm^3) by as much as 30%.

Property	315/2	UX1	400/3	UF 400/1	500/4	UX3	630/4	UF 630/1
Longitudinal tensile strength (N/mm)	315	330	400	400	500	550	630	630
Max. operational tension spliced (N/mm)	157	297	268	360	375	495	472	567
Carcass thickness (mm)	2.4	1.8	2.9	2.5	4.0	2.9	4.3	3.5
Carcass weight (kg/m^2)	2.7	1.6	3.4	2.7	4.6	3.5	4.9	4.0
Min. rip resistance (N)	500	1500	750	3000	1000	2500	1250	5000
Min. tear resistance (N)	200	1000	500	2500	650	2000	1000	4000
Min. static fastener efficiency (%)	50	65	55	65	55	65	60	65
Average elongation at T1 (%)	1.0	0.8	1.3	1.4	1.1	0.9	1.1	1.3
Minimum pulley diameter for > 60% (mm)	250	250	315	315	500	400	500	400
Minimum width at 30 deg. trough (mm)	400	500	500	650	500	650	650	800
Max. width at 30 deg. trough (mm)	800	1200	1200	1600	1400	1600	1600	2200
Belt weight stock item (kg/m^2)	9.4	8.9	10.2	10.1	11.4	12.6	14.0	14.2

Belt type	Carcass thickness (mm)	Carcass weight (kg/m^2)	Pulley diameters			Min. cover thickness	Min. width (mm)	Max. belt width (mm) for satisfactory load support with material density of t/m^3 [1]			
			A (mm)	B (mm)	C (mm)			< 0.75	0.75 - 1.5	1.5 - 2.5	2.5 - 3.2
Ultra X1	1.8	2.1	250	200	160	4 + 2	500	1200	1000	800	650
Ultra X3	2.9	3.4	400	315	250	6 + 2	650	1600	1400	1200	1000

[2] The load support of a belt is a factor of the belt width, belt strength and bulk material density.
The table indicates the limits for correct load support, based on three idlers of the same length set at 30°.

XSERIES NOVAX

The Nova X carcass can handle demanding applications including sand and gravel right through to primary and secondary crushers. In terms of tensile strength, Nova X is the next step up from Ultra X. It has excellent resistance to rip, tear and impact puncture thanks to its technologically advanced and patented fabric belt design.

NOVA X – MAKING THE RIGHT SELECTION

Nova X4 is designed to replace 630/3, 630/4, 630/5, 800/3 and 800/4 abrasion resistant multi-ply belts.

Nova X6 is designed to replace 1000/3, 1000/4, 1000/5, 1250/3 and 1250/4 abrasion resistant multi-ply belts.

REACH COMPLIANT European Chemicals Agency

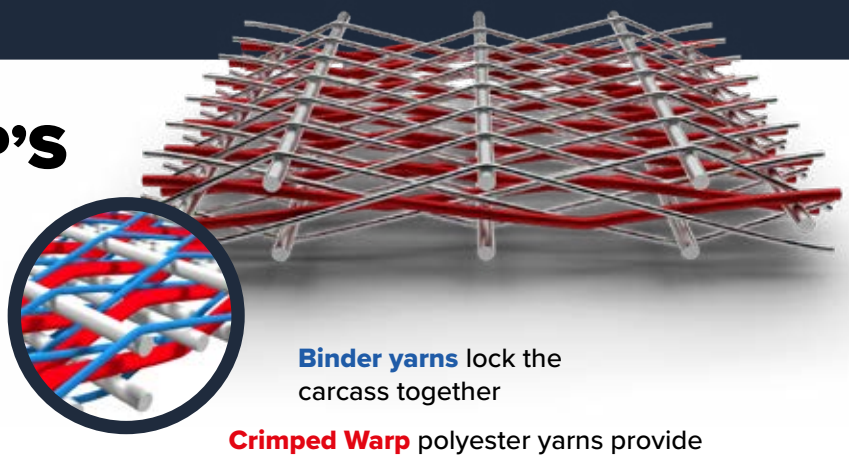
2 YEAR THE FENNER DUNLOP GUARANTEE OF QUALITY

ISO 1431 O_3 OZONE & UV RESISTANT

- Nova X has twice the rip resistance and three times the tear resistance of a plied belt of an equivalent tensile strength.
- The unique fabric weave allows for improved mechanical fastener retention and splice life.
- The smaller gauge of the Nova X carcass compared to similar tension rated multi-ply fabric belting allows for smaller diameter pulleys throughout the conveyor system as well as superior troughability, tracking and load support.
- Available with RS, a premium grade DIN W cover compound with high durability, high tear strength and excellent abrasion resistance.
- Can also be supplied with a wide selection of Fenner Dunlop cover specialist compounds such as oil resistant for example.
- Available in 690 N/mm (NX4) and 1040 N/mm (NX6) tensile strength.

FENNER DUNLOP
CONVEYOR BELTING

DUAL CRIMP WEAVE CONSTRUCTION



FENNER DUNLOP'S INNOVATIVE FLEXIBLE» CORE FABRIC CONVEYOR BELT

The fabric construction and treatment process result in enhanced resistance to edge ravel, moisture, mildew and acid mine water.

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

Nova X has 2x rip resistance and 3x tear resistance of the equivalent plied belt.

Nova X4

- ✓ Tensile strength 690 N/mm
- ✓ Can replace up to 800/4
- ✓ Stock as **NX4 6+3 RS** in widths 800, 1000, 1200 mm, or made to order

Nova X6

- ✓ Tensile strength 1040 N/mm
- ✓ Can replace up to 1250/4
- ✓ Stock as **NX6 8+3 RS** in widths 1000, 1200, 1600 mm, or made to order

Belt type	Carcass thickness (mm)	Carcass weight (kg/m²)	Pulley diameters[1]			Min. cover thickness	Min. width (mm)	Max. belt width (mm) for satisfactory load support with material density of t/m³ [2]			
			A (mm)	B (mm)	C (mm)			< 0.75	0.75 - 1.5	1.5 - 2.5	2.5 - 3.2
NX4 690/1	3.6	4.4	500	400	315	6+3	800	2000	1800	1600	1400
NX6 1040/1	4.9	6.0	630	500	400	8+3	1000	2200	2000	1800	1600

[1] Diameter for belt-loads from 60% up to 100%. For lower loads a smaller diameter can also be suitable.

[2] The load support of a belt is a factor of the belt width, belt strength and bulk material density. The table indicates the limits for correct load support, based on three idlers of the same length set at 30°.

Visit our website, and discover X Series™ case studies.

XSERIES USFLEX

UsFlex is engineered to handle the heaviest, sharpest materials that can rip or tear conventional belts. With five times the rip resistance and three times the impact resistance of standard multi-ply belts, UsFlex's unique straight-warp construction ensures maximum durability and longevity in the harshest conditions. Guaranteed to extend belt life where others fail.

USFLEX – MAKING THE RIGHT SELECTION

Quarrying: Perfect for primary and secondary crushers. Ideal for handling large, sharp, and heavy materials that can easily damage conventional belts.

Mining: Ideal for conveying heavy, abrasive and sharp materials.

Wood industry: Proven capable of handling heavy logs and timber.

Scan & See a Real Customer Story!

REACH COMPLIANT
European Chemicals Agency

2 YEAR
THE FENNER DUNLOP GUARANTEE OF QUALITY

ISO 1431
O_3
OZONE & UV RESISTANT

Belt characteristics

UsFlex's exceptional impact and tear resistance comes from its innovative straight-warp carcass. Heavy polyester strands run lengthwise and heavy nylon strands crosswise, held by strong yarn. Unlike conventional belts, the strands are straight and not interlocked, allowing the weft to float freely, absorbing impact energy over a larger area for maximum carcass protection.

HIGH IMPACT, TEAR AND RIP RESISTANT BELTING

For optimum carcass protection, Fenner Dunlop RES covers are standard, offering exceptional resistance to cutting and abrasion. Key features include:

- **Outstanding abrasion resistance:** Exceeds the highest DIN W and ISO 'D' standards.
- **Additional cover qualities:** Options available for oil, fire, and heat resistance.
- **Anti-static:** Meets EN ISO 284 anti-static requirements.
- **Ozone and UV resistance:** Compliant with EN ISO 1431 testing to prevent cracking and degradation.
- **REACH compliant:** All covers meet international REACH regulations for safety and performance.

EXCEPTIONAL WEAR RESISTANCE

Property	630/4	NX4	800/4	UF 630/1	1000/4	NX6	1250/4	UF 1000/2
Longitudinal tensile strength (N/mm)	630	690	800	630	1000	1040	1250	1000
Max. operational tension spliced (N/mm)	472	621	600	567	750	936	937	900
Carcass thickness (mm)	4.3	3.6	5.0	3.5	5.8	4.9	6.4	6.3
Carcass weight (kg/m²)	4.9	4.4	5.8	4.0	6.7	6.0	7.4	7.0
Min. rip resistance (N)	1250	3500	1500	5000	1500	5000	1500	7000
Min. tear resistance (N)	1000	3000	1000	4000	1000	4000	1000	6000
Min. static fastener efficiency (%)	60	65	60	65	60	65	60	65
Average elongation at T1 (%)	1.1	0,.7	0.9	1.3	1.1	1.3	1.8	1.3
Minimum pulley diameter for > 60% (mm)	500	500	630	400	630	630	800	630
Minimum width at 30 deg. trough (mm)	650	800	650	800	800	1000	1000	1000
Max. width at 30 deg. trough (mm)	1600	2000	1800	2200	2200	2200	2200	2200
Belt weight stock item (kg/m²)	14.0	12.7	14.7	14.2	19.1	16.4	-	19.1

Rip resistance

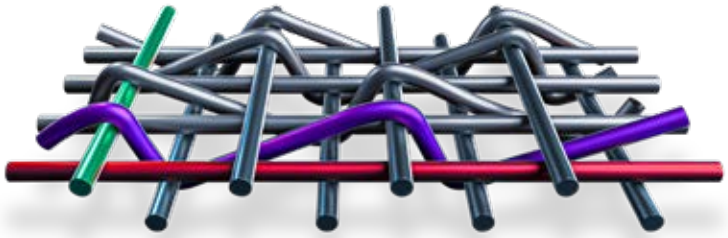
Rip resistance is over five times that of conventional multi-ply belts with a similar tensile strength. The rip resistance is also far superior to Solid Woven and EpP constructions.

Tear resistance testing

The tear resistance of UsFlex, measured according to the international EN ISO 505 standard, also significantly exceeds that of conventional multiply belts with a comparable tensile strength. Tests for rip and tear resistance are only made on the actual belt carcass with the top and bottom covers removed. This ensures that the thickness and quality of the cover does not influence the accuracy and consistency of the tests.

Impact resistance

Compared to conventional multi-ply and solid woven belting, the impact resistance of UsFlex is proven to be significantly superior. For example, a single-ply UsFlex type 630/1 has the impact absorbing qualities of a 4-ply EP belt type 1600/4 or an EpP 1250/2. The chart shows the results of impact tests on 630 rated UsFlex, Solid woven and multiply belting.



The unique straight-warp construction of the UsFlex carcass

Key Components:

Weft — Binder Warp — Straight Warp

Belt type	Carcass thickness (mm)	Carcass weight (kg/m²)	Pulley diameters[1]			Min. cover thickness	Min. width (mm)	Max. belt width (mm) for satisfactory load support with material density of t/m³ [2]			
			A (mm)	B (mm)	C (mm)			< 0.75	0.75 - 1.5	1.5 - 2.5	2.5 - 3.2
Standard (stock) UsFlex belt type specifications.											
UF 400/1	2.5	2.7	315	250	200	4 + 2.5	650	1600	1400	1200	1000
UF 500/1	3.4	3.9	400	315	250	6 + 3	800	2000	1800	1600	1400
UF 630/1	3.5	4.0	400	315	250	6 + 3	800	2200	2000	1800	1600
UF 800/1	3.9	4.5	500	400	315	6 + 3	800	2200	2200	2000	1800
UF 1000/2	6.3	7.0	630	500	400	8 + 3	1000	2200	2200	2200	2200
UF 1250/2	6.8	7.7	800	630	500	8 + 3	1000	2200	2200	2200	2200
UF 1600/2	8.1	9.1	1000	800	630	8 + 3	1200	2200	2200	2200	2200

[1] Diameter for belt-loads from 60% up to 100%. For lower loads a smaller diameter can also be suitable.

[2] The load support of a belt is a factor of the belt width, belt strength and bulk material density. The table indicates the limits for correct load support, based on three idlers of the same length set at 30°.

FENNER DUNLOP BELT BUDDY APP

for IOS and Android

Designed to help you make the best possible decisions for your products' performance.

— **Finger splicing calculator and manual**
— **Multilingual interface**
— **Datasheets, details and contact information.**

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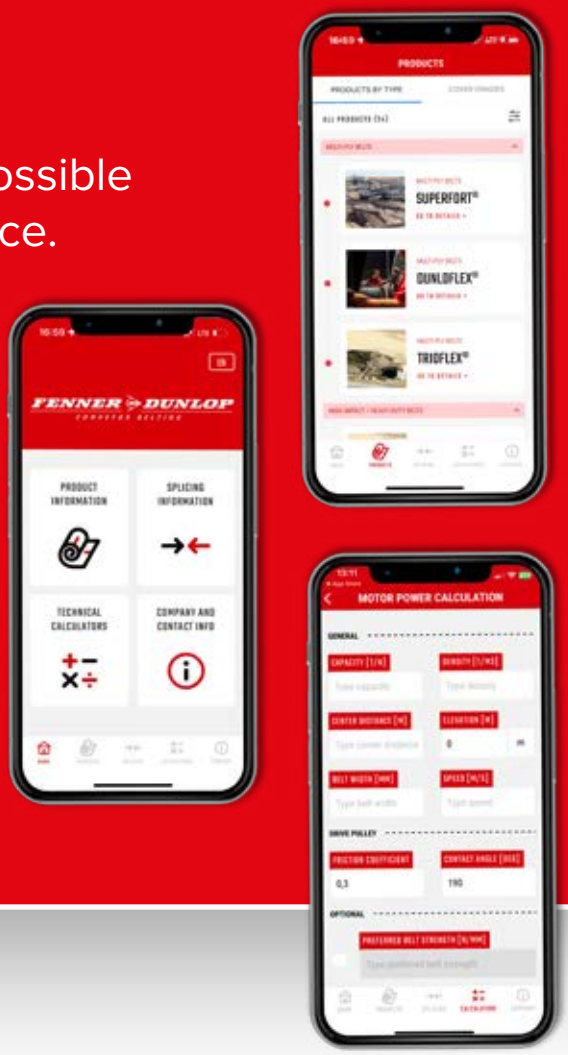

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THE LONGEST LASTING CONVEYOR BELTS

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