



Solid Woven Conveyor Belting

# THE SAFEST UNDERGROUND CONVEYOR BELTS

THE WORLD'S LEADING CONVEYOR BELT COMPANY

[www.fennerdunlopeurope.com](http://www.fennerdunlopeurope.com)



# Over 60 Years of Experience

With over 60 years experience in the manufacture of conveyor belting, coupled with our innovative leadership in product design, manufacturing, application engineering and technical support plus a total dedication to customer service, Fenner Dunlop is the first choice for conveyor belting products and services.

Fenner Dunlop is the world's largest manufacturer of conveyor belting for

mining and industrial applications. With twelve manufacturing facilities on five continents, Fenner Dunlop is uniquely positioned to provide the most comprehensive conveyor belting service available today.

Fenner Dunlop solid woven belting is manufactured to the same exacting standards in the UK, India, South Africa and Australia.

## Discover Fenner Dunlop Brand

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## Conveyors >>>

### *The backbone of a modern mining operation*

Without efficient conveying, mine production can be severely affected. The efficiency of any conveyor depends largely on the trouble-free working life of the belt itself, yet the conditions under which it has to operate can be extremely arduous, having to resist ripping, impact, abrasion, bacteria, acid, water and general mechanical damage.

# Solid Woven Conveyor Belt

## — the advantages

Our extensive knowledge of conveyor belt applications, fabric weaving and polymer technology are combined in our market-leading range that has been at the forefront of development for over half a century.

Fenner Dunlop solid woven (monoply) belting, the first choice of countless mines throughout the world, has a number of significant advantages.



**Fire resistant and anti-static** properties which meet the most stringent safety standards in the world



**Greater flexibility,** making it easier to trough and track when installed



**A solid woven single ply carcass** with no risk of ply separation



**Covers which form an integral bond** preventing any form of belt delamination



**High resistance to longitudinal tears**



**High dynamic and static vulcanised joint properties**



**Excellent retention** of mechanical fasteners



**High resistance to impact damage**

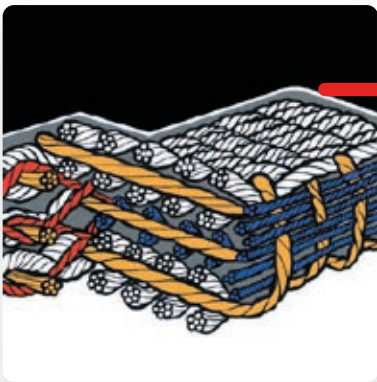


**Impervious to attack from acid, water, oil, bacteria and chemicals**



**High resistance to edge wear**

# Belt Construction

**1**

## Fenner Dunlop's unique binder warp system

The Fenner Dunlop solid woven carcass is a highly complex design, utilising warp yarns interlocked and tied into one single mass by means of a uniquely designed binder warp system. The countless options available in the construction of the Fenner Dunlop carcass enables the end user to define specific operational requirements and receive a custom-built belt exactly suited to a specific application.

**2**

## Solid woven carcass prior to PVC impregnation

The solid woven fabric is 100% impregnated with PVC to make the finished carcass. Fenner Dunlop's unique, impregnation system renders the carcass impervious to attack from moisture, dirt, chemicals, bacteria and oils.

**3**

## Finished PVC belting

Following the impregnation process, PVC covers are applied to the top (carrying) and bottom (drive) surfaces of the belt to protect the carcass and extend service life. Cover type, quality, and thickness are matched to specific customer requirements.





## CARCASS

In many respects the carcass is the most important part of a conveyor belt since it provides the tensile strength necessary to move the loaded belt and absorb the impact of material falling on to it, as well as providing the bulk and lateral stiffness required for load support and the strength required for bolt and/or fastener holding.

Nylon or polyester load bearing warp yarns and nylon or nylon/cotton weft yarns are used. Various combinations

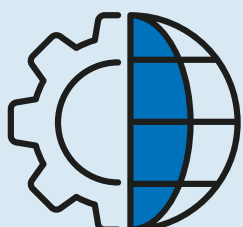
of these synthetic and natural fibres ensure that the requirements for impact resistance, belt elongation, flexibility (for troughing and wrapping round small diameter pulleys), load support and fastener retention are met. Where there is a specific need, pile warp yarns may be included to further improve impact resistance. An additional edge reinforcement option is available where required.

## COVER

PVC covers can be formulated to meet any worldwide fire resistance specification and to offer resistance to other hazards, such as oils and chemicals. Special compounds can also be used to give improved abrasion resistance or a higher coefficient of friction.

For use above and below ground and where a higher coefficient of friction is required, rubber covers are vul-

canised to the parent belt. These can be fire-resistant if required. Nitrile rubber covers are recommended for short-centre, high trip rate, steep incline (15-22 degrees), high tonnage installations above and below ground, coal preparation plants and coking works. PVC belting is available in a range of colours to assist in belt identification.



## SPECIAL APPLICATIONS

Tailor-made, low stretch Fenner Dunlop belting is also suitable for a variety of specialist applications, including bucket elevators and similar installations where take-up is limited. Other application specific belts can be designed and custom built with the assistance of a Fenner Dunlop engineer, ensuring the correct selection of belt construction and covers every time.

# The Fenner Dunlop Belt Range

## DEVELOPMENT CONVEYORS

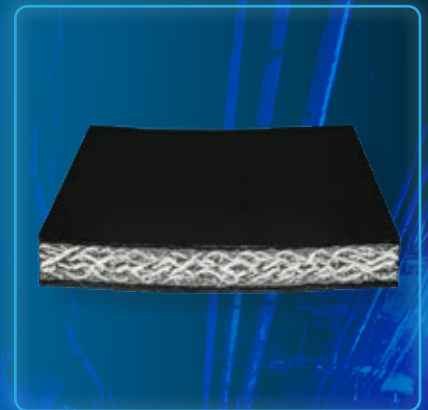
### Fenner Dunlop PVC (FR) Fire retardant

Meeting or, in many cases, exceeding the fire-resistance and anti-static requirements of all worldwide safety standards, Fenner Dunlop FR belting is designed primarily for use underground and in other potentially hazardous situations. PVC compounds, with cover thicknesses of up to 4mm can be varied to suit any specific application. Fenner Dunlop FR belting has a proven superior service life in coal mining and similar applications where high, continuous output depends on belt reliability.

The PVC covers give excellent cleaning properties and, together with the advantages of a solid-woven carcass, provide a belt ideal for conveying coal, potash, phosphate, fertiliser, salt, gypsum and clay, as well as for use in the timber industry and other applications where moist, sticky materials are handled.

#### Application areas:

- Coal                      — Potash                      — Gypsum
- Salt                        — Trona                        — Tunnelling



PVC (FR) can be customised for high visibility which improving safety underground

**PVC is suitable even in the most difficult environment**



## HEAVY-DUTY UNDERGROUND APPLICATIONS

## Fenner Dunlop FRSR (PVG) Fire retardant

Where a high level of fire resistance is required, together with special cover properties, more achievable with synthetic rubber compounds, Fenner Dunlop FRSR is the ideal solution. This belting is Fenner Dunlop PVC (FR) with the addition of single (top) or double (top and bottom) rubber covers up to 6mm thick.

Increased belt life, steep gradient and high trip rate conveying are the main advantages of this type of belting which is generally used on high tonnage drift and trunk conveyors as well as in power stations, and coal preparation plants.

**Application areas:**

- Mining
- Steep incline
- High tonnage
- Drift conveyors



## ABOVE GROUND APPLICATIONS

## Fenner Dunlop SR

Where there is no requirement for fire resistance, Fenner Dunlop SR is offered as a rubber-covered belt for conveying abrasive or hard materials.

A durable rubber cover, compounded for maximum abrasion resistance, up to 6mm thick combined with our PVC impregnated solid-woven carcass has proven ideally suited to high impact installations such as the conveying of aggregates and similar hard, sharp materials.

**Application areas:**

- Industrial
- Surface conveyors



Belt designation (lbs/in)	Warp strength (N/mm)	Weft strength (N/mm)	Belt thickness <sup>1</sup> (mm)	Belt weight <sup>1</sup> (kg/m <sup>2</sup> )	Minimum Recommended Drum Diameters	
					High tension (mm)	Low tension (mm)
3500	630	275	8.1	10.5	400	315
4000	710	300	8.3	11.0	400	355
4500	800	300	8.5	11.1	500	355
5000	875	300	8.8	11.2	500	355
6000	1000	350	9.4	11.9	630	400
6500	1140	350	9.5	12.0	630	400
7000	1250	350	10.4	12.2	750	450
8000	1400	350	10.5	13.2	750	450
9000	1600	425	11.9	14.8	800	600
10000	1800	425	12.9	16.1	800	600
—	2000	425	13.9	17.6	1000	750
12000	2100	425	13.9	17.6	1000	750
—	2500	425	13.9	17.6	1000	750
15000	2625	425	14.9	18.6	1250	800
18000	3150	400	20.0	22.6	1500	1000

<sup>1</sup>Nominal values for specific belt constructions with 1+1 PVC covers. Specification sheets detailing the actual data for any belt type supplied can be forwarded on request. For thicker covers add 1.3kg/m<sup>2</sup>/mm for PVC and 1.4kg/m<sup>2</sup>/mm for nitrile covers.

# Customised Conveyor Belting

## Special Carcass Properties

Carcass designs can be customised to include one or more of the following features:

- ✓ Increased fastener holding efficiency for high speed/tonnage applications
- ✓ Improved lateral stability to further enhance resistance to longitudinal splitting on high capacity/ deep trough conveyors
- ✓ High tear and rip resistance for arduous applications where belts are difficult to align and maintain
- ✓ Additional carcass mass to allow belts to negotiate small radius catenary curves which would normally require steel cord belt (to prevent the belt lifting off the structure under no load conditions)
- ✓ Improved edge wear protection for extensible and similar applications

## Special Covers

Certain applications require conveyor belts with special properties and our highly experienced in-house research and development technicians have developed a range of PVC compounds for covers, all of which are available with fire-resistant properties, including:

- ✓ Easy clean covers for handling wet, sticky materials such as chalk, clay and lignite
- ✓ High coefficient of friction covers for additional grip on pulleys and load retention on inclines
- ✓ Covers suitable for low temperature and arid environments
- ✓ Leach resistant covers

## Hi-Vis



**high contrast = better safety**

High Visibility (Hi-Vis) yellow covered belting provides improved safety and inspection characteristics, particularly on underground conveyors. The enhanced visibility of the yellow covers significantly improves the sighting of the conveyor's moving parts and structure against the belt, allowing easier inspection and making the conveyor itself more conspicuous. Currently installed at mine sites in the UK, Scandinavia, USA and Canada, the advantages of Hi-Vis belting have been recognised by engineers as a useful feature in improving safety around conveyors – always top priority.

Hi-Vis belting is a product innovation driven by the need

for improved safety and is especially advantageous on man-riding conveyors, making the belt edges and conveyor moving parts more obvious to the rider.

Belting is also available in a **range of other colours** to assist in belt identification.





# Diamond Edge

*Diamond Edge* conveyor belt from Fenner Dunlop is specially designed and manufactured to be used in arduous applications where edge wear and stranding can occur. These issues generally arise due to poor conveyor alignment caused by floor movement or where conveyor structure is 'temporary' eg extensible conveyors.

**Less edge wear = increased life**

Reduced belt width due to edge wear can lead to fastener holding problems and load spillage. Ultimately the belt becomes unusable whilst the surface of the belt could be perfectly acceptable. With Diamond Edge the width reduction takes much longer leading to a significant increase in useful life

**Reduced stranding = improved safety**

When the edge of a belt rubs against structure the carcass (fabric) is exposed. In some belts the warp yarns, which run in the length direction and give the belt it's strength, can pull out in long lengths. These yarns can then wrap around rollers causing the rollers to seize. The belt running across these seized rollers can wear

through the idler shells which can then cause significant damage to the belt or the shells and bearings can get very hot leading to potential fires.

**Other benefits of Diamond Edge**

Internal adhesion, cover adhesion and lateral stiffness are all increased with Diamond Edge giving the added benefit of reducing the chance of idler junction (trough point) failure.

Dynamic fastener holding, as tested in accordance with BS 8407, has been almost doubled over the typical life for 'standard' belt increasing the running time between joint changes and reducing the likelihood of failures.



**FR 6500 E 1/1mm PVC Covers**  
**Extensible belt**

**COMPARISON OF PHYSICAL PROPERTIES** (WHERE DIFFERENT)

Property	'Standard' FDECS belt	Diamond Edge
Warp tensile (lbs/in)	6600 – 7000	7000 – 7500
Weft tensile (lbs/in)	2500 – 3000	2700 – 3200
Internal adhesion (lbs/in)	75 – 85	80 – 120
Cover adhesion (lbs/in)	30 – 40	40 – 50
Steckhert (mm) <i>Weft stiffness</i>	95 - 105	100 – 110
<b>Fastener holding (MATO U37A)</b>		
Static (lbs/in)	5000 5200	5200
Dynamic (cycles) <i>BS 8407 &gt; 100,000</i>	~ 180,000	340,000

# PVC Solid Woven Elevator Belts

Our unique Solid Woven carcasses are designed and manufactured in-house with our extensive knowledge of fabric weaving and polymer technology. With a complex woven design of polyester warp and nylon or nylon and cotton weft, which are 100% impregnated with PVC, making the finished carcass impervious to attack from moisture, dirt, chemicals and oils. Additional PVC covers are applied to both sides of the impregnated carcass in our unique dipping process, to give additional protection to the carcass and extend the service life.

## Advantages of Fenner Dunlop PVC Solid Woven Elevator Belts

- ✓ High performance oil resistant fire resistant, anti-static covers  
Oil and fat resistant for most products with animal and vegetable oils and fats
- ✓ A solid woven single ply carcass with no risk of ply separation or delamination
- ✓ Covers form an integral bond preventing any form of delamination
- ✓ High resistance to bolt pull through and bucket holding
- ✓ High static clamp joint and fastener retention properties
- ✓ High resistance to longitudinal rip and tears
- ✓ High resistance to edge wear
- ✓ Flexibility for smooth running on elevator pulley and ease of tracking when installed

Unique Solid Woven Carcass





**Manufactured in the UK in accordance with our ISO 9001:2015 approved quality control procedures.**

# Elevator Belts Features

**Fire resistant and anti-static in accordance with EN 14973 Class C1**

**Complies with ATEX Directive 94/9/EC**

**Mechanical properties ISO 22721 & ISO 1120**

**Quality assurance in accordance with ISO 9001:2015**

**Oil resistant against most animal and vegetable oils, suitable for applications handling grain, feed, fertiliser and seed**

Fenner Dunlop Elevator belts are available in tensile strengths from **500 N/mm to 1800 N/mm**, slab widths from **200 mm up to 1850 mm** and with cover thicknesses of **1+1mm, 1.5+1.5 mm or 2+2 mm**.

## ELEVATOR BELTS PRODUCT RANGE

Belt designation (lbs/in)	Warp strength (N/mm)	Weft strength (N/mm)	Belt thickness <sup>1</sup> (mm)	Belt weight <sup>1</sup> (kg/m <sup>2</sup> )	Minimum Recommended Drum Diameters	
					High tension (mm)	Low tension (mm)
2800	500	275	7.7	10.1	315	250
3500	630	275	8.1	10.5	400	315
4000	710	300	8.3	11	400	355
4500	800	300	8.5	11.1	500	355
5000	875	300	8.8	11.2	500	355
6000	1000	350	9.4	11.9	630	400
6500	1140	350	9.5	12	630	400
7000	1250	350	10.4	12.2	750	450
8000	1400	350	10.5	13.2	750	450
9000	1600	425	11.9	14.8	800	600
10000	1800	425	12.9	16.1	800	600

<sup>1</sup> Nominal values for specific belt constructions. Specification sheets detailing the actual data for any belt type supplied can be forwarded on request.



# Centre of Excellence

## Quality Assurance

Our UK facility is the worldwide Centre of Excellence for Fenner Dunlop solid woven conveyor belting, operating at the forefront of research and development.

## Product Testing

Externally assessed to ISO 9001, the Centre of Excellence is constantly seeking ways to make product and process improvements as well as researching new manufacturing techniques and materials. It is staffed by experts in engineering, chemistry, polymers and textile technology.

A key function of the Centre of Excellence is the continual testing of products to ensure that the very highest standards are met. Conveyor belting, particularly for use in underground applications, is subject to rigorous safety testing in our state-of-the-art facilities to ensure that all belts meet the most stringent requirements. Our in-house dynamic performance testing ensures that every belt provides the longest life possible.

## Quality Testing

All Fenner Dunlop belting is produced within our Quality Management System which is compliant with ISO 9001. As part of this system, the quality of all belt is verified prior to despatch by a programme of comprehensive testing.

### Typically this testing will include:

- ✓ Dimensional measurements
- ✓ Warp and weft tensile strengths
- ✓ Tear strength
- ✓ Elongation
- ✓ Cover adhesion
- ✓ Small scale safety tests (laboratory flame and electrical resistance)
- ✓ Abrasion resistance
- ✓ Transverse stability



## Dynamic Performance Testing

It is necessary to ensure that every belt will perform flawlessly throughout its operating life and that the jointing technology used, be it mechanical fasteners or vulcanised splices, performs as expected

**Our testing facility is equipped with a range of dynamic test rigs enabling us to perform:**

- ✓ Accelerated life testing on both the belt and related jointing methods
- ✓ Field problem simulation
- ✓ Troughing/transition distance evaluations
- ✓ Product and material development testing
- ✓ Specific belt testing to individual customer requirements.



## Quality Assurance

In accordance with the requirements of our major customers, the planning, design, manufacture and quality control procedures of Fenner Dunlop have been assessed to ISO 9001:2015, the International Standard for assessment of a manufacturer's quality system.

The system approved under the above standard has been accepted by the USA Mines Safety and

Health Commission. A similar assessment of Fenner Dunlop has been carried out by the Canadian Federal Energy Mines and Resources Department against the Canadian Standard CAN3Z299, 1-78 Quality Assurance Programme Requirements and by the Spanish LOM Authority.

# Safety Testing

The Fenner Dunlop approach to fire safety testing is based on the premise that a belt should never be the cause of a fire, should be difficult to ignite, and if ignited by an external fire source, should not propagate the fire.

Whilst fire resistance specifications vary from country to country, belts can be formulated to meet any fire performance specifications in the world. The tests carried out on conveyor belts to assess their compliance with fire safety standards are associated with four particular hazards.



## Drum Friction Test

**The danger associated with a stalled belt and a driven rotating drum or pulley resulting in frictional heat build up.**

A test piece of conveyor belt, suitably mounted and tensioned, is wrapped half way around a rotating steel drum, simulating a stalled belt. The test is continued at specified tensions for a given time period, or until the belt breaks. The presence, or absence, of flame or glow is noted and the temperature of the drive drum is measured. The test is conducted in still air and/or in moving air. This test has probably been the major single contributor to mine safety in respect to conveyor fire prevention.



## Laboratory Flame Test

**The possibility of igniting the considerable mass of a conveyor belt with a relatively small ignition source.**

This hazard is usually assessed by the application of a small "Bunsen" type flame to a belt sample and observation of the effect. The time taken for all flame and/or glow to self-extinguish is noted.



## Gallery Fire Test

**The possibility of a belt, ignited from a larger ignition source, spreading the fire to other areas (often referred to as fire propagation).**

This hazard can only be assessed by a gallery fire test, which utilises a sample length of conveyor belt supported by a steel trestle placed in a cabinet of specified dimensions. A continuous flow of air is drawn through the cabinet whilst the sample of belt is ignited at one end by a gas burner for a defined period of time.

Upon removal of the flame source the length of undamaged belt is quantified by physical measurement and/or mathematical means. Fenner Dunlop's in-house test facility is constructed in accordance with EN 12881-1 (Section 6) Mid Scale Fire Propagation Test and is the only one operating in the UK.



## Electrical Resistance Test

**The possible build-up and subsequent discharge of static electrical charge on moving conveyors.**

Electrical resistance is determined by passing a current of specified voltage between electrodes placed on the surface of the belt. The internationally recognised acceptance criteria for electrical conductivity is a maximum resistance of  $3.0 \times 10^8$  Ohms (300M Ohms). Fenner Dunlop's PVC and rubber compounds are specially formulated to ensure that belts are sufficiently conductive to avoid the build up of static electricity.



## SAFETY

Fenner Dunlop conveyor belting meets the safety requirements of all the major mining nations and has been tested and/or approved by the appropriate national authorities, including:

Country	Applicable Standards	Country	Applicable Standards
Australia	AS 4606	Poland	PN EN 14973 C1 + PN-93-05013
Belarus	MI 600024712.001-2007	Portugal	IPQ EN 14973 C1
Canada	CSA M422:14	South Africa	SABS 971
China	MT914	Spain	UNE EN 14973 C1
Czech Republic	CS EN 14973 C1	Russia	PD03-423-01
Germany	DIN EN 14973 C2	Turkey	TS EN 14973 C1
India	IS3181	United Kingdom	BS EN 14973 C1
Italy	UNI EN 14973 C1	Ukraine	GSTU 12.0018579.001-99
Norway	NS EN 14973 C1	USA	MSHA Title 30 Part 14 & MSHA Part 18

# Technical Information

## Belt designation

Belts can be produced to various tensile specifications, using either polyamide (nylon) or polyester base warp yarn. Some markets still prefer to specify belt types based on tensile strength expressed in lbs/in width, whilst others opt for the preferred ISO nomenclature expressed in N/mm. The table on page 8 shows typical figures for minimum warp and weft strengths, belt thickness and weight for a selection of belt types, based on 1mm PVC covers. For thicker covers, add 1.3 kg/m<sup>2</sup>/mm for PVC covers and 1.4 kg/m<sup>2</sup>/mm for nitrile covers.

Alternative constructions are available which give values higher than those in the table. This is particularly relevant to weft strength, where special yarns/designs may be recommended for improved properties such as fastener holding, load support and weft stability.

The use of such special yarns may increase the belt weight and thickness which could be critical for shipping purposes or underground transportation. A Fenner Dunlop engineer should always be consulted where this is likely to be an issue.

## Belt width

Any width up to 2000mm can be manufactured. Whilst we recommend customers to follow the ISO range of preferred widths, non-standard widths can be supplied. Slit-edge belting is also available upon request.

## Belt thickness

When considering cover thickness, please be aware of the high textile content of solid woven and the properties afforded by the increased carcass bulk compared to rubber plied belting. Consequently, thinner covers may generally be chosen than would normally be associated with an equivalent plied product, the enhanced textile density of a solid woven carcass providing the necessary load support and resistance to impact.

## Drum diameters

The drum diameters quoted are the minimum generally recommended. Given specific information regarding wrap configurations, tensions, belt speeds and jointing methods, it may be possible to recommend smaller drums.





## Roll lengths

Customers are asked to specify their maximum acceptable roll diameters and weights so that belts can be supplied in the most suitable roll lengths to avoid unnecessary joints. Belts can normally (subject to safe working limits in our factory) be produced in any required roll size to suit handling and transit to site.

Single, double or special double coiled rolls can be supplied with fasteners fitted if required. Short belts can be spliced into endless loops as part of the manufacturing process.

**The relationship between roll length and diameter is given by the formula:**

$$L = \frac{D^2 - d^2}{K \cdot t} \quad D = \sqrt{K \cdot L \cdot t + d^2}$$

$L$  – length of belt (m)

$d$  – core diameter (mm)

$D$  – rolled belt diameter (mm)

$t$  – thickness of belt (mm)

$K$  – 1275 (constant)

## Belt stretch

The unique design and manufacturing process of solid woven belt allows both permanent and elastic stretch to be kept to a minimum. With numerous carcass designs available in both nylon and polyester yarns, it is impracticable to indicate all stretch figures. Further details can be provided on request.

## Operating factor or safety

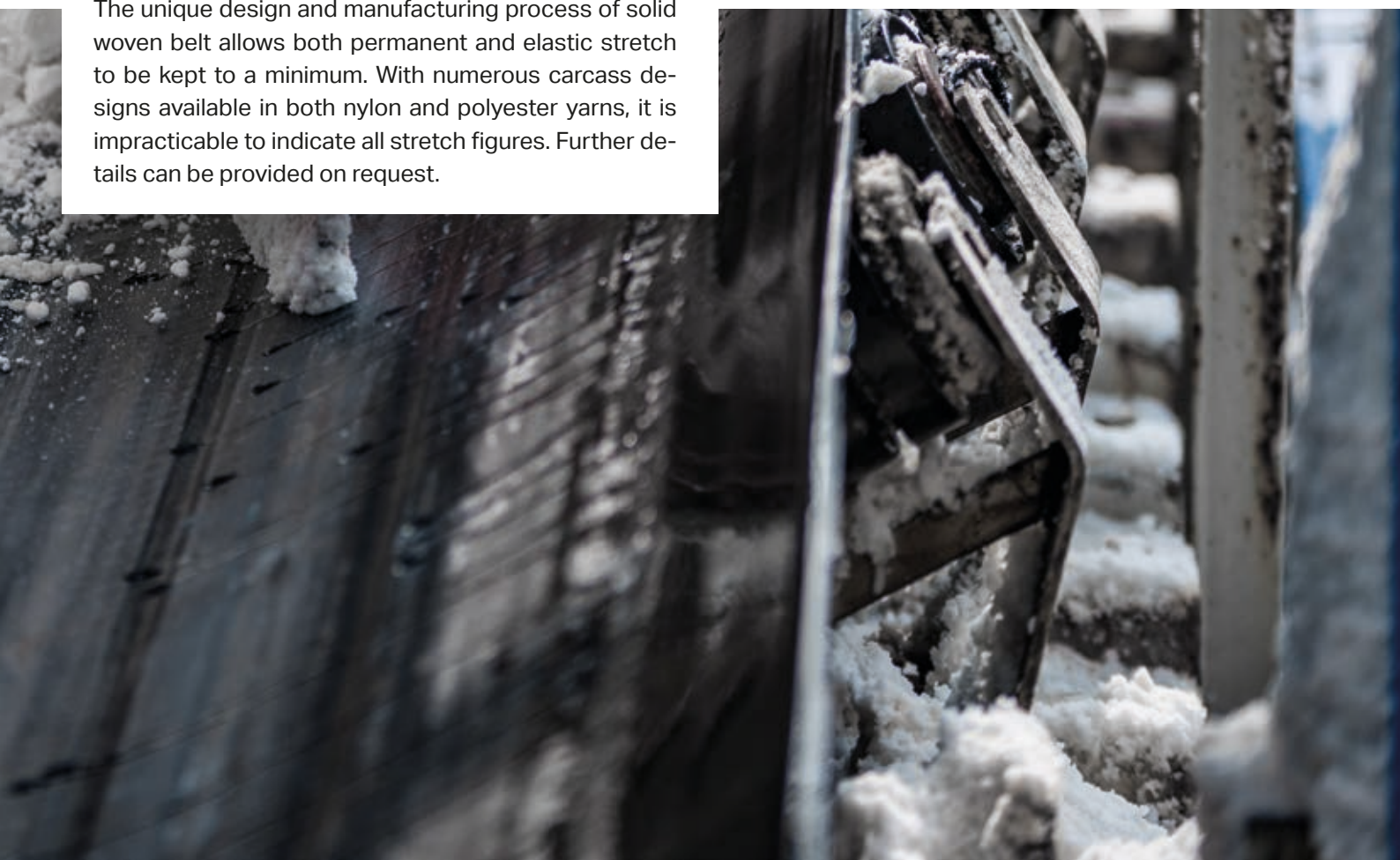
With good quality mechanical fasteners or vulcanised joints a factor of safety of 10:1 is generally acceptable. However we would be pleased to confirm the recommended belt construction and acceptable safety factor for any specific application on receipt of the necessary conveyor details.

## Operating temperature range

Above 90°C PVC softens and the belt properties change. PVC belt is therefore not recommended for conveying materials above this temperature. Standard belts can be used in cold climates down to -10°C. Where applicable, cold weather details should be supplied to ensure that belting with suitable coefficient of friction and flexibility characteristics is specified.

## Fitted fasteners

Mechanical fasteners to customer requirements can be pre-fitted in the factory. Please advise when ordering the belt.



# Joining of Solid Woven Belt

Fenner Dunlop solid woven conveyor belting can be joined in two ways, either by hot vulcanised finger splicing or by the use of mechanical fasteners.

## Hot Vulcanised Finger Splice

Conventional vulcanising presses are used for this process, in conjunction with a variety of polymeric jointing materials developed for maximum joint efficiency. This type of splice enables good quality joints to be made with strengths approaching that of the parent belt. Hot vulcanising offers certain advantages, including:

- ✓ The highest joint strength possible
- ✓ A reduced risk of tearing at the splice area
- ✓ A smooth joint area for superior performance under scrapers,
- ✓ ploughs, deflectors and minimal impact over pulleys and idlers
- ✓ Operation through automatic weighing devices and magnetic separators
- ✓ Reduced maintenance
- ✓ Resistance to moisture and harmful chemicals
- ✓ Superior resistance to abrasion
- ✓ Easier cleaning
- ✓ Reduced spillage

## Mechanical Fasteners

The thick, high textile content of the solid woven carcass, combined with the superior PVC impregnation produced by our unique process, gives excellent fastener holding properties. A wide range of fasteners including Mato, Goro, Titan and Flexco are suitable for use with solid woven conveyor belting.

**Mechanical fasteners are appropriate in conditions where:**

- ✓ Belts are replaced frequently
- ✓ Belts and conveyors are extended regularly
- ✓ Emergency jointing or repairs are required
- ✓ Take up travel is limited.

The following mechanical fasteners can be fitted as standard.





Brand	Type	Max. Tensile Range		Belt Thickness (mm)
		N/mm (metric)	lbs/in (imperial)	
<b>MATO</b>	U35A	1050	6000	9
	U35	1050	6000	7-11
	U37A	1400	8000	8-12
	U37	1400	8000	8-12
	U38A	3500	20000	10-14
	U38	3500	20000	12-15
	U65A	1250	7000	15-18
	U65	1250	7000	6-10
	U67A	1400	8000	8-12
	U67	1400	8000	10-14
	U68A	3500	20000	12-15
	U68	3500	20000	15-18
	H35A	1050	6000	6-9
	H35	1050	6000	7-11
	H37A	1400	8000	8-11
	H37	1400	8000	10-14
	MH22A	630	3500	5-7
	MH22B	630	3500	7-9
	MH25A	1050	6500	5-7
	MH25B	1050	6500	7-9
	MH27A	1400	8000	10-12
	MH27B	1400	8000	12-14
	MP27	800	4500	8-11
	MP28	800	4500	8.5-14.5
<b>FLEXCO</b>	R5	800	4500	6-11
	R51/2	114	6500	8-15
	R6	140	8000	10.5-17
	F8	800	4500	5-8
	F9	1140	6500	6-9
	F11	1140	6500	8-11
	F12	1400	8000	9-12
	F14	1400	8000	11-14

*All fasteners should be fitted according to manufacturers instructions*



**NOTE:** All polymeric vulcanising materials deteriorate with age. Most materials have an effective life of six months and unsatisfactory splices may result from using old materials. Storage in warm conditions may reduce effective life further. This warning applies to all splicing materials, regardless of supply source or belt types. We would be pleased to advise further on the storage of such materials.

# INSPECTION PACKAGING & **STORAGE**



## 1. Final inspection

Before shipping, belts are 100% inspected. Double coils and Special Double Coils can be supplied if there are height constraints. At this point, the customer's preferred mechanical fasteners can be fitted.

## 2. Storage of Conveyor Belting

Belting should be stored coiled with the central axis horizontal. Rolls may be stacked several rolls high providing the resultant pressure does not collapse or distort the centres.

Conveyor belting should be stored and handled in accordance with the guidelines outlined in the following standards:

**ISO 2230** — Vulcanised rubber  
(Guide to storage)

**ISO 5285** — Conveyor belts  
(Guide to storage and handling).

## 3. Temperature

Ideally the storage temperature should be below 25°C though temperatures up to 40° C can be tolerated. The effects of low temperatures are not permanently detrimental though below 0° C belts become stiffer and care should be taken when handling at and below this temperature. When rolls are removed from storage at low temperatures for immediate use, their temperature should be raised to approximately 20° C throughout before being put into service.



## 4. Light

Conveyor belting should be protected from sunlight, in particular direct sunlight and strong artificial light with a high ultra-violet content.







## 5. Ozone

As ozone can be particularly damaging to vulcanised rubber, storage rooms should not contain any equipment capable of generating ozone such as high voltage electrical equipment, electric motors or other equipment which may give rise to electric sparks or electrical discharges. Combustion gases and organic vapours should be excluded as they may give rise to ozone via photochemical reactions.

### Ozone Threats:



High  
Voltage



Gases  
and vapours



## 6. Packaging

Belting requiring long term storage should be bound with steel or high tenacity plastic or textile straps and protected with waterproof plastic material. A supporting centre core of suitable dimensions manufactured from wood or steel should be specified at the time of order.



Supporting  
centre core

Bound plastic  
strapping

Edge protector packaging supplied on all our rolls prevents damage during transit, storage and installation, protecting your investment.

# Technical Support

**Fenner Dunlop's commitment to our customers does not begin or end with the sale of a high quality belt. In addition we offer a comprehensive range of services.**

## Training

A number of different procedures can be used to splice a solid woven belt and accredited supervision and training, on-site or in-house, ensures that a belt is jointed so as to ensure maximum performance.

## Site Surveys & Calculations

Reports on conveyor systems, belting and vulcanised or mechanical joints can be produced and we also offer expert assistance to calculate the parameters of any non standard conveyor.

## Destructive Testing & Analysis

Our testing of new belt is extensive. However we can also test used belt to gauge performance in service. A section of belt removed and sent to us can be tested and analysed to check ultimate tensile strength and to check that original design parameters and agreed factors of safety are still being met. We also offer testing for both mechanical and vulcanised joints.

## Site Vulcanising

Highly qualified splicing teams are fully equipped to carry out splicing work both underground and on the surface anywhere in the world using our extensive range of sectional vulcanising presses.

## Belt Fitting

We offer the complete installation of belts or inserts and assistance with developing method statements and risk assessments to ensure that belt changes are completed safely.

## Drum Lagging

Either in-situ or in our workshops, we can lag drums with rubber, PU or ceramic in different designs and thicknesses, both standard or fire resistant and using hot or cold bonding procedures.

## Splice Materials

There is a specific splice kit available for every solid woven belt, using the same raw materials used in the production of the belt. Using approved splicing materials and following the approved splice procedure will ensure the highest joint strength and best in-field performance from the conveyor belt.

## Belt Coiling

Within our factories we have the equipment and capability to coil rolls of belt up to a maximum of 2m wide. Belts can be coiled in a number of ways including Double Coiled and Special Double Coiled when there is limited access, there are height or dimension restrictions or just for ease of installation.

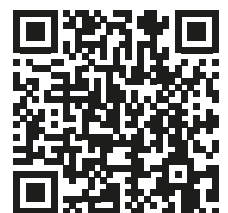
## Mechanical Fasteners

Fasteners chosen by or recommended to customers can be supplied and fitted to belts before delivery. Training for on-site fitting can also be arranged.





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**Fenner Dunlop**  
**Marfleet, Hull, England HU9 5RA**

Tel: **+44 (0)1482 781234**  
Fax: **+44 (0)1482 785438**  
Email: **[sales@fennerdunlopeurope.com](mailto:sales@fennerdunlopeurope.com)**