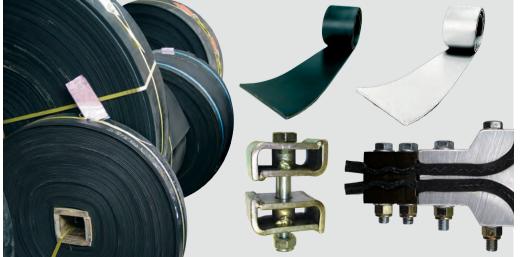
ELEVATOR BELTING & BELT FASTENERS







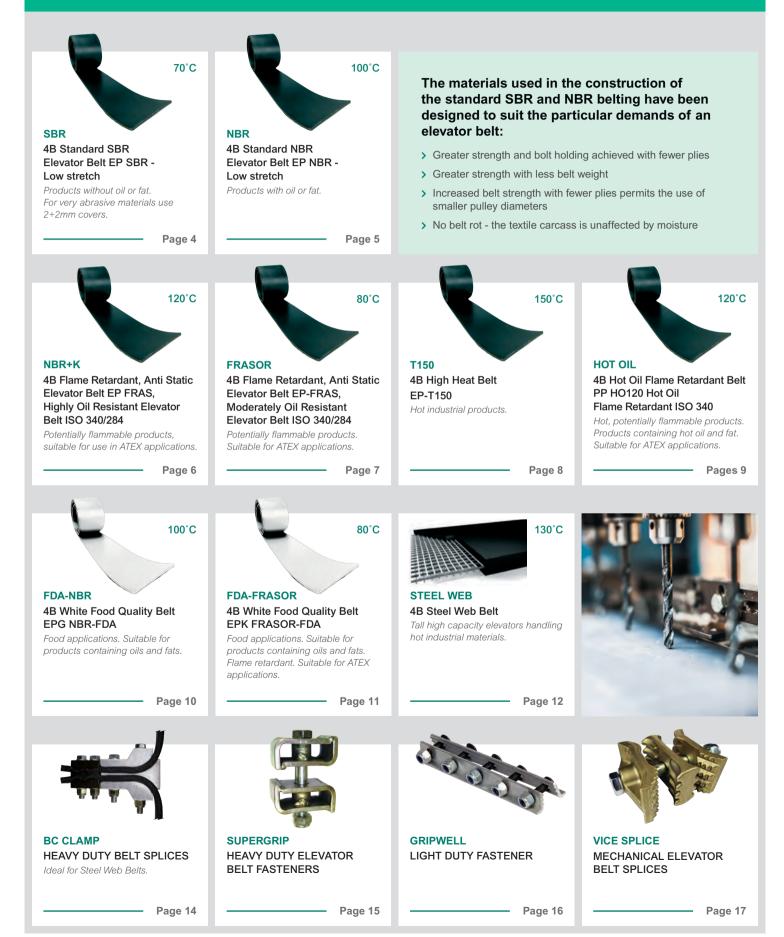
A Worldwide Manufacturer of High Quality, Technologically Advanced Material Handling & Electronic Components

BETTER BY DESIGN

CONTENTS

ELEVATOR BELTING





BELT SELECTION GUIDE

| QUALITY PROPERTY | ANTI-STATIC | ANTI-ABRASIVE | OIL-RESISTANT | FLAME- RETARDANT | FOOD QUALITY | | RATURE |
|---------------------|-------------|---------------|---------------|---------------------|--------------|-------|--------|
| SBR | ~ | ~ | × | × | × | -20°C | +70°C |
| NBR | ~ | ~ | ~ | × | × | -25°C | +100°C |
| NBR+K | ~ | ~ | ~ | ~ | × | -25°C | +120°C |
| FRASOR | ~ | ~ | ~ | ~ | × | -25°C | +80°C |
| T150 | ~ | ~ | × | × | × | -20°C | +150°C |
| HOT OIL | ~ | ~ | ~ | × | × | -20°C | +120°C |
| FDA NBR | ~ | ~ | ~ | × | ~ | -20°C | +100°C |
| FDA FRASOR | ~ | ~ | ~ | ~ | ~ | -20°C | +80°C |
| STEEL WEB | ~ | ~ | × | × | × | -20°C | +130°C |

4B - YOUR SPECIALIST SUPPLIER OF ELEVATOR BELTING

- > Wide range to suit all applications
- Detailed technical support from our experienced team of engineers
- > Extensive stock
- Belts supplied slit, cut to length and punched to your requirements or in full coils
- > Same day dispatch from stock range if required







LOW STRETCH ELEVATOR BELTING - ABRASION RESISTANT



Higher Strength Belts – EP1000-EP2000 kN/m available on request





4B elevator belting is of laminar construction, to give high impact resistance coupled with low stretch at working tension. The EP carcass comprises a woven textile construction having low stretch polyester fabric warp (along its length) and impact resistant polyamide fabric weft (across the width). The low stretch characteristics of the belt are achieved using the high strength textile fabric which is pre-tensioned during the manufacturing process. This process limits the maximum stretch in the belt, at working strength, to 1.5%.

Applications

 For fat and oil free products up to 70°C

Covers

 > SBR Styrene Butadiene Rubber

Temperature Range



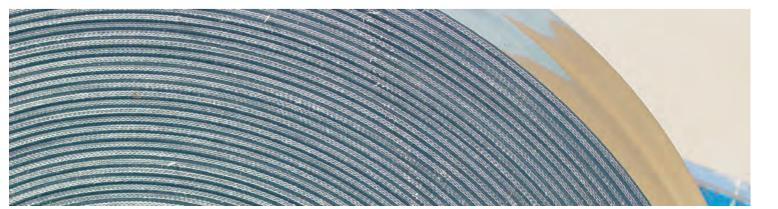
Carcass

 Polyester fabric warp and polyamide fabric weft plies (EP) separated by 0.3mm thick synthetic rubber laminates of SBR

Standard

 Manufactured to BS 490, DIN 22102 and DIN 22104 standard

| ТҮРЕ | | EP500/3 1+1 SBR | EP630/4 1+1 SBR | EP630/4 2+2 SBR | EP800/5 2+2 SBR |
|--|-------|--------------------|--------------------|--------------------|--------------------|
| Strength per ply | kN/m | 160 | 160 | 160 | 160 |
| Number of plies | - | 3 | 4 | 4 | 5 |
| Total Tensile Strength | kN/m | 500 | 630 | 630 | 800 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 50 | 63 | 63 | 80 |
| Top & Bottom Cover Thickness | mm | 1.0 | 1.0 | 2.0 | 2.0 |
| Belt Thickness | mm | 6.0 | 7.0 | 9.0 | 10.5 |
| Weight | kg/m² | 7.8 | 9.0 | 11.4 | 13.3 |
| Minimum Pulley Ø | mm | 315 | 500 | 500 | 630 |





LOW STRETCH ELEVATOR BELTING - OIL RESISTANT



NBR Nitrile provides good resistance to oil and fat. Suitable for products containing oils and fat up to 100°C.

- > 100% Nitrile covers with Nitrile interplies
- > Tested using ASTM3 / IRM 903 Reference Oils

Applications

 For products containing oils and fats up to 100°C

Covers

> NBR 100% Nitrile Butadiene Synthetic Rubber

Temperature Range

> -25°C to +100°C

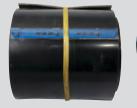
Carcass

 Polyester fabric warp and polyamide fabric weft plies (EP) separated by 0.3mm thick oil resistant synthetic rubber laminates

Standard

 Manufactured to BS 490, DIN 22102 and DIN 22104 standard

| ТҮРЕ | | EP500/3 1+1 NBR | EP630/4 1.5+1.5 NBR | EP800/4 2+2 NBR | EP1000/5 2+2 NBR | EP1250/5 2+2 NBR | EP1600/5 2+2 NBR |
|---|-------|--------------------|------------------------|--------------------|---------------------|---------------------|---------------------|
| Strength per ply | kN/m | 160 | 160 | 200 | 200 | 250 | 315 |
| Number of plies | - | 3 | 4 | 4 | 5 | 5 | 5 |
| Total Tensile Strength | kN/m | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 50 | 63 | 80 | 100 | 125 | 160 |
| Top & Bottom Cover Thickness | mm | 1.0 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 |
| Belt Thickness | mm | 6.0 | 8.0 | 9.5 | 11.0 | 12.5 | 13.5 |
| Weight | kg/m² | 7.6 | 10.2 | 12.0 | 13.9 | 15.6 | 17.5 |
| Minimum Pulley Ø | mm | 315 | 500 | 500 | 800 | 800 | 1000 |



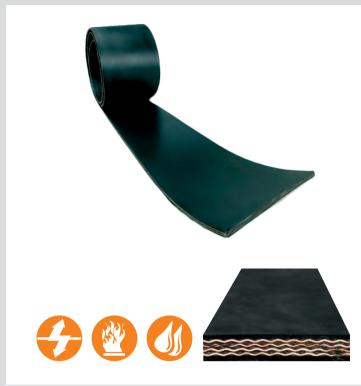


NBR Quality Information ASTM #1 = 1RM 901 ASTM #3 = 1RM 903

Test: 70hrs @ 100°C +/- 10% ∆V + 20% ∆V (max)



ISO 340/284 NBR+K - FLAME RETARDANT, ANTI STATIC AND HIGHLY OIL RESISTANT BELT



Suitable for use in ATEX applications.

Recommended for use in equipment / installations where there is a risk of fire or explosion.

Applications

 Suitable for handling products with more aggressive oil content such as rape seed

Covers

> NBR Nitrile Synthetic Rubber

Temperature Range



Carcass

 Polyester fabric warp and polyamide fabric weft plies (EP) separated by 0.3mm thick synthetic rubber layers

Standard

- > Flame Retardant ISO 340/ EN20340 (DIN 20340)
- Anti Static ISO 284/EN20284 (DIN 20284)
- Manufactured to BS490 DIN 22102 and DIN 22104 standard

| ТҮРЕ | | EP400 | EP500 | EP630 | EP800 | EP1000 | EP1250 |
|---|-------|-------|-------|-------|-------|--------|--------|
| Number of plies | - | 3 | 3 | 3 | 4 | 4 | 5 |
| Total Tensile Strength | kN/m | 400 | 500 | 630 | 800 | 1000 | 1250 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 40 | 50 | 63 | 80 | 100 | 125 |
| Top & Bottom Cover Thickness | mm | 3+1 | 3+1 | 3+1 | 3+1.5 | 3+1.5 | 3+1.5 |
| Belt Thickness | mm | 7.0 | 7.5 | 8.0 | 10.0 | 11.0 | 12.5 |
| Weight | kg/m² | 10.5 | 10.6 | 11.6 | 13.8 | 14.9 | 17.4 |
| Minimum Pulley Ø | mm | 315 | 315 | 400 | 500 | 630 | 800 |





ISO 340/284 FRASOR - FLAME RETARDANT, ANTI-STATIC AND OIL RESISTANT BELT



Suitable for use in ATEX applications.

Recommended for use in equipment / installations where there is a risk of fire or explosion. Suitable for handling cereals and products with moderate levels of oil, such as soya.

Applications

 Moderate resistance to vegetable and animal oil

Covers

> Moderately Oil Resistant and Flame Retardant Rubber

Temperature Range

> -25°C to +80°C

Carcass

 Polyester fabric warp and polyamide fabric weft plies (EP) separated by 0.3mm thick synthetic rubber laminates

Standard

- Flame retardant ISO 340/ EN20340 (DIN 20340)
- > Anti-static ISO 284/EN20284 (DIN 20284)
- Manufactured to BS490 DIN 22102 and DIN 22104 standard

| ТҮРЕ | | EP315 | EP400 | EP500 | EP630 | EP800 | EP1000 | EP1250 | EP1600 |
|---|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Number of plies | - | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 |
| Total Tensile Strength | kN/m | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 |
| Top & Bottom Cover Thickness | mm | 3+1 | 3+1 | 3+1 | 3+1 | 3+1.5 | 3+1.5 | 3+1.5 | 3+1.5 |
| Belt Thickness | mm | 6.2 | 7.0 | 7.5 | 8.0 | 10.0 | 11.0 | 12.5 | 14.0 |
| Weight | kg/m² | 6.5 | 9.1 | 9.9 | 10.4 | 13.0 | 14.1 | 16.6 | 18.5 |
| Minimum Pulley Ø | mm | 250 | 315 | 315 | 400 | 500 | 630 | 800 | 1000 |



T150 - HIGH HEAT BELT

HIGH HEAT BELT

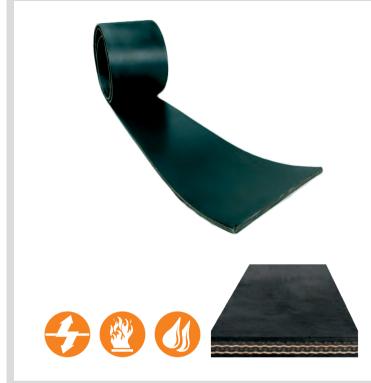


| ТҮРЕ | Thickness | Weight | Min. Pulley |
|------------------------|-----------|---------|-------------|
| | (mm) | (kg/m²) | ø (mm) |
| EPDM800/4 3+3 NBR T150 | 11.3 | 12.0 | 500 |





HOT OIL AND FIRE RESISTANT BELT



Suitable for use in ATEX applications.

This special belt offers resistance to the combination of fats and oils and higher processing temperature up to 120°C in often humid working environments.

The belt is specially aimed at solving high temperature problems in processing of soya beans, cattle feed, rape seed and fat processing.

Technical Specifications

- > Product Norm: DIN 22102 ETGX
- > E = anti-static DIN 22104
- > T = heat resistant to 120°C
- for fatty products
- > G = both covers and textile plies resistant to mineral, animal and vegetables oils and fats, low concentrations of acids, lyes and water resistant
- > X = good abrasion resistance
- K = flame retardant DIN 22103K - ISO 340/EN 20340
- Elongation at maximum recommendation working load - 1.5-2.0%

Temperature Range

> -20°C to +120°C

| ТҮРЕ | Thickness | Weight | Min. Pulley |
|----------------------|-----------|---------|-------------|
| | (mm) | (kg/m²) | ø (mm) |
| PP800/4 2+2 NBR T120 | 9.0 | 9.8 | 500 |



NBR - WHITE NITRILE - FDA



This belt quality has good oil and fat resistance and meets the requirements for components in contact with food stuffs.

Used widely with rice processing, flour mills, dry milk products, salt, sugar and detergents etc.

> FDA Approved

> Highly Oil Resistant (NBR) covers

Technical Specifications

- Constructed with Polyester/ Polymide plies with low elongation characteristics
- Resistant to acids and lyes in low concentration
- > Approved FDA CFR section 21-177-2600, DIN 22102 EGA
- > E = Anti-static DIN 22104
- > G = Fat resistant
- > A = Food quality

| Temperature Range |
|-------------------|
| > -20°C to +100°C |



| туре | | EP400 | EP500 | EP630 | EP800 | EP1000 |
|--|-------|---------|---------|---------|-------|--------|
| Number of plies | - | 3 | 3 | 3 | 4 | 4 |
| Total Tensile Strength | kN/m | 400 | 500 | 630 | 800 | 1000 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 40 | 50 | 63 | 80 | 100 |
| Top & Bottom Cover Thickness | mm | 1.5+1.5 | 1.5+1.5 | 1.5+1.5 | 2+2 | 2+2 |
| Belt Thickness | mm | 6.0 | 6.3 | 6.9 | 9.4 | 10.6 |
| Weight | kg/m² | 8.2 | 8.4 | 8.7 | 11.9 | 12.5 |
| Minimum Pulley Ø | mm | 315 | 315 | 400 | 500 | 630 |





FRASOR - ISO 340/284 - FDA



| ТҮРЕ | | EP400 | EP500 | EP630 | EP800 | EP1000 |
|--|-------|---------|---------|---------|-------|--------|
| Number of plies | | 3 | 3 | 3 | 4 | 4 |
| Total Tensile Strength | kN/m | 400 | 500 | 630 | 800 | 1000 |
| Maximum Working Tension (10:1 Safety Factor) | kN/m | 40 | 50 | 63 | 80 | 100 |
| Top & Bottom Cover Thickness | mm | 1.5+1.5 | 1.5+1.5 | 1.5+1.5 | 2+2 | 2+2 |
| Belt Thickness | mm | 6.0 | 6.3 | 6.9 | 9.4 | 10.6 |
| Weight | kg/m² | 8.3 | 8.5 | 8.8 | 12.0 | 12.6 |
| Minimum Pulley Ø | mm | 315 | 315 | 400 | 500 | 630 |



STEEL WEB

The 4B Steel Web Belt is a rubber elevator belt with a special steel cord core. The cords provide low elongation with high elasticity in the length, and cross rigidity in the width. The built-in elasticity allows running over slightly crowned pulleys which greatly improves belt tracking, and helps to avoid belt wandering which is often the reason for elevators shutting down. The rigid weft cords act as a barrier to ripping and tearing which increases the holding ability for the bucket bolts. This produces a good cross rigid belt resulting in excellent straight tracking characteristics.

In contrast, most conventional steel cable belts lack elasticity and consequently have to run over truly flat, cylindrical pulleys which increases the risk of belts off-tracking.

The 4B Steel Web Belt is designed for heavy duty/industrial bucket elevator applications with long centre distances that require stable running and reliable belts with high safety factors. All 4B Steel Web Belts are manufactured in accordance with DIN 22102 and ISO norms.

TECHNICAL SPECIFICATIONS

For tall, high tonnage industrial elevators. Steel cord keeps belt stretch to a minimum.

- > Strength up to 2,500 kN/m
- > Covers 3 + 3 or 4 + 4
- > Elongation at maximum working load 0.5%
- > Temperature resistant up to 130°C continuous
- > Anti static
- > Bolt holes to customer specification

Temperature Range -20°C to +130°C 🌗

STEEL WEB BELT

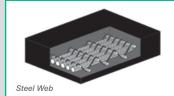


| STANDARD RANGE | COVERS (MM) | BELT THICKNESS (MM) | MINIMUM PULLEY Ø (MM) | APPROX WEIGHT (KG/M²) |
|----------------|----------------|------------------------|--------------------------|--------------------------|
| SW 800 | 3+3 | 12.0 | 500 | 18.0 |
| SW 1000 | 3+3 | 12.0 | 500 | 18.7 |
| SW 1250 | 3+3 | 13.0 | 630 | 21.0 |
| SW 1400 | 4+4 | 15.0 | 630 | 24.5 |
| SW 1600 | 4+4 | 15.0 | 630 | 25.0 |
| SW 1800 | 4+4 | 15.0 | 630 | 25.5 |
| SW 2000 | 4+4 | 15.0 | 800 | 26.0 |
| SW 2500* | 5+5 | 18.0 | 800 | 32.5 |

* On special offer

Other types on demand:

- > Type 1 highly abrasion resistant with a maximum service temperature of 100°C
- > Type 2 abrasion resistant with a maximum service temperature of 130°C. Continuous short peaks at 150°C
- > Type 3 oil and fat resistant, anti static and flame retardant ISO 340









SJ BUCKETS / BC CLAMP / **STEEL WEB BELT**



High Capacity System

A proven solution for the heavy industry.

4B can offer an integrated system of Steel Web Belting, SJ Pressed Steel Buckets and free engineering for elevator designs with compact industrial elevators.

Advantages:

- > Savings of up to 33% on component costs
- > Heavy duty but lighter weight system
- > Taller elevators are possible (up to 150m)
- > Low maintenance costs
- > Higher belt speeds are possible
- > Closer bucket spacing
- > Higher capacity and efficiency



Braime Clamp Belt Splice on 4B Steel Web Core Belt



Starco Jumbo Buckets on 4B Steel Web Core Belt Cement Application



BC CLAMP

HEAVY DUTY ELEVATOR BELT FASTENER



The Braime Clamp (BC) series of heavy-duty belt splices securely fastens belting on larger bucket elevators. As the originator of this proven style of belt clamp, 4B designed it from three pieces of extruded aluminum including a center wedge section to minimize belt wear.

The BC1 and BC2 can be used on textile belts. All BC Clamps can be used on steel web belting.

The BC2, BC3 and BC4 versions incorporate an additional three piece machined steel vise grip section designed to ride above the aluminum base clamp and secure the steel cords within a steel web belt.



Braime Clamp – BC1*

Braime Clamp – BC2 With Steel Cord Vice Grip Section



Braime Clamp – BC3 Shown With Steel Web Core Belt

| | 125mm 45mm | 175mm 45mm Mesh Reinforcements | 200mm 45mm Mesh Reinforcements | 250mm 45mm Mssh Reinforcements |
|------------------------------|---------------|---|---|---|
| | BC1* | BC2 | BC3 | BC4 |
| Belt Strength | 1,400 kN/m | 1,600 kN/m | 2000 kN/m | 2,500 kN/m |
| Weight (per m belt width) | 31.6 Kgs/m | 56.5 Kgs/m | 71 Kgs/m | 96 Kgs/m |
| Bolt Size | Bolt M16 | Bolt M16 | Bolt M16 | Bolt M16 |

* For textile belts, use only BC1.



High tensile bolt Carcass Steel Extra heavy duty cable clamp for high tensile belt



SUPERGRIP



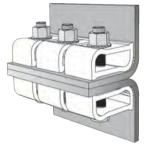
SUPERGRIP SYSTEM



The **Supergrip** belt fastener secures belting on bucket elevators. The two ends of the belt are gripped between extruded steel plates, clamped together by zinc plated high tensile bolts and self-locking nuts.

- > Easy to fit modular system of 50mm segments
- > 4 versions available for belts up to 1250 kN/m without thickness limitation
- > Each assembly comprises 2 half joints, high tensile bolt & selflocking nut
- > With standard nylon nuts max temp. 80° C, for temp. 80° C+ specify Philidas nuts
- > Available in stainless steel

Example of joint using 3 Supergrips on a belt of 150 to 195mm wide. 25mm minimum belt projection for all sizes.



| 32mm | | 32mm | 32mm | 18mm | |
|----------------------|--------------------|-----------|----------------|------------------|--|
| | Supergrip No.1 | | Supergrip No.3 | Supergrip No.4 | |
| Belt Strength | 500 kN/m | 630 kN/m | 800 kN/m | 1,000/1,250 kN/m | |
| Weight (per unit) | 0.5 Kgs/m | 0.8 Kgs/m | 0.85 Kgs/m | 1.83 Kgs/m | |
| Bolt Size | Bolt Size Bolt M14 | | Bolt M14 | Bolt M16 | |

Bespoke belt clamps available for belts over 1250kN/m. Contact 4B's technical department.



GRIPWELL

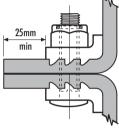
LIGHT DUTY ELEVATOR BELT FASTENER



The **Gripwell** light duty aluminum fastener secures belting on bucket elevators. The two ends of the belt are gripped between extruded serrated plates, clamped together by zinc plated high tensile bolts, safely secured by plated self-locking nuts to give a strong reliable and rustproof fastener.

The Gripwell forms a butt joint, the belt runs smoothly over the pulley with minimum stress to the joint and no relative movement can take place between the two belt ends, as is the case when an overlapping joint passes over the pulleys

- $\,$ > For elevator belts up to 500 kN/m and up to 7.0mm max. thickness
- > Vice grip between serrated jaws
- For longer joints use 2 fasteners of equal length per joint. e.g. 2 x 150mm Gripwell fasteners for a 300mm wide belt



| elt Width (mm) | Actual Length (mm) | Bolt Holes (mm) | ø (mm) | Centres (mm) |
|-------------------|--------------------------|--------------------|-----------|-----------------|
| 50 | 45 | 2 | 8.0 | 25 |
| 65 | 57 | 2 | 8.0 | 33 |
| 75 | 70 | 2 | 8.0 | 43 |
| 90 | 83 | 3 | 8.0 | 2x28 |
| 100 | 96 | 3 | 8.0 | 2.33 |
| 115 | 109 | 3 | 8.0 | 2x42 |
| 125 | 122 | 4 | 8.0 | 3x32 |
| 140 | 134 | 4 | 8.0 | 3x36 |
| 150 | 147 | 4 | 8.0 | 3x40 |
| 165 | 160 | 5 | 8.0 | 4x33 |
| 175 | 172 | 5 | 8.0 | 4x36 |
| 200 | 198 | 6 | 8.0 | 5x34 |
| 225 | 223 | 6 | 8.0 | 5x40 |
| 250 | 248 | 7 | 8.0 | 6x37 |
| 275 | 273 | 7 | 8.0 | 6x41 |
| 300 | 299 | 8 | 8.0 | 7x39 |



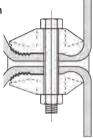
MECHANICAL ELEVATOR BELT SPLICES



4B Vise Splices are mechanical splices for use on most PVC and rubber elevator belts. Each splice unit is made of three pieces. The outside plates have two different gripping areas. The ribbed gripping area is mounted towards the face of the belt. The opposite end has a series of both longitudinal and axial teeth. The center plate is symmetrical and cannot be improperly installed around its elongated centre hole.

The splice functions by using the tension supplied by the belting. This tension on the belt ends pulls the outer plates apart, and forces gripping pressure towards the teeth on the splice unit. The greater the belt tension, the more pressure is exerted on the gripping teeth at the forward end of the splice.

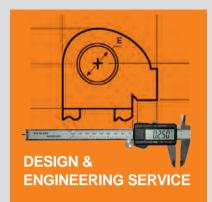
- > For belts 1000 to 1400 kN/m tensile strength
- > Use on PVC and rubber belting
- > Non-sparking (non-ferrous version)
- Each splice accommodates 50mm of belt width



| Non-Ferrous | Ferrous | |
|----------------------------------|----------------------------------|--|
| up to 1400 kN/m Tensile Strength | up to 1000 kN/m Tensile Strength | |
| Bronze Colour | Silver Colour | |
| 1.33 kgs | 1.18 kgs | |
| Up to 260°C | Up to 315°C | |



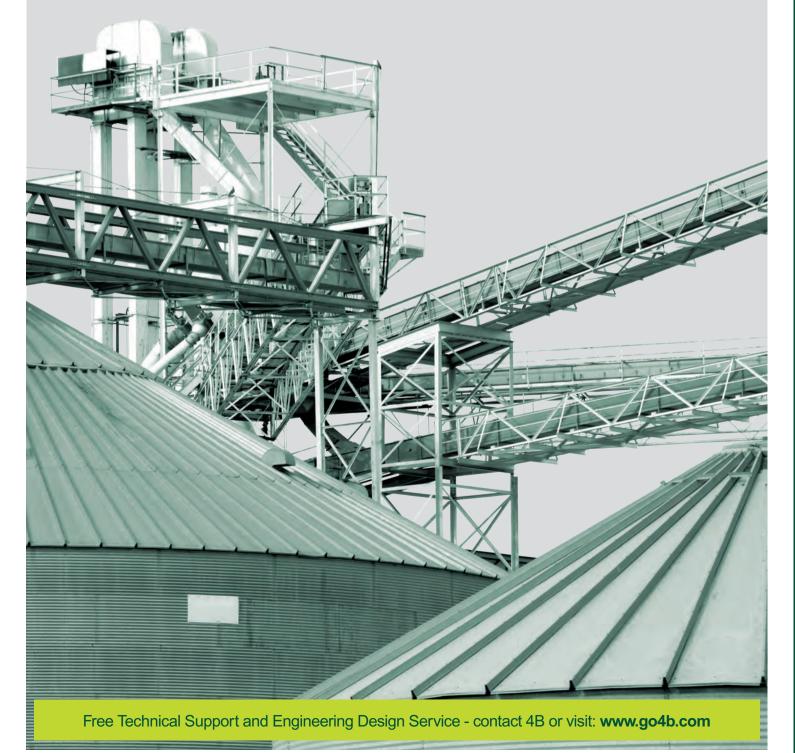




BUCKET ELEVATOR PERFORMANCE ANALYSIS

4B ENGINEERS CAN:

- > Maximize Bucket Elevator Capacity (TPH)
- > Calculate Horsepower and Shaft Diameter Requirements
- > Recommend Shaft / Belt Speeds
- > Troubleshoot Elevator Issues
- > Provide Solutions for Hazard Monitoring Compliance



ALSO IN THE 4B RANGE



ASK FOR OUR CATALOGUES

MATERIAL HANDLING COMPONENTS



ELEVATOR BUCKETS

- Pressed seamless steel, stainless steel and welded steel
- High density polyethyene, nylon and polyurethane
- For agricultural and industrial applications



ELECTRONIC MONITORING SYSTEMS

HAZARD MONITORS

An extensive range of ATEX / IECEx / CSA approved hazard monitoring systems specifically designed for bucket elevators and conveyors in dust hazard environments.



ELEVATOR BOLTS

- > EURO BOLTS
- > EASIFIT BOLTS
- > REF 70
- FANG BOLTS



BEARING TEMPERATURE SENSORS

Bearing sensors with thermistors type PTC, NTC or PT100, compatible with a range of monitoring systems.



DROP FORGED CHAINS

- Made from special heat treated alloy steel
- Case hardened to Rockwell
 C57- C62, with ductile core hardness of Rockwell C40
- Maximum shock and wear resistance

SPROCKETS & TRAILERS

- > For drop forged chains
- Manufactured from high grade heat treated steel
- Minimum hardness of 57 HRC



MISALIGNMENT MONITORS

A range of magnetic and contact switches designed specifically for use on bucket elevators and open and closed conveyors.



SPEED SWITCHES

A range of speed switches, from simple inductive shaft speed monitoring devices through to intelligent underspeed monitors.



VISIT OUR WEBSITE FOR DETAILED TECHNICAL INFORMATION:

www.go4b.com

- > Technical Manuals
- Installation Guides
- > Wiring Guides
- CAD Drawings
- > Certificates...



4B catalogues also available:

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 - nics
- Elevator Buckets
- Bolts & Fasteners
 Forged Chains





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