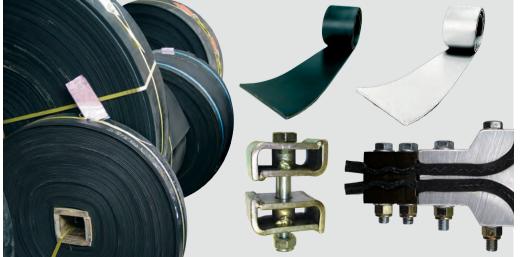
ELEVATOR BELTING & BELT FASTENERS







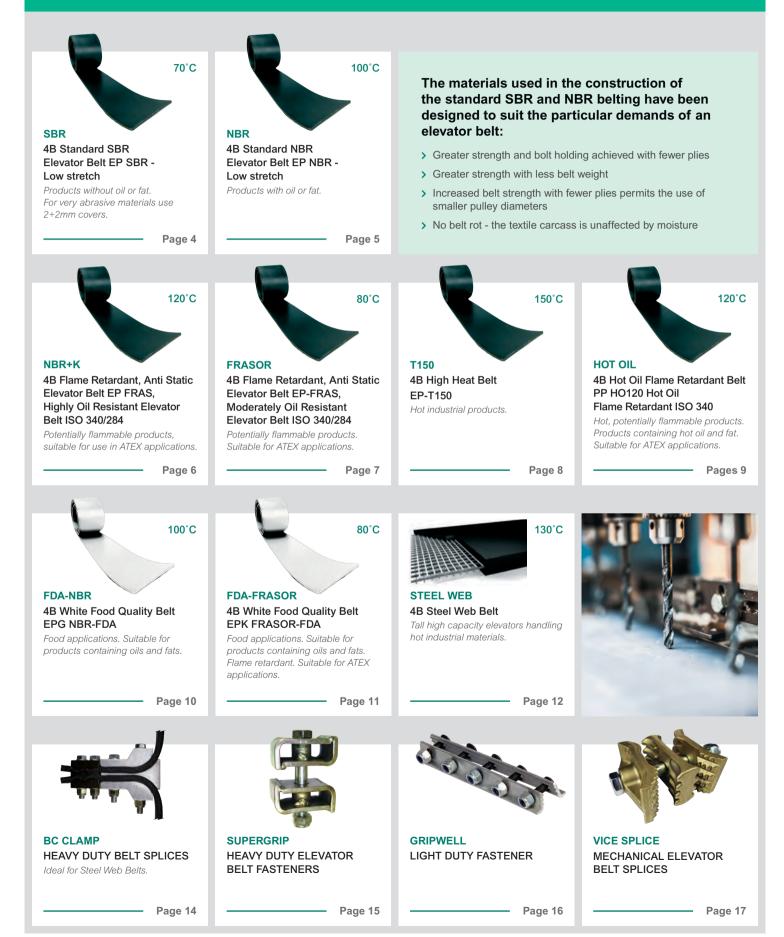
A Worldwide Manufacturer of High Quality, Technologically Advanced Material Handling & Electronic Components

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



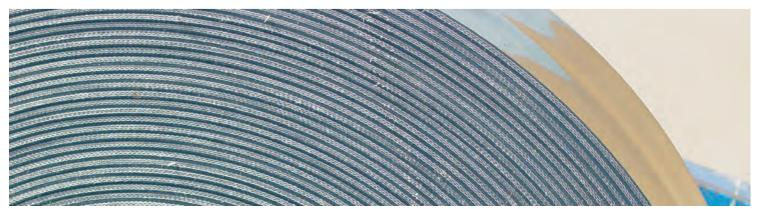
Carcass

 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

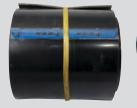
Carcass

 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



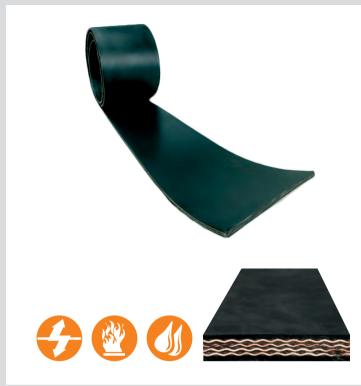


NBR Quality Information ASTM #1 = 1RM 901 ASTM #3 = 1RM 903

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

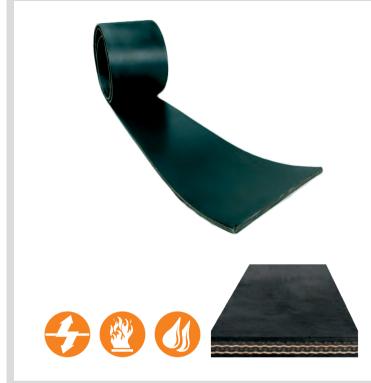


ТҮРЕ	Thickness	Weight	Min. Pulley
	(mm)	(kg/m²)	ø (mm)
EPDM800/4 3+3 NBR T150	11.3	12.0	500





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

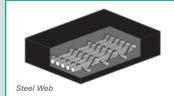


STANDARD RANGE	COVERS (MM)	BELT THICKNESS (MM)	MINIMUM PULLEY Ø (MM)	APPROX WEIGHT (KG/M²)
SW 800	3+3	12.0	500	18.0
SW 1000	3+3	12.0	500	18.7
SW 1250	3+3	13.0	630	21.0
SW 1400	4+4	15.0	630	24.5
SW 1600	4+4	15.0	630	25.0
SW 1800	4+4	15.0	630	25.5
SW 2000	4+4	15.0	800	26.0
SW 2500*	5+5	18.0	800	32.5

* 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

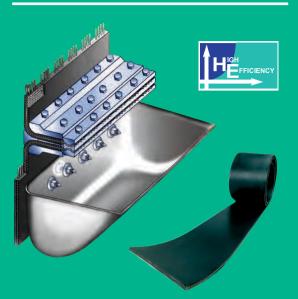








SJ BUCKETS / BC CLAMP / **STEEL WEB BELT**



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



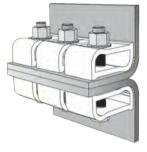
SUPERGRIP SYSTEM



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

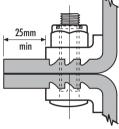
LIGHT DUTY ELEVATOR BELT FASTENER



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



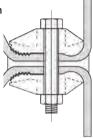
MECHANICAL ELEVATOR BELT SPLICES



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.

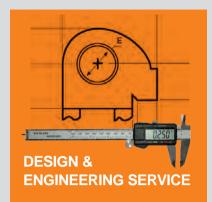
- > For belts 1000 to 1400 kN/m tensile strength
- > Use on PVC and rubber belting
- > Non-sparking (non-ferrous version)
- Each splice accommodates 50mm of belt width



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	



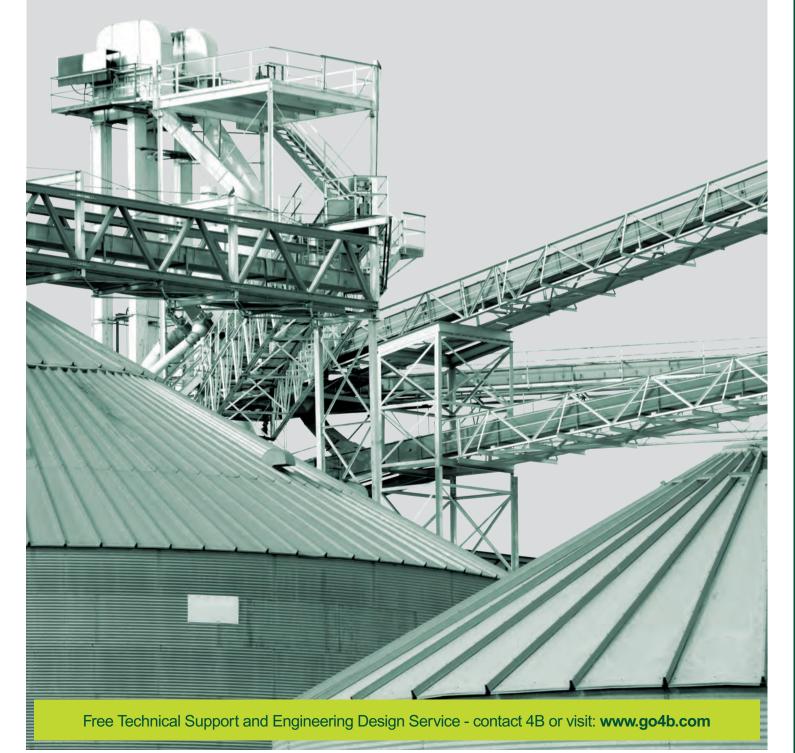




BUCKET ELEVATOR PERFORMANCE ANALYSIS

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.



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www.go4b.com

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



4B catalogues also available:

- Electronics
 - nics
- Elevator Buckets
- Bolts & Fasteners
 Forged Chains





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