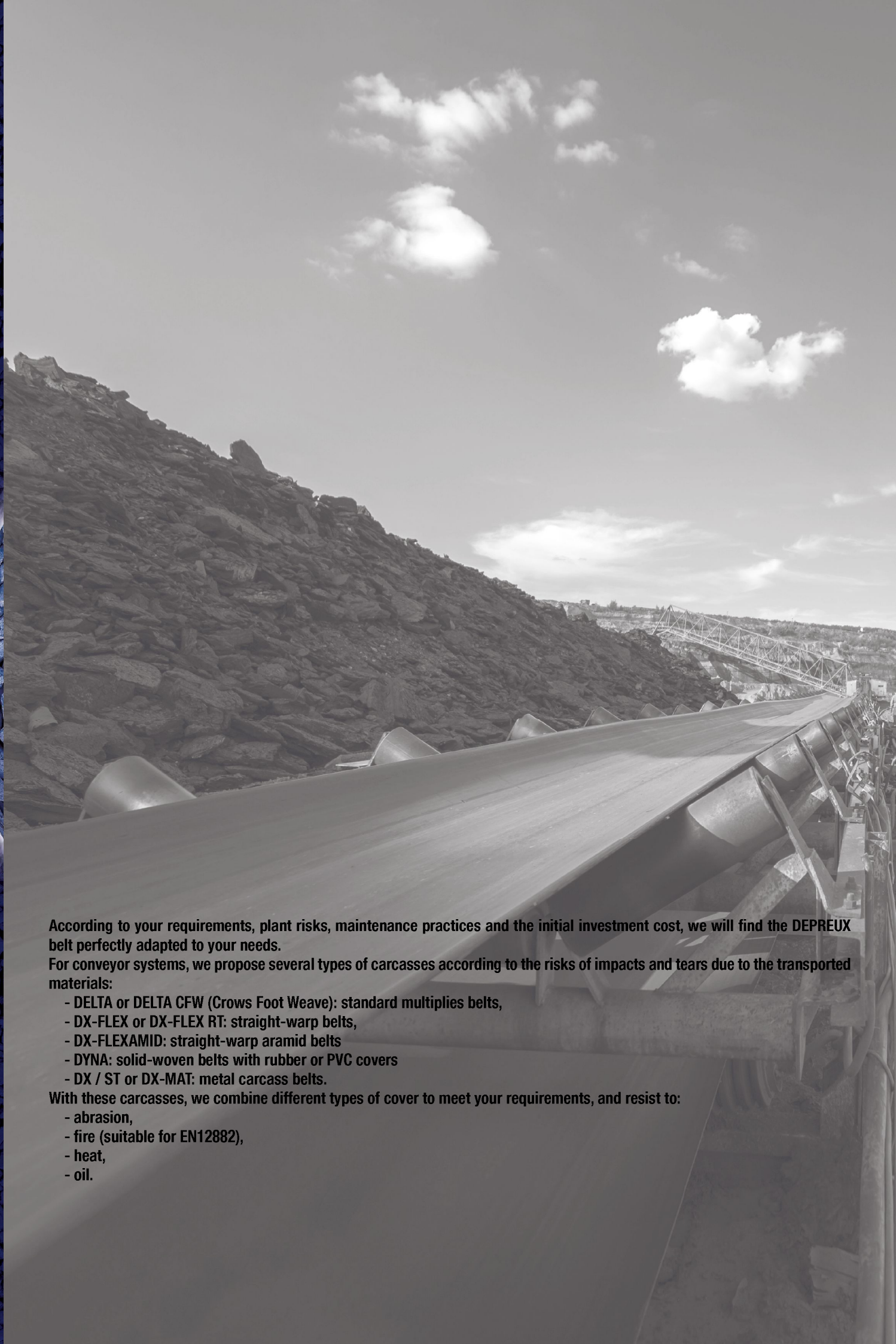
DEPREUX

CONVEYOR & ELEVATOR BELTS FOR ABOVEGROUND APPLICATION

- CONVEYOR AND ELEVATOR BELTS ABRASION RESISTANT
  Textile or steel carcass
- CONVEYOR AND ELEVATOR BELTS FIRE RESISTANT
  Textile or steel carcass
- CONVEYOR AND ELEVATOR BELTS HEAT RESISTANT
  Textile or steel carcass
- CONVEYOR AND ELEVATOR BELTS FAT RESISTANT
  Textile or steel carcass

COBRA GROUP



According to your requirements, plant risks, maintenance practices and the initial investment cost, we will find the DEPREUX belt perfectly adapted to your needs.
For conveyor systems, we propose several types of carcasses according to the risks of impacts and tears due to the transported materials:

- DELTA or DELTA CFW (Crows Foot Weave): standard multiplies belts,
- DX-FLEX or DX-FLEX RT: straight-warp belts,
- DX-FLEXAMID: straight-warp aramid belts
- DYNA: solid-woven belts with rubber or PVC covers
- DX / ST or DX-MAT: metal carcass belts.

With these carcasses, we combine different types of cover to meet your requirements, and resist to:

- abrasion,
- fire (suitable for EN12882),
- heat,
- oil.

Applications

ABRASION RESISTANT CONVEYOR AND ELEVATOR BELTS **PAGE 4**
Conveyor and elevator belts for the transport of abrasive materials or with impact loading in ambient environment.

FIRE RESISTANT CONVEYOR AND ELEVATOR BELTS **PAGE 6**
Conveyor and elevator belts for aboveground applications, suitable for the European norm EN 12882.

HEAT RESISTANT CONVEYOR AND ELEVATOR BELTS **PAGE 8**
Conveyor and elevator belts for transporting hot products.

OIL RESISTANT CONVEYOR AND ELEVATOR BELTS **PAGE 10**
Conveyor and elevator belts for transporting fat and oily products.

Different types of carcasses

BELTS WITH FABRICS CARCASSES

DELTA is a multiply construction belt made of several textile plies and rubber covers. We also offer a variant CFW (Crows Foot Weave) that has a higher tear resistance, and a Selftrack variant with 1 extra stiff fold on the middle of the belt, to optimize the centering and guiding of the belt.

DELTA page 12

DX-FLEX is a straight-warp polyester textile belt protected on both sides by a polyamide textile fabric. The DX-FLEX RT variant provides better stapling resistance and increases tear resistance.

DX-FLEX page 13

DX-FLEXAMID is a DX-FLEX where the polyester chain has been replaced by aramid. This belt combines strength, lightness and low elongation, especially on long conveyors.

DX-FLEXAMID page 14

DYNA has a textile carcass Solid-woven and rubber covers. This belt offers a high resistance to impacts, and a long lifetime. We have developed a similar DYNA P range with PVC covers.

DYNA page 15

BELTS WITH STEEL CARCASSES

DX-ST is a belt composed of steel cables placed over the entire width. This construction does not include a weft. However it is possible to add steel breakers to improve the tear resistance.

DX-ST page 16

DX-MAT is a belt with a carcass composed of one or two layers of steel cables held by a synthetic chain.

DX-MAT page 18

Summary of mechanical characteristics

Summary page 20

ABRASION RESISTANT CONVEYOR AND ELEVATOR BELTS

Our anti-abrasive DEPREUX belts combine a multiply carcass with covers with high resistance to abrasion.

The choice of the belt's type is largely influenced by the physical properties of the transported materials: its granularity, its humidity level, its abrasion capabilities.

Some examples:

- Highly abrasive materials: clinker, ore, pyrite, coke, lignite, super-phosphate, magnetite, quartz, glass powder.
  Recommended covers: DIN W
- Medium abrasive materials: anthracite, coal, ash, bauxite, potash, gravel, aluminium, concrete, sand.
  Recommended covers: DIN Y
- Heavy or sharp materials: iron, andesite, schist, ryolythe, comblanchien, and all types of rocks with a granularity higher than 100mm after being broken down.
  Recommended covers: DIN X

Belts construction

Conveyor and elevator belts are composed of:

- **fabric or steel carcass** (see details pages 12 to 19),
- **two rubber covers** : a top cover ensuring contact with the transported material and the bottom cover ensuring contact with the conveyors drums.

MULTIPLY

(see details p12)

DELTA

POLYESTER STRAIGHT-WARP

(see details p13)

DX FLEX

ARAMID STRAIGHT-WARP

(see details p14)

DX FLEXAMID

SOLID WOVEN

(see details p15)

DYNA

STEEL CORD

(see details p16)

DX-ST

STEEL STRAIGHT-WARP

(see details p18)

DX-MAT

Technical characteristics of abrasion resistant covers:

Designation	Suitable for							Uses	Abrasive index (mm3)	Break resistance (Mpa)	Elongation at break (%)	Temperature range	Composition
	DIN 22102	ISO 14890	US	AUSTRALIA AS 1332	ENGLISH SB490	CHINESE GB / T7984 Multiplies	CHINESE GB / T9770 Steel Cord						
B			RMA2			L		Moderately abrasive materials with a low granularity such as: sand, earth and coal, in normal conditions	<150	>14	>400	-25°C to +80°C	SBR/BR
X	X	H		AS M	M24	H	H	Sharp materials and blocks	<120	>25	>450	-25°C to +80°C	NR/BR
Y	Y		RMA1	AS N	N17		L	Abrasive materials of medium granularity	<150	>20	>400	-25°C to +80°C	NR/SBR/BR
W	W	D				D	D	Highly abrasive materials	<90	>18	>400	-25°C to +80°C	NR/SBR/BR
SH				AS A				Highly abrasive materials	<70	>20	>450	-25°C to +80°C	NR/SBR
IS								Abrasive materials, thin and sticky, use at very low temperatures.	<50	>14	>350	-45°C to +80°C	NR/BR/SBR
PVC (Solid-woven)									<140	>15	>350	0°C to +50°C	PVC

FIRE RESISTANT CONVEYOR AND ELEVATOR BELTS

suitable for the European norm EN 12882

This part describes DEPREUX's heavy duty safety belting where there is a requirement for Anti Static and Flame Resistance in compliance with European norm EN12882.

Product range: 250N/mm to 5400N/mm and to a maximum width of 1800mm.

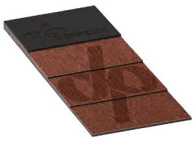
A standard conveyor belt is highly flammable, because it is mainly composed of pretrochemical components. Therefore it is highly combustible and difficult to extinguish.

In a safety belt, components to promote the flow of static electric charges are added to the chemical formula of the elastomers in the carcass and in the cover ; and flame-retardant and special agent are added to contain the fire and the heating build up.

Belt construction

Conveyor and elevator belts are composed of:

- **fabric or steel carcass** (see details pages 12 to 19).
- **two rubber covers** : a top cover ensuring contact with the transported material and the bottom cover ensuring contact with the conveyors drums.



MULTIPLY

(see details p12)

DELTAFLAM

POLYESTER STRAIGHT-WARP

(see details p13)

DX FLEX

ARAMID STRAIGHT-WARP

(see details p14)

DX FLEXAMID

SOLID WOVEN

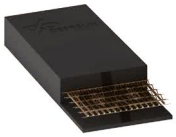
(see details p15)

DYNAFLAM

STEEL CORD

(see details p16)

DX-ST



STEEL STRAIGHT-WARP

(see details p18)

DX-MAT

European standard EN 12882 This standard defines the different safety requirements for the different categories of risks identified by the user for the different applications.
The user has to choose the belts categories the most suitable one depending on the application. There are four main risks identify by the european norm EN12882 :

- electrostatic risk according to the norm ISO 284,
- located small flames risk according to the norm ISO 340,
- fire risk EN 12881-1,
- drum friction risk EN 1554.

The frequency of occurrence and the level of hazard is a function of the application and of the working environment.

Consequently, the safety level required varies with each application and the level of risk.

Hazards mentioned above are not the only characteristic to consider. Other aspects to be considered are health, safety and environmental impacts.

DIFFERENT TYPE OF COVERS

Product	Specification	Abrasive index (mm3)	Break resistance (Mpa)	Elongation at break (%)	Composition	Temperature range		Correspondances and other denominations	
						DELTAFLAM / DX FLEX / DX-ST /DX-MAT	DYNAFLAM		
2A / 2B	STD	< 200	> 14	> 350	SBR	-25°C to +80°C	0°C to +50°C	DIN22102 - DELTAFLAM K1 & S1	K1 for 2A, S1 for 2B
	Premium	< 120	> 18	> 400	SBR			DIN 22102 - DELTAFLAM K2 & S2	K2 for 2A, S2 for 2B
	MOR	< 170	> 13	> 450	SBR/NBR			DIN 22102 - DELTAFLAM K3 & S3	K3 for 2A, S3 for 2B
2A	SOR	< 170	> 13	> 350	NBR			-	-
3A / 3B	STD	< 200	> 14	> 350	SBR			-	-
	Premium	< 120	> 20	> 400	SBR			-	-
4A/4B	STD	< 200	> 14	> 350	SBR			-	-
5A	MOR	< 160	> 15	> 350	CR	-25°C to +110°C		DIN 22109-4 - DELTAFLAM VT	-

HEAT RESISTANT CONVEYOR AND ELEVATOR BELTS

Belts described in this part are used to convey hot products with temperatures higher than 80°C, and can be used to transport hot materials up to 200°C.

To improve the life expectancies of the belt, we recommand:

- to maximise the top cover thickness,
- to maximise the carcass thickness, for example, use one ply more than what would be used normally (4 plies instead of 3 plies).

For some applications, with hot glowing material, it can be of benefit to « bakelise » the cover. This forms a protective insulation cover for the belt.

Special case with belts which must be hot resistant, oil resistant and flame resistant: DELTAFORCE with the following characteristics.

- allows transport of materials up to a maximum temperature of 110 °C,
- conforms to the safety standard NF EN 12882, class 5A, antistatic test, drum friction test and flammability mini tunnel test,
- has polychloroprene cover, with medium oil/fat resistance.

Belt construction

Conveyor and elevator belts are composed of:

- **fabric or steel carcass** (see details pages 12 to 19).
- **two rubber covers** : a top cover ensuring contact with the transported material and the bottom cover ensuring contact with the conveyors drums.

MULTIPLY

(see details p12)

DELTATHERM

POLYESTER STRAIGHT-WARP

(see details p13)

DX FLEX

ARAMID STRAIGHT-WARP

(see details p14)

DX FLEXAMID

STEEL CORD

(see details p16)

DX-ST

STEEL STRAIGHT-WARP

(see details p18)

DX-MAT

DEPREUX's belts are in compliance with the International Standard for conveying hot material ISO 4195 (1&2).

The standard defines three categories of heat resistance belts. We produce categories T2, T3.

Each category must specify the variations authorized in the mechanical properties of cover.

Variation from initial values of mechanical characteristics		Type of belts T2	Type of belts T3
Test temperature		125°C	150°C
Test duration		7 days	7 days
		Maximum variation	
Elongation at the break	Maximum variation from the initial value, %	-50	-55
	Minimal value, %	200	180
Break resistance	Maximum variation from the initial value, %	-30	-40
	Minimal value, Mpa	10	5

This table describes the nature of the coating, as well as its mechanical characteristics. Our commitment in terms of temperature resistance is limited to the conformity of the constituents with the ISO 4195 standard.

Categories of heat resistance	Temperature used for the ageing test in accordance with ISO 4195 (1&2)	Continuous material operating temperature	Maximum temperature of the conveyed material	Covers			
				Abrasive index	Break resistance	Elongation at break	Composition
	°C	°C	°C	mm3	Mpa	%	
T2	125°C	-20°C to +125°C	+150°C	<150	>15	>400	SBR
T3	150°C	-30°C to +150°C	+200°C	<100	>13	>290	EPDM

FAT RESISTANCE CONVEYOR AND ELEVATOR BELTS

The oil resistant conveyor and elevator belts are used to transport material that contain mineral oil components or to transport some special chemical products. For examples:

- when oily components are present in the transported material such as fuel oil in coal or ferilizers, lubrication oils in metal recycling, founderies, steel processes, waste industries or in the case of any lubricant chemicals,
- for the transport of a chemical component that has good chemical compatibility with nitrile NBR rubber which is the main elastomer used in the rubber covers.

The presence of oily components in the transported material can have dramatic effects on a standard belt:

- it will degrade the mechanical properties of the covers:abrasion and tensile strength at break mainly
- the belt will absorb oil and swell, causing covers deformation and loss of adhesion between the carcass and the rubber around it.

The effects can be more or less dramatic depending on the nature of the oily components (aliphatic and naphtenic oils are for example very agressive), and the effects increase exponentially with temperature. We developped two types of oil resistant belt:

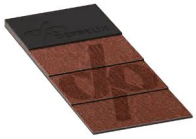
- G1 / MOR : Medium Oil Resistant,
- G2 / SOR : Super Oil Resistant.

To transport oily products for agriculture or food insdutry, please refer to the TRANSCO brochure.

Belt construction

Conveyor and elevator belts are composed of:

- **fabric or steel carcass** (see details pages 14 to 21).
- **two rubber or PVC covers** : a top cover ensuring contact with the transported material and the bottom cover ensuring contact with the conveyors drums (see details page 23).



MULTIPLY

(see details p12)

DELTAFAT

POLYESTER STRAIGHT-WARP

(see details p13)

DX FLEX

ARAMID STRAIGHT-WARP

(see details p14)

DX FLEXAMID

SOLID WOVEN

(see details p15)

DYNAFAT

STEEL CORD

(see details p16)

DX-ST

STEEL STRAIGHT-WARP

(see details p18)

DX-MAT

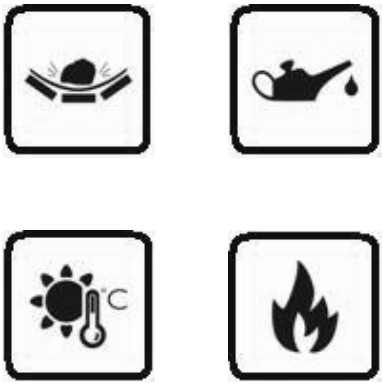
The herebelow table lists the operating range, swelling factor, and cover properties of the different belts that DEPREUX offers for this application.
It is to be noted that PVC is a very competitive option for superior oil resistant requirements.
However its long term longevity will be inferior to solutions including 100% nitrile.

Categories of oil resistance	Composition	Property	Swelling test		Covers				
								Temperature range	
			IRM902 28J at 20°C (%)	IRM903 72H at 70°C (%)	Abrasive index (mm3)	Break resistance (Mpa)	Elongation at break (%)	DELTAFAT / DXFLEX / DX-ST / DX-MAT	DYNAFAT / DYNA P
G1 / MOR	SBR/NBR	**Medium** resistance to standard oils and conventional hydrocarbons	<15		<150	>16	>350	-25°C to 80°C	-
G2 / SOR	100 % NBR	**Superior** resistance to standard oils and conventional hydrocarbons		<5	<140	>16	>350		0°C to 50°C
PVC	PVC	**Superior** resistance to standard oils and conventional hydrocarbons Good resistance to cuts		<5	<140	>15	>350	-	

In the metal recycling industry, there can be a requirement for both a superior oil resistant cover and a higly cut, tear and impact resistant cover and carcass. The solid-woven belts, DYNAFLAM with rubber covers, and DYNA-P with PVC covers can be two excellent options.

Multiply belts with rubber
DELTA - DELTA CFW - DELTA SELFTRACK

Applications :



Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

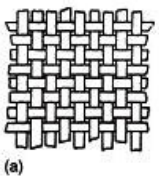
Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

Belt structure

The textile carcass DELTA or DELTA CFW belt is made up of layers of fabrics from 2 to 4 (or more) plies. Each of them is separated by a rubber layer. This «sandwich» structure enables the belt to absorb impacts. The upper and lower fabrics of the belt are then covered with a final rubber cover.

DELTA

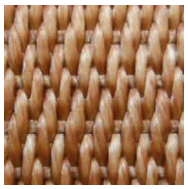


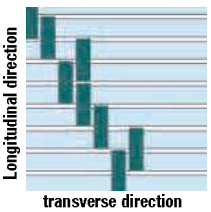
(a)

DELTA SELFTRACK

Delta Selftrack in application
on 3 rolls trough

DELTA CFW

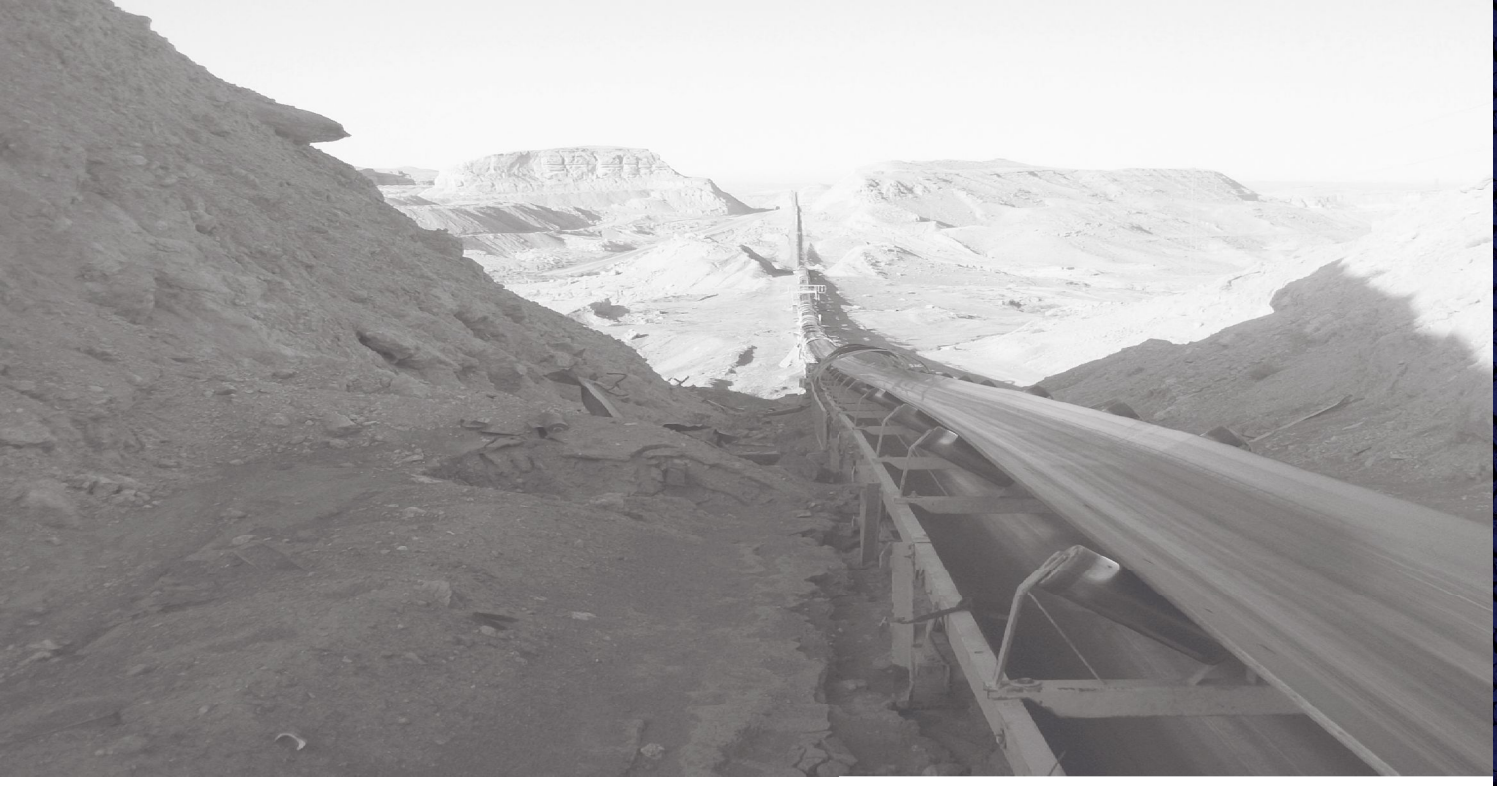




The fabric of each ply is made either by a weaving fabric called «1/1» band - DELTA (crossing a warp yarn and a weft yarn) or a weaving fabric called «Jacquard» - DELTA CFW belt - (CFW or Crows Foot Weave) with warp and weft yarns bigger, which provides greater resistance to impact and to longitudinal tearing.

The fabrics are dipped with RFL solution. The RFL and rubber composition is designed to ensure maximum adhesion between the plies. This needs to be adhesive enough to ensure a longlife expectancy, but not so adhesive that it would hamper the operation of splicing the belt.

Adhesion: > 4N/mm.



Textile Straight-warp belts
DX-FLEX or DX-FLEX RT

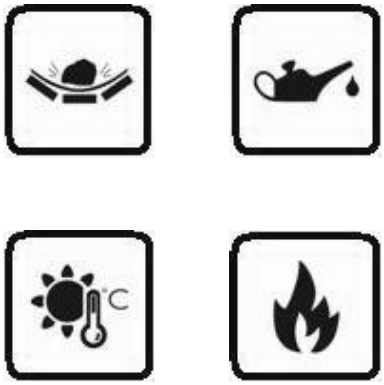
Belt structure

The DX-FLEX belt has, on the one hand, very good tear resistance, impact resistance and good stapling resistance. On the other hand, it has a lower elongation than the multiply belts and it can operate with lower drum diametres, given its smaller thickness and a one-piece carcass construction.

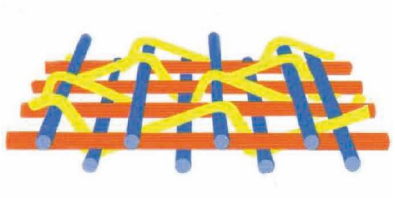
DX-FLEX is therefore used on conveyors where the impacts and risks of tearing are important, typically seen in quarrying, open cast mining and steel industries...

The DX-FLEX RT is a variant with superior resistance to stapling, tearing and impact.

Applications :



DX-FLEX is a textile belt straight-warp with a carcass composed of one or two plies. Each ply is with straight-warp, protected on both top and bottom by weft lines in textile as shown in the opposite drawing.



The straight-warp is composed of thick twisted (textile cables) in polyester. This warp is inserted between two textile weft made of thick twisted polyamide. The warp and the weft are connected by a small fine wire which ensures the maintenance of textile.

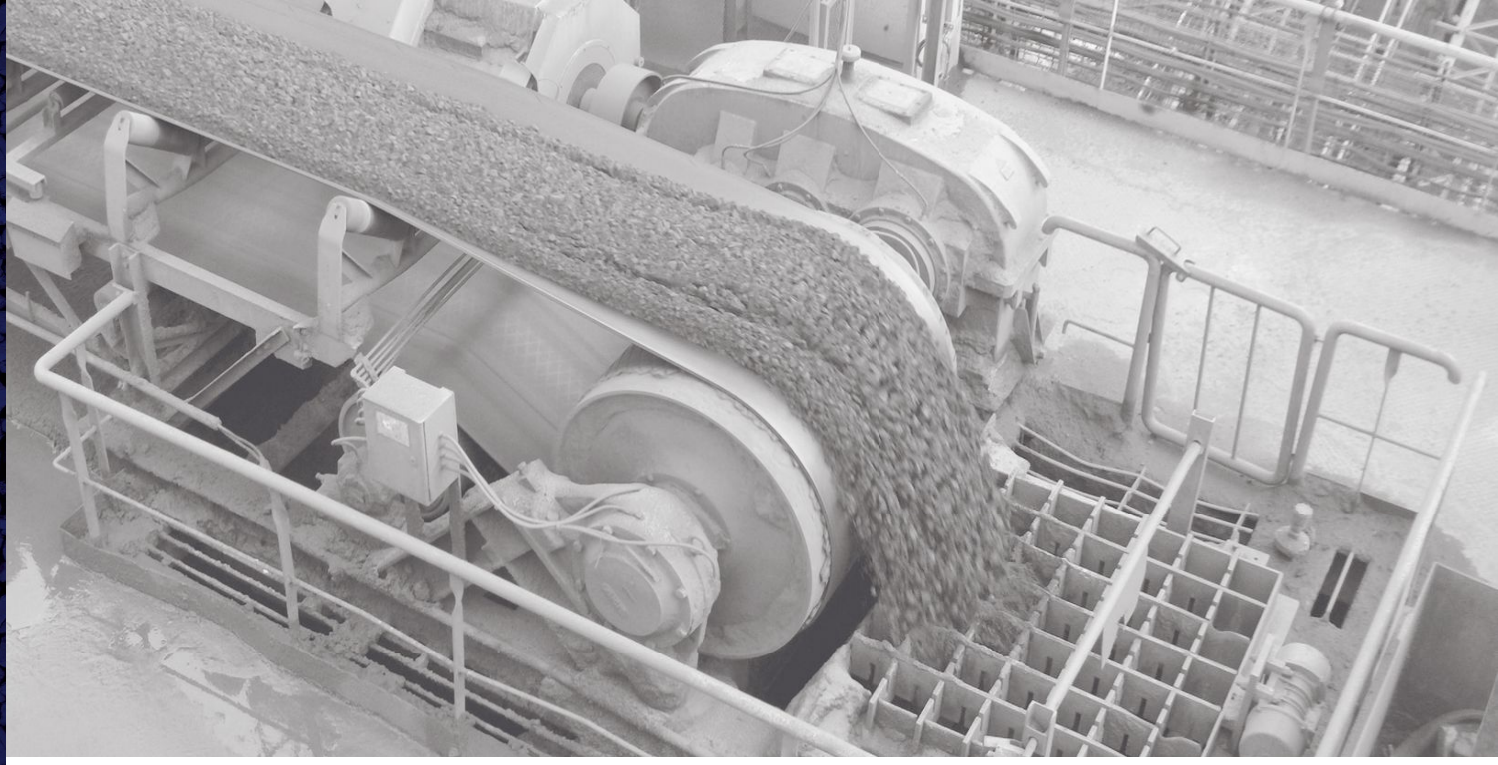
For high resistance, it is preferable to use 2 plies straight-warp, separated by an interply in rubber to facilitate splicing.

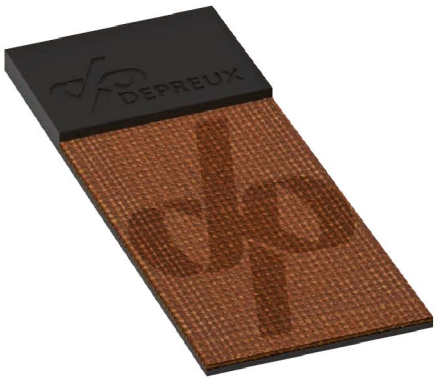
Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.



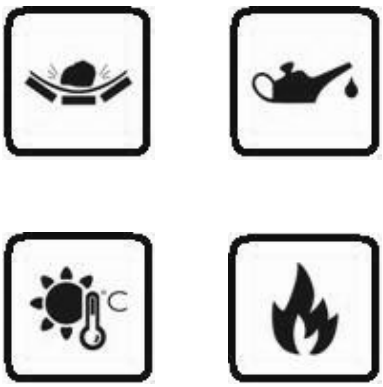


Aramid straight-warp belts
DX-FLEXAMID

This belt is the lightest and thinnest of all the textile and steel casing options in the Depreux range. Aramid yarn has a specific strength (or toughness) 3 times higher than a polyester yarn.

It is naturally lighter than steel and its lengthening comparable. The aramid yarn is used in the warp and the polyamide yarns are generally used in the weft.

Applications :



Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

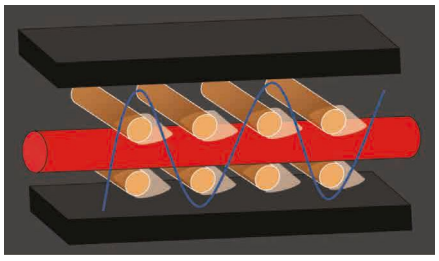
Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

Belt structure

DX-FLEXAMID belt is composed of a straight-warp carcass, made with a layer of aramid straight chain fibre yarn, with two layers in the weft direction, upper and lower polyamide textile fibre yarn.

The yarn of the warp and weft are connected with a bonding polyamide yarn to ensure a strong construction.



Solid-woven belts with rubber or PVC covers
DYNA - DYNA P

These belts are suitable for all types of handling where a long life is sought after and / or which are characterized by severe operating conditions such as the presence of large blocks, sharp materials or risk of longitudinal or transverse tears:

- For large inter-axis conveyors where metal-reinforced belts are traditionally used, DYNA belts offer an excellent alternative with good resistance to longitudinal and transverse tears, total carcass inertia to corrosion, excellent stapling and low elongations.
- For bucket elevators thanks to the high strength of the monoply carcass with holes and the risk of tearing.

DYNA P belt (PVC covers) is used for the transportation of cutting and greasy materials, especially for the recycling of scrap.

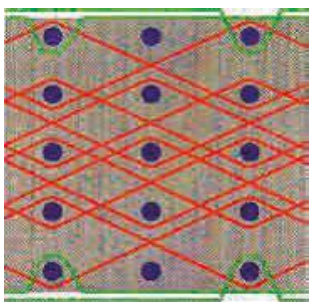
Condition of use: from 0°C to 50°C. The tape is insensitive to moisture and rot-proof.

Applications :

Belt structure

The solid-woven textile is made of polyester (E) yarns in the warp direction to minimize the stretching of the belt, and of polyamide (P) yarn in the weft direction for good belt flexibility.

- At 10% of nominal belt tensile strength: 1 % maximum
- Elastic stretch: 0.5% to 0.7% for standard carcass
- Permanent stretch : 0.4% to 0.7%.
- Excellent fastener holding capacity - from 50% to 90% - which makes this joining technique increasingly popular.



The solid-woven carcass is covered with cotton ply yarns laid in the warp direction, and special edge reinforcements which make the belt exceptionally resistant:

- to impacts by sharp or large materials,
- to longitudinal tearing,
- to carcass wear in case of substantial damage in the rubber cover.

As the carcass is highly compact, the thickness of the outer rubber covers can be reduced.

Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

Steel cord belts with rubber covers
DX-ST

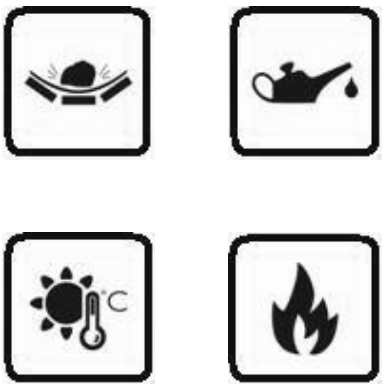
Steel cord belts are used in a wide variety of applications such as mining, harbour terminals, tunnelling, steel works, cement plants and power generation plants.

Steel cord belts are preferred to textile plied or solid-woven conveyor belts in the following situations:

- when the required tensile strength is high and the conveyor tight. The feeding capacities are interesting for small width belts.

- when a very low elongation of the belt is necessary, especially for very long open-cast conveyors, such as those connecting a quarry and a cement plant, steel mills or tunnelling.

Applications :



Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

Belt construction

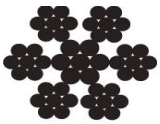
DX/steel-cord conveyor belt is composed of:

- steel Cables placed at a constant pitch across the width of the belt,

- a special rubber-bonding layer to the cables and to the rubber covers,

- top and bottom rubber covers.

Steel cord construction :



DEPREUX uses the open type steel cord construction that allows the rubber to penetrate fully into the cable, which is a guarantee of the longevity for the belt. This technique optimises the adhesion and minimises corrosion to the steel cords in the case of damage to the belt.

Open steel cables also offer characteristics that enhance the impact absorption capability of the belt and makes for easy transition between the troughed position of the belt to flat and vice versa.

The steel cables are also protected against corrosion with special zinc plating.

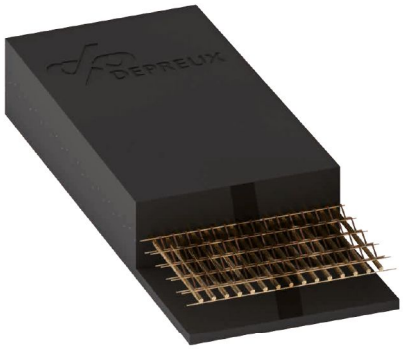
Steel breaker ply technical parameters

Break resistance (N/ mm)	HE 125	HE 250	HE 315	HE 400
Weight (kg/mm)	0.7	1.20	1.45	2.50
Cable diametre (mm)	1.35	1.52	1.52	2.40
Pitch (mm)	8.9	6.4	5.1	7.1
Density (cable/m)	112	156	196	141

Technical parametres Construction according to ISO 15236-2

Type	Unit	ST 500	ST 630	ST 800	ST 1000	ST 1250	ST 1400	ST 1600	ST 1800	ST 2000	ST 2250	ST 2500	ST 2800	ST 3150	ST 3500	ST 4000	ST 4500	ST 5000	ST 5400
Tensile	N/mm	500	630	800	1000	1250	1400	1600	1800	2000	2250	2500	2800	3150	3500	4000	4500	5000	5400
Max. steel cord diametre	mm	3,0	3,0	3,7	4,2	4,9	5,0	5,6	5,6	5,6	5,6	7,2	7,2	8,1	8,6	8,9	9,7	10,9	11,3
Min cord tensile strength	KN	7,6	7,6	10,3	12,9	18,4	20,6	26,2	25,5	25,5	26,2	39,7	39,7	50,0	55,5	63,5	75,0	90,3	96,0
Space between cords (±1,5mm)	mm	14,0	11,0	12,0	12,0	14,0	14,0	15,0	13,5	12,0	11,0	15,0	13,5	15,0	15,0	15,0	16,0	17,0	17,0
Min thickness cover	mm	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	5,0	5,0	5,5	6,0	6,5	7,0	7,5	8,0
Belt width	tolerance (mm)	Cord numbers																	
600	+10/-5	33	42	39	39	34	34	31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
650	+10/-7	44	54	51	51	45	45	41	46	52	56	41	46	41	41	41	39	36	N/A
800	+10/-8	54	68	64	63	55	55	60	57	64	69	51	57	51	51	51	48	45	45
1000	±10	68	84	80	80	68	68	63	71	80	86	63	71	63	64	63	60	56	57
1200	±10	86	110	97	97	82	82	76	85	96	104	76	85	76	76	76	72	67	68
1400	±12	96	124	114	113	97	97	90	100	112	122	89	99	89	89	89	84	79	79
1600	±12	111	142	130	130	111	111	103	114	129	140	102	114	102	102	102	96	90	90
1800	±14	125	160	147	147	125	125	116	129	145	159	116	128	116	116	116	108	102	102
2000	±14	139	177	164	163	140	139	130	144	162	177	129	143	129	129	129	121	114	114
2200	±15	153	195	180	180	154	154	143	159	179	195	142	158	142	142	142	133	126	126
2400	±15	167	213	197	197	168	168	156	174	195	213	156	173	156	156	156	146	137	137
2600	±15	181	231	214	213	182	182	170	189	212	231	169	188	169	169	169	158	149	149
2800	±15	196	249	230	230	197	197	183	203	229	249	182	202	182	182	182	171	161	161
3000	±15	210	267	247	247	211	211	196	218	245	268	196	217	196	196	196	183	173	173
3200	±15	224	286	264	263	225	225	210	233	262	286	209	232	209	209	209	196	184	184

N/A: Not applicable because of troughability



Steel straight-warp belt
DX-MAT (IW)

DX-MAT IW is appreciated for its superior tear resistance, impact and puncture resistance in applications with high impact or high temperatures.

The SW variant is even more resistant with a second frame level.

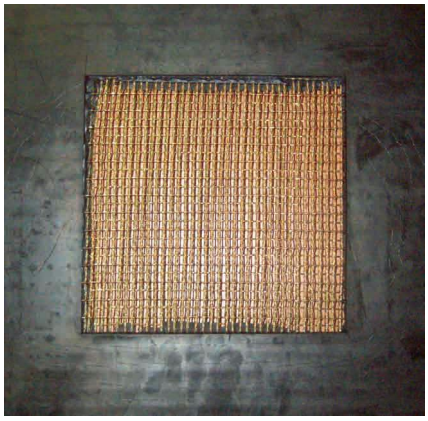
In both cases, the frames are designed for proper trimming.

DX-MAT is used for heavy applications as quarrying, steelmaking and foundries.

Belt construction

DX-MAT IW is a steel warp and weft belt: straight-warp, with straight steel chain, protected on one side by an IW steel frame.

DX-MAT generally uses the FLEXIMAT® IW carcass. In this frame, the chain is made of steel (type E) cables with impact and compression resistance, as well as greater elongation than normal steel used in steel-cord. The frame is made of steel with very high elongation (type HE).



The variant SW has a lower frame and an upper frame. The chain and the weft are joined together thanks to a textile bonding.

Applications :

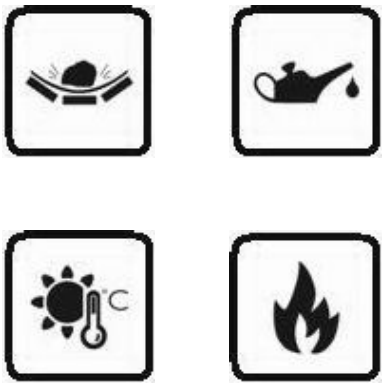
Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

Applications :



Different cover properties:
refer to the table on page 21.

Thickness and weight of the belts:
according to technical sheets on request.

Minimum diametre of use of the drums:
see details on page 22.

Joining procedures:
available on request.

BREAKER OPTION (Textile or steel breaker)

Tearing protection by the use of breakers.

The DELTA and Steel Cord (ST) belts can be equipped with a steel or fabric breaker which function is to protect the carcass against potential tears.

The breaker can be installed in the top cover only (1 or 2 breakers) or on both sides, if double protection is required. It can be included in the thickness of the cover, or in addition to the cover.

The corresponding configurations are called respectively:

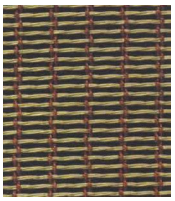
- BRK1 + 0: for a steel or fabric breaker, which will be on the top cover.
- BRK1 + 1: 1 steel or fabric breakers in the top cover and 1 steel or fabric breaker in the bottom cover.
- BRK2 + 0: 2 steel or fabric breakers in the top cover.

These belts are used for applications, where the risks of impact and tear are important, because of the cutting nature of the materials transported or the possible presence of unwanted metal objects.

Steel breakers

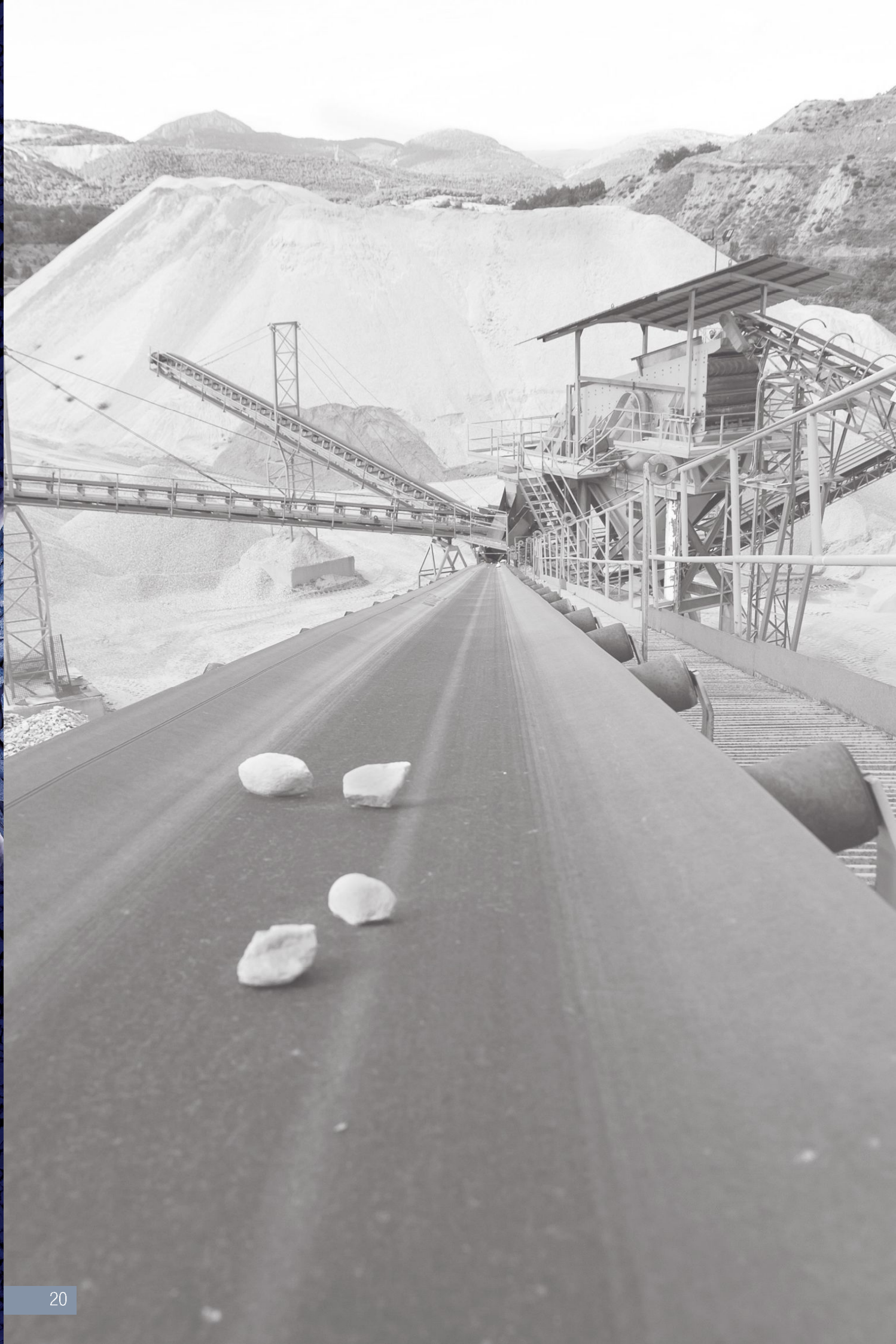
The steel breaker ply has ample capacity to resist tearing. The ply is constructed of steel cables resistant to cutting and tied together by polyamide wires. The resistance of the cable and the spacing of the cables vary according to the resistance required. The steel cables are orientated in the weft direction of the belt.

The steel breaker is denominated for its ultimate tensile strength at break, in N/mm; in the direction of the steel cables, which relates to the transverse direction of the belt We offer the breaker plies in grades 125,160, 200, 250, 315, 400. BS - 125 is stated to be that the resistance to break in cable direction (it relates to the direction of the weft of the belt) as better than 125 N/mm.



Textile breakers

In standard we use:
- Protect from impact: EP125 and EP160



Summary of mechanical characteristics






		MULTIPLY	POLYESTER STRAIGHT-WARP	ARAMID STRAIGHT-WARP	SOLID WOVEN	STEEL CORD	STEEL STRAIGHT-WARP
ABRASION RESISTANT CONVEYOR & ELEVATOR BELTS (PAGE 4)		DELTA	DX FLEX	DX FLEX AMID	DYNA	DX ST	DX-MAT IW / SW ELEVMAT SW
B		X	X	X	X	X	X
X		X	X	X	X	X	X
Y		X	X	X	X	X	X
W		X	X	X	X	X	X
SH		X	X	X	X	X	X
IS		X	X	X	X	X	X
PVC		-	-	-	X	-	-
FIRE RESISTANT CONVEYOR & ELEVATOR BELTS (PAGE 6)		DELTAFLAM	DX-FLEX	DX-FLEXAMID	DYNAFLAM	DX-ST	DX-MAT IW / SW ELEVMAT SW
2A / 2B	STD	X	X	X	X	X	X
	PREMIUM	X	X	X	X	-	-
	MOR	X	X	X	X	-	-
2A SOR		X	X	X	-	-	-
3A / 3B	STD	X	X	X	-	-	-
	PREMIUM	X	X	X	-	-	-
4A / 4B STD		X	X	X	-	-	-
5A MOR		X	X	X	-	-	-
HEAT RESISTANT CONVEYOR & ELEVATOR BELTS (PAGE 8)		DELTATHERM	DX-FLEX	DX-FLEXAMID	-	DX-ST	DX-MAT IW / SW ELEVMAT SW
T2		X	X	X	-	X	X
T3		X	X	X	-	X	X
OIL & FAT RESISTANT CONVEYOR & ELEVATOR BELTS (PAGE 10)		DELTAFAT	DX FLEX	DX-FLEXAMID	DYNAFAT	DX-ST	DX-MAT IW / SW ELEVMAT SW
G1 / MOR		X	X	X	X	X	X
G2 / SOR		X	X	X	X	X	-

RECOMMENDED MINIMUM PULLEY DIAMETERS (MM)

DELTA, DELTA CFW or DELTA SELFTRACK									
Break resistance N/mm	315	400	500	630	800	1000	1250	1400	1600
Number of plies	2	3	3	4	4	4	4	4	4
Pulley type A	250	315	400	500	630	800	1000	1000	1250
Pulley type B	200	250	315	400	500	630	800	800	1000

DX FLEX or DX-FLEX RT										
Break resistance N/mm	400	500	630	800	800	1000	1000	1250	1600	1800
Number of plies	1	1	1	1	2	1	2	2	2	2
Pulley type A	315	315	315	500	630	630	800	800	1000	1000
Pulley type B	250	250	250	400	500	500	630	630	800	800

DX-FLEXAMID					
Break resistance N/mm	1600	1800	2000	2500	3150
Pulley type A	800	1000	1000	1250	1250
Pulley type B	630	800	800	1000	1000

PVG-PVC-DYNA											
Break resistance N/mm	400	500	630	800	1000	1250	1400	1600	1800	2000	2500
Number of plies	1	1	1	1	1	1	1	1	1	1	1
Pulley type A	400	400	500	500	630	800	800	800	1000	1000	1250
Pulley type B	315	315	400	400	500	630	630	630	800	800	1000

STEEL CORD														
Break resistance N/mm	ST630	ST800	ST1000	ST1250	ST1600	ST2000	ST2500	ST3150	ST3500	ST4000	ST4500	ST5000	ST5400	ST6300
Number of plies	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pulley type A	500	500	630	800	1000	1250	1400	1500	1600	1600	1600	1800	1800	1800
Pulley type B	400	400	500	630	800	1000	1000	1250	1250	1250	1250	1400	1400	1400

DX MAT							
Break resistance N/mm	IW500	IW630	IW800	IW1000	IW1250	IW1400	IW1600
Number of plies	1	1	1	1	1	1	1
Pulley type A	500	500	800	800	1000	1000	1000
Pulley type B	400	400	630	630	800	800	800

Comparison of different constructions for anti abrasive belts
in type 1600 N/mm and effective cover of 6+2

TYPE	Multiply EP	Straight-Warp			Solid Woven	Steel cord
Products	DELTA	DX FLEX		DX FLEXAMID	DYNA	DX/ST
	1600/4	1600/1	1600/2	1600/1	1600/1	1600/1
DIMENSION AND CONSTRUCTION						
WARP	Polyester	Polyester		Aramid	Polyester	Steel Cable
WEFT	Polyamide	Polyamide		Polyamide	Polyamide	Steel Breaker or Textile
Other construction fabrics		Polyamide		Polyamide	Cotton	
Number of Plies	4	1	2	1	1	0
Requested effective thickness of the covers	6+2	6+2	6+2	6+2	6+2	6+2
Recommended thickness of the covers (*)	7+2	6+2	6+2	6+3	6+2	8+4
Carcass definition	4 textile plies + 3 rubber interlayers	1 textile ply	2 textile plies + 1 rubber interlayer	1 textile ply	1 impregnated PVC carcass	Steel Cable + 1/2 Diam cable on top + 1/2 Diam cable on bottom to ensure carcass integrity
Total thickness of the carcass	8,5	5,5	8,4	3,2	8,5	5 + 2,5 + 2,5 = 10
Belt total thickness	17,5	13,5	16,4	11,2	16,5	16
Weight (average) (kg/m²)	19,7	14,4	17,6	13,5	20	22,6
MECHANICAL PROPERTIES						
Warp resistance	1600	1600	1600	1600	1600	1600
Longitudinal elongation at break	14	14	14	4	14	3
Range of operating temperatures	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	0°C to +40°C	-25°C to +80°C
RESISTANCE TO POSSIBLE INCIDENTS						
Punctures from impact	+	++	++	+	+++	+ (corrosion risk and liquid penetration between the cables)
Longitudinal tearing	+ or ++ if special fabric (1KN)	+++ if reinforced weft (5KN)	+++ if reinforced weft (5KN)	+	++ or +++ if reinforced weft (2 or 3 KN)	+ or ++ if breaker
Edge wear	+	++	++	++	+++	+
Fastener holding (mechanical joining)	+	++	++	+	+++	+ if breaker
Cover wear performance	+	+	+	+	+++	+
FLEXIBILITY						
Transverse flexibility, troughability	+	++	+	+++	++	+++
Longitudinal flexibility (on drum)	+	+++	++	+++	++	+
ELONGATION						
Typical elastic elongation (%)	0,7	0,5	0,5	0,3	0,5	0,2
Permanent elongation	0,5	0,3	0,3	0,1	0,4	low
Elongation on long conveyor (1000m centre) (m)	3,5	2,5	2,5	1,5	2,5	1,0
OTHERS PROPERTIES						
Safety factor	> 8	> 8	> 8	> 8	> 8	> 6
Splicing method	Cold or hot splice by step method	Hot splicing with finger + reinforced fabric method	Hot splicing with finger + reinforced fabric method	Hot splicing with finger + reinforced fabric method	Hot splicing with finger + reinforced fabric method	Hot splicing with cathedral step method
Splice length (mm)	800 (hot) and 1110 (cold)	1620	1620	1470	1840	800
Minimum diametre head drum(mm)	1250	800	1000	800	800	1000

(*) A technical note is available for more information (contact our sales department)

CONVEYOR BELTS MANUFACTURER

Cobra has an international sales team and three production sites (in France, Poland and China).

With the three brands Depreux, Transco and Indi as well as the corresponding accessories and services, Cobra offers complete solutions for your requirements.

Our decades of experience is based on:
- a controlled manufacturing process,
- the traceability of raw materials,
- compliance with safety standards,
- cooperation with universities and institutes,
- Highly qualified staff.

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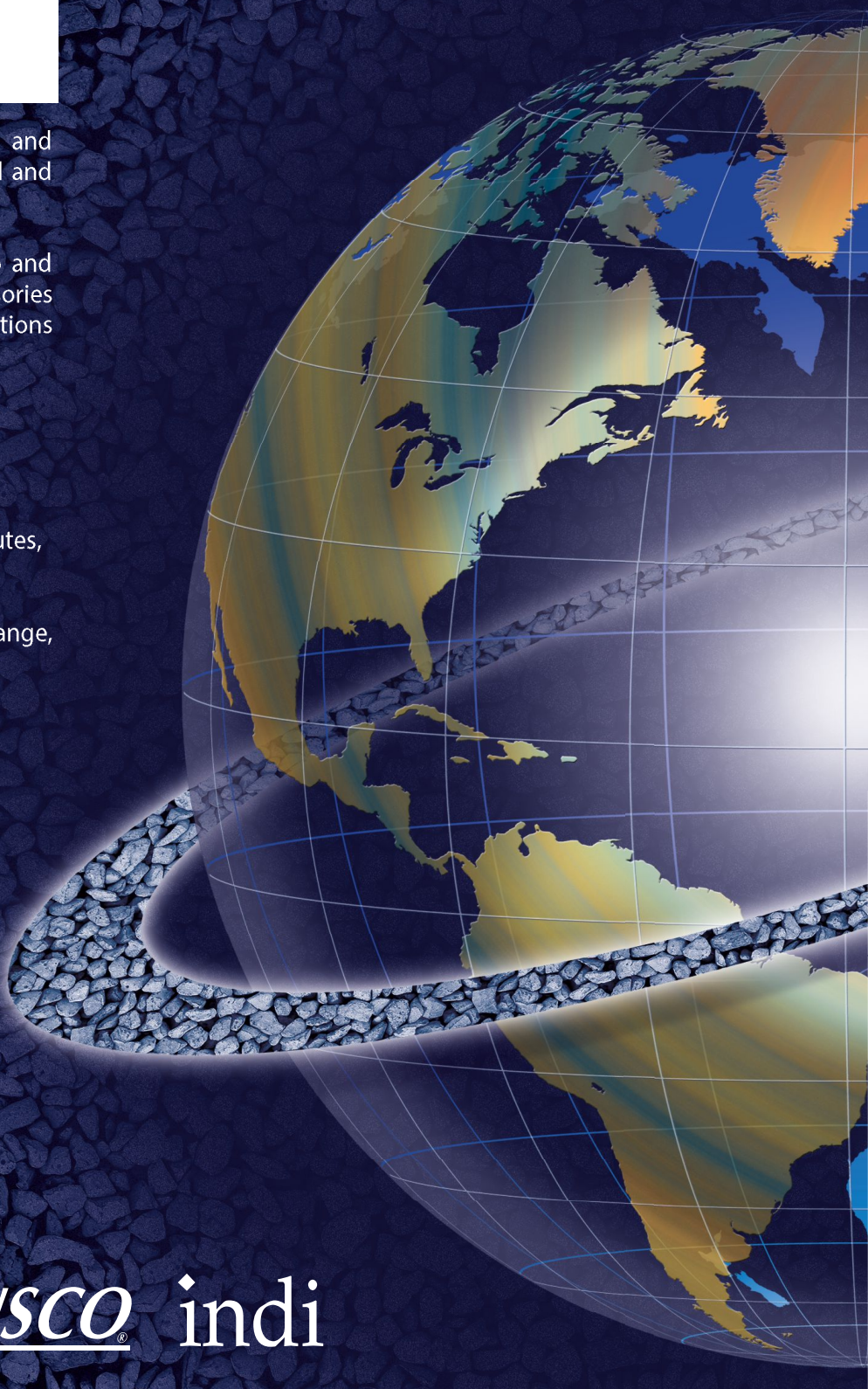

DEPREUX TRANSCO indi

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