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With a main logistics platform in Lille (France), offices and storage facilities in Poland, U.S.A and Australia we can provide our clients with :

- A wide range of belt specifications in stock
- Cutting services to customise belts to width and length
- Hole punching service for elevator belts
- A « one stop shop » for conveyor belt related products such as splice kits, glues, mechanical fasteners, idlers, loading stations, belt cleaners, vulcanising presses...
- Buckets for elevator belts together with related fastening and installation equipment (eg:bolts, clips...)
- Short delivery times

DEPREUX is part of the COBRA GROUP.

For further information on DEPREUX or the COBRA GROUP ACTIVITIES please contact your closest COBRA subsidiary or your head office.



Mossier



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## CONVEYOR AND ELEVATOR BELTS FOR THE TRANSPORT OF MATERIAL THAT CONTAIN MINERAL OIL COMPONENTS

### TEXTILE CARCASES

- DELTATFAT  
Multiply with rubber cover
- DYNAFAT  
Solid-Woven with rubber cover
- DYNA-P  
Solid-Woven with PVC cover
- DX FLEX  
Straight-warp polyester with rubber cover

### STEEL-CORD CARCASES

- DX/ST  
Steel-cord with rubber cover
- DX MAT  
Steel-cord Straight-warp warp/weft weaving with rubber cover



# Conveyor and elevator belts for the transport of material that contain mineral oil components



## Introduction

The oil resistant conveyor and elevator belts described in this DEPPEUX brochure are used to transport material that contain mineral oil components or to transport some special chemical products.



TRANSCO PRODUCTS ARE TO BE USED FOR THE TRANSPORT OF OILY AGRICULTURAL OR FOODSTUFF MATERIALS.

## Use

These oil resistant belts are used:

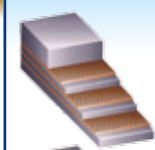
- when oily components are present in their material transported such as fuel oil in coal or fertilizers, lubrication oils in metal recycling, foundries, steel processes, waste industries..or in the case of special processes such as glass or chemical
- for the transport of a chemical component that has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

## Belt construction

The conveyor or elevator belt is composed of :

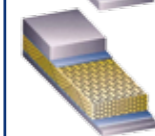
- a textile or a steel carcass with different designs that are designed in the brochure ' conveyor belts and elevator belts for...
- a top cover, in rubber or PVC , that is in contact with the material transported
- a bottom cover to ensure the contact of the belt with the supporting idlers and the various pulleys The rubber and PVC covers are described in the table at the next page. NOTA : Belts that are both oil and fire-resistant.

## Range



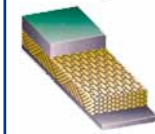
### DELTAFAT - Textile multiply belt

DELTAFAT is a belt with a traditional « multiply » construction , composed by several fabric plies, rubber interplies and rubber top and bottom covers.



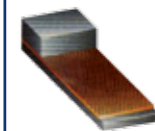
### DYNAFAT – Solid-Woven belt

DYNAFAT has a « monopoly » textile carcass and rubber covers. Dynafat offers good impact resistance, and a long life expectancy.



### DYNA-P - Solid-Woven with PVC cover

DYNA-P is a variation of a DYNA, using PVC covers instead of rubber. It is used in very special cases such as the transport of metallic parts, recycling of metals for which the risk of cuts is important.



### DX FLEX - Textile belt « straight-warp »

DX-FLEX is textile « straight-warp » belt, the warp is polyester, protected on two sides by a textile polyamide weft. DX-Flex has good tearing resistance, good impact damage resistance and strong mechanical fastener retention..



### DX/ST - Steel-cord belt

DX-ST is belt composed of steel-cords extending along the overall length of the belt. In this construction there is no weft. (on the draft, DX-ST with steel-cord breaker in the top cover).



### DX-MAT - Steel-cord Belt « straight warp »

Warp and weft is made using steel-cords

## Belts that are both oil and fire-resistant

These might be required in some process industries.

DEPREUX offers DELTA FORCE and DYNAFLAM (5A) with the following characteristics :

- an operating range from -25°C to +140°C
- rubber covers composed of very high performance chloroprene with the following characteristics: abrasion 160 mm<sup>3</sup> max, 17 Mpa tensile at break min, 400% elongation at break min
- a good oil resistance to mineral oils : oil swelling in IRM902 for 72 hours at 70°C , 15% maximum
- and that satisfies the highest safety category defined in the new european standard EN 12882 , which is the safety category 5A.

These belts are described in more details in the brochure "Safety conveyor or elevator belt for aboveground applications in compliance with european norm EN12882".

## Consequences of the presence of oily components in the material transported

The presence of oily components in the material transported 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 carcass 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 aggressive), and the effects increase exponentially with temperature .

This is very important to make a selection of the most suitable belt for the application between a medium oil resistant (MOR) and a superior oil resistant (SOR) belt. Do not hesitate to consult our specialists for a technical advice on the matter ;

The nitrile rubber is the rubber elastomer that is the most resistant to the action of mineral oils .In a medium oil resistant belt, the nitrile rubber will form a significant proportion of the rubber covers , while for the superior oil resistant belts , the dipping solution for the fabrics is nitrile based, the interlayers and the rubber covers will only use nitrile rubbers in their composition. The resistance to oil of a belt is evaluated by measuring the swelling of the rubber cover after imerging it for some time in one of the following two standard oils:

IRM902, which is a medium aggressive oil

IRM903, which is equivalent to fuel oil nr.2, and which is an aggressive oil containing naphtenics,aromatics and aliphatics.

By performing the test at higher temperatures, the effects can be accelerated and the tests be shorter in time.

## Operating temperature table of belts

	DELTAFAT, DX-FLEX G1 or G2	DYNAFAT G2	DX/ST, DX-MAT G1 or G2	DYNA-P
Continuous material operating temperature	-25 °C to +80 °C	+0 °C to +50 °C	-25 °C to +80 °C	+ 0 °C to +50 °C

## Mechanical properties

The herebelow table lists the operating range , swelling factor, and cover properties of the different belts that DEPPEUX 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 solution including 100% nitrile.

Categories of oil resistance	Cover grade	Property	Test de gonflements		Cover		
			IRM902 28J at 20°C	IRM903 72H at 70°C	Abrasion resistance	Tensile strength	Elongation at break
			%	%	mm3	Mpa	%
<b>G1</b>	SBR/NBR	<b>Medium</b> resistance to standard oils and conventional hydrocarbons	<15		<150	>16	>350
<b>G2</b>	100 % NBR	<b>Superior</b> resistance to standard oils and conventional hydrocarbons		<5	<140	>16	>350
<b>PVC</b>	PVC	<b>Superior</b> 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 at the same time a highly cut , tear and impact resistant covers and carcass.The solid-woven belts, DYNAFLAM with rubber covers, and DYNA-P with PVC covers can be two excellent options.These belts are described respectively in the brochures DEPPEUX "Safety conveyor or elevator belt for aboveground applications in compliance with european norm EN12882" and "Conveyor or elevator belts for the transport of abrasive materials or with impact loading in ambient environment".

## Characteristics of carcass

All the characteristics of the carcass components for flame retardant conveyor or elevator belting are the same as described in the brochure « Conveyor or elevator belt to handle abrasive and sharp material, or with high loading impact in ambient temperature », especially a comparison of the different constructions was done on page 13 and recommendation for the minimum drum diameters was given on page 15.

## Denomination

DELTAFAT EP 630/4 - 1000 - 6 + 2 - G2  
 DELTAFAT : Superior oil resistant multiply textile belt  
 EP : EP Warp polyester, weft polyamide  
 630 : Minimum full longitudinal (warp) tensile strength N/mm  
 4 : Number of ply  
 1000 : Belt width, in mm  
 6 + 2 : Thickness of the top and bottom cover, in mm  
 G2 : G2 quality