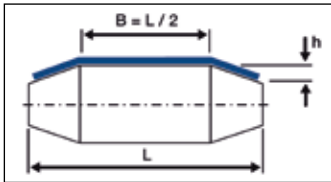


conveyor belts driving

To center a conveyor belt, we recommend the use of rounded drums or drums with cone-shape ends.



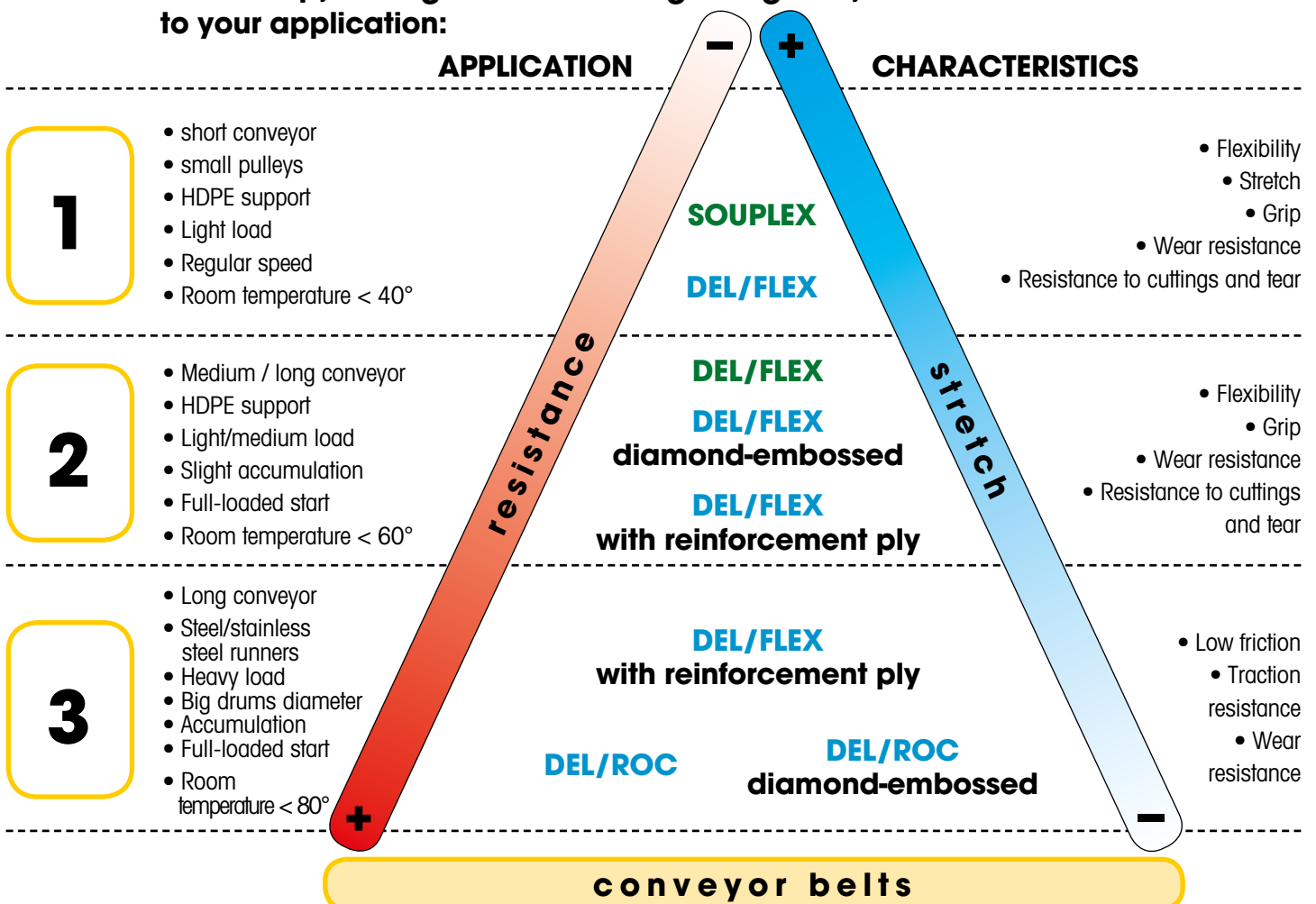
L	h
up to 200 mm	0.25 to 0.5 mm
200 mm to 500 mm	0.5 to 1 mm
500 mm to 1000 mm	1 to 1.5 mm

choosing a conveyor belt

To choose the right belt, you need to know the characteristics of the conveyor, the working conditions and the conveyed products:

CONVEYOR	PRODUCT TRANSPORTED	WORKING CONDITIONS
length of the conveyor	maximum transported weight	continuous or stop-and-go driving
diameter of the pulleys	nature of the product	accumulation
Type of support	spreading of the weight along the conveyor	other efforts, pressure, etc...
length of the tensioning system	temperature of the product	room temperature

Choose up, amongst the 3 following categories, which one best matches to your application:



conveyor belts

Into the selected category, choose the quality of belt whose general characteristics, such as **resistance, hardness, friction coefficient, stretch, operating temperature...** are the closest to the ones you are looking for.

Examples :

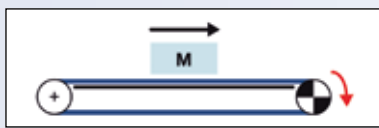
- In case of accumulation of the products transported on the belt, choose the quality with the lowest friction coefficient.
- To convey heavy loads, choose the strongest and less stretchy quality.



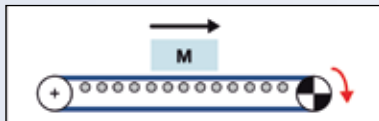
conveying / simplified calculations

SYMBOLE	MEASURES	DESIGNATION	BELT CHARACTERISTICS (In catalog)
M	Kg	Transported load	
Mmax	Kg	Maximum load limit per belt	
F	daN	Minimum traction force for the continuous driving of the load M	
F'	daN	Minimum traction force for full-loaded starts with the load M	
Ft	daN	traction force of the chosen belt	X
t	%	Stretch corresponding to the traction force of the belt Ft	X
Cf		Friction coefficient of the belt on its runner	X
Cr		Rolling coefficient of the belt on its support (0.05 to 0.1 according to the conditions: smooth support, bearings,...)	
Cfp		Friction coefficient on the transported product on the belt	
Cs		Safety coefficient	

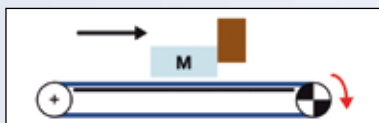
type of conveyor



CONVEYOR WITH SUPPORT PLATE



CONVEYOR WITH SUPPORT ROLLERS



CONVEYOR WITH ACCUMULATION

For all type of conveyors, in case of **STOP-AND-GO DRIVING** (full-loaded starts):

simplified calculation of the needed traction force to drive a specific load

$$F = M \times Cf$$

$$F = M \times Cr$$

In case of accumulation, take into account the friction coefficient of product to convey on the belt. Add this value to the friction coefficient of the belt on its support:

$$F = M \times (Cf + Cfp)$$

The traction force **F** determined above must be multiplied by 2.

$$F' = F \times 2$$

simplified calculation of the maximum load limit per belt

$$Mmax = Ft / Cf$$

$$Mmax = Ft / Cr$$

$$Mmax = Ft / (Cf + Cfp)$$

As you calculate **Mmax**, only take into account half the traction force of the selected belt.

$$Ft/2$$

example

Conveying in food industry of 100kg on a 300mm wide conveyor belt.

Wet conditions - belt cleaned very often.

Stainless steel plate support.

Conveyor spacing: 10 meters.

Drums diameter: 150 mm.

Stop-and-go driving.

choice of a belt category (page 31)

Long spacing
Medium load
Full-loaded start
Stainless steel plate

CATEGORY 3

DEL/FLEX with reinforcement ply
DEL/ROC smooth
DEL/ROC diamond-embossed

Calculation of the maximum load limit on the selected belts

	DEL/FLEX with reinforcement ply 3 mm thick	DEL/ROC 2 mm thick	DEL/ROC 3 mm thick
Friction coef. on stainless steel	Cf 0.35	0.5	0.5
Traction force of the belt at 1% tension	Ft (daN) 7 daN / cm width 210	18 daN / cm ² section 108	18 daN / cm ² section 162
Maximum load limit on the belt with full loaded start	Mmax (Kg) = (Ft/2) / Cf 300	108	162
Safety coef.	Cs = Mmax / M 3	1.1	1,6

solutions

The drum diameters of the belts previously selected being compatible with the application, 2 solutions can be studied, with a reasonable safety coefficient:
BT DEL/FLEX with reinforcement ply 300 x 3mm
 · **BT DEL/ROC** 300 x 3 mm

We will finally choose a **DEL/ROC** with diamond-embossed bottom side:
 · Better sliding on stainless steel plate than smooth **DEL/ROC** in wet conditions.
 · Better resistance to cleaning than a **DEL/FLEX** with reinforcement ply.