ELLEGAARD.

VOLTA

Deep freeze applications

FOOD

Low Temperature (LT) Belts for Deep Freeze Applications

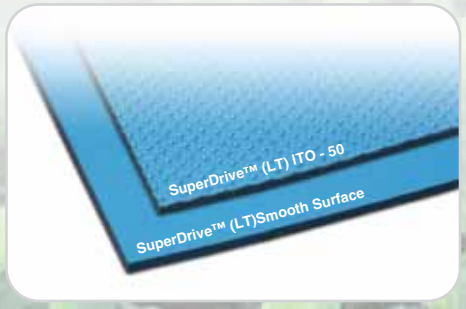
Volta Belting Technology has successfully launched the latest addition to the largest range of hygienic belts available. A thermoplastic material with excellent strength and enhanced resistance to frozen temperatures, the LT (Low Temperature) belting is rated for use at temperatures down to -35° C / -31° F. The belting will not crack and fragment. It is not brittle which means an end to fragmented particles being fed into the product flow. For extra safety, it is manufactured in a food-certified blue color.

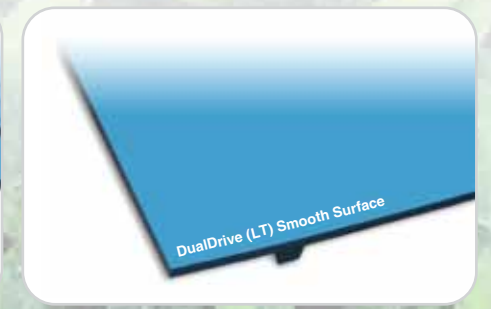
The belt is employed in plants processing fish and vegetables in deep freeze environments and it can be perforated for use in freezer tunnels. It is available in continuous lengths with a maximum width of 1500mm.

In addition to the resistance to low temperatures, the LT material adheres to the Volta tradition of low bacteria counts and offers the usual Volta savings in running costs with reduced cleaning time and low maintenance. Factories working at close to full capacity will benefit from the availability of extra production time currently wasted on cleaning procedures needed for modular belts.

LOW TEMPERATURE (LT) POSITIVE DRIVE BELTS									
SuperDrive™ (LT) Belts									
Product & Color	Shore Hardness	Temperature Range	CoF (bottom) UHMW	Thickness (mm)	Minimum Pulley Diameter		Maximum Pull Force		Approvals
					mm	inch	kg/cm width	lbs/in width	
FMB-SD-LT	95A/46D	-35°C to 35°C -31°F to 95°F	0.30	3	80	3 1/4	3	16.80	FDA/USDA/EU
FMB-SD-ITO50-LT	95A/46D	-35°C to 35°C -31°F to 95°F	0.30	3	80	3 1/4	3	16.80	FDA/USDA/EU
DualDrive (LT) Belts									
FMB-DD-LT	95A/46D	-35°C to 35°C -31°F to 95°F	0.30	3	80	3 1/4	3	16.80	FDA/USDA/EU
DualDrive Small Pulley (LT) Belts									
FMB-DDSP-LT	95/46D	-35°C to 35°C -31°F to 95°F	0.30	2.5	50	2	1*	5.6*	FDA/USDA/EU

* The Maximum Pull Force in the table is for DDSP Low Load Pulley applications.





LOW TEMPERATURE (LT) FLAT FOOD CONVEYOR BELTS

Smooth Homogenous Low Temperature (LT) Belts**

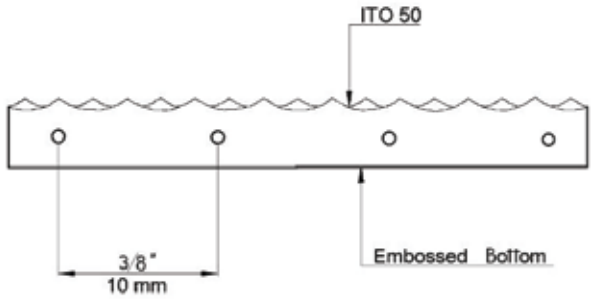
Product & Color	Shore Hardness	Temperature Range	CoF (bottom) UHMW	Thickness (mm)	Minimum Pulley Diameter		Maximum Pull Force 1%		Approvals
					mm	inch	kg/cm width	lbs/in width	
FMB-LT	95A/46D	-35°C to 35°C -31°F to 95°F	0.30	3	40	1 5/8	1.2	6.7	FDA/USDA/EU
				4	60	2 3/8	1.6	9	
				5	80	3 1/8	2	11.2	
				6	90	3 35/64	2.4	13.4	

**Mostly used to fabricate flights.

Aramid Cord Reinforced (ACR) Low Temperature (LT) Belts***

Product & Color	Shore Hardness	Temperature Range	CoF (bottom) UHMW	Thickness (mm)	Minimum Pulley Diameter		Maximum Pull Force 0.2%		Approvals
					mm	inch	kg/cm width	lbs/in width	
FELB-ACR-ITO 50-LT	80A	-40°C to 50°C -40°F to120°F	0.35	2.5	18	45/64	4	22.4	FDA/USDA/EU
FEMB-ACR-ITO 50-LT	95A/46D	-35°C to 50°C -30°F to120°F	0.20	2.5	40	1 37/64	4	22.4	FDA/USDA/EU

*** Pull force in table relates to a finger splice weld 20x50mm.
The calculation is in accordance with a welding area which has a strength of 28kg/cm. Note that various finger splice methods and different tools can result in differing belt strengths.



Guidelines and Suggested Materials for the Fabrication of Low Temperature (LT) belts

Important Note: The Low Temperature material (LT) should be treated as a separate family of materials in terms of fabrications. The Low Temperature material (LT) must not be combined with/welded to Volta H material.

1. Sidewalls: It is possible to weld Sidewalls from L and LT with a thickness of 1.6mm and 2mm to LT belts.
2. Flights: It is recommended to use LT material for flights. M material is also acceptable but in this case one should verify that the ambient temperature of the application does not exceed the regular limit of M materials.
HF welding of flights is recommended on LT belts.
Electrode welding is not recommended under any circumstances with LT material for welding flights.
3. Endless Closure of Belts: Volta recommends joining the Low Temperature Positive Drive (LT) belts with a butt weld using an FBW Tool except for Aramid Cord (ACR) reinforced Low Temperature belts which should only be closed by finger splicing. Care should be taken to calibrate the pressure and temperature suited to the vulcanizing press employed to close the belt as each model has its own sensitivity. Due to the multiplicity of presses on the market, Volta does not make specific recommendations for finger splicing procedures.
Currently, Volta does not offer a Lace closure for Low Temperature material. Other forms of mechanical fasteners should be employed only where needed, as they constitute a hygienic weak point.

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V-Guides			
Products		VLSB/VLSC	
Shore		80A	
Color		Blue/Clear	
Size(mm)		Add to Minimum Pulley Diameter	
Width	Height	mm	inch
10	6	40	1.6
13	8	45	1.8
17	11.50	70	2.75

Preventing Ice Build-Up & Technical Recommendations

- Pulleys: Use the largest diameter available.
- Open the conveyor in the area of the pulleys to allow air circulation and reduce the humidity.
- The environment in the work area should be as dry as possible.
- Ice formation results from humidity and cold and a limiting of these parameters will reduce the problem.
- Use carefully positioned scrapers made from H material on the top side of belt to avoid product sticking.
- Use carefully positioned scrapers made from H material in front of the tail pulley and on the inside of the belt to avoid ice build-up.

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