



FTT WOLBROM®

THERMO-STEEL FLEX AND NORMAL-STEEL FLEX RUBBER CONVEYOR BELTS WITH FLEXIMAT METAL MESH

Application

The belts with Fleximat type metal mesh are designed to convey materials of various grain sizes, especially where little elongation is required while the belt is exposed to tearing and longitudinal cuts.

Depending on the cover rubber used, the following belts are produced:

- for general purpose - **NORMAL-STEEL FLEX**
- resistant to temperatures T120 °C, T150 °C and T200 °C

THERMO-STEEL FLEX.

NORMAL-STEEL FLEX belts are used to transport of sharp-edged materials on long conveyor lines and at high inclination angles, e.g. in open pit mining, aggregate mining industry, etc.

THERMO-STEEL FLEX belts, on the other hand, can convey materials whose temperature is up to 200 °C. These belts are used in metallurgical and cement industry and for the transport of hot ash, slag, moulding sand, etc.

Construction of the belt

The basic element of the belt is a rubberized carcass made of brass-plated steel cords constituting the warp and weft cords arranged transversely.

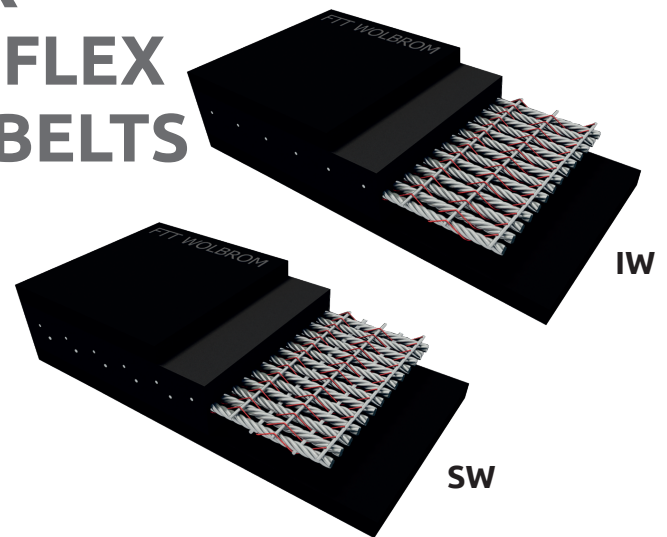
Due to the construction of the Fleximat metal mesh, two kinds of belts are distinguished:

IW – with weft cords arranged on one side of the warp

SW – with weft cords arranged alternately on both sides of the warp cords

Construction of the belt, requirements and test methods for rubber belts with metal mesh are specified in the Technical Conditions WT-24 / XX¹

¹ Current edition of the Technical Conditions



Properties

The belts based on the Fleximat mesh are characterized by:

- low elongation, not exceeding 0,25% at the load equal to 10% of nominal strength;
- high impact resistance;
- high adhesion of the rubber to the carcass;
- smaller diameter of conveyor drums than for fabric-rubber belts of the same type;
- high resistance to longitudinal cuts;
- very high transverse flexibility – the ability to create a trough up to 45%;
- possibility of using garland roller sets

Durable matking of the belts

To be agreed with the Customer or as a standard on the carrying cover of the belt, in the distance of approx. 5 [m] from the beginning of the belt, 50 ± 100 [mm] from the belt edges, at intervals of 10 ± 20 [m] at one or both edges of the belt (depending on width of the belt), a permanent mark in the form of a relief imprint in rubber is placed, containing at least the manufacturer's name, type of the belt, thickness of covers, cover class, belt number and the last two digits of the year of production.

Packing

As a standard, the belt is wound into a coil on a metal drum with a diameter of 500 [mm] with a square hole with a side of 230 [mm]. Rolled belts are secured against unwinding during transport by clipping with polypropylene tape.

FTT can accept individual orders that meet the Customers' wishes regarding the selection and delivery of the belts with cover thicknesses other than those listed in the table.

Table 1. Standard types of belts with steel mesh FLEXIMAT

Belt type 1. NORMAL-STEEL FLEX 2. THERMO-STEEL FLEX Longitudinal belt tensile strength (kN/m)	Core thickness [mm]		Thickness [mm]			Width (mm) ²					
	IW	SW	Rubber covers/ min max ¹	~Belt total min max		800	1000	1200	1400	1600	1800
				IW	SW						
500	3,2	4,7	6+4 12+6	13,2 21,2	14,7 22,7	x	x	x	x	x	x
630	3,2	4,7	6+4 12+6	13,2 21,2	14,7 22,7	x	x	x	x	x	x
800	4,5	5,4	6+4 12+6	14,5 22,5	15,4 23,4		x	x	x	x	x
1000	4,5	5,4	6+4 12+6	14,5 22,5	15,4 23,4		x	x	x	x	x
1250	6,0	7,1	6+4 12+6	16,0 24,0	17,1 25,1		x	x	x	x	x
1400	6,0	7,1	6+4 12+6	16,0 24,0	17,1 25,1		x	x	x	x	x
1600	6,0	7,1	6+4 12+6	16,0 24,0	17,1 25,1			x	x	x	x
1800	-	7,1	6+4 12+6	-	17,1 25,1			x	x	x	x
2000	-	7,1	6+4 12+6	-	17,1 25,1			x	x	x	x

Recommended lengths of belt pieces 100, 150, 200 m [+2/-0%]

¹ Allowances of covers thicknesses +1: -0,5 mm

² Other belt widths not included in *Table 1* to be agreed with manufacturer

Table 2. Physicomechanical properties of cover rubber for belts with steel mesh for general purpose NORMAL-STEEL FLEX

Parameter	Unit	Requirements for cover rubber										Testing method ¹
		Acc. with DIN 22131					PN-EN ISO 15236-1					
		X	Y	Y60 ²	W	W60 ²	H	D60 ²	D	L		
Tensile strength, min.	TS	[MPa]	25	20	20	18	18	24	20	18	15	PN-ISO 37 (sample type 2)
Elongation at break, min.	E _b	[%]	450	400	450	400	400	450	450	400	400	PN-ISO 37 (sample type 2)
Abrasion, max.	-	[mm ³]	120	150	60	90	60	120	60	100	90	PN-ISO 4649 (method A)
Resistance after accelerated heat ageing at conditions: +70 [°C] x168[h], max.	ΔTS	[%]	- 25									PN-ISO 188 (method B)
	ΔE _b	[%]	- 25									PN-ISO 37 (sample type 2)

¹ Testing carried out according with up-to-date issues of standards

² D60; Y60, W60 – cover with upgraded parameter of abrasion resistance, other parameters of cover rubber are allowed after consultation with the customer

Table 3. Physicomechanical properties of cover rubber for belts resistant to accelerated temperatures THERMO-STEEL FLEX

Parameter	Unit	Requirements for cover rubber			Testing method ³	
		T120	T150	T200		
Tensile strength, min.	TS	[MPa]	15	15	12	PN-ISO 37 (sample type 2)
Elongation at break, min.	E _b	[%]	350	350	400	PN-ISO 37 (sample type 2)
Abrasion, max.	-	[mm ³]	150	150	150	PN-ISO 4649 (method A)
Resistance after accelerated heat ageing	+100 [°C] x72 [h], max.	ΔTS ΔE _b	[%] [%]	±40 ±60		PN-ISO 188 (method B) PN-ISO 37 (sample type 2)
	+125 [°C] x72 [h], max.	ΔTS ΔE _b	[%] [%]		±45 ±65	PN-ISO 188 (method B) PN-ISO 37 (sample type 2)
	+125 [°C] x168 [h], min.	TS E _b	[Mpa] [%]			10 300

³ Testing carried out according with up-to-date issues of standards

Procedure of worn-out products

Liquidation of worn-out product by recovery, e.g. by incineration. If recovery is not possible, it is acceptable to neutralize, e.g. by storing in a landfill other than for hazardous or inert waste.

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