



FTT WOLBROM®

# Fabryka Taśm Transporterowych Wolbrom S. A.



EN ISO 9001 | EN ISO 14001 | PN-ISO 45001 | PN-EN ISO/IEC 27001  
PN-EN ISO/IEC 17025 Laboratorium

## TERMO-FLEX AND NORMAL-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 FLEX**
- resistant to temperatures T120 °C, T150 °C i T200 °C
- **TERMO FLEX.**

NORMAL 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.

TERMO 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.

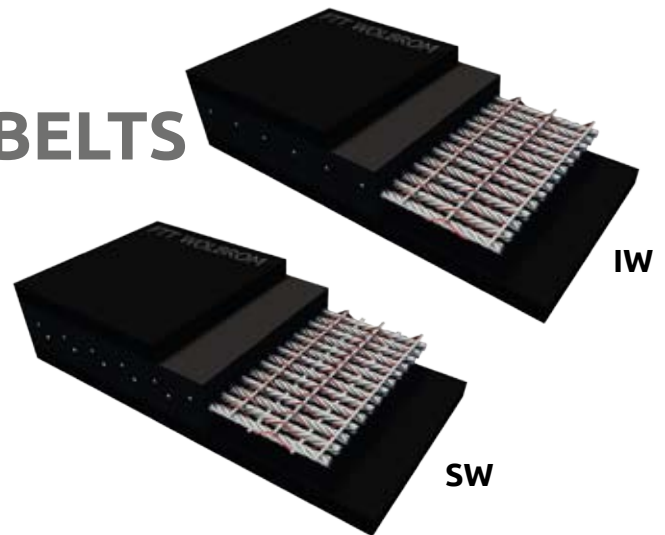
Due to the construction of the Fleximat metal mesh, two kinds of belts are distinguished:

**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-2 / XX; WT-3 / XX and WT-24 / XX 1

<sup>1</sup> 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 marking 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 190 [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 – FLEX 2.TERMO-FLEX Longitudinal belt tensile strength (kN/m)	Core thickness [mm]		Thickness [mm]			Width (mm) <sup>3</sup>					
	IW	SW	Rubber covers/ min max <sup>2</sup>	~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%]

<sup>2</sup> Allowances covers thicknesses +1: -0,5 mm

<sup>3</sup> 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 NORMAL FLEX**

Parameter	Unit	Requirements for cover rubber										Testing method <sup>4</sup>
		Acc. with DIN 22131					PN-EN ISO 15236-1					
		X	Y	Y60 <sup>5</sup>	W	W60 <sup>5</sup>	H	D60 <sup>5</sup>	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 <sub>b</sub>	[%]	450	400	450	400	400	450	450	400	400	PN-ISO 37 (sample type 2)
Abrasion, max.	-	[mm <sup>3</sup> ]	120	150	60	90	60	120	60	100	90	PN-ISO 4649 (method A)
Resistance to heat impact, in air, at conditions: +70 [0C] x168[h], max.	ΔTS	[%]	- 25									PN-ISO 188 (method B)
	ΔE <sub>b</sub>	[%]	- 25									PN-ISO 37 (sample type 2)

<sup>4</sup> Testing carried out according with up-to-date issues of standards

<sup>5</sup> D60; Y60, W60 – cover with upgraded parameter of abrasion resistance

**Table 3. Physicomechanical properties of cover rubber for belts TERMO FLEX.**

Parameter	Unit	Requirements for cover rubber of heat resistant belts					Testing method <sup>4</sup>
		Internal standard WT-13/					
		T120	T150	T200			
Tensile strength, min.	TS	[MPa]	15	15	12	PN-ISO 37 (sample type 2)	
Elongation at break, min.	E <sub>b</sub>	[%]	350	350	400	PN-ISO 37 (sample type 2)	
Abrasion, max.	-	[mm <sup>3</sup> ]	150	150	150	PN-ISO 4649 (method A)	
+100 [0C] x72 [h], max.	ΔTS	[%]	±40			PN-ISO 188 (method B) PN-ISO 37 (sample type 2)	
	ΔE <sub>b</sub>	[%]	±60				
+125 [0C] x72 [h], max.	ΔTS	[%]	±45			PN-ISO 188 (method B) PN-ISO 37 (sample type 2)	
	ΔE <sub>b</sub>	[%]	±65				
+125 [°C] x168 [h], min.	TS	[Mpa]	10			PN-ISO 188 (method B) PN-ISO 37 (sample type 2)	
	E <sub>b</sub>	[%]	300				

<sup>4</sup> Testing carried out according with up-to-date issues of standards

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