

## TERVAKOSKI FILM

# ET

### ET FEATURES

High Temperature PP-film manufactured by tenter process with controlled shrinkage for better overwrap. Film surface has corona treatment on one side (inner side) what allows direct printing on film.

### GENERAL APPLICATIONS

Wrapping film for metallised film capacitor elements. ET film is designed for high ambient temperatures to keep wrapping force power also in high temperatures and long durability.

### STANDARD THICKNESSES (BY WEIGHT)

TENTER PROCESS [µm]	TOLERANCE
15 µm, 20 µm	± 5 %

### ROLL DIMENSIONS

CORE (I.D)	76,0 mm	± 0,5 mm
	152,0 mm	- 0,0 / +2,0 mm
ROLL (O.D)	at width ≤ 400 mm	≤ 240 mm
	> 400 mm	≤ 575 mm
ROLL WIDTH		50 - 920 mm
WIDTH TOLERANCES		
Roll width <150 mm		± 0,4 mm
Roll width ≥150 mm		± 1,0 mm

### SURFACE PROPERTIES

SURFACE TENSION inside of the customer roll	≥ 38 mN/m	TTM 302
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### GENERAL PHYSICAL PROPERTIES

DENSITY	0,910 g/cm <sup>3</sup>	± 0,04 g/cm <sup>3</sup>
SOFTENING POINT	140 °C	Vicat
MELTING POINT	165-170 °C	
WATER ABSORPTION	< 0,01 %	

### MECHANICAL PROPERTIES (TYPICAL VALUES)

TENSILE STRENGTH			TTM 218
	MD	≥ 140 MN/m <sup>2</sup>	
	CD	≥ 200 MN/m <sup>2</sup>	
ELONGATION			
	MD	≤ 200 %	TTM 213
	CD	≤ 65 %	
SHRINKAGE (110 °C, 15 MIN)			TTM 213
	MD	> 1,6 %	
	CD	< 0,1 %	

## PACKING

### FOR WIDTHS < 400 mm

Each roll is first wrapped with electrical grade polypropylene film to give protection against dust and foreign particles during normal conditions of transport and storage. The rolls are placed in a carton placed on a wooden pallet.

Standard pallet sizes are: 1070 mm x 1070 mm, 1020 mm x 1020 mm and 800 mm x 1200 mm according to the customer roll outer diameter and customer requirements.

At the bottom of each carton under the first roll layer there is a cardboard plate. Also the roll layers are separated from each other by using the same kind of plates. The rolls are supported by plastic stopper plugs on cardboard holes. The carton is wrapped with stretch film and tied to the pallet with plastic straps. If necessary, the packing unit is further protected and strengthened with a wooden crate.

### FOR WIDTHS ≥ 400 mm

Each individual roll is wrapped with polypropylene film to protect against dust and foreign particles during normal conditions of transport and storage. The roll is in horizontal hanging position hold by plastic or wooden supporting plates. Soft plastic discs are inserted between roll edge and plastic/wooden supporting plate. The roll and supporting plates are bound together with plastic straps.

A set of the rolls on the pallet is bound together and tied to the pallet with plastic straps. The pallet is wrapped with stretch film.


Pallet size is set according to the roll diameter and width.

## STORAGE

In the handling of pallets and individual rolls all kinds of shocks should be avoided. The rolls should be stored in the original package and in a dry place. Temperature exceeding 40°C should be avoided during storage. It is also recommended that film is used within one year of receipt. Longer storing time increases the risk of winding problems.

## LABELLING

Each bobbin is equipped with 2 labels, which is placed under upper film layer and inside the innercore.

**Tervakoski film**  **TERVAKOSKI FILM ET** 1

<b>NOMINAL THICKNESS:</b>	15.00	<b>ROLL NO.:</b>	4-0015176304		
<b>TREATED SIDE:</b>	IN	<b>POS.:</b>	O/A/2	<b>JOBS NO.:</b>	000003010206
<b>WEIGHT:</b>	4.16	<b>LENGTH (m):</b>	2090	<b>WIDTH (mm):</b>	146.6
<b>NO OF JOINTS:</b>					
<b>CUSTOMER ITEM NO.:</b>					
<b>CUSTOMER ORDER NO.:</b>	502002499				
<b>OPERATOR:</b>	001	<b>DATE:</b>	20210809		

**4001517630400014660004202090150149**

**4001517630400014660004202090150149**

**1 2 3 4 5 6 7**

### INFORMATION ON THE LABEL:

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|---|---|
| <ol style="list-style-type: none"> <li>1. Tervakoski film ET = Product name and grade</li> <li>2. Nominal thickness [µm]</li> <li>3. Production roll number</li> <li>4. Surface treated side</li> <li>5. Position of roll</li> <li>6. Production order</li> <li>7. Net weight of the film in the roll [kg]</li> <li>8. Actual film length [m]</li> <li>9. Actual film width [mm]</li> </ol> | <ol style="list-style-type: none"> <li>10. Number of joints in roll</li> <li>11. Customer material number</li> <li>12. Customer order number</li> <li>13. Operator number</li> <li>14. Production date</li> <li>15. Bar Code</li> </ol> |
|---|---|

### THE BAR CODE INCLUDES THE FOLLOWING INFORMATION:

1. Baseline number (1 digits)
2. Production roll number (10 digits)
3. Actual film width (7 digits)
4. Net weight of the film (5 digits)
5. Actual film length (5 digits)
6. Nominal thickness (3 digits)
7. Thickness by weight (3 digits)

**Tervakoski film** 

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