

TERVAKOSKI FILM

RERT

RERT FEATURES

High Temperature PP-film manufactured by tenter process with super clean electrical grade resin. Tervakoski film RERT has controlled surface roughness on both sides facilitating complete oil impregnation.

GENERAL APPLICATIONS

Tervakoski film RERT is designed for high ambient temperatures to meet the needs of high dielectric strengths and long durability. Impregnated all film high voltage power and filter capacitors up to largest sizes and with highest stresses.

STANDARD THICKNESSES (BY WEIGHT)

TENTER PROCESS [µm]
6 7,4 8 9 10 11,2 12 12,7 13,6 14,4 15,2 16,2 17,8

ROLL DIMENSIONS

CORE (I.D)	76 ± 0,5 mm
ROLL (O.D)	Up to 240 mm
ROLL WIDTH	50 - 600 mm
WIDTH TOLERANCES:	
Roll width <150 mm	± 0,4 mm
Roll width ≥150 mm	+ 0,8 / - 0,5 mm
Roll width > 500 mm	± 1,0 mm

SURFACE PROPERTIES

SPACE FACTOR			
	Lot average	95%-range	Test method
< 8 µm	7,5 - 11 %	6 - 14 %	TTM 216
8 - 12 µm	8,5 - 11 %	6,5 - 14 %	
>12 µm	9,5 - 12 %	8 - 15 %	

ELECTRICAL PROPERTIES

DIELECTRIC CONSTANT	2,2	TTM 230
25 °C, 50 Hz-1 MHz		
RESISTIVITY	> 1x10 ¹⁵ Ωm	TTM 230
< 100 °C		
DISSIPATION FACTOR	≤ 1,8x10 ⁻⁴	TTM 230

GENERAL PHYSICAL PROPERTIES

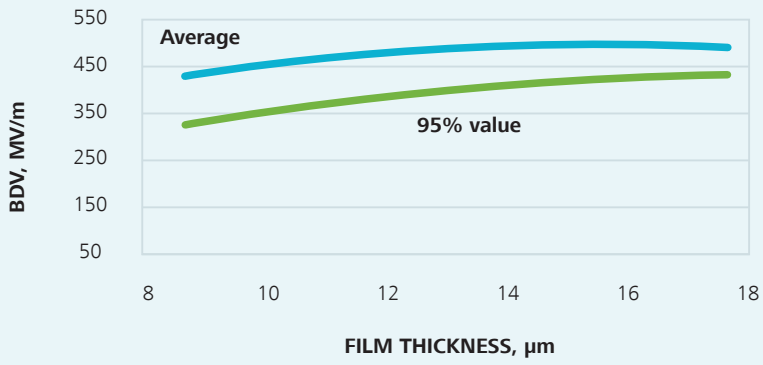
DENSITY	Tenter	0,910 g/cm ³
SOFTENING POINT	140 °C	Vicat
MELTING POINT	165-170 °C	
WATER ABSORPTION	< 0,01 %	

MECHANICAL PROPERTIES (TYPICAL VALUES)

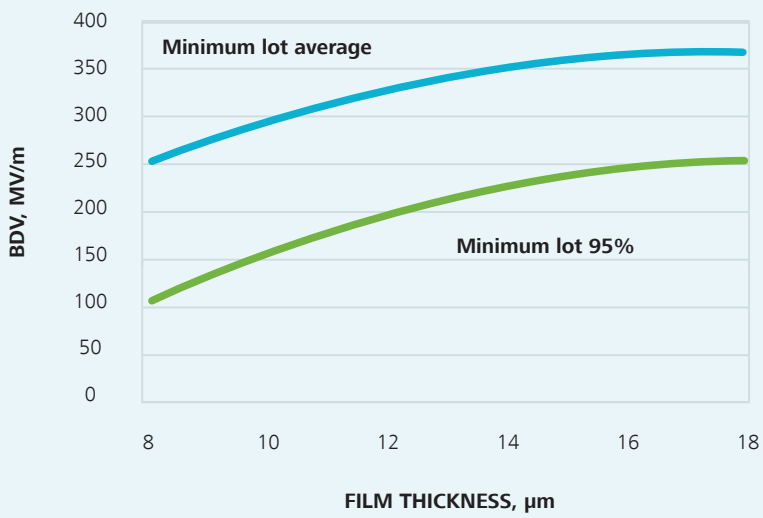
TENSILE STRENGTH			TTM 218
	MD	≥130 MN/m ²	
	CD	≥200 MN/m ²	
MODULUS OF ELASTICITY			TTM 213
	MD	≥1900 MN/m ²	
	CD	≥2000 MN/m ²	
SHRINKAGE (100 °C, 10 MIN)			TTM 213
≤ 10 µm	MD	≤ 4 %	
	CD	≤ 2 %	
> 10 µm	MD	≤ 4 %	
	CD	≤ 1,5 %	

CHEMICAL PROPERTIES

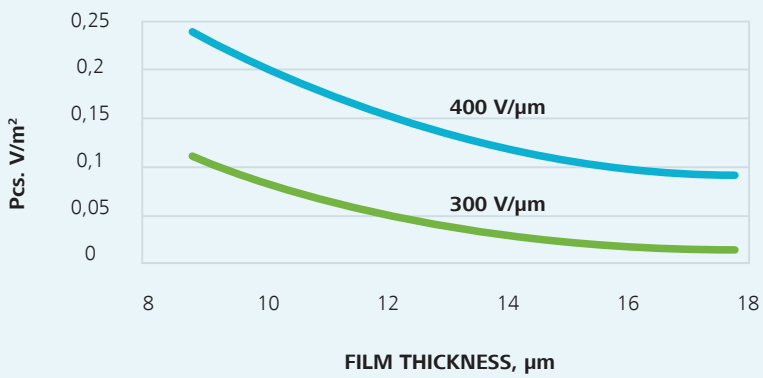
ASH CONTENT	≤ 30 ppm	TTM 506
CHLORINE CONTENT	≤ 10 ppm	TTM 504



Typical DC-breakdown strength of impregnated one-layer capacitor windings, electrode area $2 \times 2 \text{ m}^2$. Windings impregnated with M/DBT. Test method TTM 231.



DC-breakdown strength of dry one-layer capacitor windings, electrode area $2 \times 2 \text{ m}^2$. Test method TTM 222.



Number of weak points calculated based on the BDV-results of test windings (TTM 222)

BALANCING

The average film thickness, which is given on the roll label, is determined as average thickness based on roll weight, film length and film width. Based on average film thickness the rolls are classified into three balancing groups. The balancing groups and tolerances applied to each group are given in the table below.

THICKNESS NOMINAL [μm]	BALANCING GROUP [μm]			
	-	0	+	
6	5,6	5,85	6,15	6,4
7,4	7,0	7,25	7,55	7,8
8	7,6	7,85	8,15	8,4
9	8,6	8,85	9,15	9,4
9,5	9,1	9,35	9,65	9,9
10	9,6	9,85	10,15	10,4
11,2	10,8	11,05	11,35	11,6
12	11,6	11,85	12,15	12,4
12,7	12,3	12,55	12,85	13,1
13,6	13,2	13,45	13,75	14,0
14,4	13,9	14,15	14,65	14,9
15,2	14,7	14,95	15,45	15,7
16,2	15,6	15,95	16,45	16,8
17,8	17,1	17,55	18,05	18,5

PACKING

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 two or three layers 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

At the bottom of each carton under the first roll layer there is a plate of expanded polystyrene. Also the roll layers are separated from each other by using the same kind of plates. The carton is wrapped with stretch film and tied to the pallet with plastic straps.

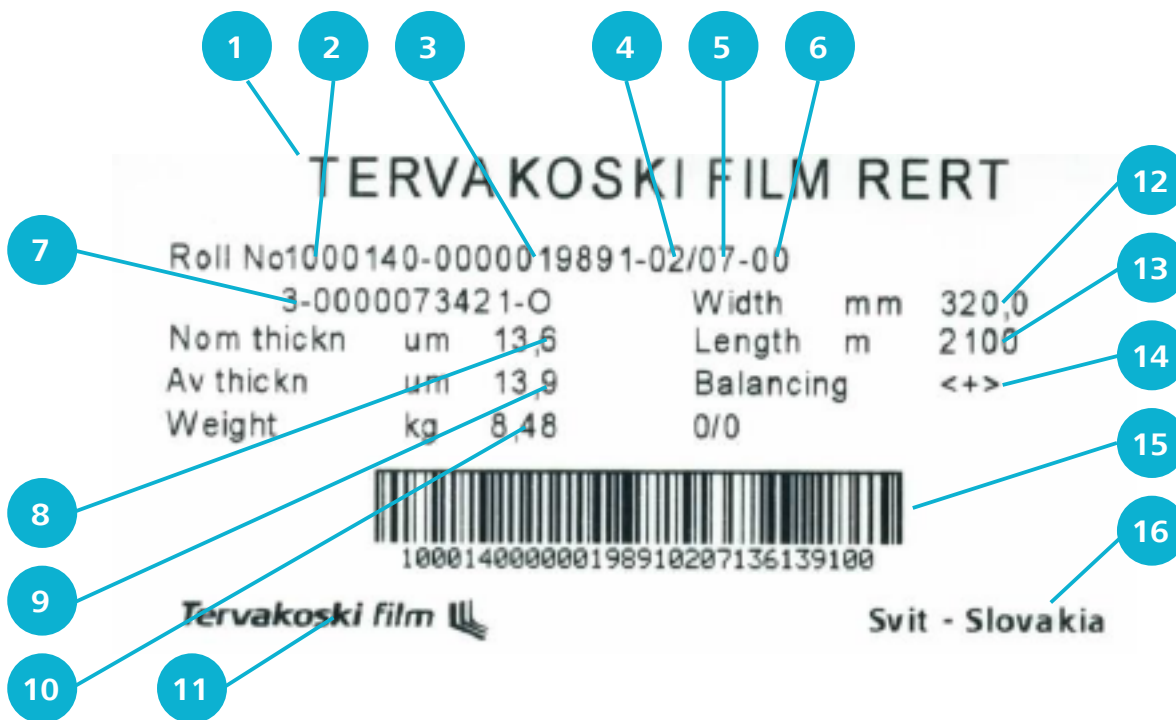
In overseas shipments cardboard plates instead of polystyrene plates are used. The rolls are supported by plastic stopper plugs on cardboard holes. If necessary, the packing unit is further protected and strengthened with a wooden crate

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 roll is equipped with a label, which is placed either on the outer surface of the roll or inside the core.



INFORMATION ON THE LABEL:

1. Tervakoski film RERT = Product name and grade
2. Production lot number
3. Machine roll number
4. Slitting set number (i.e. roll position in MD-direction in a machine roll). Set nr.1 is slit starting from the surface of machine roll, set nr. 8 is slit last (i.e. nearest to the core)
5. Roll position (i.e. position in CD-direction in a slitting set)
6. Slitting operator number
7. Internal/code number
8. Nominal thickness [μm]
9. Actual average thickness (by roll weight) [μm]
10. Net weight of the film in the roll [kg]
11. Tervakoski film logo
12. Roll width [mm]
13. Actual film length [m]
14. <0> or <+> or <+> = Balancing by actual average thickness 0/0 = Pallet number and i.e. 01/13 = Slitting week and year
15. Bar code
16. Production site

THE BAR CODE INCLUDES THE FOLLOWING INFORMATION:

1. Production lot number (7 digits)
2. Machine roll number (10 digits)
3. Slitting set number (2 digits)
4. Roll position (2 digits)
5. Nominal thickness (3 digits)
6. Average thickness (3 digits)
7. Nominal Space factor i.e. 10,0% (3 digits)

Tervakoski film 

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