

ELECTRICAL INSULATING  
PAPERS

**WEIDMANN**



# CONTENTS

<b>WEIDMANN KNOW-HOW</b>	<b>4</b>
<b>PRESSPAPER</b>	<b>6</b>
GRADE K PRESSPAPER	7
GRADE 3 PRESSPAPER	8
GRADE 4 PRESSPAPER	9
<b>GRADE K T/U PRESSPAPER</b>	<b>10</b>
<b>DIAMOND DOTTED PRESSPAPER</b>	<b>12</b>
GRADE K T/U DIAMOND DOTTED PRESSPAPER (THERMOPOX)	13
GRADE 3 DIAMOND DOTTED PRESSPAPER	14
<b>PRESSPAPER COMBINED POLYESTER FILM</b>	<b>15</b>
THERMOFILM 18MP23	16
THERMOFILM 25MP23	16
THERMOFILM 13MP50	16
THERMOFILM 18MP50	17
THERMOFILM 25MP50	17
THERMOFILM 18PMP50	17
<b>CREPE PAPER</b>	<b>18</b>
CREPE PAPER TYPE 60/90	19
CREPE PAPER TYPE 60/120	20
CREPE PAPER TYPE 60/170	20
CREPE PAPER TYPE 67/100	21
CREPE PAPER TYPE 67/130	21
CREPE PAPER TYPE 80/120	22
CREPE PAPER TYPE 80/160	22
CREPE PAPER TYPE 100/150	23
CREPE PAPER TYPE 100/200	23
<b>ALUMINIUM CREPE PAPER</b>	<b>24</b>
<b>STORAGE RECOMMENDATION</b>	<b>26</b>

## WEIDMANN KNOW-HOW

### EXCELLENCE IN QUALITY AND SERVICES

“Made by WEIDMANN” means top quality – there is no compromise on that. WEIDMANN meets all international standards. WEIDMANN ensures superior quality control along the entire supply chain. WEIDMANN’s range of electrical insulating papers is your assurance for consistent, impeccable quality. The quality system following ISO 9001:2000/EN 29001 and a manufacturing process with

decisive know-how, continuously optimized over decades, guarantee the high quality of the products and services which WEIDMANN is more than happy to offer you at any time. Working with this high-value insulation material, you benefit from the entire savings potential of all optimizations without the risk involved in products that have not been tested to the highest standards.

WEIDMANN has been involved for decades in the design and optimization of insulation papers. Specializing in insulation paper, WEIDMANN offers a broad spectrum of cellulose-based paper, ranging from flat untreated paper to creped, coated, calendered, thermally upgraded or laminated material structures. In addition, WEIDMANN slits, cuffs and creases papers on demand.



The comprehensive knowledge and expertise of the WEIDMANN engineers supply the bushing, cable, motor, generator and transformer industry with accurate and reliable information. WEIDMANN can provide an insulation layout that offers reduction of clearances and elimination of critically stressed areas.



# PRESSPAPER

## MULTI-PLY ELECTRICAL INSULATING PRESSPAPERS

WEIDMANN manufactures several grades of presspaper for a variety of insulating applications. All are manufactured to international standards on a multi-vat cylinder machine. This method of construction builds up a continuous web of processed fibers in homogeneous layers to create a pinhole-free structure.

Grade K Presspaper is made of 100% sulphate wood pulp. It is a high-strength paper with excellent electrical properties. It is ideal for a broad range of applications. It can be dyed to various colors achievable with an unbleached furnish. Dyeing has no effect on quality.

Grade 3 Presspaper is made from a mixture of sulphate wood pulp and cotton. It is a flexible paper that conforms easily to uneven surfaces. Favored by coil winders, it has excellent edge folding (cuffing) properties. WEIDMANN developed this paper jointly with transformer manufacturers to meet their need for insulation with an optimum combination of electrical and mechanical strength, low permittivity, and maximum oil absorption. The furnish for this paper is composed to minimize drying times and maximize aging properties.

Grade 4 Presspaper is made of 100% cotton. It combines electrical strength, mechanical toughness, and flexibility for superior performance under the most arduous service conditions. This grade is one of WEIDMANN's most successful presspapers. It has been in continuous production for many decades, and reflects a history of continuous improvement made possible by carefully selected raw materials and developments in processing techniques.

### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60641-2 and 60243-1. These typical values do not constitute specifications of WEIDMANN products.



Paper samples of Grade K Presspaper (natural buff) and Grade 3 Presspaper (blue)

## GRADE K PRESSPAPER

Thickness	Master size	Standard widths	Standard roll diameters		Norm
			Internal	External	
0.076 mm	3400 mm	850 mm	70, 76, 102, 120,	280, 370 mm	IEC 60641-3-2, type P.4.1A
0.10 mm		1135 mm	154 mm		
0.127 mm		1700 mm			
0.15 mm		3400 mm			
0.20 mm					
0.25 mm					
0.30 mm					
0.40 mm					
0.50 mm					
0.60 mm*	1420 mm	825 mm			
0.70 mm*		1100 mm			
0.80 mm*		1420 mm			
0.90 mm*					
1.00 mm*					

\*Combination of presspapers laminated with a synthetic adhesive

Thickness tolerance  $\pm 10\%$

Other thicknesses and roll dimensions available on request

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.1
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	94
			$> 0.2$ mm	110
	cross machine direction	MPa	$\leq 0.2$ mm	53
			$> 0.2$ mm	50
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	1.7
			$> 0.2$ mm	2.4
	cross machine direction	%	$\leq 0.2$ mm	7.5
			$> 0.2$ mm	7.6
Moisture content		%	–	$< 8$
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	2.0
pH of aqueous extract		–	–	7.2
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	70
			$> 0.2$ mm	50

## GRADE 3 PRESSPAPER

Thickness	Master size	Standard widths	Standard roll diameters		Norm
			Internal	External	
0.127 mm	3400 mm	850 mm	70, 76, 102, 120,	280, 370 mm	IEC 60641-3-2, type P4.3
0.20 mm		1135 mm	154 mm		
0.25 mm		1700 mm			
0.30 mm		3400 mm			
0.40 mm					
0.50 mm					
0.80 mm *	1420 mm	825 mm			
1.00 mm *		1100 mm			
		1420 mm			

\*Combination of presspapers laminated with a synthetic adhesive

Thickness tolerance  $\pm 10\%$   
Other thicknesses and roll dimensions available on request

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.0
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	99
			$> 0.2$ mm	91
	cross machine direction	MPa	$\leq 0.2$ mm	42
			$> 0.2$ mm	40
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	2.3
			$> 0.2$ mm	2.8
	cross machine direction	%	$\leq 0.2$ mm	6.9
			$> 0.2$ mm	7.8
Moisture content		%	–	$< 8$
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	3.7
pH of aqueous extract		–	–	7.2
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	75
			$> 0.2$ mm	55



## GRADE 4 PRESSPAPER

Thickness	Master size	Standard widths	Standard roll diameters		Norm
			Internal	External	
0.127 mm	3400 mm	850 mm	70, 76, 102, 120, 154 mm	280, 370 mm	IEC 60641-3-2, type P.4.2
0.18 mm		1135 mm			
0.25 mm		1700 mm			
0.30 mm		3400 mm			
0.40 mm					
0.50 mm					
0.80 mm *	1420 mm	825 mm			
1.00 mm *		1100 mm			
		1420 mm			

\*Combination of presspapers laminated with a synthetic adhesive

Thickness tolerance  $\pm 10\%$   
Other thicknesses and roll dimensions available on request

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.1
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	90
			$> 0.2$ mm	89
	cross machine direction	MPa	$\leq 0.2$ mm	44
			$> 0.2$ mm	44
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	2.7
			$> 0.2$ mm	3.2
	cross machine direction	%	$\leq 0.2$ mm	8.8
			$> 0.2$ mm	8.6
Moisture content		%	–	$< 8$
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	4.7
pH of aqueous extract		–	–	7.8
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	75
			$> 0.2$ mm	55

## GRADE K T/U PRESSPAPER THERMALLY UPGRADED PAPER

Grade K Thermally Upgraded Presspaper is made of sulphate wood pulp and is used mainly as a layer insulating paper in low voltage and high voltage windings of oil-immersed distribution transformers. The lifetime of the transformers is directly related to the condition of insulation paper of the winding. Thermally upgraded paper is a cellulose-based paper that has been chemically modified to reduce the rate at which the paper decomposes.

The purpose of thermally upgrading insulation paper is to neutralize acids caused by thermal degradation of the cellulose over the lifetime of the transformer. Thermally upgraded paper retains a much higher tensile and bursting strength than untreated papers when exposed to elevated temperatures.

### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60641-2, 60243-1 and internal test methods. These typical values do not constitute specifications of WEIDMANN products.



## GRADE K T/U PRESSPAPER

Thickness	Master size	Standard widths	Standard roll diameters	
			Internal	External
0.076 mm	3400 mm	850 mm	70, 76, 102, 120, 154 mm	280, 370 mm
0.127 mm		1135 mm		
0.18 mm		1700 mm		
0.25 mm		3400 mm		
0.38 mm				
0.50 mm				

Thickness tolerance  $\pm 10\%$   
Other thicknesses and roll dimensions available on request

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.0
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	115
			$> 0.2$ mm	110
	cross machine direction	MPa	$\leq 0.2$ mm	50
			$> 0.2$ mm	39
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	2.0
			$> 0.2$ mm	2.4
	cross machine direction	%	$\leq 0.2$ mm	7.2
			$> 0.2$ mm	7.5
Moisture content		%	–	$< 8$
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	2.2
pH of aqueous extract		–	–	7.0
Nitrogen content		%	–	1.8
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	70
			$> 0.2$ mm	50

## DIAMOND DOTTED PRESSPAPER

### ELECTRICAL INSULATING PRESSPAPERS WITH B-STAGE RESIN DOTS

Diamond Dotted Presspaper improves the mechanical strength of oil-immersed transformer windings without reducing partial discharge levels. WEIDMANN manufactures this paper by applying discrete dots of B-stage resin on both sides in a diamond pattern. The size and shape of the dots are carefully chosen to avoid interfering with vacuum drying and oil impregnation.

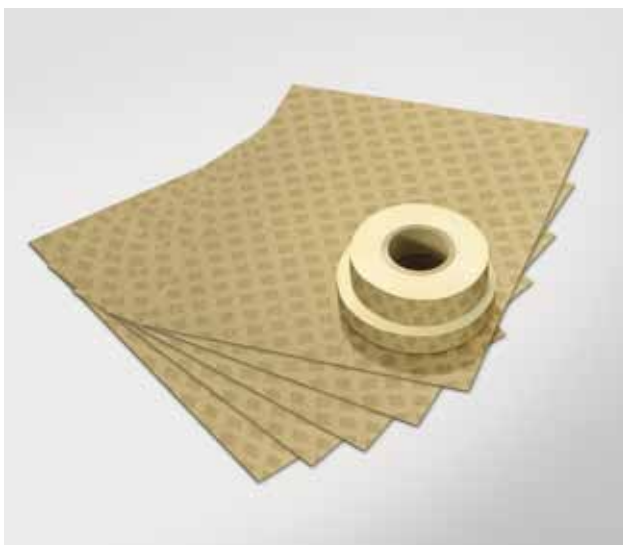
During B-stage, the resin dots are dry and tack free, permitting storage and handling similar to normal presspaper. When the winding is heated for drying purposes, the adhesive dots melt and cure, thus creating permanent bonding sites unaffected by further heating cycles that may occur in service. The bonding

strength is adequate to support effective gluing in unsupported coil design.

The pinhole-free multi-ply paper allows single layer application in LV foil windings. Temperature rise time in the drying oven is important, particularly during the final transition to the temperature at which the resin starts to melt. To obtain maximum bond strength, this transition should be completed as swiftly as possible. The drying requirements of the transformer normally provide for adequate curing of the resin. Nevertheless, WEIDMANN recommends careful monitoring of oven performance.

#### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60641-2, 60243-1 and internal test methods. These typical values do not constitute specifications of WEIDMANN products.



Grade KT/U Diamond Dotted Presspaper (Thermopox)



Grade 3 Diamond Dotted Presspaper

## GRADE K T/U DIAMOND DOTTED PRESSPAPER (THERMOPOX)

Thickness	Master size	Standard widths	Standard roll diameters	
			Internal	External
0.045 mm*	1565 mm	1016 mm	76 mm	270, 370 mm
0.06 mm*		1118 mm		
0.076 mm		1219 mm		
0.127 mm		1565 mm		
0.18 mm				
0.25 mm				
0.38 mm				
0.50 mm				

\*Insulation paper according to IEC Norm 60554-3-5, type 5A4-1

Thickness tolerance  $\pm 10\%$

0.5 mm thickness available upon request subject to availability

Other widths available by arrangement – Rolls can also be supplied slit to specified widths as required

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.0
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	115
			$> 0.2$ mm	110
	cross machine direction	MPa	$\leq 0.2$ mm	50
			$> 0.2$ mm	39
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	2.0
			$> 0.2$ mm	2.4
	cross machine direction	%	$\leq 0.2$ mm	7.2
			$> 0.2$ mm	7.5
Moisture content		%	–	$< 8$
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	2.2
pH of aqueous extract		–	–	7.0
Nitrogen content		%	–	1.8
Bond strength cured for 120 min at 120 °C and 14 kPa; tested at 100 °C		N/cm <sup>2</sup>	–	61
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	70
			$> 0.2$ mm	50

## GRADE 3 DIAMOND DOTTED PRESSPAPER

Thickness	Master size	Standard widths	Standard roll diameters	
			Internal	External
0.127 mm	1565 mm	1118 mm	76 mm	270, 370 mm
0.20 mm		1565 mm		
0.25 mm				
0.40 mm				
0.50 mm				

Thickness tolerance  $\pm 10\%$

0.5 mm thickness available upon request subject to availability

Other widths available by arrangement – Rolls can also be supplied slit to specified widths as required

Property		Unit	Range of thickness	Value
Apparent density		g/cm <sup>3</sup>	–	1.0
Tensile strength unfolded	machine direction	MPa	$\leq 0.2$ mm	99
			$> 0.2$ mm	91
	cross machine direction	MPa	$\leq 0.2$ mm	42
			$> 0.2$ mm	40
Elongation unfolded	machine direction	%	$\leq 0.2$ mm	2.3
			$> 0.2$ mm	2.8
	cross machine direction	%	$\leq 0.2$ mm	6.9
			$> 0.2$ mm	7.8
Moisture content		%	–	< 8
Ash content		%	–	0.3
Conductivity of aqueous extract		mS/m	–	3.7
pH of aqueous extract		–	–	7.2
Bond strength		N/cm <sup>2</sup>	–	54
cured for 120 min at 120 °C and 14 kPa; tested at 100 °C				
Electric strength in air unfolded		kV/mm	$\leq 0.2$ mm	10
			$> 0.2$ mm	7
Electric strength in oil		kV/mm	$\leq 0.2$ mm	75
			$> 0.2$ mm	55

## PRESSPAPER COMBINED POLYESTER FILM THERMOFILM FLEXIBLE LAMINATES

Presspaper Combined Polyester Film is used for insulating applications that require punching and forming without significant loss of electrical strength. WEIDMANN manufactures these flexible laminates by bonding electrical insulating presspaper with high-quality polyester film using a synthetic resin adhesive. The resulting product, sold as Thermofilm, has excellent thermal stability and good thermal overload properties.

Polyester/paper laminates are predominantly used for electric motor slots and field coil insulation. They can also be used in oil-immersed and dry type transformers where the unique properties of the material can be used to advantage. Presspaper Combined Polyester Film is available in Grade K, Grade 3 and Grade 4.

### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60626-2 and 60243-1. These typical values do not constitute specifications of WEIDMANN products.

### THERMOFILM IS AVAILABLE IN TWO FORMS:

Thermofilm MP: Polyester Film – Presspaper

Thermofilm PMP: Presspaper – Polyester Film – Presspaper



Type	Thickness			Master size	Standard width	Standard roll diameters		Norm
	Presspaper (mm)	Film (µm)	Composite (mm)			Internal	External	
18MP23	0.18	23	0.210	1135 mm	1135 mm (± 5 mm) untrimmed	76 mm	280 mm	IEC 60626-1, type F-PET/P-C
25MP23	0.25	23	0.28					
13MP50	0.13	50	0.19					
18MP50	0.18	50	0.24					
25MP50	0.25	50	0.31					
18PMP50	0.18	50	0.42	1135 mm	1135 mm (± 5 mm) untrimmed	76 mm	280 mm	IEC 60626-1, type P-C/F-PET/P-C

Slit rolls are available cut from standard rolls in widths from 8 mm upwards depending on thickness

## THERMOFILM 18MP23

Property		Unit	Value
Grammage		g/m <sup>2</sup>	250
Film thickness		µm	23
Tensile strength unfolded	machine direction	kN/m	189
	cross machine direction	kN/m	116
Breakdown voltage		kV	6

## THERMOFILM 25MP23

Property		Unit	Value
Grammage		g/m <sup>2</sup>	330
Film thickness		µm	23
Tensile strength unfolded	machine direction	kN/m	252
	cross machine direction	kN/m	168
Breakdown voltage		kV	6

## THERMOFILM 13MP50

Property		Unit	Value
Grammage		g/m <sup>2</sup>	190
Film thickness		µm	50
Tensile strength unfolded	machine direction	kN/m	162
	cross machine direction	kN/m	105
Breakdown voltage		kV	8



## THERMOFILM 18MP50

Property		Unit	Value
Grammage		g/m <sup>2</sup>	290
Film thickness		μm	50
Tensile strength unfolded	machine direction	kN/m	216
	cross machine direction	kN/m	132
Breakdown voltage		kV	8

## THERMOFILM 25MP50

Property		Unit	Value
Grammage		g/m <sup>2</sup>	345
Film thickness		μm	50
Tensile strength unfolded	machine direction	kN/m	279
	cross machine direction	kN/m	186
Breakdown voltage		kV	8

## THERMOFILM 18PMP50

Property		Unit	Value
Grammage		g/m <sup>2</sup>	505
Film thickness		μm	50
Tensile strength unfolded	machine direction	kN/m	399
	cross machine direction	kN/m	252
Breakdown voltage		kV	10

## CREPE PAPER

### HIGH ELONGATION INSULATING PAPERS

Crepe Papers come in a variety of qualities developed to meet the requirements of the transformer industry. The extensibility of Crepe Paper facilitates wrapping irregular contours, which can be useful for joining and forming tapping leads. The low dissipation factor makes it especially suitable for high voltage bushings and instrument transformers. Other typical applications include wire wrapping, and shielded rings placed within end sections of power transformer windings.

WEIDMANN manufactures Crepe Papers from high-quality electrical grade kraft base papers (100% sulphate wood pulp) in reel widths up to 2500 mm. The elasticity and pliability of the base paper combined with controlled creping process parameters determine the properties of the final product. Careful final inspection ensures compliance with the most demanding requirements.

#### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60554-2 and 60243-1. These typical values do not constitute specifications of WEIDMANN products.



Type	Thickness	Master size	Standard widths	Standard roll diameters		Norm
				Internal	External	
60/90	0.30 mm	2500 mm	750, 1000, 1500, 2500 mm	70, 76 mm	550 mm	IEC 60554-3-3, type 3.2-90-50F
60/120	0.35 mm					IEC 60554-3-3, type 3.2-120-100F
60/170	0.47 mm					IEC 60554-3-3, type 3.2-170-185F
67/100	0.41 mm					IEC 60554-3-3, type 3.2-100-50M
67/130	0.41 mm					IEC 60554-3-3, type 3.2-130-100F
80/120	0.38 mm					IEC 60554-3-3, type 3.2-120-50F
80/160	0.47 mm	1500 mm	750, 1000, 1500 mm	70, 76 mm	550 mm	IEC 60554-3-3, type 3.2-160-100F
100/150	0.46 mm					IEC 60554-3-3, type 3.2-150-50F
100/200	0.54 mm					IEC 60554-3-3, type 3.2-200-100C

Slit coils widths: min. 20 mm, ID: 50 mm, OD: ~ 100 – 300 mm

## CREPE PAPER TYPE 60/90

Property		Unit	Value
Grammage		g/m <sup>2</sup>	94
Hill count		cm <sup>-1</sup>	17
Extended tensile index	machine direction	Nm/g	70
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	4.3
	cross machine direction	kN/m	3.0
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	52
	cross machine direction	%	4.2
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.1
pH of aqueous extract		–	6.9

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 60/120

Property		Unit	Value
Grammage		g/m <sup>2</sup>	122
Hill count		cm <sup>-1</sup>	20
Extended tensile index	machine direction	Nm/g	51
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	4.1
	cross machine direction	kN/m	4.3
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	98
	cross machine direction	%	4.1
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.3
pH of aqueous extract		–	7.0

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 60/170

Property		Unit	Value
Grammage		g/m <sup>2</sup>	171
Hill count		cm <sup>-1</sup>	18
Extended tensile index	machine direction	Nm/g	60
	cross machine direction	Nm/g	35
Tensile strength	machine direction	kN/m	3.8
	cross machine direction	kN/m	5.7
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	173
	cross machine direction	%	4.9
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.4
pH of aqueous extract		–	6.9

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 67/100

Property		Unit	Value
Grammage		g/m <sup>2</sup>	104
Hill count		cm <sup>-1</sup>	12
Extended tensile index	machine direction	Nm/g	69
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	4.7
	cross machine direction	kN/m	3.3
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	52
	cross machine direction	%	4.3
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.0
pH of aqueous extract		–	6.8

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 67/130

Property		Unit	Value
Grammage		g/m <sup>2</sup>	134
Hill count		cm <sup>-1</sup>	16
Extended tensile index	machine direction	Nm/g	63
	cross machine direction	Nm/g	36
Tensile strength	machine direction	kN/m	4.5
	cross machine direction	kN/m	4.6
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	96
	cross machine direction	%	4.7
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	1.9
pH of aqueous extract		–	6.8

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 80/120

Property		Unit	Value
Grammage		g/m <sup>2</sup>	122
Hill count		cm <sup>-1</sup>	15
Extended tensile index	machine direction	Nm/g	67
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	5.3
	cross machine direction	kN/m	4.0
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	54
	cross machine direction	%	5.0
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.0
pH of aqueous extract		–	6.9

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 80/160

Property		Unit	Value
Grammage		g/m <sup>2</sup>	161
Hill count		cm <sup>-1</sup>	15
Extended tensile index	machine direction	Nm/g	63
	cross machine direction	Nm/g	35
Tensile strength	machine direction	kN/m	5.0
	cross machine direction	kN/m	5.4
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	103
	cross machine direction	%	5.0
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.0
pH of aqueous extract		–	6.8

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 100/150

Property		Unit	Value
Grammage		g/m <sup>2</sup>	152
Hill count		cm <sup>-1</sup>	15
Extended tensile index	machine direction	Nm/g	57
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	5.3
	cross machine direction	kN/m	6.0
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	50
	cross machine direction	%	4.1
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	2.0
pH of aqueous extract		–	6.8

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## CREPE PAPER TYPE 100/200

Property		Unit	Value
Grammage		g/m <sup>2</sup>	206
Hill count		cm <sup>-1</sup>	8
Extended tensile index	machine direction	Nm/g	57
	cross machine direction	Nm/g	33
Tensile strength	machine direction	kN/m	5.7
	cross machine direction	kN/m	6.6
Dissipation factor in air/oil*		20 °C	0.0035
		90 °C	0.0040
Elongation at break	machine direction	%	109
	cross machine direction	%	4.4
Ash content		%	0.3
Conductivity of aqueous extract		mS/m	1.9
pH of aqueous extract		–	6.9

\*Oil in the paper pores contributes to the dissipation factor value. If the oil is new and properly processed, nearly the same values as for the measurements in air can be obtained.

## ALUMINIUM CREPE PAPER

### HIGH ELONGATION PAPER FOR ELECTROSTATIC SHIELDING

Aluminium Crepe Paper provides efficient shielding against electrostatic fields. The eddy current formation in the aluminium caused by magnetic fields is moderate. Typical applications include transformer coils, cables, bushings, electronic components, and other electrical devices.

To manufacture this paper, WEIDMANN laminates electrical kraft paper on aluminium foil, using a nonconductive adhesive that is insoluble in water and hot oil. Its high elongation and flexibility allows Aluminium Crepe Paper to wrap snugly and precisely around any size or shape.

#### TECHNICAL DATA

The technical data reflect typical results of routine tests performed in WEIDMANN laboratories according to IEC standards 60554-2 and 60243-1. These typical values do not constitute specifications of WEIDMANN products.





## ALUMINIUM CREPE PAPER

Thickness		Master size	Standard width	Standard roll diameters for slit tapes		Standard roll diameters for master roll	
Total uncreped	Total creped			Internal	External	Internal	External
0.09 mm*	0.38 mm	730 mm	730 mm	50 mm	135, 190, 300 mm	70 mm	550 mm

\*Aluminium layer thickness: 0.009 mm (9 µm)

Property		Unit	Value
Grammage		g/m <sup>2</sup>	136
Hill count		cm <sup>-1</sup>	15
Extended tensile index	machine direction	Nm/g	57
	cross machine direction	Nm/g	29
Tensile strength	machine direction	kN/m	4.9
	cross machine direction	kN/m	3.8
Elongation at break	machine direction	%	56
	cross machine direction	%	3.0
Moisture content		%	< 6
Conductivity of aqueous extract		mS/m	6.8
pH of aqueous extract		–	7.3

## STORAGE RECOMMENDATION

Cellulose-based insulation exhibits hygroscopic properties. Therefore, it should be kept dry in the storeroom. On receipt of a consignment of material, the packing must be examined to ascertain that it is undamaged and the moisture proof wrapping is intact. If the wrappers are satisfactory, it is preferable to leave the material in its original packing until near the time for use.

If the packaging material shows any sign of damage, it is advisable to check that the contents are dry and then repair the wrappers before placing the insulation in the storage area. Insulation must never be stored directly on a concrete floor but must always be kept on wooden pallets or shelves.

Do not store any insulation exposed to direct sunlight, near radiators or open windows and doors or beneath overhead heaters.

Before use it is also recommended that crates and cases should be unpacked and the material allowed to adjust to the prevailing relative humidity of the storeroom/workshop. This does not mean that rolls and sheets etc. can be left uncovered. They must always be kept clean and protected from airborne dust and droplets of moisture that may condense on, and fall from, overhead structures.



Packing method of Crepe Paper with a roll width of 2.50 m



#### **STORAGE OF DIAMOND DOTTED PRESSPAPER**

At room temperature (20°C), Diamond Dotted Presspapers may be stored for one year avoiding direct sunlight and proximity to radiators. If stored at the limit of the shelf life or at higher temperatures, it is recommended to test the reactivity of the resin before use.

