PLASTIC TECHNOLOGIES






INSULATING SOLUTIONS.
KNOWLEDGE. INNOVATION. QUALITY.

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PLASTIC TECHNOLOGIES

WKT PLASTIC TECHNOLOGIES.
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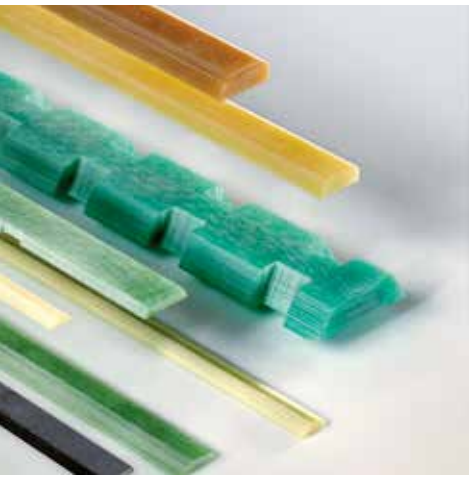
KNOWLEDGE. INNOVATION. QUALITY.

150000 V. 1000° C. Since 1994 the WKT group is specialised in solving technically demanding electrical and heat insulation challenges. We ensure that single components or complete buildings are protected effectively and long-lastingly against extreme high-voltage or thermal stresses.

Based on more than 100 employees worldwide, the most modern CNC-equipment, high-quality fibre-reinforced plastic materials and a large amount of innovation we manufacture insulating components for diverse applications. Our workforce includes electrical engineers, toolmakers, cabinet makers, mechanics and adhesive experts. Like a big family we work together to achieve results we can all be proud of. We provide solutions which excite our customers and manufacture components which exceed their expectations.

Solving technical challenges is the passion of the owners and the whole team.

When our customers have innovative ideas we like to bring in our specialized knowledge right from the beginning. Professional advice on the choice of materials as well as manufacturing to high-precision specifications is a matter of course in our company. By means of a high-performance tension testing machine and a five-axle-measuring system the quality of our products is permanently monitored. Quality made by WKT, certified according to ISO 9001.



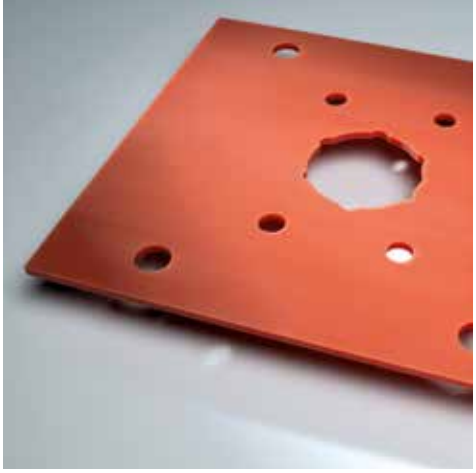
ELECTRICAL INSULATION.
PROTECTION AGAINST HIGH VOLTAGE AND CREEPING CURRENT.
STRONG AS STEEL.

Our insulation parts made of high-strength fibre-reinforced plastics which are a good alternative to steel. The parts are corrosion-resistant and insulate even in case of high voltages. The most important applications are in the power generation and power distribution industry's where both low and high voltages are used. Many of our customers no longer ask for single parts, but for sub-assemblies and systems.

Therefore we can offer complete solutions from one source.

TYPICAL APPLICATIONS

+ Generators
+ Electric motors
+ Transformers
+ High-current distributions
+ Switchgears
+ Wind generators
+ Traffic engineering

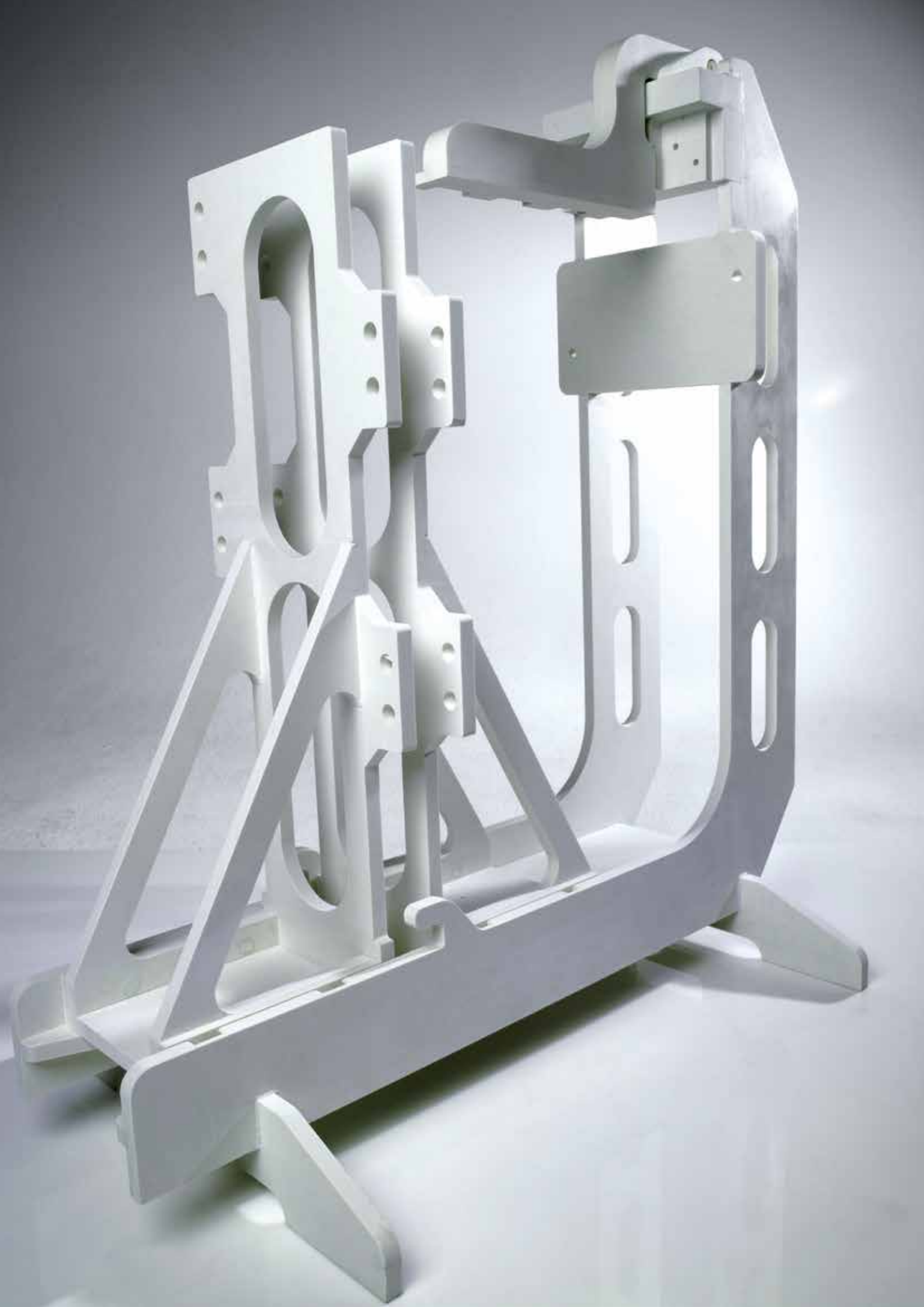


HEAT INSULATION.
PROTECTION AGAINST EXTREME TEMPERATURES WITH THE HIGHEST PRECISION.

An excellent heat resistance up to 1000 °C and high-precision machining in our modern CNC-equipment characterise our components for thermal insulation. We manufacture these high performance materials with a tolerance of 5/100 millimeters! Such precise machining is demanded by our customers who often use our components within the tool and mold construction industry.

TYPICAL APPLICATIONS

+ Steel industry
(e.g. furnace engineering)
+ Glass industry
+ Tool- and mold construction
+ Machine and press manufacturing
+ Automobile industry
+ Railway technology

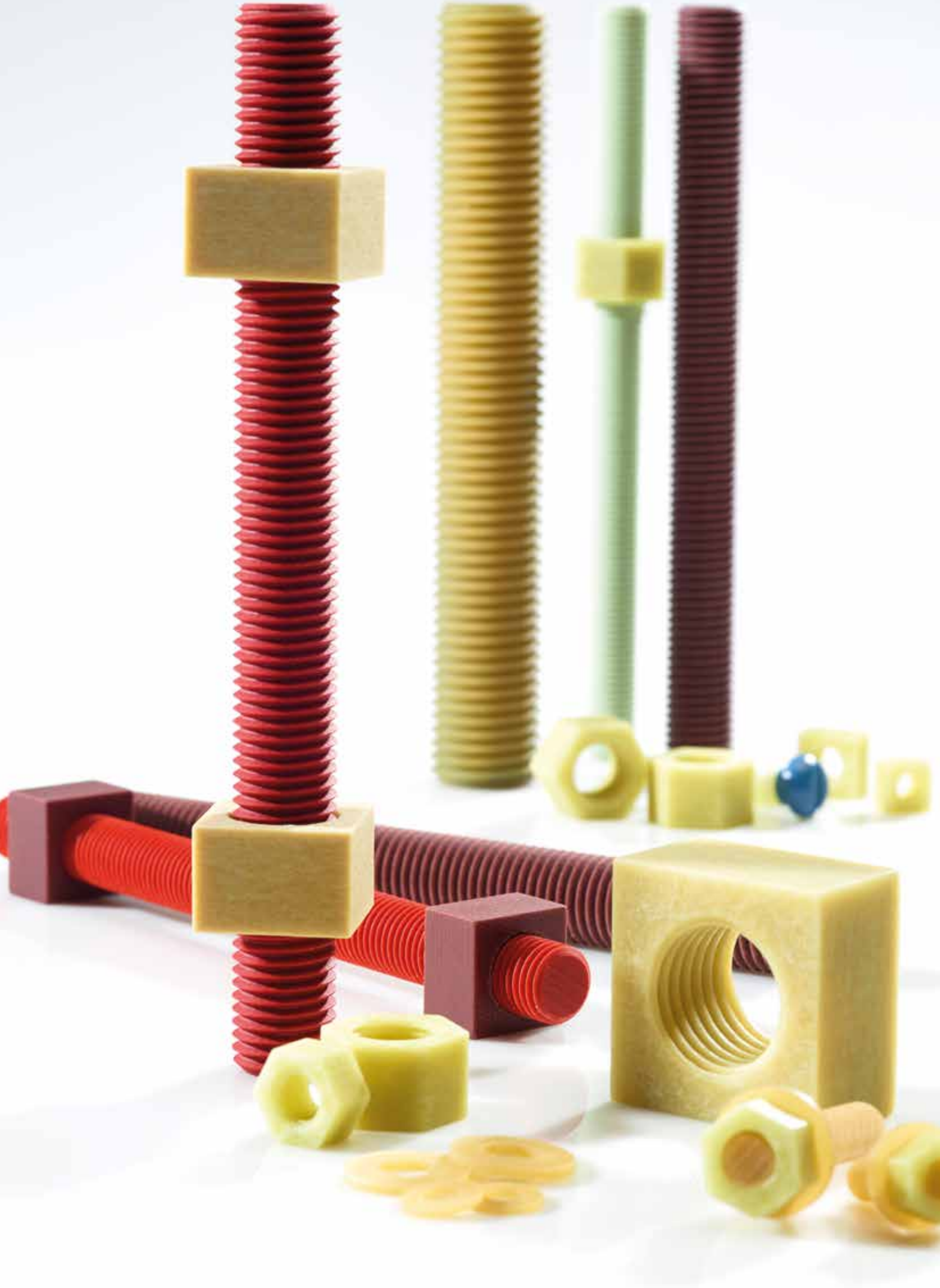


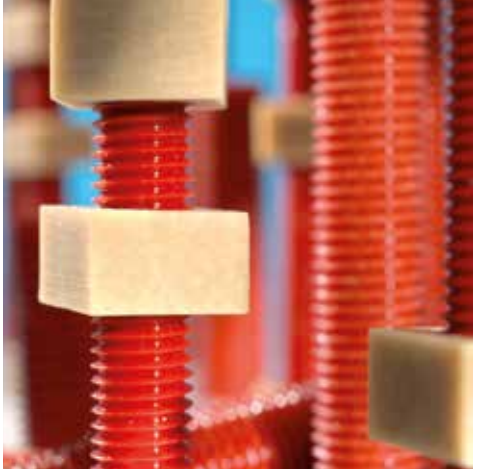
MECHANICAL ENGINEERING.
HIGH-PRECISION AND INSULATING.

Materials which are lighter and stronger than steel are more and more frequently required. That these materials are additionally corrosion-resistant and insulating is one of the reasons why our products are becoming increasingly successful. Our long experience with these modern laminates is considered by our customers to be a major benefit. The solutions we can achieve are always convincing and due to the close communication with the production department we can provide an outstanding flexibility. Whether production is of small or large quantities – the quality and adherence to delivery dates is always at the forefront of our thoughts.

TYPICAL APPLICATIONS

+ Medical technology
+ Sorting- and conveyor systems
+ Pharmaceutical machines
+ Aircraft industry
+ Packaging machine engineering
+ Mechanical tool engineering
+ Fixture construction





THREADED RODS.
CORROSION-RESISTANT.
CREEPING CURRENT RESISTANT.
FLAME-RETARDANT.

Threaded rods ranging from M6 to M20 and a length of up to 1.900 millimetres.
Metric threads, fine pitch threads and With-worth threads. Manufactured from glass-fibre reinforced plastics (GRP) according to DIN 13-19. Temperatures from -40 °C up to +250 °C and voltages up to 150 kV. Including the corresponding nuts and washers made of the same material. These products have more exact tolerances than their equivalents made of metal.

Our standard threaded rods made of GRP are used in many different applications. Many of these applications require an electrical insulation function.

For special requirements our series WKT 476 is used. Flame-retardant according to UL 94 V0 and creeping current resistant. Optimal for the use in the railway traffic and electrical field.

TYPICAL APPLICATIONS

+ High voltage facilities
+ Transformers
+ Refrigeration
+ Facade engineering
+ Railway traffic

ZERTIFIKAT ■ CERTIFICATE ■ 認證證書 ■ СЕРТИФИКАТ ■ CERTIFICADO ■ CERTIFICAT

TÜV SÜD Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that

WKT Wernemann Kunststofftechnik GmbH
Daimlerstraße 5, 49744 Geeste, Germany

Scope of application:
Manufacture and distribution of
GRP-materials for the electrical industry
and mechanical engineering

WKT Press Technologies GmbH
Daimlerstraße 5, 49744 Geeste, Germany

Scope of application:
Manufacture of fibre reinforced plastic Sheets

has established and applies
a Quality Management System.

An audit was performed, Report No. **70750933**.

Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled.

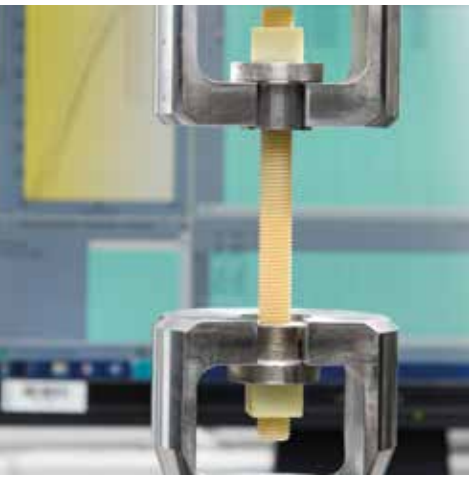
The certificate is valid from **2015-05-15** until **2018-05-14**.

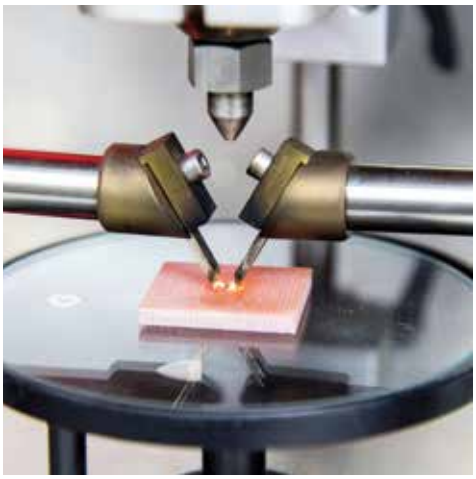
Certificate Registration No. **12 100 35937 TMS**.

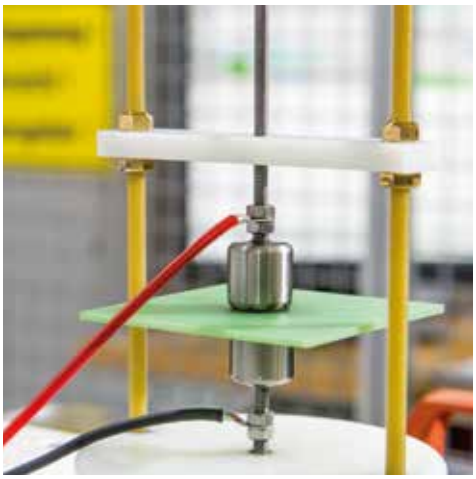
Product Compliance Management
Munich, 2015-04-20

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 65 • 80339 München • Germany
www.tuev-sued.de/certificate-validity-check

TÜV®







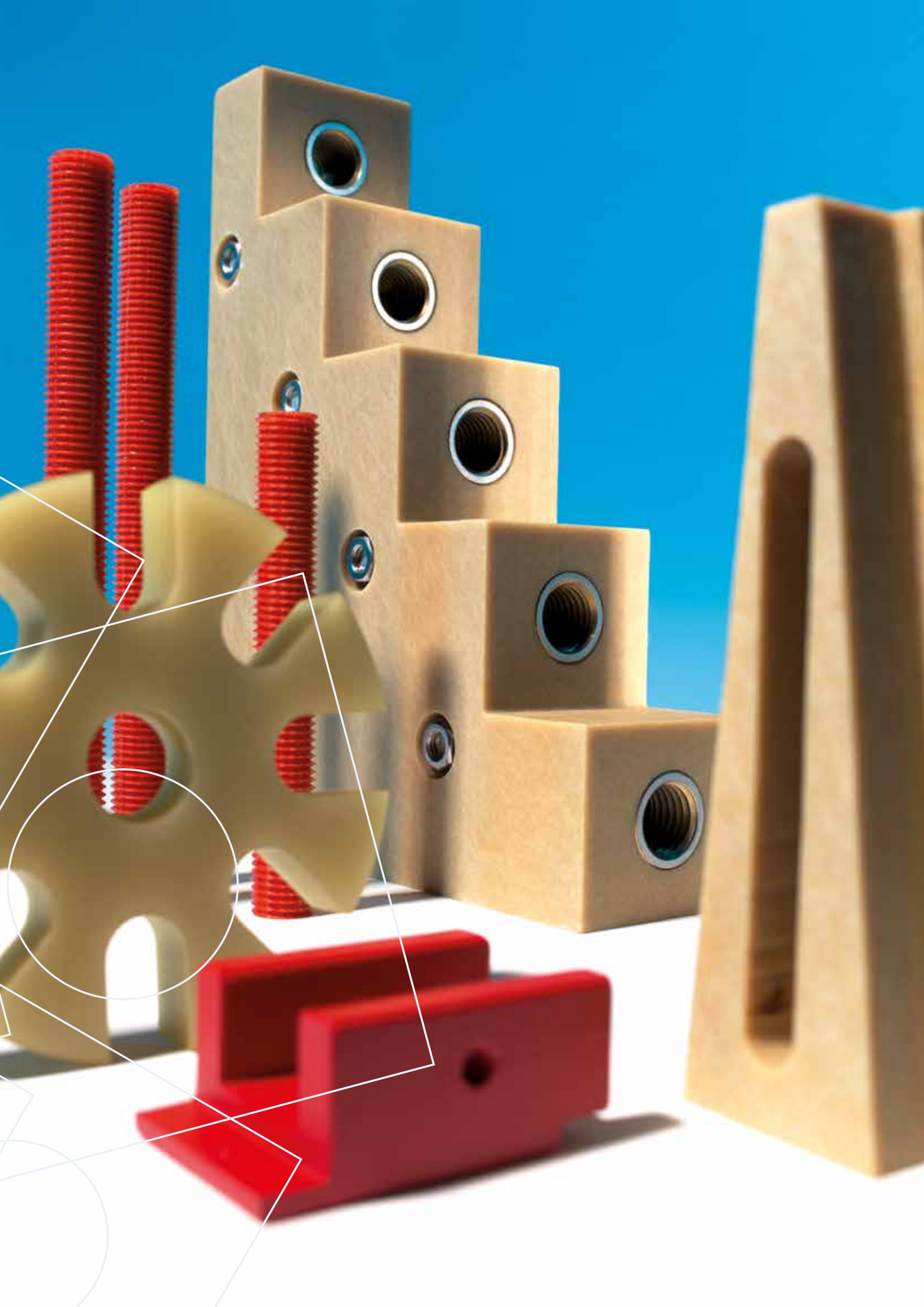
QUALITY.

A permanent quality assurance is a matter of course. Therefor we regularly carry out diverse material tests in the internal laboratory.

SCOPE OF TESTING:

+ Tensile strength
+ Bending strength
+ Compressive strength
+ Tracking resistance
+ Dielectric strength
+ Partial discharge
+ Heat resistance
+ DSC-analysis
+ Incineration tests/Material composition
+ Thread-laser check

THERMOSETTING PLASTICS



LAMINATED PAPER

Laminated paper consists of phenolic-formaldehyde resin (PF) and paper sheets. The paper sheets impregnated with PF are laminated in several layers. Afterwards these prepregs are pressed at approximately 150 °C and under extremely high pressure.

Laminated paper features by a good mechanical and electrical strength as well as an excellent resistance to weathering and humidity.

TYPICAL APPLICATIONS

+ Construction elements for mechanical engineering and automotive industry
+ High-voltage industry

CHARACTERISTICS

+ Good weathering and humidity resistance
+ High mechanical and electrical strength
+ Heat resistance up to 120 °C

TECHNICAL DATA

PRODUCT	Unit	WKT 161	WKT 161.5	WKT 163	WKT162.9
Standards	IEC 60893	PF CP 201	PF CP 202	PF CP 204	PF CP 205
	NEMA LI-1	XXP	XX	XXXPC	FR 2
	DIN 7735	HP 2061	HP 2061.5	HP 2063	HP 2062.9
MECHANICAL CHARACTERISTICS					
Bending strength	MPa	150	130	80	60
Tensile strength //	MPa	120	100	70	60
Compressive strength ⊥	MPa	150	150	---	---
Modulus of elasticity	MPa	7000	7000	7000	5000
ELECTRICAL CHARACTERISTICS					
Dielectric strength //	kV	15	40	20	20
Dielectric strength ⊥	kV/mm	15	40	25	25
Tracking resistance	CTI	100	100	100	100
THERMAL CHARACTERISTICS					
Heat resistance	°C	120	120	120	90
Thermal conductivity	W/mK	0,2	0,2	0,2	0,25
MISC. CHARACTERISTICS					
Density	g/cm³	1,4	1,4	1,4	1,4
Flammability	UL 94	---	---	---	V0
Water absorption (5 mm)	%	0,9	1,0	1,1	0,65
Resin		PH	PH	PH	PH
Type of reinforcement		Paper	Paper	Paper	Paper
Colour		dark brown	brown	light brown	light brown

We are well prepared to offer further qualities upon request.
All measured values have been determined at room temperature.
The indicated data describe average values (typical measuring values).
The values are not legally binding so that we cannot accept any responsibility for their accuracy.
The listed materials are compliant according to RoHS.

COTTON LAMINATED FABRICS

Cotton laminated fabrics consist of phenolic-formaldehyde resin (PF) and cotton fabrics. The fabrics impregnated with PF are laminated in several layers. Afterwards these prepregs are pressed at approximately 150 °C and under extremely high pressure.

Cotton laminated fabrics are characterized by an excellent mechanical strength. Additionally this material is equipped with good sliding properties and is resistant against solvents, weak lyes, oils and fuels.

TYPICAL APPLICATIONS

+ Bearings / bearing segments
+ Construction elements for packing- and food industry
+ Transformer industry

CHARACTERISTICS

+ Good weathering and humidity resistance
+ Heat resistance up to 120 °C

TECHNICAL DATA

PRODUCT	Unit	WKT 182	WKT 182.5	WKT 182.2	WKT 183
Standards	IEC 60893	PF CC 201	PF CC 202	PF CC 201 + MOS2	PF CC 203
	NEMA LI-1	C	CE	---	L
	DIN 7735	HGW 2082	HGW 2082.5	HGW 2082 + MOS2	HGW 2083
MECHANICAL CHARACTERISTICS					
Bending strength	MPa	130	115	100	150
Tensile strength //	MPa	80	60	60	100
Compressive strength ⊥	MPa	170	150	200	170
Modulus of elasticity	MPa	7000	7000	6000	7000
ELECTRICAL CHARACTERISTICS					
Dielectric strength //	kV	8	20	---	8
Dielectric strength ⊥	kV/mm	5	5	---	5
Tracking resistance	CTI	100	100	100	100
THERMAL CHARACTERISTICS					
Heat resistance	°C	120	120	120	120
Thermal conductivity	W/mK	0,2	0,2	0,2	0,2
MISC. CHARACTERISTICS					
Density	g/cm³	1,35	1,35	1,35	1,35
Water absorption (5 mm)	%	1,0	0,7	1,0	1,25
Resin		PH	PH	PH	PH
Type of reinforcement		Cotton fabrics	Cotton fabrics	Cotton fabrics	Cotton fabrics
Colour		brown	brown	brown	brown

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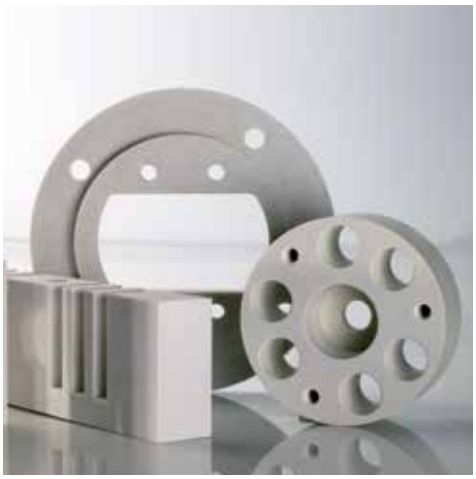

POLYESTER RESIN LAMINATES

Polyester resin laminates are based on an unsaturated polyester resin (UP) in connection with a reinforcement of glass mats. These polyester laminates are equipped with outstanding electrical properties as well as a very low smoke density and toxicity.

TYPICAL APPLICATIONS

+ Switchgear industry
+ High-voltage industry
+ Traffic engineering
+ Transformer industry

CHARACTERISTICS

+ Excellent electrical insulation properties
+ Tracking resistance: CTI 600
+ Heat resistance up to 155 °C

TECHNICAL DATA

PRODUCT	Unit	WKT 171	WKT 108	WKT 173	WKT 174	WKT 175
STANDARDS	**IEC 60893**	**UP GM 203**	**UP GM 203**	**UP GM 203**	**UP GM 204**	**UP GM 205**
	NEMA LI-1	**GPO-3**	**GPO-3**	**GPO-3**	**---**	**---**
	DIN 7735	**HM 2471**	**HM 2471**	**HM 2472**	**---**	**---**
MECHANICAL CHARACTERISTICS						
Tensile strength //	MPa	70	80	110	150	≥ 160
Bending strength	MPa	130	150	200	250	350
Compressive strength ⊥	MPa	240	255	350	400	500
Modulus of elasticity	MPa	9000	9000	12000	16000	≥ 20000
THERMAL CHARACTERISTICS						
Heat resistance	°C	155	155	155	155	155
Thermal class		F	F	F	F	F
Thermal conductivity	W/mK	0,3	0,3	0,3	0,3	0,3
Coeffecient of linear expansion	$10^{-6}/K^{-1}$	15 - 30	15 - 30	15 - 30	15 - 30	10 - 20
ELECTRICAL CHARACTERISTICS						
Dielectric strength ⊥	KV/mm	13	13	13	13	13
Dielectric strength //	KV	70	70	70	60	60
Tracking resistance	CTI	600	600	600	600	600
Insulation resistance (after storing in water)	mΩ	105	105	104	105	105
MISC. CHARACTERISTICS						
Density	gr/cm3	1,85	1,9	1,85	1,85 - 1,9	1,9 - 2,0
Flammability	UL 94	V0	V0	V0	V0	V0
Fire protection	EN 45545-2 R22, R23	---	HL 3	---	---	---
Water absorption	%	0,1	0,1	0,1	0,1	0,1
Halogen-free		Ja	Ja	Ja	Ja	Ja
Type of resin		UP	UP	UP	UP	UP
Type of reinforcement		Glass mats	Glass mats	Glass mats	Glass mats/roving	Glass mats/roving
STANDARD SIZE						
Thickness mm	2,0 - 40	3720 x 1020	3720 x 1020	3720 x 1020	3720 x 1020	3720 x 1020
	40 - 130	2020 x 1020	2020 x 1020	2020 x 1020	2020 x 1020	2020 x 1020
Color		white, red	white	white, red	white	white, mintgreen

We are well prepared to cut the sheets to the required dimension upon repuest.

We are well prepared to offer further qualities upon request.
All measured values have been determined at room temperature.
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EPOXY RESIN LAMINATES

Epoxy resin laminates are based on an epoxy resin (EP) in connection with a reinforcement of glass fabrics resp. glass mats. These laminates feature excellent mechanical and electrical properties as well as a high flame resistance.

TYPICAL APPLICATIONS

+ Motor- and generator industry
+ High-voltage industry
+ Traffic engineering
+ Mechanical engineering
+ Electrical industry

CHARACTERISTICS

+ High mechanical strength
+ Excellent electrical insulation properties
+ Heat resistance from 130 °C up to 180 °C

TECHNICAL DATA

PRODUCT	Unit	WKT 270	WKT 272.1	WKT 272	WKT 206	WKT 272 M	WKT 276	WKT 273
Standards	IEC 60893	EP GC 205	EP GC 202	EP GC 203	EP GC 306 EP GC 308	---	EP GC 204	EP GM 203
	NEMA LI-1	---	FR 4	G 11	G 11	---	FR 5	---
	DIN 7735	HGW 2370.4	HGW 2372.1	HGW 2372.4	HGW 2372.4	---	HGW 2372.2	---
MECHANICAL CHARACTERISTICS								
Bending strength	MPa	550	500	500	550	160	450	400
Tensile strength //	MPa	420	350	350	375	---	330	250
Compressive strength ⊥	MPa	450	420	450	620	---	550	500
Modulus of elasticity	MPa	22000	24000	24000	24000	14000	24000	18000
ELECTRICAL CHARACTERISTICS								
Dielectric strength //	kV	50	50	50	80	---	75	60
Dielectric strength ⊥	kV/mm	12	13	13	20	---	15	13
Tracking resistance	CTI	200	200	200	500	---	600M	225
THERMAL CHARACTERISTICS								
Heat resistance	°C	155	130	155	180	155	180	180
Thermal conductivity	W/mK	0,25	0,3	0,25	0,25	---	0,25	0,3
MISC. CHARACTERISTICS								
Density	g/cm³	1,9	1,9	1,9	1,9	3,5	2	1,9
Flammability	UL 94	---	V0	---	---	---	V0	---
Water absorption (5 mm)	%	0,05	0,05	0,06	0,04	---	0,05	0,1
Resin		EP	EP	EP	EP	EP	EP	EP
Type of reinforcement		Glass roving-fabrics	Glass fabrics	Glass fabrics	Glass fabrics	Glass fabrics / iron powder	Glass fabrics	Glass mats
Colour		yellow-bown	yellow (nature)	yellow (nature) green	yellow-brown	grey	red-brown	yellow

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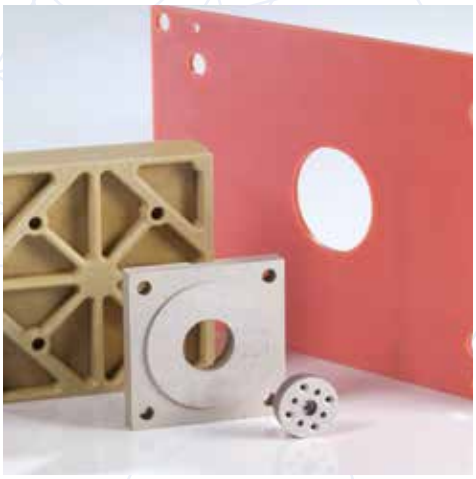

HIGH TEMPERATURE PRODUCTS / PRESSURE RESISTANT INSULATIONS

The family of the high-temperature products is designed for applications from +200 °C up to +1000 °C.

TYPICAL APPLICATIONS

+ Steel industry
+ Glass industry
+ Tool and mould construction
+ Mechanical engineering

CHARACTERISTICS

+ Excellent heat resistance up to 1000 °C
+ High mechanical strength
+ Good thermal insulation
+ Low thermal conductivity

TECHNICAL DATA

PRODUCT	Unit	WKT 195	WKT 295	WKT 600 M	WKT 800 M	WKT 800 XP	WKT 1000
MECHANICAL CHARACTERISTICS							
Bending strength	MPa	≥ 200	400	230	170	185	16
Tensile strength //	MPa	100	350	170	120	---	---
Compressive strength ⊥	MPa	≥ 300	600	400	330	45	31
Compressive strength ⊥ (200 °C)	MPa	155	---	---	---	---	---
ELECTRICAL CHARACTERISTICS							
Dielectric strength ⊥	kV/mm	---	80	25	25	1,8	4,7
Tracking resistance	CTI	---	450	600	600	600	600
THERMAL CHARACTERISTICS							
Heat resistance	°C	200	250	600	800	700	1000
Thermal conductivity	W/mK	0,2	0,24	0,26	0,26	0,32	0,37
Coefficient of linear expansion	$10^{-6}K^{-1}$	15-20	14	10	10	6,6	6,4
MISC. CHARACTERISTICS							
Density	g/cm^3	1,65	1,9	2,2	2,2	1,8	1,4
Water absorption (5 mm)	%	0,15	0,1	1	1	---	---
Type of reinforcement		Glass fabrics	Glass fabrics	Muskovit-mica	Phlogopit-mica	Calcium silicate	Calcium silicate
Colour		white	red	silver-grey	anthrazit-grau	white	white

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THREADED RODS

Threaded rods made of GRP are used for different applications, especially in ranges which require electrical insulation. Temperatures from -40 °C up to +250 °C and voltages up to 150 kV are resisted. For special requirements our series WKT 476 is used. Flame-retardant according to UL 94 V0 and creeping current resistant. Optimal for use in the railway traffic and electrical field.

TYPICAL APPLICATIONS

+ High-voltage constructions
+ Transformers
+ Refrigeration technique
+ Structural-facings sector
+ Railway traffic

CHARACTERISTICS

+ Excellent electrical insulation properties
+ Flame-retardant and creeping current resistant
+ High mechanical strength
+ Heat resistance up to +250 °C

TECHNICAL DATA

PRODUCT	Unit	WKT 472	WKT 472	WKT 472	WKT 472	WKT 472	WKT 472
Nominal diameter		M 6	M 8	M 10	M 12	M 16	M 20
Breaking load (H=D)	N	3000	7200	11000	18000	31000	36500
Heat resistance	°C	180	180	180	180	180	180
Tracking resistance	CTI	500	500	500	500	500	500

PRODUCT	Unit	WKT 476	WKT 476	WKT 476	WKT 476	WKT 476	WKT 476
Nominal diameter		M 6	M 8	M 10	M 12	M 16	M 20
Breaking load (H=D)	N	2550	6100	9400	15500	26500	31000
Heat resistance	°C	180	180	180	180	180	180
Tracking resistance	CTI	600	600	600	600	600	600
Flammability	UL 94	V0	V0	V0	V0	V0	V0

We are well prepared to offer further qualities and variants upon request.

The standard length is 1900 mm.
H = Height of the nut.
D= Diameter of the threaded rod.

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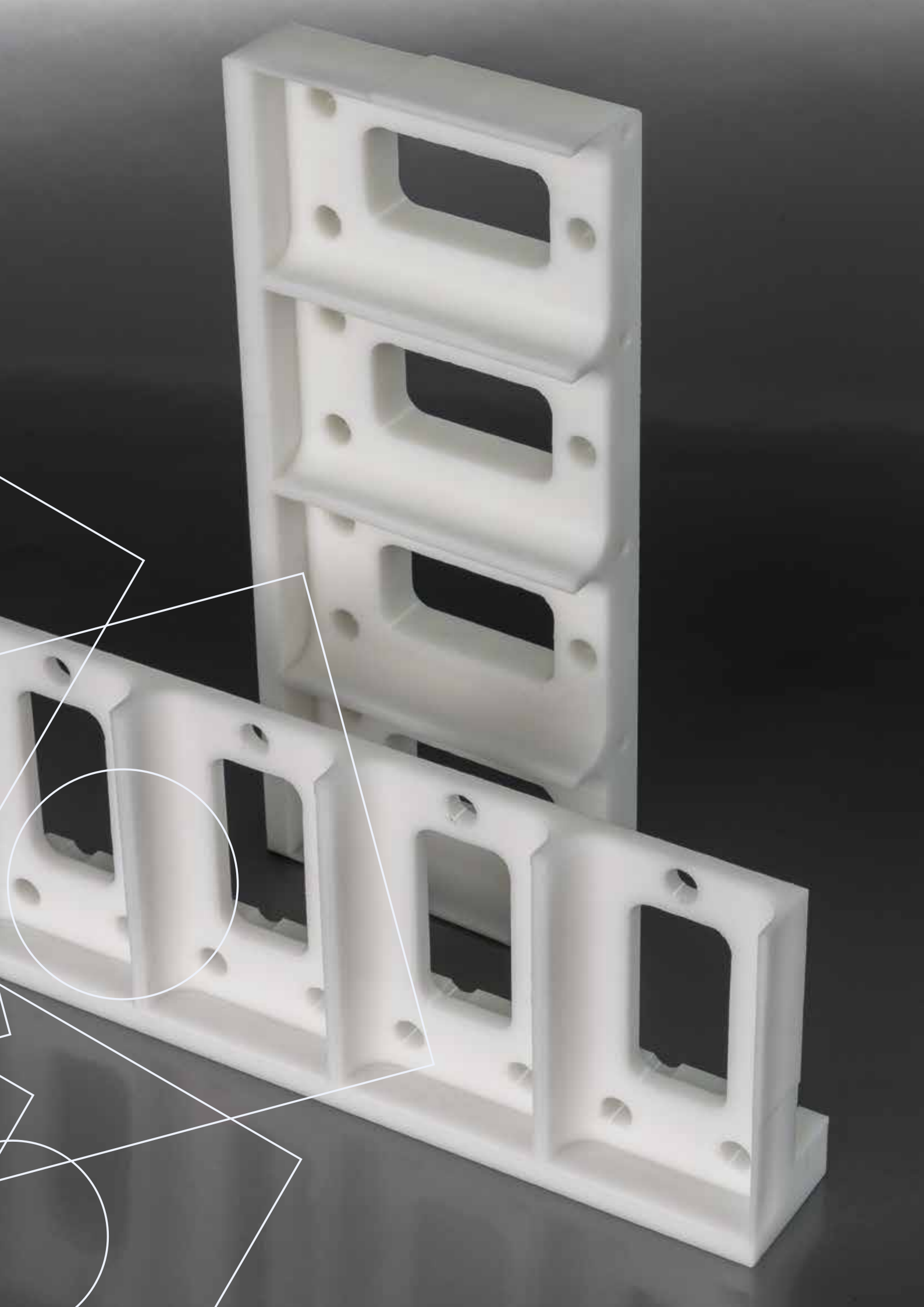
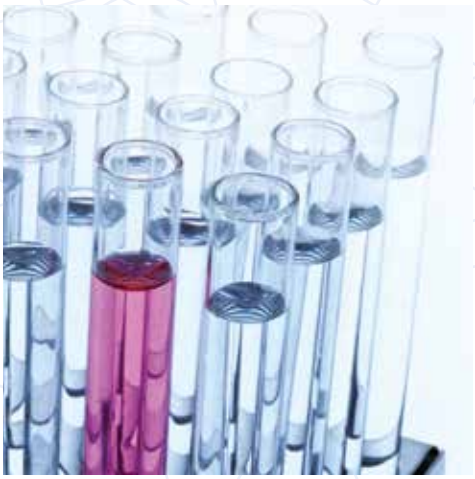
THERMOPLASTICS





ENGINEERING MATERIALS

Engineering materials are provided with a high mechanical strength in combination with an outstanding resistance against chemicals and wear.

TYPICAL APPLICATIONS

+ Mechanical engineering
+ Medical industry
+ Chemical industry
+ Traffic engineering

CHARACTERISTICS

+ High mechanical strength
+ High mechanical damping capacity
+ High fatigue strength
+ Excellent wear resistance
+ Good sliding and emergency running properties

TECHNICAL DATA – POLYAMIDES

PRODUCT	Unit	PA 6 E	PA 6 G	PA 6.6	PA 6.6 GF30
MECHANICAL CHARACTERISTICS					
Bending strength	MPa	130	140	135	---
Tensile stress at yield	MPa	75	80	85	160
Modulus of elasticity (tensile test)	MPa	2700	3100	3000	11000
Modulus of elasticity (bending test)	MPa	2500	3400	2900	---
Ball indentation hardness	MPa	150	160	170	240
Charpy-impact strength	kJ/m²	no break	no break	no break	50
Charpy-impact stress notched	kJ/m²	5,5	3,5	6	6
ELECTRICAL CHARACTERISTICS					
Surface resistance	Ω	10^{13}	10^{13}	10^{12}	10^{13}
Specific insulation resistance	Ω*cm	10^{15}	10^{15}	10^{15}	10^{14}
Dielectric strength ⊥	kV/mm	50	50	50	60
Tracking resistance	CTI	600	600	600	475
THERMAL RESISTANCE					
Upper service temperature	°C	100	105	100	120
Lower service temperature	°C	-30	-40	-30	-30
Short-time temperature	°C	140	170	150	180
Thermal conductivity	W/mK	0,23	0,23	0,23	0,3
MISC. CHARACTERISTICS					
Density	g/cm³	1,14	1,15	1,14	1,35
Flammability	UL 94	HB	HB	HB	HB
Water absorption (5 mm)	%	10	6,5	9	5,5
Colour		nature black	nature black blue	nature black	black

We are well prepared to offer further qualities upon request.
All measured values have been determined at room temperature.
The indicated data describe average values (typical measuring values).
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TECHNICAL DATA - POLYETHYLENE

PRODUCT	Unit	PE 300	PE 500	PE 1000
		PE-HD	PE-HMW	PE-UHMW
MECHANICAL CHARACTERISTICS				
Bending strength	MPa	35	40	30
Tensile stress at yield	MPa	25	30	25
Modulus of elasticity (tensile test)	MPa	800	850	800
Modulus of elasticity (bending test)	MPa	800	850	800
Ball indentation hardness	MPa	40	45	40
Charpy-impact strength	kJ/m²	no break	no break	no break
Charpy-impact stress notched	kJ/m²	12	50	no break
ELECTRICAL CHARACTERISTICS				
Surface resistance	Ω	10^{14}	10^{14}	10^{14}
Specific insulation resistance	Ω*cm	10^{16}	10^{16}	10^{16}
Dielectric strength ⊥	kV/mm	45	45	45
Tracking resistance	CTI	600	600	600
THERMAL RESISTANCE				
Upper service temperature	°C	50	50	50
Lower service temperature	°C	-50	-100	-260
Short-time temperature	°C	80	80	80
Thermal conductivity	W/mK	0,38	0,38	0,38
MISC. CHARACTERISTICS				
Density	g/cm³	0,95	0,95	0,94
Flammability	UL 94	HB	HB	HB
Water absorption (5 mm)	%	0,01	0,01	0,01
Colour	%	nature black	nature green	nature black green

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TECHNICAL DATA

PRODUCT	Unit	POM-C	PC	PP-H	PVC-U
MECHANICAL CHARACTERISTICS					
Bending strength	MPa	115	95	45	80
Tensile stress at yield	MPa	65	60	30	60
Modulus of elasticity (tensile test)	MPa	3000	2300	1400	3000
Modulus of elasticity (bending test)	MPa	2900	2200	1400	---
Ball indentation hardness	MPa	150	100	70	130
Charpy-impact strength	kJ/m²	no break	no break	no break	no break
Charpy-impact stress notched	kJ/m²	10	25	7	4
ELECTRICAL CHARACTERISTICS					
Surface resistance	Ω	10^{13}	10^{15}	10^{14}	10^{13}
Specific insulation resistance	Ω*cm	10^{15}	10^{17}	10^{16}	10^{16}
Dielectric strength ⊥	kV/mm	70	30	50	40
Tracking resistance	CTI	600	225	600	600
THERMAL RESISTANCE					
Upper service temperature	°C	100	110	80	50
Lower service temperature	°C	-30	-40	0	0
Short-time temperature	°C	140	140	100	70
Thermal conductivity	W/mK	0,31	0,21	0,22	0,16
MISC. CHARACTERISTICS					
Density	g/cm³	1,41	1,2	0,91	1,42
Flammability	UL 94	HB	V2	HB	V0
Water absorption (5 mm)	%	0,8	0,36	0,01	0,01
Colour	%	nature black	nature (clear)	nature grey	black red white grey transparent

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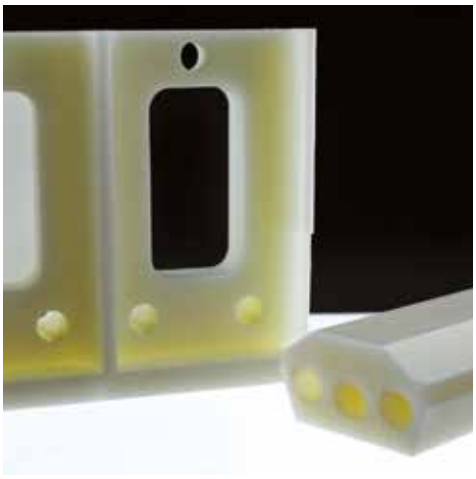

HIGH-PERFORMANCE MATERIALS

High-performance- and high-temperature products are equipped with an excellent heat resistance from -200 °C up to +310 °C and offer an outstanding resistance against chemicals.

TYPICAL APPLICATIONS

+ Nuclear industry
+ Mechanical engineering
+ Medical industry
+ Chemical and petrochemical industry
+ Traffic engineering
+ Food industry

CHARACTERISTICS

+ Excellent heat resistance
+ High mechanical strength

TECHNICAL DATA

PRODUCT	Unit	PEEK	PTFE	PVDF
MECHANICAL CHARACTERISTICS				
Bending strength	MPa	160	6	75
Tensile stress at yield	MPa	95	25	55
Modulus of elasticity (tensile test)	MPa	3600	750	2000
Modulus of elasticity (bending test)	MPa	4100	540	2000
Ball indentation hardness	MPa	230	30	120
Charpy-impact strength	kJ/m^2	no break	no break	no break
Charpy-impact stress notched	kJ/m^2	7	16	15
ELECTRICAL CHARACTERISTICS				
Surface resistance	Ω	10^{16}	10^{17}	10^{13}
Specific insulation resistance	Ω*cm	10^{16}	10^{18}	10^{14}
Dielectric strength ⊥	kV/mm	25	40	25
Tracking resistance	CTI	150	600	600
THERMAL RESISTANCE				
Upper service temperature	°C	250	260	140
Lower service temperature	°C	-40	-200	-40
Short-time temperature	°C	310	280	160
Thermal conductivity	W/mK	0,25	0,23	0,19
MISC. CHARACTERISTICS				
Density	g/cm^3	1,32	2,18	1,78
Flammability	UL 94	V0	V0	V0
Water absorption (5 mm)	%	0,45	0,01	0,04
Colour	%	nature black	nature	nature

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PLASTIC TECHNOLOGIES

HEAD OFFICE
WKT-WERNEMANN KUNSTSTOFFTECHNIK GMBH
Daimlerstraße 5, D-49744 Geeste-Dalum, Germany
Tel.: +49 (0) 5937 9706-0, Fax: +49 (0) 5937 9706-20
Email: info@wkt-group.com

UNITED KINGDOM
UNIVERSAL INSULATING PRODUCTS LTD.
Mr. Todd Littlehales
The Courtyard Buntsford Drive
Stoke Pound Bromsgrove, B60 3DJ, United Kingdom
Tel.: +44 (0) 3300 240 520 - Email: toddlittlehales@uipl.co.uk

SOUTH KOREA
WKT PLASTIC TECHNOLOGIES KOREA CO., LTD.
No. 303-908, Bucheon Techno Park 3 Cha, 397, Seokcheon-ro,
Ojeong-gu, Bucheon-si, Gyeonggi-do, Korea (14449)
Tel.: +82 32 624 2765-6, Fax: +82 32 624 2764, Email: sales@wkt-group.co.kr

SINGAPORE / SOUTHEAST ASIA / CHINA
WERKSTOFF PTE LTD
Mr. Y K Wong
9 Temasek Boulevard 31F, Suntec Tower 2, Singapore 038989
Tel.: +65 67 37 366-7, Fax: +65 67 37 366-9
Email: yk.wong@werkstoff.com.sg

www.wkt-group.com

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