SOVOLTA manufactures high-quality prepregs and laminates as sheets, tubes and rods. Future-oriented and efficient production sites enable us to adjust technical properties of laminates to the specific needs of our customers.

Thanks to our own resin production facilities we can create individual resin systems ideally suited for the professional and flexible manufacture of special products.

INDIVIDUAL LAMINATES FOR INDIVIDUAL REQUIREMENTS
OUR MODE OF OPERATION

A synergy of partnership and experience

The reliable ISOVOLTA supplier network guarantees first-class products and meeting delivery deadlines. A long-term and close cooperation with our suppliers ensures that only the best raw materials are being used in production and provides a supply guarantee characterised by reliable delivery and both innovative thinking and action. All ISOVOLTA partners are ISO-certified and audited by ISOVOLTA.

Our production plants use these substrate materials:
- paper
- cotton fabric
- glass fabric
- carbon fabric

These are impregnated with various resin systems manufactured by ISOVOLTA, such as:
- epoxy resin
- phenol resin
- melamine resin
- silicon resin
and pressed to high quality technical laminates in form of sheets, tubes and rods.

THE ISOVOLTA COMPETENCY

From resin to prepreg – from prepreg to laminate

Polymer chemistry for suitable resins
The development of resin systems is one of the ISOVOLTA core competencies, pursued in dedicated research programmes at our ultra-modern laboratories. This competency enables us to not only maintain high technical standards in products but to continuously develop them further.

Impregnation for individual prepregs
The application or inserting of the resin matrix onto or into the substrate material is done by means of horizontal and vertical impregnation equipment. During this process, special attention must be paid to ensure that the demanded quantity of resin is correctly dosed and that the required degree of tackiness is accurately adjusted. This greatly influences the next processing step of “prepregs” thereby created. It may consist of pressing laminates, rolling tubes and rods or shaping forms. The correct combination of resin and substrate material determines the main chemical, mechanical, electrical and thermal properties of prepregs and therefore of the resulting laminates.

Pressing for versatile laminates
The prepregs are either used in our production plants to make high-pressure laminates, tubes and rods or being sold to fabricators. The pressing of laminates and the curing of tubes and rods are controlled by pressure, temperature and time. The large variety of ISOVOLTA press formats and the many adjustable prepreg parameters enable us to respond effectively to customers’ requirements.
THE ISOVOLTA PRODUCT RANGE

The right properties for every application
**VOLTIS® HP**
- VOLTIS® Hp 2061 (PF CP 201)
- VOLTIS® Hp 2061.5 (PF CP 202)

**VOLTIS® Hgw**
- VOLTIS® Hgw 2082 (PF CC 201)
- VOLTIS® Hgw 2082.5 CE (PF CC 202)
- VOLTIS® Hgw 2083 (PF CC 203)

**VOLTIS® LC**
- VOLTIS® LC 141
- VOLTIS® LC 201

**INBORD®**
- INBORD® E
- INBORD® M
- INBORD® ECS

**Phenolic Paper Laminates**
- Highest mechanical strength, good electric properties at normal humidity
- High electric strength in oil, used in high voltage range at power frequencies

**Phenolic Cotton Laminates**
- Viscoplastic material for mechanical application
- Viscoplastic material for mechanical and electrical application

**Rubber Clad Laminates**
- Also with PTFE or PP film, best solvent resistance
- Also with PTFE or PP film, easy to punch

**Laminates with Melamine Surface**
- Tracking index CTI 600 for switchgear and electric appliances
- Tracking index CTI 200 for mechanical applications and punched pieces
- Tracking index CTI 600 for switchgear with improved safety in case of arcing, with additional glass cloth reinforcement

**ISOVAL®**
- ISOVAL® A (EP GC 201)
- ISOVAL® 10 R
- ISOVAL® H (EP GC 203 & 308)
- ISOVAL® TM (EP GC 203 & 308)
- ISOVAL® FR4-HF (EP GC 202)
- ISOVAL® R (EP GC 205)
- ISOVAL® RKB-FR (similar to EP GC 202)

Epoxy glass fabric laminates with the high-performance and temperature resistant ISOVAL® resin system

- With glass filament fabric for test adapters in printed circuit testing equipment
- With glass roving fabric, high-quality thermal insulation for mechanical engineering and plant engineering and construction where high working temperatures (up to 300 °C) and high pressure loads combined, Thermal Class H (180 °C)
- With glass filament fabric, for electric appliances and transformers, high flexural strength at elevated operating temperatures, Thermal Class H (180 °C)
- High tracking resistance (CTI 600) glass filament fabric, construction material in electric appliances and switchgear especially for applications where surface contamination occurs, Thermal Class H (180 °C)
- With glass filament fabric, high-quality construction material for a wide variety of high-temperature applications, Thermal Class H (180 °C)
- Flame-resistant, halogen-free glass fabric laminate Type FR4, without any toxic flame retardants, UL 94 listed, Thermal Class H (180 °C)
- With glass roving fabric, similar to ISOVAL H, but for larger parts, Thermal Class H (180 °C)
- Tracking resistance of CTI 600, glass roving fabric laminates, for insulating partitions in switchgear, flame resistant, Thermal Class F (155 °C)
Special Glass Laminates

**CONTIVAL®**
- Glass filament fabric, for conductive corona protection for slot packing in high voltage machines, Thermal Class H (180 °C)

**MAGNOVAL®**
- For magnetic slot wedges in high voltage machines, Thermal Class F (155 °C) and Thermal Class H (180 °C)

**VOLTIS ME®**
- Tracking resistant laminate with melamine-resin-impregnated glass fabric, for mechanical and electrical applications: Low flammability

**ISOCARBON®**
- Carbon epoxy laminate with a wide range of applications and a long-term thermal stability of up to 200 °C, 3K or 12K carbon cloth with 0/90° or quasi isotropic fibre orientation

**VOLTACOMP®**
- Multi-functional epoxy-resin-system impregnated glass roving fabric, laminate with high mechanical resilience and excellent thermal properties

**VOLTIS® S1**
- Silicone glass filament fabric, insulation material for high-frequency applications, Thermal Class H (180 °C)

**VOLTIS® Hgw 2072**
- Phenolic/glass filament fabric for electrical applications under high temperatures, flame resistant

**VOLTIS® AND ISOVAL®**

<table>
<thead>
<tr>
<th>VOLTIS®</th>
<th>ISOVAL®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hgw TU 21 (PF CP 21)</td>
<td>Tum 2072 (PF CP 21)</td>
</tr>
<tr>
<td>Hgw TU 21 (PF CP 21)</td>
<td>Hgw TU 22 (PF CP 22)</td>
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<tr>
<td>Hgw TU 22 (PF CP 22)</td>
<td>Hgw RD 41 (PF CP 41)</td>
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<tr>
<td>Hgw RD 41 (PF CP 41)</td>
<td>Hgw RD 42 (PF CP 42)</td>
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**Round rolled and moulded tubes and rods**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Round rolled phenolic paper laminate tube</td>
<td>For mechanical and electrical applications</td>
</tr>
<tr>
<td>Round rolled phenolic fine weave cotton fabric laminate tube</td>
<td>With high toughness for mechanical applications, excellent machinability</td>
</tr>
<tr>
<td>Round rolled phenolic cotton fabric laminate tube</td>
<td>With high toughness for mechanical applications</td>
</tr>
<tr>
<td>Round moulded phenolic fine weave cotton fabric laminate rod</td>
<td>With high toughness for mechanical applications, excellent machinability</td>
</tr>
<tr>
<td>Round moulded phenolic cotton fabric laminate rod</td>
<td>With high toughness for mechanical applications</td>
</tr>
<tr>
<td>Flame-resistant, halogen-free round rolled epoxy glass fabric laminate tube</td>
<td>With high strength for mechanical and electrical applications</td>
</tr>
<tr>
<td>Round rolled epoxy glass fabric laminate tube</td>
<td>With high strength even at elevated temperature for mechanical and electrical applications</td>
</tr>
</tbody>
</table>
ISOVOLTA INNOVATION

To utilise the potential of possibilities

ISOVOLTA development projects focus on continuously optimising in-house formulated and manufactured resins, so that products can be adapted to individual customer requirements. Years of experience and state-of-the-art technologies assist in finding the right settings for every application. Furthermore, high-performance ISOVOLTA production facilities enable the manufacture of special products according to customer specifications. ISOVOLTA competence centres constantly work on developing new products, always extending our technological leadership. Our successful special products speak volumes.

ISOVOLTA supports customers and business partners worldwide in a variety of industries and sectors, offering flexibility and a focus on practical implementation. Comprehensive and personal customer service is our first priority. Being a reliable partner, ensuring fast deliveries and maintaining high-quality in products and working processes is as second nature to us as environmental protection and safety at work. ISOVOLTA’s commitment to the reduction of emissions is confirmed by our ISO 14001 environmental certification. Our research and development departments and our quality management system in action ensure high standards and a continuous improvement of our products. All ISOVOLTA plants are certified according to ISO 9001.

THE ISOVOLTA SERVICE

Quality beyond the product
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