1. Circular Distributionsblock
2. Diffusion Block of PE-UHMW and other materials
3. Forming Boards Leading Blade, Standard and High Turbulence Profiles
4. Hydrofoil Blades / MTR-Foil
5. Single Foil Blade
6. Vacuum Foil Blades including Deckles
7. Covers in several types
8. Suction Roll Seal Strips + Accessories
9. Felt Suction Box Cover
10. Doctor Blades
11. Rod Holder
12. Gears wheels / Gear wheel segments
13. Trim Guard
14. Format limiters
15. Fourdrinier raiser
Our materials

CeramX®
is a material which combines the properties of ultra-high-molecular-weight polyethylene (PE-UHMW) and Ceramic and consequently is a material for the future. Due to it containing maximum proportion of the highest purity Ceramic additives CeramX combines the advantages of flexible plastic material with the wear resistance of Ceramic.

Advantages: easy handling and assembly, no risk of breakage, lowest abrasion of the wire. Surface processing possible. For foils up to a width of 85 mm a surface finish of Ra ~ 0,4 µm is possible.

Colour: oyster white

St 9000 MOS²
This material made of ultra-high-molecular-weight polyethylene (PE-UHMW) and specific additional substances is tailored to pulp production requirements. It offers outstanding wear resistance and the material can also be used at high temperatures with the simultaneous use of bleaching chemicals.

The solid lubricants used ensure there is very little friction between the machine clothings and the dewatering elements.

Color: graphite grey

Ceradur®
is a modified material based on ultra-high-molecular-weight polyethylene (PE-UHMW) with an additive of micro-silicates. The material gives higher wear resistance and hardness compared with standard plastic materials; its behaviour in the de-watering section / wet section is very good.

Colours: yellow-green, black, red

PS 4190®
is a modified ultra-high-molecular-weight polyethylene (PE-UHMW) material which combines good wear resistance and very good sliding properties with the addition of various solid lubricants; consequently this facilitates particular wire protection.

Colour: black anthracite

PS 1000®
is the basic ultra-high-molecular-weight polyethylene (PE-UHMW) material for the Paper Industry. High wear resistance, high impact strength and good sliding properties (achieved by adding graphites) characterise the material which has been used in the Paper Industry for more than 40 years.

Colour: black

St 1000®
is the basic of all ultra-high-molecular-weight polyethylene (PE-UHMW) types of material. As pure, non-modified basic material it is characterised by having high wear resistance, high impact strength and good sliding properties.

Colour: natural

---

| Material designation | Wear resistance | Coefficient of friction | Surface quality | Molecular weight/ light scattering | Density DIN 53479 | Shore D hardness DIN 53505 | Ball indentation hardness DIN ISO 2039 part 1 | Ultimate tensile strength at 23°C DIN 53455 | Elongation at break at 23°C ISO/R 527 | Coefficient of linear expansion ISO 11359 | Abrasion | Coefficient of friction |
|----------------------|-----------------|-------------------------|----------------|---------------------------------|------------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------|-------------------------|
| CeramX®              | ***** S        | *****                   | *****          | ~ 9,2 Mio.                      | 0,95             | 67 – 70                     | 38                             | 35                             | > 120                           | 8                         | ~ 65                    | ~ 0,15                  |
| St 9000 MOS²         | ****           | *****                   | ****           | ~ 9,2 Mio.                      | 0,961            | 68                          | 42                             | 33                             | 360                            | 17                        | ~ 70                    | ~ 0,08                  |
| Ceradur®             | ***            | **                      | **             | ~ 9,2 Mio.                      | 1,007            | 64 – 69                     | 47 – 48                         | 35                             | 340 – 350                      | ~ 15                      | ~ 75 – 85               | ~ 0,25                  |
| PS 4190®             | **             | ***                     | ***            | ~ 9,2 Mio.                      | 0,97             | 68                          | 47                             | 35                             | 350                            | 10                        | ~ 75                    | 0,08                    |
| PS 1000®             | **             | **                      | ***            | ~ 9,2 Mio.                      | 0,95             | 64 – 68                     | 46                             | 41                             | 330                            | 20                        | ~ 85                    | ~ 0,25                  |
| St 1000®             | *              | ***                     | *****          | ~ 4,4 – 9,2 Mio.                | 0,93             | 64 – 67                     | 38                             | 40,5                           | 400                            | 20                        | 100                     | 0,1 – 0,2               |
Stands for quality products in paper machines

We are in a position to supply tailor made plastic grades to meet customer’s specific requirements. These grades have been approved for decades and we guarantee their suitability. From the Forming Board leading edge up to the milled Cover in drilled or slotted execution; as Foil Boxes or Suction Tubes slotted in straight or Zick-Zack design perforation. Many alternatives are possible and are constantly tested and improved in our Development Department. The basic material for all our grades is virgin ultra high molecular weight Polyethylene (PE-UHMW) which does not incorporate any reprocessed material. The grades developed by us are finished with lubricants and are more wear resistant with the addition of special additives.

Percentage abrasion in sand slurry laboratory test

The diagram illustrates how the abrasion decreases corresponding to the different types of material. Thus, the premium quality St 9000 MOSI and CeramX has a wear reduction of 30 – 35 % compared with simple standard types.

FEM-calculation

A special program allows the calculation of suction box covers according to the vacuum load. We shall be happy to simulate this service for you at an extra charge. Consequently, deformations of the dewatering elements can be avoided already before the installation in the wet section.

Wefapress materials for different machine speeds

Various types of material are available according to the different machine speeds of your machine. With the quality St 9000 MOSI and CeramX machine speeds up to 1000 m/min. and more are possible.
Diffusion Blocks

A further very important part of our product range is the manufacturing of Diffusion Blocks for Headboxes, manufactured from PE-UHMW, PE-HMW, PA and other plastic materials. Especially for pulp dryer machines we developed our St7000EHT material which is resistant to the high temperature and aggressive bleaching chemicals in this application. The Blocks are available in non welded form in lengths up to 10250 mm and in thicknesses up to 210 mm. Blocks to other dimensions can be welded to specific requirements. The surfaces of the step drillings achieve a quality of Ra 0,4 up to 0,8 µm which is optimum for such applications. This is also valid for Holeplates for Circular Distributors (EQUALcircler) which can be produced up to a diameter of 2500 mm.

Sleeves for the application in diffusers in order to adjust the flow speed according to the machine parameters and to generate turbulences. For this applications various materials, e.g. PA (polyamide), POM (polyoxymethylene) or PE (polyethylene) are available.
Suction Box Covers

The new material CeramX combines the advantages of plastic material with the addition of ceramic additives. Also, in practice, our material bears comparison with other materials relative to wear and abrasion resistance. Furthermore, the use of silanes (PEX B) increases the application possibilities when compared with other common materials available on the market.

Highest Surface Quality

Due to a special smoothing method, with a width of up to 85 mm, a foil surface of Ra ~ 0.4 µm is standard. This method has been developed especially for application in decor paper production as it reduces the coefficient of friction as well as deposits on the material.
Sealing Strips for Suction Rolls...

Since plenty of years Wefapress produce suction roll sealing strips from flexible rubber graphite for the paper industry. Our FlexGuard material gets used in the biggest and fastest paper machines worldwide. Lowest friction, excellent emergency running properties, long life time and easiest handling are what FlexGuard stands for. FlexGuard sealing strips can get supplied up to a length of 12 meter.

The coiled sealing strip can get packed in a small box what simplifies the transport as well as the handling and storage at the customer.

Advantages of Flex Guard sealing strips

- Easy handling without risk of breakage
- Excellent emergency running properties and lowest friction through self lubrication
- Stable machine run due to even vacuum level
- Doubled life time possible through lowest wearing
- Reduction of drive power

Another big advantage of the flexible sealing strips in rubber graphite is that they have no risk for breakage like the old graphite strips which were very brittle in the past. FlexGuard can get used in all suction rolls, it doesn’t matter if it is in a pulp, board, tissue or paper machine and independent if the roll shell is in bronze or in stainless steel.

Individual solutions for each application

Since plenty of years Wefapress produce suction roll sealing strips from flexible rubber graphite for the paper industry. Our FlexGuard material gets used in the biggest and fastest paper machines worldwide. Lowest friction, excellent emergency running properties, long life time and easiest handling are what FlexGuard stands for.

The special Finger-Joint Connection for overlength sealing strips

Wefapress can produce one-piece sealing strips up to 12 meters long. For paper machines with a very large working width and especially for wide silencer seals there is the possibility of producing two-piece sealing strips joined with a connector. This connector is absolutely airtight and simplifies both the handling during installation as well as storage and transport.

Since the complete production is in Germany we can react flexibly to orders and provide highest quality.

Accessories

consisting of GFK Sealing Strip Holders (Vinylester resin), non-rigid PVC or Silicone hoses, fittings and tongues at cost efficient (and fair conditions

An abundant stockholding in Germany and England allows prompt deliveries of accessories and spare parts within Europe. Corresponding customer requests can be quickly fulfilled.

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Flex Guard Rubber Graphite

<table>
<thead>
<tr>
<th>Property</th>
<th>Value of Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>DIN 53470 1,55 kg/dm³</td>
</tr>
<tr>
<td>Coefficient of Expansion</td>
<td>DIN 53752 1,5 x 10⁻⁵ K⁻¹</td>
</tr>
<tr>
<td>Coefficient of Friction</td>
<td>0,11 dynamic</td>
</tr>
<tr>
<td>Moisture absorption</td>
<td>0,2 %</td>
</tr>
<tr>
<td>Max Operation Temp.</td>
<td>130 °C</td>
</tr>
</tbody>
</table>

Individuel solutions for each application

Another big advantage of the flexible sealing strips in rubber graphite is that they have no risk for breakage like the old graphite strips which were very brittle in the past. FlexGuard can get used in all suction rolls, it doesn’t matter if it is in a pulp, board, tissue or paper machine and independent if the roll shell is in bronze or in stainless steel.

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Ceramics

All ceramics from Aluminium Oxide (also fine grade stabilised) to Zirconium Oxide withstand very extreme conditions. Temperatures of up to 600 °C which are produced in rapid running Paper Machines present the highest demands on the ceramic dewatering elements.

For such cases elements manufactured from Silicon Carbide (Si-Carbide) are recommended. All ceramics used have a very high degree of hardness and cleanliness which guarantees a very low porosity rate.

Application options

• rapid running machines with abrasive conditions (Si-Carbide)
• extreme fluctuation of temperature in the press section (Si-Nitride)
• on forms of medium rapidness
• application possibilities up to the medium abrasive range (Al-Oxide)

Doctor Blades

Wefapress produce the majority of the raw materials on in-house special designed machines. This guarantees the highest quality raw material ensuring excellence in the finished product for trouble-free use. In-house production and R&D facilities allow Wefapress to react first to changing customer requirements.

Compared to extruded doctor blade profiles our sintered doctor blades from Wefapress are internal stress free what avoids bending and guarantee an even contact pressure and surface cleaning on the roll.

Doctor Blades from polyethylene

<table>
<thead>
<tr>
<th>Material</th>
<th>PS 1000 / Ceradur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colours + properties</td>
<td></td>
</tr>
<tr>
<td>Material:</td>
<td>black / white</td>
</tr>
<tr>
<td>Print:</td>
<td>black / yellow</td>
</tr>
<tr>
<td>Temperature resistance:</td>
<td>up to 80°C</td>
</tr>
<tr>
<td>Chemical resistance:</td>
<td>very good</td>
</tr>
<tr>
<td>Water absorption:</td>
<td>none</td>
</tr>
<tr>
<td>Standard dimensions</td>
<td></td>
</tr>
<tr>
<td>Thickness mm</td>
<td>6,0</td>
</tr>
<tr>
<td>Width mm</td>
<td>50, 75, 100, 120</td>
</tr>
<tr>
<td>Special dimensions on demand</td>
<td>up to 80</td>
</tr>
<tr>
<td>Key features</td>
<td>continuous length to individual specification, single or double bevel, bevel from 15° - 90° rebate or groove</td>
</tr>
</tbody>
</table>

Contact information:

+49 2564 9329-0
+49 2564 9329-45
contact@wefapress-papertec.com
Rod Holder

Rod holders usually consist of a cross-linked ultra high molecular weight polyethylene (PE-UHMW) and are characterized by a very high wear resistance as well as a low frictional resistance. The machining offers high flexibility in the performance and optimisation of the bed design.

Length: up to 12 meters
Applications: for all direct- and film coating processes
Manufacture: machining
Advantages: • low coefficient of friction • for all common coating devices • anti-hygroscopic • design flexibility

Gearwheels / Gearwheel segments

Bevel pinion, gearwheels and gearwheel segments for drying cylinders made out of our Nylatec360 material reduces noise, grease demand and the shut down time for maintenance.

Further application examples

Chain guides
Used in materials handling

Flow disc
Application in flotation facility

Annular bearing
Application at oscillating high pressure spraying beams

Edge curler
Operation on the fourdrinier machine in paper industry

Injector
Application in flotation facility

Squares of different Rod-Holder

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## Material Overview

<table>
<thead>
<tr>
<th>Material designation</th>
<th>Raw material</th>
<th>Additives</th>
<th>Mechanical properties</th>
<th>Chemical resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>St 1000</strong> PE-UHMW</td>
<td>Celanese GUR Braskem UTEC</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>St 6000</strong> PE-UHMW</td>
<td>Celanese GUR Braskem UTEC</td>
<td>Anti-oxidant agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>St 9000</strong> MOS</td>
<td>Celanese GUR Braskem UTEC</td>
<td>Molybdenum-disulphide</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>St 9100</strong> Oil PE-UHMW</td>
<td>Celanese GUR Braskem UTEC</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceradur PE-UHMW</td>
<td>Celanese GUR Braskem UTEC</td>
<td>Micro-glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>St 7000</strong> EHT PE-UHMW</td>
<td>Celanese GUR Braskem UTEC</td>
<td>Stabilizer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>St 500</strong> PE-HMW</td>
<td>Lupolen-Idealis</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PA 6</strong> Polyamide 6</td>
<td>Ultramid u. a.</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PA 6 G</strong> Cast-Polyamide 6</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PA 6 G + Oil</strong> Cast-Polyamide 6</td>
<td>Oil</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PET</strong> Polyethylene-terephthalate</td>
<td>Arinite</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PET-SP</strong> /</td>
<td>Antiblocking agent</td>
<td>—</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Mechanical Properties
- Density (g/cm³): 0.93, 0.96, 1.00, 1.06, 1.04, 1.05, 1.07, 1.09, 1.10, 1.12, 1.14, 1.19, 1.24, 1.26, 1.28, 1.30, 1.35, 1.43
- Tensile strength at break (MPa): 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70, 70
- Elongation at break (%): 100, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80
- Modulus of elasticity (GPa): 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4
- Coefficient of friction: 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1
- Crystallisation temperature (°C): 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170, 170
- Notched impact strength (kJ/m²): 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000
- Specific volume resistance (Ω cm): 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵
- Surface resistance (Ω): 10¹⁰, 10¹¹, 10¹², 10¹³, 10¹⁴, 10¹⁵, 10¹⁶, 10¹⁷, 10¹⁸, 10¹⁹, 10²⁰, 10²¹, 10²², 10²³, 10²⁴, 10²⁵, 10²⁶

### Thermal Properties
- Heat deformation temperature (°C): 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120
- Specific volume resistance (Ω cm): 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵, 10¹⁵
- Surface resistance (Ω): 10¹⁰, 10¹¹, 10¹², 10¹³, 10¹⁴, 10¹⁵, 10¹⁶, 10¹⁷, 10¹⁸, 10¹⁹, 10²⁰, 10²¹, 10²², 10²³, 10²⁴, 10²⁵, 10²⁶

### Chemical Resistance
- Moisture absorption (%): 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01, 0.01
- Application temperature (max.): 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175
- Application temperature (min.): 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19
- Moisture absorption (%): 0.17, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2
- Application temperature (max.): 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175, 175
- Application temperature (min.): 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, 19

All indications correspond to internal and external laboratory examinations and are regularly checked and controlled during the manufacturing process. Slight deviations depend on consignments and are unavoidable. All details are subject to change.