

Wefapress[®]

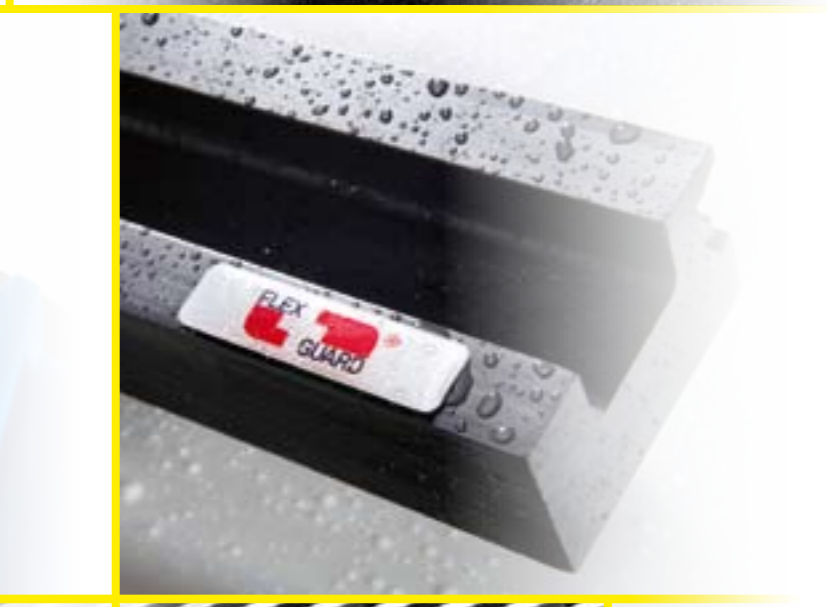


Wefapress
Beck + Co. GmbH



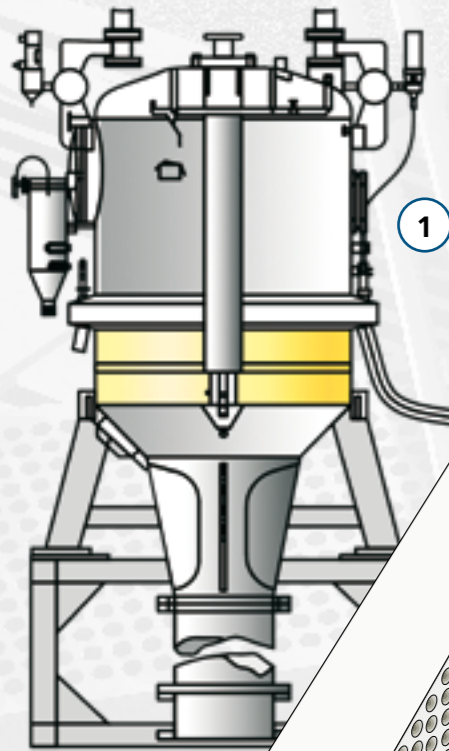
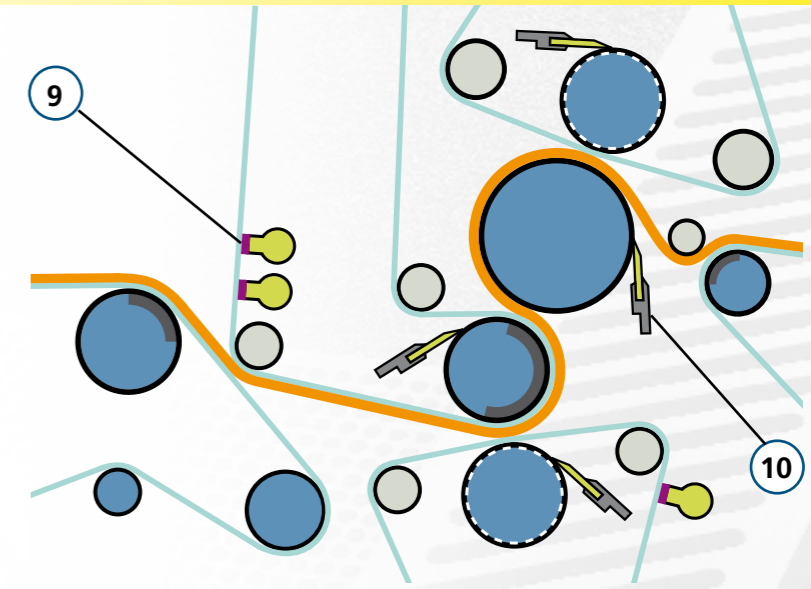
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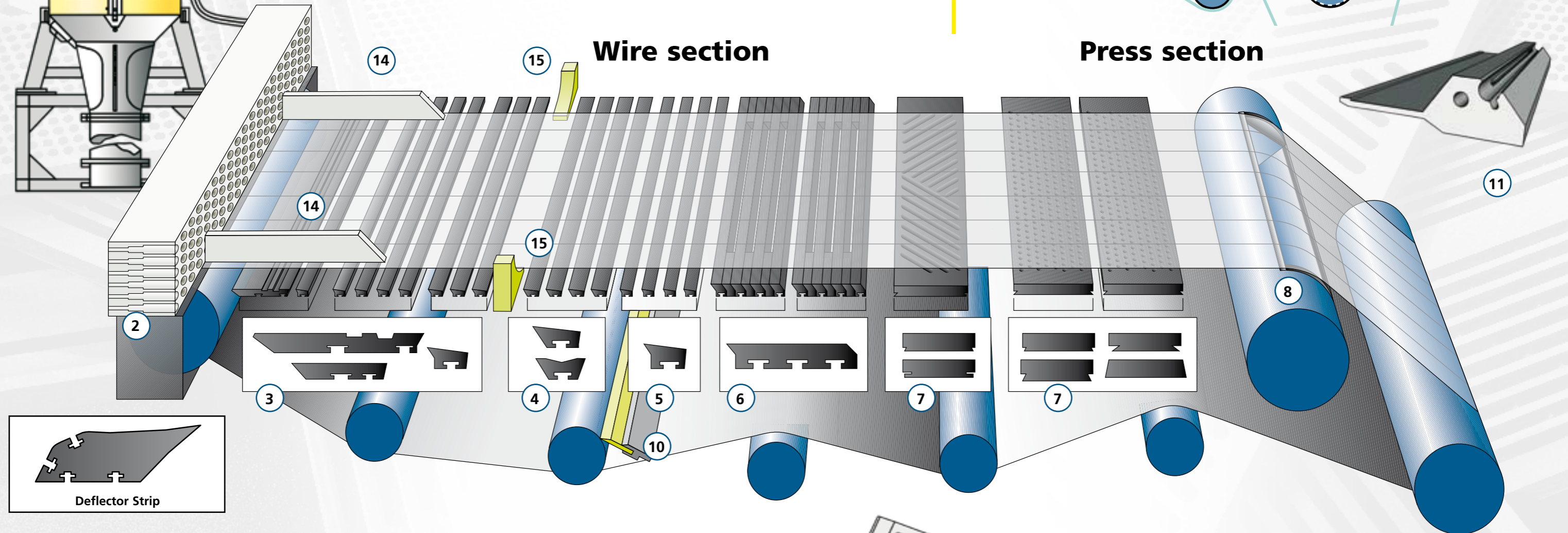
paper industry

Cutout of product range



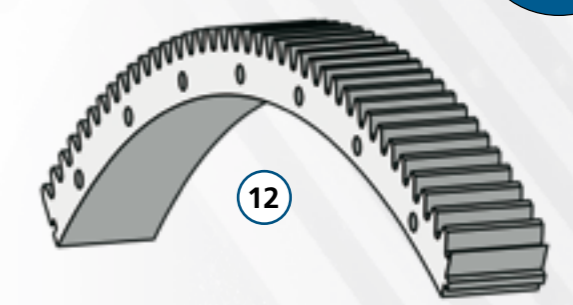
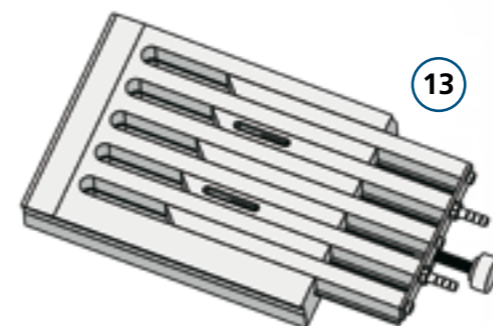
Wire section

Press section



- 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. Gearswheels / Gearwheel 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 resilience 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 graphite) 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.

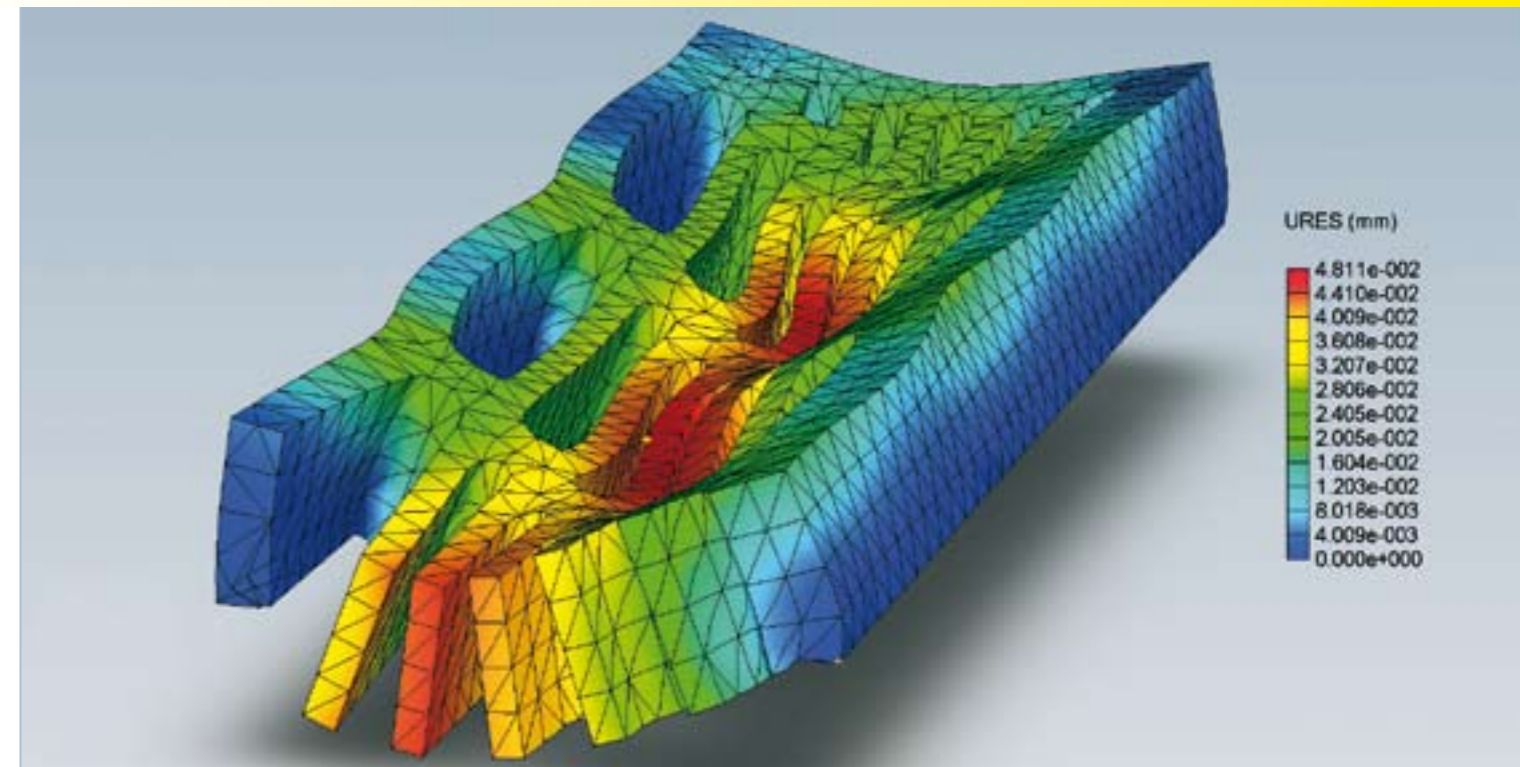
Colour: natural

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
				g/mol	g/cm ³	Skala D	N/mm ²	N/mm ²	%	10 ⁻⁵ *(1/K)	%	µ
CeramX®	***** S	*****	*****	~9,2 Mio.	0,95	67 – 70	38	35	> 120	8	~ 65	~ 0,15
St 9000 mos²	****	*****	***** S	~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.

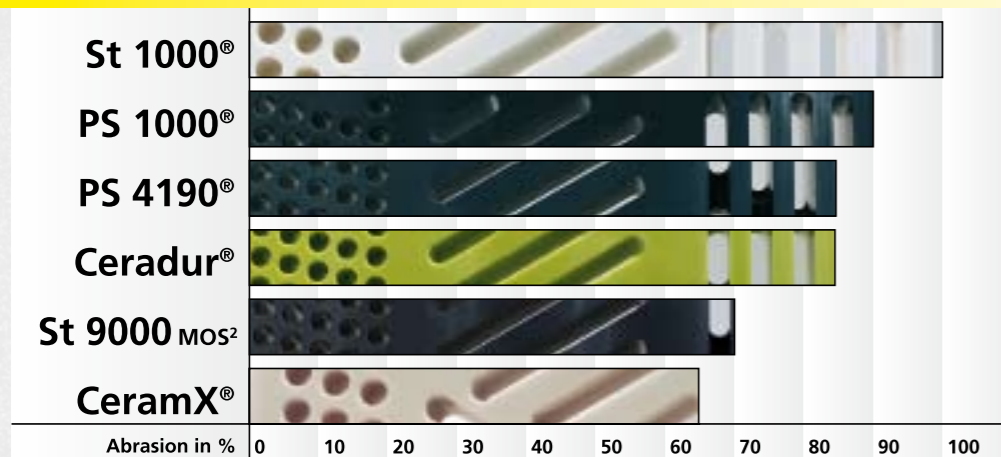


The FEM analysis (Finite Element Method) allows to optimise components before completion, load and deformation.

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.

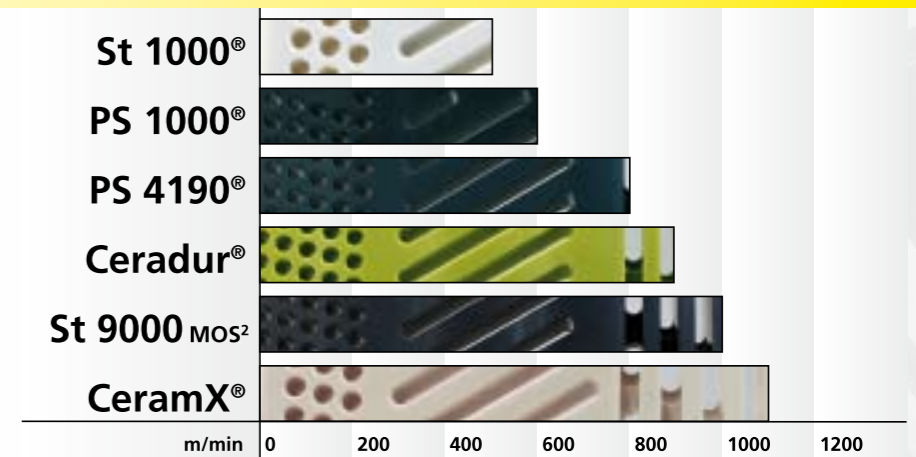
Percentage abrasion in sand slurry laboratory test

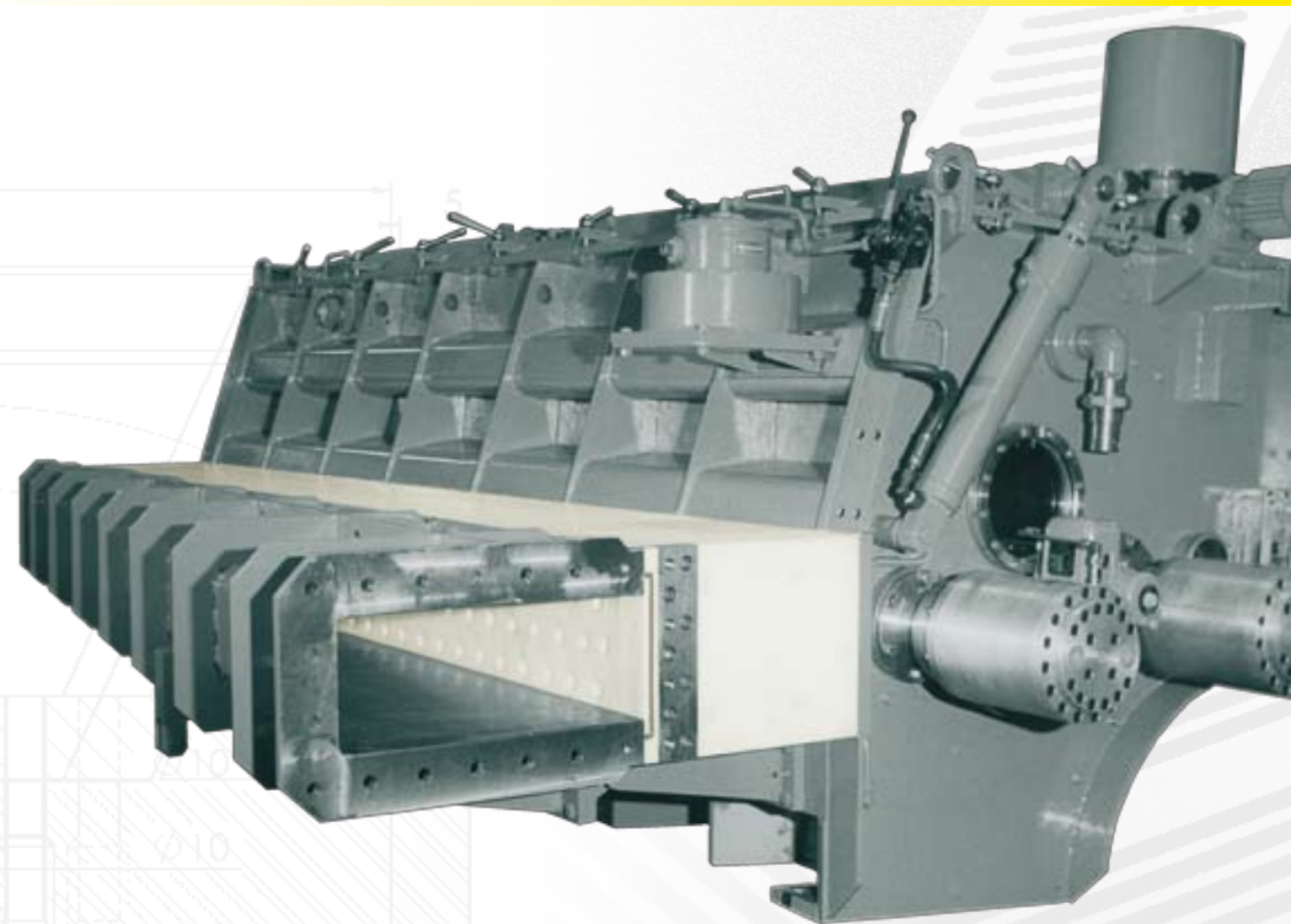


The diagram illustrates how the abrasion decreases corresponding to the different types of material. Thus, the premium quality St 9000 MOS² and CeramX has a wear reduction of 30 – 35 % compared with simple standard types.

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 MOS² and CeramX machine speeds up to 1000 m/min. and more are possible.

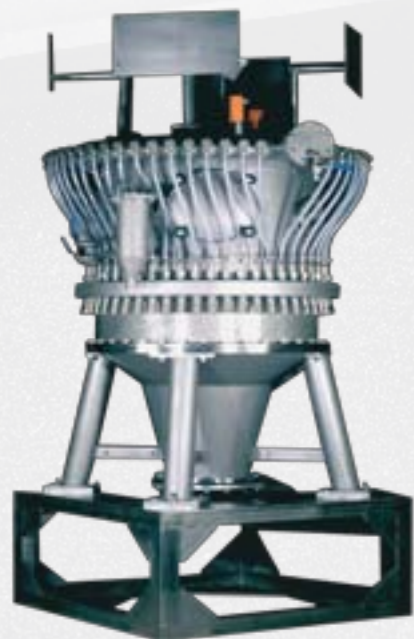




Diffusion Blocks

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.





Highest Surface Quality

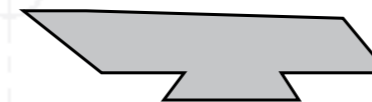
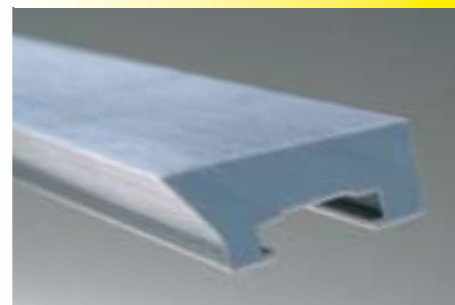
Due to a special smoothing method, with a width of up to 85 mm, a foil surface of Ra ~ 0,4 µm is standard. This method has been developed especially for application in decor paper production as it reduces the coefficient of friction as well as deposits on the material.



Trim Guard for the wire section

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.



Foils made out of CeramX running simultaneously with 100 % ceramics



Foils for drainage and for developed fibre orientation as well as sheet formation

MTR-foil for the micro turbulence to optimise the sheet formation, fibre orientation and the dewatering





FLEX GUARD[®]

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.



Flex Guard Rubber Graphite

Property		Value of Rating
Density	DIN 53479	1,55 kg/dm ³
Coefficient of Expansion	DIN 53752	1,5 x 10 ⁻⁵ ·K ⁻¹
Coefficient of Friction		0,11 dynamic
Moisture absorption		0,2 %
Max Operation Temp.		130 °C

Individual 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.

Advantages of Flex Guard sealing strips

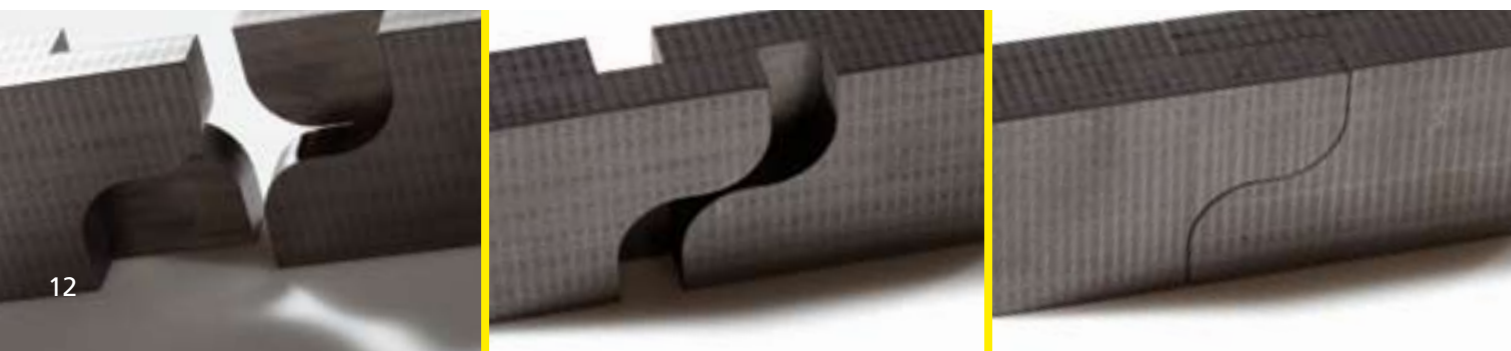
- Easy handling without risk of breakage
- Excellent emergency running properties and lowest friction through self lubrication
- Stable machine run due to even vacuum level
- Doubled life time possible through lowest wearing
- Reduction of drive power



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.





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.

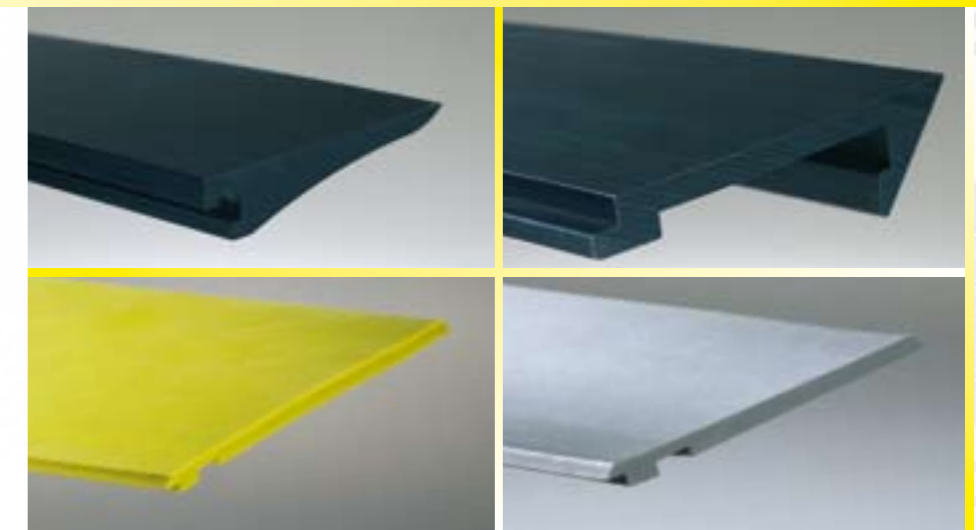
Application options

- 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)

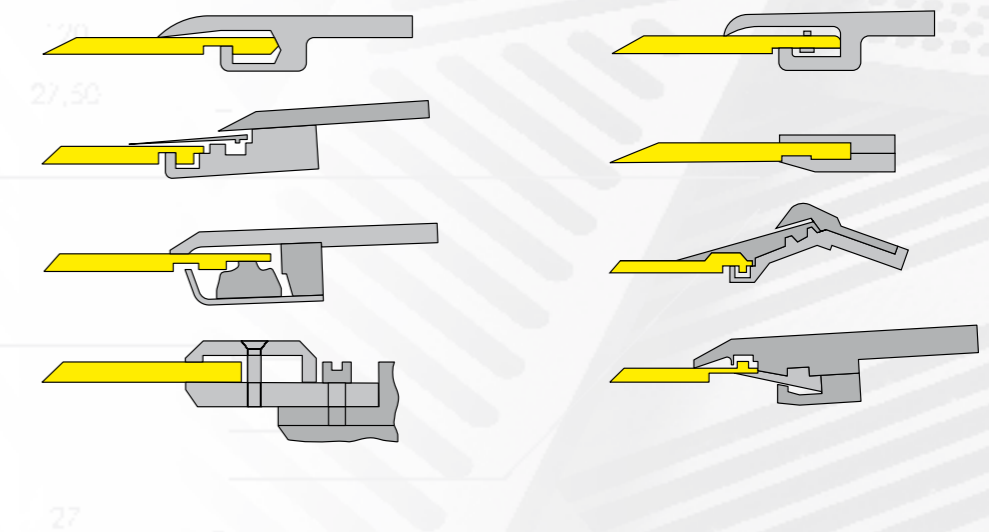


Doctor Blades

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.



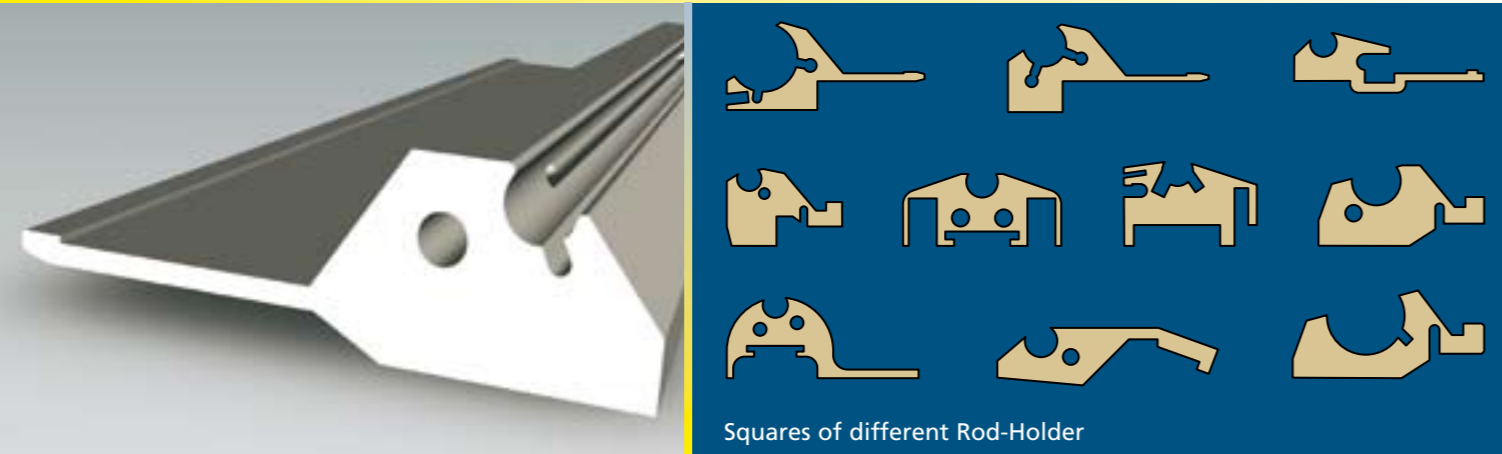
Compared to extruded doctor blade profiles our sintered doctor blades from **Wefapress** are internal stress free what avoids bending and guarantee an even contact pressure and surface cleaning on the roll.



Doctor Blades from polyethylene

Material		PS 1000 / Ceradur	
Colours + properties	Print: Material colour: Temperature resistance: Chemical resistance: Water absorption:	black / white black / yellow up to 80°C very good none	
Standard dimensions	Thickness mm Width mm	6,0 50, 75, 100, 120	8,0 up to 80 special dimensions on demand
Key features	continuous length to individual specification, single or double bevel, bevel from 15° - 90° rebate or groove		

Rod Holder



Squares of different 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

Partner of


CONTROLLED QUALITY

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.

Cutout material overview

— without additives + limited resistant ++ resistant * humid ** limited UV-constant / not measured o. Br. no failure				Mechanical properties										Thermal properties										Electr. properties				Chemical resistance					
				Density DIN 53479	Tensile strength DIN 53455	Shore D hardness DIN 53505	Ball indentation hardness DIN ISO 2039 Teil 1	Ultimate tensile strength DIN 53455	Elongation at brea DIN ISO / R 527	Modulus of elasticity DIN 53457	Notched impact strength DIN 53453	Abrasion (sand slurry method)	Coefficient of friction	Dimensional stability under heat DIN 53461	Vicat softening temperature DIN 53460	Crystalline melting range (DTA)	Thermal conductivity at 23°C	Specific heat at 23°C	Coefficient of linear expansion at 23°C DIN ISO 11359	Fire behaviour UL 49	Application temperature (min.)	Application temperature (dauernd)	Moisture absorption	Specific volume resistance DIN 53482	Surface resistance DIN 53482	Dielectric strength IEC 60243	Dielectric constant DIN 53485	Diluted acids	Diluted alkalines	Benzine	Ethylene glycol	Sulphuric acid (80%)	Chromic acid (50%), diluted
Material designation	Raw material	Trade name	Additives	g/cm ³	N/mm ²	Skala D	N/mm ²	N/mm ²	%	N/mm ²	kJ/m ²	%	μ	°C	°C	°C	W/K*m	KJ/K*kg	10 ⁻⁵ *(1/K)	°C	°C	%	Ω cm	Ω	kV/mm	at 50 Hz							
St 1000®	PE-UHMW	Celanese GUR Braskem UTEC	—	0,93	27	64–67	38	40,5	400	700	> 80 -140	100	0,1 -0,2	47	79	130 -135	0,42	1,8	20	HB	-200	+80	<0,01	10 ¹⁵	10 ¹⁴	45	1,9	++	++	+	+	+	+
St 6000*** AST	PE-UHMW	Celanese GUR Braskem UTEC	Antistatic agent	0,93	25	64–70	38	36	350	700	> 70 -130	~110	0,25	47	79	130 -135	0,42	1,8	20	HB	-200	+80	<0,01	10 ⁹	10 ⁶	/	/	++	++	+	+	+	+
St 9000 MOS ²	PE-UHMW	Celanese GUR Braskem UTEC	Molybdän- disulphid	0,961	21	68	42	33	360	~700	o.Br.	~70	~0,08	45	80	135	~0,4	1,4	17	HB	-269	+80	<0,01	10 ¹⁶	10 ¹³	90	/	++	++	+	+	+	+
St 9100Oil	PE-UHMW	Celanese GUR Braskem UTEC	Oil	0,93	22	60–65	30-35	41	≥ 200	700	≥ 80	~80	0,08	47	80	135 -138	0,4	1,8	20	HB	-200	+80	<0,01	10 ¹⁵	10 ¹³	45	/	++	++	+	+	+	+
Ceradur	PE-UHMW	Celanese GUR Braskem UTEC	Micro- glasperl	1,007	23	64–69	47-48	35	340 -350	~650 -700	> 80 -120	~75 -85	~0,25	47	79	130 -135	0,42	1,8	~15	HB	-200	+80	<0,01	10 ¹³	10 ¹²	45	1,8	++	++	+	+	+	+
St 7000 EHT	PE-UHMW	Celanese GUR Braskem UTEC	Stabiliser	0,93	23	60–65	30-35	35	≥ 350	700	≥ 100	~80	0,12	47	80	130 -135	0,4	1,8	9	HB	-200	+100	<0,01	10 ¹⁵	10 ¹³	45	2,1	++	++	+	+	+	+
St 500®	PE-HMW	Lupolen Idealis	—	0,96	27	~70	46	25	100	1060	o. Br.	>250	0,1 -0,2	47	80	130 -135	0,41	1,8	~20	HB	-100	+80	<0,01	10 ¹⁵	10 ¹³	40	2,9	++	++	+	+	+	+
A4®	PE-UHMW	Celanese GUR Braskem UTEC	—	0,94	27	64–68	40	30	200	900	> 30 -110	~130	0,2	47	79	130 -135	0,42	1,8	20	HB	-200	+80	<0,01	10 ¹⁵	10 ¹³	40	/	++	++	+	+	+	+
A4®G	PE-UHMW	Celanese GUR Braskem UTEC	—	0,95	18	64–68	40	37	max. 200	900	> 30 -110	~150	0,1 -0,2	47	79	130 -135	0,42	1,8	20	HB	-200	+80	<0,01	10 ¹⁵	10 ¹³	40	/	++	++	+	+	+	+
PA 6	Polyamide 6	Ultramid u. a.	—	1,14	80	81	160	80	> 50	2700	> 3	/	0,38	95	/	218	0,23	/	8	HB	-40	+100	~2,2	10 ¹²	10 ¹⁰	40	3,7	++	++	+	/	/	/
PA 6 G	Cast-Polyamide 6	Ultramid u. a.	—	1,15	85	/	160	80	> 50	3100	> 4	/	0,36	80	/	220	0,23	~0,29	8	HB	-40	+100	~2,2	10 ¹⁵	10 ¹³	40	3,7	++	++	+	/	/	/
PA 6 G + Oil	Cast-Polyamide 6	/	Oil	1,14	80	/	140	60	> 50	2700	> 5	/	0,18	/	/	220	0,23	~0,29	8	HB	-40	+100	~2,2	10 ¹⁵	10 ¹³	50	3,7	++	++	+	/	/	/
PTFE	Polytetra- fluoroethylene	Teflon	—	2,18	25–36	57	30	25	300	400	13	/	0,08	56	110	/	0,21	/	10	V-0	-200	+260	<0,01	10 ¹⁸	10 ¹⁷	40	2,0	++	++	+	/	/	/
POM-C	Polyoxy- methylene	Hostaform Ultraform	—	1,42	65	85	150	70	> 30	3200	> 10	/	0,32	47	79	175	0,31	1,46	10	HB	-50	+100	0,17	10 ¹⁵	10 ¹³	49	3,6	++	++	+	/	/	/
PETP	Polyethylen- terephthalate	Arnite	—	1,38	80	/	140	80	40	3000	> 4	/	0,25	75	/	255	0,24	1,1	8	HB	-20	+100	0,2	10 ¹⁶	10 ¹⁴	60	3,6	+	+	++	/	/	/
PETP-SP	/	/	Antiblocking agent	1,43	65	/	128	75	5	2200	2	/	0,20	75	/	255	0,23	1,5	8	HB	-20	+110	0,2	10 ¹⁶	10 ¹⁴	/	3,6	+	+	++	/	/	/