

PP / PE
SPECIAL
TYPES

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agru
TECHNOLOGY
IN PLASTICS



AGRU PP AND PEHD SPECIAL TYPES

ELECTRO-CONDUCTIVE PLASTIC PIPES, FITTINGS AND SEMI-FINISHED PRODUCTS FOR SPECIAL APPLICATIONS

For more than 30 years AGRU Kunststofftechnik GmbH has been producing pipes, fittings and semi-finished products out of thermoplastics for piping systems and apparatus engineering.

For all cases

The electro-conductive materials PPR-s-el, PP-el and PEHD-el have been developed on account of the most specific requirements arising in the construction of piping systems and apparatus engineering.

Physical properties of PPR-s-el, PP-el and PEHD-el

Properties	Testing standard		Unit	Reference* PPR-s-el	Reference* PP-el	Reference* PEHD-el
	DIN	ISO				
Melt flow index MFI 190/5 MFI 230/2, 16 MFI 230/5 Melting range Density at 23°C	DIN 53735 Code T Code M Code V DIN 53479	ISO 1133 procedure 18 procedure 12 procedure 20 polarization microscope ISO/R 1183	g/10 min g/10 min g/10 min °C g/cm ³	0,1	0,39 0,25	approx. 015 128 - 133 0,989
Tensile stress at yield Tensile stress at break Ultimate strength Percentage elongation at break	DIN 53455 speed VI test specimen 3	ISO/R 527 speed F test specimen acc. to fig. 2	N/mm ² % N/mm ² %	21 - 25 - - > 10	23 - 16 200	approx. 25 approx. 8 approx. 15 > 200
Flexural stress at 3.5 % Modulus in shear Modulus of elasticity	DIN 53542 DIN 53445 DIN 53457	ISO 178 ISO/R 537 ISO 178	N/mm ² N/mm ² N/mm ²	- - 1700	21 430	approx. 24 approx. 1050
Ball indentation hardness H 30 Shore-Hardness D	DIN 53456 DIN 53505	ISO 2039 ISO 868	N/mm ² -	74	44 67	approx. 50 63 - 65
Charpy impact strength Charpy impact strength	DIN 53453 DIN 53453 Standard test specimen at 23°C	ISO 179/2 C ISO 179/2 D	kJ/m ² kJ/m ²	4 40	15	> 5
Vicat softening temperature VST/B/50 Deflection temperature under load Coefficient of thermal expansion Thermal conductivity at 20°C	DIN 53460 DIN 53461 method A method B DIN 53752 DIN 52612	ISO/R 306 ISO 75 method A method B - -	°C °C °C K ⁻¹ W/m.K	75 °C - - 1,0 - 1,5.10 ⁻⁴	- 51 80 1,0 - 1,5.10 ⁻⁴	approx.. 87 - - 1,8.10 ⁻⁴ 0,43
Flammability	DIN 4102 part 1 ÖNORM B 3800 part 1 UL 94	- - -	- - -	- - V 0	B 2 B 2 94 - HB	B 2 B 2 -
Specific volume resistivity Surface resistivity	DIN 53482 part 1 DIN 53482	IEC Publ. 93 IEC Publ. 167	W cm W	< 10 ⁶ < 10 ⁶	< 10 ⁶ < 10 ⁶	< 10 ⁶ < 10 ⁶

* The above reference values were available at the time of printing.

Properties of PPR-s-el, PP-el and PEHD-el

Due to the additives necessary for achieving the modified properties some alterations have been made in comparison with the standard type.

The chemical resistances of PPR-s-el, PP-el and PEHD-el piping systems should be separately clarified for each project with our technical engineers.

Typical applications for PPR-s-el, PP-el and PEHD-el

- industrial piping systems for the transport of aggressive media
- suction and exhaust piping systems
- pipes for the transport of solids
- piping systems and tanks in explosion-proof rooms
- degassing piping systems for waste disposal facilities
- lining of tanks and containers
- apparatus engineering
- mining and pit constructions



We possess the registration of the "Department of Mineral Resources Australia" for our PPR-s-el piping system for mining work.

Quality assured

Through our extensive quality assurance programmes via internal and external control by state authorized testing institutes such as TÜV, LKT-TGM, IIP, etc. the continuous high quality of AGRU pipes, fittings and semi-finished

products is ensured. Strict quality control from the incoming raw material to the final control of the products allows the issuing of works certificates and acceptance test reports according to EN 10 204 (DIN 50 049) .

We are there for you

We offer you a worldwide unique comprehensive product program of highest quality as well as our assistance and our know-how at the design of your installations.

A close technical cooperation with our customers guarantees optimal solutions for your problems.

For further details as well as extensive product information please contact the AGRU application engineers and our distributing partners.

PRODUCT RANGE

PIPES, extruded,
ø 32 - 1200 mm
PN 3,2 - PN 10
Standard length 5 m,
Special lengths on request

FITTINGS FOR BUTT WELDING

PPR-s-el, PP-el
ø 32 - 225 mm PN 10
ø 110 - 315 mm PN 3,2

PEHD-el
ø 32 - 315 mm PN 10
ø 225 - 315 mm PN 3,2

Bends 90° Code 001

Tees Code 006

Reducers Code 007

Stub flanges Code 012

Backing rings Code 014

Fittings out of PPR-s-el and PP-el and PE are on stock in standard dimensions. Other dimensions are available on request.

Pipes and fittings can also be supplied in other dimensions and with different pressure ratings on request and after clarification of the minimum order quantities.

SHEETS, extruded,
1000 x 2000 mm
thickness 3 - 20 mm in PPR-s-el, PP-el
thickness 3 - 20 mm in PEHD-el

SHEETS, pressed,
1000 x 2000 mm

WELDING RODS
extruded, Ø 3 and 4 mm, round,
Special dimensions on request.



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