



# PP-RCT FASER OXY system for heating and cooling distribution



# FV PP-RCT FASER OXY pipes

The new generation of PP-RCT FASER OXY pipes **pushes the boundaries of heating and cooling distribution**. A key feature is the integrated oxygen barrier according to DIN 4726, which actively prevents oxygen from penetrating the system, thus protecting pumps, heat exchangers, and other sensitive components.

The pipes are made from 4<sup>th</sup> generation polypropylene (PP-RCT) enriched with glass fibers and a unique blend of materials (UBM), which provides exceptional strength, minimal thermal expansion, stable shape, and long lifespan.

FV PP-RCT FASER OXY is the successor to the previous generation of STABIOXY pipes. A significant difference and benefit of the FASER OXY pipes is the quick installation without the need to trim the aluminum layer, thus saving time and labor.

## Compared to traditional PP-R pipes, FASER OXY has:

- A diffusion barrier according to DIN 4726, which effectively protects the system against oxygen penetration
- Lower linear expansion due to glass fibers
- Faster and easier installation compared to STABIOXY pipes

The result is a pipe that combines technological advancement with maximum reliability.

The FV PP-RCT FASER OXY pipe meets strict quality and safety requirements – it has been tested and certified by ITC Zlín (**product certificate no. 25 0213 V/VO, STO-AO 224-1591/2025**), so you can rely on its top performance and long lifespan.



# Oxygen barrier

The oxygen barrier in PP-RCT pipes minimizes the penetration of oxygen from the surrounding air into the heating water. This protects the metal parts of the heating system (boiler, radiators, and fittings) from corrosion and sediments. It is a multilayer construction with a special UBM (unique blend material) enriched with glass fibers, which lies between layers of 4<sup>th</sup> generation polypropylene. By preventing water oxygenation, the lifespan of the equipment is extended and operational stability is improved, especially in closed systems.

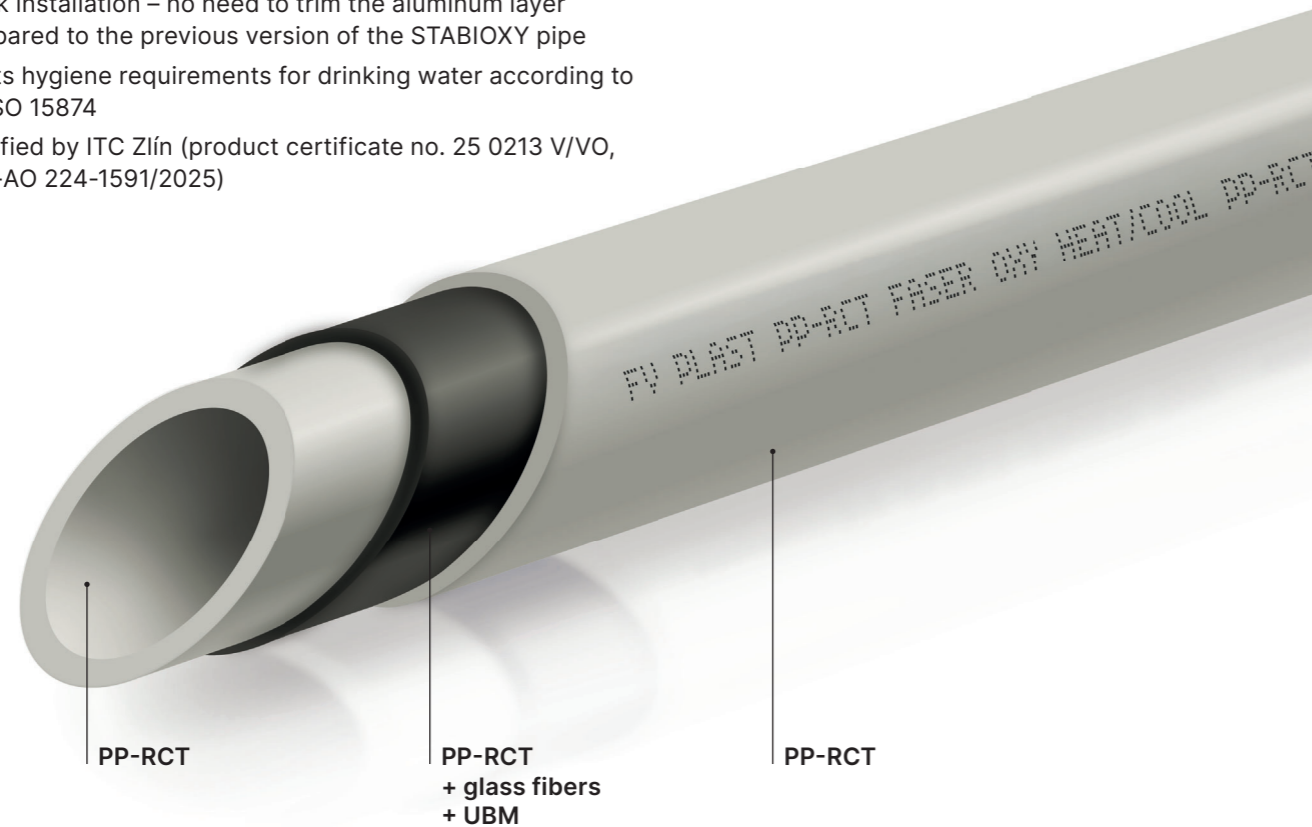
And what about the argument that pipes have a barrier and fittings do not? Isn't that useless then?

No. In piping systems, more than 99.5 % of the total surface area consists of the pipes themselves. Fittings contribute less than 0.5 % to the total area, so their impact on diffusion is negligible in this regard.



# FV PP-RCT FASER OXY

- Temperature resistance up to 90 °C
- Available dimensions: 20–63 mm
- Lower linear expansion compared to standard PP-R due to glass fibers – the pipe retains its shape and eliminates stress
- Diffusion barrier according to DIN 4726 – prevents oxygen penetration, protecting boilers, pumps, and valves
- Quick installation – no need to trim the aluminum layer compared to the previous version of the STABIOXY pipe
- Meets hygiene requirements for drinking water according to EN ISO 15874
- Certified by ITC Zlín (product certificate no. 25 0213 V/VO, STO-AO 224-1591/2025)



Maximum operating pressure for heating according to temperature and dimensions

Pipe diameter (mm)	Temperature (°C)	Maximum operating pressure (bar)	Operating time (years)
20×2.8–32×4.4	10	28	50
	50	15.2	
	70	10.7	
40×4.5–63×7.1	10	22.2	50
	50	12.1	
	70	8.5	

## PP-RCT

PP-RCT is a modern generation polypropylene that offers higher temperature and pressure resistance compared to older PP-R systems. Thanks to the improved crystalline structure, it allows for a thinner wall at the same pressure class, thus enabling higher flow rates.

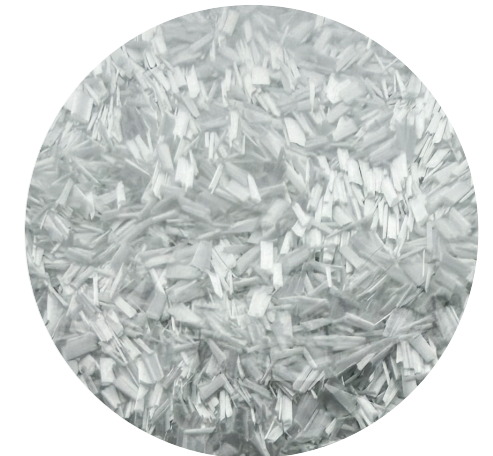
- Diffusion barrier enriched with glass fibers
- Higher **strength, toughness, and stability** of the material at higher temperatures and pressures
- Compared to PP-R, it allows for a **larger internal diameter** at the same dimension → **higher flow**
- Suitable for **cold water, hot water, heating, and technical installations**



## Glass fiber

Glass fibers in composite PP-RCT pipes act as reinforcement, increasing rigidity and shape stability, while significantly reducing thermal expansion.

- **Lower expansion** → the pipe "works" less when heated and pipeline keeps its original shape with minimal deformation
- **Fewer compensations** → simpler installation, especially for longer runs



## Unique Blend Material (UBM)

Unique blend material is a specially modified mixture of polymer and additives designed for higher durability and long lifespan. The component also includes an oxygen barrier that limits the permeability of oxygen and improves system protection.

- **The oxygen barrier** reduces the oxygenation of the heating water and contributes to the protection of the system against corrosion

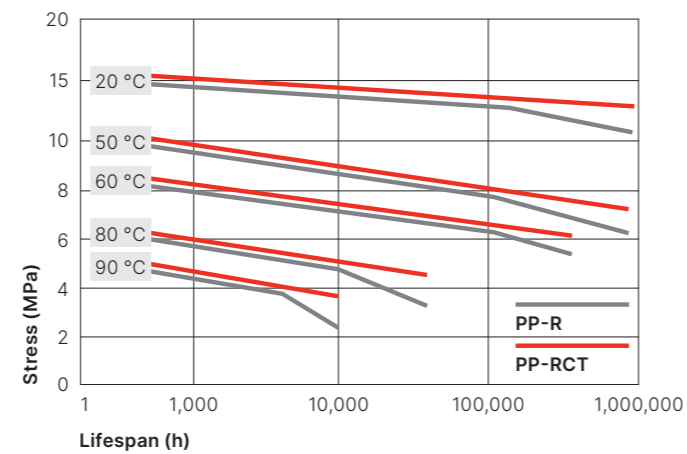


# PP-RCT polypropylene 4<sup>th</sup> generation

The new generation of FV PP-RCT pipes offers up to **37% higher flow compared to PP-R** due to a larger internal diameter at the same dimension. The basis is PP-RCT – polypropylene with controlled crystalline arrangement and higher long-term strength under thermal load. The "unique blend" formulation is a mixture of polymer and additives, especially antioxidant and thermal stabilizing components, which slow down the aging of the material. As a result, it is possible to achieve the same or better pressure and temperature resistance with a thinner wall than with PP-R.

PP-RCT has a longer lifespan than PP-R at the same temperatures and pressures.

Comparison of the lifespan of PP-R and PP-RCT pipes



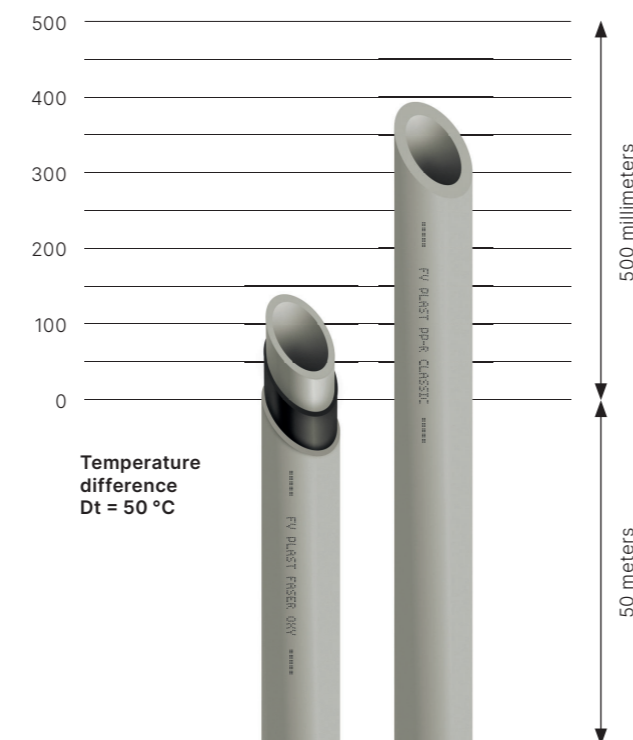
The isotherms in the graph are not extrapolated.

## Lower expansion


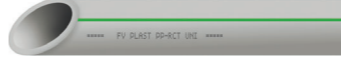
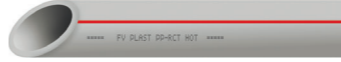

The thermal expansion coefficient of FV PP-RCT FASER OXY pipes is significantly lower due to reinforcement compared to standard all-plastic PP-R pipes. The combination of PP-RCT and the reinforcing component limits thermal expansion, so the pipes "work" less and maintain their shape better during temperature changes. In practice, this means less elongation with the same temperature difference and length of the route, which allows the design of long sections, risers, and penetrations through structures.

Lower expansion also reduces the stress on fastening points, fittings, and connections, increasing the stability of the installation during temperature cycles. As a result, compensations can often be designed more simply, with less need for expansion loops and lower requirements for support placement. The result is a more installation-friendly and long-term stable distribution system with a lower risk of deformation.

Thermal expansion of PP-R and PP-RCT OXY pipes



# FV PP-RCT FASER OXY now available in a wide range of FV – Plast pipes

	Cold water	Air conditioning, cooling water	Hot water	Low temperature heating distribution	High temperature heating distribution	Compressed air distribution
 FV PP-RCT FASER OXY	✓	✓	✓	✓	✓	✓
 FV PP-RCT UNI	✓	✓	✓	✓		✓
 FV PP-RCT HOT	✓	✓	✓	✓		✓
 FV PP-RCT FASER HOT	✓	✓	✓	✓	✓	✓

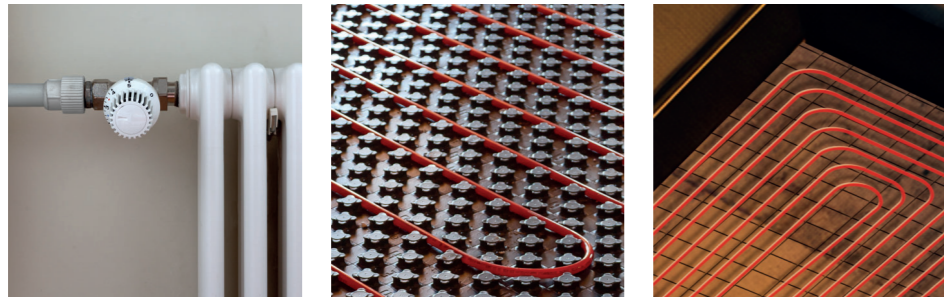
✓ Primary area of use  
 ✓ Suitable application area

## Evolution in the world of FV systems

- earlier pipe series**
- FV PP-R CLASSIC
  - CLASSIC PN16 > FV PP-RCT UNI
  - CLASSIC PN20 > FV PP-RCT HOT
  - FASER PN20 > FV PP-RCT FASER HOT
  - STABI PN20 > FV PP-RCT FASER OXY
- 4<sup>th</sup> generation pipes**
- FV PP-RCT

**15** Year warranty on PP-RCT pipes

# Complete system for heating and cooling distribution



**FV – Plast offers a comprehensive PP-RCT piping system for heating and cooling distribution – from pipes to fittings and installation accessories.**


The system is designed as a single unit, with individual components being mutually compatible, allowing for quick installation and resulting in a long-term reliable solution.

A key benefit for heating and cooling circuits is the design with an oxygen barrier according to DIN 4726, which meets the requirements for limiting oxygen penetration into the system. This helps protect pumps, fittings, heat exchangers, and other sensitive components, contributing to a longer lifespan for the entire system.

## Main advantages of the system


- Pipes with an oxygen barrier made of modern 4<sup>th</sup> generation PP-RCT material with temperature resistance up to 90 °C
- Universal application – one pipe for heating and cooling
- Three-layer technology with an oxygen barrier
- Long lifespan and reliability, worry-free operation of the system
- Wide range of pipes and fittings
- Compatibility with existing fitting systems and tools
- A homogeneous joint ensures long-term reliability of the entire system

 Protection against oxygen penetration

 For heating and cooling systems

 Proven joining by welding

 Low acquisition costs

 Lifespan of at least 50 years

# 5 reasons why to choose OXY

**1 Protection of equipment thanks to the oxygen barrier**  
 The integrated diffusion barrier according to **DIN 4726** prevents oxygen from penetrating into the heating system. It thus protects **boilers, heat pumps, pumps, valves, and heat exchangers** from corrosion and clogging. The system remains clean and efficient over the long term.

**2 Faster and easier installation**  
 Compared to the older generation of PP-R with an aluminum layer, no trimming or special procedures are required. Installation is **quick, clean, and reliable**, which speeds up construction and reduces the risk of errors.

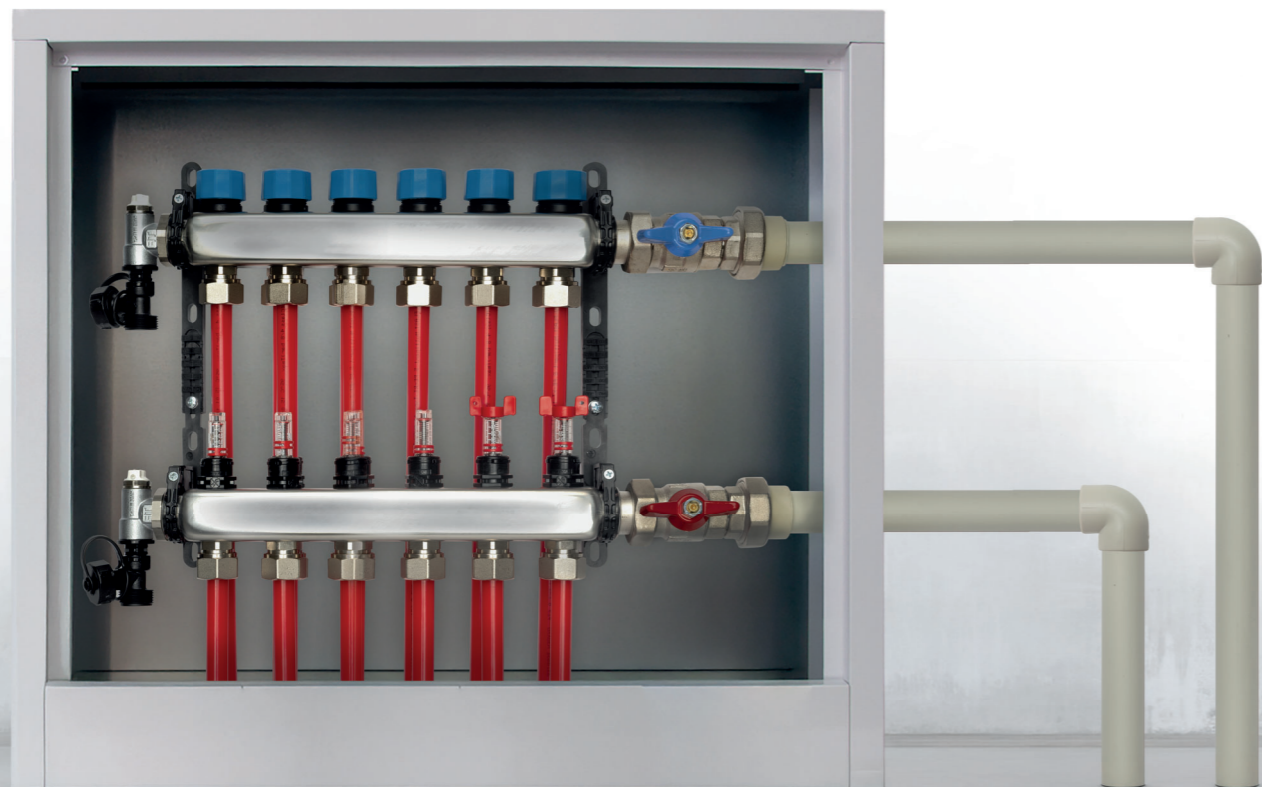
**3 Guaranteed lifespan of 50 years**  
 Pipes made of 4<sup>th</sup> generation polypropylene and fiberglass are designed to reliably serve **at least 50 years**. Shape stability, strength, pressure resistance, and temperature resistance ensure peace of mind for decades.

**4 Lower thermal expansion and a more stable system**  
 Thanks to fiberglass, PP-RCT FASER OXY provides **significantly lower linear expansion** than standard PP-R, minimizing stress, protecting joints, and improving the functionality of the entire distribution – without unwanted sagging or deformation.

**5 Significantly lower cost than copper, stainless steel, steel, or plastic press systems**  
 Compared to metal distributions, PP-RCT FASER OXY is **far more cost-effective**, while providing comparable or higher longevity. Additionally, quick installation saves time and labor costs for plumbers.

# Application – versatile solution for modern heating and cooling systems

PP-RCT FASER OXY pipes are designed to work seamlessly with today's and future heating and cooling technologies. Due to high resistance, shape stability, and integrated oxygen barrier, it is ideal for a wide range of applications **in family homes, apartment complexes, and industrial facilities.**



## Sources of heat and cold

Reliable connection of modern technologies



### Boilers of all types and heat exchange stations

condensing, gas, electric, biomass, and pellet (resistance up to 90 °C)



### Heat pumps

air-water, ground-water, water-water (protection of exchangers due to oxygen barrier DIN 4726)



### Cooling sources

large industrial central cooling units (stable operation even at low outdoor temperatures)

## Radiant and terminal devices

Efficient distribution of heat and cold



### Radiator networks

riser pipes, supplies, and distribution to heating emitters



### Underfloor heating

supply lines to manifolds



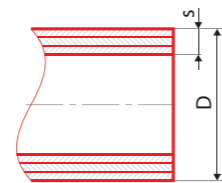
### Fan coils and terminal units

heating and cooling in residential and commercial buildings

# Pipes

## FV PP-RCT FASER OXY HEAT/COOL

Suitable for heating and cooling distribution systems. For applications 20 °C/2.0 MPa–90 °C/1.0 MPa up to D=63. Pipe with oxygen barrier and 3× lower thermal linear expansion compared to single-layer PP-R pipe. All dimensions d20 to d63 in lengths of 3 m.



Dimensions [mm]	Quantity in bulk packaging [m]	Weight [kg/m]	Volume [dm <sup>3</sup> /m]	Code	D [mm]	s [mm]	SDR (S)	Pipe length [m]
20 × 2.8	75 m	0.151	0.44	AA116020003	20	2.8	7.4 (3.2)	3
25 × 3.5	45 m	0.232	0.73	AA116025003	25	3.5	7.4 (3.2)	3
32 × 4.4	30 m	0.340	1.10	AA116032003	32	4.4	7.4 (3.2)	3
40 × 4.5	18 m	0.513	1.83	AA116040003	40	4.5	9 (4)	3
50 × 5.6	12 m	0.746	2.75	AA116050003	50	5.6	9 (4)	3
63 × 7.1	9 m	1.190	4.07	AA116063003	63	7.1	9 (4)	3

# Fittings

## Compatibility with the FV PP-RCT system

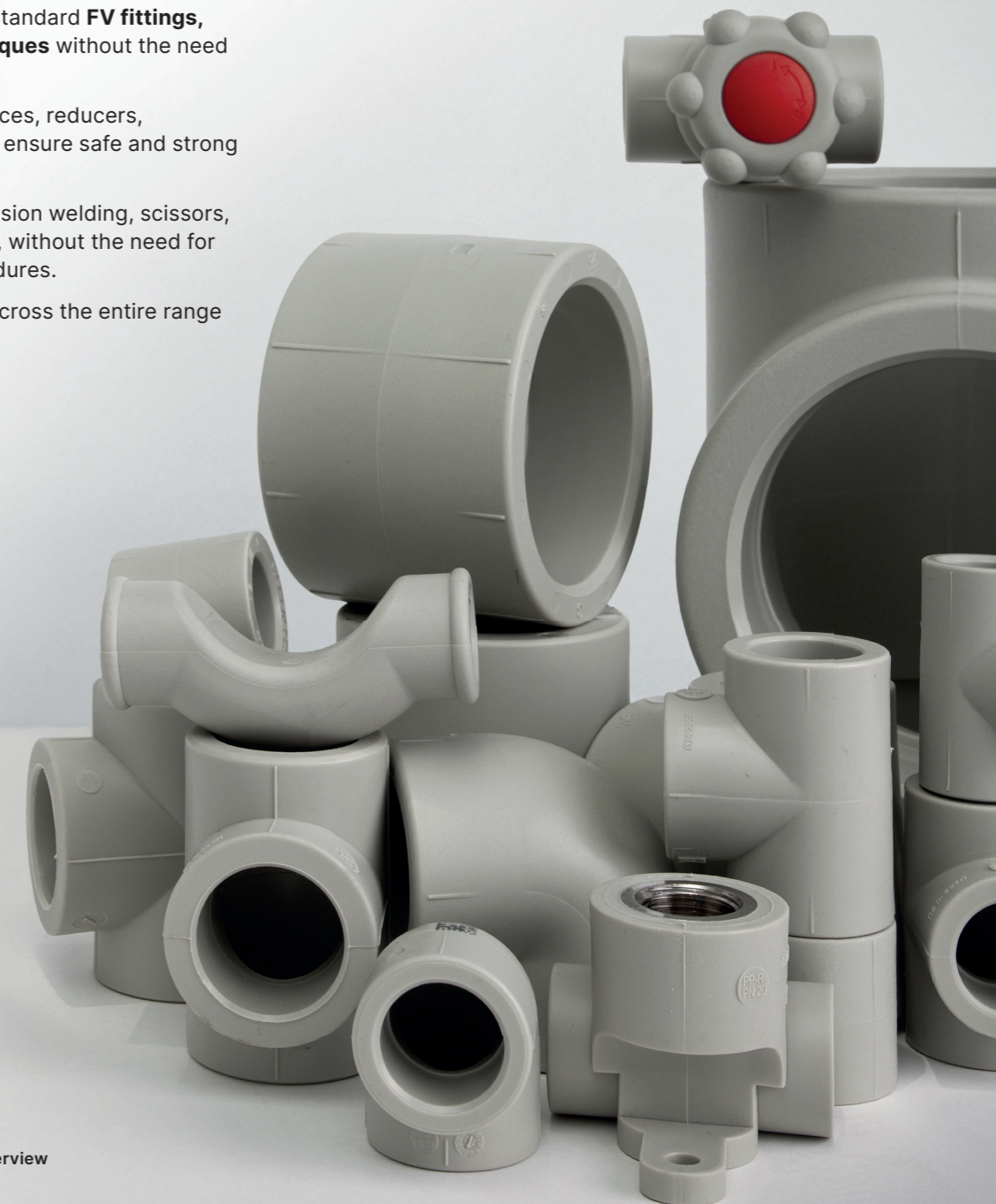
PP-RCT FASER OXY is fully compatible with the existing **FV PP-RCT system**.

Professionals can use all standard **FV fittings, tools, and welding techniques** without the need for any modifications.

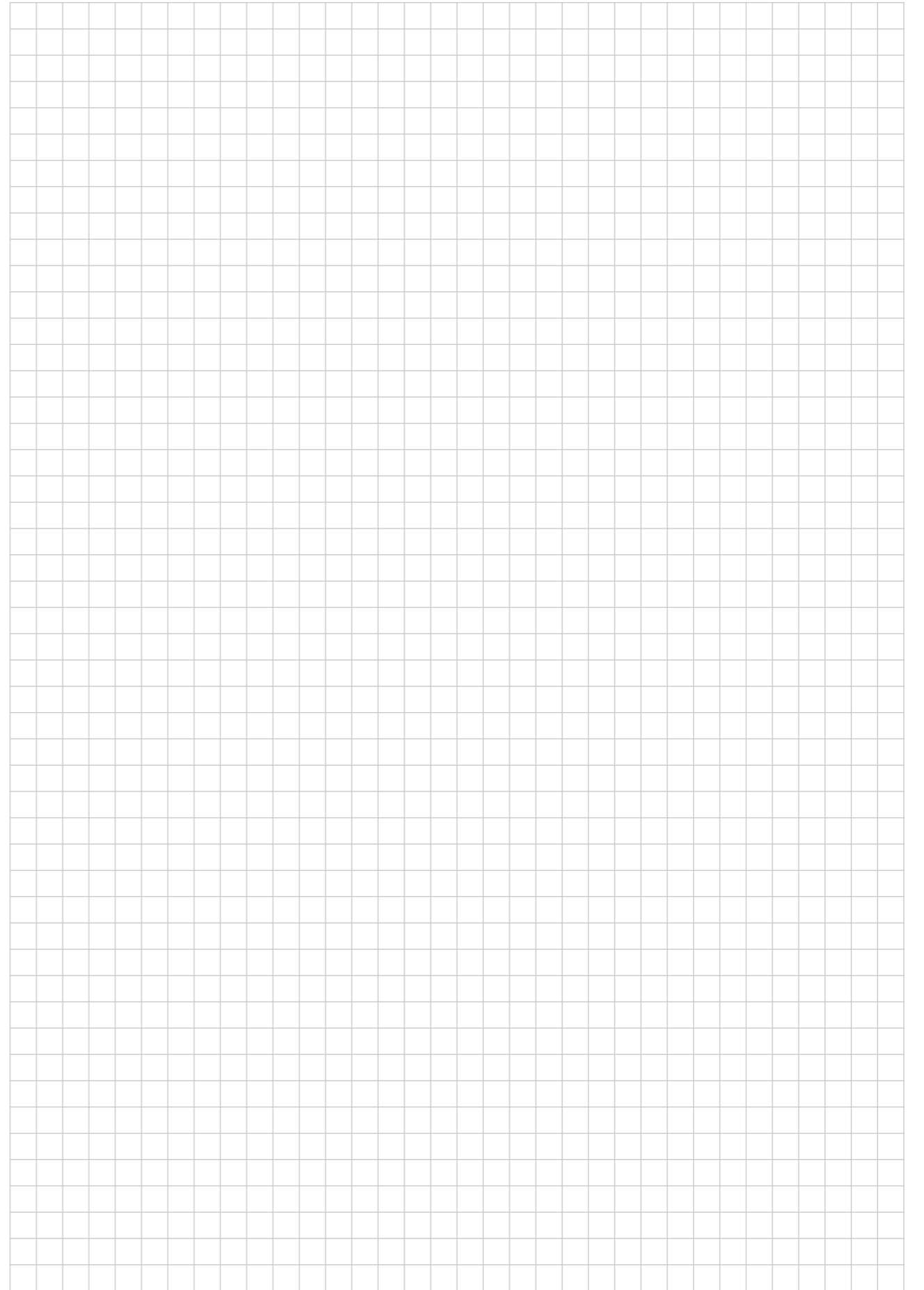
FV fittings – elbows, T-pieces, reducers, adapters, and wall fittings ensure safe and strong connections.

FV tools – standard polyfusion welding, scissors, attachments, and devices, without the need for trimming or special procedures.

Compatibility is ensured across the entire range **20–63 mm**.



Complete overview of fittings



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system walls

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Our team of specialists is always on hand to help with design, installation and quote project prices.

The warranty stated for each product covers only the functional technical characteristics of the product. It does not cover wear and tear caused by normal use of the product or defects caused by failure to comply with the general principles of handling the product or failure to follow the instructions for the product. Complete warranty conditions at [www.fv-plast.cz/zaruka](http://www.fv-plast.cz/zaruka).



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Dimensions and design are subject to change.