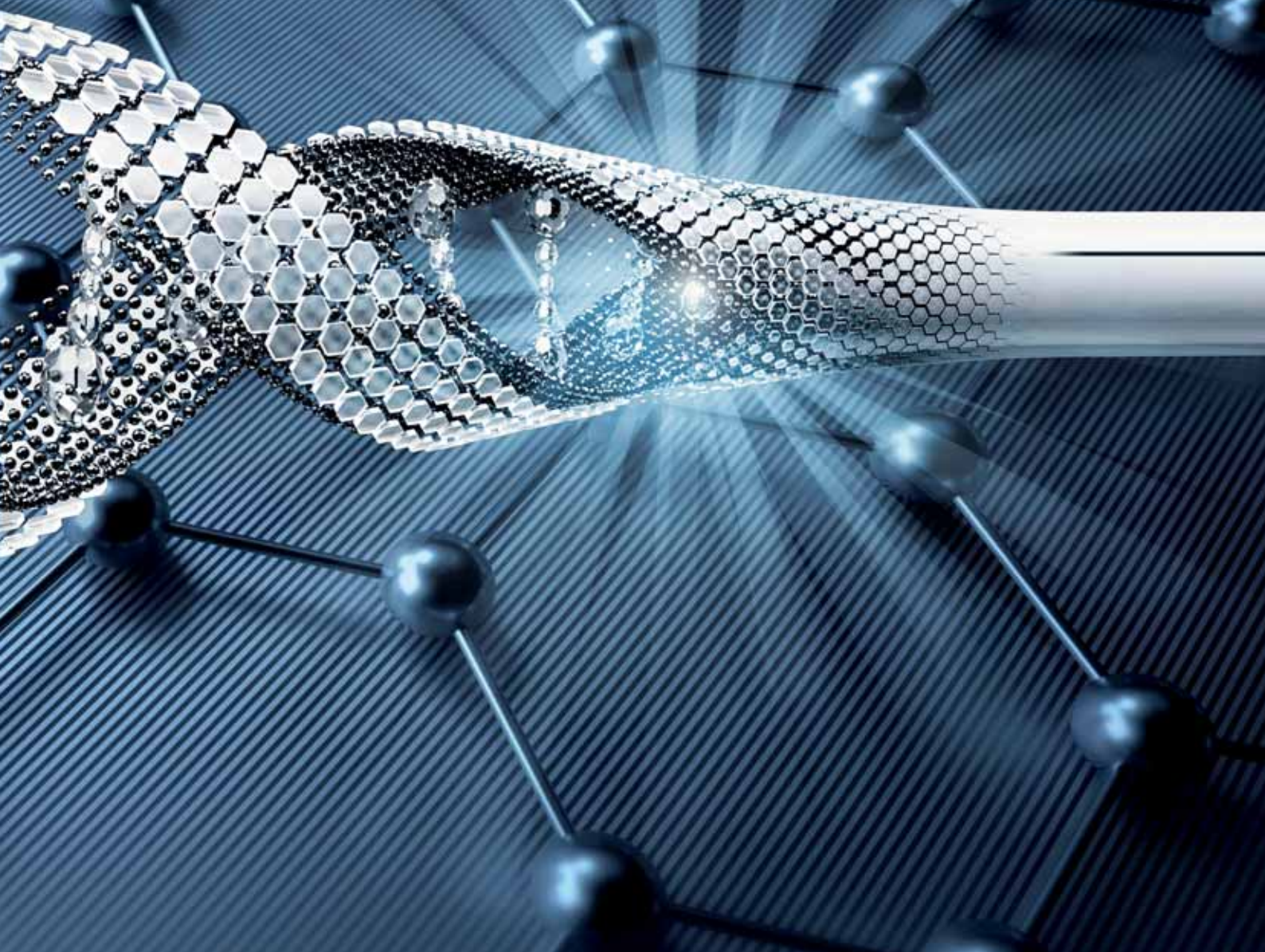


CARBO^{CRP}

AT THE TOP OF THE TECHNOLOGICAL EVOLUTION



UNIQUE CARBON TECHNOLOGY
IN PP-R/PP-RCT SYSTEM INSTAPLAST

PIPELIFE 
always part of your life

CARBO^{CRP}

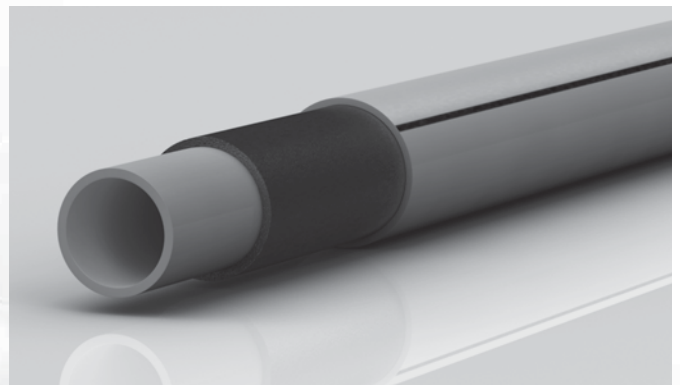
UNIQUE THREE-LAYER PIPE FOR PRESSURE APPLICATIONS

The search for optimal utilisation of carbon fibres in plastic pipe systems has finally ended. **CARBO^{CRP}** introduces the top of the technological evolution of plastic pipes for hot & cold applications. Having combined the innovative polypropylene type PP-RCT and carbon fibres, the Czech manufacturer PIPELIFE CZECH s.r.o. brings a new generation of plastic installation materials featuring the highest properties ever.

"Perfection has found its name - CARBO^{CRP}"

APPLICATION OF CARBO^{CRP} PIPES

- distribution lines for drinking water
- distribution lines for hot & cold water
- distribution lines for central (radiator) heating
- compressed air distribution
- distribution lines for AC cooling medium



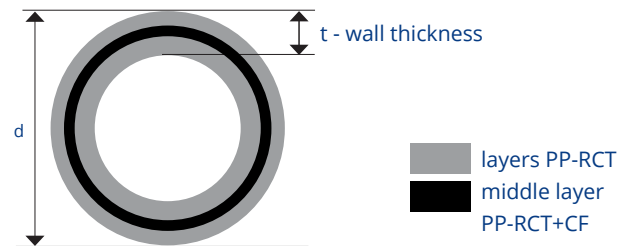
KEY ADVANTAGES OF CARBO^{CRP} PIPES

- **lower thermal expansion** (compared to the PP-R pipe)
- **temperature resistance** up to 90 °C
- **up to 50% higher pressure resistance** at high temperatures
- **20% higher flow rate**
- **standard welding** procedure equal to conventional PP-R
- **no peeling before welding required**
- **versality** and compatibility with the PP-R system
- **alternative to PP-R S2,5** pipe (PN20)
- **10-year warranty**
- **lower weight** - by 17 % on average
- **lower wearing of cutting tools**

TECHNICAL SPECIFICATION

Wall structure	PP-RCT/PP-RCT+CF/PP-RCT
Wall description	multi-layer pipe, middle layer of carbon - containing compound
Temperature coefficient of expansion	0.045 mm/(m.K)
Diameters available	d (OD) 20 - 125 mm
Standard length available	4 m; 3 m only for request
Colours	20 - 110 grey, 125 - green

3-LAYER PIPE WITH CARBON FIBRES CARBO^{CRP}








Diameter d (OD) [mm]	Wall thickness t	Class	Welding heating time [s]	Codes	
				4 m bars	3 m bars
20	2,8	S3,2	5	3296410002	3296410003
25	3,5	S3,2	7	3296411002	3296411003
32	4,4	S3,2	8	3296411005	3296411006
40	5,5	S3,2	12	3296412002	3296412003
50	6,9	S3,2	18	3296412005	3296412006
63	8,6	S3,2	24	3296413002	3296413003
75	8,4	S4	30	3296413005	3296413006
90	10,1	S4	40	3296413008	3296413009
110	12,3	S4	50	3296414002	3296414003
125	14,0	S4	60	3296414004	-

CARBO^{CRP} pipes Hi-Tech elements of PP-R/PP-RCT system INSTAPLAST

The CARBO^{CRP} pipes are fully compatible with all kinds of pipes and fittings from PP-R/PP-RCT system INSTAPLAST. The joints are made by standard polyfusion welding at a temperature of 260 °C. Pipes only need to be cleaned and cut well before welding - no peeling required. Welding, handling and other procedures are described in the brochure PP-R/PP-RCT system INSTAPLAST.

PP-R/PP-RCT system INSTAPLAST

		Drinking water	Hot & Cold water	Heating I (max. 70 °C)	Heating II (max. 90 °C)	Air
	PP-R S5	■				
	PP-R S3,2	■	■			
	PP-R S2,5	■	■	■		■
	UNIBETA	■	■	■	■	■
	CARBO ^{CRP}	■	■	■	■	■

FITTINGS SELECTION

Elbow 45°



Elbow 90° pin



T-piece



DG coupling MZD



DG coupling MZV



Elbow 90° MZV



Elbow 90° MZD



Wall piece MZD



T-piece MZV



Ball valve



Direct valve



Ball valve



Direct valve



Hand welder



Hand welder



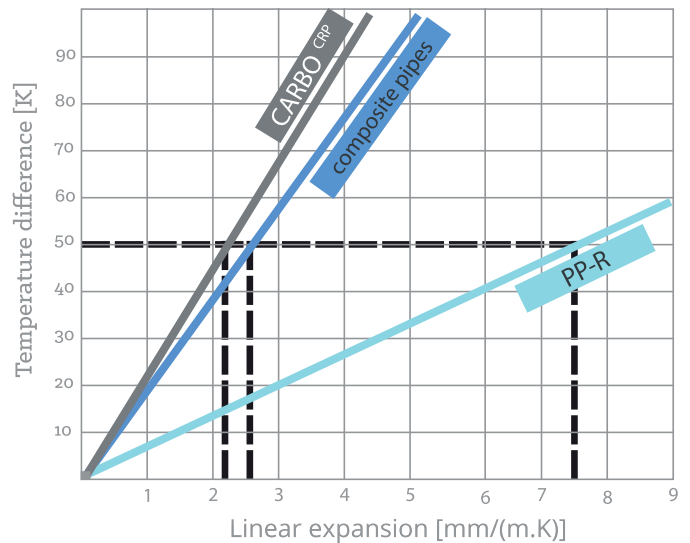
Pipe dilatation properties

Thanks to compound of PP-RCT and carbon fibres, the temperature coefficient of expansion (TCE) of the **CARBO^{CRP}** pipes is 0.045 mm/(m.K), which is less than one third of the value of the PP-R pipe's coefficient (0.15 mm/m.K)). This logically implies, that the linear expansion of the pipe with identical length and identical temperature difference will be more than 3.3 times lower in the case of the pipe with carbon fibres than in the case of the a conventional PP-R pipe.

Linear temperature expansion formula

$$\Delta L = \alpha \times L \times \Delta T$$

- ΔL** length of temperature expansion [mm]
- α** temperature coefficient of expansion (CARBO^{CRP} pipe = 0.045 mm/(m.K))
- L** length of installed pipe [m]
- ΔT** difference of temperature during of installation and working temperature [K]

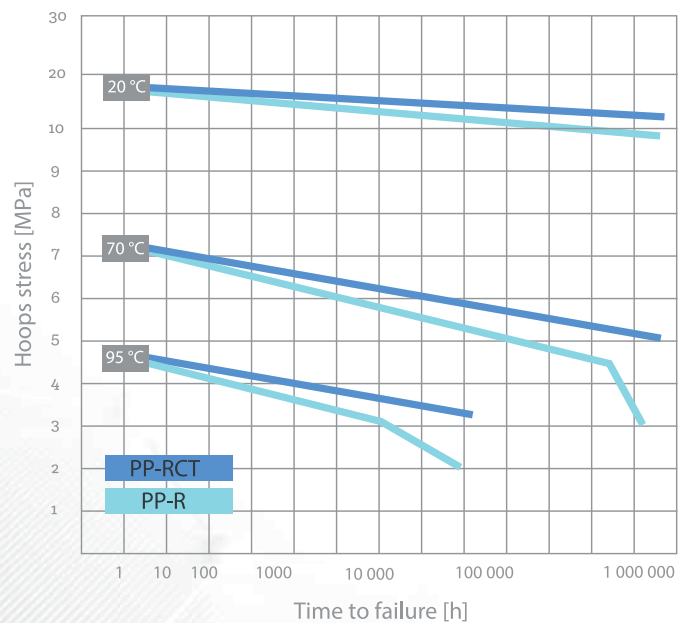


PP-RCT - Polypropylene of the 4th generation

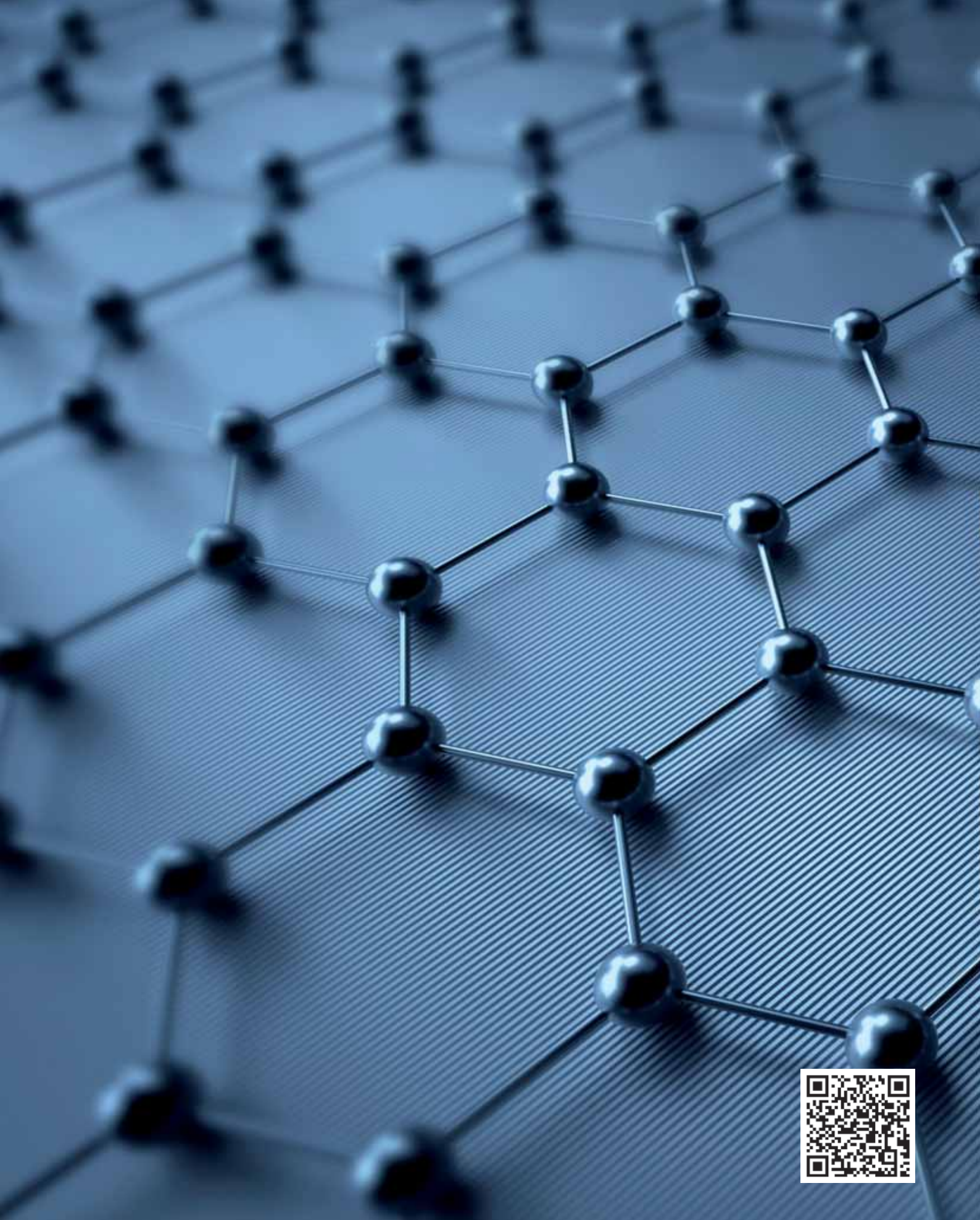
The special **nucleation process** modifies the crystalline structure of static copolymer PP-R. Thanks to this process the material gets much better **pressure and temperature properties**.

Carbon fibre (CF)

The carbon fibre contains carbon in various modifications. It is a long, thin strand of material with a diameter of 5 - 8 μm, comprised carbon atoms. The carbon atoms are bound together to form microscopic crystals which are oriented in parallel to the long axis of the fibre.



The outcome of the combination of these materials is the **CARBO^{CRP} pipe**. A unique pipe for "common" application.



Pipelife Czech s.r.o.

Kučovaniny 1778, 765 02 Otrokovice, Czech Republic

Tel.: +420 577 111 213, fax: +420 577 111 227

www.pipelife.cz

PIPELIFE 
always part of your life