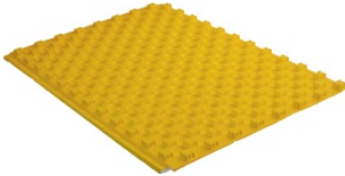


SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION (only warm)



P5

knuckled slab 5 treaded density 30 Kg; bugnato e battentato; with anti diffusion plastic film yellow; $\lambda_D=0,034$ W/mK sintered expanded polystyrene insulation; printing closed cell; marked CE; compliant in accordance to UNI 13163 e EN 1264/4; 200 kPa; surface 1200 x 800 (0,96 m²).
 R_D m·K/w 0,6; 0,75; 0,885; 1; 1,264; 1,542; 1,828; 2 (according to the different ticknesses in range, according EN 1264)



CPA 15/6

perimeter band of flexible polyethylene foam, ensures the thermal expansion of the screed. Adhesive strip on the whole rear side to more easy installation, with a strip of PE welded to avoid acoustic bridges due to infiltration down the slab.
Height mm. 150 thickness mm. 6



PE-Xa 17x2

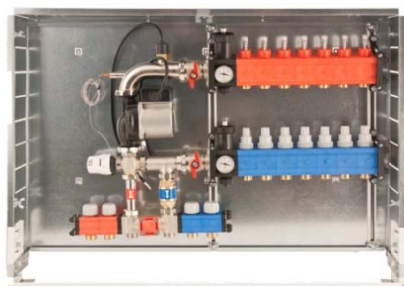
crosslinked polyethylene pipe with peroxide method, equipped with oxygen barrier evoH. Raw material is high density polyethylene (HDPE) 951 kg/m³, this pipe has a lower degree of crystallization which makes the same more flexible than that of the competitors. The pipe is crosslinked immediately after the exit from the extrusion head by heating with an infrared radiation at high power and short wavelenght with a degree >75%.
Certifications: IIP; CSTB; SKZ; IQNET; AENOR
DIN EN 12318-2 (former DIN 16892) compliant in accordance to ASTM F876 / F877.

SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION (only warm)



PE-RT 17x2

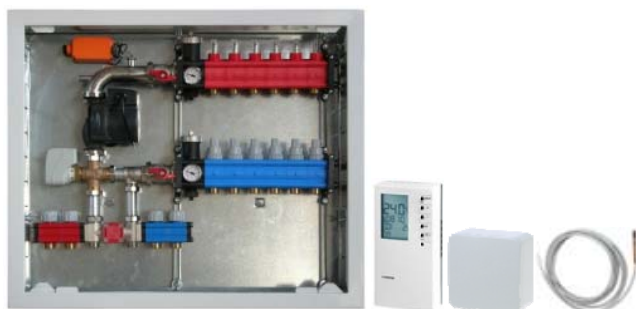
polyethylene pipe with oxygen barrier evoH, this particular type of extrusion allowa the high malleability of the pipe also in winter. Raw material is polyethylene with high thermal resistance with evoH oxygen barrier. According to DIN EN ISO 22391. IIP n° 261 / 2011 – Rev. 0 certifies that the product described complies with requirements indicated and IIP specified in the general regulations and special rules applicable and evaluated against the requirements document Sincert RT06



DUOFIX

control unit **only warm** at fixed point to be recessed in the wall for distribution both high and low temperatures; composed of that elements:

steel cabinet; polyamide manifold (reinforced with glass fiber) for low temperature, polyamide manifold (reinforced with glass fiber) for high temperature (2 ways for radiators) thermostat security TCS 47; three ways valve BUL 57 with thermostatic control TCB 34; double by pass valve; n. 2 thermometer TB 12; n. 2 automatic airvent; n. 2 filling valve+



DUOKLIM OW

climate control unit to be recessed in the wall for distribution both high and low temperatures; composed of that elements:

steel cabinet; polyamide manifold (reinforced with glass fiber) for low temperature, polyamide manifold (reinforced with glass fiber) for high temperature (2 ways for radiators) thermostat security TCS 47; three ways valve BUL 57 with motorized actuator AXM 117 (230 V) TCB 34; double by pass valve; n. 2 thermometer TB 12; n. 2 automatic airvent; n. 2 filling valve; ; a 3 speed Pump Grundfos UPS 25/55 Low Energy;

Package inculding only warm separately delivered

NRT 114 control unit (to be wall installed ; don't need thermostat because that has this function)

EGT 301 external probe (to be installed in the outside wall of the house, possibly at north)

EGT 354 flow sensor (to be installed inside cabinet of DUOKLIM **OW**)

SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION *(only warm)*



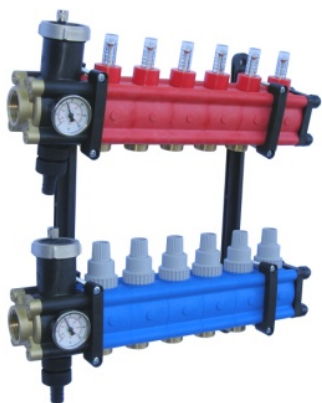
CIM

steel sheet cabinet for manifold with mobile guides . Adjustable in depth from 110 to 150 mm. Lock with screwdriver.
Suitable for the containment of manifolds in the range. Available in widths of 40, 50, 60, 70, 85, 100, 120, 130



POLIEKO

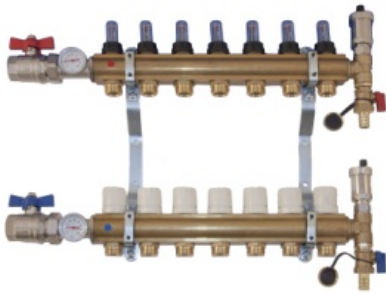
modular manifold 1" in polyamide reinforced with glass fiber, thermostatic valve on the return, with flow rate, with n. 2 thermometers, n. automatic 2 automatic airvent, n. 2 exhaust terminals, and n. 2 brackets.



POLISWELL

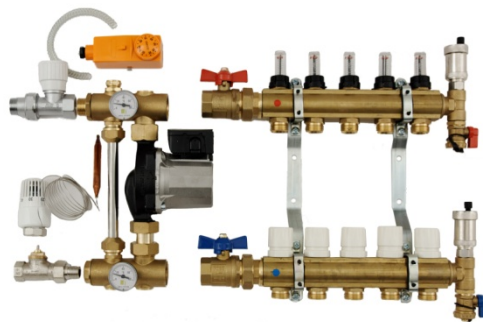
modular manifold 1" ¼ in polyamide reinforced with glass fiber, thermostatic valve on the return, with flow rate, with n. 2 thermometers, n. automatic 2 automatic airvent, n. 2 exhaust terminals, and n. 2 brackets.

SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION (only warm)



OTTOMATIC

brass manifold 1" thermostatic valve on the return, with flow rate, with n. 2 thermometers, n. automatic 2 automatic airvent, n. 2 exhaust terminals, and n. 2 brackets.



OTTOFIX MONO

UHM mixture system. This control center is designed for mixing the primary supply water with the under floor heating return water into a required temperature for under floor heating systems. Main components: thermostat security TCS 47; three ways valve BUL 57 with motorized actuator AXM 117 (230 V) TCB 34; double by pass valve; n. 2 thermometer TB 12; n. 2 automatic airvent; n. 2 filling valve; Pump Grundfos a 3 speed brand WILO
 OTTOMATIC brass manifold 1" thermostatic valve on the return, with flow rate, with n. 2 thermometers, n. automatic 2 automatic airvent, n. 2 exhaust terminals, and n. 2 brackets.
 CIM steel sheet cabinet for manifold with mobile guides . Adjustable in depth from 110 to 150 mm. Lock with screwdriver. Suitable for the containment of manifolds in the range. Available in widths of 40, 50, 60, 70, 85, 100, 120, 130



APX 17

fittings for connection of polyethylene pipes (PE Xa or PE RT) to the manifolds of the range swell system



RM 14

fittings for connection of multilayer pipes (MRN) to the manifolds of the range swell system

SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION *(only warm)*



TEP

actuator for electrical control of the manifold, 230 V, normally closed 2 or 4 wire, (with a limit switch for an additional electrical equipment like a boiler, a pump, or other.



TE 411

electronic room thermostat **WC** white with: big display graphic icons matched to the front buttons for choice of mode operation. Choice Celsius or Fahrenheit. Powered by 2 AA 1.5 V alkaline. Battery life more than 4 years, an indication of insufficient charging of batteries. Max temp 45°C Dimensions 135 x 83 x 21



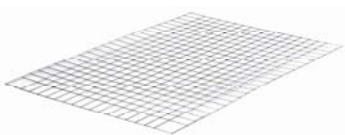
CP 18

curve support at 90° in polyamide reinforced with glass fiber. No scratch pipe



CF 17

clip for pipe in nylon reinforced with glass fiber at 50%, for fixing pipe to the slab in case of damaged knuckles



REZ 7/7/2

galvanized ribbed mesh. Decreases formation of cracks caused by temp differences and prevent the creation of projections in the floors. Measures mm. 2000 x 1000 mesh 70 x 70 x 2. Pack n. 20 sheets (m² 40). Wire is knurled for better gripping on the concrete slab

SYSTEM N° 1
RESIDENTIAL KNUCKLED OW 17
ELEMENTS DESCRIPTION *(only warm)*



GDH 11

expansion joint in flexible foam of red polyethylene, with adhesive, length mm 2000, height mm. 116, thickness mm. 7, Required for areas larger than 40 m²



GC 19

corrugated sheath precut in black polypropylene copolymer, provided with corrugation perpendicular to the longitudinal axis; good flexibility even at low temperatures. Pre cut in the longitudinal direction to allow the application on the pipe when is yet installed



LA 45

Liquid additive for concrete slab. Designed to reduce the mixing water, improves the fluidity of the concrete, promotes good workability without delaying the development of mechanical strengths. Recommended dosage: 1% by weight of cement powder



SWC 30

protective liquid for underfloor radiant system. Balanced composition of corrosion inhibitors with anti scaling action, also generates a healing effect against lime deposits or biotic, and also to corrosion residues may be present in the plant. Also generate an algostatic effect. Compatible with all metals and plastic elastomers. Biodegradable. Dosage 1 kg every 200 litres of water in the system.