



Swimming Pool Solutions

Public and private swimming pools, Sports and Spa centres, Aquaparks







Public and private swimming pools, Sports and Spa centres, Aquaparks

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Our identity

In a rapidly changing world, with a growing population and a changing climate, **water** is one of our planet's most precious resources, one that we must use with greater awareness and sustainability.

As a global leader in the industry that connects people with water and energy, Aliaxis is ready to take on this challenge and to help in shaping a better tomorrow.

We offer water and energy management systems all over the world, and it is the specific knowledge and experience of our people in the field that makes all the difference to our customers, with whom we work closely to deliver reliable performance, today and tomorrow.

Our brands have been providing innovative solutions for over 60 years and represent our history and know-how in the field of Construction, Infrastructure and Industry.

Aliaxis Italia develops personalised solutions and supports customers, from ideation to project execution, working together to define the ideal solution that can meet their needs and objectives.

A dense network of distributors, structured to guarantee not only the availability of products but also direct support and advice, is one of the many advantages that Aliaxis Italia delivers to its customers.



www.fipnet.com



ASTORE

REDI



Nicoll



From Proposal to Construction

Aliaxis is a leader in the management and conveyance of fluids.

Aliaxis Italy has a specialist team catering for designers, contractors, and contractors to offer:

- **Consultancy**
- **Solutions**
- **Technology**

CONSULTANCY

We listen to the needs of designers, contractors and companies to find the most suitable solution. We work closely our partners from proposal to construction, providing the design, technical and regulatory support to achieve the desired result.

Each project is unique, because all circumstances differ: the land with its hydro-geological characteristics, regional and local regulations.

If you have an ongoing project and would like advice, please contact:

ability@aliaxis.com

ADVANTAGES

Aliaxis technology means:

- **Being able to choose a complete system**
- **Assistance at the design stage**
- **Compliance with regulations**
- **High-performance materials**
- **Easy and fast installation**
- **Saving in installation times**

Our team of technicians works closely with designers and companies from the **Proposal** to the **Construction phase**.

We build our service around our partner's needs.

Treatment and management of **water** within **buildings**.

- Water recycling.
- **Acoustic** comfort.
- **Air** quality.
- **Energy** saving.

We adapt our products and services to the needs of professionals and general contractors.





TECHNOLOGY

We provide solutions complying with current regulations and on-site assistance during installation. Rely on an expert to be sure of a job done properly: planning the correct installation and choosing the most suitable solution saves installation time and guarantees the work of the company and designer.

For Conveyance, Interception, Dosing, Automation and Control product lines, please contact:

• **Industry Sales Technical Support**
technical.fip@alixaxis.com

For Drainage, Shower and Toilet, Ventilation and Radiant Systems, Water and Heat Recovery product lines please contact:

• **Building Sales Technical Support**
infotecnico.redi@alixaxis.com

Focus on

UNI 10637

Changes to the law and regulations governing swimming pools, from their construction to their usage and operation, have helped to diversify the range of components on offer to make pools for public use safer and more comfortable.

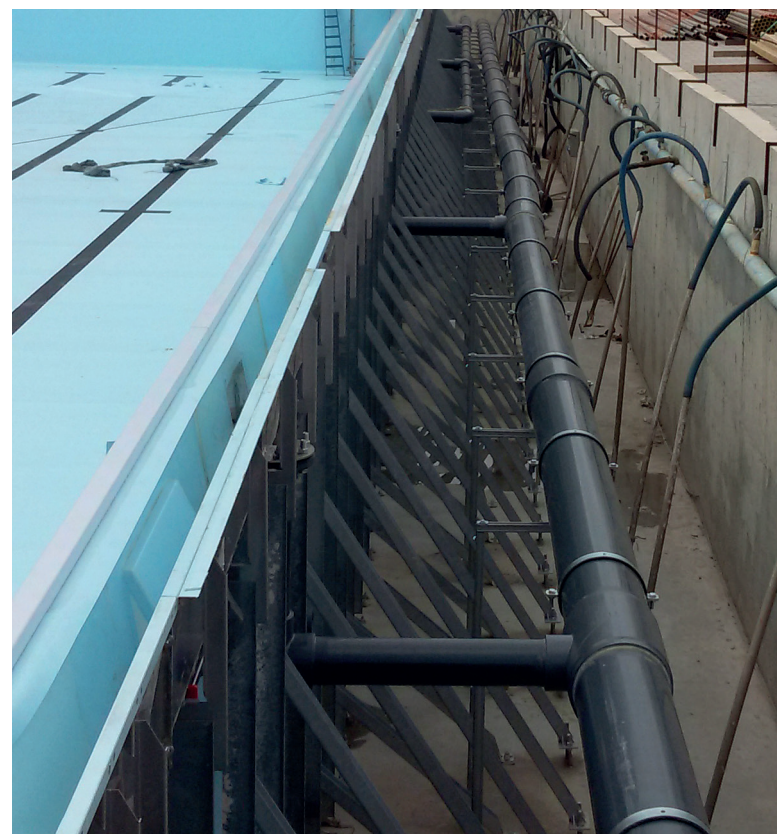
The huge popularity of water parks throughout the country, farm holiday centres and swimming pools installed in wellness centres and fitness rooms are further confirmation **of the need for facilities that guarantee safety and comfort to users.**

The **UNI 10637** standard, initiated in 1997 and subsequently revised and supplemented, sets out **guidelines for the design of filtration, circulation and recirculation systems in swimming pools in general.**

The latest 2016 revision of this national standard harmonises it with the latest European standards, **UNI EN 16582** and **UNI EN 16713**, differentiating their application between private and public pools.

UNI 10637:2016, used as a model for nearly all regions that now have a specific law for swimming pools, applies only to **"public" swimming pools (type A and B)** while for **"domestic" pools (type D)** the two European standards mentioned above apply, each divided into three parts.

For this reason, **when designing a swimming pool facility** for both public and private use, **it is essential to follow the requirements of these standards to ensure high standards of efficiency and safety.**







Swimming facilities

"If there is magic on this planet, it is contained in water."
(Loren Eiseley)

A **correctly functioning** swimming pool depends on careful management of the water cycle. Using products that combine **simplicity of installation** with **durability over time** is the right solution for building a high-quality swimming pool (value), which is our mission in support of our customers.

Our technical support service to identify the best product and its correct application **enables** our partners **to manage** all **construction activities with simplicity and success.**

The possibility to **customise Aliaxis products** is a powerful tool for strengthening recognisability on the market and ensuring a high degree of differentiation.

A **geographically widespread sales structure** is always at the service of anyone who chooses **Aliaxis** as their preferred partner for water management systems.

Public and private swimming pools, Sports and Spa centres, Aquaparks



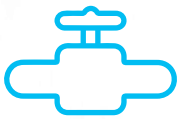
Conveyance

Pipes and connections for the safe and long-lasting recirculation of pool water



Automation

Actuated valves for automated system hydraulics management



Interception

Ball and butterfly valves for efficient fluid handling



Dosage

Diaphragm and ball control valves for precise and efficient flow rate setting





Control

Instrumentation for accurate and continuous monitoring of the key parameters



Ventilation and Radiant Systems

Room ventilation and radiant heating and cooling systems



Drainage

Systems to drain water from paved surfaces



Heat and Water Recovery

Solutions for heat recovery and grey water recovery



Showers and toilets

Partitionable cisterns and panels, designer drains for showers





PVC-U and PVC-C systems

for conveying water in the recirculation process of the pool system

Application

Swimming pool water

Safe and effective water conveyance is essential for smooth pool operation. In accordance with UNI 10637:2016, a correct recirculation system must be designed to ensure effective homogenisation of the pool water and requires that pipes in type A and B pools (public pools) should be sized to achieve pressure drops of <40 mm/m for intake sections and <70mm/m for outlet sections.

These specifications can also be applied to type C and D pools (therapeutic and private pools) to ensure high water quality and hygiene.

With a PVC-U piping and connection system it is possible to ensure the correct management of chlorinated water at room temperature.



maintenance
free



low energy con-
sumption



easy installation



anti-legionella

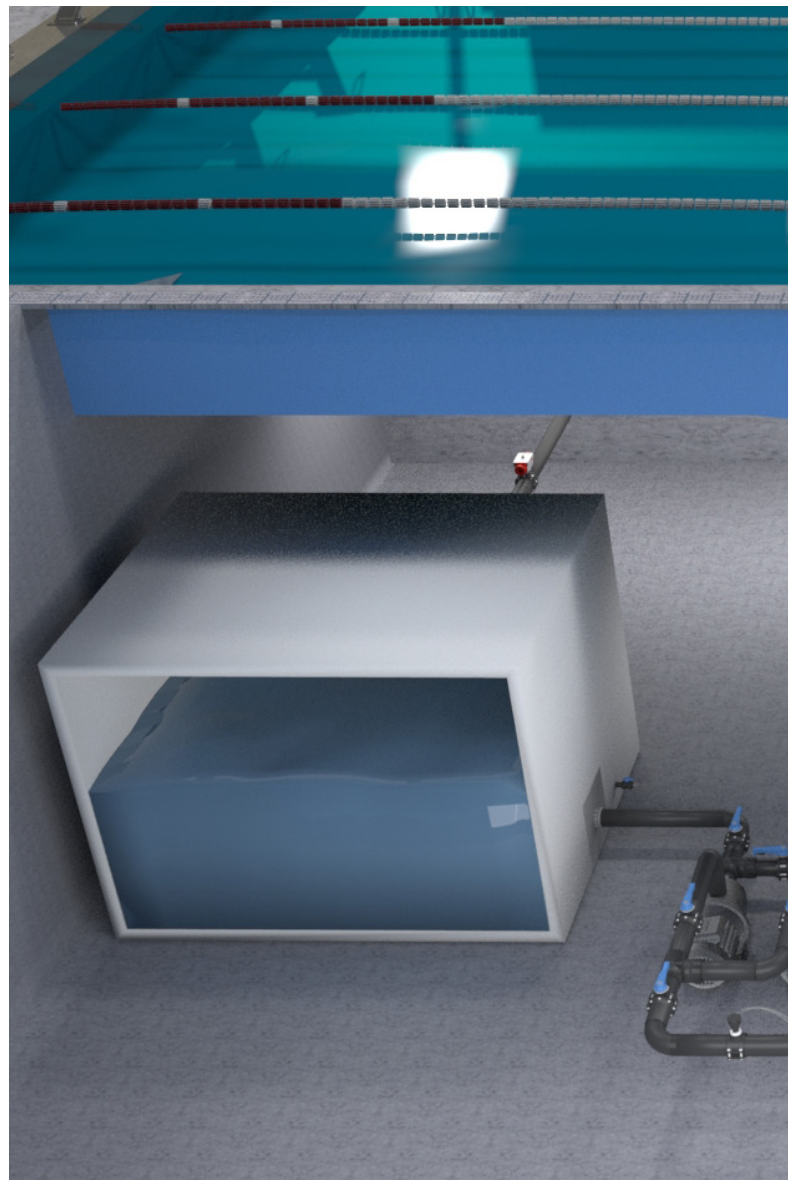
Advantages

Maintenance-free

The inertness to corrosion offered by FIP brand polyvinyl systems enables water flows to be managed safely and without maintenance schedules.

High energy efficiency

The high surface finishing of the polyvinyl chloride pipes combined with the optimised fluidynamics of the connection elements minimises pressure losses and favours low energy consumption.



Ease of installation

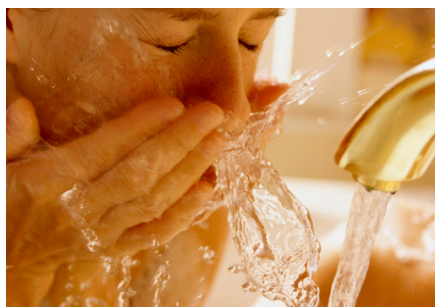
The convenience of chemical welding offers a unique advantage in installation since it does not require specific, expensive and heavy tools for assembly.

High chemical resistance:

Polyvinyl chlorides offer remarkable chlorine stability and a barrier to the proliferation of legionella bacteria.



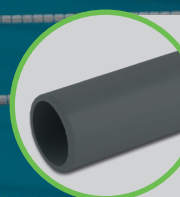
Low costs



Hygiene



Sustainability



PVC-U pipes

Size range d16÷400 (mm)

Nominal pressure PN 6, PN 10, PN 16 with water at 20 °C

Temperature range 0 °C TO 60 °C

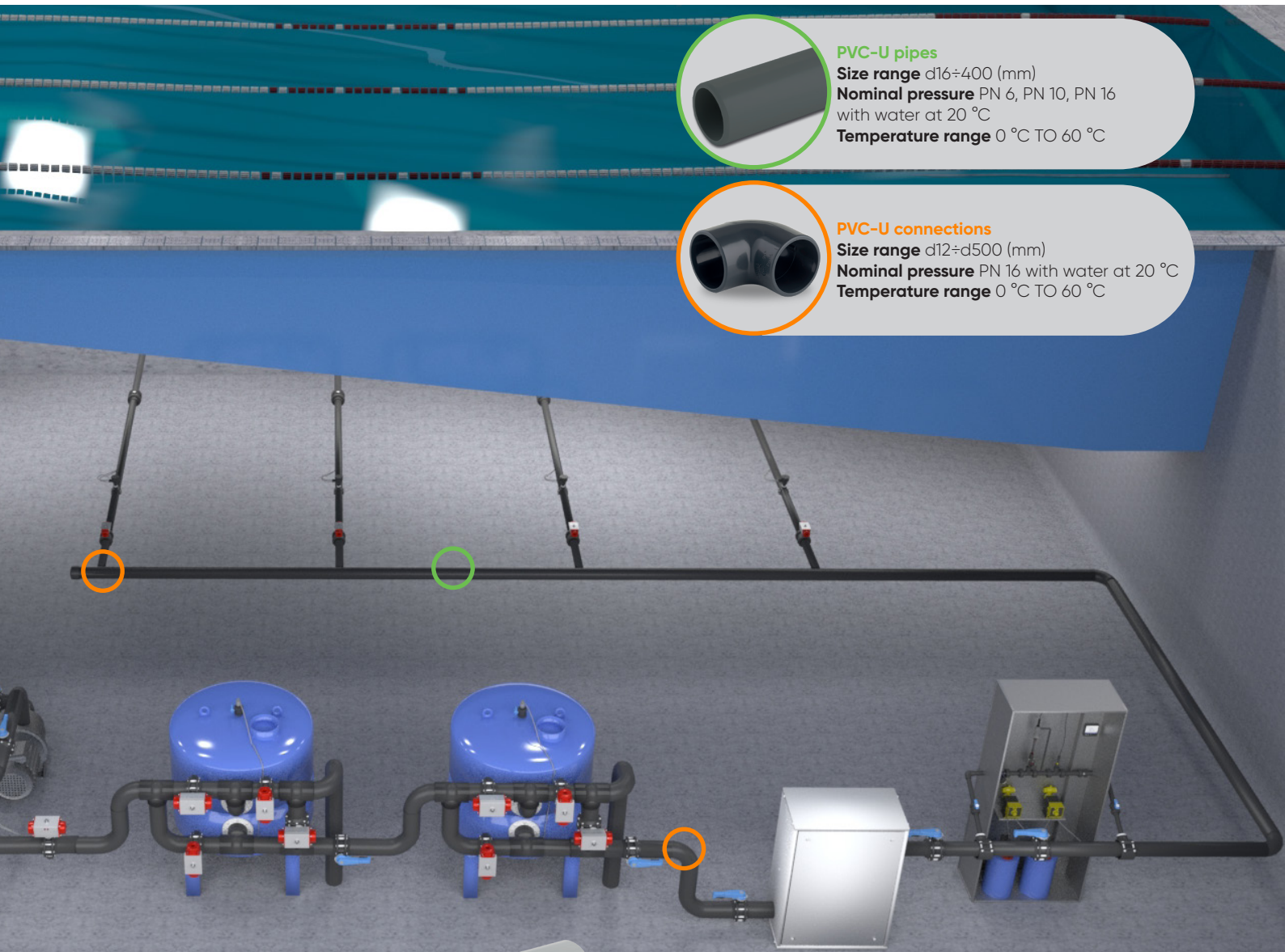


PVC-U connections

Size range d12÷d500 (mm)

Nominal pressure PN 16 with water at 20 °C

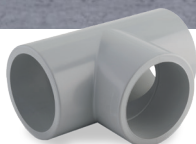
Temperature range 0 °C TO 60 °C



Thermal water solutions

High temperatures and high concentrations of mineral salts require a solution that can guarantee high system efficiency while maintaining the beneficial properties of the thermal waters.

With the PVC-C pipe and connection system, available from d16 to d225mm, it is possible to guarantee the correct handling of any thermal water even at high temperatures (up to 100 °C).



Certificates:

Quality standards:

ISO 9001, ISO 14001

Approvals and Quality Marks

ABS, ACS, BSI, Bureau Veritas, CSTB, IIP UNI, KIWA, UKR-SEPRO, WRAS, RMRS, DNV-GL, NIZP, EAC, LR, KR



INTERCEPTION



PVC-U and PVC-C valves

for intercepting water in the recirculation process of the pool system

Application

Interception

During normal pool operation it may be necessary to block or partialise the water flow in the recirculation circuit.

To do this effectively and immediately, FIP offers ideal solutions with butterfly valves, ball valves and non-return valves from the patented Easyfit series.

Pre-filtration phase

In the pre-filtration phase the water may contain suspended solids, so the ideal solution is the FE Easyfit butterfly valve series.

Post-filtration phase

For clean water flow, the VEE Easyfit ball valve series is the most versatile and quickest solution to install.

Auxiliary functions

To counteract reverse flow or the risk of unintentional emptying of pipes, the SSE Easyfit non-return valve series, available in both PVC-U and PVC-C, is the optimum solution.



FE PVC-U butterfly valve

Size range DN 40 ÷ 200

Nominal pressure

- DN 40÷50: PN 16 with water at 20 °C
- DN 65÷200: PN 10 with water at 20 °C

Temperature range 0 °C TO 60 °C

Kv100 1000÷30500 l/min

Advantages

Make your installation unique.+

The Easyfit labelling system allows valves to be personalised with company trademarks, serial or identification codes or service data such as the function of the valve within the system or the fluid conveyed; specific information for after-sales service to customers can also be included, for example the contact details of the installer or the date and place of installation.

Quick and easy with All-in-One valves

Thanks to the multifunctional ergonomic handles of the Easyfit line, installation is safe and quick even in tight spaces, inspection of the valve body and adjustment of the seals can be carried out without the use of tools, and rapid operations and graduated adjustments can be made.



Expertise



Safety



Recognisability



VEE PVC-U ball valve

Size range DN 10 ÷ 100

Nominal pressure PN 16 with water at 20 °C

Temperature range 0 °C TO 60 °C

Kv100 80÷9400 l/min



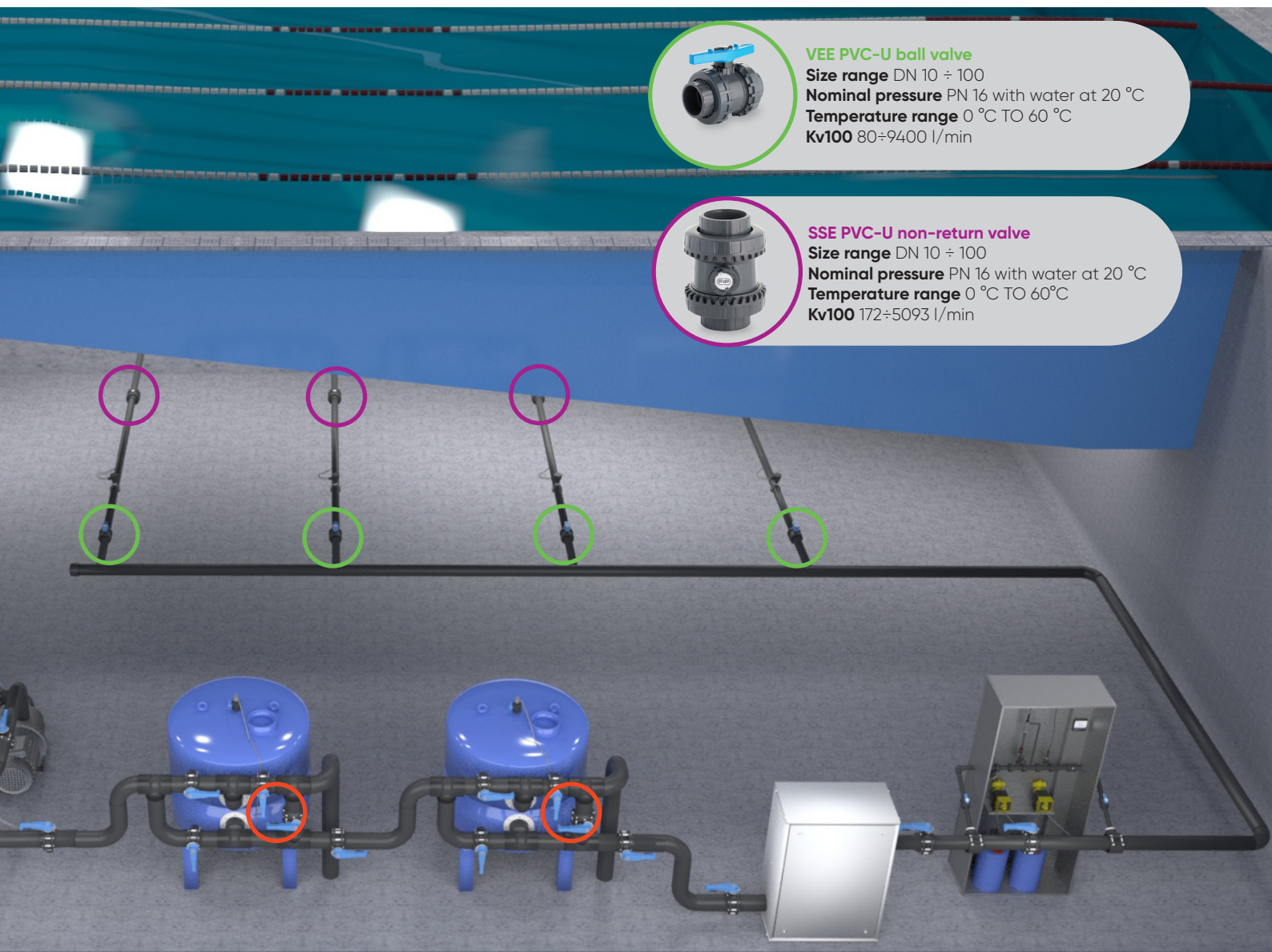
SSE PVC-U non-return valve

Size range DN 10 ÷ 100

Nominal pressure PN 16 with water at 20 °C

Temperature range 0 °C TO 60 °C

Kv100 172÷5093 l/min



Thermal water solutions

For the flow of thermal water, where the characteristics of the application require greater resistance to high temperatures, a dedicated range of Easyfit PVC-C series ball (VXE), butterfly (FK) and non-return (SSE) valves is available in a size range from DN 10 to DN 400 and operation up to 100 °C.



Certificates:

Quality standards:

ISO 9001, ISO 14001

Approvals and Quality Marks

ABS, ACS, Bureau Veritas, EAC, NSF, DNV-GL, TA-LUFT, UKR-SEPRO, WRAS, RMRS, NIZP LR, KR



AUTOMATION

Pneumatically actuated valves

for the automation of water management in the recirculation process of the pool system

Application

Flow interception activities can be optimised by activating the valves installed on the recirculation circuit.

With system automation, physical intervention is no longer necessary and it is possible to plan any operation at any time of the day or year.

This implementation, combined with the use of monitoring instrumentation, makes it possible to combine actions with specific parameters and to remotely control the management of the entire system.

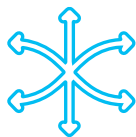
Pneumatic activation is particularly appreciated for large installations and for specific needs such as backwash filtration systems requiring high operational speed. For installations where compressed air is not used, electrically actuated solutions are also available.



reliability



operability



versatility



control

Advantages

Carefree solutions

FIP brand actuated valves comply with the regulations currently in force and are calibrated and tested one by one, in accordance with the company's principles and know-how, to guarantee the maximum reliability and quality at all times.



FE/CP PVC-U pneumatically operated butterfly valve

Size range DN 40 ÷ 200

Nominal pressure

- DN 40÷50: PN 16 with water at 20 °C
- DN 65÷200: PN 10 with water at 20 °C

Temperature range 0 °C ÷ 60 °C

Control pressure 6 bar

A wide range of accessories enables the ideal solution to be found for managing all operations in complete safety.

Multiple options for supply voltage, switching times, intrinsic protection classes and the possibility to request special versions mean that any specific system management requirements can be catered for.



Peace



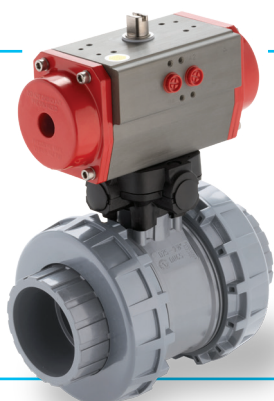
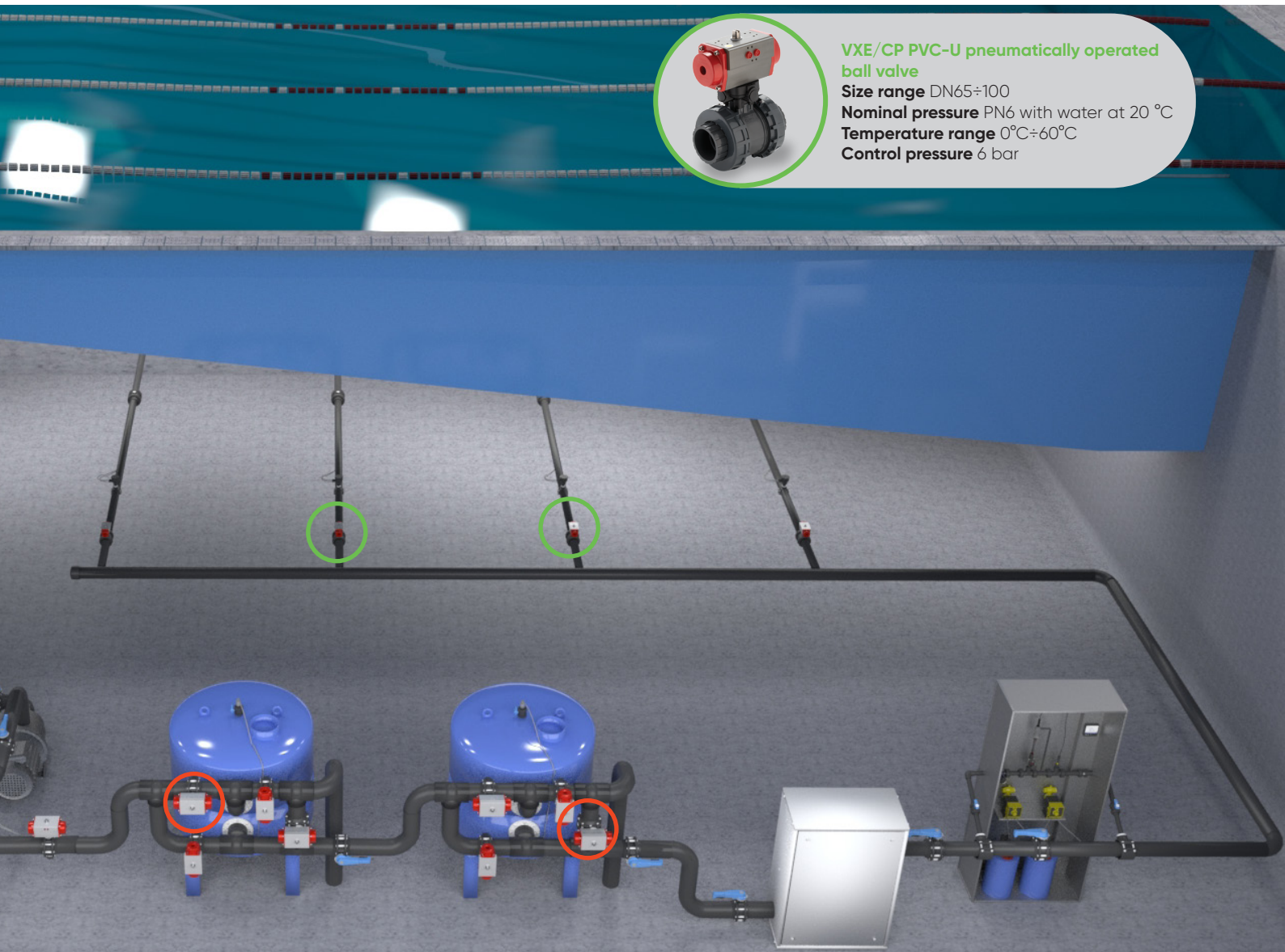
Safety



Reliability



VXE/CP PVC-U pneumatically operated ball valve
Size range DN65÷100
Nominal pressure PN6 with water at 20 °C
Temperature range 0°C÷60°C
Control pressure 6 bar



Ball actuated valves

Pneumatic and electric activation is available for both ball valves and butterfly valves.

Certificates:

Quality standards:

ISO 9001, ISO 14001

Approvals and Quality Marks

ACS, DIBT, EAC, NSF, TA-LUFT, UKR-SEPRO, WRAS, DVGW, NIZP



DOSAGE



Control instruments

for the control of water chlorination in the pool system recirculation process

Application

Swimming pool water contains both pathogenic and non-pathogenic micro-organisms that pose a risk to human health, and therefore requires balanced chemical treatment to minimise microbiological risk. The UNI 10637:2016 standard lays down specific requirements for measuring and regulating disinfection treatments for classes A, B and C (installations for public use), while UNI EN 10713 sets out the requirements for class D (installations for private use). Disinfection treatment is carried out by dosing substances that are regulated on a regional basis.

Disinfection treatments

Equipment designed for measuring and regulating the pH level (type A, B, C range 4.5-8.5pH; type D range 6.8-7.6pH) and the representative disinfection parameter must have an output signal to control the dosing systems; for type A pools in particular proportional regulation is preferred.

M9.00 series FIP monitors for type A, B and C installations, combined with CLF6 series sensors and, in the event of significant changes in the pH value, with 200 series pH electrodes, fully comply with this requirement for a free chlorine concentration of between 0.6 and 5 mg/l.

For the most modern plants using Chlorine Dioxide for chlorination, also with in situ production systems, Aliaxis also offers the CLD6 series of amperometric sensors designed for the direct measurement of this parameter without the need to combine it with pH monitoring.

For D-type systems, 200 series pH and ORP electrodes can be used to monitor the evolution of organic pollution in the pool water and to control dosing equipment for disinfectants (RedOx >650mV).



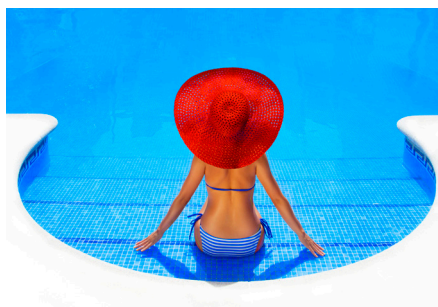
Advantages

Tailor-made for each installation

A complete and versatile range for every level and size of installation.

Equipment that can be integrated with external devices for dosing management in accordance with UNI.

Biparametric monitors to combine chemical measurement with flow measurement.



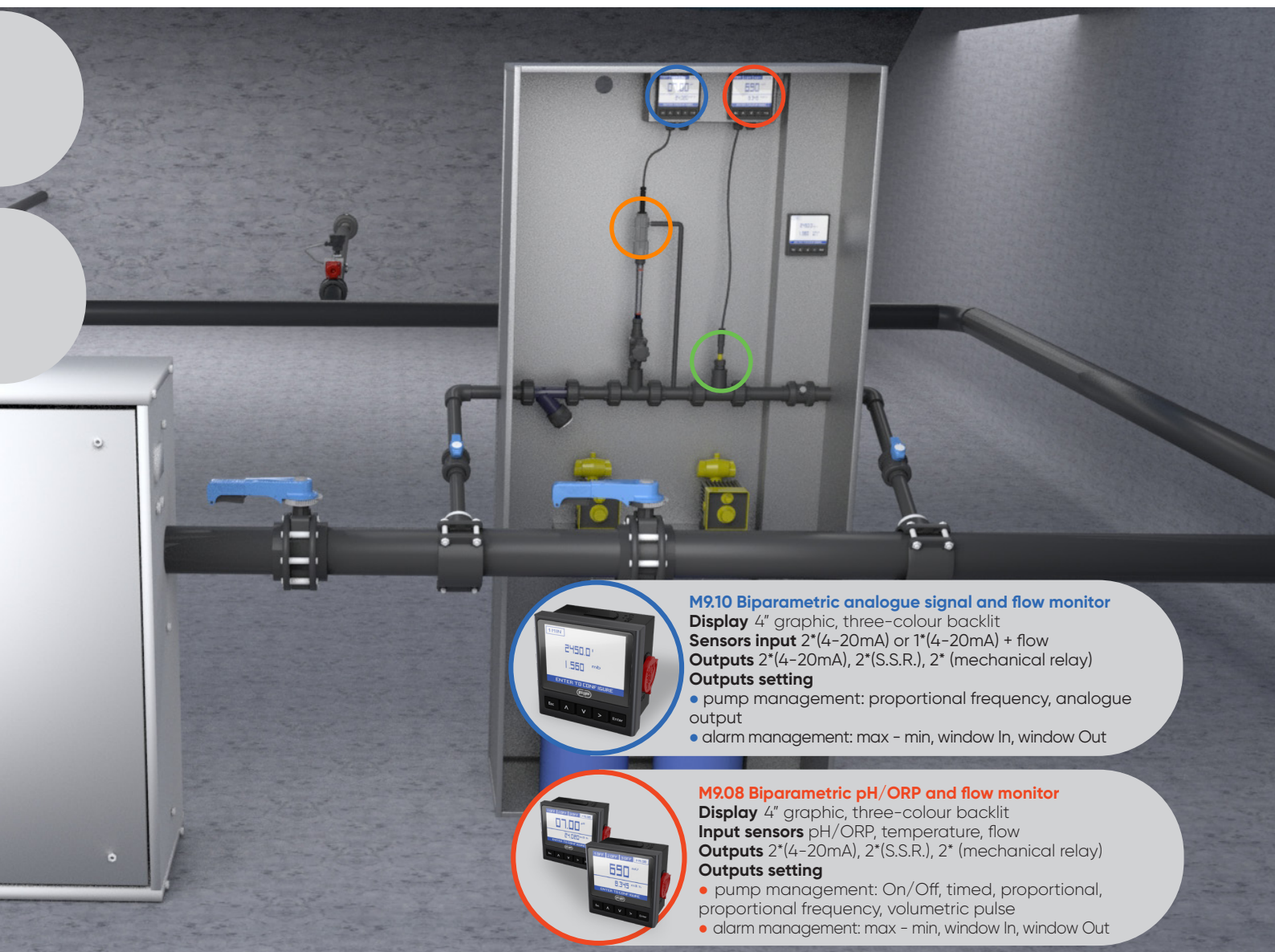
Prestige



Sustainability



Wellbeing



M9.10 Biparametric analogue signal and flow monitor

- Display** 4" graphic, three-colour backlit
Sensors input 2*(4-20mA) or 1*(4-20mA) + flow
Outputs 2*(4-20mA), 2*(S.S.R.), 2* (mechanical relay)
Outputs setting
- pump management: proportional frequency, analogue output
 - alarm management: max - min, window In, window Out



M9.08 Biparametric pH/ORP and flow monitor

- Display** 4" graphic, three-colour backlit
Input sensors pH/ORP, temperature, flow
Outputs 2*(4-20mA), 2*(S.S.R.), 2* (mechanical relay)
Outputs setting
- pump management: On/Off, timed, proportional, proportional frequency, volumetric pulse
 - alarm management: max - min, window In, window Out



200 series ORP electrodes

Single-connection solution with cable included (ORP200C) or double-connection solution with BNC connector (ORP222CD).

Certificates:

Quality standards:

ISO 9001, ISO 14001

Approvals and Quality Marks

CE, EAC, RoHS



CONTROL

Measuring instrumentation

for monitoring and controlling water in the recirculation process of the pool system



Application

Correct management of the water system that underlies the swimming pool installation involves the monitoring of volumes. In the case of volumes conveyed in pipes, the flow rate is monitored; in the case of volumes stored in the balancing pool, the level is measured.

Flow monitoring

The recirculation system must be designed to ensure an effective homogenisation of the pool water, for this reason UNI 10637:2016 prescribes a water speed in the pipe of <1.7m/s in input and <2.5 m/s in output; while UNI EN 10713-2 prescribes a speed of <3m/s for type D pools. In the section of the installation before the filtration phase, it is recommended to use a flow meter based on series F6.60 electromagnetic technology. In the part of the installation downstream of the filtration phase, it is possible to install a rotor sensor equipped with the new F3.00.W series Bluetooth wireless technology; this can be combined with a M9.00 series monitor equipped with the practical Help on Board, a guided system calibration and self-diagnostic procedure.

Level monitoring

The conventional volume of the balancing pool must be sufficient to contain the displaced volume and any wave motion generated by the maximum number of bathers, the volume generated by the backwashing of at least one filter, and the volume necessary to maintain correct aspiration and to avoid operation while dry. The balancing pool must be refilled before the minimum level is reached in order to avoid the pumps going into standby, so that the importance of accurately monitoring the water volume is clear. To monitor the volume inside the balancing pool a HF6 series hydrostatic level sensor may be used in combination with the M9.10 series monitors. The same transmitter can also be installed on the sand filter to check its level of efficiency and to plan backwashing operations.



HF6 level and pressure transmitter

Contact materials PVDF, FKM, Ceramic, (PUR cable)

Sensitive surface semi-flush ceramic membrane

Sensor technology hydrostatic, capacitive

Output 4-20mA

Range 20mA at 0.4 bar, 20mA at 16 bar

F6.60 electromagnetic flow transmitter

Contact materials SS316L, EPDM/FKM, PVDF

Sensitive surface 3 pins in SS316L (1 reference pin) Electromagnetic insertion **sensor technology**

Output 4-20mA + 1 solid state relay

Maximum operating pressure at Temperature 16 bar at 25 °C, 8.6 bar at 60 °C

F3.00.W wireless rotor flow sensor

Contact materials PVC-C/PVDF/SS316L, EPDM/FKM, Ceramic/SS316L, ECTFE

Sensitive surface Halar® rotor

Sensor technology insertion

Output: Frequency via Bluetooth® low energy

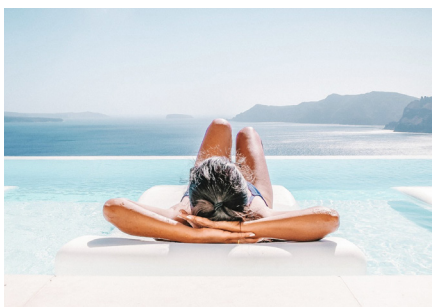
Advantages

User-friendly solutions

Insertion sensors are quickly installed by drilling a simple hole in the pipe, while the pressure and level sensors have a number of installation options that make installation equally quick and convenient.



User-friendly



Relaxation



Quality



M9.03 Biparametric flow monitor

Display 4" graphic, three-colour backlit

Sensors input 2*flow

Outputs 2*(4-20mA), 2*(S.S.R.), 2* (mechanical relay)

Outputs set-up alarm management: max - min, window In, window Out



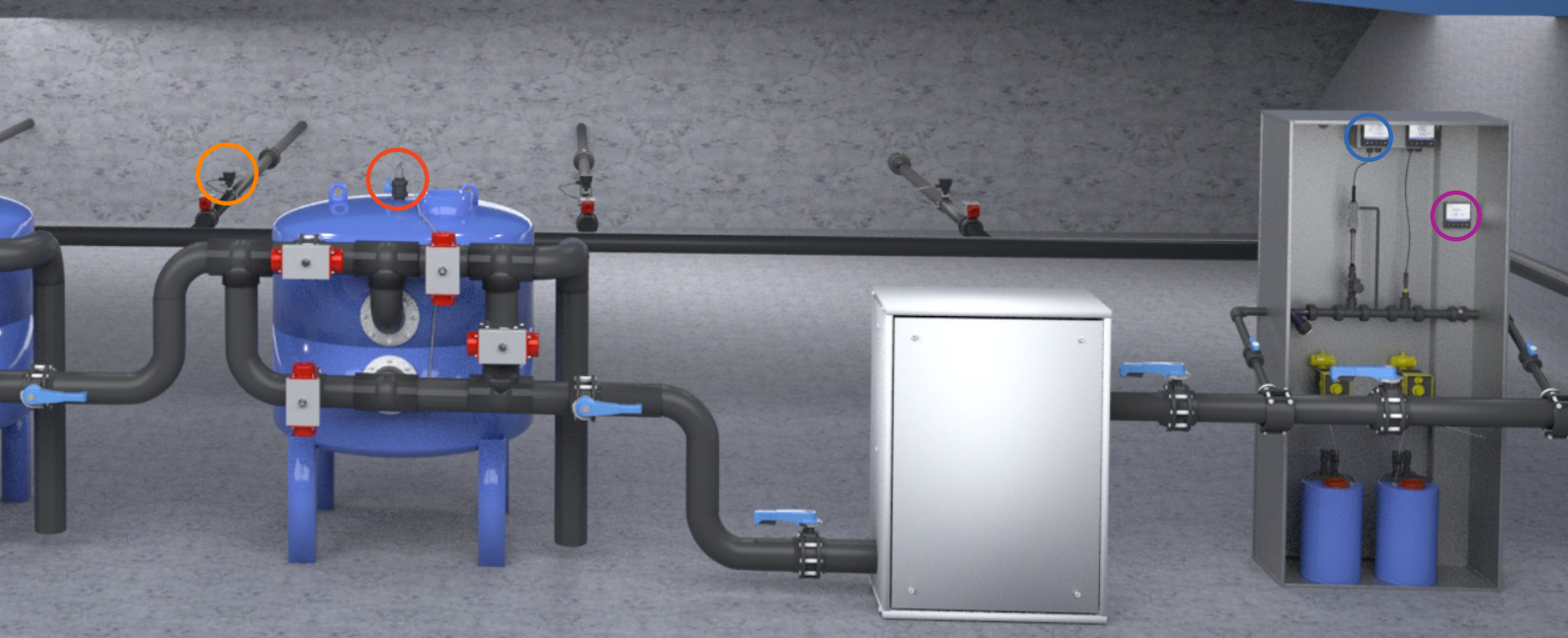
M9.10 Biparametric analogue signal monitor

Display 4" graphic, three-colour backlit

Sensors input 2*(4-20mA) or flow -1*(4-20mA)

Outputs 2*(4-20mA), 2*(S.S.R.), 2* (mechanical relay)

Outputs set-up alarm management: max - min, window In, window Out



The use of Bluetooth wireless technology also makes it easy to connect the sensors to the monitors.

FIP branded instrumentation also features an intuitive and error-proof interface with a practical on-board help function, guided settings procedures and system self-diagnostics.

Certificates:

Quality standards:

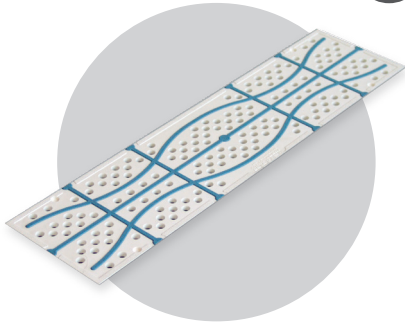
ISO 9001, ISO 14001

Approvals and Quality Marks

CE, EAC, RoHS



DRAINAGE



130 series anti-slip grille

for safety around the pool edge

Application

Safe movement around the pool is essential in all installations, whether for public or private use. A correctly sized drainage system must therefore be in place to effectively collect and channel excess water around the pool.

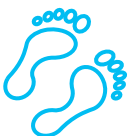
The REDI brand 130 series anti-slip grille, combined with a wide range of ducts, provides a safe and flexible solution that can be enhanced by special anti-slip rubber inserts.

A modular range of ducts in different heights allows for appropriate sizing according to the size of the pool and the volume to be conveyed, and the availability of special shapes, including angles and end caps, permits adaptation to any project configuration.

Advantages

Anti-slip

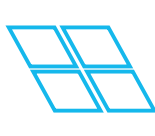
The 130 series anti-slip grille is designed to be combined with 130 series ducts, providing maximum safety around the pool edge.



barefoot



anti-slip



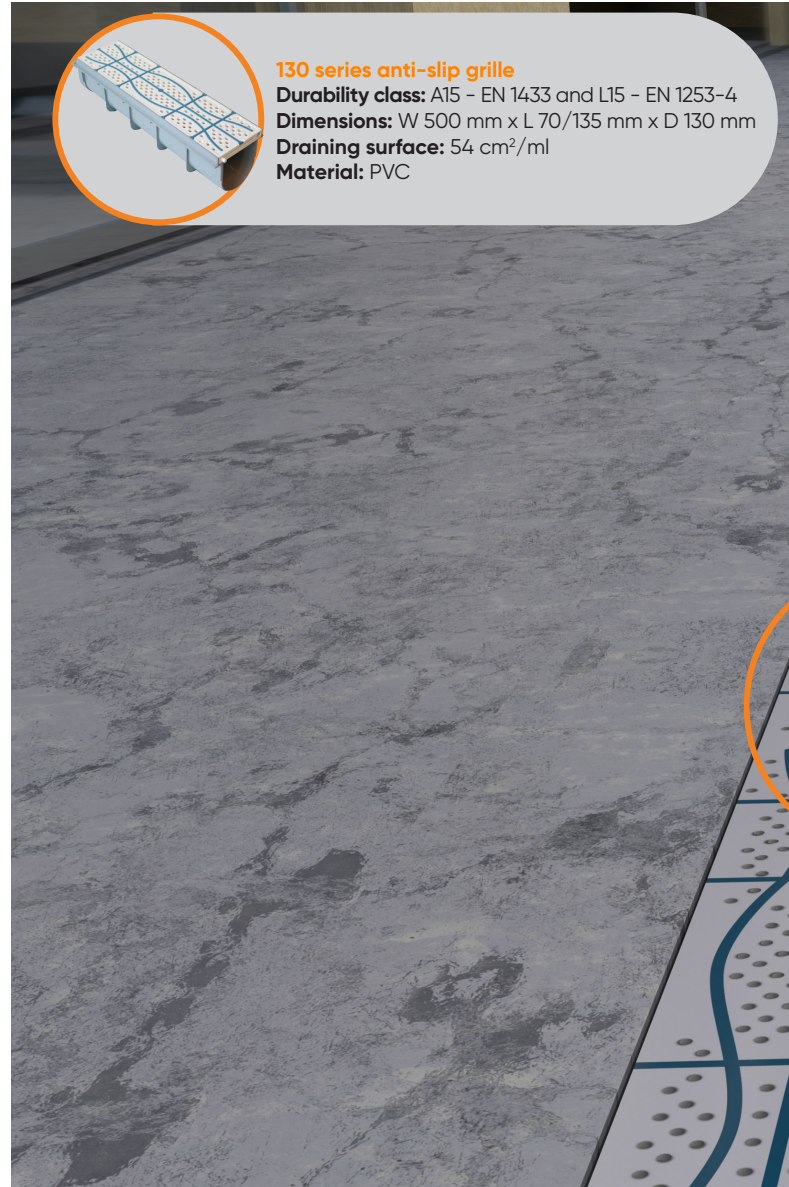
aesthetics



modular

Easy to install

The 130 series ducts are self-supporting for easy installation, have a modular jointing system, and the elements can be glued to ensure a better watertight seal. They are also ready-prepared for fixing the cover.



130 series anti-slip grille

Durability class: A15 - EN 1433 and L15 - EN 1253-4

Dimensions: W 500 mm x L 70/135 mm x D 130 mm

Draining surface: 54 cm²/ml

Material: PVC

Hard-wearing for a long life

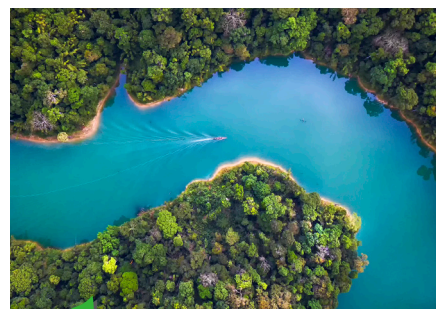
The characteristics of the PVC and construction design make this product highly resistant to weathering and ageing, ensuring dimensional stability over time.



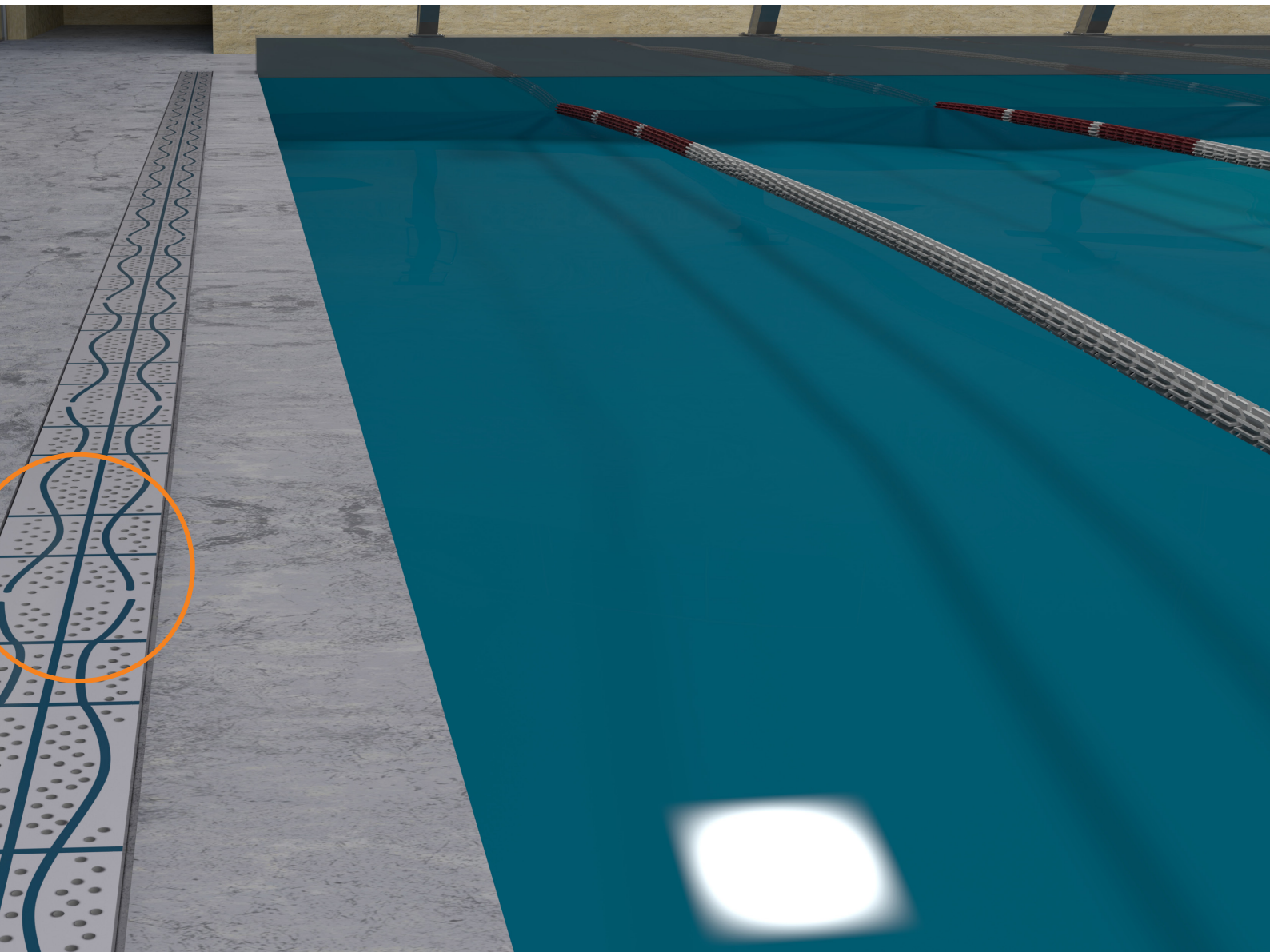
Safety



Modularity



ECOPVC **Sustainability**
Piombo Free



130 series pedestrian grille

Non-slip thanks to a knurled surface, equipped with coupling pins and ready-prepared for locking onto the duct.

Certificates:

Quality standards:

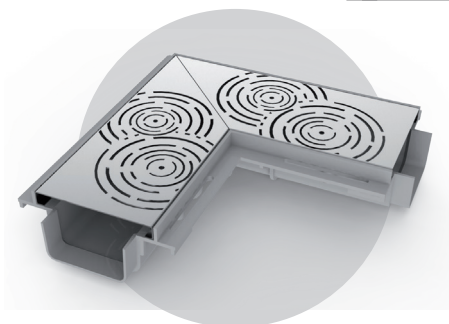
ISO 9001, ISO 14001

Approvals and Quality Marks

CE



SHOWERS



Inspectable in-floor shower drain

for an unobstructed shower area and high drainage

Application

Floor shower drain

Choosing a floor-level shower drain gives excellent freedom of movement and avoids the need for a shower tray.

Nicoll branded EN 274 compliant products offer a wide choice of modular floor solutions, with ideal design finishes adaptable to any style and environment.

Installation is quick and easy thanks to the ducting kit with high-performance siphon, double-height spacers to adapt to the thickness of the floor and fully height-adjustable supports that allow modifications even after fixing.



modular



high drainage



inspectable



zero obstacles

Advantages

- **Bespoke design**

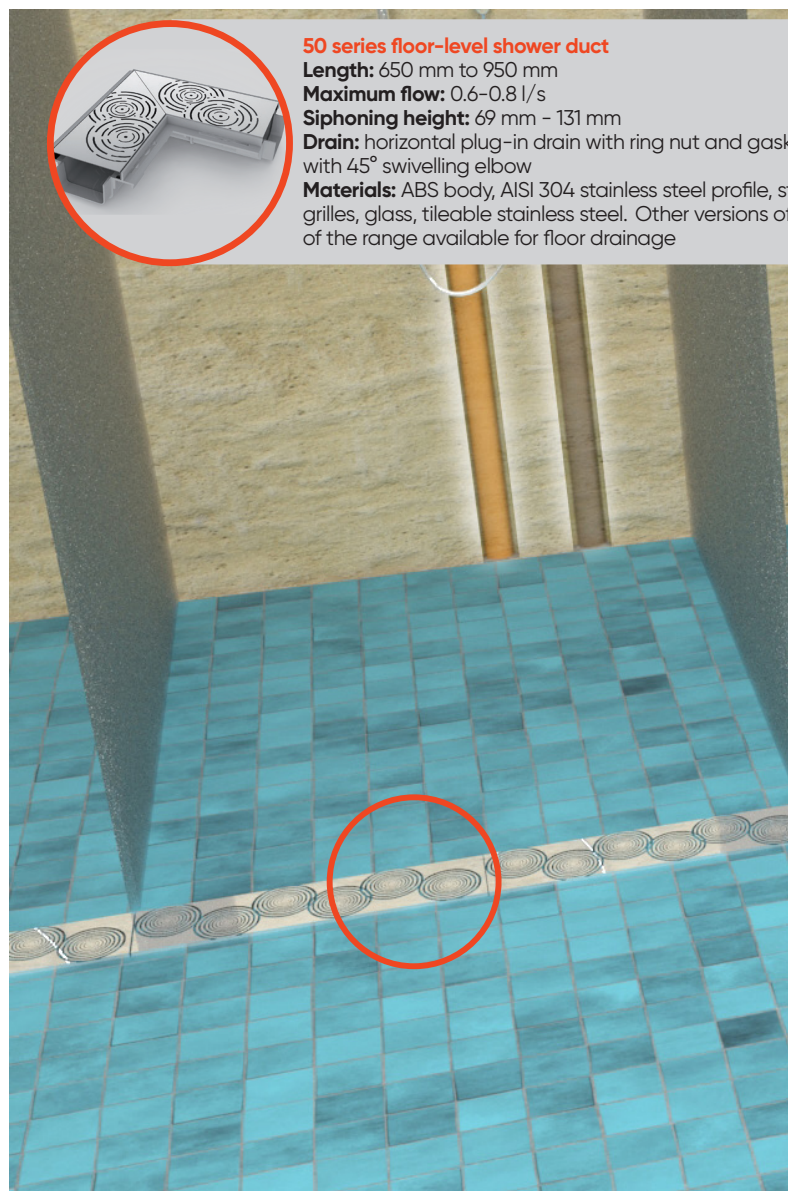
The sophisticated clean-lined design fits perfectly into any environment.

- **Freedom of movement**

Linear solutions such as the 50 series floor-level shower ducts and precision solutions such as the siphoned covers avoid the need for a shower tray while ensuring effective water drainage – thus solving mobility problems and making the shower area fully accessible to all.

- **Safety**

The stainless steel floor grille does not lose its shape, increases the walkable area and gives a high drainage capacity for the shower area of up to 48 l/min.



50 series floor-level shower duct

Length: 650 mm to 950 mm

Maximum flow: 0.6–0.8 l/s

Siphoning height: 69 mm – 131 mm

Drain: horizontal plug-in drain with ring nut and gasket with 45° swivelling elbow

Materials: ABS body, AISI 304 stainless steel profile, siphon, grilles, glass, tileable stainless steel. Other versions of the range available for floor drainage

Available in different variants



Spring stainless steel grille



Bubble stainless steel grille



Elegance stainless steel grille



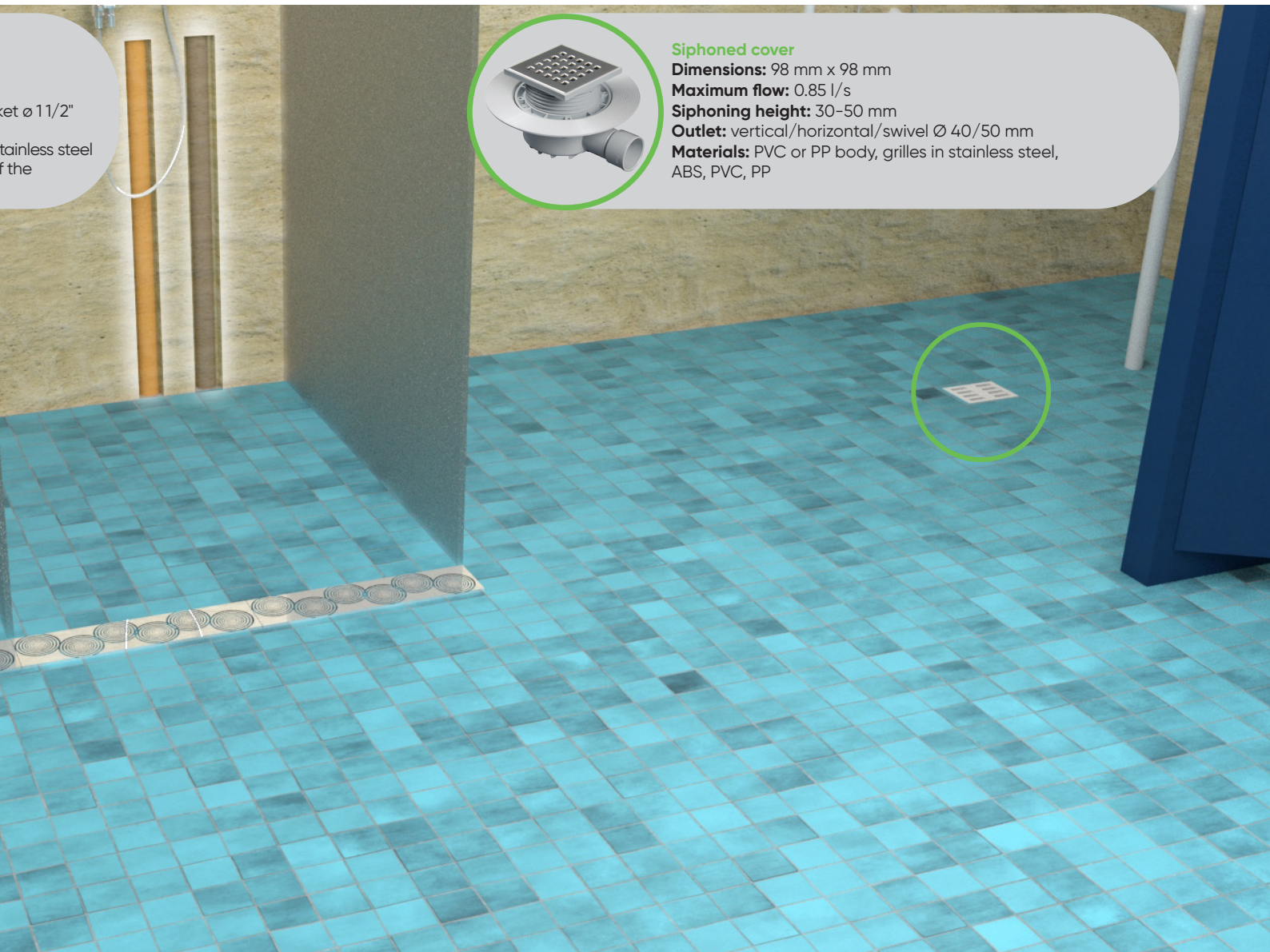
Design



Efficiency



Total accessibility



Siphoned cover

Dimensions: 98 mm x 98 mm

Maximum flow: 0.85 l/s

Siphoning height: 30-50 mm

Outlet: vertical/horizontal/swivel Ø 40/50 mm

Materials: PVC or PP body, grilles in stainless steel, ABS, PVC, PP

System'O

Sustainable and hygienic:

As well as being 98% recyclable, PVC-C is one of the least biofilm-promoting materials due to the non-roughness of its surface; also, thanks to its excellent compatibility with products containing chlorine or derivatives, it can withstand hyperchlorination treatments.

Wide range

of pipes, connections, plastic-brass transition connections, valves and dedicated two-colour PVC-C clamping system.

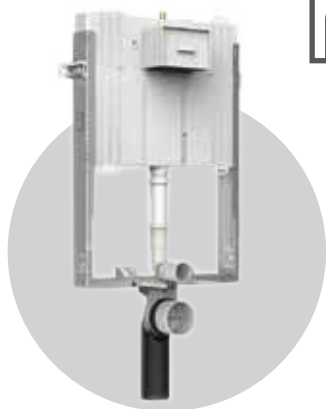
Dedicated solutions

for hot water (HTA) and cold water (HTA-F) easily identifiable within the installation





TOILETS



INEO 80 cisterns and designer panels

for a wall flush system available in different versions to suit every style

Application

Quiet, space-saving cisterns (8 cm) suitable for low wall thicknesses, pre-assembled in galvanised steel U-shaped support with 6 anchorage points and plaster net.

Advantages

Innovation

- Flush system with wire cable activation for better reliability than normal leverages.
- New design concept for easy maintenance.
- Transparent body for easy inspection.

Safety

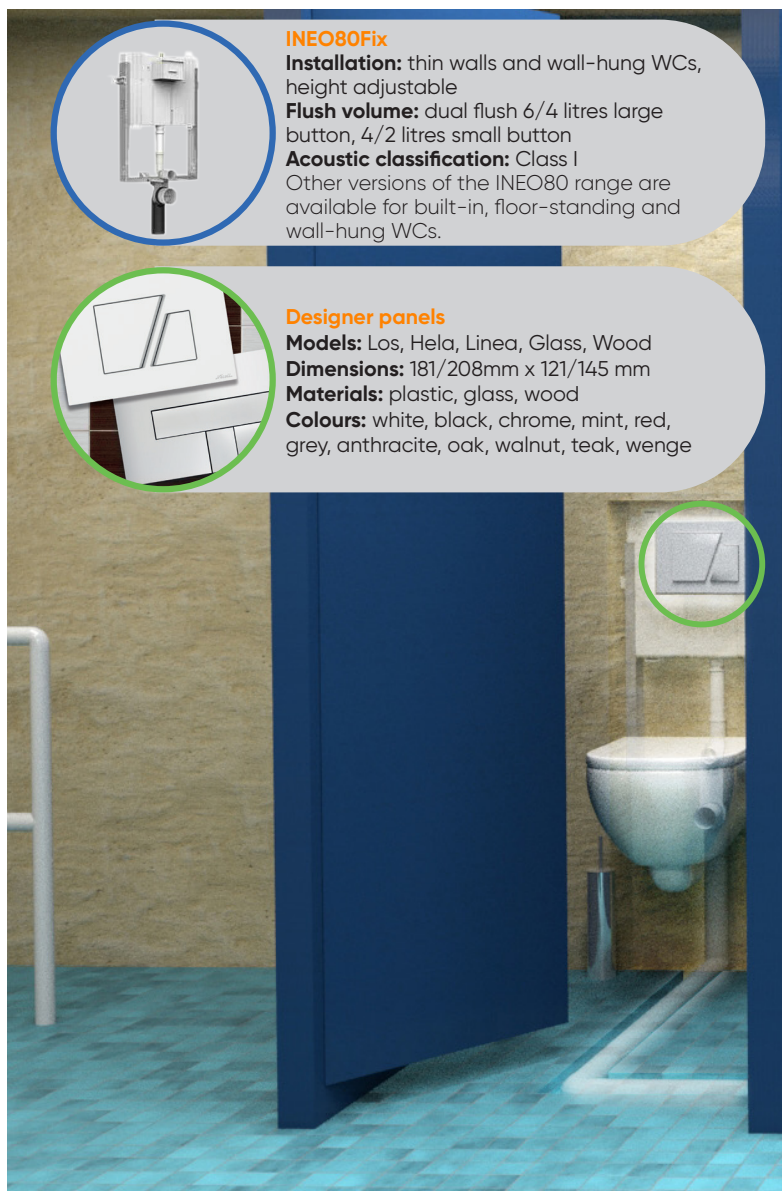
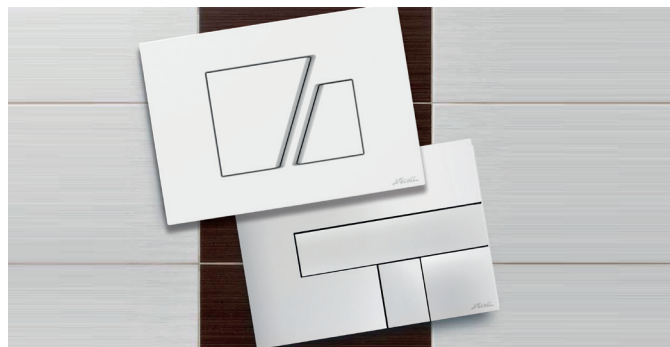
- Insulated structure to prevent direct contact with water and limescale.
- Plastic coated activation cables for durability.
- Anti-bacterial material to prevent the formation of deposits and unpleasant odours.

Simplicity

- Easily removable compact body.
- Cable activation system with quick coupling.
- Intuitive adjustment of flush volumes.

5 different lines of designer panels

to suit any wall, floor and bathroom finish.



INEO80Fix

Installation: thin walls and wall-hung WCs, height adjustable

Flush volume: dual flush 6/4 litres large button, 4/2 litres small button

Acoustic classification: Class I

Other versions of the INEO80 range are available for built-in, floor-standing and wall-hung WCs.

Designer panels

Models: Los, Hela, Linea, Glass, Wood

Dimensions: 181/208mm x 121/145 mm

Materials: plastic, glass, wood

Colours: white, black, chrome, mint, red, grey, anthracite, oak, walnut, teak, wenge

Ultramax and Amax

The multilayer PP plug-in sanitary flush system consisting of Ultramax pipes and Amax connections is notable for its high elasticity, which allows it to be totally flattened in the event of impact, even at low temperatures, without breaking or cracking.



Versatility



Sustainability



Style



Impact resistance is tested directly on the production line, at regular intervals, for each production batch.

The system is completely self-extinguishing (Class B1 within the DIN 4102 regulation) and has a perfectly white interior that is particularly appreciated during video inspections.



Certificates:

Quality standards:

ISO 9001, ISO 14001, ISO 50001

Approvals and Quality Marks

DIN EN 14055 - Kiwa



VENTILATION



Controlled Mechanical Ventilation

for continuous air change and hygrometric control with high energy recovery

Application

The quality of the air in the pool environment contributes to the well-being and comfort of bathers. In accordance with UNI 10339, which regulates the exchange of air in aeraulic systems, specific thermo-hygrometric and ventilation requirements are required for indoor swimming pools.

Specifically, the ambient temperature in the swimming and bathing area should not be lower than the temperature of the water in the pool.

The relative humidity of the air should not exceed 70% and the air velocity should not exceed 0.1m/s. In addition, air changes should be at least 20 m³/h per square metre of pool.

In the changing rooms, toilets and ancillary areas, the air temperature must not be lower than 20 °C and air changes must be at least 4 volumes/hour.

Indoor pools and changing rooms are typical high-humidity environments that promote the formation and concentration of mould, mites, fungi and bacteria, and it is therefore necessary to provide the correct ventilation.

The Nicoll brand range of products for controlled mechanical ventilation offers the Klima series for efficient heat recovery and fundamental room dehumidification.



Healthy air +



Stop mould and bacteria

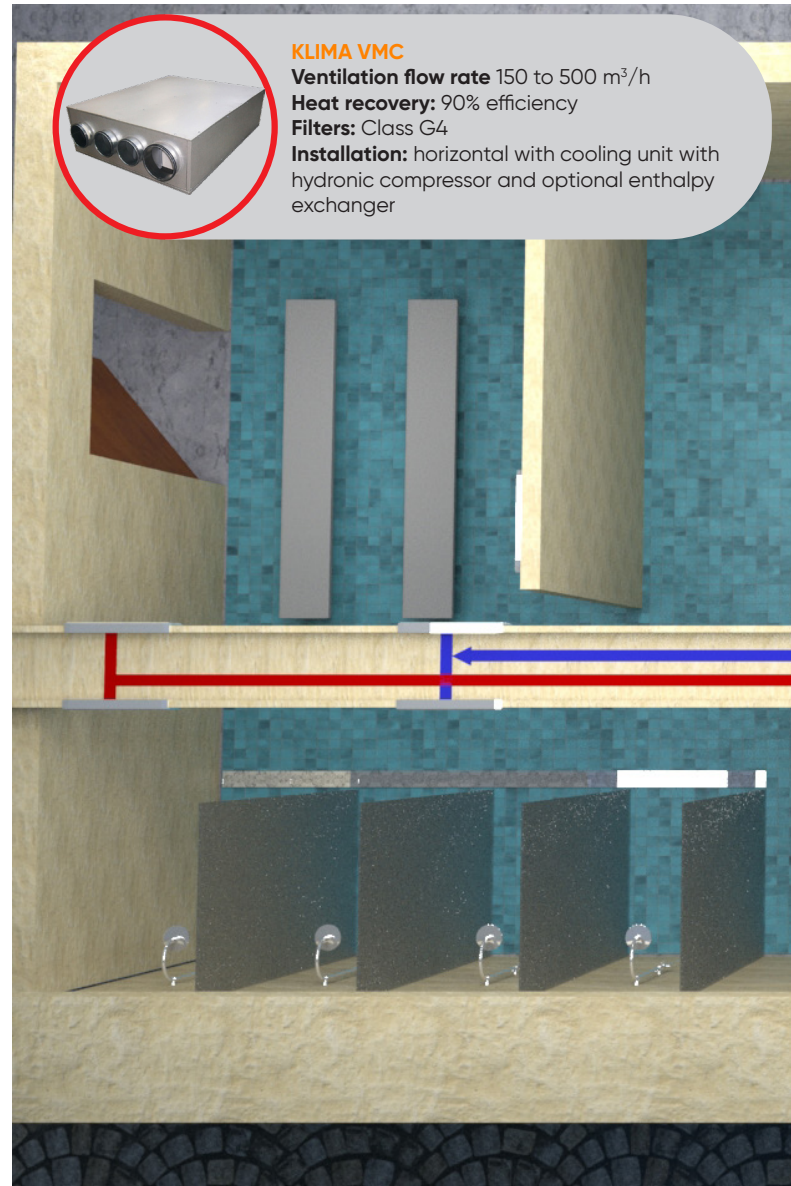


Zero Maintenance

Advantages

Clean air without heat loss

The system provides balanced and continuous ventilation with low consumption and **high energy recovery** (close to 90%).



KLIMA VMC

Ventilation flow rate 150 to 500 m³/h

Heat recovery: 90% efficiency

Filters: Class G4

Installation: horizontal with cooling unit with hydronic compressor and optional enthalpy exchanger

Low-maintenance structures

The ventilation system improves indoor air quality by reducing humidity.

A moisture-free building is healthier and reduces maintenance requirements.



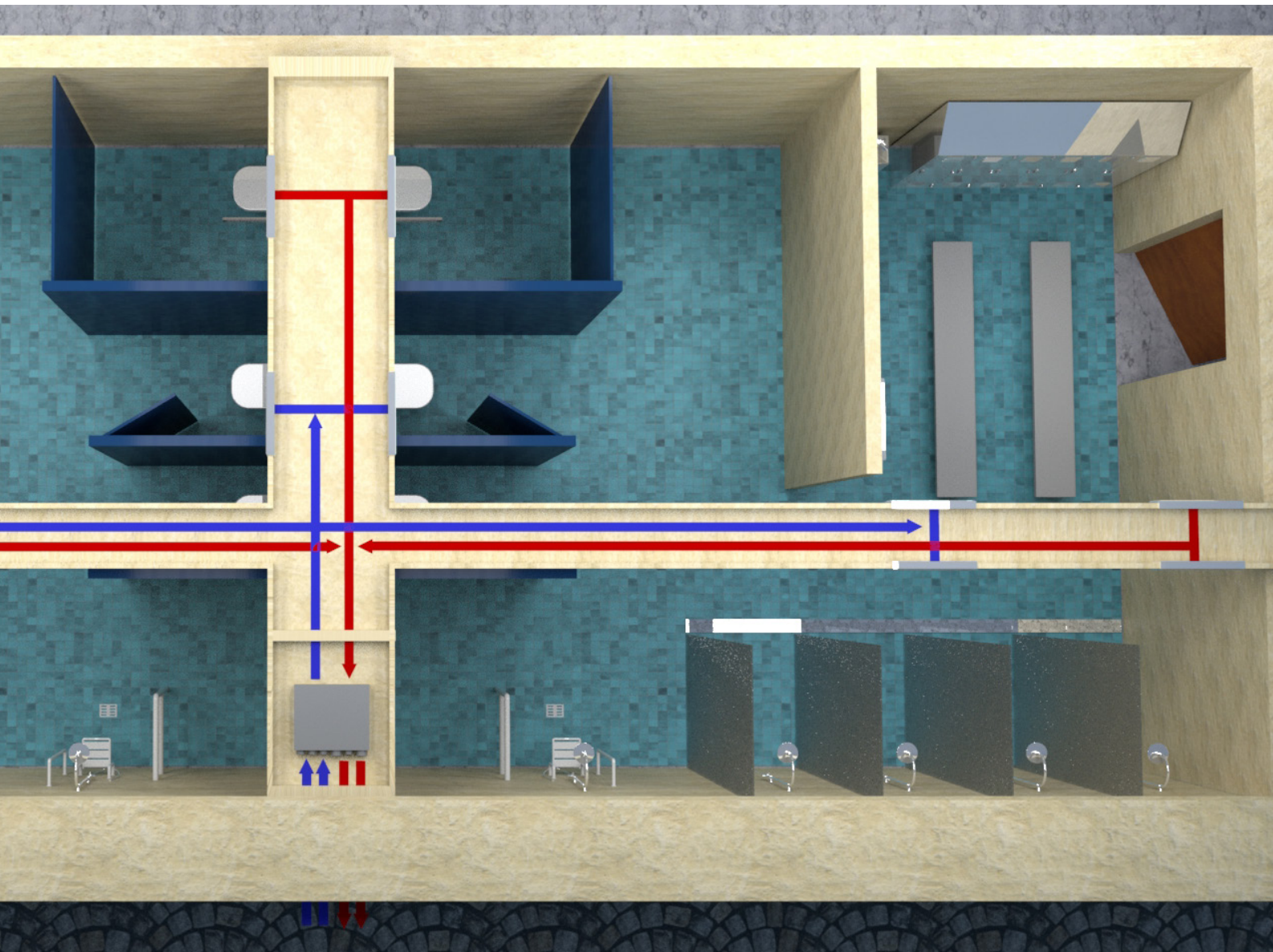
Low operating costs



Energy efficiency



Clean air



EcoDesign (ErP-2016/2018)

Regulation (EU) No 1253/2014, implementing Directive 2009/125/EU (ErP) of the European Parliament and Council, covers eco-design requirements for ventilation units.

ELD Labelling (Energy Labelling Directive)

requires products to be labelled in accordance with an ascending energy scale ranging from G to A+; the purpose of the label is to provide transparency and clarity: real and comparable data to enable informed decisions and the choice of high-efficiency products.



RADIANT SYSTEMS

Heating

for optimal room heating and cooling



Application

The Nicoll brand radiant system is the low energy solution for heating and cooling closed environments such as changing rooms or wellness areas, offering high living comfort. Thanks its insulating panels, Fluxo multilayer pipes and remote control unit, the radiant system guarantees low consumption and high yield. Nicoll solutions comply with the UNI EN 1264 standard that regulates water-fed radiant systems for heating and cooling built into structures.



Energy efficiency



Humidity control



Home Automation

Advantages

Radiant comfort

Heat transmission takes place mainly through radiation and not convection as in the case of radiators, avoiding the irritating movement of air and dust and spreading the heat more evenly.

Acoustics

The ashlar panels can be replaced with special sound-absorbing panels specifically designed to meet the recent acoustic requirements of UNI EN ISO 12354 and UNI EN ISO 717-2.



Fluxo

Material: 5-layer PEX-b - Al - PEX-b insulated pipe

Range: d14 to d75

Oxygen permeability: 100%

Thermal conductivity: 0.4 W/(mK)

Radiant system components



Klima 2.0



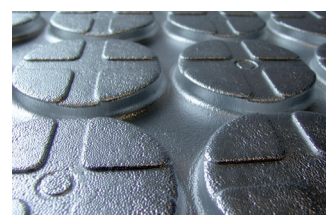
Touch screen



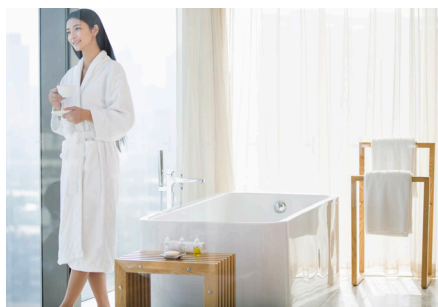
Thermostat and Humidistat



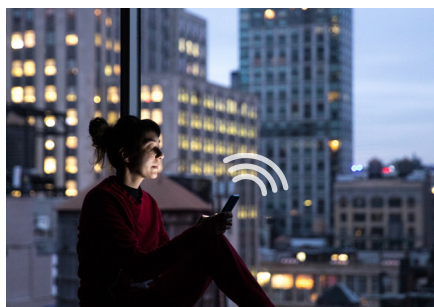
Latest generation collectors



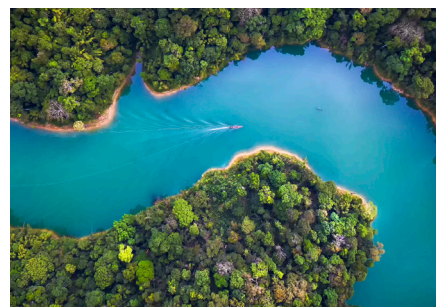
High-yield energy panel



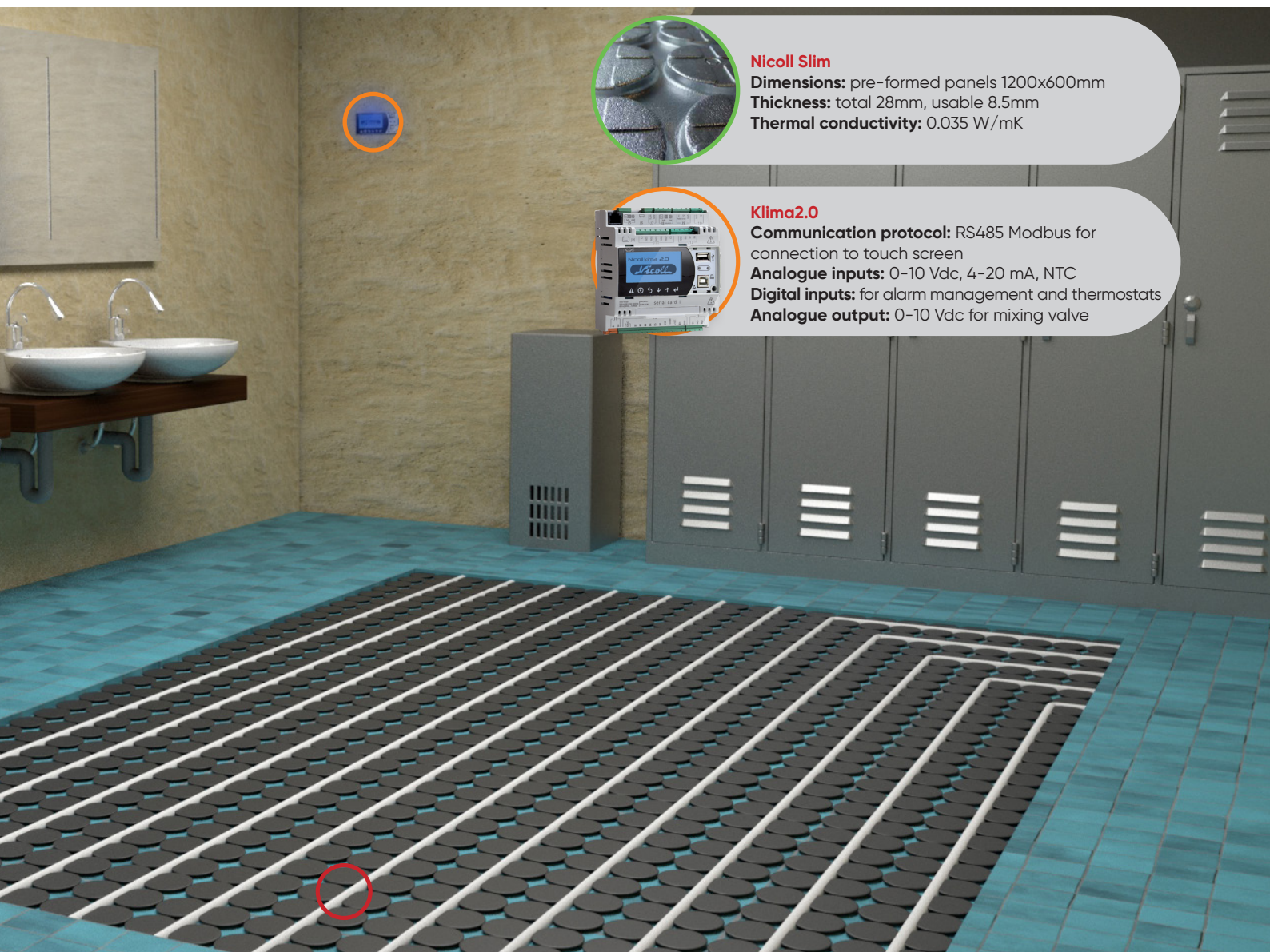
Invisible comfort



Home Automation



Energy efficiency



Nicoll Slim

Dimensions: pre-formed panels 1200x600mm
Thickness: total 28mm, usable 8.5mm
Thermal conductivity: 0.035 W/mK



Klima2.0

Communication protocol: RS485 Modbus for connection to touch screen
Analogue inputs: 0-10 Vdc, 4-20 mA, NTC
Digital inputs: for alarm management and thermostats
Analogue output: 0-10 Vdc for mixing valve

Fluxo

Multilayer system

Thanks to its **low thermal expansion**, **low pressure drop** and **high acoustic comfort**, the Fluxo multilayer system is also the ideal solution for the supply of hot and cold domestic water.

Its **flexibility of installation** also makes it a winning solution for installations with structural constraints related to room function, such as partitions and other dividing elements.





WATER AND HEAT RECOVERY

Recovery systems

grey water and ecoshower heat exchangers



Application

Energy saving and sustainable resource management

With every shower 100 litres of water at 36 °C are discharged into the sewerage system, which is not sustainable in terms of energy and resources. The recovery of waste heat at the outlet can halve the caloric consumption needed to heat domestic water, while the recovery and subsequent reuse of 100 litres of water contributes to a responsible usage of resources as well as significantly reducing consumption.

Grey water recovery

THIS IS a grey water recovery system, pre-assembled and ready for rapid connection during on-site installation.

Through the use of high-efficiency membranes there is a very high level of filtration, enabling the removal of bacteria and viruses. The new-generation filters also maintain their high performance over time, lengthening the intervals between servicing. Only one chemical washing of the membrane is required every 12-18 months, and the automatic backwashing cycle for keeping the membranes clean discharges residues directly into the drainage system. The system, which can be sized according to the number of users and combined with collection and compensation tanks, is fully automatic and can be controlled remotely.

Ecoshower

Ecoshower is an innovative solution that recovers and releases up to 40% of heat from grey water, flowing against the current in a coil and supplementing the water supply of both the boiler and the mixer (A) or of the mixer only (B). The water that feeds the boiler, instantaneous water heater or mixer on the "cold" side typically arrives at 10 °C and is heated up to 50 °C, generating a consumption of about 40Kcal/l. By integrating the ecoshower into the system incoming water is preheated to around 24 °C, reducing energy requirements by 35%.



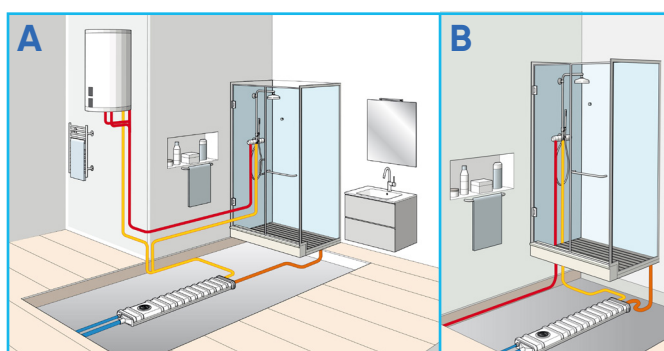
Grey water recovery

Purification phases: Primary filter+oxidation+ultrafiltration - Storage - Multistage filter+activated carbon - UV disinfection



Ecoshower

Dimensions: 813 x 288 mm
Materials: exchanger in AISI 316L, casing in PP
Connections domestic water 1/2", drain DN50
Weight: 2.3 kg

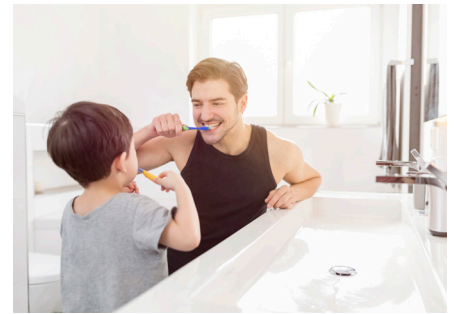




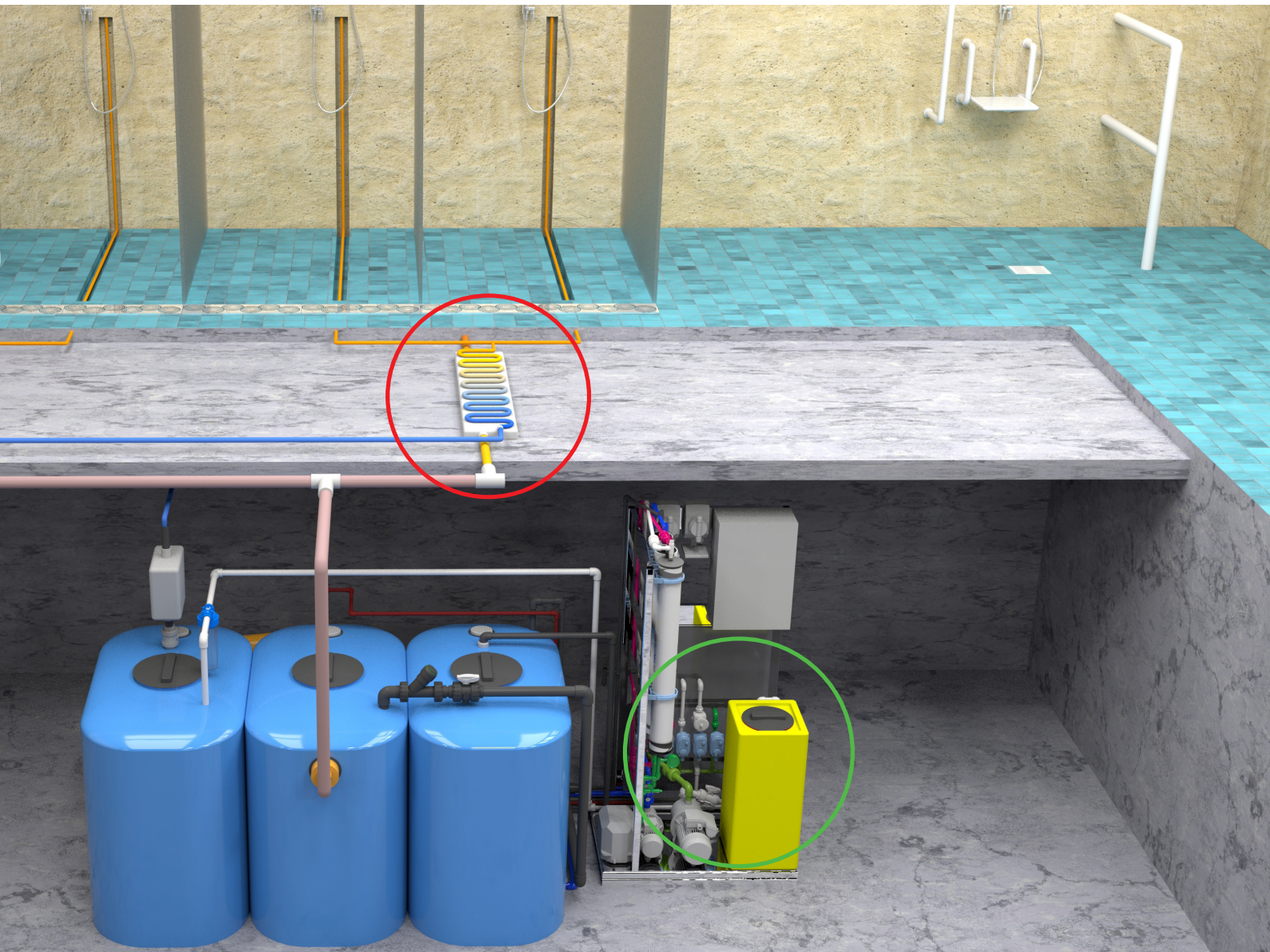
Energy classification



Sustainability



Low operating costs



Advantages

Buildings, both public and private, that are equipped with energy-saving systems and built integrating new technologies achieve a high energy class and thus increase their value. Compact solutions that are quick to install to save space and installation time, modular and scalable to facilitate design criteria.

Their low purchase and installation costs mean that the investment pays for itself quickly. The savings they offer in drinking water use, their low consumption and high efficiency enable the system's energy balance to be optimised with a view to sustainable construction.





References

PUBLIC AND PRIVATE SWIMMING POOLS

Thermalsolbad Salzgitter-Bad
Riccione public swimming pool
Hallenbad Schrobenhausen
Piscine municipale de Nerac
Ypres Aquatic Center

SPORTS CENTRES

XVIII FINA World Championships
XVII FINA World Championships
Rio Olympics
Y40 The Deep Joy
Hanoi Aquatic Center

SPA CENTRES

Terme di Bormio
Terme di Pré Saint Didier
Terme di Oradea
Aquardens Verona
Parco delle Terme di Merano
Les Thermes de Rochefort
Terme di Sirmione
Montecatini Terme

AQUAPARKS

Perth Aqua Park
Dubai Aquarium LEGO Park
Aquapark Riga
Haus des Meeres Aquarium
Aquarena di Bressanone



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