NEOPERL®
PRODUCTS

INNOVATION AND QUALITY
Like a mountain stream, we never cease to follow our course. If we encounter obstacles, we gather speed and find ways to get round them. Our competent staff, innovative power and the vast wealth of knowledge at hand provide the continuous flow of energy that drives us forward.
The Neoperl Group is a leading supplier for the plumbing industry around the globe. We develop, produce and market solutions for drinking water. For more than 50 years and counting, faucet manufacturers, industrial customers, retailers and distributors have placed their trust in us. NEOPERL® products shape the water stream, regulate the flow rate, connect appliances to water and protect drinking water from contamination. Our water-saving products enable everyone to reduce their use of this precious resource and to reduce their energy consumption by heating less water – a simple solution to the benefit of the environment and the climate.

Bound to succeed: thanks to our know-how
The know-how provided by our more than 1,600 employees in 18 countries is the cornerstone of our success. Production sites in Europe, Asia and the United States as well as sales offices in all major markets form our dense global network. Through our extensive regional presence we have gained detailed knowledge of local and country-specific characteristics. We understand what makes each market unique. Our technical know-how combined with our international sales and marketing expertise turn us into specialists for drinking water – all around the world.

The perfect product: through innovation and quality-mindedness
The research & development department in Müllheim (Germany) is our “innovation engine”. In our first-class state-of-the-art facilities we develop competitive solutions tailored to the multifaceted needs of our international clients. To do so, we rely on the valuable input provided by our customers and partners. Together, we keep exploring – and pushing – the boundaries of the technically feasible and thus develop tomorrow’s solutions today. In order to secure our leading position quality-wise, we rely on automation to the greatest possible extent, while every single production step is subjected to an integrated, 100% quality control process.
ISH 2015, Frankfurt – Singin’ in the Rain

"Singin’ in the Rain" was the slogan for the Neoperl Group booth at the 2015 ISH in Frankfurt. While showing innovative products such as the Spray ITR (In The Rain) aerator which had inspired the slogan with its unique spray concept, Neoperl was also for the first time joining forces with new Group members Mateu and Parigi.

Softpex Hoses

Established and proven for decades, our SOFTPEX® connecting hoses have been continuously further developed over the years. Convincing arguments in favour of the latest generation include their compact dimensions and improved flexibility. The hoses enable easy installation in even the most confined spaces while continuing to comply with all requirements for global approval procedures.
MIKADO – eye-catching stream design
The new MIKADO aerator turns the water stream into an eye-catcher. It has received the prestigious Red Dot Award 2016 for its innovative design.

PCA® V – this aerator deals with pressure
Neoperl now offers the PCA® V aerator with Dual-Core® technology for use in low and standard pressure applications. At low pressure (starting at 0.2 bar) the aerator creates a full, aerated stream. When the pressure rises, the water-saving flow rate remains virtually constant.
SMALL PARTS TO MAKE THE DIFFERENCE.
AERATORS

Aerators – one of the most important components of every faucet
Nowadays, aerators can be found on the spouts of virtually all washbasin and bathtub faucets. They shape the water to produce a non-splashing stream and add air to make the water pleasantly soft. They also reduce plumbing noise and help to save water and energy.

SMALL PARTS THAT MAKE ALL THE DIFFERENCE.
Aerators use the Venturi effect to introduce air into the water stream. This gives the water a pleasantly abundant, soft feel for the user – regardless of the flow rate. Uncontrolled water splashing is a thing of the past.

Aerated stream

Laminar stream
Physicists use the term “laminar” to refer to a stream that flows in parallel layers with no disruption between them. The stream is crystal clear and has a pure, natural appearance – an interesting aspect for the faucet designer. Furthermore, a laminar stream is the ideal choice for health care facilities because of its hygienic advantages: aerosol generation is reduced to a minimum due to the lack of air intake.

Spray stream
The spray stream offers an ideal means of dispersing water over the largest possible wetting area when the flow rate is low. Its water-saving attributes also make the spray stream an interesting prospect for highly frequented washrooms (e.g. in public buildings).

Rain Spray stream
Neoperl’s Rain Spray offers a special washing experience. Numerous little nozzles join forces to produce an extensive, abundant and pleasantly effervescent stream of water – a shower sensation for your hands.

Lime build-up

Aerator testing:
Two new aerators have been tested in the following conditions:
- simulation of the equivalent of 5 to 6 years of use
- water temperature of approx. 15 °C/59 °F
- room temperature of approx. 20 °C/68 °F
- water hardness 20–30° dH (German hardness)

Aerators with metal wire mesh screen
A film of water builds up over time, which forms a bridge between the insert and the housing. This is where lime begins to form. The lime gradually spreads towards the middle of the screen and finally clogs the air inlets. The stream becomes hard and splashes.

Aerators without metal wire mesh screen
With full-plastic aerators, the formation of water film bridges is hindered. Lime build-up is slowed down considerably thanks to their unique structure (CASCADE® and HONEYCOMB®). They continue to produce a straight, non-splashing stream of water, even after long periods of use.

SLC Feature
Lime clogs aerators in time. It forms more slowly on plastic aerators than on aerators with metal wire mesh screen. Neoperl has developed the SLC feature for maximum lime resistance: you can simply rub away any lime deposits on the outlet surface of the aerator with your finger.
Aerators | 9

There are basically two possible ways to control the flow. One is to restrict it by defining the size of the orifice in such a way as to permit a predetermined flow rate at a specific pressure (e.g. 3 bar). Neoperl refers to these products as "flow restrictors". While flow restrictors allow little water to pass at low pressure, the flow rate is often higher than necessary at high pressure.

Aerator with flow regulator (PCA® Aerator)
Pressure Compensating Aerator

Aerator with integrated flow regulator
Under normal conditions, the water flow through an aerator increases as the pressure rises. However, it may be necessary to achieve a virtually constant flow rate, regardless of pressure fluctuations, in situations where the flow rate is subject to certain requirements, e.g.

- compliance with standards in specific markets
- saving water
- regulated distribution of water.

This is where the PCA® technology comes into its own. PCA® aerators are easier and more convenient to use than flow restrictors at low pressure and save water at high pressure. The user has as much water as he needs (customer satisfaction) but uses no more than is necessary (environmental protection).

How the PCA® technology works

Static state (no flow, no or low pressure): the precision control o-ring is relaxed (position 1).

Dynamic state (flow): As soon as water flows through the flow regulator, the o-ring becomes distorted and is pressed into the gaps between the teeth of the core. This reduces the size of the opening for the water (position 2). The deformation of the o-ring increases as the pressure rises (position 3). When the pressure decreases, the o-ring gradually returns to its original shape, increasing the size of the opening for the water again (returning to position 2 and then to position 1).
SSR (swivel plate)
The SSR function offers a means of adjusting the direction of the water stream as needed. The inclination angle of the swivel plate on the outlet side is adjustable. The maximum swivel angle depends on the model and varies between ±6° and ±10°.

SLC (Smart Lime Cleaning)
Lime deposits at the tip of the aerator can simply be rubbed away thanks to the soft elastomer surface. This extends the service life substantially.

AC (AutoClean)
The dome screen of an AC aerator has an automatic cleaning function. Small dirt particles (up to 0.7 mm in size) are simply flushed out. This ensures that the stream pattern and flow rate remain unaffected, even after long periods of use.
Flow rates for low-pressure drinking water installations

Pressure range: 0.1 to 1.0 bar

In so-called low-pressure markets, the water pressure depends on the gravity generated in the building (gravity-fed system). The height of the water tank placed above the appliance (e.g. the faucet) determines the line pressure at the outlet.

Gravity-fed systems are characterised by low pressure; a classic aerator does not achieve an aerated stream under such circumstances. Neoperl offers special models which create a soft, comfortable, aerated water stream.

Flow rate V (full-flow model)
Aeration starting at just 0.2 bar (with a minimum flow of 3.5 l/min). Flow rate V is available for most aerator product lines.

Flow rate Q (low-flow model)
Aeration starting at just 0.1 bar with only a flow of 1.8 l/min required. Compared to flow rate V in the pressure range up to 0.6 bar, the Q has a lower flow rate and is therefore the water-efficient variant of the V. Flow rate Q is available for several aerator product lines.

NEW:
PCA® V – the model for universal use
These days, pure low-pressure markets are increasingly rare. Mixed systems with pump-fed supply are becoming much more common. Hence classic low-pressure and standard-pressure applications may occur side-by-side, posing a special challenge to faucet manufacturers.

In order to do justice to both types, Neoperl now offers the PCA® V aerator with Dual-Core® technology. This model creates a full, aerated stream in low-pressure installations. When the pressure goes up, its regulating function maintains a virtually constant, water-saving flow rate regardless of pressure fluctuations.
GENERAL INFORMATION ON AERATORS

watercolours® by NEOPERL
WATERCOLOURS® Concept

All NEOPERL® aerators are colour-coded [WATERCOLOURS® concept] and can thus easily be identified in terms of flow rate and stream pattern (aerated or laminar).

This simplifies the faucet production process as well as the procurement of spare parts. The colour-coding system is shown in the illustrations below using a classic insert as an example.

1. **models with restrictor**
   - Colour of the dome screen identifies flow rate

<table>
<thead>
<tr>
<th>Colour</th>
<th>Flow Class</th>
<th>Flow Rate</th>
<th>Noise-reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>light green</td>
<td>Z</td>
<td>7.5–9.0 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>light blue</td>
<td>A</td>
<td>13.5–15.0 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>yellow</td>
<td>S</td>
<td>18.0–19.8 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>dark blue</td>
<td>B</td>
<td>22.8–25.2 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>dark grey</td>
<td>C</td>
<td>27.0–30.0 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>light grey</td>
<td>D</td>
<td>34.8–37.8 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>orange</td>
<td>G</td>
<td>60.0–70.0 l/min at 1 bar</td>
<td></td>
</tr>
<tr>
<td>grey</td>
<td>M</td>
<td>60.0–70.0 l/min at 3 bar</td>
<td></td>
</tr>
<tr>
<td>ivory</td>
<td>T</td>
<td>1.5 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>brown</td>
<td></td>
<td>1.75 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>olive</td>
<td></td>
<td>2.0 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>red</td>
<td>X</td>
<td>2.2 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>beige</td>
<td></td>
<td>3.0 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>black</td>
<td></td>
<td>3.5 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>pink</td>
<td></td>
<td>4.0 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>lilac</td>
<td></td>
<td>4.5 gpm max. at 60 psi</td>
<td></td>
</tr>
<tr>
<td>white</td>
<td>lam. max.</td>
<td>laminar stream w/o restrictor</td>
<td></td>
</tr>
</tbody>
</table>

(*) according to EN246

2. **PCA® models**
   - Colour of the flow regulator identifies flow rate; flow regulator visible through transparent dome screen.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>brown</td>
<td>0.35 gpm max. at 60 psi</td>
</tr>
<tr>
<td>lime green</td>
<td>0.5 gpm max. at 60 psi</td>
</tr>
<tr>
<td>dark grey</td>
<td>2.0 l/min</td>
</tr>
<tr>
<td>light grey</td>
<td>2.5 l/min</td>
</tr>
<tr>
<td>beige</td>
<td>3.0 l/min</td>
</tr>
<tr>
<td>dark blue</td>
<td>1.0 gpm max. at 60 psi</td>
</tr>
<tr>
<td>orange</td>
<td>1.2 gpm max. at 60 psi</td>
</tr>
<tr>
<td>green</td>
<td>5.0 l/min</td>
</tr>
<tr>
<td>black</td>
<td>6.0 l/min</td>
</tr>
<tr>
<td>light blue</td>
<td>1.5 gpm max. at 60 psi</td>
</tr>
<tr>
<td>light green</td>
<td>7.0 l/min</td>
</tr>
<tr>
<td>lilac</td>
<td>2.0 gpm max. at 60 psi</td>
</tr>
<tr>
<td>yellow</td>
<td>2.2 gpm max. at 60 psi</td>
</tr>
<tr>
<td>white</td>
<td>8.0 l/min</td>
</tr>
</tbody>
</table>

3. **all models**
   - Colour of the lower part of the insert identifies stream pattern (aerated or laminar)

   - dark grey: aerated
   - grey: laminar

4. **low-pressure models (LP)**
   - Colour of the dome screen in combination with the ring colour identifies LP models

<table>
<thead>
<tr>
<th>Colour</th>
<th>Ring</th>
<th>Flow Class</th>
<th>Flow STD size inserts (measured at 0.2 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>green</td>
<td>light grey</td>
<td>Q</td>
<td>2.5 l/min</td>
</tr>
<tr>
<td>blue</td>
<td>white</td>
<td>V</td>
<td>5.2 l/min</td>
</tr>
</tbody>
</table>
THE THREADS ARE THE ONLY ...
Threaded aerators and inserts with washer and housing
Neoperl offers a wide range of product lines in various sizes and a broad selection of flow rates. There are threaded aerators that are screwed directly into the faucet, and the classical inserts that require housings and rubber washers.
PERLATOR® Coin Slot Aerator

No service key required. A coin that fits into the integrated coin slot is the only tool needed to install or replace a PERLATOR® Coin Slot aerator. The drip edge is also fully integrated and stops water trickling along the faucet. The revolutionarily small mixing chamber enables an exceptionally compact design without making any sacrifices in terms of stream quality. The PERLATOR® Coin Slot M24×1 aerator is 100% compatible with M24×1 threads and complies with the requirements of European standard EN246.

SLIM Air SLC Aerator

The SLIM Air SLC aerator combines the advantages of its extremely low-height design with an outstanding aerated stream quality. A service key is required to install and replace the aerator, making the SLIM Air SLC vandal-proof. The M24×1 version is 100% compatible with M24×1 threads in accordance with EN246.

SLIM PCA® Spray SLC Aerator

The SLIM PCA® Spray SLC ensures optimum water dispersion even at low flow rates. The typical spray stream pattern covers a comparatively large area. Lime deposits can simply be rubbed away thanks to the soft silicone nozzles. A service key is required to install and replace the aerator, making the SLIM PCA® Spray SLC vandal-proof. It is particularly suitable for use in the public sector.

SLIM Spray ITR Aerator

Unique rain spray – 84 silicone nozzles, which generate an extensive, pleasantly effervescent water stream: a genuine shower experience for your hands. The low-height SLIM Spray ITR aerator with its attractive stream pattern is the ideal choice for designer faucets. A service key is required to install and replace the aerator, making it vandal-proof. Lime deposits can simply be rubbed away thanks to the silicone nozzle plate.
The NEOPERL® Push aerator is an innovative product that cuts water consumption by up to 50%. The flow rate can be switched between two different values at the push of a button – even when the faucet is open.

This aerator insert with two stream paths can be used for dual-purpose faucets. The outer stream path delivers aerated tap water through the dependable PERLATOR® HC aerator part, while the inner stream path – to be connected separately - can be used for filtered or carbonated water or similar. The aerator is available with or without our water-saving PCA® technology.
The PCA® Spray ensures extensive coverage with water spray, even at a low flow rate. It is the ideal choice for use in highly frequented areas in the public sector.

The PCA® Spray SLC aerator is a pressure-compensating, water-saving product that ensures extensive coverage with water spray, even at a low flow rate. Lime deposits can simply be rubbed away thanks to the silicone nozzles on the outlet surface. The PCA® Spray SLC is the ideal choice for use in highly frequented areas in the public sector.

This classical flow straightener produces a laminar stream (without aeration). Offering little resistance, it ensures that a satisfactory flow rate is produced in the low-pressure sector.

The NEO STRAHL® LP is a special variant of the NEO STRAHL® flow straightener, which is used in conjunction with pressureless hot water heaters. Its special feature is the toothed circumference required by the standard: it ensures that the flow straightener cannot be held closed and therefore prevents over-pressure in the heater.

This special variant of the NEO STRAHL® LP is also used in conjunction with pressureless hot water heaters. The flow straightener prevents the faucet running dry and still ensures that the pressure is reduced during the system’s heating phase.

Unique rain spray – 53 silicone nozzles, which generate an extensive, pleasantly effervescent water stream. A genuine shower experience for your hands. Lime deposits can simply be rubbed away thanks to the silicone outlet surface.

The PCA® Spray ensures extensive coverage with water spray, even at a low flow rate. It is the ideal choice for use in highly frequented areas in the public sector.
The Shorty HONEYCOMB® aerator makes all the difference: it opens up new possibilities in faucet design with its low-height construction. Combined with a shortened housing, it gives faucets a classical yet modern touch.

The new MIKADO® aerator turns the water stream into an eye-catcher when washing your hands (see photo on next page). The aerator’s extraordinary, grid-like stream pattern with its simple beauty will be a source of inspiration for faucet designers.

The new aerator allows real water and energy savings using the PCA® technology which ensures a flow rate of 0.5 gpm max. (approx. 1.9 l/min) virtually regardless of pressure fluctuations.

* Patents pending
INSPIRING: THE NEW MIKADO
**AERATORS FOR HOUSINGS**

### Insert and housing sizes

**TT (Tom Thumb) size**
- Female M19 × 1
- Male M20 × 1
- Compact Vandal Proof
- Male M24 × 1

**TJ (Tiny Junior) size**
- Female M16 × 1
- Male M18 × 1
- IG 3/8”

**JR (Junior) size**
- Female M22 × 1*
- Male M24 × 1*
- US female 55/64”–27 UNS-2B*
- US male 15/16”–27 UNS-2A*

**STD (Standard) size**
- Shorty male M24 × 1
- Shorty US female 55/64”–27 UNS-2B
- Shorty US male 15/16”–27 UNS-2A

**TF (Tub Filler) size**
- Male M28 × 1

---

All aerator housings are available upon request with special surface finishes, customised laser engraving and in various colours.

* Vandal-proof versions available.
Inspiration for faucet designers
Specially developed for designer faucets, these aerators allow a great deal of room for creativity. Available in various shapes and sizes, they give designers free rein when it comes to playing with the water stream.
DESIGN

HIDDEN, INVISIBLE

FLAT, MINIMAL HEIGHT

RECTANGULAR, NOT ROUND

MINI STREAM, AERATED, MULTIPLE LAYOUTS
NEOPERL® Rectangular (RC) Aerators

PERLATOR® RC (PL–RC) Aerator

Rectangular Flow Straightener (FS–RC)

Sizes

Small 24×6 mm

Medium 28×7 mm

Large 32×8 mm

X-Large 40×10 mm

The innovative rectangular aerators offer designers a means of using the shape of the water stream as a styling element and there is no need to do without a pleasant, non-splashing stream of water. Rectangular aerators are available as versions producing a crystal clear laminar stream or an aerated water stream. NEOPERL® rectangular aerators should be used in conjunction with flow regulators to ensure that the optimum flow rate is achieved for the respective application. There are also versions available with integrated flow regulator (PCA®).

Apart from rectangular aerators with radial seal (PL–RC models), there are also models with rectangular seal (RS = rectangular seal). The RS models have been designed for use in commercially available profile-drawn rectangular tubular elements.

Round or angled – that is the question!
The CACHÉ® hidden aerator is inserted directly into the spout of the faucet and is therefore invisible. Faucets can thus be designed with flawless, perfect surface contours. This opens up a multitude of possibilities when it comes to faucet design. It also offers a means of cutting costs on the production line. The vandal-proof CACHÉ® Classic models can be installed or removed using a replacement aerator or the appropriate service key.

**Limitless faucet design**

Install and remove the aerator using the appropriate key.
The CACHÉ® aerator is also available as a Coin Slot version. The integrated "Coin Slot" offers an easy means of fitting and unscrewing the aerator with a coin, replacement aerator or a service key. The drip edge stops water trickling along the faucet. The CACHÉ® Coin Slot variants are fully compatible with the corresponding Classic models. Both are inserted directly into the spout without the need for a housing.

Easy in, easy out.

Install and remove the aerator using a coin or the appropriate service key.
The SLIM aerators offer innovative possibilities for faucet design thanks to their low-height construction (approx. 5.5 mm high). They are the perfect choice for very flat spouts. A suitable service key is used to install and remove them. They produce a non-splashing laminar stream of water, without affecting the flow rate. The flow rate should ideally be restricted, e.g. by means of a flow regulator. This should be fitted on the inlet side, some distance away from the aerator.

Extremely low height!
Small but effective – the tiny NANOPERL® aerator positively cries out for the creativity of faucet designers. This mini aerator produces an impressive aerated stream with a diameter of just 6 mm and its potential applications are numerous and creative alike: a single faucet can be equipped with several, individually positioned NANOPERL® aerators.

Always optimally positioned!
HEADING
THE RIGHT WAY.
Swivel adaptors can be connected to any standard faucet thread, enabling the aerator to spray water into every corner of the sink or bidet. Rely on proven quality and a first-class chrome finish – cylindrical or angular, with a wide range of matching aerators.

**Swivel adaptors for CACHÉ® aerators**

**Design swivel adaptors**

- cylindric NT
- cylindric
- square

**Swivel joints for aerators with housing**

- classic M22 × M22
- classic M24 × M24

The pictures show example models.

Swivel adaptors and swivel joints are available in numerous sizes and with various connecting threads: female M22 × 1, female M16 × 1, female 3/8˝, male M24 × 1, male M18 × 1, male M16 × 1, CACHÉ® STD, CACHÉ® JR, CACHÉ® TJ and CACHÉ® TT.

You can find a detailed overview of all available swivels on our website.
Flow regulators ensure that a defined, virtually constant flow rate is maintained, regardless of pressure fluctuations. They are used in faucets, in instantaneous water heaters and in solenoid valves. You can use flow regulators to reduce water consumption and take advantage of cost-effective solutions in the wide spectrum of technical applications.
The purpose of a flow regulator is to ensure that a defined, virtually constant flow rate is maintained, which is unaffected by pressure fluctuations to the greatest extent possible.

A NEOPERL® flow regulator comprises a precision control o-ring, a core and a housing (certain models). The gap between the o-ring and the teeth of the core is the opening through which the water flows. The opening may be inside or outside the o-ring depending on the model.

**Operating principle**

- **Static state**  
  (no flow, no or low pressure)  
  The o-ring is relaxed (position 1).

- **Dynamic state (flow)**  
  As soon as water flows through the flow regulator, the o-ring becomes distorted and is pressed into the gaps between the teeth of the core. This reduces the size of the opening for the water (position 2).

  The deformation of the o-ring increases as the pressure rises (position 3).

  When the pressure decreases, the o-ring gradually returns to its original shape, thus increasing the size of the opening for the water (returning to position 2 and then to position 1).
Flow regulators

**Standard flow regulators**
Standard flow regulators maintain a virtually constant flow rate within the pressure range of 1 to 10 bar. They are available in diameters of 7 to 22 mm for flow rates of 0.25 to 100 l/min. You can choose between various designs with axial or radial seals. Special types are available upon request.

**Low-pressure flow regulators**
Special flow regulators have been developed for low-pressure applications (0.25 to 4 bar). Unlike standard flow regulators, low-pressure flow regulators regulate the flow rate significantly below 1 bar.

**Adjustable flow regulators**
As the name suggests, the D-type flow regulator offers a means of adjusting the flow rate. The range of adjustment may be specified by the customer. It is used as a flow control valve in instantaneous water heaters and other applications in order to compensate extreme differences in the temperature of the incoming water (e.g. winter/summer).

**Metering liquids**
*example: solenoid valve*
Time-controlled solenoid valves can be combined with pressure-compensating flow regulators, which maintain a virtually constant flow rate, to enable the accurate metering of liquids required for beverage dispensing machines and electronic faucets, for example.

**Stream control**
Use in water-saving products: the flow regulator controls the volume of water in the shower or at the sink, ensuring that less water flows. Comfort and convenience for the user is noticeably improved at the same time, as water continues to be virtually evenly distributed, even if several outlets are used at the same time (e.g. washrooms in public buildings).

**Customised solutions**
*example: water heaters/boilers*
Flow regulators maintain a constant flow of cold water to the water heater in spite of varying inlet pressures. This is a prerequisite for maintaining a constant temperature.

*example: isolating valves*
A flow regulator may be fitted on the inlet or outlet side of an isolating valve, or in the ball valve itself. Certain isolating valves can be accessed in the closed position without having to drain the water from the system first. In this case, the flow regulator can be removed or replaced easily within the framework of maintenance work.
Flow regulators in isolating valves offer a means of achieving constant control of the flow in downstream applications to the greatest extent possible.
ALWAYS LOOKING AHEAD.
Check valves protect faucets and installation systems to prevent the backflow, backpressure or backsiphonage of used water into the pipeline system. They also guard against the potentially hazardous crossover flow between hot and cold systems in thermostatic faucets, for example. This means that hot water cannot get into the cold water pipe or vice versa.

Check valves are also available with integrated flow regulators. These not only protect against backflow, but also control the flow rate regardless of the prevailing pressure to the greatest extent possible.
The nominal diameter of the pipeline system is the determining factor when choosing a check valve cartridge. The aim is to reduce the pressure loss through the check valve cartridge to a minimum (EN 13959). The pressure lost through a NEOPERL® check valve cartridge is very low. Open cage constructions have lower pressure loss than closed body constructions. The valves are available with different springs varying in stiffness in order to comply with international standards.

Operating principle

**Static state (no flow)**
The check valve is closed. The spring presses the cone into its seat and keeps the valve closed.

**Dynamic state (flow)**
The pressure of the water is higher than the spring pressure. The cone is pushed out of its seat and allows the water to pass.

**Backflow (flow in the opposite direction)**
If the direction of flow changes as a result of an increase in pressure downstream of the valve (backflow) or a reduction in pressure upstream of the valve (backsiphonage), the spring allows the cone to snap back into its original position, closing the inlet side of the valve to prevent water flowing back.
The use of check valves, or other suitable safety devices, is prescribed by standards and technical rules and regulations in many countries to prevent contamination of the drinking water. NEOPERL® check valves are used all over the world in their capacity as backflow safeguards that comply with the pertinent standards. The broad spectrum of check valves has also proven itself in many other fields of application.

- **to prevent contamination of drinking water as a result of backflow, backpressure or backsiphonage**
  Example: a pull-out kitchen spray or shower head

- **to prevent possible damage or contamination of sensitive equipment caused by backflow**
  Example: water meters, pumps or filters

- **to hold water in a system or pipe to prevent it from running dry or to facilitate a restart**
  Example: pump systems

- **to prevent crossover flow between systems with different line pressures**
  Example: cold and hot water supplies in thermostatic mixers

- **to minimise the risk of backflow or leakage in the event of a valve failure**
  Example: a solenoid valve on the upstream side of an application

- **to safeguard correct functioning in complex systems by ensuring that water only flows in one direction**
  Example: heating systems with multiple heating zones, booster pumps

- **to prevent malfunctions caused by system pressure fluctuations in pressure-sensitive installations (unwanted discharge of water)**
  Example: a backflow preventer with aerated intermediate pressure chamber
All NEOPERL® check valve cartridges have been designed for use with drinking water. Neoperl only uses appropriately approved and certified materials. The product range includes numerous different sizes (7 to 50 mm), which comply with the requirements of all pertinent product standards (EN 13959 and ASME A112.18.3). They have become firmly established in many different applications worldwide thanks to their exceptional reliability and long service life. Apart from the classical product lines, such as the DW and CV models, Neoperl also develops innovative cartridges with additional features, such as flow control, pressure compensation or temperature resistance.

**DW/CV Line**

Type of construction: closed body  
Bore diameter: 10 – 20 mm  
Installation: in or against the direction of flow

**DW 15-PR**

Type of construction: closed body  
Bore diameter: 15 mm  
Installation: in or against the direction of flow  
Special feature: relieves any backpressure in excess of 20.5 ± 4.5 bar quickly and reliably while still complying with EN13959  
Scope of application: thermostatic faucets; particularly suitable for installations with thermal disinfection

**OV Line**

Type of construction: open cage, with snap-fit tabs  
Bore diameter: 10 – 50 mm  
Installation: preferably against the direction of flow  
Special feature: low pressure loss and low noise development

**NV Line**

Type of construction: open cage, with snap-fit tabs  
Bore diameter: 15 – 50 mm  
Installation: against the direction of flow  
Special feature: particularly suitable for applications where a cross bore impedes installation (the o-ring is mounted first)

**OF Line**

Type of construction: open cage, without snap-fit tabs  
Bore diameter: 7 – 20 mm  
Installation: in or against the direction of flow  
Special feature: low pressure loss and low noise development; easy installation

**OF/OV/NV 20-PR**

Type of construction: open cage, without snap-fit tabs [OV and NV with]  
Bore diameter: 20 mm  
Installation: in or against the direction of flow  
Special feature: relieves any backpressure in excess of 20.5 ± 4.5 bar quickly and reliably while still complying with EN13959; very low pressure loss  
Scope of application: thermostatic faucets; particularly suitable for installations with thermal disinfection
**OD Line**

*Type of construction:* open cage, with snap-fit tabs  
*Bore diameter:* 8 and 13 mm  
*Installation:* in or against the direction of flow  
*Special feature:* low pressure loss and low noise development; easy installation in spite of snap-fit tabs

**CV-FR Line (flow regulation)**

*Type of construction:* closed body  
*Bore diameter:* 10–15 mm  
*Installation:* in or against the direction of flow, compatible with the DW line  
*Special feature:* combination model with integrated flow regulator (FR = Flow Regulator)  
*Flow range:* 1.9 – 16.0 l/min

**WV Line (for water meters)**

*Type of construction:* closed body  
*Bore diameter:* 15–40 mm  
*Installation:* in the direction of flow  
*Scope of application:* water meter

**HT Line (temperature resistance)**

*Type of construction:* open cage; available as OF, OV and NV variants  
*Bore diameter:* 15–40 mm  
*Installation:* in direction of flow (apart from OF 15-HT)  
*Special feature:* heat-resistant PPO material  
*Scope of application:* particularly suitable for hot water and solar applications (continuous use at 127 °C max.)

**SV Line**

*Type of construction:* closed body  
*Bore diameter:* 15 mm  
*Installation:* in the direction of flow  
*Special feature:* flexible shell compensates increase in pressure; no vibration noise  
*Scope of application:* thermostatic faucets, particularly suitable for installations with thermal sterilisation

**BYPASS VALVE**

A bypass valve is a valve with proportional control characteristics, which keeps the pressure loss at a constant level across a specific flow range. The valves are available with a range of springs varying in stiffness. HDS valves are found in pumps used in heating and solar systems; they ensure that a defined pressure differential is maintained, serve as overload protection for pumps and protect micro generators against excess pressure.

**HDS Line (= Hydro-Dynamic Switch)**

*Type of construction:* closed body  
*Bore diameter:* 10, 15 and 20 mm  
*Installation:* in the direction of flow  
*Special feature:* valve with dynamic characteristics, keeps the pressure loss at a constant level over a specific flow range
All question of diversion.
A **diverter** is used to switch the water stream between two different outlets: between the tub filler position and the shower in a bathtub faucet, and between the overhead shower and the hand shower in a shower faucet. NEOPERL® diverters have proven their stability successfully in series of intensive endurance tests. The requirements of the standards are surpassed by a long way. Our diverters are high-quality products that have been approved for use with drinking water.
NEOPERL® diveters for bathtub faucets

The diverter in a bathtub faucet switches the water stream to either the tub filler position or the shower hose. It has three main components – main body, a connector and an axle. The axle is made of brass or plastic. This gives rise to three possible material variants: brass diverters, plastic diverters and diverters using a mix of both materials (called hybrid diverters). Diveters for bathtub faucets are available in two sizes and either with automatic return to the tub filler position from 0.2 bar, or with a locking facility. They feature a self-retaining function, which becomes effective at the very low pressure level of 0.2 bar.

The classic diverter: a brass diverter is characterised by its outstanding stability, a long service life and an elegant appearance.

A hybrid diverter comprises a plastic main body and a brass connector. This combination of materials makes the hybrid diverter robust and durable. The axle is made of brass.

The main body and connector of a plastic diverter are made of high-quality plastic. The axle is made of either brass or plastic.

Tub filler position  Shower position
NEOPERL® CDV diverters (Concealed diverters)

NEOPERL® CDV diverters are mounted in-wall to switch between the tub filler and the shower position. The choice of a pull or push-type switchover function is up to you. The diverter switches back to the tub filler position automatically when the pressure falls below 0.2 bar.

All products undergo endurance tests and are particularly efficient. The flush-mounted diverters are made of brass.
Connecting hoses are a key water supply component for faucets, washing machines, fridges etc. With a 0% failure rate since its market launch more than ten years ago, the Softpex inliner with its tried and tested material mix is a product you can count on. Inliners made of other materials such as EPDM, silicone, corrugated etc. are available upon request. Continuous development is our guiding principle, which is why the latest SOFTPEX® hose generation combines proven and innovative solutions such as reduced dimensions, higher flexibility and simplified installation. In addition, the optimised crimping technology enables an easy installation in very confined environments. Its outstanding tensile strength adds to the dependability of the latest SOFTPEX® connecting hose generation.
BOOSTCRIMP® technology – integrated innovation

The BOOSTCRIMP® technology enables the optimisation of the hose to increase flexibility while keeping the flow rate requirement level. At the same time, boostcrimping is a quality hallmark for a safely crimped hose. Available in DN6 and DN8.

Choice of braiding
Available with stainless steel or polyamide braiding, and optionally with colour stripes

Excellent chemical resistance
Softpex inliner: strong resistance against additives in drinking water such as chloramines and chlorides
**New: optimised dimensions/diameter**

Thanks to the new outer hose diameter (from 10.8 to 9.8 mm for the DN6, M8) 15% less space is required in the faucet (value applies to using two hoses). Moreover, the optimised interfacing geometry enables an easy installation.

---

**All hygienic approvals worldwide**

Around the world, the Softpex inliner has been granted all hygienic drinking water approvals; it is microbiologically pure and maintains drinking water quality in terms of appearance, smell and taste.

**All mechanical approvals worldwide**

Any mechanical approval around the world can be achieved by the SOFTPEX® hose, with the combination of brass alloy, braiding and flow rate tailored to meet the specific requirements.

---

**Increased flexibility**

By optimising the hose diameter, flexibility has been significantly increased.

---

**Norm flow rates acc. to EN 13618**

Exceeds flow rate required for EN 13618 despite smaller inner diameter.
In order to guarantee the shortest possible lead times, which means lowering our customers’ procurement risk, we have defined and maintain stock of a standard range of connections; see the selection below.

Neoperl uses the following proven alloys: CW617N (standard brass), CW510L (low lead), CW724R (Cuphin) as well as others. More details are available upon request.

**Standard connections (classic shape)**

<table>
<thead>
<tr>
<th>M8×1</th>
<th>M10×1</th>
<th>G3/8&quot;</th>
<th>G1/2&quot;</th>
<th>9/16×24 UNEF</th>
<th>CV6/38&quot;</th>
</tr>
</thead>
</table>

Other connections upon request

**Optimised fittings: some examples**

- Non-visible fittings do not require a decorative coating (thus eliminating the need for any plating)
- Optional side flats at the sleeve {SW 9} allow to do without extended, excess brass sections for polygon turning at the fittings
We consider ourselves your partner, and as such we aspire to be more than just your supplier. We work on finding solutions and developing the best possible products with a focus on quality and price to meet your requirements.

Standard connections (round shape)

- G3/8"
- G1/2"
- 9/16-24 UNEF
- CVG 3/8"
IT’S ALL ABOUT LOOKS.
With a wide range of colours, surface finishes, fittings and connections, the CHROMALUX® shower hose collection offers a vast choice of innovative versions. Neoperl shower hoses not only look good, they also comply with all of the technical requirements laid down in DIN EN 1113. The fittings and connections have a high-quality chrome finish or can be coated in the same colour as the hose to order.
**CHROMALUX® SHOWER HOSES**

### CHROMALUX® Supreme

- **Design**
- 1 outer layer  transparent PVC
- 2 coloured foil
- 3 PVC layer
- 4 reinforcement  longitudinal & cross-linked wires
- 5 inner hose  PVC

![Supreme designs](image)

- Chrome
- Brushed nickel
- Bronze*
- Polished brass*
- Shiny black*
- Matt black*
- Shiny white*

* Upon request: minimum order quantities and longer lead times apply

### CHROMALUX® Metallic

- **Design**
- 1 outer layer  transparent PVC
- 2 metallic wrap  polyester foil band
- 3 reinforcement  longitudinal threads
- 4 inner hose  PVC

![Metallic designs](image)

- Chrome
- Brushed nickel*
- Bronze*

* Upon request: minimum order quantities and longer lead times apply
**CHROMALUX® Stainless**

1. **outer layer** transparent PVC
2. **braiding** stainless steel
3. **inner hose** PVC

**CHROMALUX® Spiral**

1. **outer layer** transparent PVC
2. **metallic foil** spiralised PVC
3. **reinforcement** longitudinal threads
4. **inner hose** PVC

Colors:
- Black
- Grey*
- Chrome*
- White*
**CHROMALUX® Smooth**

1. **outer layer** coloured PVC
2. **reinforcement** longitudinal and cross-linked threads
3. **inner hose** PVC

**CHROMALUX® Agraffe**

1. **outer hose** stainless steel
2. **inner hose** PVC or silicone

- white
- red *
- yellow *
- grey *
- black *
- silver *

* *Upon request: minimal order quantities and longer lead times apply*
GENERAL INFORMATION

**Standard lengths:** 150, 175, 200 cm

**Fittings:** all fittings are made exclusively of approved and certified materials

**Standard connections:** 30 mm cone with G 1/2” thread (with or without side flats)
Optional: revolving connections eliminate the problem of the hose becoming twisted in the shower area

**Note:** other fittings and connections available upon request. All shower hoses are supplied with plastic caps to protect the fittings.
Your NEOPERL® kitchen hose offers outstanding features and benefits: it is very flexible, lightweight and glides smoothly. This is a hose that is robust and, thanks to its special braiding, comfortable to handle. Its application area is not limited to kitchens – other perfect locations include hair salons, washing stations for hand and feet as well as shower systems.
**NEOPERL® KITCHEN HOSES**

**GLIDEFLEX® hose – the high-end offering**

This hose, which is characterised by its remarkably smooth gliding, is produced using first-class materials in a patented production process. Its polypropylene braiding enables not only higher stretchability and robustness, there is also no rattling noise when pulling out the hose from the faucet. The GLIDEFLEX® hose is 100% leak-tested and meets all requirements for DIN EN 16146 as well as for all drinking water approvals.

**CRG® hose – the standard offering**

The robust, corrugated inliner provides flexibility and kink resistance. The CRG® hose comes with polyethylene braiding available in grey or black and provides good temperature resistance. It has been granted all drinking water approvals. In contrast to the GLIDEFLEX® hose, leak testing is conducted for random samples only.

<table>
<thead>
<tr>
<th>Dress codes (braiding options)</th>
<th>Dress codes (braiding options)</th>
</tr>
</thead>
<tbody>
<tr>
<td>casual black</td>
<td>grey</td>
</tr>
<tr>
<td>smart chrome</td>
<td>black</td>
</tr>
<tr>
<td>smart stainless</td>
<td></td>
</tr>
<tr>
<td>formal chrome</td>
<td></td>
</tr>
<tr>
<td>formal stainless</td>
<td></td>
</tr>
</tbody>
</table>

Kitchen hoses are also available with inliners made of EPDM, silicone etc.
**Male threaded fittings**

**Sizes:** M12 × 1, M15 × 1, 3/8”

**Thread options:**

- fixed
- rotating (for ease during assembly)
- anti-twist (always free to revolve)

**Female threaded fittings**

**Sizes:** G 1/2”

**Options:**

- smooth cone
- knurled cone
- cone with o-ring and side flats

**Special fittings with Superswivel**

**Options:**

- Superswivel G 1/2”
- Superswivel G 3/8”

Superswivel available as an option: integrated swivel adaptor for hand sprays offers maximum freedom of movement even under full line pressure.
To deliver water to the kitchen hose, the common solution is to use a copper pipe and screw connection after the mixer. As an excellent alternative, Neoperl offers Rigid PE (RPE) outlet hoses in combination with a Quick Connector.

Benefits of the NEOPERL® RPE outlet hose
- benefits compared to copper tube: non-metal, no soldering, easy to install
- PVC-free

Standard fittings for RPE outlet hose:
- as needed into the faucet (M8×1, M10×1, etc.)
- available for connection to the kitchen hose with the Clip Quick Connector (CQC*) or the Sleeve Quick Connector (SQC*) or other brass/plastic fittings as required
- fittings available as low-lead version

* Patent pending
Simple and secure installation with the Quick Connector

The NEOPERL® Quick Connector provides a very quick and highly secure way of connecting outlet and kitchen hose.

Benefits compared to brass fitting/nut:
- easy push-in motion – no twisting or torquing needed
- no extra washers to put in place for sealing
- positive “click” for secure connection; easy to fit the Quick Connector “blindly” or in awkward positions under the deck
- easy to disconnect if needed
- no unintentional disconnecting possible

Clip Quick Connector (CQC*)
- two versions: one-clip or double clip
- one-clip has room for one check valve
- double clip version: to be used like an adaptor; offers room for two check valves (as stipulated in some regulations) – one can be flow regulating
- easy push release to disconnect (with one finger)
- restricted availability: not offered in some markets

Sleeve Quick Connector (SQC*)
- easy slide-click feature
- offers room for two check valves (as stipulated in some regulations)
- unrestricted availability: for all markets

* Patent pending
Neoperl promotes a responsible attitude towards the use of drinking water with its water-saving, energy-saving products. Always aiming to provide as much water as you need, but using as little as possible – in the shower, bathroom and kitchen. Warm water accounts for the majority of water saved. This means that NEOPERL® products are playing an active role in reducing the energy consumed by heating water and making an important contribution towards protecting our climate and our environment. It’s never too late. Existing faucets and showers can be easily retrofitted with water-saving components any time.
SAVING WATER AND ENERGY
Flow regulator technology

There is an integrated flow regulator at the heart of every water-saving device. This offers a means of achieving a virtually constant stream of water, mostly regardless of the line pressure.

Each NEOPERL® flow regulator comprises a housing and a precision control o-ring made of rubber. This o-ring changes shape when water flows through it at higher pressure.

All of the products listed below are equipped with NEOPERL® flow regulator technology. Flow regulators are available in many different, colour-coded flow rates.

PCA® Aerators
Apart from an attractive stream pattern, an aerator with integrated flow regulator also produces a virtually constant flow rate. PCA® aerators are available in nearly all product lines.

PCW-01 Washer Regulators
This ½” seal with integrated flow regulator replaces the usual rubber washer in the shower hose, shower head or shattaf. The PCW-01 therefore performs two functions: sealing and flow control.
PCW-02 Washer Regulators
This ½” seal with integrated flow regulator and flexible silicone turbine is fitted inside the shower handle or bib/pillar tap where it replaces the usual rubber washer. The flexible turbine enables it to be used in bores of varying diameters and guarantees secure positioning.

PCW-02 LP Washer Regulators
The PCW-02 seal is also available as a low-pressure version. The PCW-02 LP offers an optimal flow performance from 0.2 to 4.0 bar.

PCR Shower Connection
This ¾” brass adaptor with integrated flow regulator is fitted between the faucet and the shower hose as a visible adaptor.

Ecobooster Hand Shower Kit
The Ecobooster kit is an installation kit with integrated flow regulator for hand showers or kitchen faucets. It offers manufacturers an easy means of integrating a switchover function from water-saving mode (default setting) to full capacity at the push of a button.
WE ARE PART OF THIS.
NEOPERL® ADAPTORS – RELIABLE CONNECTIONS.

A large number of top-quality NEOPERL® adaptors enable the installation of aerator housings in virtually all metric or US pipe threads (inch). The all-brass adaptors are given a high-quality chrome finish.

The pictures show example models.

male M22×1 × IG 3/8˝

male M24×1 × A 3/4˝

NEOPERL® FILTERS – WE DON’T LET EVERYTHING THROUGH.

Filters stop particles from the water getting into components and wearing or even clogging downstream components. They are often found in supply hose fittings or connections. Filters can be fitted in existing pipeline systems for easy maintenance. They are available in a wide range of sizes, shapes and materials, and some have been granted drinking water approvals.

The pictures show example models.
For a detailed overview of all available filters, please visit our website.

F filters

H filters

V filters

NEOPERL® SERVICE KEYS – OUR TOOLS ALWAYS FIT.

NEOPERL® service keys facilitate the installation and removal of aerators. They offer a means of avoiding unsightly scratches on chrome surfaces. Our range not only includes individual keys, but also versatile multi-purpose or universal keys and tools for the professional plumber.

The pictures show example models.
For a detailed overview of all available service keys, please turn to the following page.

example of a single key

d example of a universal key

tool box for professional plumbers

A universal aerator service box containing high-quality metal keys and pliers. It also includes wrench sockets for housings without side flats.
## SERVICE KEYS – OVERVIEW

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>metric threads housings</th>
<th>US threads housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.9171.0</td>
<td>single key yellow 16 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9172.0</td>
<td>single key green 18 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9170.0</td>
<td>single key red 21 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9174.0</td>
<td>single key grey 24 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9154.0</td>
<td>single key blue 18 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9101.0</td>
<td>standard key for STD and TF size blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.0021.1</td>
<td>key for STD size grey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9176.0</td>
<td>pocket key grey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.0331.1</td>
<td>key for STD and JR size red</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.0482.1</td>
<td>vandal-proof key JR size blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.0022.1</td>
<td>vandal-proof key STD size grey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.399C.1</td>
<td>vandal-proof key STD size metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BX.011C.1</td>
<td>vandal-proof key STD and JR size metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9181.0</td>
<td>RC metal key with hook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9180.0</td>
<td>RC key with saw teeth [for 2015 models onwards]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9182.0</td>
<td>RC T-shape metal key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9160.0</td>
<td>universal key metal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09.9164.0</td>
<td>universal key CACHE®</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.6207.0</td>
<td>aerator service box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>housings</td>
<td>CACHÉ® aerators</td>
<td>SLIM</td>
<td>SLIM Air / Coin Slot</td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>------</td>
<td>----------------------</td>
</tr>
<tr>
<td>US small male JRI 13/16'-27 UNS-2A</td>
<td>CACHÉ® TT M16.5×1</td>
<td>CACHÉ® JR M21.5×1</td>
<td>SLIM M18×1</td>
</tr>
<tr>
<td>US small female JRI 3¾'-27 UNS-2B</td>
<td>CACHÉ® TJ M18.5×1</td>
<td>CACHÉ® STD M24×1</td>
<td>SLIM M24×1</td>
</tr>
<tr>
<td>US JR insert</td>
<td>SLIM M18×1</td>
<td>PL-RC size 40×10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CACHÉ®</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLIM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLIM Air / Coin Slot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rectangular aerators</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Worldwide standards, approvals and certificates

Many countries have implemented standards and/or statutory requirements for faucets and associated components regarding various factors such as their fitness for use in contact with drinking water; adequacy for continuous, long-term use; water-saving flow rates; noise reduction. Our products are specifically developed for the purpose of obtaining all of the pertinent approvals and certificates. Neoperl offers products that comply with all requirements, regardless of the standard or approval procedure concerned.
Approvals | 73

COMPLIING WITH STANDARDS AROUND THE WORLD.
With a global network of production facilities and a continuously growing number of sales offices, the Neoperl Group has a comprehensive logistics infrastructure and extensive knowledge at its disposal regarding all aspects of the global drinking water situation. At the same time, we stay in close proximity to our customers and promote an intensive exchange of ideas and opinions in one-to-one discussions.

The interaction of international sales and marketing experience with comprehensive technical know-how enables us to not only develop products that are used all over the world, but also to produce customised solutions, which are adapted to meet local requirements.