NEW

ACO ShowerDrain Public X

Specific measures for more sustainability – showers with heat recovery

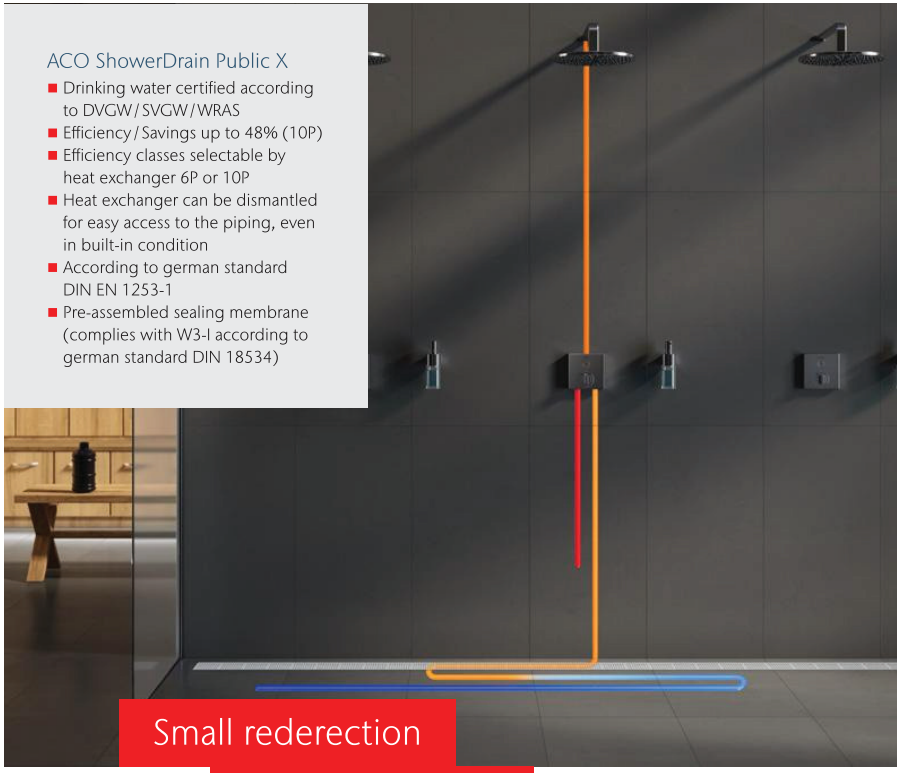
In modern buildings, the energy required to produce hot water is already equal to the energy required for the entire heating system. Instead of discharging the still warm waste-water unused into the sewage system, the ACO solution leads the wastewater through a heat exchanger.
The heat is thus extracted from the wastewater and the cold fresh water is preheated. This efficient pre-heating means that significantly less hot water has to be added later at the mixer tap.

Why our customers choose the ACO ShowerDrain Public X:
- Efficient and sustainable: energy consumption is reduced
- Short-term payback thanks to reduced energy costs
- Simple and durable: quick installation, easy cleaning and high-quality materials

The heat exchanger of the ACO ShowerDrain Public X is certified for drinking water by the following organisations:

DVGW SVGW SSIGE WRAS APPROVED PRODUCT

ACO ShowerDrain Public X
- Drinking water certified according to DVGW / SVGW / WRAS
- Efficiency / Savings up to 48% (10P)
- Efficiency classes selectable by heat exchanger 6P or 10P
- Heat exchanger can be dismantled for easy access to the piping, even in built-in condition
- According to german standard DIN EN 1253-1
- Pre-assembled sealing membrane (complies with W3-I according to german standard DIN 18534)



Challenge

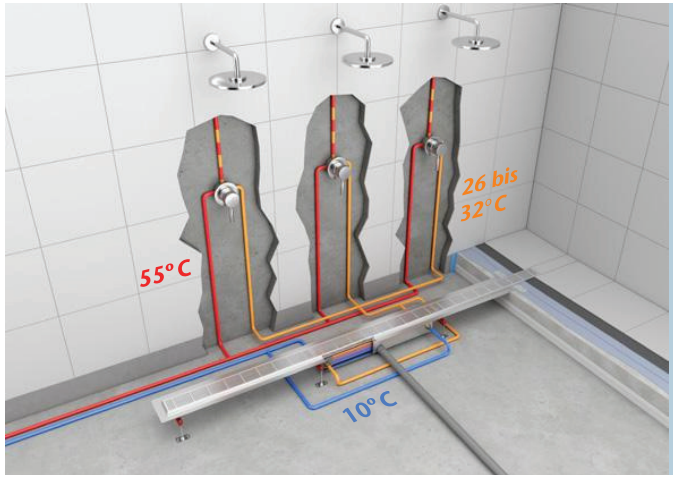
In modern building structures, both in the commercial and residential sectors, the energy demand for water heating is on a par with that for heating systems. This is particularly the case in public facilities such as gyms and swimming pools, where users often tend to make extensive use of the hot shower, as there is no separate cost for this.

Until now, solutions to reduce energy consumption and costs have been limited mainly to the use of water-saving shower heads, a measure that is not without financial risk for operators.

„Simply said, the best kilowatt hour remains the one that doesn‘t has to be generated at all.“

(Hermann Scheer)

Efficient and sustainable – reduce energy consumption



Model calculation
Fitness centre*:

>2.000.000 kWh
Energy saving*

448 tonnes
CO_2 savings
(Source: EEW 2022)

*Example on following page

With the ShowerDrain Public X, energy and costs can be saved efficiently every day!

Operating principle

- The warm shower water leaves the shower head at a temperature of 38° C, flows through the grating, passes through the foul air trap and is evenly directed over the double-walled heat exchanger in the shower channel.
- The cold fresh water (blue) flowing through the heat exchanger is heated from approx. 10° C to approx. 26 – 32° C (orange).
- As a result, the mixing valve reduces the hot water flow (red / orange), which has a direct impact on the energy consumption for hot water preparation.
- With this solution, energy costs are reduced and the protection of the environment can be reached – without giving up the comfort of a warm shower.

*see following page

Short-term payback because of reduced energy costs

In the following scenario, up to € 8.300 can be saved annually in energy costs.

Gym:
2 bathrooms (m/f) each with an ACO ShowerDrain Public X (10P)

Number of annual days of use per year	350
Number of people per day	150
Energy costs per KWh in €	0,12
Shower duration in minutes	8
Effectively used shower time for heat recovery in minutes	7
Planned service life in years	15

Up to €125.000 energy cost savings*

*With a service life of 15 years

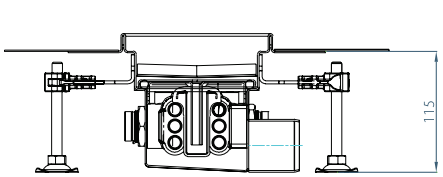
Rising prices can be expected in the future for fossil fuels.

Simply calculate potential savings. The design of the system is carried out with the help of our layout tool

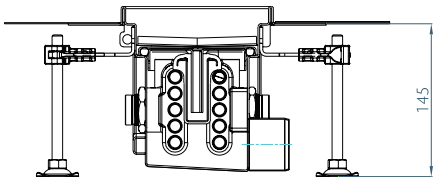
Efficiency / Savings (10P)

Volume flow per showerhead	Showers in operation	Hot water temperature	Cold water temperature	Efficiency / savings (preliminary values)	
9.2 l/min	1	38°C	10°C	48%	**Efficiency / savingsup to 48%** (with shower head 9.2 l/min) Efficiency depends on: ■ Connection diagram ■ Number of showers / shower heads ■ Flow rate of the shower heads
	2			38%	
	3			31%	
12.5 l/min	1	38°C	10°C	44%	
	2			32%	
	3			26%	

Structure of heat exchanger unit with 6P and 10P

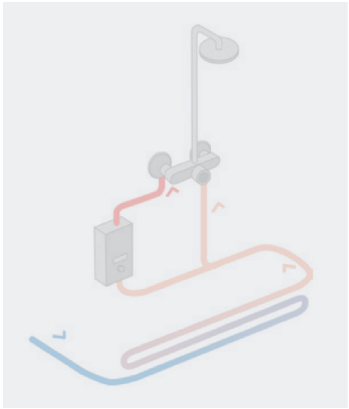


Heat exchanger with 6 double-walled copper pipes, installation height UFL from 115 mm



Heat exchanger with 10 double-walled copper pipes, installation height UFL from 145 mm

Planning data at a glance – connection diagram

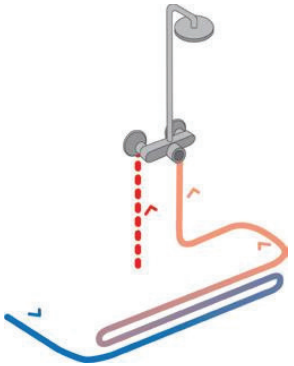


Scheme A
Preheating of the entire shower water

The entire volume flow of the shower water flows through the heat exchanger.

Preheated, it flows partly to the single lever shower mixer (cold), partly to the local water heating equipment, where it is heated and reaches the mixer (hot).

The efficiency is therefore slightly better because the volume flow through the heat exchanger is higher than in Scheme B.



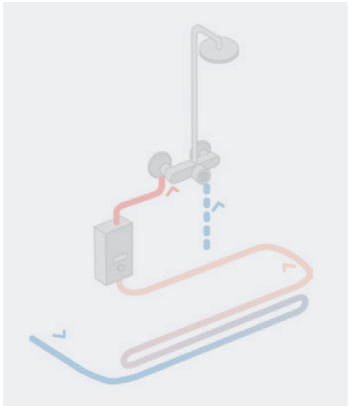
Scheme B
Preheating of the cold water

Only the cold water portion of the total volume flow passes through the heat exchanger, while the hot water is drawn from the remote boiler / storage tank.

- ACO ShowerDrain Public is installed in **Scheme B**
- The preliminary results on efficiency were measured in **Scheme B**

ATTENTION!
When comparing efficiency values with single-user shower channels: KWA test is carried out after **Scheme A**!

With **Scheme B** the values are approx. 10 – 15% lower.



Scheme C
Preheating of the hot water

Right from the beginning the hot water portion of the total volume is lead through the heat exchanger directly into the equipment for hot water preparation (local, near the shower, hot water up to 45°C). Afterwards it is routed to the single-lever shower mixer (hot). The cold water is connected directly to the single-lever shower mixer.

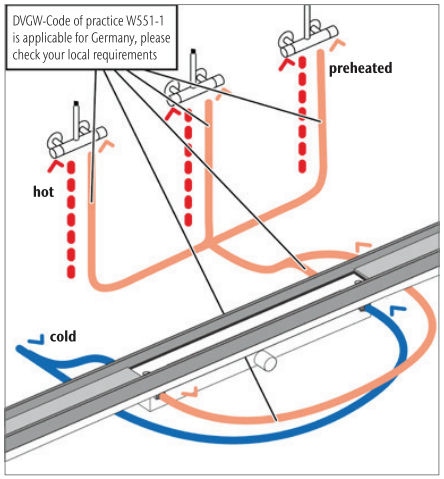
The efficiency is therefore slightly better because the volume flow through the heat exchanger is higher than in Scheme B.

Simple and durable – easy installation, easy cleaning and high-quality materials

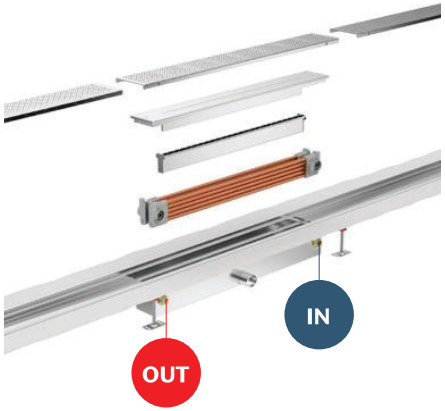
With the ACO ShowerDrain Public X, ACO offers builders and planners the best possibilities for efficient, spacious and homogeneous bathroom design without sales, material changes and barriers.
High-quality stainless steel has proven itself in many applications. Where high requirements are placed on the height and hygiene, operational safety and material resistance.
The standard material used is AISI 304.
On request, the shower channel incl. grating can also be supplied in AISI 316.

The ACO ShowerDrain Public X is supplied completely preassembled. All internal components, including the doublewalled heat exchanger, can be removed for cleaning purposes. This guarantees easy access to the pipeline even when installed.
Some applications, due to special circumstances, require individual solutions for architectural projects. With the ACO ShowerDrain Public X, a wide range of customised lengths up to 6 m are possible. Due to length measurements accurate to the millimetre, horizontal & vertical sockets, tile frames from 13 – 30 mm, the shower channel can be adapted to respective installation situations.

Installation instructions



If cold shower is needed, separate shower area provide for (e.g. in sauna areas)



Fresh water connections
- Factory-made marking „in“ / „out“ by means of stamp + coloured bonding
- Connections ½" internal thread (pre-assembled)
- Note pressure loss through heat exchanger (see table – maximum 3 shower heads / heat exchangers)

Recommended minimum flow pressure fresh water	**4 bar**
Maximum working pressure fresh	**10 bar**

Pressure loss through heat exchanger *:

For flow at the shower head (volume flow)	**1 shower head** in operation	**2 shower heads** in operation	**3 shower heads** in operation
9.2 l/min	0.20 bar	0.56 bar	1.10 bar
12.5 l/min	0.32 bar	1.04 bar	1.60 bar

Legionella protection	
Heat exchanger volume	0.7 l
Maximum pipe volume between heat exchanger and fitting	2 l

*Initial situation:
- 55°C hot water – inlet in mixer tap
- 38°C shower temperature at the shower head
- 26°C preheated fresh water heat exchanger

ACO ShowerDrain Public X

ACO product benefits

- Drinking water certified according to DVGW / SVGW / WRAS
- Efficiency / Savings up to 48% (10P)
- Efficiency classes selectable by heat exchanger 6P or 10P
- Heat exchanger can be dismantled for easy access to the piping, even in built-in condition
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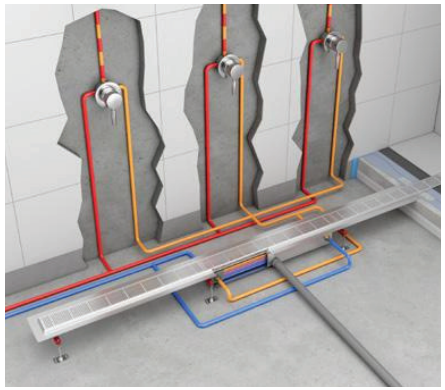
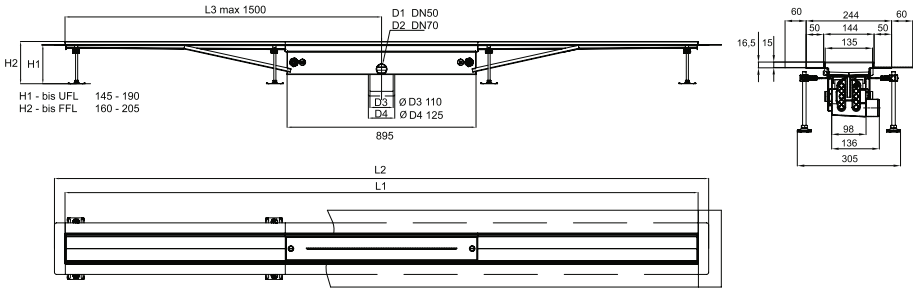
- Pre-assembled sealing membrane (complies with W3-I according to german standard DIN 18534)



Product informationen

- Material:
  - Channel body: Stainless steel
  - Heat exchanger: double-walled copper tube
  - Heat exchanger connections: brass
- Product class: A (according to EN 1253-1)
- Load class: K3 (according to EN 1253-1)
- Visible channel width: 145 mm
- Slope: Criss-cross slope
- Flow rate (according to EN 1253-1):
  - 0.8 l/s with 10 mm build-up
  - 1.0 l/s with 20 mm build-up
- Outlet socket: suitable for all push-fit pipe socket systems
- Outlet version: 1.5°, ND 50
- Foul air trap: two-piece removable
- Flange design: firmly moulded on (50 mm), pre-assembled sealing membrane, with 60 mm overlap
- Flange types: surrounding, without seepage water openings
- Channel surface: picle passivated
- Incl. removable heat exchanger
  - 10P
  - Incl. audible leakage detector and non-return valve
  - Fresh water connections ½" IT
  - Efficiency up to 48% (with shower head 9.2 l/min)
- Assembly: pre-assembled
- Scope of supply: channel body, hair strainer, feet for height adjustment
- Installation height up to unfinished floor level (UFL):
  - 10P: from 145 – 190 mm
- Height tile frame: 15 mm
- Height-adjustability by means of height-adjustable feet:
  - 10P: 45 mm
- Grating variant: Quadrato, slip-proof class C
- Supplementary components: ACO ShowerStep

Dimensioned drawing



Order information channel body

Product image	Description	Dimensions L1 [mm]	Dimensions L2 [mm]	Dimensions B [mm]	Article no.
Public X 10P, Installation height to top of screed 145 – 190 mm (frame height 15 mm)					
	■ Water seal: 50 mm ■ ND 50 (according to EN 1253-1) ■ With surrounding flange	3000	3100	145	9011.63.30

Order information design grating

Product image	Design	Description	Length [mm]	Article no.
	Quadrato	■ Grinded ■ Load class: K3 (EN 1253-1) ■ Slip resistance class C	3000	9011.13.30

The ACO ShowerDrain Public X can also be customised on request:

- Channel with heat exchanger 6P for lower installation height (from 115 mm UFL)
- Channel length up to 6m
  - Two inlet chambers with heat exchanger are necessary for channel lengths > 3.000 mm
  - On-site transport must be clarified in advance
- For increasing material requirements: Stainless steel AISI 316
- Various connection types
  - Horizontal socket ND 70 (10P)
  - Vertical socket ND 50 / 70 / 100 / 125
- Tile frames from 13 – 30 mm (e.g. for natural stone)