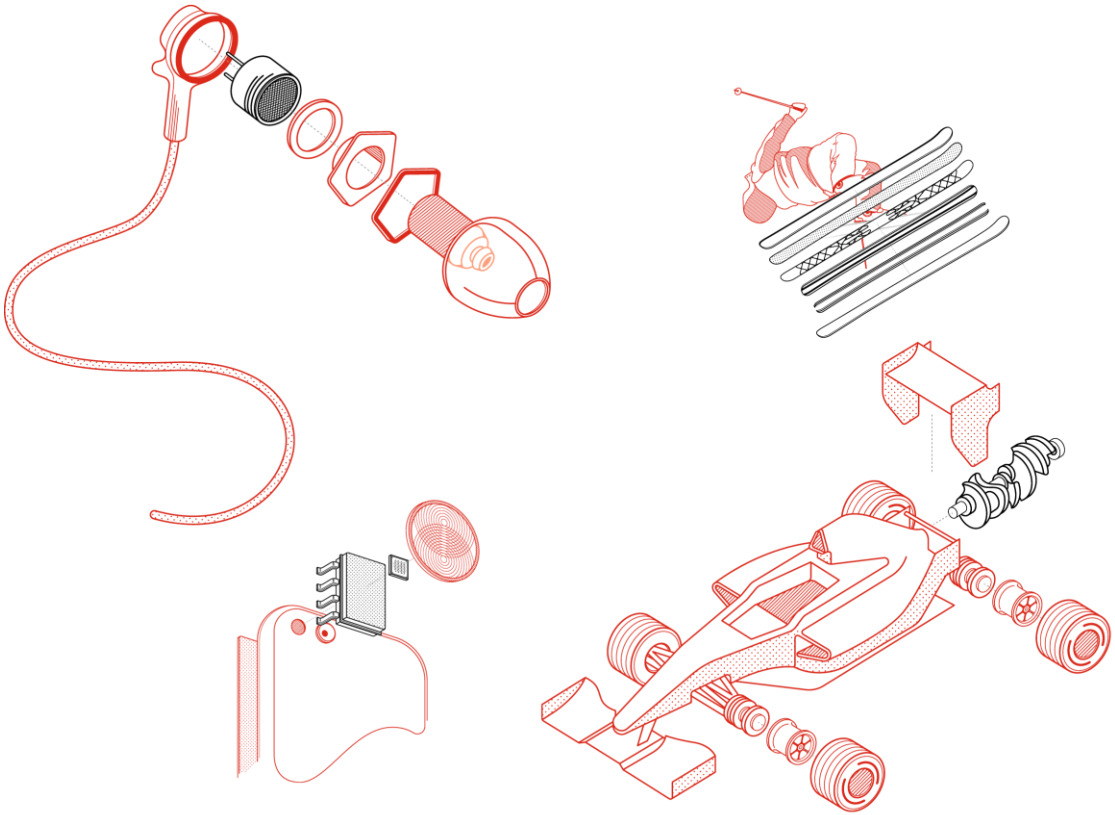
SURPRISINGLY INGENIOUS

advantageaustria.org

WATER AND WASTE WATER WEBINAR 15 MARCH 2023

- David Bachmann
- ADVANTAGE AUSTRIA Singapore



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1 AUGUST 2022
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WATER

The most valuable resource in the world

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OUR TRACK RECORD

We draw from a decade of experience building solutions with the world's best water entrepreneurs

12
Years

166
Entrepreneurs Supported

$800M+
Equity capital raised

85%
Survival rate

9
Startups acquired

24
Countries deploying IH2O startups

1.9M
Pilot funding grants since 2018

$201M
Equity capital raised by IH2O startups (2021)

OUR GLOBAL REACH

We draw from a decade of experience building solutions with the world's best water entrepreneurs

20
countries in portfolio

23%
global applicants annualy from Europe (avg 1-2 from Austria per year)

4/44
startups in IH2O Asia program since 2019 are EU-headquartered

IMAGINE H2O Asia

Since 2019

PUB SINGAPORE WATER EXCHANGE

Startup development

Market access

Pilot support

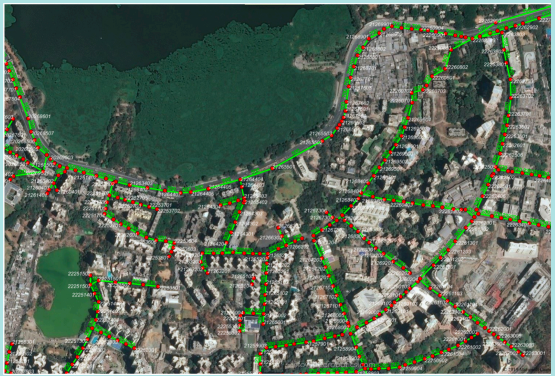
MARKET ACCESS FROM OUR SINGAPORE HUB

Market-entry advisory

SENTRY (Canada)

Direct pilot funding

Fluid Robotics (India)



Singapore ecosystem

Hydroquo+ (Bangladesh)

OUR TECH ADOPTERS NETWORK

VEOLIA
xylem Let's Solve Water
MANILA WATER TOTAL SOLUTIONS
suez
KURITA
ADB
K water
Kubota
sembcorp
SGMEM Singapore Membrane Consortium
South East Water
Marubeni
Micron
MEIYA
WORLD BANK GROUP Water
RTS
Sumitomo Corporation
SJ SURBANA JURONG
NTU itive NTUitive Pte Ltd
EWT COI NGEE ANN POLYTECHNIC
GSMA
PHUKHACO
Safe WATER NETWORK
GEORGE KENT SINCE 1936
中信环境技术 CITIC ENVIROTECH
ST Engineering
SCG
Jacobs
EL VISHVARAJ ENVIRONMENT Pvt. Ltd.
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HOW AUSTRIAN COMPANIES CAN BENEFIT?

Startups

Register with us
Apply to an innovation program
Connect with us at major industry events

End-users / Implementing Partners

Join our Tech Adopters Network
Join us at Demo Day 2023

Investors

Join our mailing list for investment opportunities
Join us at Demo Day 2023

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SINGAPORE'S NATIONAL WATER AGENCY

ADB

SWA
SINGAPORE WATER ASSOCIATION

Singapore International Water Week

THE Coca-Cola FOUNDATION

WATER FROM AIR HUMIDITY

A PERFECT SYMBIOSIS OF NATURE, TECHNOLOGY AND HUMAN.

IMHOTEP INDUSTRIES

FACTS

Increases water scarcity

Unpredictable weather phenomenons

Cut from water grid when shortages

Growing risk for communities, operations of companies and the well-being of people

Rising temperatures result in **higher humidity**

IMHOTEP INDUSTRIES

A MIX OF SOURCES

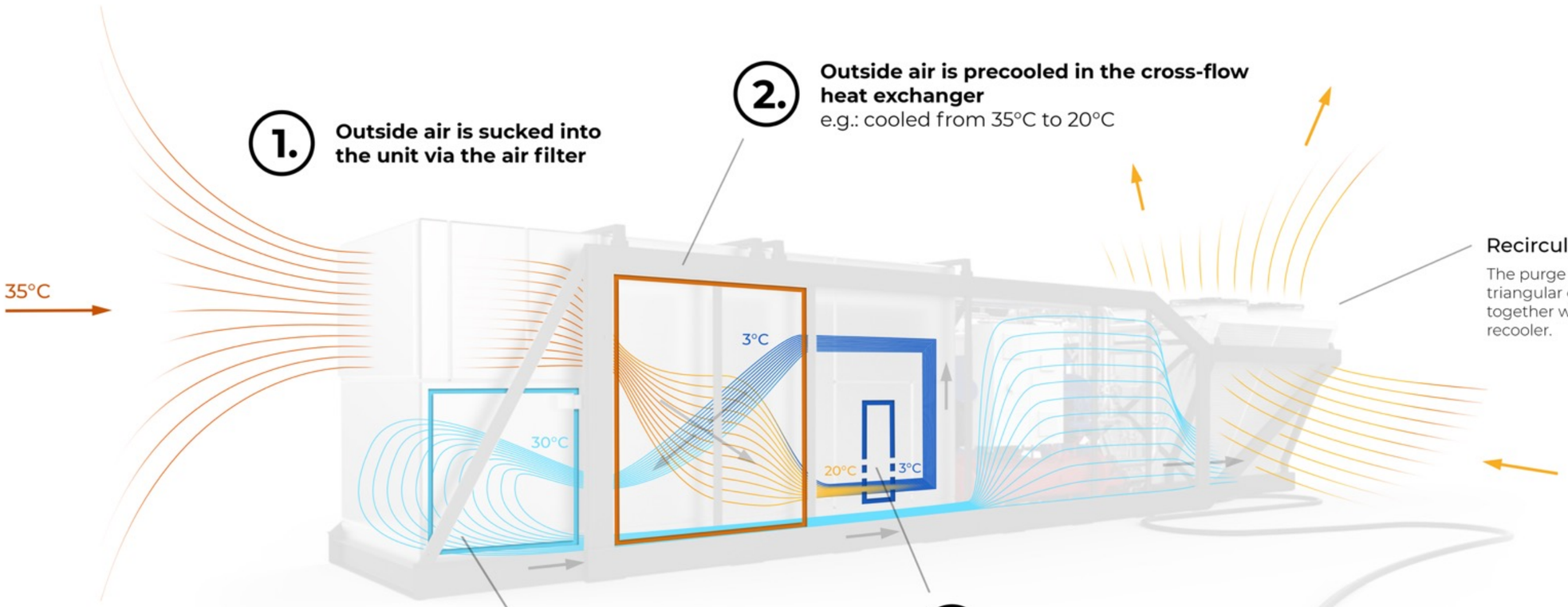
WILL BE NEEDED

IN FUTURE

WATER FROM AIR IS ONE

IMHOTEP INDUSTRIES

TECHNOLOGY



1. **Outside air is sucked into the unit via the air filter**

2. **Outside air is precooled in the cross-flow heat exchanger**
e.g.: cooled from 35°C to 20°C

3. **In the cooling coil, the air is cooled to e.g.: 3°C, so that water precipitates out**

Recirculating chiller

The purge air flows out through the triangular openings and is drawn in together with the outside air from the recooler.

Air outlet

Exhaust air with approx. 30°C flows through the air outlet from the ventilation into the interior between ventilation and cladding in the direction of the technical area & cools the technology in the process.

IMHOTEP INDUSTRIES

PHANTOR

MOBILE WATER GIANT

PHANTOR 10.000

10.000l / 24h drinking water

40“ size (12 x 2,3 x 2,6m), 14,3t

Power supply: max 120 kW (400V, 50Hz)

Water treatment (filter, UV, mineralization)

Integrated water tank: 1000l

Weather station & control technology

PHANTOR 6.000

6.000l / 24h drinking water

20“ container (6 x 2,4 x 2,9m), 11t

Power supply: max 100 kW (400V, 50Hz)

Water treatment (filter, UV, mineralization)

Integrated water tank: 600l

Control technology

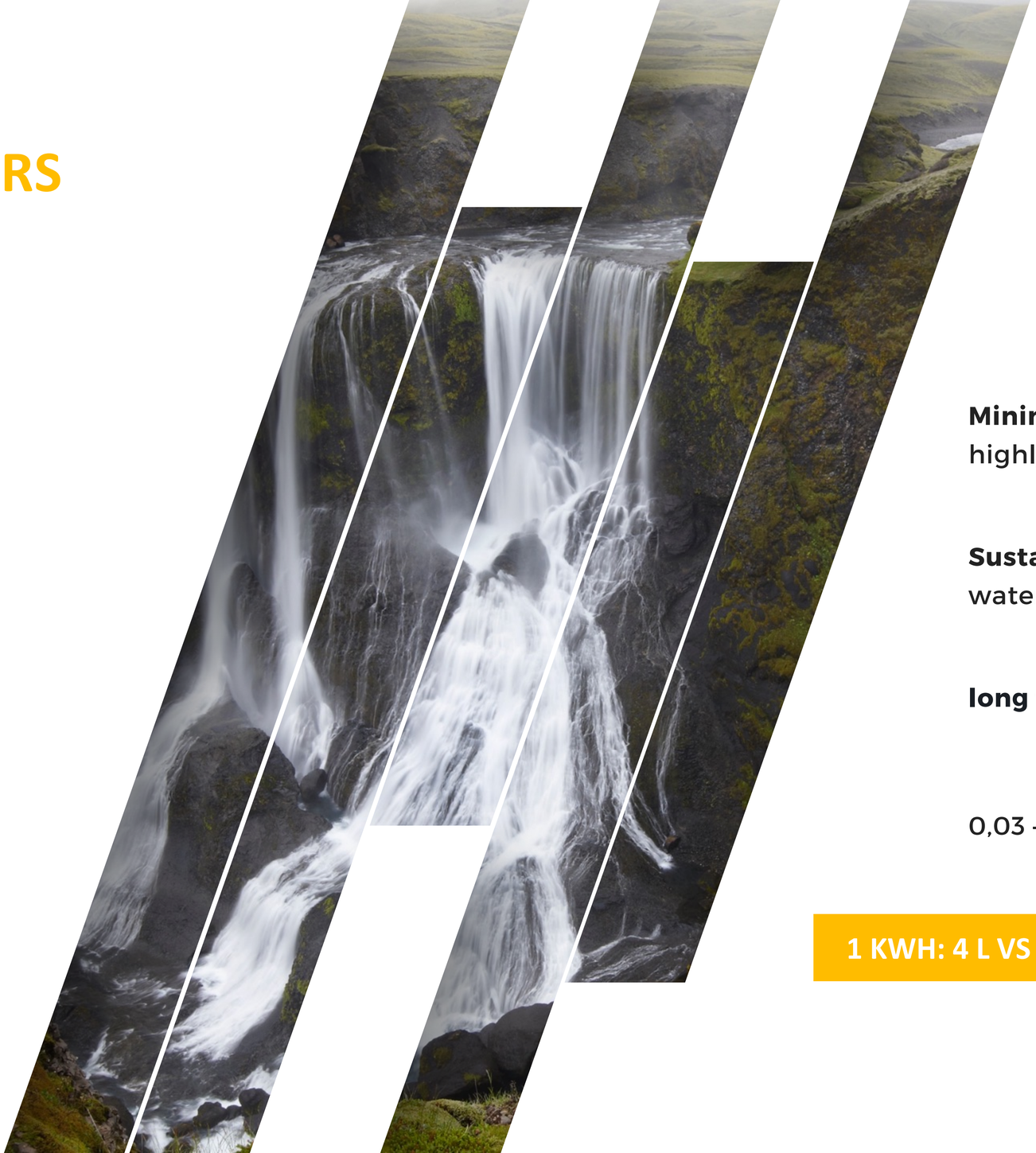
IMHOTEP INDUSTRIES

DIFFERENTIATORS

Highest energy efficiency process due to innovative air circulation and cooling

Highest water output on the market with **lowest energy input** (approx. 250Wh per liter of water)

10.000 l /day



Minimal maintenance through highly stable components

Sustainable & Self-sufficient water source

long term operation

0,03 – 0,10 € / liter

1 KWH: 4 L VS 5 KM TESLA RIDE

IMHOTEP INDUSTRIES

AWARD
WINNING TECHNOLOGY

THE PHANTOR

GREEN AWARDS

iceberg INNOVATION LEADERSHIP AWARD

GERMAN INNOVATION AWARD '21 WINNER

future zone

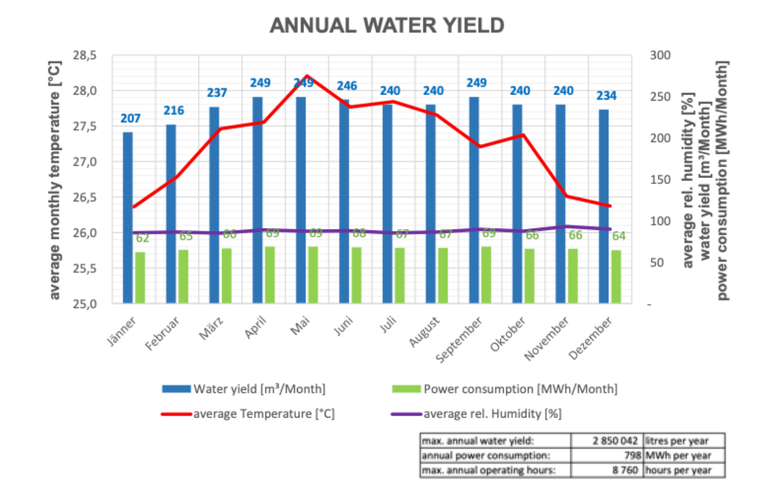
Energy Globe
The world award for sustainability

PHANTOR

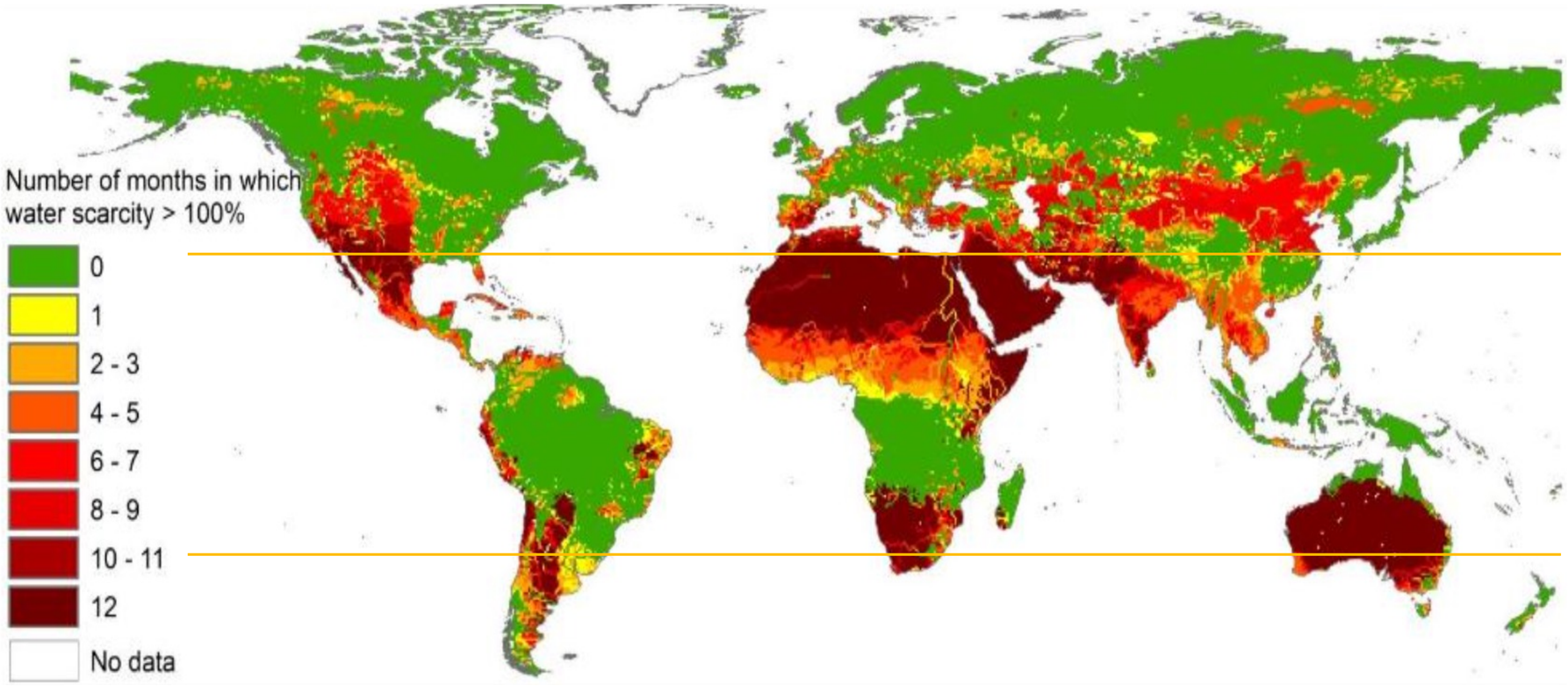
IN SINGAPORE 2022

SUSTAINABLE & SELF-SUFFICIENT
DRINKING WATER
FOR COMMUNITIES & BUILDINGS

GREENTECH FESTIVAL



FOCUS



1 L = 0,03-0,10€

1 KWH: 4 L VS 5 KM TESLA RIDE

1 L = 250 WH

IMHOTEP INDUSTRIES

POSITIVE SIDE EFFECTS

Increase your water security

Self-sufficient drinking water source

No micro-plastics in body

No fracking

Not more energy necessary than needed for the production of plastic bottles

Savings of 39 tons of plastic waste and 38 tons of oil every year

self-sufficient, alternative, clean and safe drinking water technology

USE CASES

FOR ATMOSPHERIC DRINKING WATER


Water for remote sites

SELF-SUFFICIENT, CLEAN AND SAFE DRINKING WATER


Drinking water


Water as a service


Water for production

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Version: 2023-03-14 Preliminary Slide Deck

Aquarden TECHNOLOGIES

Who are we?

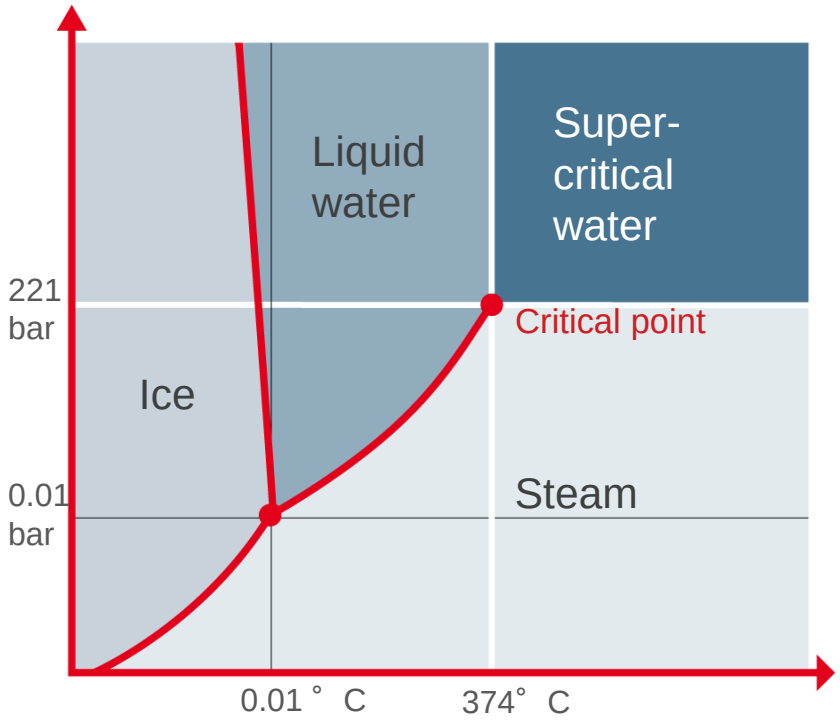
Sustainable Solutions for Problematic Wastestreams

- Innovation & Design
- 10 specialists in Denmark
- Consultancy, Design, Build, Integrate

SuperOx®

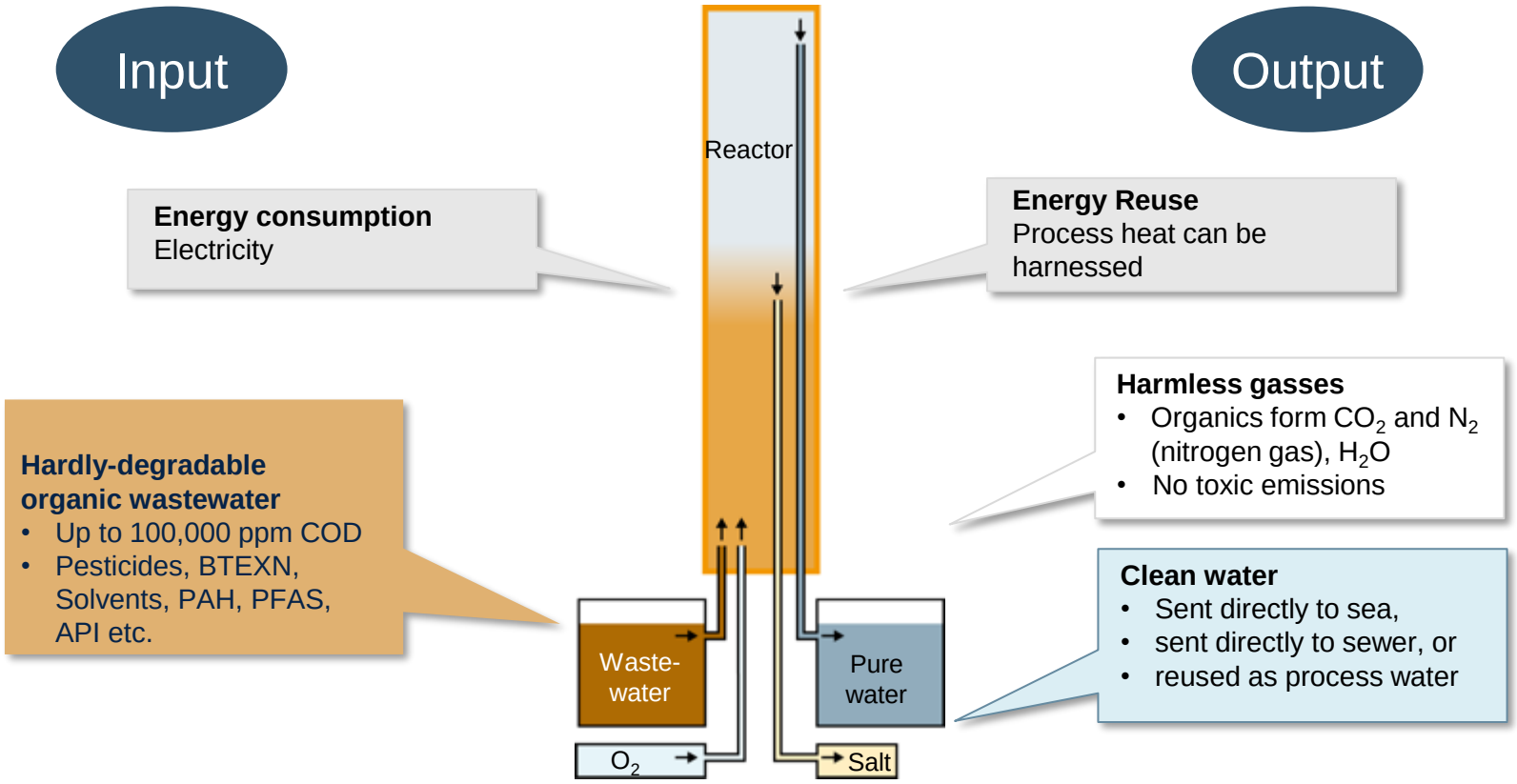
- Supercritical Water Oxidation - SCWO
- Total destruction of toxic organics
- No toxic emissions
- Reuse of resources
- Launched in 2015

What is Supercritical Water?



- Organics dissolve, salts precipitate
- **Total destruction of hardly degradable organics**

How SCWO Works



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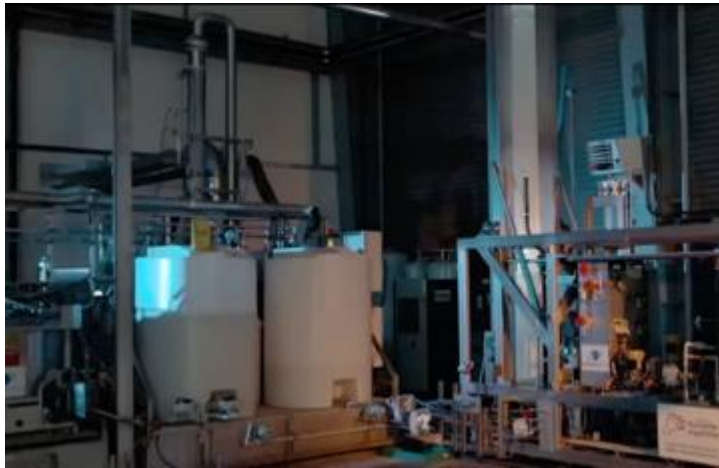
European Business Awards for the Environment

EU-award for the Environment 2016

The European Business Award for the Environment is given to a new and innovative product that significantly contributes to sustainable development and innovation.


Aquarden
TECHNOLOGIES
SuperOx®

- Partners with ArianeGroup since 2017
- SCWO Destruction
  - Energetic materials
  - Chemical Warfare Agents
  - PFAS
- Full-scale for industrial use



Applications

PFAS
- AFFF
- GAC / IX Resins
- Foam Fractionation
- Sludge

Defense
- Explosives
- Warfare agents
- PFAS

Chemical Industry
- Solvents
- Polyester wastewater

Oil & Gas
- Spent caustics
- H_2S scavengers

Aquarden TECHNOLOGIES

The New York Times

E.P.A. to Designate PFAS, or 'Forever Chemicals,' as Hazardous

A proposed rule would require companies to report spills of two toxic chemicals that have been linked to cancer.

Give this article

PFAS chemicals have been found in a range of products including carpets, waterproof clothing and food packaging, including some microwave popcorn bags. Alamy

By Lisa Friedman

Aug. 26, 2022

THE STRAITS TIMES WORLD

Rainwater unsafe to drink due to chemicals: Study

The New York Times

PFAS: The 'Forever Chemicals' You Couldn't Escape if You Tried

Virtually indestructible, these artificial compounds are used in fast-food packaging and countless household items, but they have been found as far away as virgin forests.

The substances are found in packaging used not only at fast-food restaurants like McDonald's and Burger King, but also at more health-oriented spots like Cava and Sweetgreen. Clockwise from top left: Saul Loeb/AFP — Getty Images; Evan Sung for The New York Times; Amy Lombard for The New York Times; Chuck Burton/Associated Press

PFAS destruction technologies are starting to emerge

Supercritical water oxidation spotlighted at congressional hearing

by ***Cheryl Hogue***

December 29, 2021 | A version of this story appeared in **Volume 100, Issue 1**

In a recently published case study, researchers from the US Environmental Protection Agency examined supercritical water oxidation technology from Battelle, **374Water of Durham, North Carolina**, and Denmark's **Aquarden Technologies**. The researchers specifically looked at the potential of the technologies to destroy PFAS in water-diluted firefighting foams containing perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) (*J. Environ. Eng.* 2021, DOI: **10.1061/(ASCE)EE.1943-7870.0001957**). They found that supercritical water oxidation technologies could destroy more than 99% of the PFAS run through them. The EPA team says more information is needed on operation and maintenance costs of supercritical water oxidation and on the technology's potential for emitting PFAS into air or creating hazardous by-products.

While the congressional hearing gave attention only to supercritical water oxidation, this method is just one of the processes researchers are developing for PFAS destruction.

"Thermal technologies in general are one of the most promising approaches for actually achieving PFAS destruction," **Timothy J. Strathmann, a professor of civil and environmental engineering at the Colorado School of Mines**, tells C&EN. Thermal technologies include incineration and pyrolysis as well as supercritical or subcritical water with oxidation, he says.

Korsør Fire School:
Flocculation + MF + GAC + IXR + SCWO

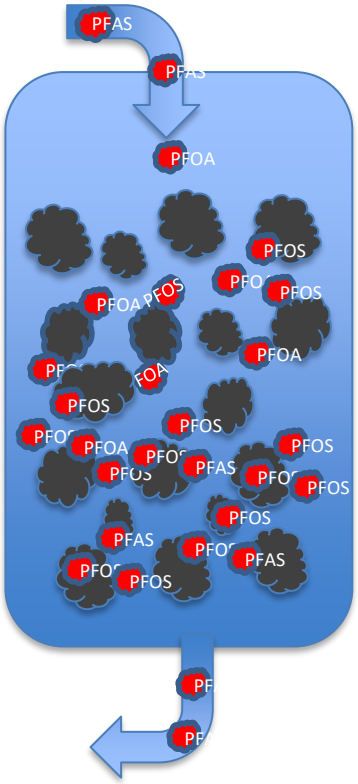
900.000 ng/l

Kommentar	*2
Parameter	
PFAS-forbindelser, 21 stoffer	
PFHpA	<1.0
PFOA	1.1
PFNA	<1.0
PFBS	2.1
PFHxS	18
PFOS	870
PFDS	<10
PFOSA	2.5
PFHxA	<5.0
PFBA	<1.0
PFHpS	<10
PFUnDa	<10
PFTeDa/PFTA	<10
PFPeA	<5.0
PFDA	<1.0
FTS 6:2	1.2
PFDoDa	<10
PFTrDa	<10
NEtFOSAA	<10
NMeFOSAA	<10
8:2 FTS	<1.0

<DL

Kommentar	*1
Parameter	
PFAS-forbindelser, 21 stoffer	
PFHpA	<0.0010
PFOA	<0.0010
PFNA	<0.0010
PFBS	<0.0010
PFHxS	<0.0010
PFOS	<0.0010
PFDS	<0.010
PFOSA	<0.0010
PFHxA	<0.0050
PFBA	<0.0010
PFHpS	<0.010
PFUnDa	<0.010
PFTeDa/PFTA	<0.010
PFPeA	<0.0050
PFDA	<0.0010
FTS 6:2	<0.0010
PFDoDa	<0.010
PFTrDa	<0.010
NEtFOSAA	<0.010
NMeFOSAA	<0.010
8:2 FTS	<0.010

Alternative to Incineration



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Thank you!

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BECAUSE OUR WATER IS VALUABLE.

Webinar Singapore – Water Management, March 15th, 2023

Rabmer Group

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- International business group with headquarter in Altenberg/Linz, Austria
- A family owned company in 2nd generation, founded in 1963
- 100% shareholder and CEO: Ulrike Rabmer-Koller
- Activities: Construction, Real Estate, City Services, Environmental Technologies
- Focus on water and energy-efficiency in the business segment „environmental technologies“




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- Corrosion and Lime Protection
- Energy from Waste Water for Heating and Cooling
- Energy Optimizing of Ventilation Systems
- Water Treatment and Purification
- Rehabilitation of Pipes and Manholes




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Water and Energy Saver for Showers

Water & Energy saver for showers

GRUPPE. QUALITÄT. KOMPETENZ. INNOVATION.

- Common Eco showers or faucets have one big problem:

  LESS WATER -> LESS PRESSURE -> LONGER SHOWER DURATION

- Savings from reduced water flow are partially lost through longer shower durations

Water & Energy saver for showers

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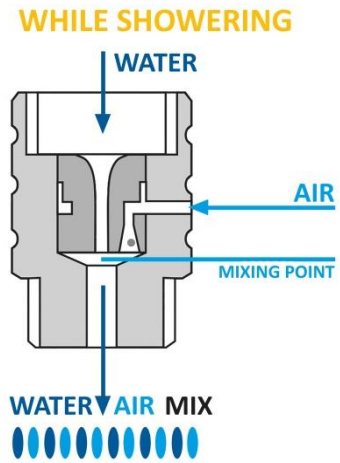
WATERSAVER FOR SHOWERS BASED ON VENTOURI TECHNOLOGY

- An Austrian product which reduces the water and energy consumption in showers by approx. 40% without any noticeable loss of comfort
- The only water saving system on the market, which keeps the full showering comfort
- Water flow rates of 5 l/min with perfect comfort are possible in combination with adequate shower heads

Water & Energy saver for showers

GRUPPE. QUALITÄT. KOMPETENZ. INNOVATION.

- **40% water- and energy reduction without loss of comfort** – how is this possible?
  - Reduction and acceleration of the water by the constriction of the diameter
  - Creation of a negative pressure
  - Air contribution through bypass
  - Enlargement of the volume through the enriched air-water mixture which results in a high showering comfort



Water & Energy saver for showers

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- TÜV – Austria certificate
  - Certified as an accepted measure according to Energy Efficiency Act
- Hygienic type examination – Dr.med. Daxböck
  - Suitability for use in health care facilities from a hygienic point of view
- Austrian eco-label
  - Tested for the function and use of sustainable materials
  - According to European hygienic standards (KTW, DVGW, DIN EN etc.)

Application areas

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- Hotels and campsites
- Schools and sport facilities
- Sanitary facilities in industrial and commercial enterprises
- Barracks
- Hospitals
- Retirement and student homes
- Bathing establishments and spas
- Cruise ships
- Single and multi-family houses

References

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Some References

- Santos Group, Mallorca
- HM Hotels Group, Mallorca
- Dalata Group, Irland
- Falkensteiner Group, Austria
- Hilton Vienna Park, Austria
- Hotel Palais Hansen Kempinski, Vienna
- Johannesbad Gruppe, Bad Füssing
- Stanglwirt Bio- und Wellnessresort, Going
- Biohotel Rupertus, Leogang
- Naturhotel Forsthofgut, Leogang
- Krallerhof, Leogang
- Alpen-Karawanserai, Hinterglemm
- Natur- und Wellnesshotel Höflehner, Schladming
- Stock Resort, Finkenberg
- Hotel Ambassador, Vienna
- Hotel Zeitgeist, Vienna
- Sims Hotels, Vienna
- Eurothermenresort, Bad Schallerbach
- Vortuna Gesundheitsresort, Bad Leonfelden
- Lambrechterhof, Steiermark
- Gesundheitszentrum Am Kokl, St. Georgen
- Hotel Pfösl, Italy
- Biohotel Schloss Wartegg, Switzerland
- Familienhotel Marco Polo, Hochkönig
- Hotel & Resort Dachsteinkönig, Gosau
- Wellnesshotel Klosterbräu, Tirol
- Schloss Pichlarn, Steiermark
- Das Opernring, Vienna
- Harry‘s Home, Linz
- Pflegeheim DomiZiel, St. Pölten
- Landessportentrum NÖ, St. Pölten
- Hotel Group Walchhofer, Zauchensee
- Johannes Kepler Studenthome, Linz
- Studenthome Hagenberg
- Home4Students
- Fitnessstudios Injoy, OÖ
- Bildungsheim St. Magdalena, Linz
- Energie Steiermark
- EWW, Wels
- Energie AG OÖ
- Voestalpine AG, Linz

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Sustainable Corrosion- & Limescale Protection for households and buildings

Lime Protection – Common solutions on the market

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- Salt based Ion Exchangers
  - Technology
    - Swap calcium and magnesium ions for sodium ions
    - Reduce total hardness to approx. 8°dH
  - Advantages
    - State of the art
    - Less lime in the water
      - Protectsion of household appliances
      - Protection of sanitary pipes
  - Disadvantages
    - **High water consumption for reactivation**
    - Create corrosion problems in metallic pipes
    - Change water taste
    - Large space requirement
    - Ongoing maintenance and operating costs

AQUABION®

Corrosion and limescale protection

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- Proven and reliable **zinc sacrificial anode system protects against limescale and corrosion** without altering the water from its original form.
  - prevents pipe damage
  - protects water-bearing devices and systems
  - reduces the cleaning effort
  - leaves the good taste of the water
  - reduces energy costs, because less limescale in the pipes means less energy consumption for hot water production
  - Reduces the risk of germs and legionella formation

AQUABION®

Corrosion and limescale protection

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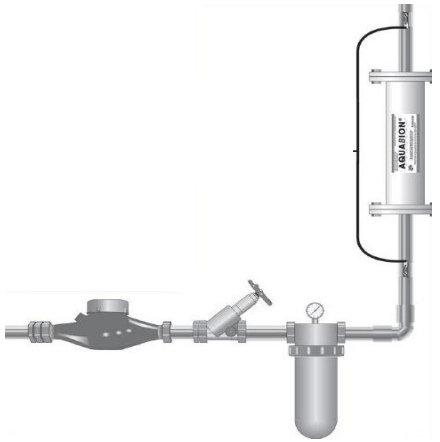
- Proven function: Limescale molecules are modified by the release of zinc ions into the water and are therefore "non-adherent“
- Simple installation with no ongoing operating costs
- Tested technology (OFI, TÜV Nord, WRAS ...)
- Internationally proven - over 300,000 applications throughout Europe



TÜV NORD

ofi FORTSCHRITT IN GUTEN HÄNDEN

WRAS Water Regulations Advisory Scheme

AQUABION®

Corrosion and limescale protection for natural water

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- Some samples of B2B clients in Austria

AKADEMIKERHILFE AH
STUDENTENUNTERSTÜTZUNGSVEREIN

ÖBB

VÖSLAUER

STIFT ST FLORIAN

WERZER'S
HOTEL RESORT PÖRTSCHACH

BOREALIS

starlim sterner

... alles für Bäcker und Konditoren
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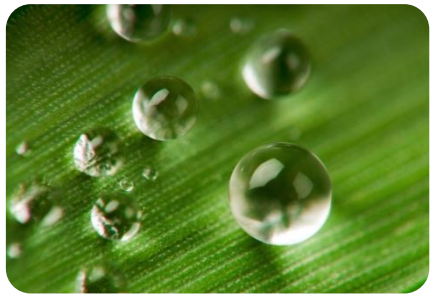

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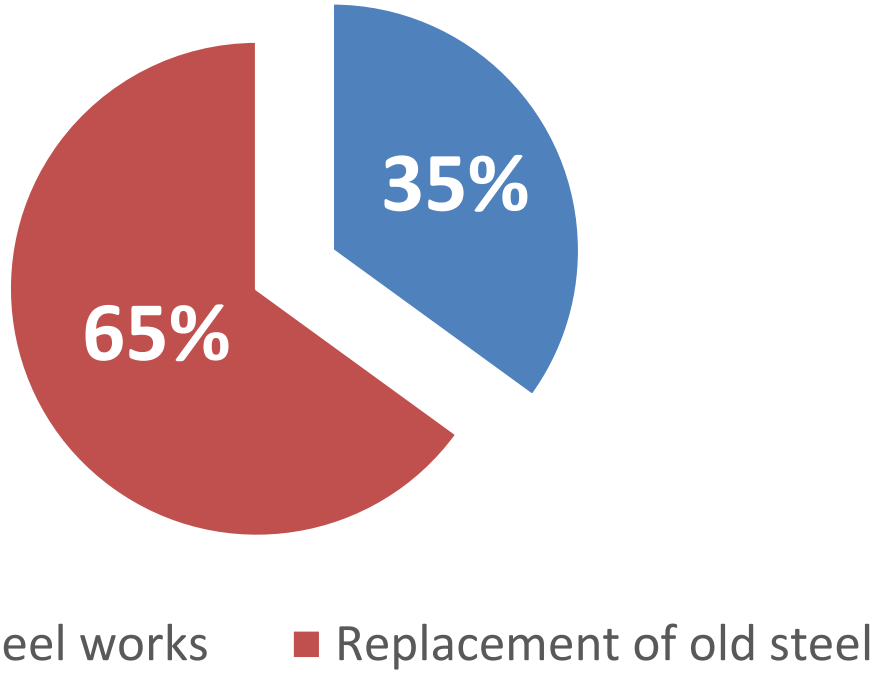
“asset integrity for eternity”

www.zinga.eu

“How corrosion protection saves millions”

Corrosion in numbers

- 65% of all steel produced is used to replace corroded steel, a completely unnecessary waste of natural resources.



Corrosion in numbers

- 3 to 4% of a country's GDP is spent replacing old, corroded steel
  - USA: $ 240 billion
  - Singapore: S$ 7.9 billion
  - Austria: € 20.2 billion

- Iron and steel production is one of the largest CO_2 emitters of any industry. Steel production accounts for **27**% of the CO_2 emissions of the global manufacturing sector
- Corroded steel replacement = **3,5**% of global CO_2 emissions.
  - This will become **9%** by 2030!

How can this be stopped?

Company presentation

- Zingametall Belgium – Zingametall Singapore Pte. Ltd.
  - Manufacturer of Zinga, a zinc coating system. (film galvanizing)
  - Global references
  - Presence in +120 countries through a network of distributors
  - Founded late 1970’s in Belgium

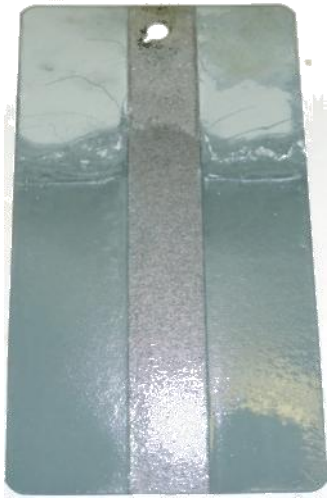
How can Zinga help?

Active, cathodic, galvanic protection
→ Very high zinc content (96%)

- Passive barrier protection
→ Zinc salts on top of surface

14 days in water immersion

Untreated

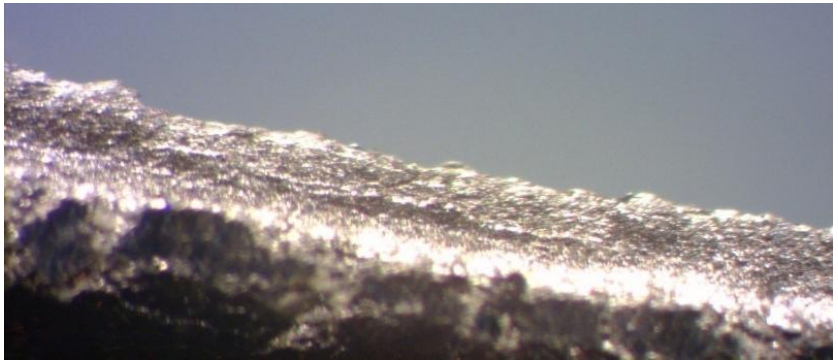


Treated except 2cm strip

One component organic Zinc coating

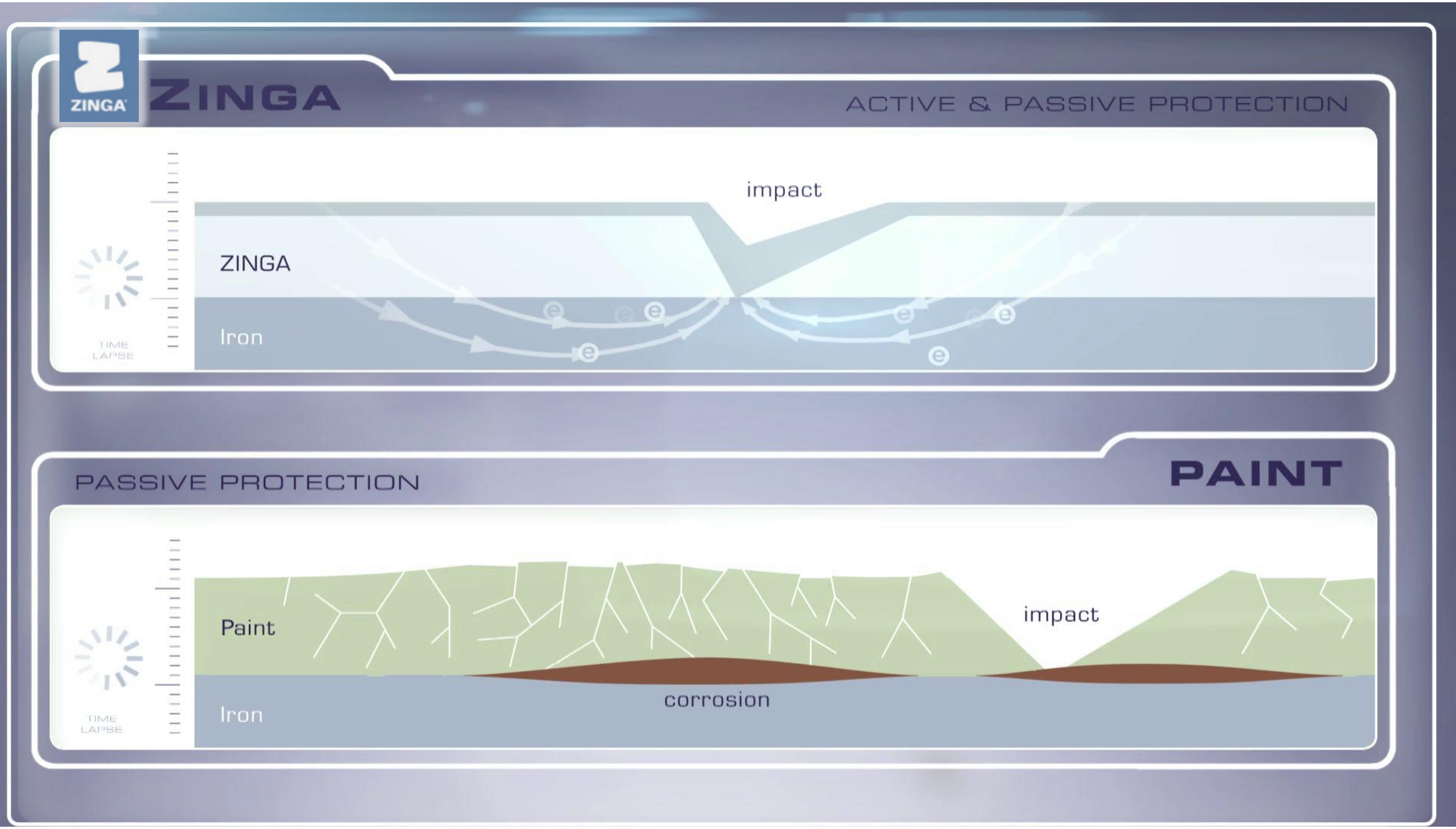
ZINGA is NOT a paint:

- Does not form a closed film
- Will not crack
- Will not flake/peel off



ZINGA layer

How to properly prevent corrosion? Cathodic Protection!



What is the optimal solution?

- Proper coating of steel with Zinga
  - Zinga provides warranties of up to 25 years at 120µm DFT
  - Zinc layer can easily be recharged for another 25 years of protection
  - Reloading Zinga results in an **eternal** life of steel = no more waste!
  - No annual maintenance cost after application
  - 100% safe in contact with potable water
  - **Touch-dry in 10 minutes**
  - -40°C to +120°C working range with 150°C peaks
  - Does **no**t contain **toxic or carcinogenic solvents** (Green Label Singapore)
  - Unlimited shelf life


LAND
ROVER


U.S.ARMY


ZINGA


DEPARTMENT OF THE NAVY
UNITED STATES OF AMERICA


ExxonMobil
Energy lives here™


BRUNEI


PETRONAS


BR
PETROBRAS


CFE
Comisión Federal de Electricidad


GUGLER
TECHNOLOGY FOR HYDROPOWER PLANTS


Land Transport Authority
We Keep Your World Moving


SMRT
CORPORATION


PUB
SINGAPORE'S
NATIONAL
WATER AGENCY

References

Gugler Water Turbines (Austria)

Since 2012 & ongoing

Different steel structures for water turbines & pipelines

Parts in contact with air:

ZINGA 1 x 60 µm DFT + Zingalufer 1 x 80 µm DFT + Zingafinish 1 x 100 µm DFT

Parts in contact with water:

Aquazinga 1 x 80 µm DFT + Zingaceram HS 2 x 120 µm DFT

Singapore

- Land Transport Authority (Singapore)
  Since 1998
  km's of guard rails
  Reduction in road closures
  -> substantial cost-saving for LTA
  ZINGA 2 x 40 µm DFT

- Lighting Mast (Singapore)
  Since 2002
  At PSA (Port of Singapore Authority)
  30 lighting masts,45 metres in height
  ZINGA 2 x 60 µm DFT
  Inspection in 2018 : in perfect condition

Railways

- Maglev (China)
  In 2001
  ZINGA was used on sensitive parts
  (e.g. steel functional units)
  ZINGA 2 x 40 µm DFT

- Dorbras (Brazil)
  In 1999
  45.000 pieces
  ZINGA 1 x 80 µm DFT

Storage tanks

- Quartes (Belgium)
  In 1980
  On previously hot-dipped storage tanks
  4 silos, 20 m in height, 4 m in diameter
  4000 m²
  ZINGA 2 x 60 µm DFT
  30 years after application only minor repairs were required

- Braithwaite Potable Water Tanks (UK)
  Application in 2007
  On the inside of 9 storage tanks for potable water
  ZINGA 2 x 60 µm DFT

ZINGA®

Let’s not waste any more natural resources unnecessarily

- Contact details:
  - Austria

    DKS Technik GmbH

    www.zinga.at

  - Singapore

    Zingametall Singapore Pte. Ltd.

    www.zinga.com.sg

    Olivier Vijverman

    Vice-President Asia-Pacific

    olivier@zinga.be

    +6591322446

MwStop®
CHECK VALVE

THE INTELLIGENT BACK FLOW PREVENTION DEVICE UP TO DN1800

COMPANY HISTORY

The optimization of hydrotechnical systems, their inspection, monitoring, positioning and cleaning has been our business field since 1985.

We develop specialized services, equipment and measuring systems and understand ourselves as a technology leader for special problems.

founding year of MTA Messtechnik GmbH:	2002
owner and managing director:	Marko Taferner

- 2005 foundation of the European Pipeline Center (Competence Centre)
- 2010 development of WCS – Water Control Systems®
- 2014 development of MTA Pipe-Inspector®
  Carinthian Innovation and Research Award 2014

MwStop® Check Valve

MwStop® check valve can be easy installed within a few minutes in practically all types of pipes. Immediat protection against flood, foreign substances and annoying smells.

The wide range of MwStop® check valves ensures the availability of a suitable model for any kind of application as back-flow protection in sewerage pipes, rain water pipes or the emerging of odors out of miscellaneous waste water systems.

MwStop® Check Valve

SCOPE OF APPLICATION

- main sewer
- sewers
- rainwater pipes
- clarifier basin

SIZES UP TO DN1800

MwStop® grant efficient protection against water back-flow, flooding and annoying odors.

MwStop® APPLICATIONS

There are numerous causes for back-flow.

Heavy rainfall, pipe blockage, operational breakdown of the pumping station, water back-flow from water bodies or other overload of the sewage system might exceed the capacity of the sewage system.

MwStop® check valve protects against water back-flow, intrution of water and foreign substances into buildings as well as into sewage and rainwater pipes.

Moreover, MwStop® check valve is an efficient protection against inconvenient smells.

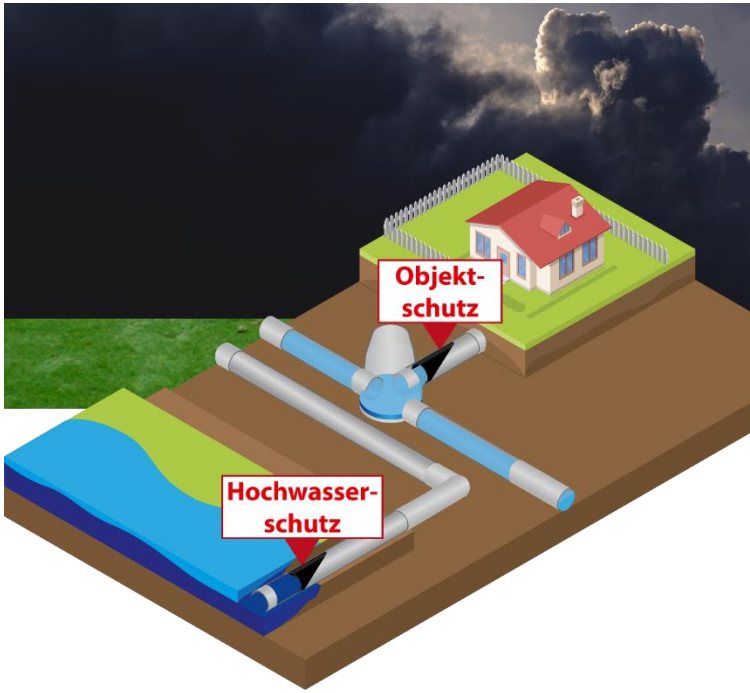
MwStop® APPLICATIONS

BUILDING PROTECTION

- water back-flow protection
- water back-flow protection against underground water

FLOOD PROTECTION

- water back-flow protection
- adjusting of waste water
- triggering of flush cleaning



MwStop® FUNCTIONALITY

POSITION 1 – SHUT DOWN PHASE - the elastic membrane of the MwStop® check valve seals the pipe off tightly until the backlog of the outgoing flow reaches the trigger pressure.

POSITION 2 – FLUSHING PHASE - lifts the elastic membrane up and the flush of the backlog water cleans the pipe and removes possible deposits.

POSITION 3 – BACKLOG PHASE - water who pushes the membrane outwards against the wall of the pipe sealing it off effectively against the intrusion of the incoming water. The back-log height varies according to the MwStop® check valve model (maximum 8.000 mm).

MwStop® APPLICATIONS

MwStop® - FEATURES

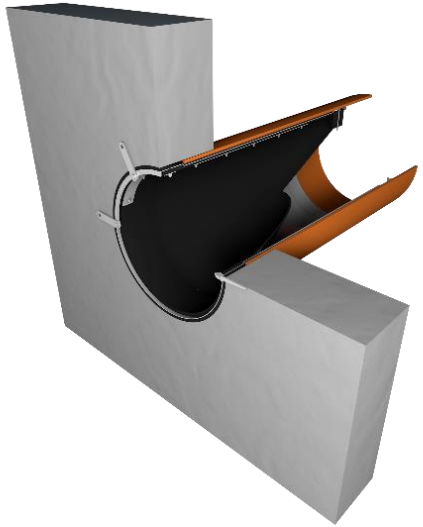
- backflow prevention
- odor control
- flushing

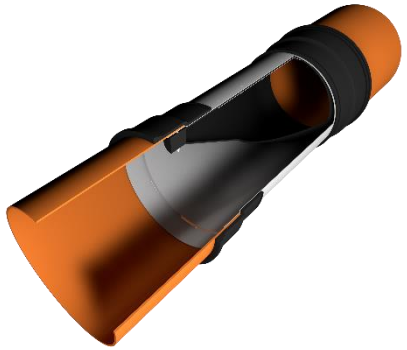
MwStop® - ADVANTAGES

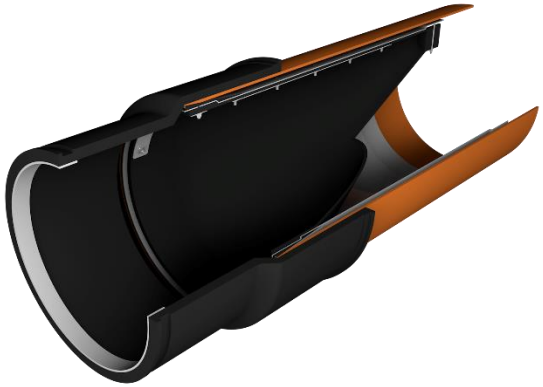
- extremely low pressure drop
- without moving parts
- simplest installation
- long lifetime
- applicable for all pipe materials & sizes

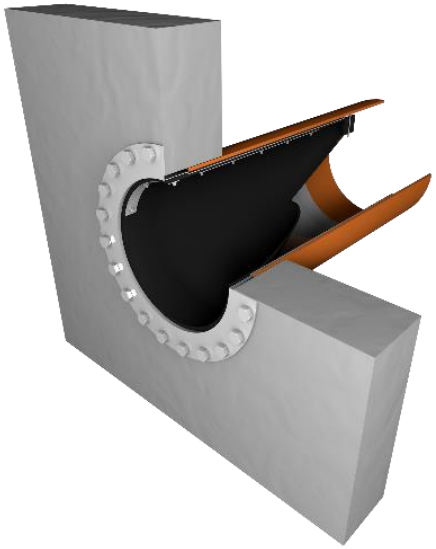
MwStop® INSTALLATION

MwStop® valves can be installed in various ways in any position from horizontal to vertical, full functionality is given.









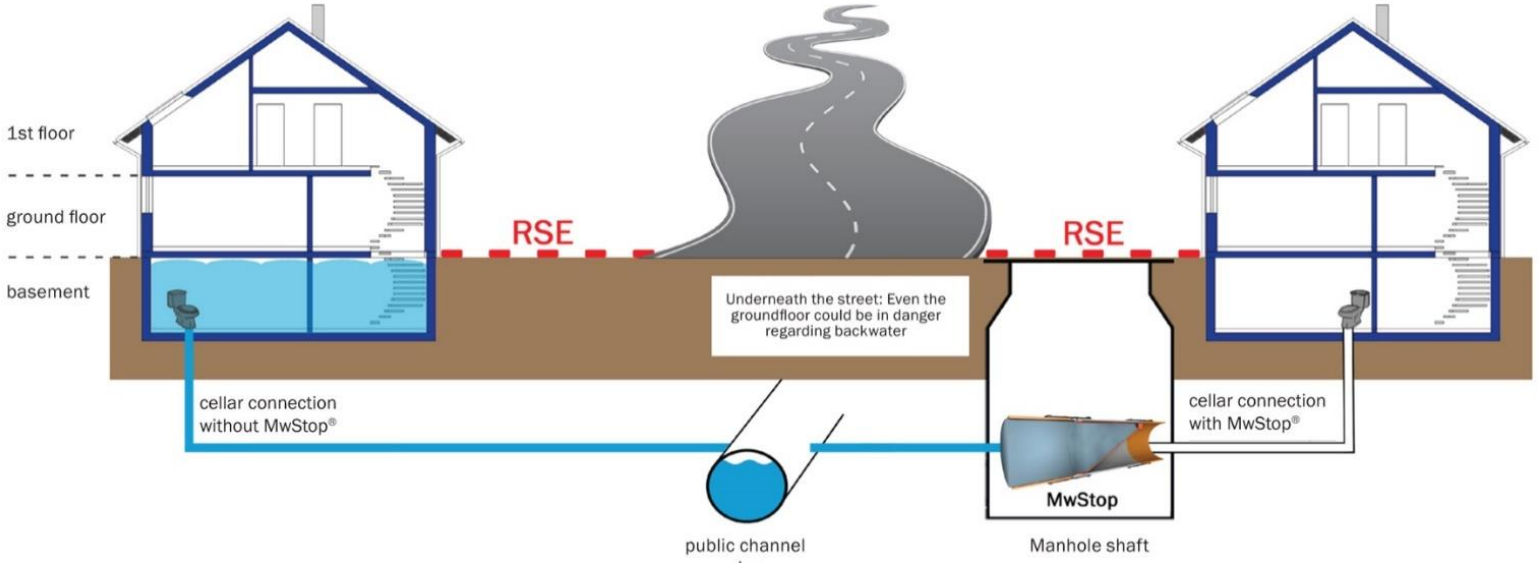
MwStop® BACKWATER HEIGHTS

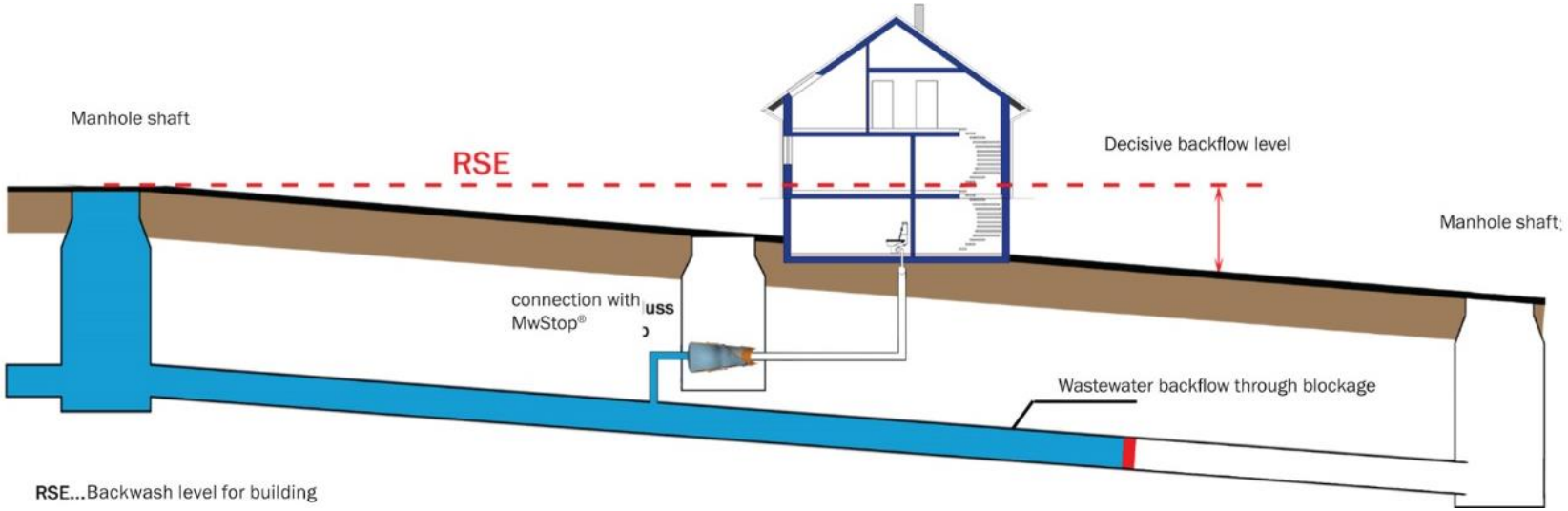
MAXIMUM BACK-FLOW PROTECTION

The MwStop® standard models provide backflow protection up to a height of 5.000 mm water column.

The MwStop® soft models provide a backflow protection up to a height of 3.000 mm water column.

Special models up to a height of 8.000mm water column can be produced on demand.


1st floor
ground floor
basement
RSE
RSE
Underneath the street: Even the groundfloor could be in danger regarding backwater
cellar connection without MwStop®
cellar connection with MwStop®
MwStop
public channel
Manhole shaft


Manhole shaft
RSE
Decisive backflow level
Manhole shaft
connection with MwStop®
Wastewater backflow through blockage
RSE... Backwash level for building

MwStop® VERSIONS

MwStop® SIZES

FOR ALL COMMON PIPE INSIDE DIAMETER

MwStop® check valves are available up to 1800. Practically for all pipe dimensions and pipe materials. Special sizes on request.

MwStop® MATERIALS

CASING

The standard casing of the MwStop® consists of stainless steel 1.4404. For sizes up to DN200 and mounting as part of a pipe, PVC/PE can be used as an alternatively offered.

MEMBRANE

The MwStop® membrane is manufactured up to DN1800 in EPDM with different shore (standard & soft membrane).

MwStop® STANDARD FOR Gradient ≥2%

To ensure the full functionality of the MwStop® a minimum gradient of 2% is required in the standard version.

MwStop® Standard

Under this precondition the EPDM membrane of the MwStop® opens at a certain water pressure (water flow) and closes if this pressure falls below the normal level.

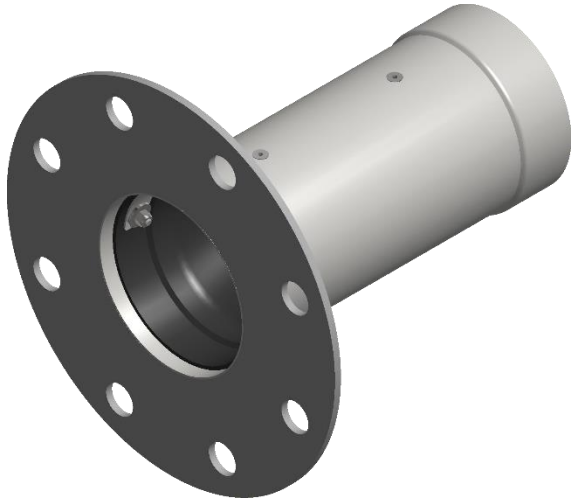
The MwStop® remains closed until the pressure of the backlog water reaches the trigger point. At the trigger point it opens up all of a sudden creating the controlled flushing process.

MwStop® Short

MwStop® SOFT FOR LOW GRADIENT

For installation in pipes with a gradient of less then 2% (minimum 1% is required) the membrane of the MwStop® consists of a more flexible material.

This ensures that even in these situations the flushing process removes the waste water inclusive eventual deposits.



MwStop® Flange front

MwStop® Flange back

MwStop® EXAMPLES OF USE

DN225 - flood protection & object protection

MwStop® EXAMPLES OF USE

DN700 - Flood protection - object protection – Germany

MwStop® EXAMPLES OF USE

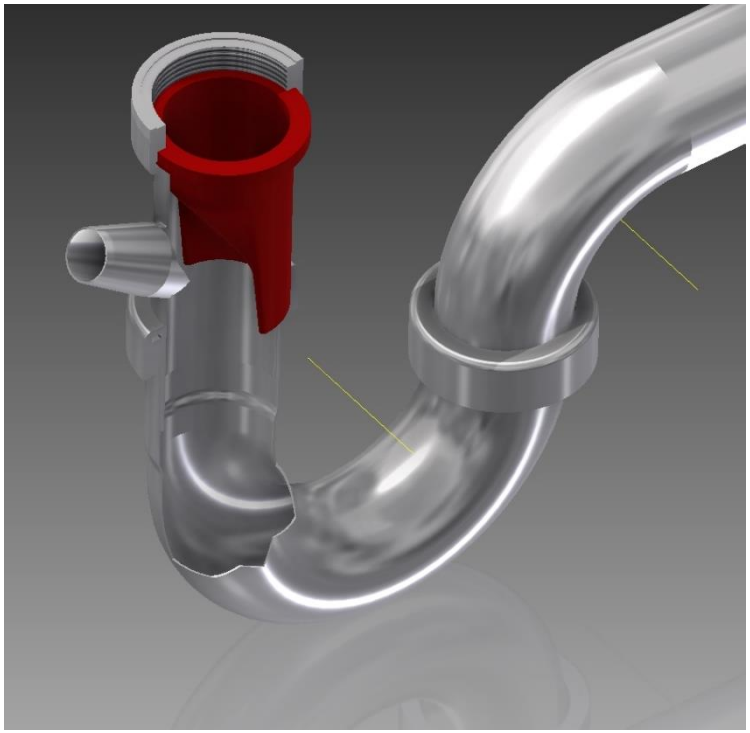
DN900 - flood protection river - Austria

MwStop® EXAMPLES OF USE

DN1000 - Backwater protection - Austria

MwStop® Home Series

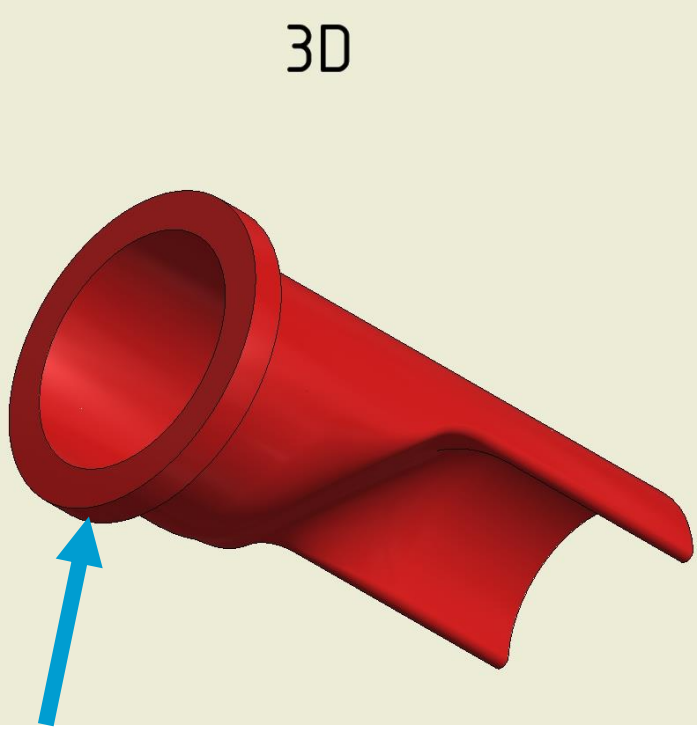
Small check valves for domestic installations e.g DN32 or DN40

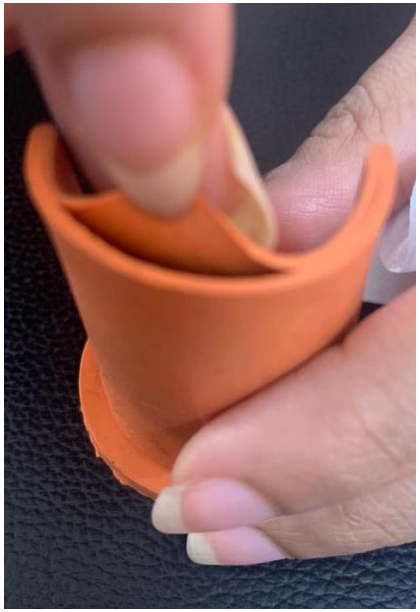


- For standard pipelines in buildings
- Water flows off without problems (no loss of free pipe diameter)
- Membrane closes automatically and thus prevents unpleasant odours from the waste water pipe
- Special solution for holiday residences and seasonal guest accommodations

MwStop® Home Series

Small check valves for domestic installations e.g DN32 or DN40

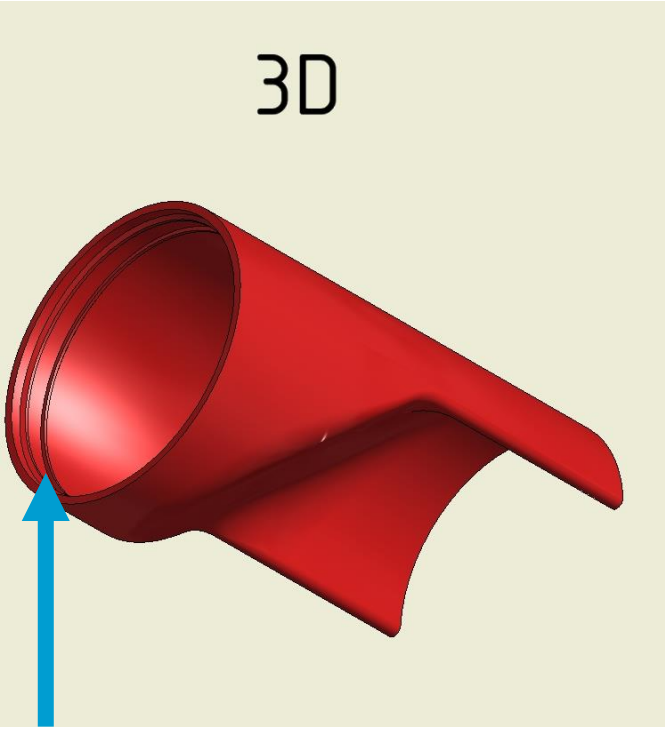




Flange serves as fixation in the pipe and at the same time as sealing ring

MwStop® Home Series

Medium check valves for domestic installations e.g DN100 or DN150



- For standard waste water pipelines in buildings
- Water flows off without problems (no loss of free pipe diameter)
- Membrane closes automatically and thus prevents unpleasant odours from the waste water pipe
- Special solution for holiday residences and seasonal guest accommodations

Mounting in the pipe takes place by means of an expanding ring

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