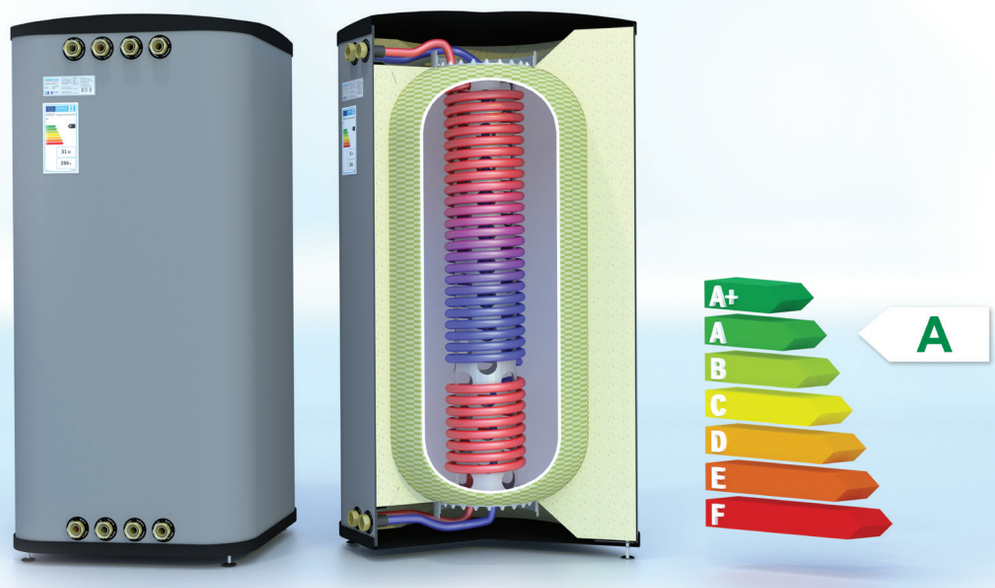
ENERGY SYSTEMS

Solarico®

Innovative
Composite
New Generation

UniQube

Solar Storage Tank
Domestic Water Heater
Stratified Separator Storage Tank



NEW

QUALITY 30 YEARS GUARANTEE

TÜV HESSEN

ISO 9001
LL-C (Certification)

live the future

Connection between us and water, in our homes, corresponds to the modality of living. Solarico UniQube leads us to new generations of storage tanks, a long life way of keeping our water hygienic and high quality.

Solarico thermal storage systems can store solar energy in the form of heat by using water as material with high specific heat capacity. Water stores heat and transfers energy in our home.

Solarico UniQube

Exciting lightweight and space saving

A Composite Plastic type of storage tank - in cooperation with The Mikrosam Institute for Advanced Composites and Robotics

When using solar thermal panels, storage tank is the central part of any heating system, guaranteeing its efficiency.

Improved energy efficiency class "A", usable hot and clean water, light-weight, corrosion resistant, space saving design.

Plastic tank is reinforced by filament winding of fiber glass. Using this technology for our storage tank, we lift it a level above the conventional storage tanks.

UniQube provides hygienically safe water, heated by any kind of heat source, or combination of more heat sources, depending on customer's needs.

The inside heat diffusion is limited by stainless steel diffusion protection.

Compatible with various types of thermal systems

Solarico's Storage Tank UniQube is designed to work as stand-alone storage tank or in combination with other devices of any type of thermal system.

Works perfect as a buffer, solar or combined storage tank, for heating domestic water. Solarico UniQube can be integrated directly into the heating systems with maximum continuous operating pressure of six bar.

Solar thermal collectors connected to UniQubes perform a support for the heating system.

Solarico UniQube

You and High efficiency thermal device

- "A" class of energy efficiency
- corrosion resistant
- pressure stability
- hygienic hot water
- space saving attractive design
- light weight
- extended durability
- stratified water heater
- new level of reliability

Minimum heat loss, impressive strength and light weight. Solarico's UniQube storage tank is roto-molded plastic tank, strengthened by filament winding of fiberglass.

Unique combination of these materials results in low weight tank.

Special plastic, stainless steel stratification tube and stainless steel heat exchangers ensure corrosion resistance and anode free tank, which means no smelly water inside, no unwanted chemical reactions too.

Almost all materials in Solarico's UniQube are low heat loss materials. We insulate it with very limited fire contribution polyurethane foam class B2 according to DIN 4102, so the storage tank ensures safety, highest class of insulation, high effectiveness and system stability.

Solarico team have decades of experience in planning, projecting and installing of various types of heating, cooling and ventilation systems. From small residential infrastructures to big hotels, from heating domestic water to solutions for industrial processes.

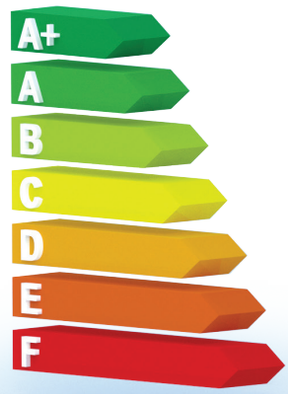
Looking to the future, combining knowledge and experience, we got inspired to start our own production line of this advanced heat storage tank.

UniQube overcomes standard problems of conventional storage tanks, lifting to the new level of efficiency, and sets new standards for heat storage tanks.

We make it to be compatible for your home needs and to give you a comfort.

We make it to improve your industrial process and to lower the cost of your product.

We make it environmental.



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UniQube

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- **Pressure stability**

  Due to its excellent strength, no welding joints, and no weak points, UniQube can be comfortably operated at a constant pressure up to 6 bars and a temperature up to 95 degrees Celsius. It is pressure tank for direct integration into the heating systems.

- **Optimized stratification and controlled diffusion**

  Stainless steel stratification tube inside, keeps the thermal diffusion controlled, and stratifies the heat into thermal layers, improving the efficiency and lowering the heat loss.

- **Extended durability**

  30 years projected lifetime and 10 years of warranty period for UniQubes

- **Hygienic hot water**

  Domestic hot water provided by Solarico's UniQube is continuous flow, on demand heated water. Cold drinking water is connected to the inlet of stainless steel heat exchanger, and its outlet is connected to the tap. Water flows thru when the tap is open and gets instantaneous heat from the water of the heating system, that is stored in the tank. This on-demand heating is limiting proliferation of Legionella.

- **Space saving attractive design**

  Cuboid shape and design saves your space and fits in your interior design.

- **Light weight**

  Very easy to transport, assembly and install.

- **Minimum maintenance**

  Due to its non-corrosive tank, there are no anode rods to be periodically replaced. Stainless steel heat exchanger have a mirror surface finish, it is made of stainless steel corrugated pipe and the inside flowing water is followed by vibrations and swirling, so there are no conditions for deposits such as lime scale, sediment or rust. The functional safety of the safety valve must be verified periodically.

- **"A" class of energy efficiency**

  Composite-plastic materials are significantly reducing heat loss, so UniQube is normal size storage tank with up to 60% lower heat loss than conventional hot water storage tanks.

- **Adjustable for multiple operations and various kinds of systems**

  Solarico's UniQube can work as solar storage tank, combined heat source storage tank, pressure tank, buffer, hydraulic separator, drinking water heater.

- **Experience and knowledge**

  UniQube is developed on the basis of customers' needs and Solarico's decades of experience in planning, projecting and installing solar thermal systems, central heating, cooling and ventilation systems. It is a huge benefit for contractors and for homeowners.

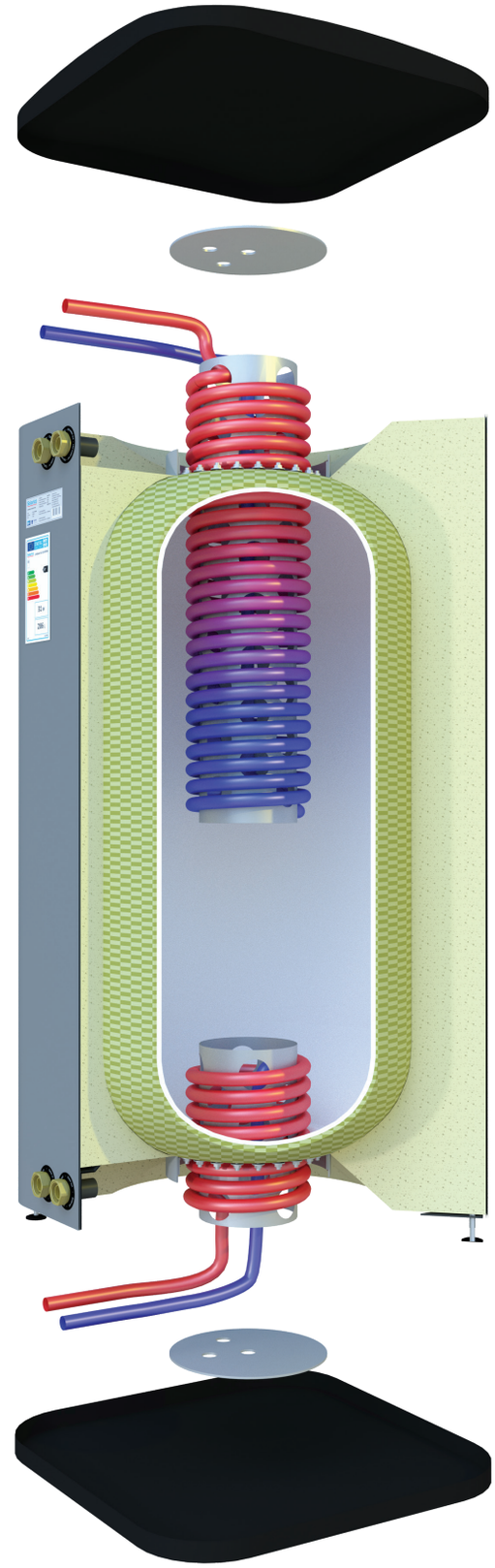
- **No corrosion**

  Combination of plastic and fiberglass composite materials is corrosion resistant on both sides of the tank.

Solarico UniQube
using space wisely

thinking of storage tank for hygienic domestic hot water and have it for multiple purposes

- solar storage tank
- stand-alone storage tank
- buffer storage tank
- hydraulic separator storage tank
- combined storage tank
- home water heater
- electric heater backup



Created to provide hygienic hot water

UniQube is heat storage tank, not a hot sanitary water storage tank. Domestic water is heated in the moment we use it. UniQube is continuous flow water heating device. The water flows through corrugated stainless steel pipes, therefore it remains hygienic and clean when we use it. This operating mode lowers the growth of Legionella and other germs in the water we use. The drinking water is recommended to be heated up to 60°C, so it reduces calcification of a heat exchanger and there is no discharge of excessive temperature water. Stainless steel heat exchanger is also resistant to deposits like lime scale, so it is free of it and its heat exchanging capacity is constant.

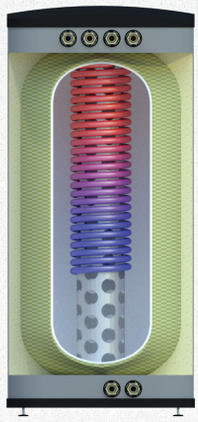
Stratified Temperature Volume

Stratified Uniqube tank is providing hot water faster than conventional diffused tanks.

Solarico UniQube is equipped with system of tubes toward the stratification of the temperature inside the tank

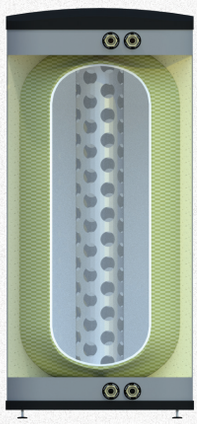
All entering, filling pipes, are positioned within the stratification tube. The stratification tube is made of stainless steel with openings placed in order to support the stratification process. The entering water of the heating system with its specific temperature is flowing inside the stratification tube and is positioning in the space with corresponding temperature. Flow direction inside the tank depends on model and its function in the heating system.

- Solar Storage Tank
  Domestic Water Heater
  Stratified Separator Storage Tank



- Domestic Water Heater
  Stratified Separator Storage Tank

- Solar Storage Tank
  Stratified Separator Storage Tank



- Stratified Separator Storage Tank

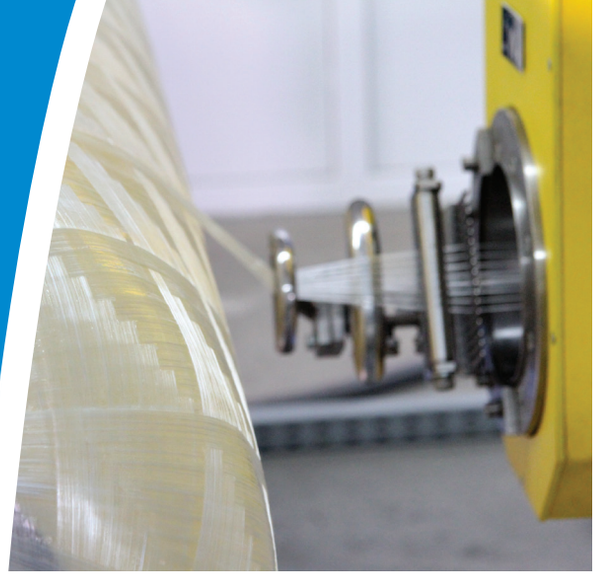
- Buffer Storage Tank

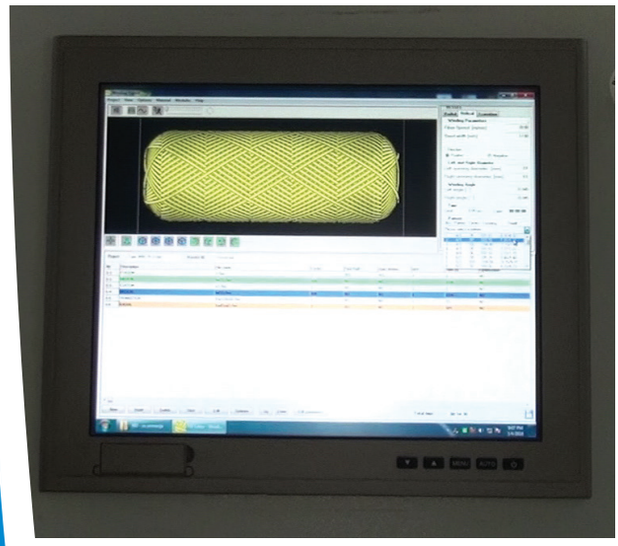
Solarico UniQube

from simple buffer storage tank to combined storage tank

UniQube can be equipped with stratification tube, heat exchangers, electric heater backup, and combinations of it. UniQube have maximum extended durability, all inner parts are removable, replaceable, and spare parts can be used. UniQube can be upgraded from one type of device to another.

UniQube is unique type of storage tank that can be basically produced in 5 different variations, depending on system requirements. You can have it as a Buffer storage tank, Separation storage tank, Solar storage tank, Domestic drinking water heater or Combined storage tank. It can be installed in a group or as individual device.





Solarico manufacturing

Composite thermal plastic storage tank - in cooperation with "Mikrosam Institute for Advanced Composites and Robotics"

Solarico manufacturing implemented UniQube Thermal plastic-composite water heaters & storage tanks - our second production line after UniPlate collectors line.

- latest technology of filament winding
- laser-cut precision
- roto molding of thermal plastic
- computer controlled automated processes
- high quality materials

Commitment to the next level of water heaters & storage tanks

Projecting and installing solar thermal systems and complex heating systems always requires high efficiency and long service life for central storage tanks.

"Mikrosam Institute for Advanced Composites and Robotics", the oldest and most experienced in the region, met our ideas and, in relatively short time cooperation on this field, the result was the tank of UniQube.

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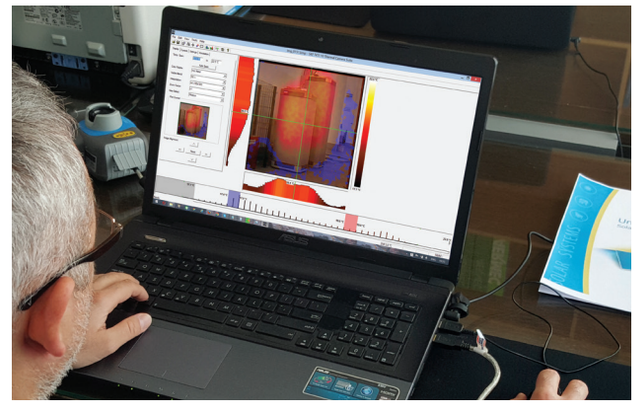
Vision and development

The technology of composite filament winding is giving the UniQube required strength so it can be stable to higher working pressures. This pressure stability is tested and makes it the product capable for special operating conditions.

Thermal plastic combined with composite material gives the basic tank impressive thermal insulation. Resistant to any chemical reactions, dents, scratches and salt air on both sides of the tank.

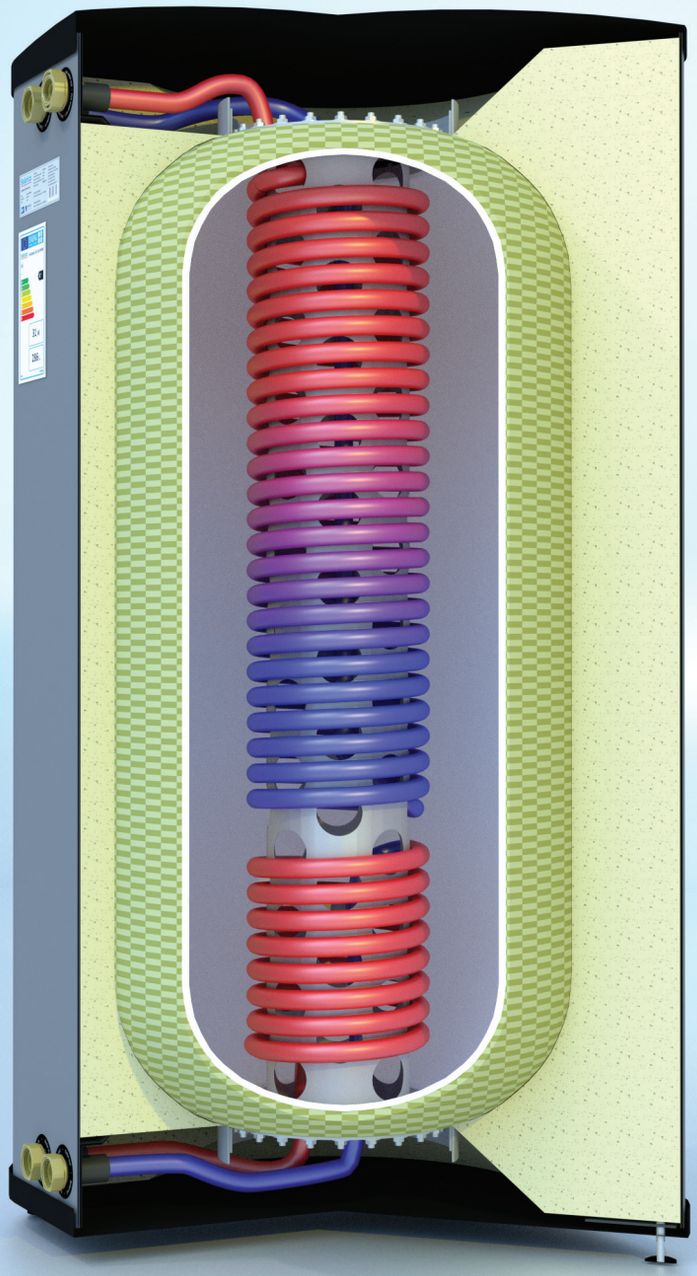
Corrosion free. Tests and calculations on UniQube are only confirming the basic idea that this technology implemented on water heaters & storage tanks is giving fascinating results and makes serious efficiency improvement to solar and heating systems.

Mikrosam Institute for Advanced Composites and Robotics



UniQube

Solar Storage Tank
Domestic Water Heater
Stratified Separator Storage Tank



- continuous flow domestic water heater, a hygienic storage tank
- domestic hot water heat exchanger made of stainless steel INOX 316 L corrugated pipe
- solar heat exchanger made of stainless steel INOX 316 L corrugated pipe
- device for stratification of the heat
- hydraulic separator between the heat source circuit and the heating circuit
- equipped with four sleeves for sensors
- polyurethane high quality insulation, specific in very limited fire contribution, class B2 according to DIN 4102
- all flanges are replaceable and it can be modified to any other type of storage tank if necessary.
- electric heater back up

6 functions integrated tank

This model is fully equipped, combining functions of stratification, hygienic water heater, buffer, hydraulic separator, solar storage tank and solar support for the heating system.

It is 1 piece solution for high efficiency central heating systems.

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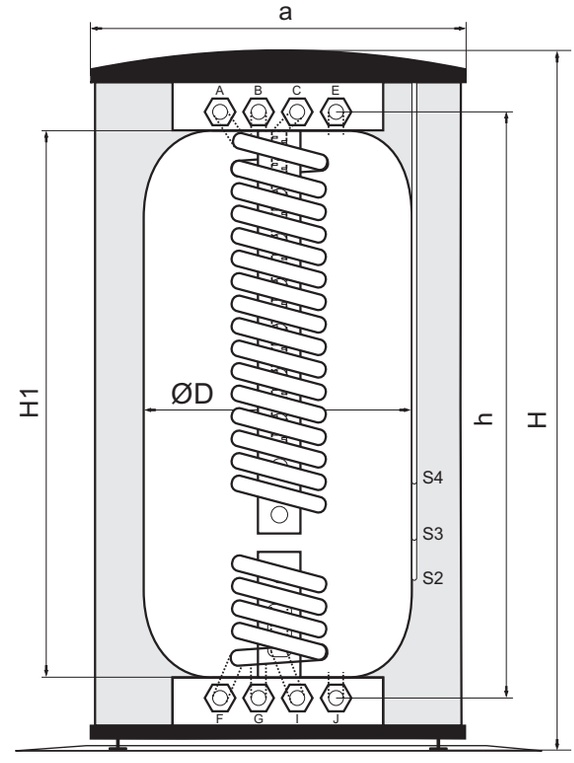
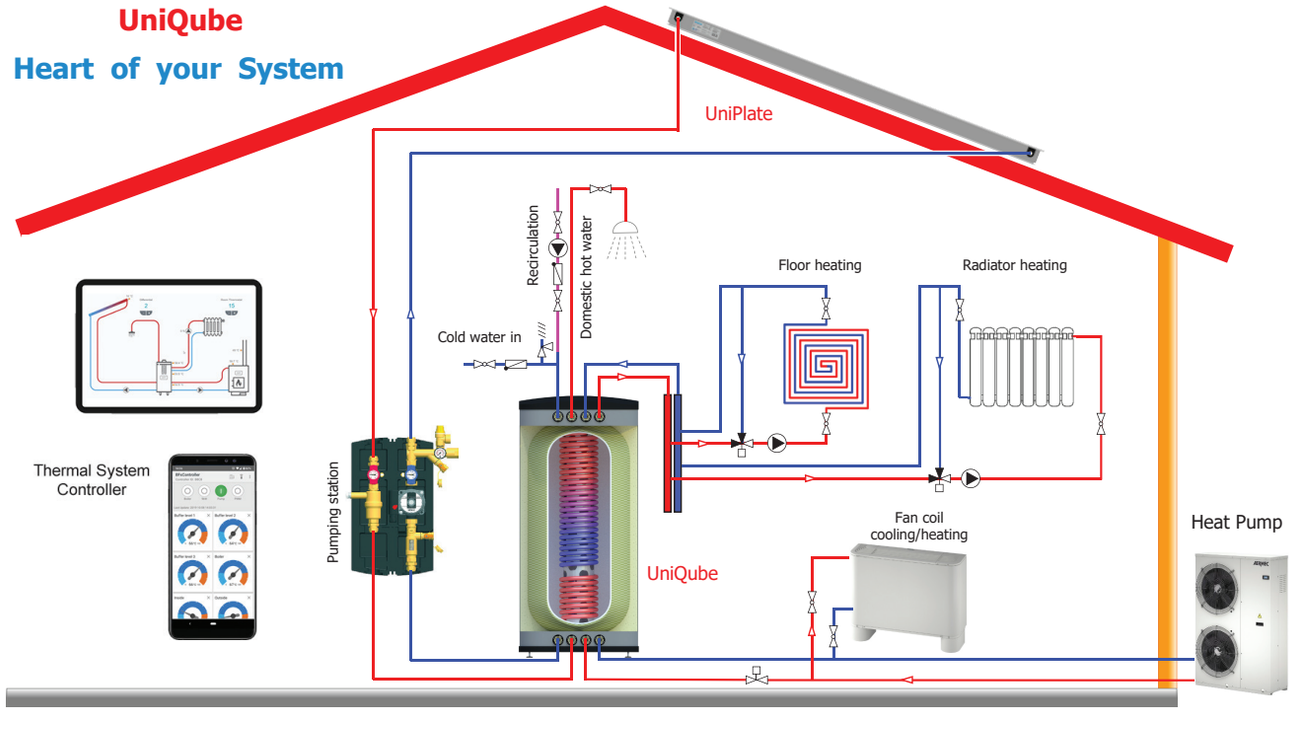
UNIQUBE MODEL - SOLAR STORAGE TANK, DOMESTIC WATER HEATER, STRATIFIED SEPARATOR STORAGE TANK			
TYPE SQ-BPSW		310	440
D (diameter)	(mm)	620	620
H1 (height)	(mm)	1300	1730
h (connectors)	(mm)	1470	1900
Connections C, E, I, J		5/4″	5/4″
H (height)	(mm)	1570	2000
a (width)	(mm)	734	734
max. working temp.	(°C)	90	90
max. working pressure	(bar)	6	6
max. test pressure	(bar)	9	9
Net tank capacity	(liters)	290	413
Approx. weight	(kg)	119	160
S2 Solar sensor position	(mm)	1110	1550
S3 Heating sensor position	(mm)	910	1350
S4 DHW sensor position	(mm)	710	1150
Pivot measurement	(mm)	1730	2130
Solar heat exchanger			
Connections F, G		5/4″	5/4″
max. working pressure	(bar)	10	10
max. test pressure	(bar)	15	15
capacity	(liters)	5	8
output area	(m^2)	1,2	2
Water heat exchanger			
Connections A, B		5/4″	5/4″
max. working pressure	(bar)	10	10
max. test pressure	(bar)	15	15
capacity	(liters)	15	19
output area	(m^2)	3,8	5

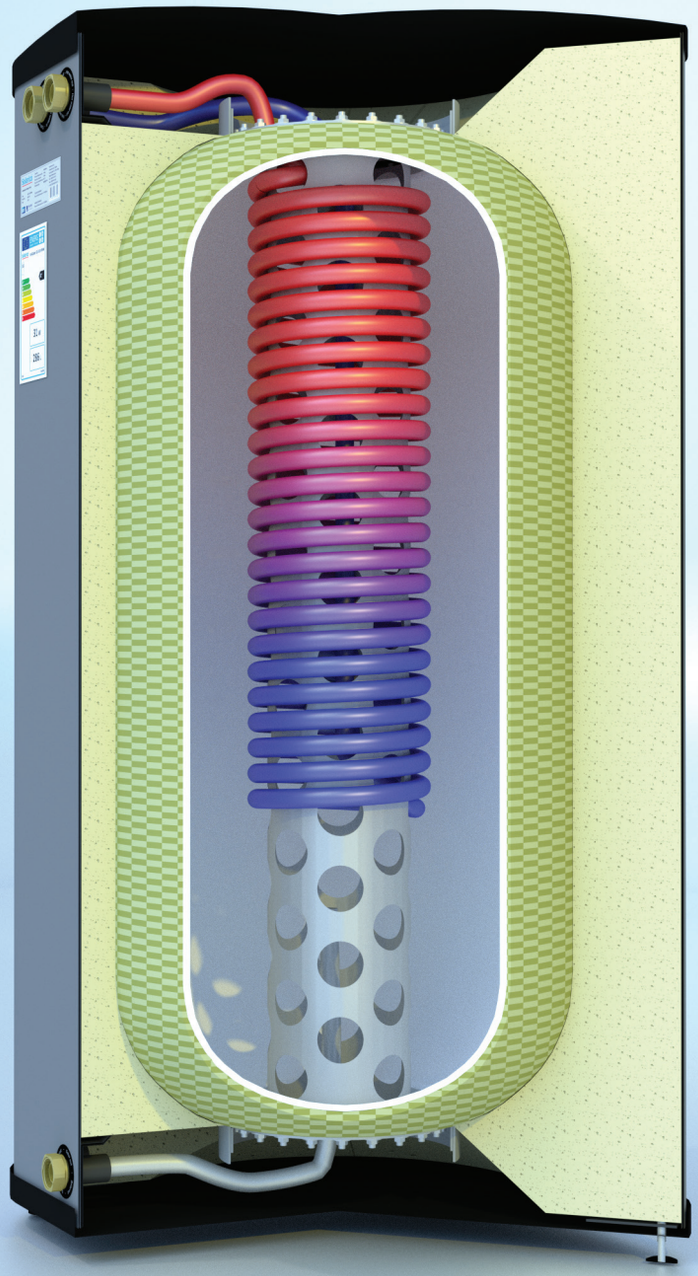


A - Cold water in
B - Hot water out
C - Heating in
E - Heating out
F - Solar in
G - Solar out
I - Boiler in
J - Boiler out
S2 - Solar sensor
S3 - Heating sensor
S4 - DHW sensor



UniQube

Domestic Water Heater
Stratified Separator Storage Tank



- continuous flow domestic water heater, a hygienic storage tank
- domestic hot water heat exchanger made of stainless steel INOX 316 L corrugated pipe
- device for stratification of the heat
- hydraulic separator between the heat source circuit and the heating circuit
- equipped with three sleeves for sensors
- polyurethane high quality insulation, specific in very limited fire contribution, class B2 according to DIN 4102
- all flanges are replaceable and it can be modified to any other type of storage tank if necessary.
- electric heater back up

Stratified Domestic water heater function

On-demand heating of drinking water is the principle that is used for domestic water heaters.

Heated drinking water is hygienic and can be used in many purposes.

When choosing a non-solar heat source, this is most efficient model.

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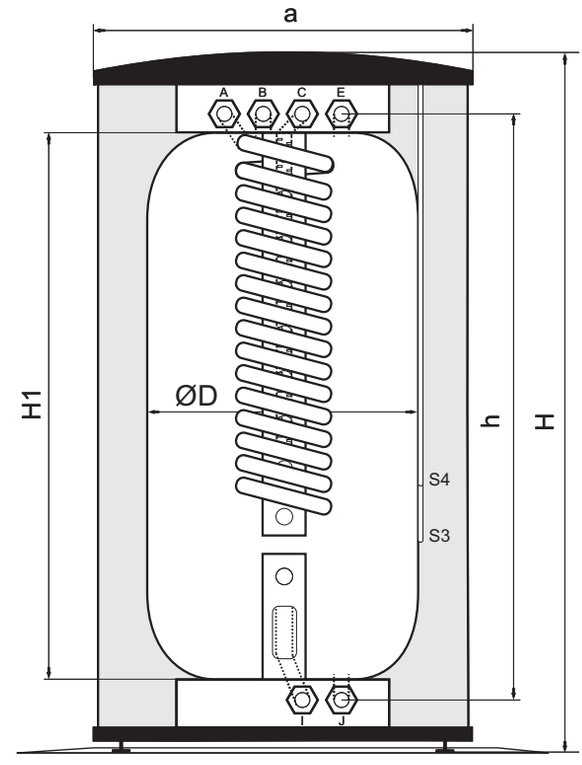
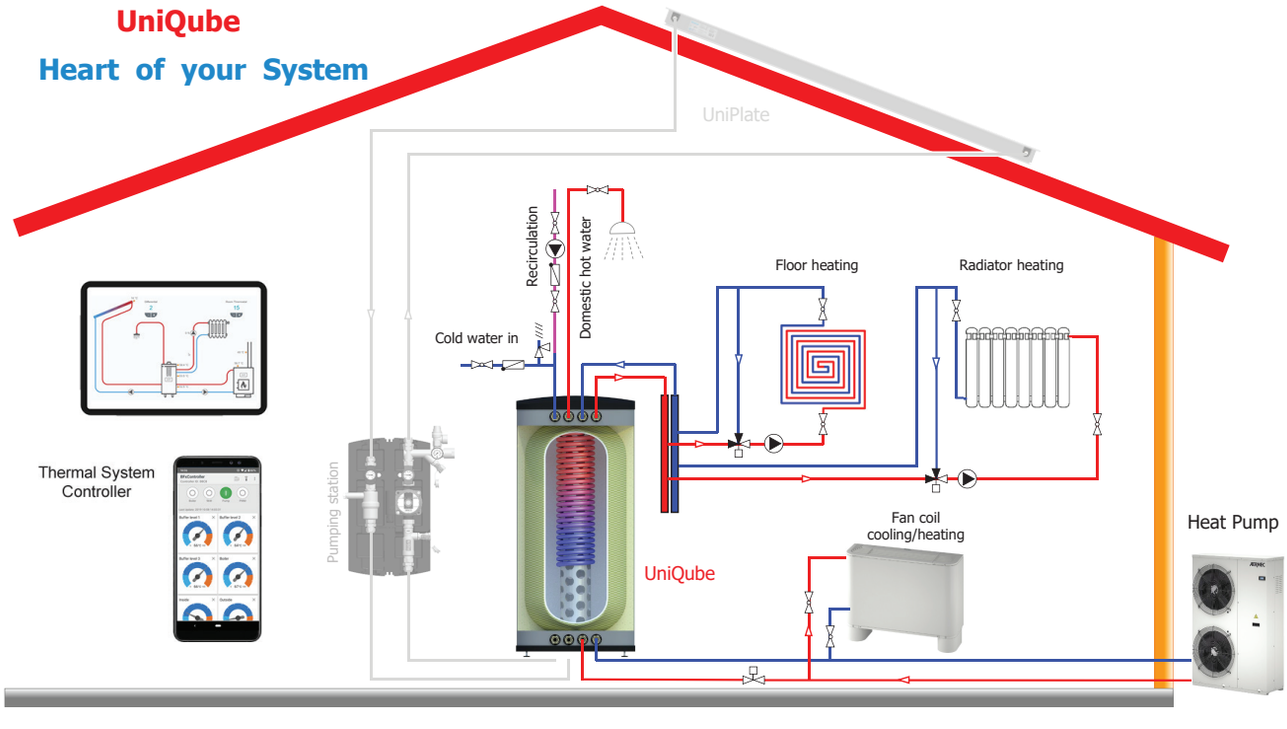
UNIQUBE MODEL - DOMESTIC WATER HEATER, STRATIFIED SEPARATOR STORAGE TANK			
TYPE SQ-BPW		310	440
D (diameter)	(mm)	620	620
H1 (height)	(mm)	1300	1730
h (connectors)	(mm)	1470	1900
Connections C, E, I, J		5/4″	5/4″
H (height)	(mm)	1570	2000
a (width)	(mm)	734	734
max. working temp.	(°C)	90	90
max. working pressure	(bar)	6	6
max. test pressure	(bar)	9	9
Net tank capacity	(liters)	295	421
Approx. weight	(kg)	108	142
S3 Heating sensor position	(mm)	910	1350
S4 DHW sensor position	(mm)	710	1150
Pivot measurement	(mm)	1730	2130
Water heat exchanger			
Connections A, B		5/4″	5/4″
max. working pressure	(bar)	10	10
max. test pressure	(bar)	15	15
capacity	(liters)	15	19
output area	(m^2)	3,8	5

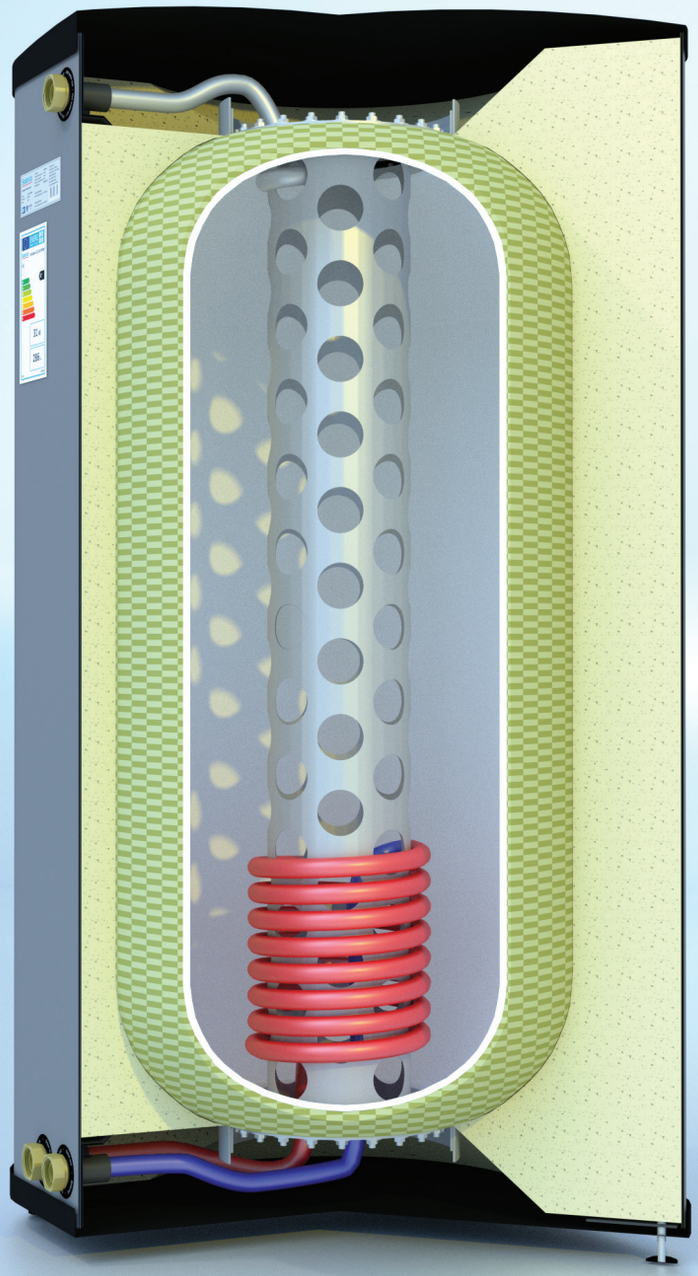


A - Cold water in
B - Hot water out
C - Heating in
E - Heating out
I - Boiler in
J - Boiler out
S3 - Heating temperature sensor
S4 - DHW temperature sensor



UniQube

Solar Storage Tank
Stratified Separator Storage Tank



- solar heat exchanger made of stainless steel INOX 316 L corrugated pipe
- device for stratification of the heat
- hydraulic separator between the heat source circuit and the heating circuit
- equipped with three sleeves for sensors
- polyurethane high quality insulation, specific in very limited fire contribution, class B2 according to DIN 4102
- all flanges are replaceable and it can be modified to any other type of storage tank if necessary.

Stratified Solar storage tank function

Solar heat can be transferred and stored into the storage tanks and ready to be used on demand.

Only high energy efficiency tank is guaranteeing low heat loss.

It can be used for heating domestic water and for support of heating systems.

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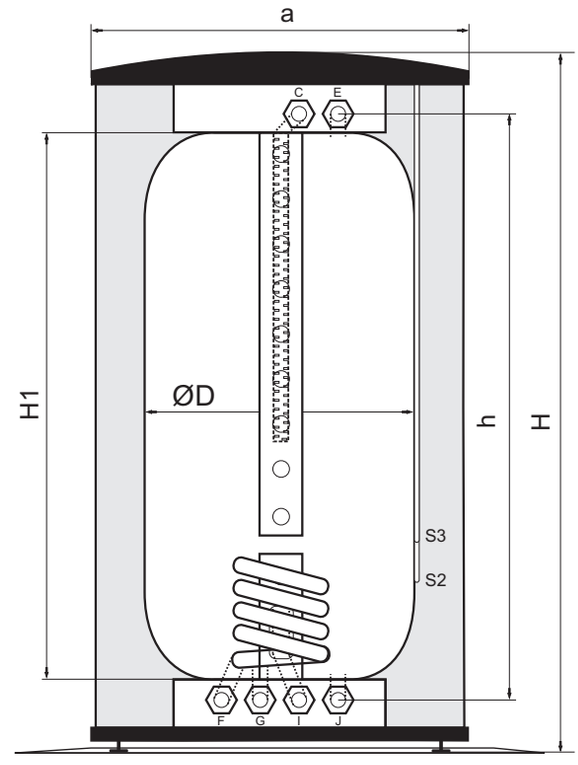
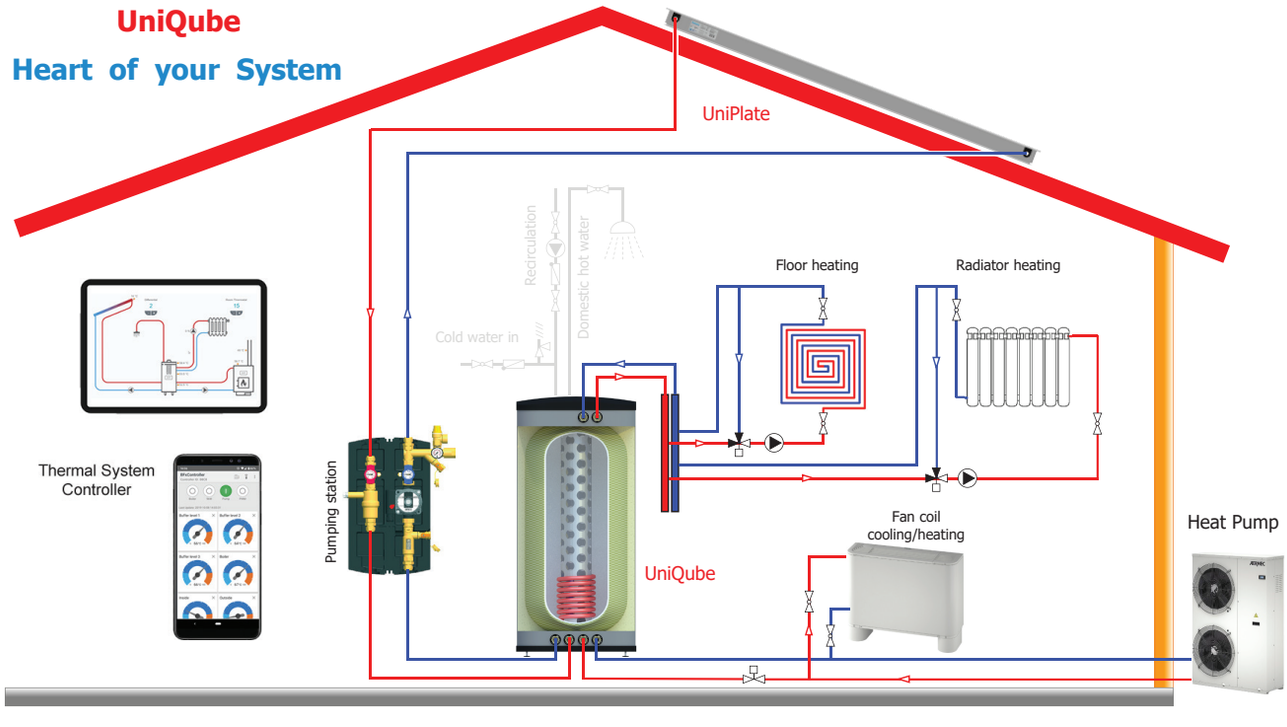
UNIQUBE MODEL - SOLAR STORAGE TANK, STRATIFIED SEPARATOR STORAGE TANK			
TYPE SQ-BPS		310	440
D (diameter)	(mm)	620	620
H1 (height)	(mm)	1300	1730
h (connectors)	(mm)	1470	1900
Connections C, E, I, J		5/4″	5/4″
H (height)	(mm)	1570	2000
a (width)	(mm)	734	734
max. working temp.	(°C)	90	90
max. working pressure	(bar)	6	6
max. test pressure	(bar)	9	9
Net tank capacity	(liters)	305	432
Approx. weight	(kg)	87	118
S2 Solar sensor position	(mm)	1110	1550
S3 Heating sensor position	(mm)	910	1350
Pivot measurement	(mm)	1730	2130
Solar heat exchanger			
Connections F, G		5/4″	5/4″
max. working pressure	(bar)	10	10
max. test pressure	(bar)	15	15
capacity	(liters)	5	8
output area	(m^2)	1,2	2



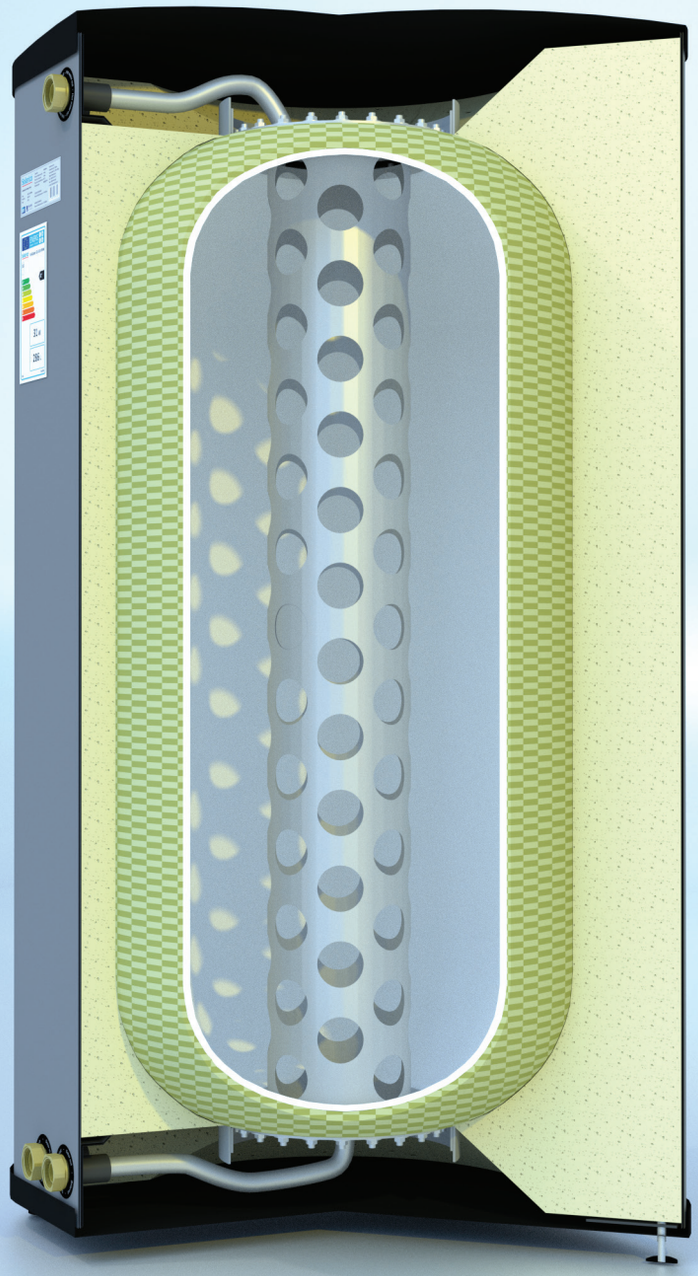
C - Heating in
E - Heating out
F - Solar in
G - Solar out
I - Boiler in
J - Boiler out
S2 - Solar sensor
S3 - Heating sensor

UniQube
Heart of your System



UniQube

Stratified Separator Storage Tank



- device for stratification of the heat
- hydraulic separator between the heat source circuit and the heating circuit
- equipped with two sleeves for sensors
- polyurethane high quality insulation, specific in very limited fire contribution, class B2 according to DIN 4102
- all flanges are replaceable and it can be modified to any other type of storage tank if necessary.

Hydraulic Separator storage tank function and stratified

Separator storage tank combined with stratification unit is ideal to hydraulically separate the heat source circuit and the heating circuit which results in easy control over the circulating pumps and improves their lifetime.

Its functionality is based on a hydraulic separator principle.

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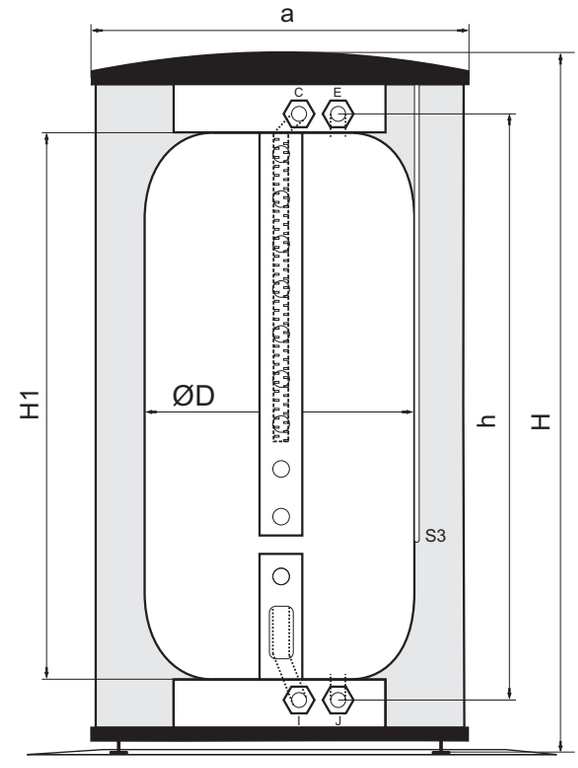
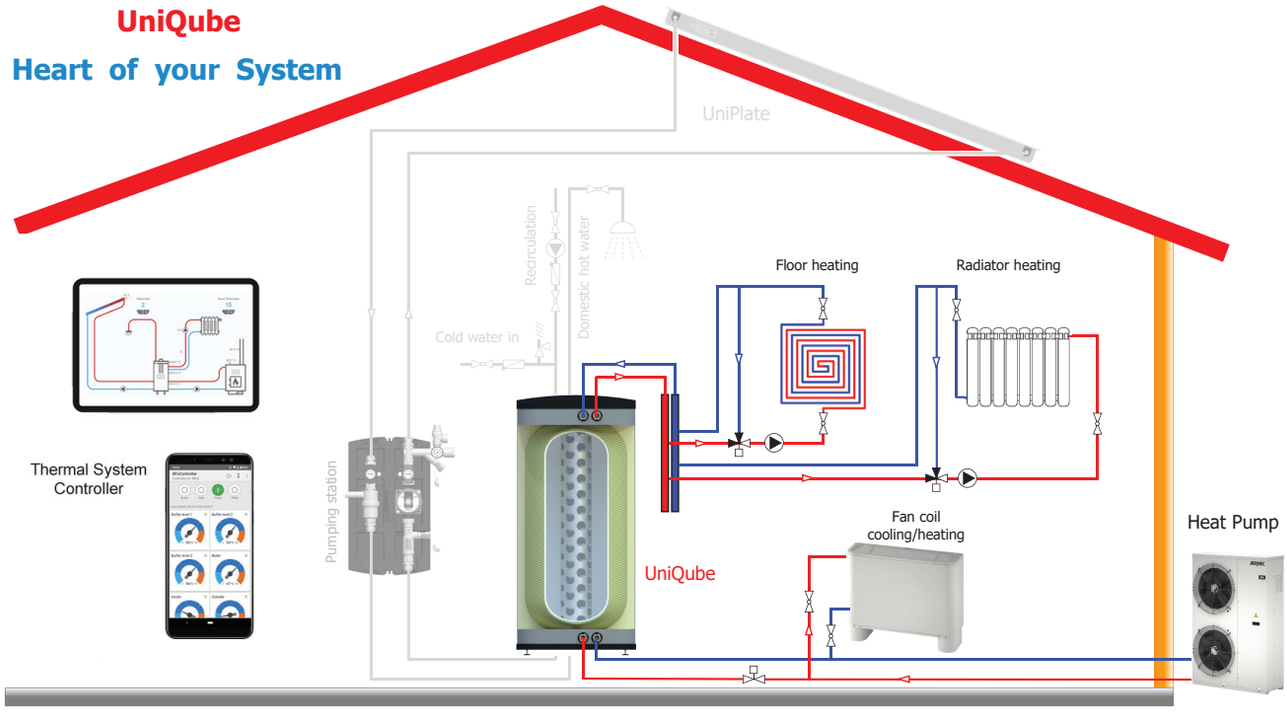
UNIQUBE MODEL - STRATIFIED SEPARATOR STORAGE TANK			
TYPE SQ-BP		310	440
D (diameter)	(mm)	620	620
H1 (height)	(mm)	1300	1730
h (connectors)	(mm)	1470	1900
Connections C, E, I, J		5/4”	5/4”
H (height)	(mm)	1670	2100
a (width)	(mm)	734	734
max. working temp.	(°C)	90	90
max. working pressure	(bar)	6	6
max. test pressure	(bar)	9	9
Net tank capacity	(liters)	310	440
Approx. weight	(kg)	77	100
S3 Heating sensor position	(mm)	910	1350
Pivot measurement	(mm)	1730	2130

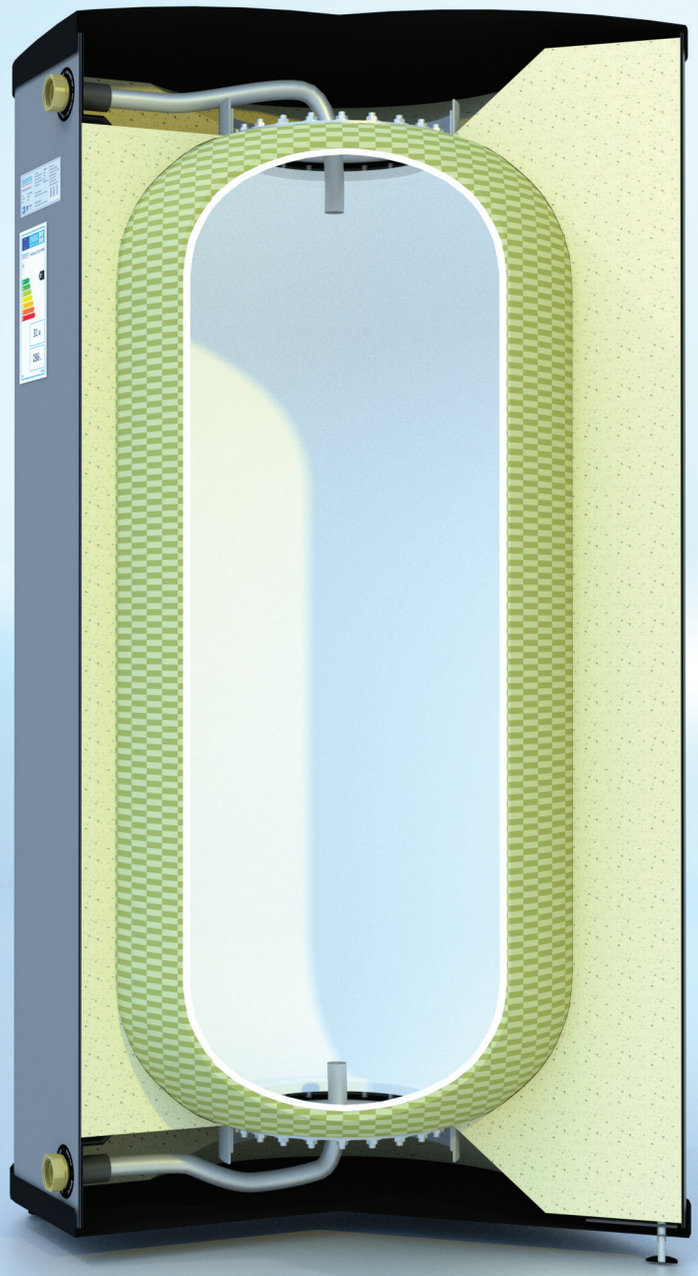


C - Heating in
E - Heating out
I - Boiler in
J - Boiler out
S3 - Heating sensor



UniQube

Buffer Storage Tank



- all flanges are replaceable and it can be modified to any other type of storage tank if necessary.
- equipped with one or two sleeves for sensors
- polyurethane high quality insulation, specific in very limited fire contribution, class B2 according to DIN 4102

Buffer Storage tank function

Installing buffer storage tanks is the first step to optimizing the heating system and improving its efficiency.

Buffer storage tank is absorbing the peaks of energy generators, and is releasing energy into the system when required.

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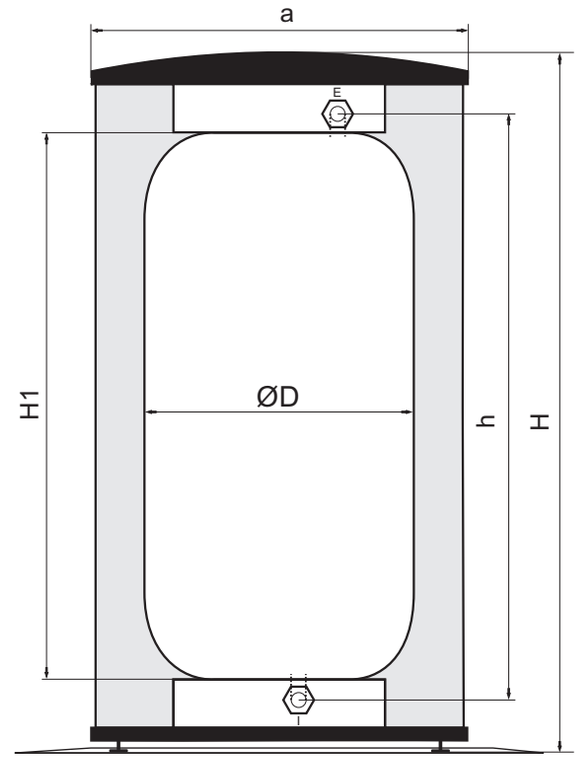
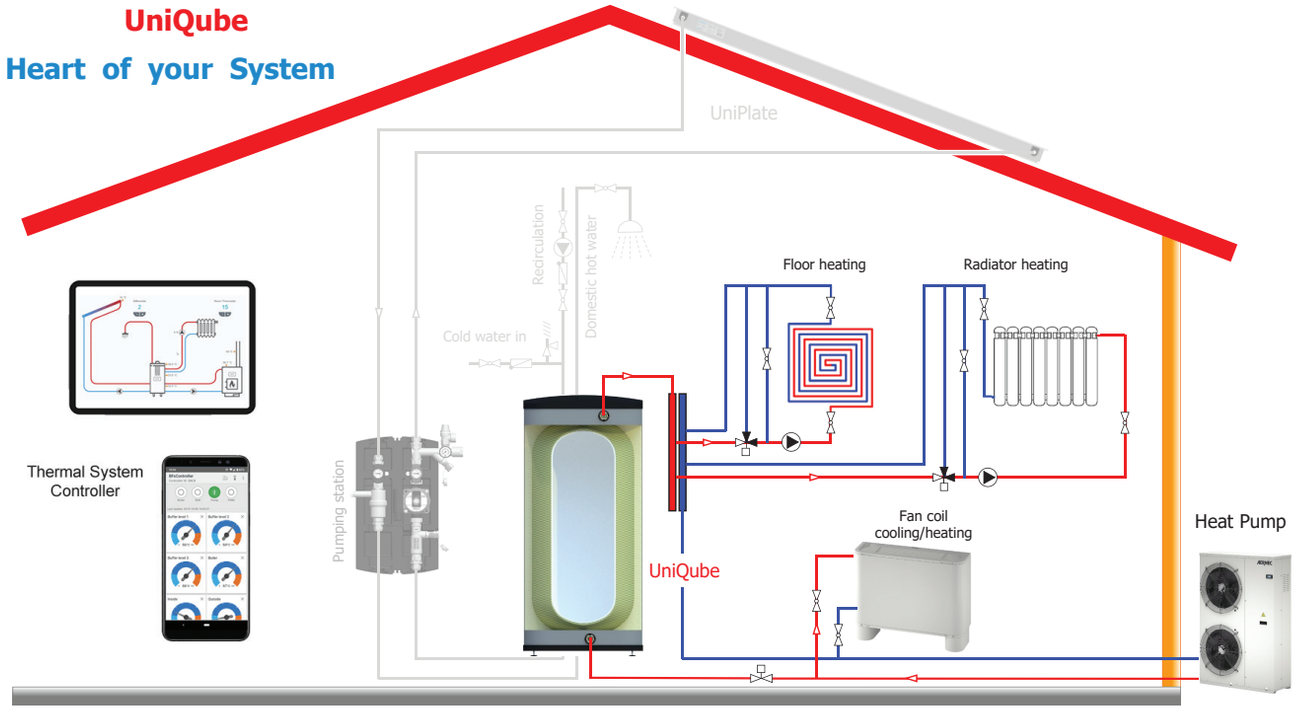
UNIQUBE MODEL - BUFFER STORAGE TANK			
TYPE SQ-B		310	440
D (diameter)	(mm)	620	620
H1 (height)	(mm)	1300	1730
h (connectors)	(mm)	1470	1900
Connections E, I		5/4″	5/4″
H (height)	(mm)	1570	2000
a (width)	(mm)	734	734
max. working temp.	(°C)	90	90
max. working pressure	(bar)	6	6
max. test pressure	(bar)	9	9
Net tank capacity	(liters)	310	440
Approx. weight	(kg)	74	97
Pivot measurement	(mm)	1730	2130



E - Heating out
I - Boiler in



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