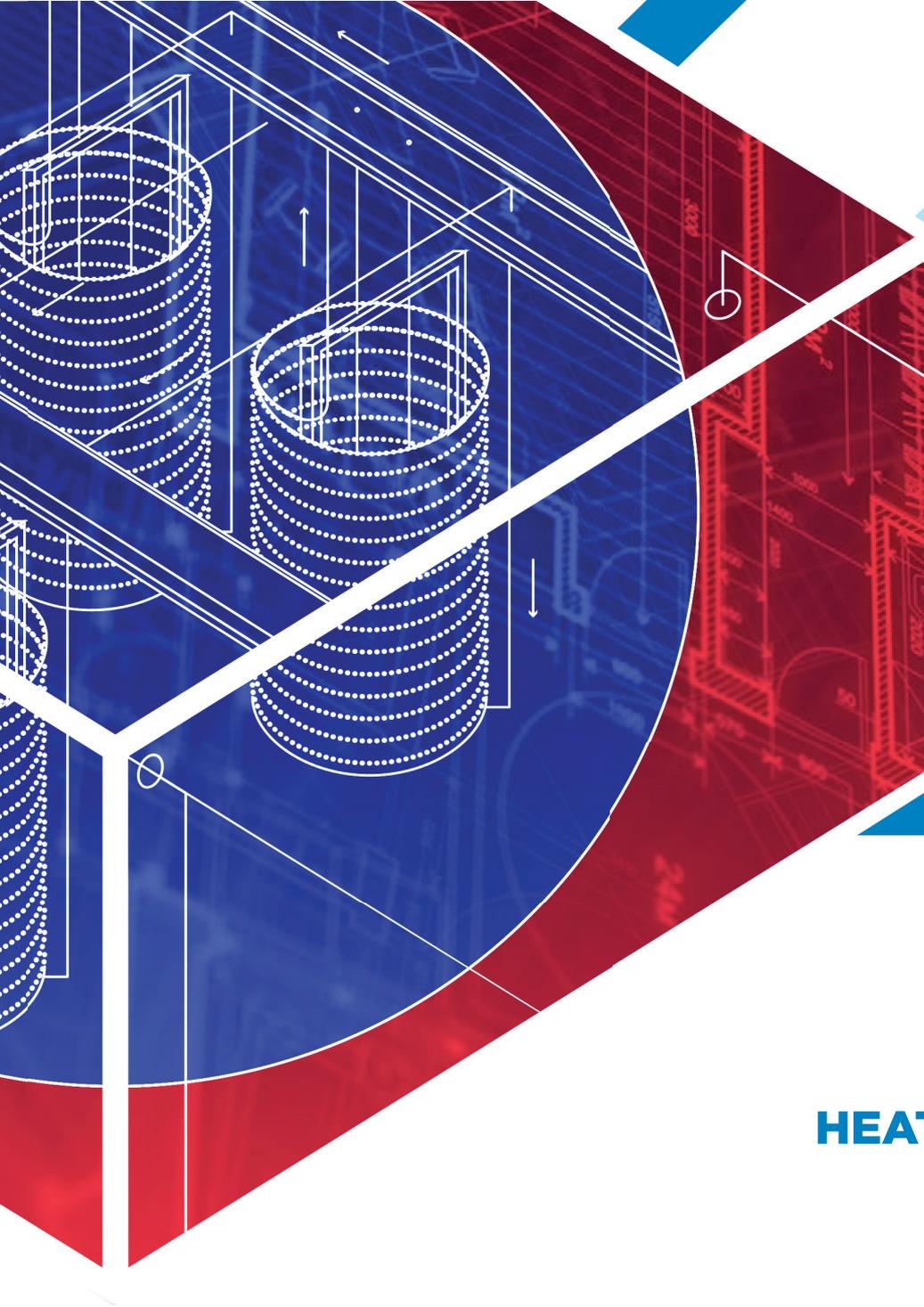




SIRAC



HEAT ACCUMULATOR

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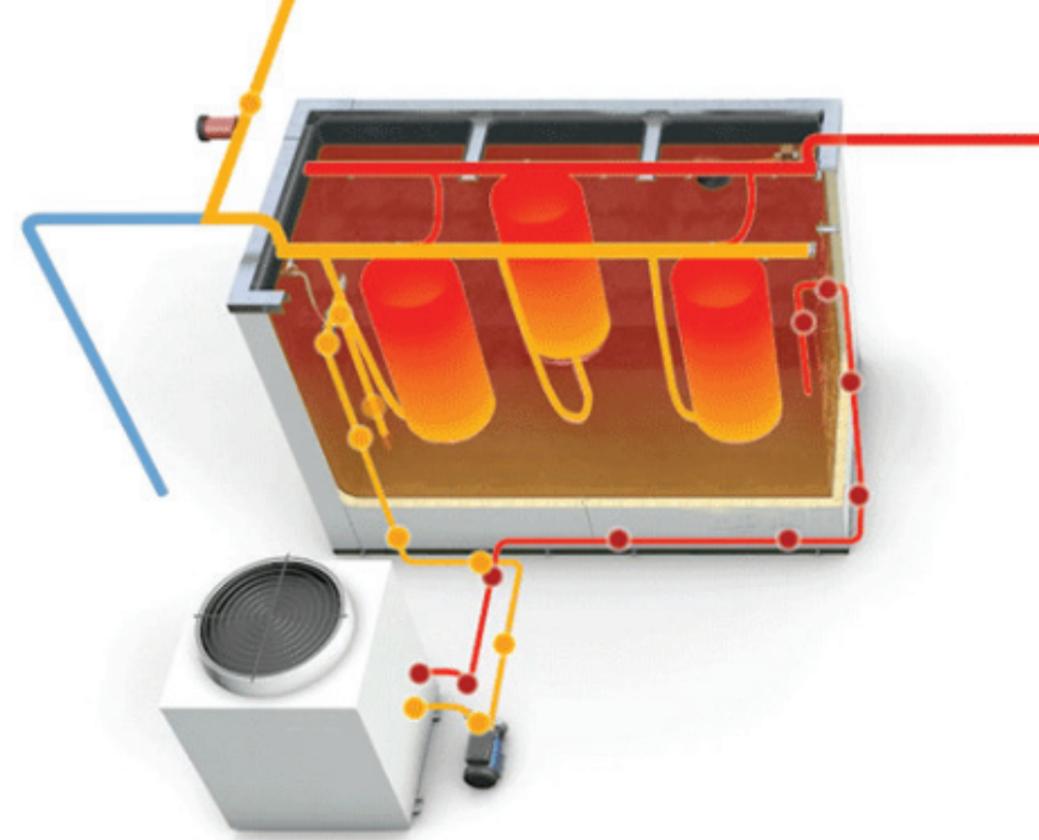
UNIQUE SPECIAL FEATURES

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PATENT INFORMATION



As industry leaders, renowned for successfully pioneering new innovations in the sector, SIRAC invented, designed and patented the **THERMOCUBE™** Hot Water Heat Accumulator system in 2010. The **THERMOCUBE™** is constructed from interlocking, 60mm polyurethane foam sandwich panels. The tank components are shipped as a compact kit for on-site assembly. This allows the tanks to be assembled in difficult to access areas.

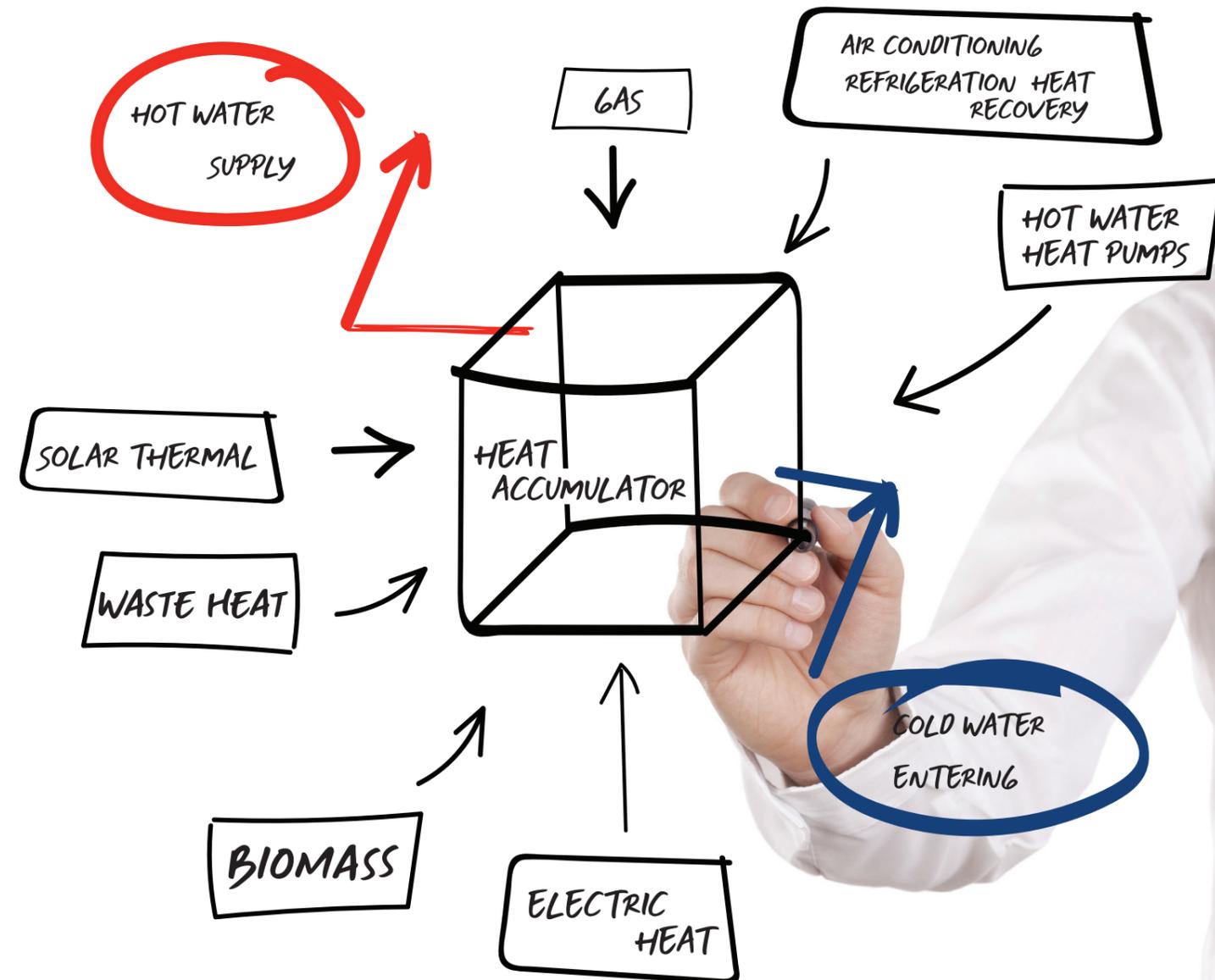
BASIC PRINCIPLE:

The stored, heated water never leaves the tank and the potable water, at regulated mains pressure, passes through purpose-made 316L stainless steel heat exchangers which are suspended into the hot water within the tank. Energy is transferred from the stored body of water through the heat exchanger wall to the potable supply. This heated sanitised water is then available for distribution.

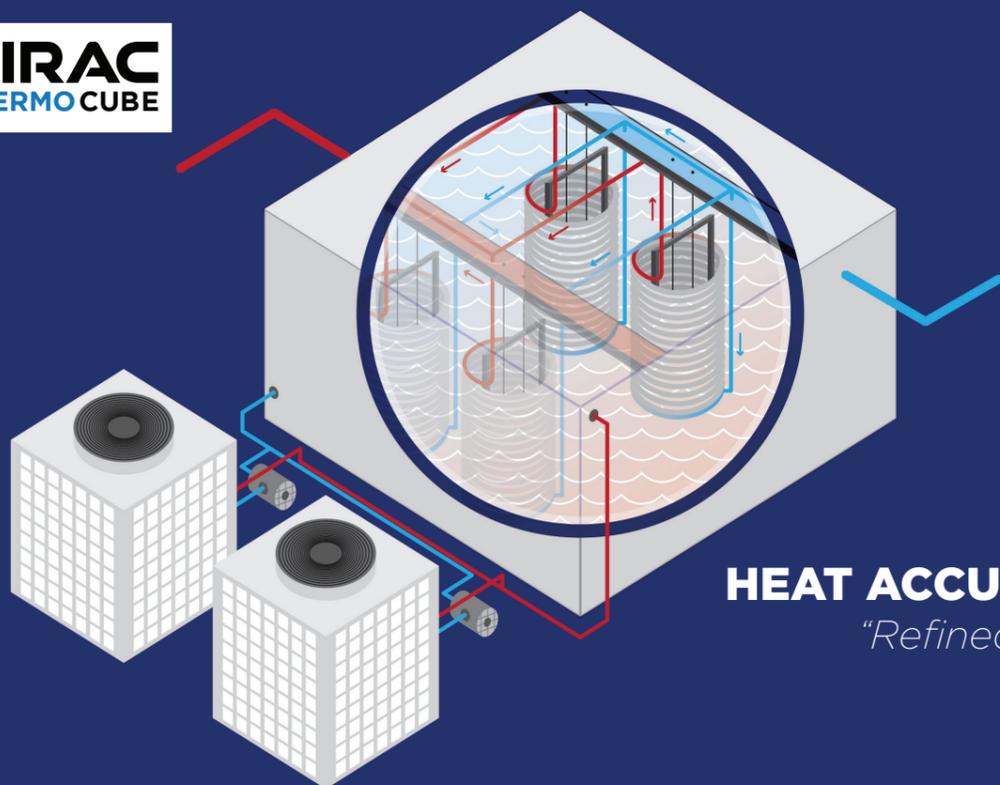
UNIQUE SPECIAL FEATURES

- ▶ It is an extremely versatile and flexible junction point for numerous energy sources such as Solar Thermal, Heat Pumps, Gas heating, Heat recovery etc.
- ▶ Saves space in a plant room due to its flexible and adaptable rectangular design
- ▶ The tank is shipped in compact kit form. It is easy to transport, and all components fit through a standard doorway
- ▶ Large range of standard sizes
- ▶ The tank is assembled on site
- ▶ Quick manufacturing time
- ▶ The spiral 316L stainless steel heat exchangers provide exceptional heat transfer, hygiene protection and corrosion resistance
- ▶ The hot water is stored at atmospheric pressure and never leaves the tank
- ▶ High level of water sanitation. Only fresh sanitised municipal water is fed into the hot water reticulation piping system
- ▶ Designed for outdoor applications
- ▶ Outstanding insulation properties with minimal heat loss

THERMOCUBE™ Provides a perfect hot water storage Junction point for Multiple Heat Sources and Hot Water Supply Options.



SIRAC
THERMOCUBE



HEAT ACCUMULATOR
"Refined Technology"



DETAILED SPECIAL FEATURES

ENERGY EFFICIENCY

The panels are constructed from 43 kg/m³ polyurethane, foamed between 2 Chromadek sheets. The unique patented panel design eliminates temperature “bridging” and gives the tank outstanding strength and insulation properties with an R-value of >2.65. The heat exchangers are fabricated from 316L stainless steel spiral corrugated tubing with 0.3mm wall thickness which provides exceptional heat transfer properties. The large bore tube provides the necessary surface area to afford exceptional efficiency with a low water pressure drop. These heat exchangers have a maximum operating pressure of 10 bar.

ALTERNATIVE HEAT SOURCE

Superb junction point for combining different heat sources like solar panels, waste heat, heat pumps, gas etc. Perfect storage solution for low pressure drain back solar systems.

HYGIENE

The **THERMOCUBE™** system maintains a high water hygiene level by separating the storage water from the potable sanitised water. Legionella and bacteria growth is virtually eliminated in this indirect system. Fresh sanitised municipal water is fed directly into the hot water heat exchanger system with a first in first out principle. The smooth shiny inner tube surface resists limescale and sludge deposits. The corrugated spiral design causes the water to vortex and agitate. This increases the heat exchanger efficiency and reduces the possibility of the build-up of solids. Deposits of limescale, sediments, sludge and rust can accumulate in traditional steel pressurised tanks. This can become a breeding ground for bacteria. This is not possible with the **THERMOCUBE™** system. Heat pumps can be used without the possibility of cross contaminating the water with oil and refrigerant from the refrigeration system.

EXCEPTIONAL CORROSION RESISTANCE

The heat exchangers are fabricated from heat-treated 316L stainless steel spiral tubing. This grade of stainless steel has an exceptionally high resistance to corrosion, pitting, and crevice corrosion in chloride environments. Bulkhead fittings and supply and return headers are grade 316 Stainless steel.

TANK AT ATMOSPHERIC PRESSURE

The hot water is stored and heated at atmospheric pressure, preventing a possibly explosive situation and the need for pressure safety controls and expensive preventive maintenance measures.

LIFE SPAN

The **THERMOCUBE™** stores water at atmospheric pressure eliminating the stresses of expansion and contraction associated with pressurized tanks. The **THERMOCUBE™** is fitted with an EPDM rubber geomembrane liner that is flexible, resists temperature shocks and is puncture resistant. The liner is easily repairable or replaceable. All components of the tank can be individually replaced.

THERMOCUBE IN ACTION

JEWEL CITY | INNER CITY HOUSING PROJECT:



SIRAC supplied and installed: 3 x 17,500L **THERMOCUBE™** Tanks coupled with 6 x 90kW SIRAC Heat Pumps providing hot water for the Jewel City (Ithemba Properties) Development.



SIRAC provided a full turnkey solution, in collaboration with Izazi Consulting Engineers. All plantroom specific componentry and installation and commissioning.

NETCARE MILPARK | HYBRID HEAT RECOVERY AND STORAGE SOLUTION:

In collaboration with Spoomaker & Partners and Airgro, SIRAC designed, supplied and commissioned 3 x 7,500L **THERMOCUBE™** Heat Accumulator sets which act as a junction for multiple heat sources - Chiller heat recovery and 2 x 100kW High Temperature specific SIRAC Heat Pumps.



The **THERMOCUBE™** System simply and conveniently connects all aspects of this project together, improving combined efficiency, sanitation and comfort levels.



THERMOTUBE™ - Shares the same operating principle and many of the key features of the **THERMOCUBE™**.

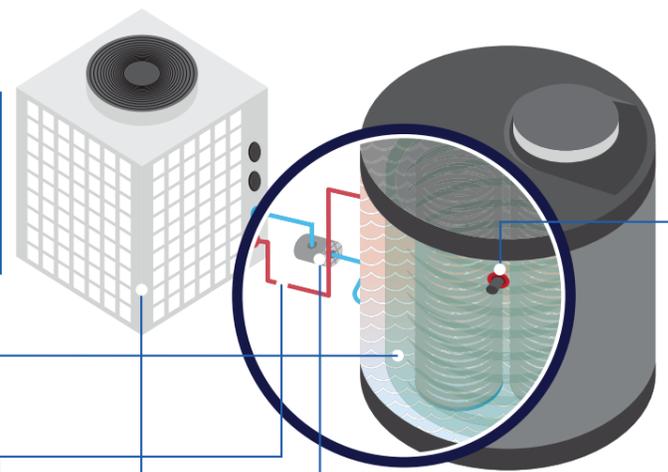
THERMOTUBE™ has been invented for smaller system applications. The tank is supplied factory assembled.



UNIQUE SPECIAL FEATURES

- ▶ Available in two sizes 1000 and 1600 litres. Each with options for one or two heat exchangers
- ▶ Lightweight factory assembled construction for ease of transport, rigging and positioning
- ▶ Roto moulded temperature resistant Polypropylene inner tank suitable for temperatures of < 80°C
- ▶ UV protected top and bottom polyethene caps
- ▶ Large access lid
- ▶ Fitted ball float valve and overflow pipe fitting
- ▶ Designed for outdoor applications
- ▶ The tank is insulated with 100 mm high-density fibreglass with an R-value of 2.5. This far exceeds the SANS10252 minimum requirement of R-value of 2.0
- ▶ Extremely durable, high impact strength, UV protected Fibre Reinforced protective cladding
- ▶ Purpose made 316 stainless steel heat pump/heat source and process bulkhead connections
- ▶ Factory fitted 316L helical heat exchangers coil(s) complete with internal 316 stainless steel manifold
- ▶ Heat exchangers suitable for up to 10 bar working pressure

EXCEPTIONAL EFFICIENCY
316L stainless steel heat exchangers are suspended in the hot water



HOT WATER OUTLET
Hot water leaves the Heat Exchanger manifold providing hot water to the building

HEAT SOURCE CONNECTION
Insulated piping connects the heat source to the tank in the hot water.

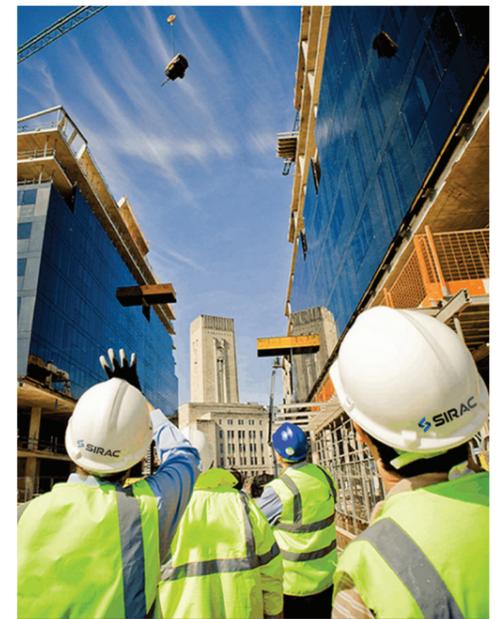
HEAT SOURCE
Heat Pumps, Gas, Solar, Waste Heat Recovery or other, provides the energy to heat the water in the tank.

CIRCULATING PUMPS
Hot water pumps circulate the water between the tank and heat source



ABOUT SIRAC

SIRAC is a well-established South African company that offers energy-saving products and innovative solutions for a broad range of hot water heating applications. The key to the company's success and growth is due to the total commitment in providing high quality, efficient and reliable service.



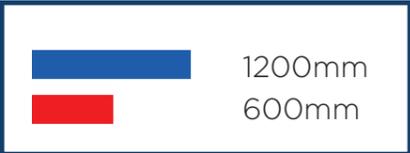
We lead this industry through our products, innovation, experience and exceptional understanding of the hot water heating business.

SIRAC is a national company with offices and technical support in the major centres. Our extensive technical knowledge coupled with unrivalled industry expertise, allows us to tailor the best overall solutions mix for each customer need. Our innovative approach brings fresh perspectives and creative thinking when designing energy-efficient systems, ultimately delivering solutions for our clients that will effect positive change.

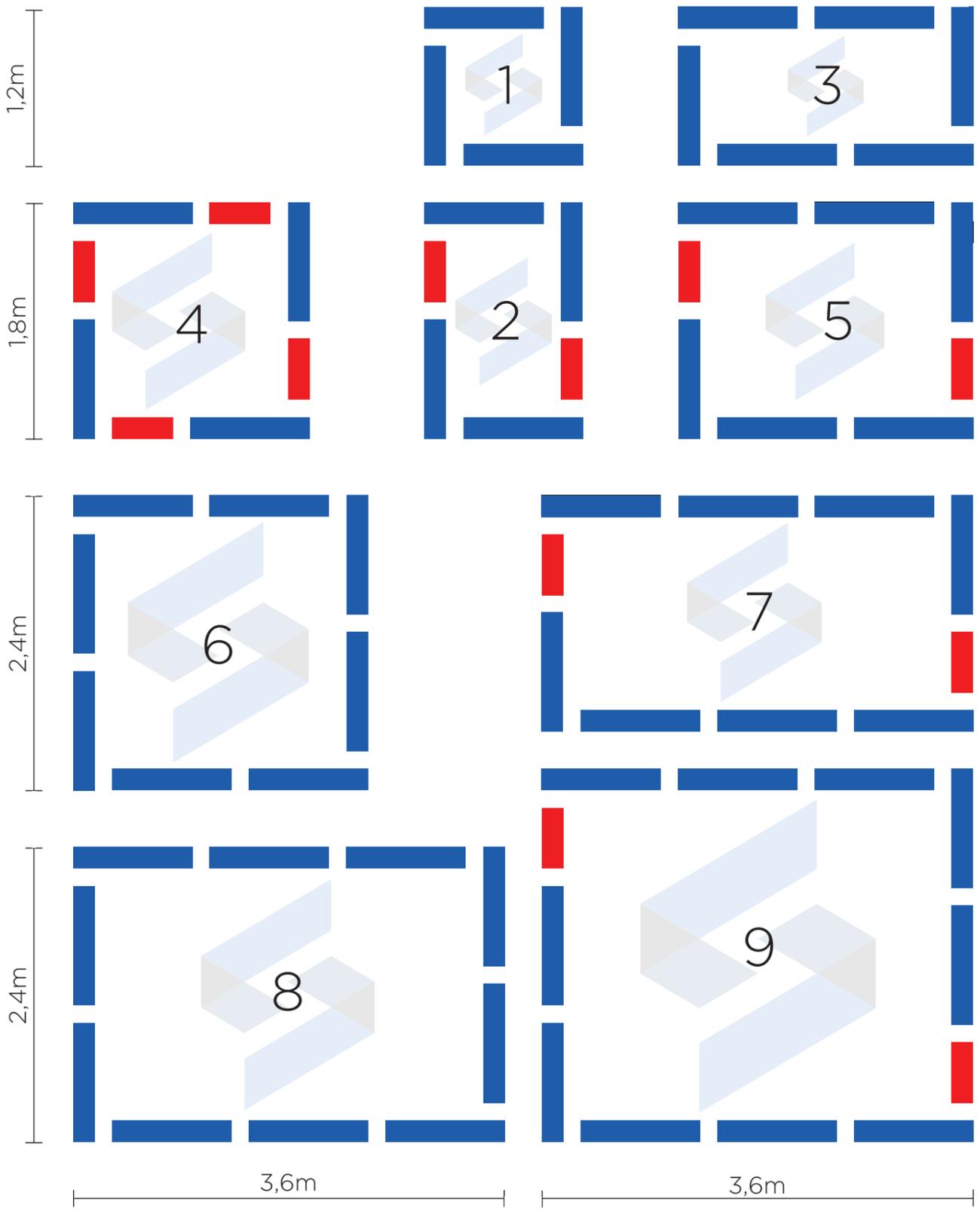
TRUSTED BY

We are proud to be trusted by these leading, iconic brands to reliably deliver our commercial energy and hot water expertise.





*These tanks have an option to increase the height of the panel from 1.7m to 1.9m



THERMOCUBE SIZES AND CONFIGURATIONS

#	CODE	CAPACITY	DIMENSIONS	GROSS WEIGHT
1a	TC-016	1600L	1,2 x 1,2 x 1,7	2000kg
1b	TC-018	1850L	1,2 x 1,2 x 1,9	2250kg
2a	TC-025	2500L	1,8 x 1,2 x 1,7	3000kg
2b	TC-028	2850L	1,8 x 1,2 x 1,9	3350kg
3a	TC-035	3500L	2,4 x 1,2 x 1,7	4000kg
3b	TC-040	4000L	2,4 x 1,2 x 1,9	4600kg
4a	TC-038	3850L	1,8 x 1,8 x 1,7	4500kg
4b	TC-045	4500L	1,8 x 1,8 x 1,9	5200kg
5a	TC-055	5500L	2,4 x 1,8 x 1,7	6200kg
5b	TC-062	6200L	2,4 x 1,8 x 1,9	7100kg
6	TC-075	7500L	2,4 x 2,4 x 1,7	8300kg
7a	TC-085	8500L	3,6 x 1,8 x 1,7	9400kg
7b	TC-100	10000L	3,6 x 1,8 x 1,9	11000kg
8a	TC-110	11000L	3,6 x 2,4 x 1,7	12000kg
8b	TC-125	12500L	3,6 x 2,4 x 1,9	13700kg
9a	TC-155	15500L	3,6 x 3,0 x 1,7	17000kg
9b	TC-175	17500L	3,6 x 3,0 x 1,9	19100kg

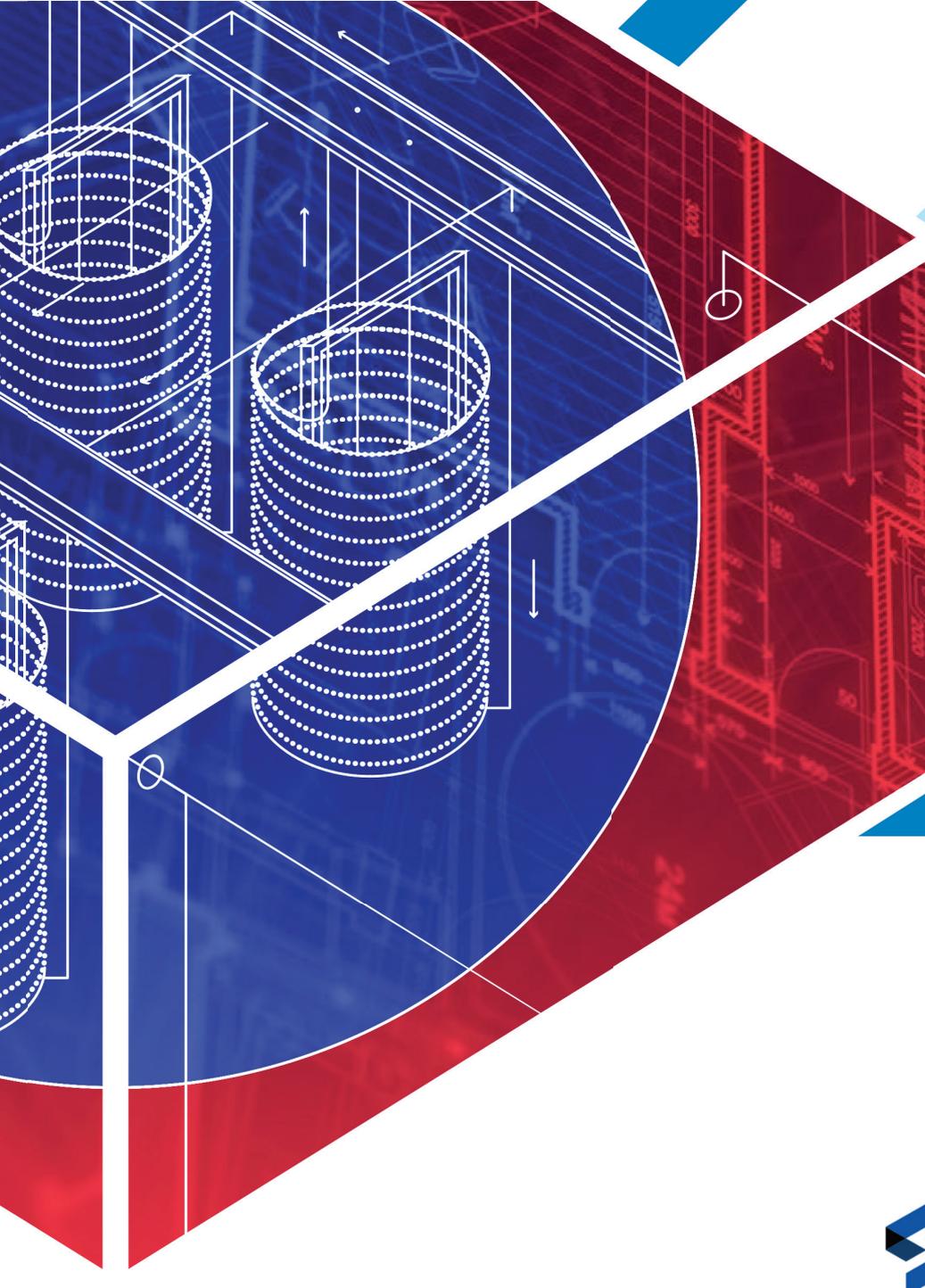
THERMOTUBE SIZES AND CONFIGURATIONS

MODEL	CAPACITY	DIAMETER	HEIGHT
TT - 010	1000L	1280	1410
TT - 016	1600L	1280	2250

INDUSTRY PIONEERS

THERMOCUBE™ and **THERMOTUBE™** products are protected by the following patents.
2017/05553
2017/00798
2019/04514

INVENTED
DESIGNED, PATENTED
AND PERFECTED SINCE 2010



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