Telford
COPPER
CYLINDERS
LIMITED

"Bringing the best to your Home"

Thermal Stores

Telford Copper Cylinders Limited
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Merchant stockist.

CERTIFIED TO BRITISH STANDARD
WRAS APPROVED PRODUCT
benchmark
WMA WATERHEATER MANUFACTURERS ASSOCIATION
CE
BBA BRITISH BOARD OF AGREMENT

Vented Copper Cylinders and Combination Tanks
These Cylinders are available in a large range of sizes, manufactured to comply with current British Standards and Building Regulations.

Tornado and Tempest Stainless
Manufactured from Duplex Stainless Steel; mains pressure cylinders with a life time guarantee.

For copies of these Brochures or further information please contact us on:
Tel: 01952 257961 or **Fax: 01952 253452** or visit our website at: **www.telford-group.com**

Other products in the Telford Range . . .

TECHNICAL NOTES:

THE TERMS Active and Non Active refer to the connections and operation of the thermal store.
For example a non-active store is only capable of providing a supply of mains pressure hot water through the mains coil and would be heated either by pumped heating system through a zone valve or in the case of an electric version by the immersion heaters (two immersions supplied as standard).

An active thermal store is one which also provides a heating demand such as the unit favoured by the underfloor heating market. This unit provides lower temperature water for the heating system which can also be used for radiator systems. These would however require a larger sized unit to provide heating and is limited to floor area. (Further advice on request).

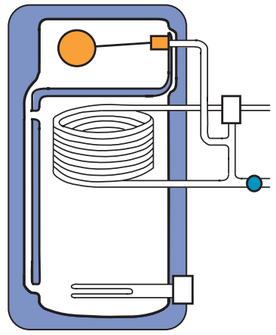
- All Technical Stores are made from and tested to B.S.S. standards copper product and carry our normal guarantee.
- The terms Heat Store, Heat Banks and Thermal Store all refer to similar technology.
- All units are designed to work at a max 3bar incoming cold water mains pressure.
- All units are fitted with a factory set thermostatic mixing valve @ 51°C.
- The company reserves the right to change specifications without notice as part of its policy of continuous improvement.
- **All electrical installations must meet I.E.E. Standards.**

GUARANTEE

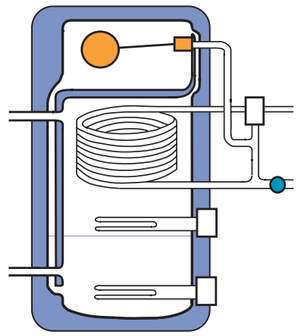
The Thermal store unit including controls is covered by a 2 year guarantee, excluding damage caused by hard water/limescale or incorrect installation (see terms and conditions).
The controls of this unit require a service every 12 months to ensure correct operation.

All electrical models are suitable for use with low tariff electricity and come with two immersion heaters fitted as standard.

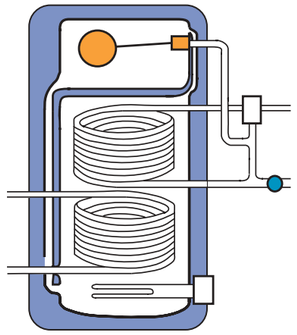
Heat Source Options



Hot Water Only
Heat Supplied by boiler, with immersion heater for backup

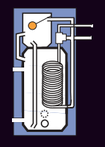


All Electric
For use with low tariff supplies. Supplied with 2x3 Kw immersion heaters



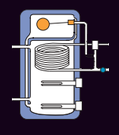
Dual Source Indirect
Suitable for use with solar, solid fuel and wood burning stoves. Can be adapted for use on district schemes.

Tristor & Tristar Standard Dimensions



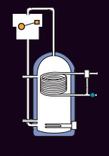
TRISTOR - Cased

TSC	HEIGHT	OVERALL DIAMETER
150	1400	510
200	1750	510
280	2000	555



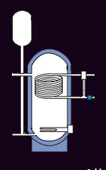
TRISTAR - Foamed

TSC	HEIGHT	OVERALL DIAMETER
115	1050	550
144	1400	550
160	1550	550
210	1850	550



TSV Vented

TSV	HEIGHT	OVERALL DIAMETER
115	900	550
144	1050	550
160	1200	550
210	1500	550



TSS Sealed System

TSS	HEIGHT	OVERALL DIAMETER
115	900	550
144	1050	550
160	1200	550
210	1500	550

All Thermal stores come complete with shock arrestor, immersion heater(s) and blend valve.
This is just a selection of our standard sizes. If you require a specialised size please contact Telford Copper Cylinders.

"Bringing the best to your Home"

Welcome to Telford Copper Cylinders

Telford Copper Cylinders is a family run business which began trading in 1989 from the premises it still occupies today. These premises now act as its Head Office. The original factory has been extended on a number of occasions since then to keep up with the increased demand for its products. With the advent of new plumbing systems requiring diverse raw materials we now have a second site manufacturing cylinders in stainless steel.

From the beginning, Telford set out to manufacture a broad range of copper cylinders. Our copper division has developed from manufacturing traditional vented cylinders to now include commercial calorifiers and the advanced Tristor thermal store units, which are available as Manual-fill, "Washing machine", solar recovery and under-floor heating variants.

As the market for plumbing and water storage cylinders has changed, Telford Copper Cylinders have adapted to ensure we are always at the cutting edge of technology, making new products without compromising our first principal of quality. We also have a commitment to offer a professional aftercare service, which includes dedicated personnel as well as nationwide support through its team of service engineers.

The traditional vented cylinder has recently undergone a major change. The Building Regulations (Part L in England and Wales, Part J in Scotland) have been altered to ensure domestic hot water system design is more energy efficient than in the past.
This was linked to a revision to the British Standards covering Indirect and Direct copper cylinders.
The standards now call for thicker material for better corrosion resistance and larger coils to take advantage of higher efficiency condensing boilers now available.

Tristar™

This unit is the workhorse of the Telford thermal store cylinder range. The original design is over twelve years old and has proven itself in many applications. It remains a specifiers favourite due to its size, replacing old systems in small airing cupboards.

Tristor™

Our most recent unit is a market leading thermal store which delivers hot water to meet modern living styles. Extensive research went into designing and producing this model, it has an attractive white case and is without doubt the best performing thermal store in its class.

Picture courtesy of Walton Homes

Modern Day Requirements

Thermal Stores & Heat Stores

For at least twelve years we have been manufacturing and supplying our range of "thermal stores" under the brand names of **Tristar™** and **Tristor™**, we started with three different models; *Combination, Open Vented, & Sealed System* for both boiler application and fully electric. We now have over 100 models and can offer *"Bespoke Design & Size"* on all units.

All of our thermal stores can be manufactured to accept any heat source that is currently available including Solar and range cookers.

Tristar and Tristor can be manufactured to suit both "Active" and "Non-active" heating applications *(see technical notes for explanation)* and from fully pumped systems to zone control and underfloor systems.

Over the years research and development in partnership with others has led to the development of many variants to meet specialist requirements; including OEM models for use in the underfloor heating and solar gain markets. These can, on request, be branded with the customer's name. Recently we have developed, in conjunction with a major house builder, a thermal store unit that has provision for a washing machine under the unit and is supplied with plumbed washing machine leak detection and failsafe water protection. This has proved popular with insurance companies and developers of multi-storey properties alike. Another very popular system we have developed requires no overflow or discharge pipe work on installations, ideal where access to a suitable discharge point is difficult or impossible.

The added advantage of thermal store mains pressure installations is that the installer does not require ***special qualifications,*** plus Telford Copper Cylinders will provide first class technical backup and customer support.

Selecting the right Cylinder for your Home

DOMESTIC SELECTION GUIDE

BEDROOMS	HOT WATER DEMAND	LITRES
UPTO 2 BEDS	1 SHOWER	150 LTR
	1 BATH, 1 SHOWER	150 LTR
UPTO 3 BEDS	1 BATH, 2 SHOWERS	200 LTR
UPTO 4 BEDS	2 BATHS, 1 SHOWER	200 LTR
	2 BATHS, 2 SHOWERS	200 LTR
UPTO 5 BEDS	3 BATHS, 2 SHOWERS	280 LTR
	3 BATHS, 3 SHOWERS	280 LTR

The above chart is for guidance only.

Selecting the correct size of cylinder requires consideration of a number of variables, including the volume of water needed, the energy source and the space available. Calculating the volume needed can be achieved by adding together the individual volumes of each appliance that uses hot water and how frequently it is used.

Telford Copper Cylinders, as a member of the Waterheater Manufacturers Association, has been working to establish a simple to use hot water volume calculator. In our research we determined that there were four principle types of user, and two levels of consumer expectation.

Telford Copper Cylinders can provide a design service for all types of development. Please contact our Technical Helpline on **01291 675460** for assistance or to request your copy of the WMA Hot Water Calculator.

High-Performance Hot Water Cylinder

This thermal store unit is designed for high performance and can be used with underfloor heating systems. Further coils can be added for use with solar systems.

Bespoke & Special Units

Multi-Input Thermal Stores for underfloor Heating

In conjunction with a major designer and installer of specialist thermal stores we have developed a high performance range which satisfies the requirement to integrate condensing boiler technology with energy from renewable sources

It solves the major problem of very low heat demands in modern well insulated buildings. This causes even the most advanced gas boiler to cycle on and off, greatly reducing efficiency by running the boiler out of 'condensing mode'. This problem is even more serious with oil boilers as their output cannot be regulated.

Designed as a Thermal store it has an extremely high recovery rate enabling it to produce an almost unlimited supply of domestic hot water. Because it stores cooler water in the lower part it supplies water for underfloor heating directly without mixing sets thus increasing the efficiency of the whole system.

Special versions are available for ground source heat pumps with or without the addition of a boiler. By incorporating sealed system coils input from solar panels, wood burners, kitchen ranges and wind turbines can be accommodated.

The ability to control a number of heat sources provides the unique ability to optimise energy use and greatly reduces the running costs of the whole system.

How a Thermal Store Works

The water in the cylinder 'the store' is heated to and maintained at 76°C by the heat source which can be a boiler, immersion heaters or solar (optional).

Cold water at mains pressure is fed through a heat exchanger in 'the store' (a high efficiency coil).
The heated water is blended with cold mains water and supplied to the taps at a thermostatically controlled 51°C.

This system is highly efficient; heat loss is kept to minimum due to the high density CFC free foam installation.

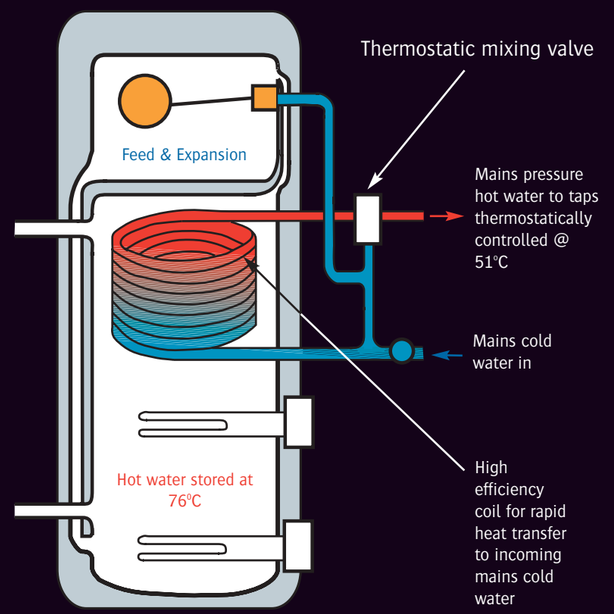
Running costs are low because you only heat the water you use.

The key to using a thermal store in the most cost effective and efficient manner is to maintain 'the store' temperature at a constant 76°C by means of the chosen heat source.

This will ensure that 'instant' hot water, at mains pressure, is available whenever required; no waiting for the cylinder to heat up.

Minimal heat loss when the thermal store is at rest keeps 'the store' temperature maintenance costs low.

Thermal stores do not require G3 Building Control Notification and unlike other stored mains pressure systems no special qualifications are required to install the unit.



Inside the Tristor

Blend Valve - (supplied fitted and calibrated).
This valve blends hot water from 'the store' with cold mains water for delivery to the taps at a comfortable 51°C.
The thermostatically controlled blend valve has built in 'fail to cold' safety protection in the event of a failure.

Autofill™
This clever device monitors the level in the feed and expansion tank fitted above 'the store' and when the level falls below the set minimum the Autofill™ automatically tops up the unit.

Watersafe™
The Watersafe™ detector is fitted to the base of the stand and is activated in the event of the washing machine leaking.
Once activated the controller will isolate the unit from the mains water and interrupts the power supply to the immersion heaters as a safety precaution.

(Washing machine for illustration purposes only)

Tristor Manual Fill

Tristor Manual Fill™

This thermal store has been designed for fitting in situations where the running of an overflow or discharge pipe would be difficult or impractical. The filling of the unit is achieved by integral filling loop which is disconnected from the mains water when the correct water level is attained.
The entire system is protected from flooding with the unique overfill device fitted as standard. At the heart of this unit is the same Tristor™ technology for proven hot water performance.

- Unique Overfill™ protection device
- Unique design
- No overflow or discharge required
- High Flow Rates
- Thermostatically controlled hot water @ 51°C
- Easy to install and commission
- Highly efficient - low heat loss
- Easy to maintain

Tristor Spacesaver Plus™

Tristor Spacesaver Plus™

This model was developed with space saving in mind and includes leak detection and protection systems.

Supplied with a powder coated metal cylinder stand a washing machine can be fitted beneath and fed from thermal store. The Watersafe™ leak protection system will isolate the water supply to the cylinder in the event of a washing machine leak - especially useful in high rise dwellings as it prevents the lower apartments being affected. At the heart of this unit is the Tristor™ technology for proven hot water performance.

Tristor Spacesaver Plus™

- Unique space saving design (stand included)
- High Flow Rates - 25ltr/min
- Thermostatically controlled hot water @ 51°C
- Easy to install and commission
- Autofill™ - Automatic filling
- Watersafe™ - Leak detection/prevention technology
- Low heat loss
- Highly efficient
- Easy to maintain
- Built in scale inhibitor