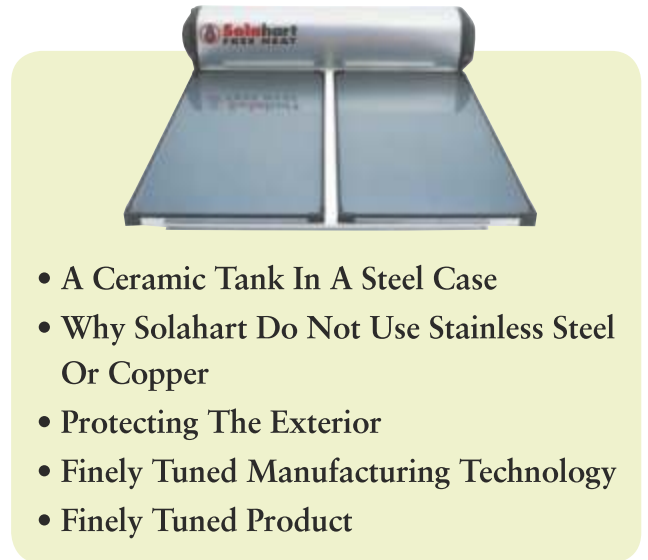


## ANSWERING THE FREQUENTLY ASKED QUESTIONS

# WHY DOES SOLAHART MAKE CERAMIC LINED TANKS?

Solahart's technology has evolved over many decades. During its long manufacturing history the company has evaluated and used many methods of manufacturing storage tanks, found them inferior and made substantial investments in fused ceramic technology.

Ninety five percent of all the world's boiling water storage tanks use ceramic linings. The Solahart ceramic lining is tried and proven and can be used in every climate and with a wide range of water qualities.



### A Ceramic Tank In A Steel Case

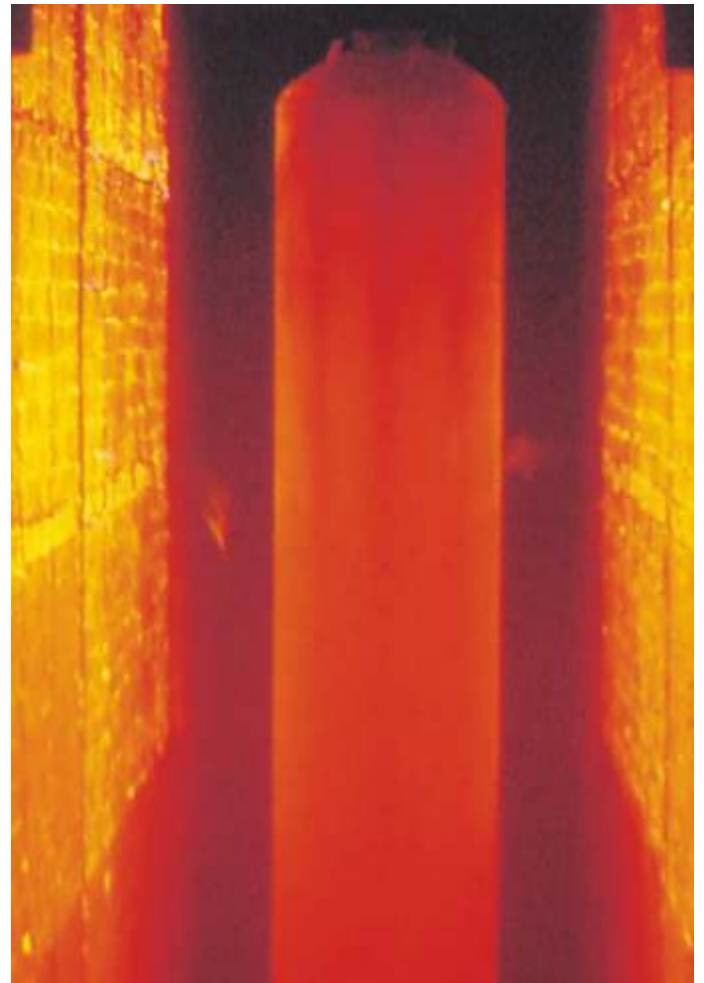
The Solahart storage tank can be considered as a ceramic tank with a steel casing.

All Solahart thermosiphon tanks have an internal double layer ceramic lining, applied after all the fabrication work on the tank is complete to ensure tank integrity.

The double ceramic lining is fused to the steel casing at over 800°C, pre-stressing it. As it cools, the ceramic lining cools slower than the steel, becoming compressed. This ensures no cracking or crazing of the ceramic lining under normal daily temperature variations and pressures.

The use of a double lining is superior to most water heaters which only use a single lining. The second Primaglaze<sup>®</sup> coat has been specifically formulated to ensure that the tank will withstand hotter water over the lifetime of the tank, than ordinary water heaters can usually withstand.

Solahart storage tanks have specially formulated double layer ceramic lining fused to the steel casing at over 800°C



Over its long development Solahart ceramic tank technology has withstood the vagaries of all kinds of water supplies, and has proven to be a match for any conditions, including waters with high chloride levels.

Ceramic linings are used because they afford resistance to corrosion, scale deposition, and high temperatures. A fact not lost on some 95% of the world's water heater manufacturers.

Metals fused with ceramics have been used in some very extreme conditions such as the nose cones of NASA space shuttles.

(See Fact File 08 for information about the rigorous testing that Solahart products undergo).

## Why Solahart Do Not Use Stainless Steel Or Copper

The expression 'stainless' or rust free steel has its origins in kitchenware. The fact that such knives and saucepans do not stain is often extended to the belief that stainless steel generally is corrosion proof. This is not borne out in fact. When stainless steel is exposed to water, a very thin film of oxide is formed on the surface. This film is the only protection the steel will ever have. It cannot offer the substantial protection of a double ceramic lining, and can break down in some water supplies.

Corrosion can occur when very small defects grow over time or as the metal is stressed by heating and cooling.

Copper is not preferred because it also fails in normal mains pressure boiling water systems, especially where high chloride levels are present.



*The stages of corrosion: 1. Initial Pit forms; 2. Auto catalytic process speeds up as concentrated solution becomes more aggressive; 3. Leak occurs as pit breaks through outer surface.*

## Protecting The Exterior

The Solahart storage tank is protected from the weather and UV radiation by an aluminium casing and with polypropylene ends. Decades of manufacture and use have shown that the casing is strong and very durable, even in coastal locations.



## Finely Tuned Manufacturing Technology - Finely Tuned Product

The Solahart product range has evolved over more than fifty years, and like any progressive industry, the company is always seeking to improve the product. At any point in those fifty years, Solahart can make the claim that it was the innovator and the standard setter. Nothing has changed.



*Solahart tank production technology is fully automated.*