

THERMO SHIELD®

thermal insulation coating

Residential Restoration
Mould Removal | Rust Conversion | Thermal Insulation





ROOF RESTORATION - Mould removal | Rust conversion | Thermal ceramic coating

Thermoshield's thermal ceramic coating is the flagship product – crucial to all applications.

However, many roofs are often in poor state of repair and need many stages of preparation prior to the ceramic coating – in order for the coating to be able to stand the test of time.

This report takes you through the process of the various stages undertaken on restoring a heavily weathered, aging roof suffering from widespread surface rusting - due to the incorrect use of dissimilar metals between roof sheeting & tech screws, causing galvanic corrosion.

IMPORTANT TO NOTE:

With the property being in a built up residential area & aesthetics being a concern in addition to product performance, the decision was made to apply the colour "surf mist". Despite being a very light colour, the standard white coating significantly outperforms any tinted product for thermal performance.

The document takes you through the following stages & processes carried out:

- **Chlorine (& 50% water) wash – to kill mould**
- **Power washing – minimum 3000psi**
- **Rust conversion**
- **Etch priming coat**
- **2 coats – Thermoshield thermal ceramic coating**

BEFORE / CHOLRINE WASH

Prior to works commencing, a permanent static line (or 'lifeline') was installed in order to work on a very steep pitched roof. The photos also doubles for roof condition prior to work:



The roof is visible from road level and you can see the roof has become highly unsightly due to the build up of moss & mould.

On closer inspection – the roof had far greater issues than its appearance in that heavily rusted tech screws had caused the rust to spread onto the roof sheeting itself:



Below photos shows the applicator applying a very low pressure chlorine mist in order to greatly assist in completely removing all mould, moss & grime from the roof sheets.

Without this process, the risk of product not making ideal 'contact' to the metal increases. Again, the photos also double as 'before' shots of the roof:



Again, you can see from below the in amongst the moss & mould, each & every tech screw roof connection are on their "last legs" – which was beginning to cause roof sheet corrosion:



In our experience, when advanced tech screw rusting spreads to the roof sheet itself, in 2-3 years the areas around the penetration corrode through which causes widespread waterproofing issues – which ultimately leads to roof replacement.

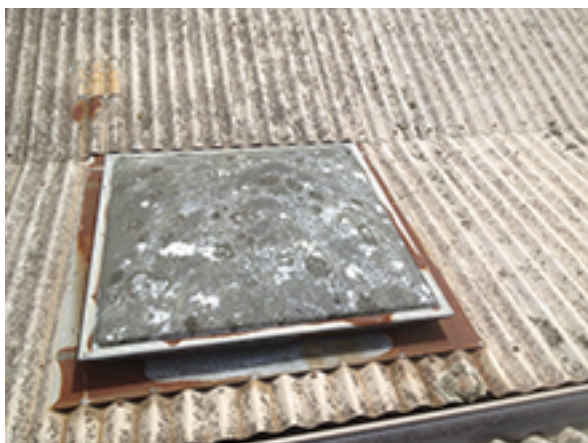
Heavy tech screw corrosion, coupled with the damaging effects of roof expansion & contraction - leads to screws breaking &/or becoming dislodged creating prominent openings for water ingress.

In addition, the high rust content water run off also causes accelerated wear on roof channels, sheet troughs & gutters – significantly reducing their expected life.



What appeared to have been simply an unsightly mould issue – in reality was also a potentially very expensive corrosion issue.

If left untreated, the roof could well have found itself on its “last legs” in the very near future, which would have resulted in a major cost & inconvenience to replace it



POWER WASHING / CLEANING

Fairly self explanatory – however the point to stress is that minimum of 3,000psi is required. High-pressure washers bought from hardware stores or DIY kits, are manifestly inadequate.



You can see from the below photos the difference following the mould and grime removal. Once cleaned, it highlights how corroded the tech screws have become:



RUST CONVERSION

The Thermoshield coating contains rust inhibiting chemicals. However it isn't designed to be applied directly onto heavy surface rusting or in this instance, heavily corroded tech screws.

In order for rust to not re-surface through the coating, a dedicated rust converter is applied to convert the rust into a stable metal phosphate & simultaneously forms a protective abrasion resistant skin.

Once converted, the Thermoshield ceramic coating provides a non-permeable membrane that acts to encase the metal, preventing any water & oxygen from coming into contact with the metal – preventing additional rust.



The 'polka dot' contrast of the roof sheet to rust converter highlights how widespread corrosion & rust rusting had become underneath the moss & mould coverage:



Rust conversion continued:



THERMOSHIELD – THERMAL CERAMIC COATING

Significant amount of care was taken to remove the potential for overspray to damage surrounding areas such as plant life, decking & house walls.

We estimate that the colour 'surf mist' would result in approximately 70% of the thermal performance efficiency, compared to the standard pure white coating.



Second coat being applied below:



FINISHED COATING

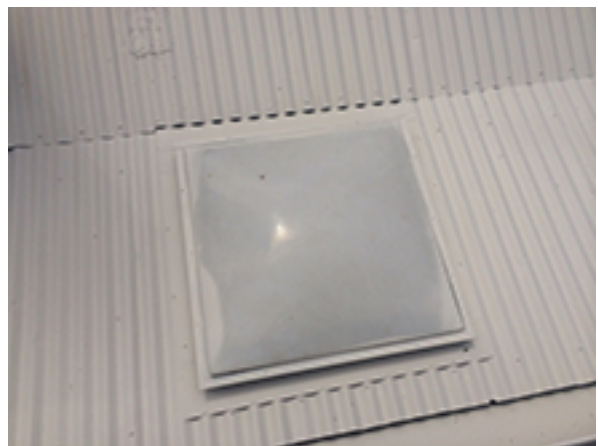
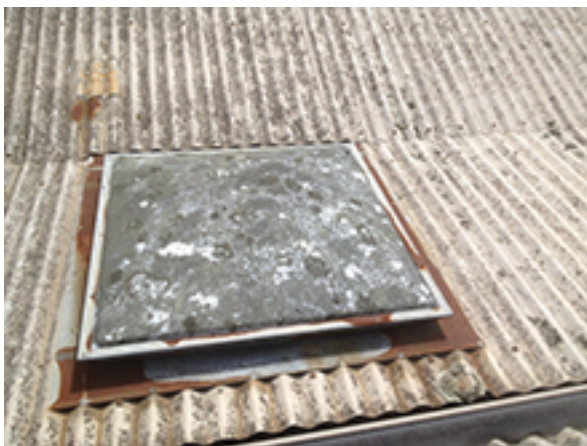
You can see from the below two photos how much care was taken to avoid over spray. You can see the tree was protected & any edges were cut in by hand:



You can see from the below photo how the tech screws have been well sealed beneath the ceramic coating. If the problematic screws are not able to come into contact with water or oxygen, then they are deprived of essential elements to cause further corrosion.



BEFORE & AFTER EXAMPLES



BEFORE & AFTER EXAMPLES continued



BEFORE & AFTER EXAMPLES continued



BEFORE | DURING | AFTER

