

MetalTec TC®

THE ULTIMATE SOLUTION TO
THERMAL INSULATION

What is MetaltecTC®?

Developed over 12 years ago by MetalTec Products, **Metaltec TC®** is a liquid thermal insulating coating that goes above and beyond any benefits that conventional insulation methods could ever offer. Made from composite ceramics and applied via spray method, **Metaltec TC®** tackles three major problems that plague facilities daily around the world:-

- **Corrosion Under Insulation (CUI),**
- **Personnel protection**
- **Heat retention.**

Plants and process facilities constantly battle with these issues, which are all directly related to heat transfer and the materials used to reduce that heat. This is why the use of innovative materials, like **Metaltec TC®**, has become a must, rather than an option and is an excellent solution to any necessity of heat retention in any plant or industrial environment.

Corrosion Under Insulation (CUI) is one leading costs of maintenance in the industry sector. All plants, facilities and commercial areas that have hot or cold tanks have to deal with Corrosion Under Insulation. Due to the intrinsic corrosive atmosphere and its ability to gestate worse corrosive atmospheres between a substrate and its conventional insulation, CUI has no problem taking hold and spreading like wildfire.

Basically, CUI is the cancer of the industrial world. Because of the lack of substrate inspection ability that is inherent with conventional insulation, once the CUI has been found, it is usually too late to save the substrate. After the insulation is peeled back, there is a crumbled mess of insulation and substrate flaking onto the feet of the inspectors. What was once sturdy, stable steel now resembles spent pipe tobacco. The conventional insulation materials used in the past have played into the rapid process of substrate degradation due to creation of a corrosion-promoting internal atmosphere. This adds to increased industrial maintenance schedules and downtime for repairs.

MetalTec products overcome that problem because of the very nature of the coating itself. Since it is applied to the substrate either directly or on top of a primer, there is no room for CUI to take hold. Best of all, the substrate is now viewable at all times. This means that the inspection team doesn't have to destroy a large area of insulation prior to inspection.

If repairs are necessary, they can be made to that specific area only and the now-exposed substrate is easily touched up and repaired with ease.

Spending money efficiently isn't the only thing that affects a company's health, though. So is protecting the people who are working for that company. In an industrial setting, personnel protection is always at the top of every manager's mind, or at least it should be.

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INTRODUCTION

The latest generation liquid thermal insulation, having a thickness of 1 to 5mm, the same insulation properties than Rock wool or PU foam but with the advantages of alienating all problems of corrosion under insulation(CUI), condensation, creeping in humidity. At the same time allowing instant inspection and maintenance with complete visibility of the insulated support or equipment.

Metaltec TC® is a mono component water based acrylic polymer loaded with different types of ceramic microspheres encapsulating air. Derived from the space industry research, **Metaltec TC®** reconciles performance, lightness, flexibility and compactness.

It is a very stable and durable coating, totally watertight, very thin (from 1 to 5mm), and it also offers the bonus of being a very effective sound dampener, 10 -15dB.

Anti corrosion coating, it offers an excellent protection against rust and eliminates corrosion under insulation (CUI). It does not get affected by ambient humidity and retains its full characteristics in wet conditions. It can be hot applied without downtime on surfaces up to 200°C, with no shutdown necessary. It will insulate from -40°C up to 260°C, (with peaks accepted up to 300°C for short times.)

Surface preparation is minimal(wire brushing) and application does not require specially qualified manpower, applicable with airless spray gun, roller or brush in 1mm layers.

Metaltec TC® can be applied on walls & roofs, in cellars, attics, warehouses, steam pipes, hot oil pipes, exhaust systems, in all places where insulation and significant energy savings are required. It insulates easily, valves, flanges, elbows, ducts, heat exchangers, equipment of any shape or in remote areas and corners difficult to reach otherwise. It also will protect from freezing temperatures oil & gas pipes, heating ducts and tanks.

It is the perfect product to use to protect personnel from the dangers of skin contact burns in hot processes and heat radiation environments, (skin test certified ASTM C 10555-99), a 3 to 4mm coating temperature will drop from 180 to 50°C. It also acts as a fire retardant Class A, does not propagate flames and does not emit toxic fumes.

Metaltec TC® is really encapsulating energy!!

Due to its superior properties of emissivity and reflexivity, **Metaltec TC®** excels in insulating structures & equipment against the gain of radiant energy. **99%** of this energy is either reflected, or re emitted(radiated back), this means that only **1%** is absorbed.

Metaltec TC® is environment friendly, non toxic, free of solvents and safe.

MetalTec Ltd

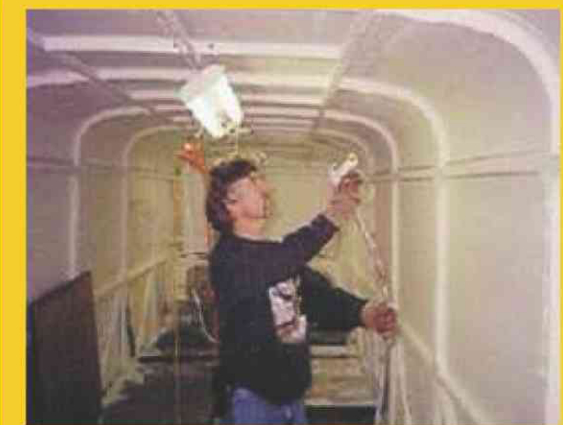
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APPLICATION TECHNIQUES

Mixing: Power mix contents of container using a mud paddle at 300 rpm or less for 3 to 5 minutes, making sure to blend in all solids at the top of container.

Surface Temperature: Minimum 15°C, Maximum 175°C. Coating will not dry below 15°C. Prior to applying to substrates at temperatures greater than 66°C, please contact your distributor for assistance.

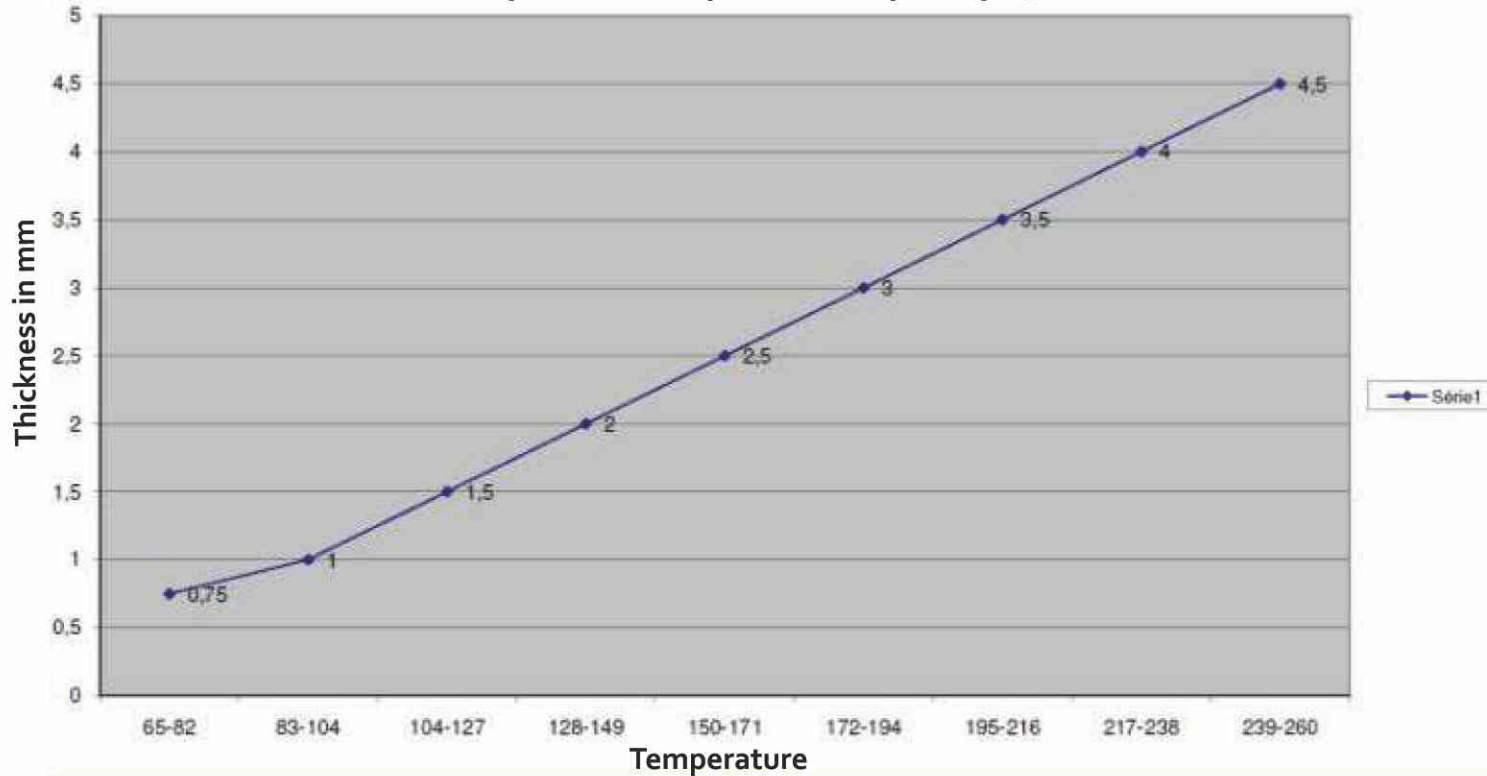
Methods and Equipment: Apply MetaltecTC® on a dry, clean substrate free from oil, grease, wax, dirt, rust or corrosion. Use an airless sprayer with 205 Atm, 4.75L/min, 28:1 ratio with a 0.53mm tip size. A spray gun using shop air may be used for small applications. Allow the product to completely dry between coats. This is a one-coat system with dry time of 12 hours under room temperature conditions. Elevating temperature of substrate will accelerate re-coat time. Brush may be used for touch up, but is not recommended for full application, except for under 50m².

Recommended thickness: Suggested MetaltecTC® Insulation thickness. To reduce surface temperature to approx. 60°C.



Anti Condensation

Thickness required to keep skin safety temp @ 60°C



Thermal Insulation Various piping

Thermal Insulation Process Tank

Thermal Insulation HVAC Ducting for CUI reasons

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Classical Use

- **Rooftop Installation:** 0.4mm thickness can reduce solar heat flux roof by 99% through refraction and re emission.
- **Boiler Hot Pipe Installation:** Actual installations have shown that a 1.5mm thickness will reduce exterior boiler wall temperatures from over 180°C to less than 90°C. Excellent for insulating hot pipe/surfaces up to 260°C or cold pipe/surfaces in hot environments.
- **RV/Bus/Truck/Trailer/Container Installation:**
 - a. 0.4mm thickness on a roof can cut solar heat flux by 99%. Can be sealed by white acrylic or alkyd enamel over the Metaltec TC®.
 - b. 1.2 to 1.5mm thickness in the engine compartment/fire wall can cut the heat inside the RV/Bus.
 - c. 0.8mm on the walls, ceiling and floor of the interior shell can increase the insulation of the RV/Bus/Trailer/Container without increasing the wall thickness.
- **Ships:**
 - a. Hulls can be coated with approximately 1mm to insulate & seal. Keeps moisture off hulls.
 - b. Insulate hot/cold piping (1.6 - 2.7mm) including exhaust system
 - c. Insulate hot/cold tanks, refrigeration units or systems with 1.6 - 2.7mm.
 - d. Insulate deck housing from solar heat 0.4mm thick.



Personnel Safety Against Skin Burns

Classical use - Surfaces and Areas

Air Conditioning Duct Work	Cat walk handles & guards	Garages
Aircraft Interior Walls	Chicken Farm Rooftops	Grain Silos
Airplane Hangers	Commercial Refrigeration	Hot water heaters
Metal Buildings	Corrugated iron & metal roofs	Hulls of ships & boats
Slurry Truck Tanks	Crane Beams	Residential home, wall & roof
Barracks	Engines & Engine rooms	Restaurants & Offices
Build up roofs	Flooring	Vehicle Conversion interiors
Boat/ship decks & galleys	Fruit & pack stores & sheds	Wine Cellars