



# COOLING

OUR URBAN ENVIRONMENT

## Cool Energy Efficient Heat Reflective Roof and Wall Coatings for New Construction and Renovation.!

### Certified Performance:



Astec Energy Star products are the first, and only range of thermally regulated roofing finishes, texture coatings and elastomeric deck and wall membranes to be CodeMark certified and approved for guaranteed compliance with the B.C.A., Building Code of Australia section J – Energy Efficiency Guidelines.

### Leaders in Green, Sustainable, Low V.O.C. Products:



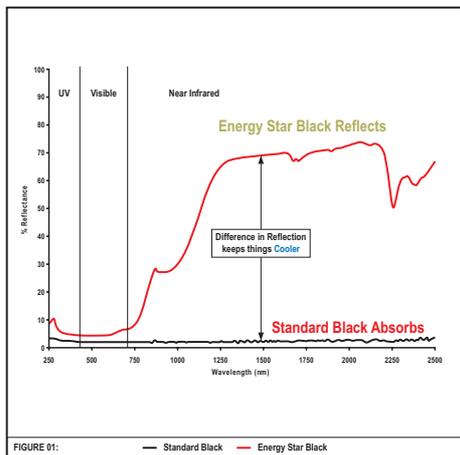
Sustainability is at the core of our business philosophy. We are proud of our portfolio of leading brands that make a positive difference to the environment and the health of our buildings. With more than 95% of all products being low in V.O.C. and certified by Good Environmental Choice Australia, as green sustainable products.



# Cool Roofing and Cool Walls

is one design element you can not afford to overlook when designing, constructing or renovation an energy efficient building.

## Infrared heat is reflected - reducing absorbed heat in the building.

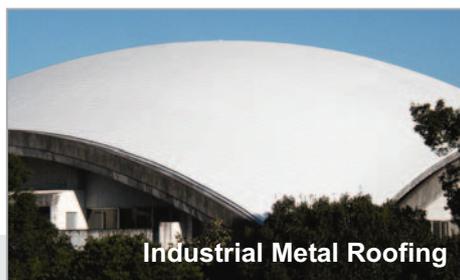


Astec Energy Star infrared heat reflective coatings systems reflect fully 50% of solar heat by infrared reflection. Even in darks colours, their low solar absorbance and high emittance, significantly reduces absorbed heat in the building envelope.

The IR heat signature was captured by an infrared camera from the rear of two panels during a Solar Radiation Exposure Test. One panel was Astec Energy Star® Low Sheen and the other, a competitor's premium exterior acrylic. Both panels were identical in colour.

**Fact:** a 1°C drop in temperature can provide a 10% power saving, and as such a considerable overall power savings for a property. [Macquarie University webpage Energy and Emissions – Sustainability].

**Fact:** Research indicates that reducing the upper surface solar absorbance of 1m<sup>2</sup> of a roofs area by 0.25 is equivalent to removing a one off amount of 64 kg of CO<sub>2</sub> emissions from the atmosphere for the life of the roof. 14,080 kg / 220 m<sup>2</sup> roof. [Department of climate change discussion paper].



Astec's System for metal roofs completely seals and waterproofs seams, flashings and fastening devices. The waterproofing is achieved by embedding polyester matt between liquid water-proofing materials.

The entire roof is over-coated with multiple coats of liquid applied heat reflective elastomers to form a monolithic waterproof seal; With superior resistance to U.V. degradation and wind driven rain. Wind, water and contaminants are stopped from entering the building, assuring you complete and absolute watertight integrity.

The entire roof is treated with a scientific blend of penetrating, oxygen and moisture displacing rust encapsulant that halts present corrosion and allows the existing heavy gauge metal to remain in place.

Once installed, this system forms a seamless uniform protective covering that protects, maintains and enhances the roof for many, many years to come. The Astec seamless metal roof is installed at a fraction of the cost of re-roofing is aesthetically pleasing and remains cool in the extremes of summer.

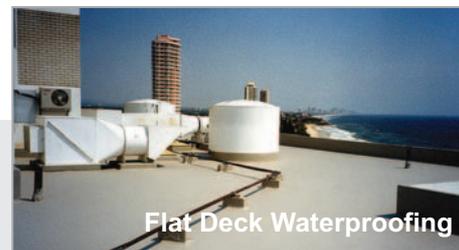


The Astec Asbestos System is a long-term rehabilitation and stabilization coating system. It does not require the high pressure cleaning of the weathered sheet which is now prohibited in Australia.

The system utilizes an under-film mould retardant, a penetrating sealer / binder, and highly durable heat reflective elastomeric topcoats. The system penetrates and locks firmly deep within the non-decayed asbestos fibre matrix.

Splits, fasteners and flashings are waterproofed ensuring a long-term water tight roof. It removes the threat of under-film mould re-growth and provides a new impact resistant surface to the weathered sheet.

The system can be installed at a fraction of the cost of replacement, and without the inconvenience and disruption to business or home life. It renders the sheet safe, cool and aesthetically pleasing?



A liquid-applied fully adhered seamless membrane that is formed in situ during new construction or retrofit, of concrete / timber ply decks, degraded box guttering or over existing weathered membranes.

The system will stop the transmission of ponded bulk water, eliminating moisture accumulation in the substrate.

Low temperature flexibility, down to -30° C. makes them resistant to low temperature cracks in extreme weather, and assures positive adhesion, resilience to hailstone impact, and long-term crack free integrity.

Most importantly no more excessive heat build up in the concrete slab, that can take days to cool down once absorbed.

Durable, flexible, heat reflective elastomeric membranes, resist UV degradation, ponded water and many industrial chemical environments and because they remain cool will last up to four times longer than conventional waterproofing.



Why absorb the sun  
when you can reflect it.



## B.C.A. Building Code of Australia Energy efficiency compliance at either equal or lower cost to construction.

It makes sense to start with a building envelope that is highly reflective to sunlight, as a Cool roof and Cool walls will provide an optimum start point for the energy efficient design of any new building.

Nowadays, the whole of building approach differs from the traditional design/build process, as the design team examines the integration of all building components and systems then determines how they best work together to save energy and reduce environmental impact.

The use of Energy Star coatings at the design stage will address the single most important aspect that influences cooling loads, by reducing the amount of solar heat absorbed by the building envelope.

Independently tested and certified Absorbance and emittance values for Energy Star are input to BCA (Building Code of Australia), Compliant Building Verification software, such as, Accurate, and

Energy Plus during energy efficiency compliance work or in some climate zones are specified by absorptance alone for use during D.T.S (Deemed to Satisfy), provisions.

As a result of their low absorbtivity, insulation, roof space, glazing and or shading concessions are achieved resulting in reduced cost to construction. Moreover, the long term benefit to the building owner, of greatly reduced cooling loads and energy consumption.

Energy Star's Low absorbtivity translates into reduced cost of construction, an increase in the buildings energy rating and the positive environmental effects from the buildings increased energy efficiency.

## Construction and renovation.



Concrete Tiles

Unlike the normal repainting of weathered concrete tiles, the Astec System fulfils the replacement of the weathered factory finish in a positive and long-term manner addressing not only aesthetics, but the durability, adhesion and mould regrowth aspects.

The entire roof is cleaned and repaired then over-coated with multiple coats of liquid-applied heat reflective elastomers to form a monolithic waterproof seal; With superior resistance to U.V. degradation and wind driven rain.

Once installed, this system forms a uniform protective covering that protects, maintains and enhances the roof for many years to come.

The heat reflective restoration is installed at a fraction of the cost of re-roofing, is aesthetically pleasing and remains cool in the extremes of summer.



Textures and Renders

Nowadays, design teams face the added challenge of providing rich dark aesthetical appeal to the externals of a building while meeting energy efficiency guidelines. The use of these deep tone exteriors, although aesthetically appealing, adds absorbed heat to the building envelope and is contrary to basic principals of energy efficiency.

Most deep tone exteriors have high absorptance values and require added levels of bulk insulation to combat the increase in absorbed heat.

This absorbed heat also adds greater thermal shock to substrates such as Harditex®, and in some instances bulk insulation demands a greater volume than is available in the typical wall construction.

Astec Energy Star texture and render systems significantly reduce absorbed heat in the wall by selective reflection of infrared light. They remain cool, even in dark colours, reduce thermal shock and in some climate zones negate the need for added insulation at all.



Elastomeric Wall Finishes

Masonry wall retrofit has always been a premature expense to building owners. Where the general integrity of the paint finish is sound, excluding unsightly failures over continually moving cracks.

Astec Elastomeric Wall Coatings ensure crack free protection against the ingress of water and carbon dioxide. Moreover, their unique Dirtguard chemistry gives a high level of resistance to dirt pick-up.

Unlike normal paint, Astec elastomeric wall coatings maintain their flexibility with time. Substrate movement for whatever reason leads to cracks. These cracks are easily bridged during initial application and remain bridged throughout the worst ravages of cold winters & hot summers.

### FOR YOUR ABSOLUTE CONFIDENCE.

**Astec elastomeric wall coatings possess the ability to bridge a forthcoming crack 4.9 times its dry film thickness. ( 350 microns dry will accommodate a forthcoming crack of 1.75 mm )**

## Trust Our Experience and Reputation for Quality:

Our impressive portfolio of projects spanning almost three decades is testimony to our reputation for quality. Throughout Australia and Asia to the deserts of U.A.E, our products have proven to survive long-term in the world's most extreme environments which is why Astec is the energy efficient choice of the building and restoration industry.

### Trusted by leading organizations - Since 1978:



#### **Coca Cola Warehouse - NSW**

Energy Star elastomeric heat reflective coating system applied to reduce internal factory temperatures and provide the roof with a new watertight seal. 58,000 m2



#### **Yanmar Co Ltd - Japan**

Energy Star heat reflective asbestos roof restoration system applied to waterproof entire factory roof, reduce power consumption and internal temperatures.



#### **Ocean Isles - Queensland**

Astec heat reflective Elastomeric wall coatings, for crack resistant seafront masonry protection and reduced internal building temperatures. 3,600 m2



#### **Honda Motor Co Ltd**

Metal roof to entire plant. Anti-corrosive treatment, leak repair and heat reflective coatings applied to reduce power consumption and reduce internal building temperatures.



#### **Science Museum, Melbourne Victoria**

Metal buildings coated with Energy Star Heat Reflective Coatings to increase internal summer comfort of visitors to the museum.



#### **Panasonic**

Astec system installed so that the existing heavy gauge metal could be retained. Seams, flashings and fasteners sealed with Energy Star elastomeric coatings applied to reduce internal summer heat.



#### **Residential Village Abu Dhabi**

Energy Star Armatex texture system to walls of 130,000 m2. Energy Star reflective coating system to roof of 70,000 m2. Specified to tolerate 50 deg C heat.



#### **Telstra Switching Huts**

Astec heat reflective insulating paint applied to keep heat sensitive electronic switching gear cool in Far North Queensland.

### Test Properties and Approvals

#### **Independent thermal testing**

- ASTM C 1371-04, "Determination of Emittance of Materials Near Room Temperature".
- ASTM E 1980-01, "Standard Test Method for determining Solar Absorptance Values".
- ASTM C 1549-02, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer".
- ASTM E 903-96, "Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres".
- ASTM E 1980-01, "Standard Test Method for determining Solar Reflectance Index".

#### **Third party compliance**

- Complies with Australian Standards AS /NZS 4859.1, (Materials for the thermal insulation of buildings).
- B.C.A (Building Code of Australia CodeMark Certified. Certification No.GM-09-CM30010.
- Good Environmental Choice Australia Certified. Certification No.AST-2007.



#### **Contact us today;**

and find out how your roof can become an energy asset, keep you cool in summer, and reduce the costs of cooling your building.

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