

COOLING

OUR URBAN ENVIRONMENT

KEY FEATURES

- Heat Reflective
- Complies with AS/NZS 4859.1
- Very low absorptance
- Energy Efficient
- B.C.A. CodeMark Certified
- Certified by Good Environmental Choice Australia
- Water Based
- Low V.O.C.
- Strong anti-corrosive properties
- Plasticizer free.
- Rapid cure and bond strength
- Excellent resistance to alkali
- Very strong surface bond
- Rapid through cure
- Excellent adhesion to aged alkyd
- Excellent adhesion to aluminum



(Technical Bulletin) AC-3 Primer

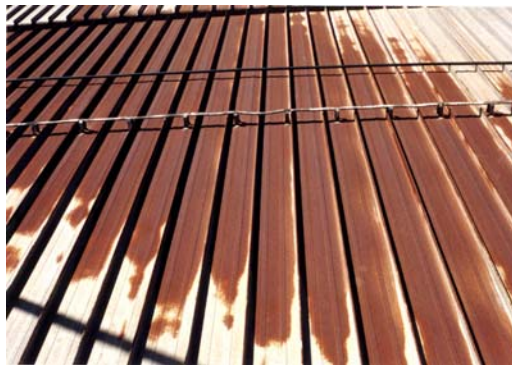
An Infrared Heat Reflective Anti-Corrosive Primer
With Outstanding Adhesion to New Metal Surfaces

Description:

A coating doesn't have to be white to be cool.....! As an Architect, Builder or Homeowner, rich, dark colour is an important part of your building design and decoration. Unfortunately, dark colours soak up the sun and get hotter and hotter as the day progresses. As a result, building temperature and power consumption are increased, and greater demand is placed on our environment and global resources.

AC-3 Primer is an infrared heat reflective primer that incorporates a new technology developed by Astec of colour infused nano ceramics that reflect heat by selective reflection of infrared light. This technology enables us to offer a dark coloured metal roof that reflects fully 50% of Solar energy with solar reflectance values of up to 58% higher than standard coatings of the same colour. As an example, standard slate grey has a Total Solar Reflectance, (T.S.R.), value of 16.6% compared with Energy Star Slate Grey that has a T.S.R of 40.30%, (58% higher reflectance).

AC-3 Primer is a premium grade, water-based, 100% acrylic anti-corrosive primer coating, designed for use on all correctly prepared metal substrates. AC-3 Primer is low in Volatile Organic Compounds, (V.O.C.) and adhesion promoted for outstanding direct to substrate adhesion. The product is manufactured with a new water based technology developed by Astec Technical Laboratories which provides adhesion properties to the product that are in excess of many traditional oil based primers, even on difficult substrates such as aluminium.



Confidence for Certifiers, Builders and Architects

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. Section J – Energy Efficiency Guidelines.



AC-3

Description cont:

AC-3 Primer has excellent inter-coat adhesion with acrylic topcoats and contains flash rust inhibitors to allow the primer to be applied direct to steel without the threat of flash rust forming beneath the applied primer. Furthermore, has excellent flexibility and copes well with the dimensional instability of metal roofing sheet.

AC-3 primer is an excellent replacement for Solvent-borne acrylic and alkyd anti-corrosive primers, providing many of the same performance properties without harmful solvent release to the atmosphere.

The product has excellent flow and leveling properties and levels to a smooth, uniform protective film. It has very good edge-cover and wet-hold during brush application which insures "thin edge lifting" of the cured film is eliminated.

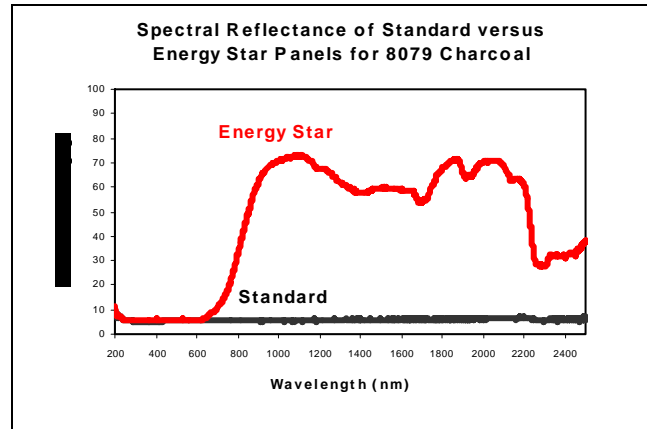
The product contains high levels of anti-corrosive pigments accommodating maximum weather exposure experienced by metal roofing decks. Zinc Phosphate, the cathodic protection ingredient, chemically prevents the iron from reacting with the oxygen in the air to form rust. Higher than normally required levels of Zinc Phosphate is incorporated in the primer for added resilience to the levels of electrolysis experienced on metal roofing decks.

AC-3 Primer is manufactured principally for use in the Astec Seamless Metal Roofing System and has also found considerable use in the maintenance and restoration industries i.e. as a mist primer for adhesion of new topcoats to new galvanized metal; a shop primer for new construction steel and for the priming of difficult substrates such as aluminum.

The applied finish is tough, yet flexible and because it remains cool, testing has shown that it will last four times longer than all conventional exterior acrylic roof paints.

High Reflectivity Low Solar Absorptance:

The comparative data represented on the graph above is actual spectral results printed during tests conducted to ASTM E-903 on a Lambda 9000 Solar Reflectometer. The graph shows the difference in heat reflection between a standard charcoal roofing paint and Energy Star Charcoal.



Durability:

Heat and moisture are the two main contributing factors that accelerate the degradation of exterior coatings. In highly humid, tropical environments, conventional acrylics have been known to last as little as three years. In Australia some dark metal roofing can start to change colour and fade from it's original depth of colour within 3 years.

Energy Star coatings have increased durability and life expectancy compared with conventional paints. Independent laboratory testing to ASTM Standards confirmed Solar Reflectance Indexes of 241% greater than normal paints on a dark colour of Slate Grey.

Heat generated by Solar Radiation from the sun is one major contributing factor to exterior coating degradation, especially in a standard dark colour.

As AC-3 remains cool, After exposure to 2800hrs of UVB 313/Moisture testing, in accordance to ASTM G53-96, the gloss, depth of colour, adhesion and film integrity remained un-changed, This provides a performance increase of more than 400% when compared to a standard roofing acrylic. Quite simply, the less heat on the coating the longer they last.

Moisture is the second major contributing factor to exterior coating degradation, especially in water based acrylic coatings. Atmospheric moisture enters the coating film on a daily basis and swells the coating, greatly reducing it's life.

AC-3

Durability cont:

Specialty silicones used in AC-3 Primer prevent the entry of moisture into the coating film. As a result, the coating does not swell and can last 400% longer than standard roofing acrylics. Simply put, the less moisture that the coating film has to tolerate the longer it will last.

AC-3 Primer is the most advanced and functional metal roof primer available in Australia. It provides high Solar Reflectivity, excellent resistance to moisture and corrosion.

Principal Use:

Metal roof and sidewalls.

Substrates:

Correctly prepared, new, aged or painted metal, factory painted metal, powder coated and plain aluminum.

Colour Range:

Grey

Preparation:

Previously painted:

1. Ensure down-pipes to rain-water tanks and storm water are disconnected before cleaning.
2. All surfaces must be clean, dry and free of contaminants. Remove dirt or dust with a wire brush and any grease with a household detergent. Alternatively, the surface should be high-pressure water cleaned to remove any surface contaminants. The most suitable nozzle to achieve the best results is a Kranze Turbo Nozzle. Any deposits of grease, oil or silicone must be removed.
3. Scrape off any loose or flaking paint, then sand any remaining paint to a flat finish. Any existing paint that exhibits a complete lack of adhesion should be entirely removed for the best results. Wipe down with a damp cloth to remove any dust.
4. Rusted surfaces or nail heads should be treated with Astec Rust-trait and once cured spot primed with Astec AC-3 Grey Primer. (See relevant technical bulletin).
5. Prime the entire surface with one light, transparent coat of Astec AC-3 Grey Primer. (See relevant technical bulletin).

New unpainted:

1. Degrease thoroughly with Astec Enviro-green, while frequently changing rags.

2. Prime the entire surface with one light, transparent coat of Astec AC-3 Grey Primer. (See relevant technical bulletin).

Application:

- The best results will be obtained by spray or brush application methods.
- For spray applications, apply AC-3 straight from the drum with a conventional air or airless spray gun using a 515 to 518 tip.

MIXING:

Thoroughly mix before use with a paint wacker or broad flat stick.

PRECAUTIONS FOR USE:

Avoid contact with skin and eyes; always use a respirator during spray applications

LIMITATIONS:

AC-3 is a water based material, therefore, should not be applied during inclement weather or when precipitation or freezing are imminent.

PACKAGING:

20L,10L,4L open top pail.

AC-3



Product Data:

%T.S.R. <i>Total Solar Reflectance</i> (White) to ASTM	89.20
Emittance to ASTM C	0.89
Drying Time at 25°C @ 100 MIC W.F.T.	35 min dry and block resistant
Recommended thinners	Water / Thinning not recommended.
Wash up	Water
Recoat time at 25°C	1 to 2 hrs
Theoretical spread rate at D.F.T (30 microns Dry)	12.00 m ² per ltr
Spread rate at recommended D.F.T (150 D.F.T.)	2.4 m ² per ltr (including two coats and profile)
Abrasion resistance	Good
Solvent resistance	Poor
Specific Gravity. Low Sheen	1.335
Volume Solids. Low Sheen	38% V/V
P.V.C. Low Sheen	37% V/V

Table 1- Physical resistance properties compared to a premium acrylic:

TEST DESCRIPTION	PREMIUM ACRYLIC	AC-3
1 Boiling Water Test	Fail Severe whitening	Pass – 1
2 Water Resistance		
-Blistering	Dense poor 8	Spars good 2
-Whitening	DL + 4.88 (Whitening did not recover)	-0.318
3 Crosshatch Adhesion	OB,c	OB,c
4 Face to face Block Resistance	Separation caused severe damage	Separated easily with minimal damage.
5 Accelerated Weathering (ASTM G53-96)	Moderate chalking and surface whitening.	Excellent gloss retention with little to no surface change.

Test Procedures:

1. Boiling Water Test:

Place 24hr old test panel into boiling water for 30 minutes. Removed and dried panel then noted blistering and adhesion loss.

2. Water Resistance Test:

3.

Placed 24hr old test panels into lab temperature water, 25 deg C, for 48 hrs. Remove, dry and measure for water whitening and blisters.

AC-3



Test Procedures Con't':

3. Cross Hatch Adhesion Test:

A test panel has lines scribed through the coating to the substrate at 3mm intervals in a cross hatch pattern. Adhesive tape is applied and remove noting any failure.

Rating:- OB = 90% squares removed.
 C = Cohesive substrate failure.

4. Face to Face block Resistance Test:

24 hour old coated M.D.F. test panels were stacked face-to-face with a 245kg weight applied to the stack for 24hours at room temperature. At the end of the test stack was noted for ease in separation.

5. Accelerated Weathering (ASTM G53-96):

2800hrs of UVB 313 Lamps/Moisture testing, in accordance to ASTM G53-96. Sample were exposed to four hour cycles of U.V.B. at an irradiance of 1.05 then moisture at 60 deg C for a total period of 2800 hrs.


Warranty:

The technical data furnished herein is based upon data believed by Astec Paints to be true and accurate at the time of writing, however, no guarantee of accuracy is given or implied and is subject to change without notice.

This information is given in good faith for the assistance of users. No legal warranty expressed or implied is made as to its accuracy, completeness or otherwise.

Every person dealing with this material herein does so at their own risk absolutely and must make independent determinations of suitability and completeness from all sources to ensure their proper use.

We have no control over the condition under which these products are stored, handled or used, therefore our recommendations must not be regarded as a mounting to legal warranty or as involving any liability on us.



In a climate dominated by heat, it makes sense to provide exterior finishes that are highly reflective to sunlight.

Astec Paints Australasia

22-24 Pinn Street
 St Marys
 Adelaide, South Australia 5042
 Phone: 618 8297 2000 | Fax: 618 82972555
 Toll Free:
enquiries@astecpaints.com.au
www.astecpaints.com.au