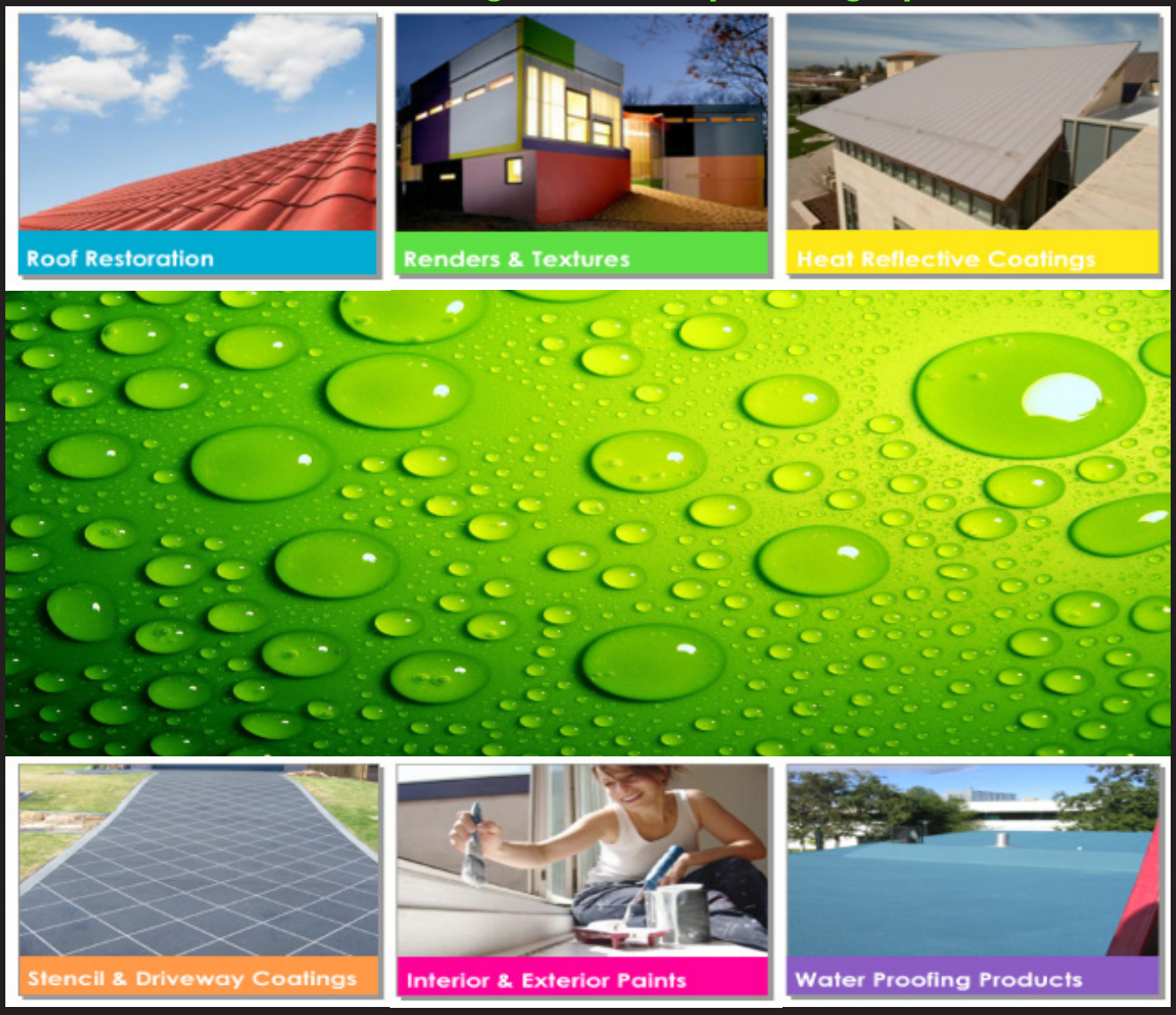
RAINBOW SHIELD SDN BHD

- Since 1996 -

-Your Protective Coating And Waterproofing Specialist -



- www.rainbowshield.com.my -

ISO 9001 ISO 14001 Find us on facebook

Table of Content

A. Company Introduction

RAINBOW SHIELD

COMPANY INTRODUCTION

RAINBOW SHIELD SDN BHD (Formally known as RAINBOW ROOFGUARD (J) SDN BHD), was established in 1996.

Malaysia is a tropical country with all year round rain and hot humid weather. Due to the nature of it's environment and the general lack of proper environmental protection, roof tiles, floors, and walls, whether made of concrete, ceramic or steel, are subjected to severe wear and tear resulting in long term effects of sunlight, fungus and water seepage, thus causing buildings to age prematurely and look unsightly.

Imported from Australia, a pioneer in the environmental protection industry, our proven quality green environmental products are made with advanced technologies to provide extreme properties in water repellence and non- toxicity.

With years of service in the industry providing solutions to various environmental problems to residential housing, factories, temples, governmental buildings, etc, we are proud to have received valuable testimonials on our completed projects testifying to our commitment in enhancing our team work, stringent quality controls and most of all, serving our valuable customers.

In order to provide more diversified products in the related industry, Rainbow Shield has since imported other energy saving anti heat/water seepage, anti slip coatings and also coatings for the protection of wooden products.
We are confident that with our long standing reputation in the industry, our coating systems will undoubtedly provide our customers a permanent solution in environmental protection.

INTRODUCING

RAINBOW SHIELD'S BUSINESS PARTNER

SHIELDCOAT

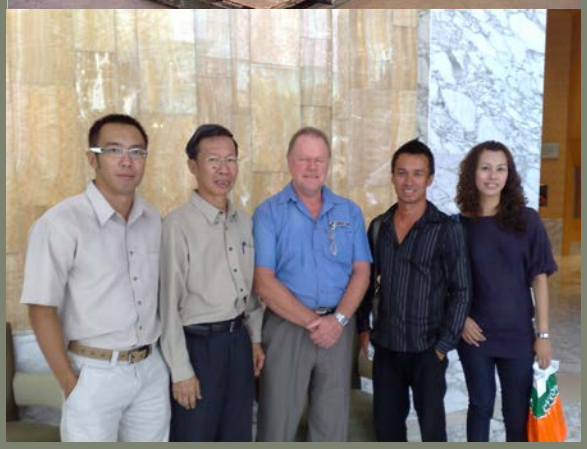
SHIELDCOAT is a manufacturer specializes in protective coating: Roof Paint, other Roof Coatings, Flexible Pointing, Driveway Paint, Stencil Coatings and Concrete Coatings, Paving Paint, Heat Reflective Coatings & Paint, Waterproofing Membranes, Acrylic Modified Cement Renders and Polymer Texture Coatings and much more, including Thermotex heat reflecting textures and paints that are also 'cool coatings' this time to keep your exterior walls cooler.

SHIELDCOAT

We make products to suit our customers ... not ourselves

All of SHIELDCOAT water based products are based on 100% Acrylic Resin, the balance being defoamer, disperser, mould inhibitor, drying agent, thickener and pigmentation. As SHIELDCOAT also grinds its own colour dispersions to maintain total quality control over the products. No unnecessary extenders are added to the product, thus excellent gloss levels and durability result. As a consequence many of the products are guaranteed for ten years against peeling, flaking and cracking.

All SHIELDCOAT products are Australian made to suit all climates both cold and hot. SHIELDCOAT is a quality assured company ISO9001-2000 and our products meet Australian Standards in paint manufacture having passed our internal strict quality controls. This ensure the customers receive the best possible product.



RAINBOW SHIELD & SHIELDCOAT

Rainbow Shield and Shieldcoat share the same philosophy : Provide premium, high quality products and services to customers.

Combining the unique products from Shieldcoat with Rainbow Shield's well trained applicators, we can provide you a complete solution for protective coating and restoration work .

B. Roofbond Roof Coating System

i. Introduction

ROOFBOND

A complete solution package for your roof

To protect roof tiles, you need a roof coating that could last as long as possible. ROOFBOND is the best choice.

ROOFBOND Coating System is a finest 100% acrylic resin, water-based coating with no unnecessary extenders, manufactured by SHIELDCOAT Australia , solely distributed and applicated by RAINBOW SHIELD Sdn Bhd in Malaysia. Combining the unique products from SHIELDCOAT with RAINBOW SHIELD's well trained applicators, we provide you a complete solution of roof coating and restoration.

Roofbond Roof Coating System's formula has been continuously perfected over years, resulting in a roof coating designed to be easy to use and apply, spray smoothly and evenly and lie equally well on metal or tiled roofs.

And best of all, Roofbond Roof Coating System is guaranteed for 10 years.

Australian Made, Australian Sourced

Shieldcoat choose to source paint ingredients from within Australia wherever possible. The ingredients used to formulate our roof coatings are the best available.

The Benefits of ROOFBOND

100% Acrylic Resin

ROOFBOND is a finest 100% acrylic resin, water-based coating with no unnecessary extenders

Low VOCs

Low VOCs (volatile organic compounds)

Long Durability

ROOFBOND can last more than 10 years. The re-paint cycle is 3 times longer than normal painting. Thus save cost and energy.

Choice of Colours

ROOFBOND is available in 8 popular colours.

Protection

- Protect roof tiles against
  a. Sun's visible & invisible heat rays (infrared, UV)
  b. Impact of rain.
  c. Anti Rust (Metal Roof)
  d. Anti Fungus/Moss.
- Water resistant.

Warranty

10 years warranty against paint peeling or paint cracking.

Cement roof restoration process

Step 1 Wash

High pressure roof washing with a water blaster to remove dirt and fungus.

Step 2 Repair

Inspect and repair rtoofing.

Step 3 Mouldshield

Apply Mouldshield anti-fungus formula to prevent fungus growth.

Step 4 Shieldseal W

Apply Shieldseal W (sealer) using airless spray machine to seal porous surface.

Step 5 Roofbond Roofing Paint

High pressure roof washing with a water blaster to remove dirt and fungus.

COMPLETE

Metal roof restoration process

Step 1 Wash

High pressure roof washing with a water blaster to remove dirt

Step 2 Repair

Inspect and repair rtoofing.

Step 3 Shieldseal W

Apply Mouldshield anti-fungus formula to prevent fungus growth.

Step 4 Roofbond Roofing Paint

Apply Shieldseal W (sealer) using airless spray machine to seal porous surface.

COMPLETE

Can Roofbond last?
There are Living Proof in town!

Chinese Chamber of Commerce Batu Pahat's roofing is coated with ROOFBOND Coating and restored at year 1999. After 19 years, it's roofing still looking good and in good condition.

Still look good after 19 years!

B. Roofbond Roof Coating System

ii. Product Information

ROOFBOND
ROOFING PAINT

PRODUCT INFORMATION

Shieldcoat's Roofbond coating systems are manufactured to withstand Australia's unique and demanding climate, using an all acrylic binder specifically recommended for roof refurbishment applications.

Shieldcoat has chosen the best resin available on the market for this product. The criteria for Shieldcoat's choice is based on the resin's characteristics including durability, wet adhesion properties, gloss retention, low dirt pick up, low water sensitivity and through dry capabilities.

The resin chosen for the system is based on a highly UV resistant pure acrylic technology, which has been an industry bench mark for adhesion, gloss and colour retention for over 30 years. Its durability and performance have been proven over many harsh Australian and in particular many harsh Queensland seasons. Whilst its cost is premium, it will always remain the choice because of its quality and consistency.

Some key features and benefits of Shieldcoat's unique formulation are:

- Excellent exterior durability
- High gloss level
- Fast hardness development
- Superior Coverage/Hide
- Good water resistance
- Mould and Lichen resistant
- Safe for collecting drinking water. (Leave 7days or until after the first rain)

Shieldcoat's commitment to consistent quality means that even the colours used to make Roofbond products are produced in the factory to our own rigid requirements. The pigments used have been chosen for their durability and all are listed as 8 on a scale of 1-8 (Ratings for Xenotest exposure. Grading: 1=Poor; 8=Excellent). This control over the entire paint production process means the ability to produce colours specific to the customer's requirement, even to the levels of gloss where required.

No unnecessary fillers or extenders are added to the product, thus ensuring the best gloss finish available and the *highest resin ratio* of any like manufacturer. Simply put, all the raw materials used to produce one bucket of Roofbond are the highest quality products available on the market today.

Roofbond - quite possibly the best paint in the world.

SHIELDCOAT PTY LTD
2/1075 Beaudesert Road, Archerfield, QLD 4108
Ph: 07 3274 6911 – Fax: 07 32746414
www.shieldcoat.com.au info@shieldcoat.com.au

B. Roofbond Roof Coating System

iii. MSDS

ABN: 79 090 620 410
Unit 2/1075 Beaudesert Road
ARCHERFIELD QLD 4108
Phone: (07) 3274 6911
Fax: (07) 3274 6414
www.shieldcoat.com.au

MATERIAL SAFETY DATA SHEET INFORMATION

For further information: Please refer to the Material Safety Data Sheet following

Issue: September 07

PRODUCT: Roofbond Roofing Membrane

Other Names: None

Uses: Construction materials

UN No.:	N/R
Dangerous Goods Class:	N/R
Subsidiary Risk:	None
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	N/R

Hazardous Nature:	This product is not hazardous according to Australian Safety and Compensation Council criteria.
Exposure Standards:	TWA: No data available for this type of product; STEL: No data available for this type of product; Peak Limitation (if any): No data available for this type of product; Skin Sensitiser (if any): No data available for this type of product. Refer to Section 8 for further information and definitions.

Physical Characteristics (Typical)	**Section 9 of the MSDS**
Appearance	Coloured, viscous liquid
Boiling Point/Range (°C):	> 100
Flash Point (°C):	Not applicable
Specific Gravity/Density (g/ml @ 15°C):	~1.05
pH:	7.0 - 8.0
Chemical Stability:	This product is stable at room temperature and pressure.
Reactivity:	None known

Product Ingredients		**Section 3 of the MSDS**
Ingredient	CAS Number	Proportion
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
For further ingredients information, please refer to the full MSDS		

Risk Phrases	**Section 2 of the MSDS**
Not hazardous: intentionally left blank	

DEFINITIONS

Dangerous Goods	Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5°C, a pH below 3 or above 11, are explosives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.
Hazardous Substances	Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.
Poisons	Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

SUMMARY INFORMATION ONLY

1. IDENTIFICATION

Product Name:	Roofbond Roofing Membrane
Other Names:	None
Chemical Family:	Liquid Glaze
Molecular Formula:	Not Applicable
Recommended Use:	Construction materials
Supplier:	Shieldcoat Pty Ltd
ABN:	79 090 620 410
Address:	2/1075 Beaudesert Road, Archerfield Qld 4108
Telephone:	+61 7 3274 6911
Fax:	+61 7 3274 6414
Emergency Phone:	**0414 479 458**
All other inquiries:	+61 7 3274 6911

2. HAZARDS IDENTIFICATION

Hazard Classification

This product is not hazardous according to Australian Safety and Compensation Council criteria.

Hazard Category

This section is intentionally left blank.

Risk Phrases

Not hazardous: intentionally left blank

Safety Phrases

Not hazardous: intentionally left blank

Dangerous Goods Classification

N/R

Poisons Schedule

N/R

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS Number	Proportion (% v/v)
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
Mould inhibitor	various	< 0.1
Surfactants	various	< 2.0

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affective victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Seek immediate medical attention.

First Aid Facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress providing fire fighters with this Material Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable Extinguishing Media

Product will not burn.

Hazards from combustion products

None: product will not burn.

Precautions for fire fighters and special protective equipment

None: product will not burn.

Hazchem Code

N/R

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent product from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours or dusts from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard, where present.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled product using the resources in the spill kit.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard, where present.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.

- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See “First Aid Measures” and “Stability and Reactivity”.

7. HANDLING AND STORAGE

Precautions for Safe Handling

There are no specific safety requirements for handling this product. Standard industrial hygiene and safety practice is recommended when using this product.

Conditions for Safe Storage

There are no specific safety requirements for storing this product. Consider checking containers for leaks periodically and protect the packaging from physical damage (store out of direct sunlight, away from high traffic areas, etc.).

Incompatible Materials

None known

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: No data available for this type of product, which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short term exposure limit (STEL) is: No data available for this type of product, which is the maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a Peak Limitation value (Peak): None applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitiser, represented as (Sk), where none applies in this case.

Biological Limit Values (BLV)

No data available for this type of product

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion proof equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may approach or exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type ‘A’ filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/Body Protection: Always wear long sleeves, long trousers, or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical Value
Appearance	None	Clear, viscous liquid
Boiling Point/Range	°C	> 100
Flash Point	°C	Not applicable
SG/Density (@ 15°C)	g/ml; kgm^{-3}	~1.05
Vapour Pressure @ 20°C	kPa	No data available
Vapour Density @ 20°C	g/ml; kgm^{-3}	No data available
Autoignition Temperature	°C	Not applicable

Property	Unit of measurement	Typical Value
Explosive Limits in Air	% vol/vol	Not applicable
Viscosity @ 20°C	cPs, mPas	> 400
Percent volatiles	% vol/vol	40%
Acidity/alkalinity as pH	None	7.0 - 8.0
Solubility in Water	g/l	Water soluble
Other solvents	-	None

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Technical Data Sheet.

10. STABILITY AND REACTIVITY

Chemical stability

This product is stable at room temperature and pressure.

Conditions to avoid

None known

Hazardous decomposition products

None known

Hazardous reactions

None known

Hazardous polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Effects

Ingestion

Ingestion will result in discomfort on swallowing. No narcotic effects are expected.

Eye Contact

This product will cause discomfort to the eye and surrounding tissue. These effects will subside with appropriate First Aid.

Skin Contact

This product is unlikely have any effect on the skin, however, individuals with pre-existing skin conditions may experience some sensitivity.

Inhalation

Inhalation of this product is unlikely and no vapours are present in the formula.

Chronic Effects

None known

Other Health Effects Information

None known

Toxicological Information

Oral LD_{50}: No data available

Dermal LD_{50}: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity:

Fish Toxicity LC_{50}: No data available
Daphnia Magna EC_{50}: No data available
Blue-green algae: No data available
Green algae: No data available

Persistence/Biodegradability:

This product is expected to persist.

Mobility:

This product is unlikely to be very mobile.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure that empty packaging is managed in accordance with Dangerous Goods regulations.

Special Precautions

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be incinerated in a regulated facility. In the absence of a designated industrial incinerator, this product should be treated and disposed through chemical waste treatment, or considered for use in solvent recycling.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	N/R	UN No.	N/R	UN No.	N/R
Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating
DG Class	N/R	DG Class	N/R	DG Class	N/R
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	N/R	Packing Group	N/R	Packing Group	N/R
Hazchem	N/R	Hazchem	N/R	Hazchem	N/R

Dangerous Goods Segregation

This product is not classified as Dangerous Goods for Transport by Road and Rail.

15. REGULATORY INFORMATION

Country/Region: Australia

Inventory: AICS

Status: Listed

Poisons Schedule: N/R

16. OTHER INFORMATION

Reasons for Issue: Upgraded MSDS. New information in all sections.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

ASCC: Australian Safety and Compensation Council

References:

- Supplier Material Safety Data Sheets
- ***Sax's Dangerous Properties of Industrial Materials,*** Richard J Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Shieldcoat Pty Ltd.

B. Roofbond Roof Coating System

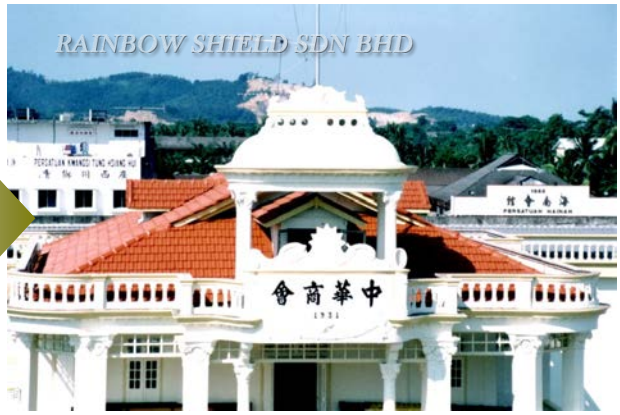
iv. Project Photos

Ling Shan Monastery - Palor 灵山寺 - 巴罗

Ling Shan Monastery - Palor 灵山寺 - 巴罗

RISDA - Bandar Baru Uda

Chinese Chamber of Commerce Batu Pahat 峇株巴辖中华商会



RAINBOW SHIELD SDN BHD

10 YEARS AFTER!

10 YEARS AFTER COMPLETION!

J . K . R . B a t u P a h a t

10 YEARS AFTER!

Moral Uplifting Society - Che Luan Kor - Kluang 德教会 – 紫銮阁 - 居銮

S I R I M


RAINBOW ROOFGUARD SDN BHD
彩虹屋瓦鍍層
有限公司
JEC
3100
PUSAT
INKUBATOR
SIRIM BERHAD
INCUBATOR
CENTRE
SIRIM BERHAD
SIRIM
RAINBOW SHIELD SDN BHD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P L U S T o l


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RAINBOW SHIELD SDN BHD


SCANIA
RAINBOW SHIELD SDN BHD

Majlis Perbandaran Johor Bahru Tengah - MPJBT

Syarikat Air Johor (S.A.J.) Kota Tinggi

Chemical Building

Syarikat Air Johor (S.A.J.) Kota Tinggi

Workshop

Chlorine Building

Power Plant

Syarikat Air Johor (S.A.J.) Kota Tinggi

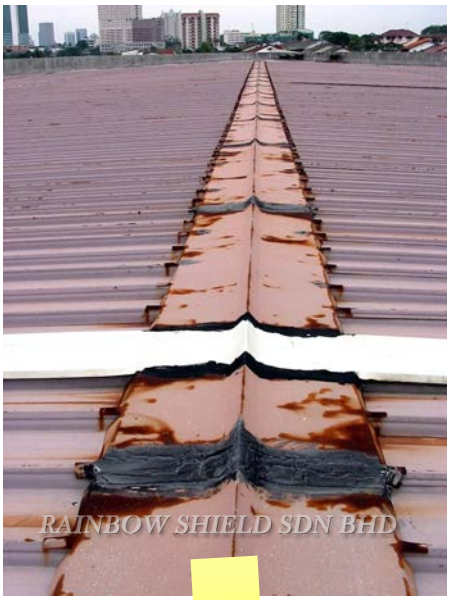
Treated Water Pumping System

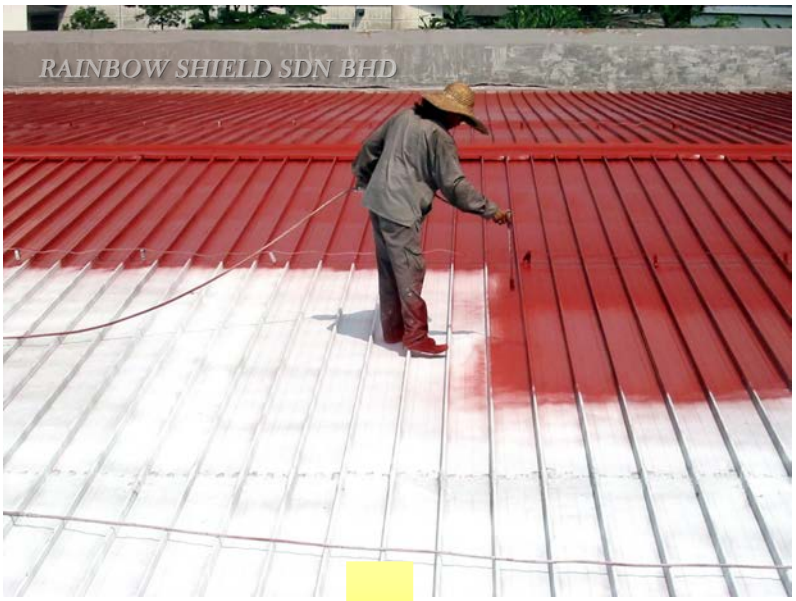
Filtration Building

Yew Lee Metal Works Sdn.Bhd.有利金屬有限公司

Cathedral Sacred Heart of Jesus 耶酥圣心主教座堂

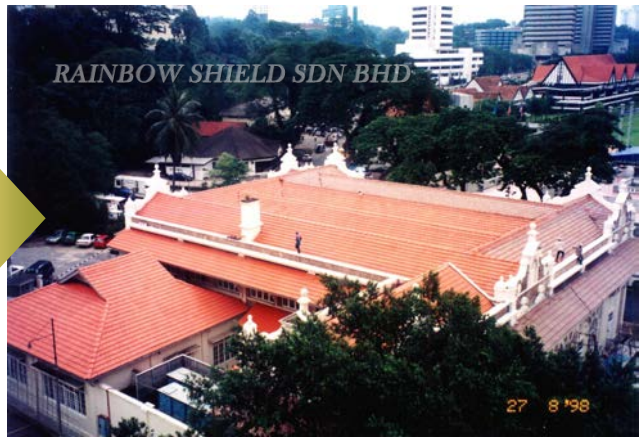
Holiday Plaza – Parkson Grand 假日广场 - 百盛





慈光亭

Pustaka Peringatan



天后宫

Increase the life span of your roof

Over

20 years

C. Thermobond Heat Reflective Coating

i. Introduction

THERMOBOND HRC

Keeps you cool - when the heat is on!

For Roof and Exterior Walls

THERMOBOND HRC

Keeps you cool - when the heat is on!

Thermobind HRC is a ultimate surface coating that will not only give you the best looking roof in the street, it will help you keep your cool on even the hottest of days!

Thermobond is specifically designed to reflects solar heat from the sun, result in reducing amount of heat being transferred inside buildings and houses, creates a more comfort environment.

Thermobond HRC can be applied to all roofing surfaces, including Colourbond, Galvanised Iron, Cement Tiles, Fibro Decramastic Cement. Thermobond HRC is also suitable to apply on exterior walls.

The Benefits

- Water-based 100% acrylic coating
- 10 years paint warranty against paint peeling/cracking
- Superior heat reflection
- Cost effective
- Environmentally friendly
- Low maintenance
- Available in various fashionable pastel colours
- Reduces air-conditiong costs by 21%

THERMOBOND HRC Cools you down

After exposing to the sun for a period of time, building surface will absorb a lot of heat. Roof and exterior walls exposed to direct sun light, absorbs most of the heat and transfers .the heat into the building

As an enclosed area, roof cavity will have a relatively high temperature than the ambient temperature (outside air temperature). The heat absorbed by the roof is transferred into the cavity will heat up the entire building, raising in house temperature, thus increase .cooling and energy cost

By using Shieldcoats Thermobond HRC Heat Reflective Coatings on substrates (roofs and walls) that exposed to the sun, we are reflecting and blocking solar heat before it can penetrate. Resulting in lower temperatures on substrates, preventing heat build up and reducing heat transfer to ceiling cavity. By reducing ceiling cavity temperature by 80%, we are now creating a more comfortable interiors - reducing cooling cost, energy costs and .green house emissions

Without

THERMOBOND HRC

- Heat,
- Indoor temperature
- Cooling cost

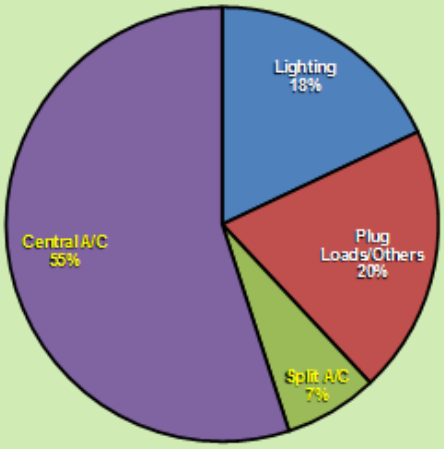
With

THERMOBOND HRC

- Heat,
- Indoor temperature
- Cooling cost

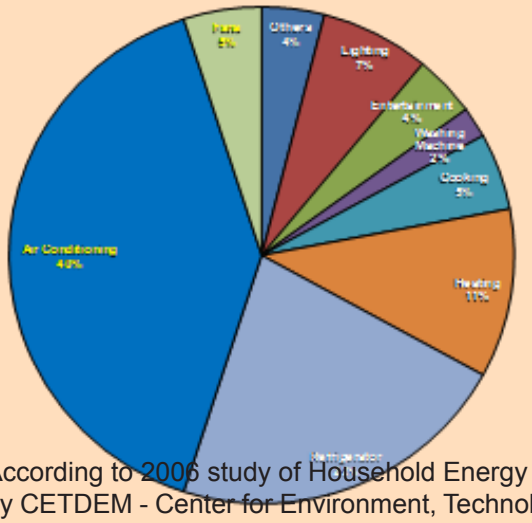
Save Energy
=
Save Money

COMMERCIAL BUILDINGS POWER CONSUMPTION



The major commercial building end-uses in Malaysia, referring to the Engergy Audit in Government Buildings by Pusat Tenaga Malaysia in 2003.

HOUSEHOLD POWER CONSUMPTION



According to 2006 study of Household Energy use by CETDEM - Center for Environment, Technology and Development, Malaysia, found the average home electricity consumption pie chart as shown in below.

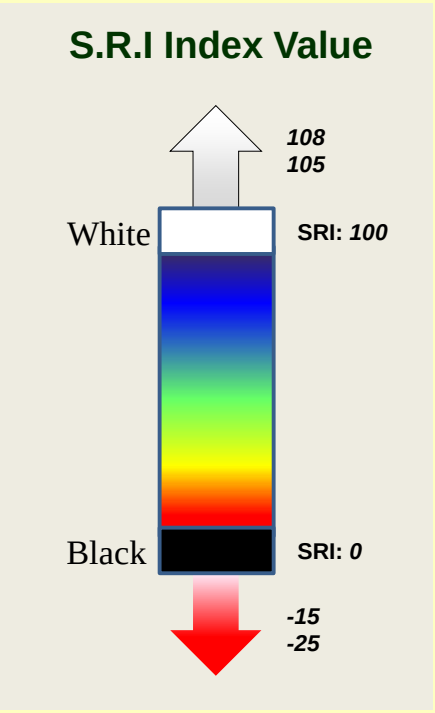
Charts above indicate that cooling, including air conditionings and fans, takes up huge amount of the average electricity consumption: 55%~62% for commercial building, 45% for household. Therefore, the most effective way to cut electrical cost is to find a way to reduce the use of air conditionings and fans.

Thermobond HRC is able to cool down your building passively, reduce your air conditioning cost up to 21% annually!

Solar Reflective Index (S.R.I)

is a measure of the solar reflectance and emissivity of materials, to indicate how hot they are likely to become when solar radiation is incident on their surface. The lower the SRI, the hotter a material is likely to become in the sunshine.

- Standard black (reflectivity 5%, emissivity 90%) has an index of 0
- Standard white (reflectivity 80%, emissivity 90%) has an index of 100.
- Very hot materials can actually have negative values
- Very cool materials can have values greater than 100.



Cool roof properties

For a heat reflectant coating to work it has to have a very high Solar Reflective Index to stop heat ingrerss (SRI above 65% is the minimum requirement), very high emissivity to allow fast heat emission (above 85%) and a minimum dry film thickness of 150µm (which can be achieved in 2 coats). A thin coating (75µm or less dry film thickness of heat reflectant paint would only prevent heat ingress for a short period of time.

How THERMOBOND HRC Performs?

THERMOBOND HRC simply does not allow the passage of heat from the visible and visible light spectrum to reach the substrate. The coating blocks the invisible and invisible light/heat rays with specialis pigments not present in other coatings, and because of its very high emission rate it does not readily store heat. If any heat is retained by the substrate it is rapidly released.

Requirement of Cool Roof Paint	THERMOBOND WHITE
Solar Reflectivity > 65%	88%
Solar Emissivity > 85%	88%
Minimum Dry Film Thickness 200µm	220µm
Infrared Blocking Additives	YES
Minimum **S.R.I. Value**: At least 82.5	116

A good heat reflective coating should have a S.R.I. (Solar Reflective Index) of at least 82.5 or higher - Thermobond S.R.I. 116.
A good heat reflective coating should have at least 65% Solar Reflectance - Thermobond and thermotex (render range) has 88% Solar Reflectance.
A good heat reflective coating should have at least a 85% Emittance - Thermobond and Thermotex (render range) has 88% Emittance.

/https://surfaceoptics.com/applications/leed-solar-reflectance-index-measurements-cool-roof

More about Solar Reflectance Index

How to Qualify Building Materials for LEED and the Heat Island Reduction Credit

Building designers and developers that are pursuing the Heat island reduction credit for LEED certification require documentation of the Solar Reflectance Index (SRI) for their project's roofing materials, shade giving structures, and paving materials.

Under the U.S. Green Building Council's LEED 2009 rating system, credits SSc7.1 and SSc7.2 (combined as credit SSc5 in LEED v4) are intended to minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

To satisfy the requirements of the Heat Island reduction credits, a certain percentage of the hardscape and roofing must have a high solar reflectance index.

> The solar reflectance index (SRI) is a measure of the constructed surface's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standard black surface (reflectance 0.05, emittance 0.90) is 0 and a standard white surface (reflectance 0.80, emittance 0.90) is 100.[1]
>
> *- U.S. Green Building Council*

HOW DO I OBTAIN SRI VALUES FOR MY BUILDING MATERIALS?

LEED requires specific SRI values for your individual product or material. There are three ways to obtain SRI data and documentation for LEED credit[2]:

1. **Ask the manufacturer.** Your product's specifications may already be available in the form of a manufacturer datasheet which can be used as LEED documentation.
2. **Lab Testing.** In cases where the manufacturer can not provide the SRI of a material, the USGBC allows for SRI values to be obtained from a laboratory following the appropriate ASTM standards for reflectivity and emissivity testing.

> SRI is calculated according to ASTM E 1980. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E408 or ASTM C 1371.
>
> *- U.S. Green Building Council*

By sending in a small sample of your building material, the Surface Optics Measurements Lab can perform SRI testing in accordance with ASTM and LEED requirements. Solar Absorptance (and it's associated Solar Reflectance) and Total Emittance can be derived from Hemispherical Directional Reflectance (HDR) measurements. Surface Optics Corporation has been making HDR measurements for over 35 years.

DATA REPORT FOR YOUR SAMPLE INCLUDES

Test	Test Method	Equipment Used
Reflectance	ASTM E903 – Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres	Hemispherical Directional Reflectometer
Emittance	ASTM E408 – Standard Test Method for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques	Hemispherical Directional Reflectometer
Solar Reflectance Index	ASTM E 1980 – Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces	SRI Calculator

Use our contact form to tell our lab how many material samples you want tested and get a quote today.

3. **In-Place Testing.** When laboratory testing isn't an option for your project, solar reflectance and thermal emittance data can be captured on-site using a portable reflectometer and emissometer.

PRODUCTS FOR ON-SITE MEASUREMENTS

thermal emittance data can be captured on-site using a portable reflectometer and emissometer.

PRODUCTS FOR ON-SITE MEASUREMENTS

Test	Test Method	Equipment Used
Reflectance	ASTM C1549 – Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer	410-Solar Visible / NIR Portable Reflectometer Product Details
Emittance	ASTM E408 – Standard Test Method for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques	ET-100 Thermal Handheld Emissometer Product Details
Reflectance and Emittance	ASTM C1549 and ASTM E408	410-Vis-IR Portable Emissometer & Solar Reflectometer Product Details
Solar Reflectance Index	ASTM E 1980 – Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces	SRI Calculator

WHAT SRI VALUES DO BUILDING MATERIALS NEED FOR LEED?

As shown in Table 1, the minimum SRI for cool roofing has increased in the newer LEED v4. In the earlier LEED 2009 requirements, cool roofing did not consider aged SRI as an option for qualification. Projects seeking LEED v4 have the option of qualifying using either initial SRI or by obtaining the 3-year aged SRI value. Surface Optics does not perform aged SRI testing.

Table 1. Minimum SRI for Cool Roof Materials in LEED 2009 vs. LEED v4

		Slope	Initial SRI	3 year aged SRI
LEED 2009	Low sloped roof	≤ 2:12	78	—
	Steep-sloped roof	> 2:12	29	—
	Parking Cover	—	29	—
LEED v4	Low sloped roof	≤ 2:12	82	64
	Steep-sloped roof	> 2:12	39	32
	Parking Cover	—	39	32

The impact of hardscape such as roads, sidewalks, courtyards, and parking lots is an important element in earning the Heat Island reduction credit. Table 2 shows the requirements for hardscape and shade providing architectural devices and structures. In LEED version 4, paving materials require documentation for Solar Reflectance only, not the SRI asked for in LEED 2009.

Table 2. Minimum Solar Reflectance for Hardscape in LEED 2009 vs. LEED v4

	Metric	Initial	3-year aged
LEED 2009	Solar Reflectance Index	29	—
LEED v4	Solar Reflectance	0.33	0.28

HEAT ISLAND REDUCTION CREDIT CHANGES IN LEED V4

Project teams are allowed to register for either LEED v4 or LEED 2009 until June 1, 2015, after which LEED v4 will be the required rating system. USGBC has made some changes to the Heat Island reduction credit requirements for version 4, which are:

- Combined Sustainable Sites credits *7.1: Heat Island Effect — Non-Roof* and *7.2: Heat Island Effect – Roof* into a single credit *SSc5: Heat Island Reduction*.
- Increased the SRI requirements for cool roofing materials
- Included 3-year aged SRI/ SR values as an alternative option for product qualification
- Incorporated a weighted average SRI calculation methodology
- Changed the metric by which hardscape paving materials are measured from SRI to Solar Reflectance (SR)
- Increased minimum percent of parking spaces under cover from 50% to 75% to qualify

1. U.S. Green Building Council (2009). Heat island effect – roof. Retrieved May 29, 2014, from http://www.usgbc.org/node/1731100?return=/credits/new-construction/v2009

2. U.S. Green Building Council (2012, October 4). *LEED Reference Guide for Green Building Design and Construction with Global Alternative Compliance Paths*. Retrieved June 3, 2014, from http://www.usgbc.org/sites/default/files/LEED%202009%20RG%20BD+CSupplement_GLOBAL_12_2013_Heat_Island_Update.pdf

Thermal Test

To prove the effectiveness of Thermobond, we can run a thermal test on a piece of concrete slab.

How is the test conducted?

A concrete slab is separated in 3 parts. One without any coating, another one with Thermobond HRC, and the last painted with normal paint.

The concrete slab is then placed under the sun from 12.00pm to 1.30pm to allow heat
absorption..

At 1.30pm, we test the temperature of all concrete surfaces with a Thermal tester

The result s were:

Cement: 61.7°C
Normal Paint: 59.6°C
Thermobond HRC: 48°C

It shows that Thermobond is 21% cooler than cement (without any paint) and 19% cooler than normal paint!

C. Thermobond Heat Reflective Coating

ii. Product Information

THERMOBOND HRC

Keeps you cool - when the heat is on!

Product Information

The Simple Stuff:

Shieldcoat's **Thermobond HRC** (heat reflective coating) keeps you cool when the heat is on by reflecting solar infrared and visible rays that cause the build up of heat in roof cavities creating more comfortable interiors. It is cost effective, attractive, easily maintained, environmentally friendly and available in white and most pastel colours. Thermobond HRC is one of the most advanced, high performance acrylics available on the market today utilising only the best available raw materials in production to ensure it will easily last beyond its 10 year guarantee.

Thermobond HRC was formulated for optimum performance over all roofing substrates including:

- Colorbond
- Bare Galvanised Iron
- Cement Tiles
- Decramastic
- Fibro
- Cement Sheeting
- Masonry

This makes it suitable for **domestic** and **commercial applications** such as houses, steel garages, sheds, industrial sheds, caravans, patios, farm sheds, pipelines, storage tanks and more. Its environmentally friendly ingredients make it ideal for use on roofs used to **collect drinking water** as well!

Roofs are the most exposed areas on a building and are especially responsible for heat re-radiation into ceiling cavities and flat roof buildings due to the poor insulative qualities of most roofing systems. As a consequence the inside air temperature gets a lot hotter than the outside air temperature, creating a "hot" house effect.

Coating a roof with Thermobond HRC will prevent heat re-radiation into ceiling cavities and buildings thus creating more **comfortable interiors**.

Example:

On a sunny summer's day where the ambient air temperature is 31°C, your ceiling cavity temperature can reach as high as 55°C-60°C. Once Thermobond HRC is applied the cavity will reach only 35°C-38°C, just a few degrees above outside ambient temperature. Then, if the overnight air temperature is lower, (as it usually is) the ceiling cavity will actually remain cooler than the outside air temperature, creating a "cool" house.

Thermobond HRC is made up of an **highly UV resistant** pure acrylic resin* specifically recommended for heat reflectant coating applications as it possesses the required hardness, adhesion and gloss retention qualities needed to make the **best possible finished product**. The hardness of the resin is double that of the most popular coatings. This ensures very low dirt pickup properties whilst still maintaining its thermo plasticity. Its durability and performance have been proven over many harsh Australian seasons.

The system employs a "second generation" formula for heat reflectant coatings which has in it expensive **specialist pigments** and fillers designed to re-radiate all spectrums of light/heat rays, including visible light and infra-red (which make up 97% of heat from the sun).

All this means that applying Thermobond HRC to your roof can actually save you money. How? Independent tests carried out project a **saving of up to 21% a year** on air-conditioning costs, if Thermobond HRC is applied to the roof. Tests carried out in December 1997 reported the following:

4 Panels, (600 x 600mm)

1. Galvanized iron coated in a traditional roof red.
2. Plain zincalume.
3. Colorbond Off White.
4. Zincalume coated with 2 coats of Thermobond HRC.

All panels were placed facing due west in full summer sun conditions. Digital thermometers were placed 50mm under and away from each panel. Readings were taken from 1pm to 4pm, every 30 minutes. At 2.30pm the ambient air temperature was 31.6°C, the highest temperature recorded. Relative humidity was 82%.

The three panels without Thermobond HRC measured a re-radiated temperature of between 52.4°C and 58.7°C degrees Celsius, the Off White being the lowest and the zincalume the highest. The Colorbond Off White panel temperature was surprisingly high.

The panel with Thermobond HRC measured a re-radiated temperature of 35.6°C. The difference observed was between 18.8°C and 23.1°C. The panel with Thermobond HRC never exceeded 35.6°C.

*The resin or binder is the main ingredient in any coating or paint system and therefore it is crucial that the one chosen is specific for its application and of the highest quality.

The Proof cont:

Emittance is a measure of a material to release heat in the form of Infrared radiation. A very high emittance rating would be 0.90 or 90%, and a low emittance rating would be 0.06 or 6%. Again the result for **Thermobond HRC**, both white and beige of 0.88 or 88% is outstanding.

Solar Reflective Index (SRI) is the real measure of a coatings performance as a heat reflectant system. The system was developed by the Dr Paul Berdahl of Lawrence Berkely Institute at the University of California. This index takes into account the products solar reflectivity, its infrared emittance and any subsequent temperature rise. This index is calculated using ASTM E 1980. It gives a value relative to a standard black and a standard white surface. The standard black surface is assumed to have solar reflectance of 5% and thermal emittance of 90%, and the standard white surface has solar reflectance of 80% and thermal emittance of 90%.

Dr Lisa Gartland, Director of PositivEnergy in Oakland California wrote in her email dated 18th September 2003 that ***"….Your white product performs better than the standard white surface, so it has an SRI value higher than 100. Your brown*** (beige) ***products also perform very well….."*** Dr Gartland calculated the SRI for our white Thermobond HRC to be **110.5** and the beige to be **98.9**. Dr Gartland also stated that ***"… The State of California is considering defining a cool roof as one with a solar reflectance of 70% or higher and a thermal emittance of 75% or higher, for an SRI of 82.5 or higher…."***
Obviously **Thermobond HRC** in both white and beige far exceeds the requirements for an effective heat reflectant coating.

The Tricky Stuff:

WHY HEAT REFLECTANT COATINGS REALLY DO WORK

Heat reflectant coatings operate on three levels that involve: solar reflectivity, heat emissivity (*noun - Thermodynamics:* the ability of a surface to emit radiant energy compared to that of a black body at the same temperature and with the same area) and coating thickness.

To illustrate: Zincalume roofs have a very high solar reflective index but a very poor heat emission rate. That's why they reradiate intense heat underneath that can reach temperatures exceeding 60°C. Its emission rate is slower than its ingress rate and thus the heat build-up.

So, for a heat reflectant coating to work it has to have a very high Solar Reflective Index to stop heat ingress (SRI above 50% is the minimum requirement), very high emissivity to allow fast heat emission (above 80%) and a minimum dry film thickness of 150um (which can be achieved in 2 coats). A thin coating (75um or less dry film thickness) of heat reflectant paint would only prevent heat ingress for a short period of time.

This specialised high build coating simply does not allow the passage of heat from the visible and invisible light spectrum to reach the substrate. The coating **blocks the visible and invisible light/heat rays** with specialist pigments **not present in other coatings**, and because of its very high emission rate it does not readily store heat. If any heat is retained by the substrate it is rapidly released.

The Proof:

AMERICAN ASTM TEST METHODS & COMMENTS FROM CSIRO & POSITIVEnergy COMMISSION

On September 15th 2003, PRI Asphalt Technologies Inc. (6408 Badger Drive, Tampa, Florida) tested 4 samples of Shieldcoat's **Thermobond HRC**. They were given two white and two beige samples for the purpose of determining the solar reflectance and emittance properties. The samples for testing were received from Uni-Glaze (17927 Ida Drive, Los Gatos, California), the principal distributor of Shieldcoat's **Thermobond HRC** in the U.S. The actual tests results are attached. The following is a summary of the results:

The tests were conducted against ASTM C 1549: Standard test method for determination of Solar Reflectance and ASTM C 1371: Standard test method for determination of Infrared Emission. Both of these methods are Cool Roof Rating Council (CRRC) accepted methods for determining these properties.

Solar Reflectance is the amount of visible light/heat reflected by the coatings surface. Typically a reflectance of a high quality white commercial paint would be around 82-84%, some white coatings can be as low as 70% or less. A result of **88%** for the white Thermobond HRC is an excellent value.

The solar reflectance results for the beige samples were also exceptional at 79.5%.

C. Thermobond Heat Reflective Coating

iii. MSDS

ABN: 79 090 620 410
Unit 2/1075 Beaudesert Road
ARCHERFIELD QLD 4108
Phone: (07) 3274 6911
Fax: (07) 3274 6414
www.shieldcoat.com.au

MATERIAL SAFETY DATA SHEET INFORMATION

For further information: Please refer to the Material Safety Data Sheet following

Issue: September 07

PRODUCT: Thermobond HRC

Other Names: None

Uses: Construction materials

UN No.:	N/R
Dangerous Goods Class:	N/R
Subsidiary Risk:	None
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	N/R

Hazardous Nature:	This product is not hazardous according to Australian Safety and Compensation Council criteria.
Exposure Standards:	TWA: No data available for this type of product; STEL: No data available for this type of product; Peak Limitation (if any): None; Skin Sensitiser (if any): none. Refer to Section 8 for further information and definitions.

Physical Characteristics (Typical)	**Section 9 of the MSDS**
Appearance	White coloured, viscous liquid
Boiling Point/Range (°C):	> 100
Flash Point (°C):	Not applicable
Specific Gravity/Density (g/ml @ 15°C):	~1.05
pH:	7.0 - 8.0
Chemical Stability:	This product is stable at room temperature and pressure.
Reactivity:	None known

Product Ingredients		**Section 3 of the MSDS**
Ingredient	CAS Number	Proportion
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
For further ingredients information, please refer to the full MSDS		

Risk Phrases	**Section 2 of the MSDS**
Not hazardous: intentionally left blank	

DEFINITIONS

Dangerous Goods	Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5°C, a pH below 3 or above 11, are explosives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.
Hazardous Substances	Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.
Poisons	Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

1. IDENTIFICATION

Product Name:	Thermobond HRC
Other Names:	None
Chemical Family:	Liquid Glaze
Molecular Formula:	Not Applicable
Recommended Use:	Construction materials
Supplier:	Shieldcoat Pty Ltd
ABN:	79 090 620 410
Address:	2/1075 Beaudesert Road, Archerfield Qld 4108
Telephone:	+61 7 3274 6911
Fax:	+61 7 3274 6414
Emergency Phone:	**0414 479 458**
All other inquiries:	+61 7 3274 6911

2. HAZARDS IDENTIFICATION

Hazard Classification

This product is not hazardous according to Australian Safety and Compensation Council criteria.

Hazard Category

This section is intentionally left blank.

Risk Phrases

Not hazardous: intentionally left blank

Safety Phrases

Not hazardous: intentionally left blank

Dangerous Goods Classification

N/R

Poisons Schedule

N/R

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS Number	Proportion (% v/v)
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
Mould inhibitor	various	< 0.1
Surfactants	various	< 2.0

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affective victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Seek immediate medical attention.

First Aid Facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress providing fire fighters with this Material Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable Extinguishing Media

Product will not burn.

Hazards from combustion products

None: product will not burn.

Precautions for fire fighters and special protective equipment

None: product will not burn.

Hazchem Code

N/R

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent product from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours or dusts from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard, where present.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled product using the resources in the spill kit.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard, where present.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.

- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See “First Aid Measures” and “Stability and Reactivity”.

7. HANDLING AND STORAGE

Precautions for Safe Handling

There are no specific safety requirements for handling this product. Standard industrial hygiene and safety practice is recommended when using this product.

Conditions for Safe Storage

There are no specific safety requirements for storing this product. Consider checking containers for leaks periodically and protect the packaging from physical damage (store out of direct sunlight, away from high traffic areas, etc.).

Incompatible Materials

None known

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: No data available for this type of product, which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short term exposure limit (STEL) is: No data available for this type of product, which is the maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a Peak Limitation value (Peak): None applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitiser, represented as (Sk), where none applies in this case.

Biological Limit Values (BLV)

No data available for this type of product

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion proof equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may approach or exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type ‘A’ filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/Body Protection: Always wear long sleeves, long trousers, or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical Value
Appearance	None	Clear, viscous liquid
Boiling Point/Range	°C	> 100
Flash Point	°C	Not applicable
SG/Density (@ 15°C)	g/ml; kgm^{-3}	~1.05
Vapour Pressure @ 20°C	kPa	No data available
Vapour Density @ 20°C	g/ml; kgm^{-3}	No data available
Autoignition Temperature	°C	Not applicable

Property	Unit of measurement	Typical Value
Explosive Limits in Air	% vol/vol	Not applicable
Viscosity @ 20°C	cPs, mPas	> 400
Percent volatiles	% vol/vol	40%
Acidity/alkalinity as pH	None	7.0 - 8.0
Solubility in Water	g/l	Water soluble
Other solvents	-	None

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Technical Data Sheet.

10. STABILITY AND REACTIVITY

Chemical stability

This product is stable at room temperature and pressure.

Conditions to avoid

None known

Hazardous decomposition products

None known

Hazardous reactions

None known

Hazardous polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Effects

Ingestion

Ingestion will result in discomfort on swallowing. No narcotic effects are expected.

Eye Contact

This product will cause discomfort to the eye and surrounding tissue. These effects will subside with appropriate First Aid.

Skin Contact

This product is unlikely have any effect on the skin, however, individuals with pre-existing skin conditions may experience some sensitivity.

Inhalation

Inhalation of this product is unlikely and no vapours are present in the formula.

Chronic Effects

None known

Other Health Effects Information

None known

Toxicological Information

Oral LD_{50}: No data available

Dermal LD_{50}: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity:

Fish Toxicity LC_{50}: No data available
Daphnia Magna EC_{50}: No data available
Blue-green algae: No data available
Green algae: No data available

Persistence/Biodegradability:

This product is expected to persist.

Mobility:

This product is unlikely to be very mobile.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure that empty packaging is managed in accordance with Dangerous Goods regulations.

Special Precautions

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be incinerated in a regulated facility. In the absence of a designated industrial incinerator, this product should be treated and disposed through chemical waste treatment, or considered for use in solvent recycling.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	N/R	UN No.	N/R	UN No.	N/R
Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating
DG Class	N/R	DG Class	N/R	DG Class	N/R
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	N/R	Packing Group	N/R	Packing Group	N/R
Hazchem	N/R	Hazchem	N/R	Hazchem	N/R

Dangerous Goods Segregation

This product is not classified as Dangerous Goods for Transport by Road and Rail.

15. REGULATORY INFORMATION

Country/Region: Australia
Inventory: AICS
Status: Listed
Poisons Schedule: N/R

16. OTHER INFORMATION

Reasons for Issue: Upgraded MSDS. New information in all sections.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

ASCC: Australian Safety and Compensation Council

References:

- Supplier Material Safety Data Sheets
- ***Sax's Dangerous Properties of Industrial Materials,*** Richard J Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Shieldcoat Pty Ltd.

SHIELDCOAT PTY LTD
Unit 2/1075 Beaudesert Rd, Archerfield Q 4108
Phone: (07) 3274 6911 Fax: (07) 3274 6414
Email: info@shieldcoat.com.au Web: www.shieldcoat.com.au

Product Information: **THERMOBOND HRC**
Heat Reflective Coating

American ASTM Test Methods and comments from PositivEnergy Commission.

In September 15th, 2003, PRI Asphalt Technologies Inc. of 6408 Badger Drive, Tampa, Florida tested 4 samples of **Thermobond HRC**, 2 White and 2 Beige samples for the purpose of determining the solar reflectance and emittance properties. The samples for testing were received from Uni-Glaze of 17927 Ida Drive, Los Gatos, California. Uni-Glaze is the principal distributor of **Shieldcoat's Thermobond HRC** in the United States of America. The actual tests results are attached. Following is a summary of the results;

The tests were conducted against ASTM C 1549: Standard test method for determination of Solar Reflectance and ASTM C 1371: Standard test method for determination of Infrared Emittance. Both of these methods are Cool Roof Rating Council (CRRC) accepted methods for determining these properties.

Solar Reflectance is the amount of visible light / heat reflected by the surface. Typically a reflectance of a high quality white commercial paint would be around 82-84%, some white coatings can be as low as 70% or less. **A result of 88% for white Thermobond HRC is an excellent value**. **The solar reflectance results for the beige samples were also exceptional at 79.5%.**

Emittance is a measure of a material to release heat in the form of Infrared radiation. A very high emittance rating would be 0.90 or 90%, and a low emittance rating would be 0.06 or 6%. Again the result for **Thermobond HRC, both white and beige of 0.88 or 88% is outstanding.**

Solar Reflective Index (SRI) is the real measure of a coatings performance as a heat reflectant system. The system was developed by the Dr Paul Berdahl of Lawrence Berkely Institute at the University of California. This index takes into account the products solar reflectivity, its infrared emittance and any subsequent temperature rise. This index is calculated using ASTM E 1980. It gives a value relative to a standard black and a standard white surface. The standard black surface is assumed to have solar reflectance of 5% and thermal emittance of 90%, and the standard white surface has solar reflectance of 80% and thermal emittance of 90%.

Dr Lisa Gartland, Director of PositivEnergy in Oakland California wrote in her email of the 18th September 2003 that ***"….Your white product performs better than the standard white surface, so it has an SRI value higher than 100. Your brown*** (beige) ***products also perform very well….."*** Dr Gartland calculated the SRI for our white Thermobond HRC to be **110.5** and the beige to be **98.9**. Dr Gartland also stated that ***"… The State of California is considering defining a cool roof as one with a solar reflectance of 70% or higher and a thermal emittance of 75% or higher, for an SRI of 82.5 or higher…."***

Obviously **Thermobond HRC** in both white and beige far exceeds the requirements for an effective heat reflective coating.

Shieldcoat heat reflecting technology is used in the following products:

Thermobond HRC…… A water based acrylic heat reflective paint used traditionally to paint roofs

Textureshield Thermo …….. A water based acrylic heat reflective paint to coat timber walls, rendered walls and concrete tilt slab panel walls

Thermotex…… Comes in Alfresco polymer trowel on textures and Provencal brush, roll and glove applied polymer textures.

C. Thermobond Heat Reflective Coating

iv. Asphalt Technologies Tests Report

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PRI
ASPHALT
TECHNOLOGIES

Laboratory Report

Report for: Uni-Glaze
17927 Ida Drive
Los Gatos, CA 95033

Date: September 15, 2003

Attention: Chris Fisher

Purpose: The purpose of this testing was to determine the solar reflectance and emittance properties of two coatings.

Materials: The samples for testing were received from Uni-Glaze.
The samples were labeled as follows:

1. Thermobond HRC White: Batches: MS03080US, 1 and 2
2. Themobond HRC Berber Beige: Batches: MS0300831US, 1 and 2

Test Methods: The test methods used included ASTM C 1549: *Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Reflectometer* and ASTM C 1371: *Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.* Both of these methods are Cool Roof Rating Council (CRRC) accepted methods for determining these properties.

PRI Asphalt Technologies, Inc. 6408 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail mail@priasphalt.com WebSite: http://www.priasphalt.com

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Results of Testing: All measurements were conducted at laboratory conditions of 23 ± 2°C and 50 ± 5 percent relative humidity. The testing was conducted on **September 12, 2003**

Reflectance

Material ID	ASTM Test Method	Result, Solar Reflectance, Air Mass = 1.5					
Specimen No.		1	2	3	Avg.	SD	95% CI
Thermobond HRC White 1	C 1549	87.8	87.8	67.2	87.5	0.348	0.864
Thermobond HRC White 2	C 1549	87.4	87.5	88.1	87.7	0.378	0.939
Thermobond HRC Berber Beige 1	C 1549	78.1	78.1	78.0	78.1	0.054	0.135
Thermobond HRC Berber Beige 2	C 1549	77.8	77.5	77.8	77.7	0.115	0.285

Note: Reflectance measurements were conducted using a Devices and Services SSR-ER Version 5.0 reflectometer calibrated with Devices and Services Reference Standard: 0.807.
SD = Standard Deviation, 95% CI = 95% Confidence Interval

Emittance

Material ID	ASTM Test Method		Emittance, ε					
Specimen No.		Thickness, in	1	2	3	Avg.	SD	95% CI
Thermobond HRC White 1	C 1371	0.025	0.89	0.88	0.89	0.89	0.006	0.014
Thermobond HRC White 2	C 1371	0.025	0.84	0.85	0.87	0.85	0.015	0.038
Thermobond HRC Berber Beige 1	C 1371	0.025	0.88	0.88	0.88	0.88	-	-
Thermobond HRC Berber Beige 2	C 1371	0.025	0.87	0.89	0.88	0.88	0.006	0.014

Note: Emittance measurements were conducted using a Devices and Services Emissometer Model AE calibrated with Devices and Services Reference Standards: High Emittance: 0.90 and Low Emittance: 0.06.
Room Temperature: 25.0°C

Signed: Brian Bruns
Laboratory Technician

Approved: Donald C. Portolio
Vice - President

Date: 9/12/2003

Date: 9/15/2003

C. Thermobond Heat Reflective Coating

v. Asphalt Technologies Tests Certificate

PROTECTIVE COATING Solutions

Formulation - Application - Development • Specialists in Pure Acrylic Technologies

CERTIFICATE OF COMPLIANCE

CLIENT CERTIFICATE NO: 34105-21075

ISSUE DATE: 24th September 2007

ISSUED TO: Shieldcoat Pty Ltd
2/1075 Beaudesert Road
Archerfield, Brisbane
QLD 4108

Report References: Oak Ridge National Laboratories CA Report 6527, Asphalt Technologies Tempe Florida Lab Report(s) 15/03 and 04/04.

Product Description: Shieldcoat's Thermobond HRC (Heat Reflective Coating), also known as Textureshield Thermo and Thermotex (heat reflective acrylic render).

Product Use: Heat reflective barrier for walls, roofs, pipelines etc. Substitute and augment for insulation in Zones 1 & 2 to prevent heat gain.

This is to certify that representative samples of: Shieldcoat's Thermobond HRC (Heat Reflective Coating), also known as Textureshield Thermo and Thermotex (heat reflective acrylic render) have been investigated by PCS in accordance with the following standards:

ORNL Report 6527 test of 24 heat reflective membranes using standards ASTM C-177 (Thermal Conductivity) and ASTM C-1045 (Thermal Transmission), with results of K value-0.0454, Heat Flux Reduction 13,500BTU/Sq Ft or R22 (imperial). Metric R = 0.176 of imperial R value.

Current CRRC standard for Cool Coatings: Solar Reflectance, >70; Thermal Emittance, >75%;
SRI (Solar Reflective Index - a correlation between solar reflectance and infra red emittance), >82.5

Results of Shieldcoat's products tested at Asphalt Technologies:

ASTM C 1549 (Solar Reflectance): 20 = Poor, 90 = Excellent
Thermobond HRC in white = 87.8; Thermobond HRC in pastel colours = 78.1; Thermotex off white = 86.3.

ASTM C 1371 (Infra Red Emittance): 20% = Poor, 90% = Excellent
Thermobond HRC in white = 89%; Thermobond HRC in pastel colours = 88%; Thermotex off white = 87%.

SRI – Standard Scale 0-100: 20 = Poor, >100 = excellent
Thermobond HRC in white = 110.5; Thermobond HRC in pastel colours = 98.9; Thermotex off white = 108.9

Therefore Shieldcoat's products exceed the requirements as determined by ORNL Report 6527 being- K value-0.0454, Heat Flux Reduction 13,500BTU/SqFt

Subject to the following conditions:
Shieldcoat's Technical and Specification Guide inclusive of Application Instructions, Dry Film Thickness and Colour limitations.

By_____
Mark W Slater
Managing Director LTSC SCAA

Mark W Slater LTSC. SCAA 3 Myla Tce Tennyson Ph 0414 479458
email info@protectivecoatingsolutions com.au

C. Thermobond Heat Reflective Coating

vi. Project Photos

SHELL Petrol Station

FFM Marketing Sdn Bhd


RAINBOW SHIELD SDN BHD


RAINBOW SHIELD SDN BHD


RAINBOW SHIELD SDN BHD


RAINBOW SHIELD SDN BHD


RAINBOW SHIELD SDN BHD

SAMSUNG Electronics Display

D. Ultrashield

i. Introduction

ULTRASHIELD

Premium Interior/
Exterior Wall Coating

Superior Paint For A Superior Performance: Guaranteed.

Ultrashield is Shieldcoat's highly formulated interior/exterior paint. It has been formulated using only the highest quality raw materials for all components including a water base, pure acrylic resin normally only considered for use in roof coating. This no compromise approach has lead to what many experienced painters have called the best paint they have ever used. Guaranteed for 10 years, and expected to last well beyond this.

Ultrashield is one of the most advanced, high performance acrylic coatings on the market today, a high performance product specifically designed to protect and beautify your chosen surface.

- 10 Years warranty against paint peeling/cracking
- Silk like brush-ability,
- Superior coverage
- Self priming on most finished surfaces
- Dirt pick-up resistant,
- Washable,
- High scratch, mar resistance and moult resistant.

Ultrashield Exterior is a water-based, exterior acrylic coating suitable for most finished surfaces including timber, renders and concrete blocks, available in gloss, semi-gloss or low sheen. Our Ultrashield Thermo also provides protection from the heat, available in a boutique range of pastel colours.

Ultrashield Interior is the interior version, suitable for all interior surfaces. Ceiling white or a sealer is also available for Gyprock walls.

All Ultrashield Internal paints are available in Semi Gloss and Low Sheen and are tintable to most colours, and all wash up in water. Why not contact us to talk further about colours or how we can meet your specific requirements.

D. Ultrashield

ii. MSDS

ABN: 79 090 620 410
Unit 2/1075 Beaudesert Road
ARCHERFIELD QLD 4108
Phone: (07) 3274 6911
Fax: (07) 3274 6414
www.shieldcoat.com.au

MATERIAL SAFETY DATA SHEET INFORMATION

For further information: Please refer to the Material Safety Data Sheet following

Issue: October 10

PRODUCT: Ultrashield

Other Names: Textureshield Ultrashield

Uses: Construction materials

UN No.:	N/R
Dangerous Goods Class:	N/R
Subsidiary Risk:	None
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	N/R

Hazardous Nature:	This product is not hazardous according to Australian Safety and Compensation Council criteria.
Exposure Standards:	TWA: No data available for this type of product; STEL: No data available for this type of product; Peak Limitation (if any): None; Skin Sensitiser (if any): none. Refer to Section 8 for further information and definitions.

Physical Characteristics (Typical)	**Section 9 of the MSDS**
Appearance	Coloured, viscous liquid
Boiling Point/Range (℃):	> 100
Flash Point (℃):	Not applicable
Specific Gravity/Density (g/ml @ 15℃):	~1.05
pH:	7.0 - 8.0
Chemical Stability:	This product is stable at room temperature and pressure.
Reactivity:	None known

Product Ingredients		**Section 3 of the MSDS**
Ingredient	CAS Number	Proportion
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
For further ingredients information, please refer to the full MSDS		

Risk Phrases	**Section 2 of the MSDS**
Not hazardous: intentionally left blank	

DEFINITIONS

Dangerous Goods	Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5℃, a pH below 3 or above 11, are expl osives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.
Hazardous Substances	Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.
Poisons	Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

SUMMARY INFORMATION ONLY

1. IDENTIFICATION

Product Name:	Ultrashield
Other Names:	Ultrashshield Thermo
Chemical Family:	Liquid Glaze
Molecular Formula:	Not Applicable
Recommended Use:	Construction materials
Supplier:	Shieldcoat Pty Ltd
ABN:	79 090 620 410
Address:	2/1075 Beaudesert Road, Archerfield Qld 4108
Telephone:	+61 7 3274 6911
Fax:	+61 7 3274 6414
Emergency Phone:	**0414 479 458**
All other inquiries:	+61 7 3274 6911

2. HAZARDS IDENTIFICATION

Hazard Classification

This product is not hazardous according to Australian Safety and Compensation Council criteria.

Hazard Category

This section is intentionally left blank.

Risk Phrases

Not hazardous: intentionally left blank

Safety Phrases

Not hazardous: intentionally left blank

Dangerous Goods Classification

N/R

Poisons Schedule

N/R

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS Number	Proportion (% v/v)
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
Mould inhibitor	various	< 0.1
Surfactants	various	< 2.0

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affective victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Seek immediate medical attention.

First Aid Facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress providing fire fighters with this Material Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable Extinguishing Media

Product will not burn.

Hazards from combustion products

None: product will not burn.

Precautions for fire fighters and special protective equipment

None: product will not burn.

Hazchem Code

N/R

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent product from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours or dusts from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard, where present.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled product using the resources in the spill kit.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard, where present.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.

- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See “First Aid Measures” and “Stability and Reactivity”.

7. HANDLING AND STORAGE

Precautions for Safe Handling

There are no specific safety requirements for handling this product. Standard industrial hygiene and safety practice is recommended when using this product.

Conditions for Safe Storage

There are no specific safety requirements for storing this product. Consider checking containers for leaks periodically and protect the packaging from physical damage (store out of direct sunlight, away from high traffic areas, etc.).

Incompatible Materials

None known

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: No data available for this type of product, which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short term exposure limit (STEL) is: No data available for this type of product, which is the maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a Peak Limitation value (Peak): None applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitiser, represented as (Sk), where none applies in this case.

Biological Limit Values (BLV)

No data available for this type of product

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion proof equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may approach or exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type ‘A’ filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/Body Protection: Always wear long sleeves, long trousers, or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical Value
Appearance	None	Clear, viscous liquid
Boiling Point/Range	℃	> 100
Flash Point	℃	Not applicable
SG/Density (@ 15℃)	g/ml; kgm $^{-3}$	~1.05
Vapour Pressure @ 20℃	kPa	No data available
Vapour Density @ 20℃	g/ml; kgm $^{-3}$	No data available
Autoignition Temperature	℃	Not applicable

Property	Unit of measurement	Typical Value
Explosive Limits in Air	% vol/vol	Not applicable
Viscosity @ 20℃	cPs, mPas	> 400
Percent volatiles	% vol/vol	40%
Acidity/alkalinity as pH	None	7.0 - 8.0
Solubility in Water	g/l	Water soluble
Other solvents	-	None

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Technical Data Sheet.

10. STABILITY AND REACTIVITY

Chemical stability

This product is stable at room temperature and pressure.

Conditions to avoid

None known

Hazardous decomposition products

None known

Hazardous reactions

None known

Hazardous polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Effects

Ingestion

Ingestion will result in discomfort on swallowing. No narcotic effects are expected.

Eye Contact

This product will cause discomfort to the eye and surrounding tissue. These effects will subside with appropriate First Aid.

Skin Contact

This product is unlikely have any effect on the skin, however, individuals with pre-existing skin conditions may experience some sensitivity.

Inhalation

Inhalation of this product is unlikely and no vapours are present in the formula.

Chronic Effects

None known

Other Health Effects Information

None known

Toxicological Information

Oral LD_{50}: No data available

Dermal LD_{50}: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity:

Fish Toxicity LC_{50}: No data available
Daphnia Magna EC_{50}: No data available
Blue-green algae: No data available
Green algae: No data available

Persistence/Biodegradability:

This product is expected to persist.

Mobility:

This product is unlikely to be very mobile.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure that empty packaging is managed in accordance with Dangerous Goods regulations.

Special Precautions

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be incinerated in a regulated facility. In the absence of a designated industrial incinerator, this product should be treated and disposed through chemical waste treatment, or considered for use in solvent recycling.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	N/R	UN No.	N/R	UN No.	N/R
Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating
DG Class	N/R	DG Class	N/R	DG Class	N/R
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	N/R	Packing Group	N/R	Packing Group	N/R
Hazchem	N/R	Hazchem	N/R	Hazchem	N/R

Dangerous Goods Segregation

This product is not classified as Dangerous Goods for Transport by Road and Rail.

15. REGULATORY INFORMATION

Country/Region: Australia

Inventory: AICS

Status: Listed

Poisons Schedule: N/R

16. OTHER INFORMATION

Reasons for Issue: Upgraded MSDS. New information in all sections.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

ASCC: Australian Safety and Compensation Council

References:

- Supplier Material Safety Data Sheets
- *Sax's Dangerous Properties of Industrial Materials*, Richard J Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Shieldcoat Pty Ltd.

E. Nano Protect

i. Introduction

SHIELDCOAT PTY LTD

NANOPROTECT SC-96

NanoProtect

NanoProtect

NanoProtect , Shieldcoat's revolutionary protective top coat for all roof types. NanoProtect has been formulated using a new resin system with unique properties that make it perfect for this application. It has under-gone more than ten years of weathering field trials directly up against most of its major competitors with outstanding results in durability and gloss retention.

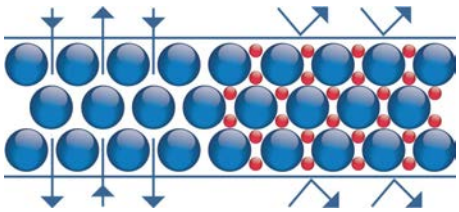
Combining this new technology with the extremely user friendly formulations you've come to expect from Shieldcoat, makes NanoProtect the most effective roof coating system on the market today.

As the name suggests, NanoProtect also incorporates nano technology. Nano technology is the use of particle sizes thousands of times smaller than previously possible, to give new properties to existing products. In this case, nano technology has been used to create a much harder, denser film on a molecular level.

The key benefits of a harder, denser film are: greatly increased dirt pick-up resistance, which essentially makes the coating self cleaning; increased UV resistance, which protects the coloured coating underneath from fadeing; increased scratch and mar resistance and excellent gloss retention.

Using NanoProtect as a final coat over Roofbond Roof Membrane will increase the life of the coating system immensely. Severe fading in colours like Mountain Blue and Charcoal after 3-4 years will become a thing of the past. Gloss levels after 5 years will still be almost 90% of what they were the day the job was done.

We are so confident in the superior performance of the NanoProtect , Roofbond and Shieldseal coating system, that we can now offer an Australian first 12 year product guarantee that also covers colour fade and gloss retention!



When viewed under a microscope, the particles in a normal roof mem-brane appear as they do on the left of this diagram, with small spaces between all particles. Adding smaller nano-particles fills these spaces creating a much stronger barrier to the elements.

Specifications:

Surface Dry: 0.5-2 hours
Hard Dry: 3 -5 days
Coverage: 150M²/15Lt
Thinning: No thinning required normally. If desired thin with water sparingly.
Clean Up: Water
Dry times are considered at 25ºc
Milky Liquid, Dries Clear

AUSTRALIAN MADE

25/5/15

HEAD OFFICE Building 2, 1075 Beaudesert Rd (Entry via Kerry Rd, Acacia Ridge). Archerfield, QLD 4108 Ph: 07 3274 6911
www.shieldcoat.com.au

E. Nano Protect

ii. MSDS

ABN: 79 090 620 410
Unit 2/1075 Beaudesert Road
ARCHERFIELD QLD 4108
Phone: (07) 3274 6911
Fax: (07) 3274 6414
www.shieldcoat.com.au

MATERIAL SAFETY DATA SHEET INFORMATION

For further information: Please refer to the Material Safety Data Sheet following

Issue: February 13

PRODUCT: NanoProtect SC-96

Other Names: None

Uses: Construction materials

UN No.:	N/R
Dangerous Goods Class:	N/R
Subsidiary Risk:	None
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	N/R

Hazardous Nature:	This product is not hazardous according to Australian Safety and Compensation Council criteria.
Exposure Standards:	TWA: No data available for this type of product; STEL: No data available for this type of product; Peak Limitation (if any): No data available for this type of product; Skin Sensitiser (if any): No data available for this type of product. Refer to Section 8 for further information and definitions.

Physical Characteristics (Typical) — **Section 9 of the MSDS**

Appearance	Clear, viscous liquid
Boiling Point/Range (°C):	> 100
Flash Point (°C):	Not applicable
Specific Gravity/Density (g/ml @ 15°C):	~1.05
pH:	7.0 - 8.0
Chemical Stability:	This product is stable at room temperature and pressure.
Reactivity:	None known

Product Ingredients — **Section 3 of the MSDS**

Ingredient	CAS Number	Proportion
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0

For further ingredients information, please refer to the full MSDS

Risk Phrases — **Section 2 of the MSDS**

Not hazardous: intentionally left blank

DEFINITIONS

Dangerous Goods	Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5°C, a pH below 3 or above 11, are explosives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.
Hazardous Substances	Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.
Poisons	Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

SUMMARY INFORMATION ONLY

1. IDENTIFICATION

Product Name:	NanoProtect SC-96
Other Names:	None
Chemical Family:	Liquid Glaze
Molecular Formula:	Not Applicable
Recommended Use:	Construction materials
Supplier:	Shieldcoat Pty Ltd
ABN:	79 090 620 410
Address:	2/1075 Beaudesert Road, Archerfield Qld 4108
Telephone:	+61 7 3274 6911
Fax:	+61 7 3274 6414
Emergency Phone:	**0414 539 703**
All other inquiries:	+61 7 3274 6911

2. HAZARDS IDENTIFICATION

Hazard Classification

This product is not hazardous according to Australian Safety and Compensation Council criteria.

Hazard Category

This section is intentionally left blank.

Risk Phrases

Not hazardous: intentionally left blank

Safety Phrases

Not hazardous: intentionally left blank

Dangerous Goods Classification

N/R

Poisons Schedule

N/R

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS Number	Proportion (% v/v)
Acrylate block copolymer resin	various	> 50
Water	7732-18-5	< 30
Ethylene Glycol Monobutyl Ether	111-76-2	< 2.0
Mould inhibitor	various	< 0.1
Surfactants	various	< 2.0

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affective victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Seek immediate medical attention.

First Aid Facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress providing fire fighters with this Material Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable Extinguishing Media

Product will not burn.

Hazards from combustion products

None: product will not burn.

Precautions for fire fighters and special protective equipment

None: product will not burn.

Hazchem Code

N/R

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent product from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours or dusts from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard, where present.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled product using the resources in the spill kit.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard, where present.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.

- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See “First Aid Measures” and “Stability and Reactivity”.

7. HANDLING AND STORAGE

Precautions for Safe Handling

There are no specific safety requirements for handling this product. Standard industrial hygiene and safety practice is recommended when using this product.

Conditions for Safe Storage

There are no specific safety requirements for storing this product. Consider checking containers for leaks periodically and protect the packaging from physical damage (store out of direct sunlight, away from high traffic areas, etc.).

Incompatible Materials

None known

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: No data available for this type of product, which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short term exposure limit (STEL) is: No data available for this type of product, which is the maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a Peak Limitation value (Peak): None applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitiser, represented as (Sk), where none applies in this case.

Biological Limit Values (BLV)

No data available for this type of product

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion proof equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may approach or exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type ‘A’ filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/Body Protection: Always wear long sleeves, long trousers, or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical Value
Appearance	None	Clear, viscous liquid
Boiling Point/Range	°C	> 100
Flash Point	°C	Not applicable
SG/Density (@ 15°C)	g/ml; kgm^{-3}	~1.05
Vapour Pressure @ 20°C	kPa	No data available
Vapour Density @ 20°C	g/ml; kgm^{-3}	No data available
Autoignition Temperature	°C	Not applicable

Property	Unit of measurement	Typical Value
Explosive Limits in Air	% vol/vol	Not applicable
Viscosity @ 20°C	cPs, mPas	> 400
Percent volatiles	% vol/vol	40%
Acidity/alkalinity as pH	None	7.0 - 8.0
Solubility in Water	g/l	Water soluble
Other solvents	-	None

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Technical Data Sheet.

10. STABILITY AND REACTIVITY

Chemical stability

This product is stable at room temperature and pressure.

Conditions to avoid

None known

Hazardous decomposition products

None known

Hazardous reactions

None known

Hazardous polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Effects

Ingestion

Ingestion will result in discomfort on swallowing. No narcotic effects are expected.

Eye Contact

This product will cause discomfort to the eye and surrounding tissue. These effects will subside with appropriate First Aid.

Skin Contact

This product is unlikely have any effect on the skin, however, individuals with pre-existing skin conditions may experience some sensitivity.

Inhalation

Inhalation of this product is unlikely and no vapours are present in the formula.

Chronic Effects

None known

Other Health Effects Information

None known

Toxicological Information

Oral LD_{50}: No data available

Dermal LD_{50}: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity:

Fish Toxicity LC_{50}: No data available
Daphnia Magna EC_{50}: No data available
Blue-green algae: No data available
Green algae: No data available

Persistence/Biodegradability:

This product is expected to persist.

Mobility:

This product is unlikely to be very mobile.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure that empty packaging is managed in accordance with Dangerous Goods regulations.

Special Precautions

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be incinerated in a regulated facility. In the absence of a designated industrial incinerator, this product should be treated and disposed through chemical waste treatment, or considered for use in solvent recycling.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	N/R	UN No.	N/R	UN No.	N/R
Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating	Proper Shipping Name	Roof tile coating
DG Class	N/R	DG Class	N/R	DG Class	N/R
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	N/R	Packing Group	N/R	Packing Group	N/R
Hazchem	N/R	Hazchem	N/R	Hazchem	N/R

Dangerous Goods Segregation

This product is not classified as Dangerous Goods for Transport by Road and Rail.

15. REGULATORY INFORMATION

Country/Region: Australia

Inventory: AICS

Status: Listed

Poisons Schedule: N/R

16. OTHER INFORMATION

Reasons for Issue: Upgraded MSDS. New information in all sections.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

ASCC: Australian Safety and Compensation Council

References:

• Supplier Material Safety Data Sheets

• *Sax's Dangerous Properties of Industrial Materials*, Richard J Lewis Snr., pub. Canada (2000)

F. Stencil Shield

i. Introduction

STENCIL SHIELD

DECORATIVE ACRYLIC STENCIL SYSTEMS

For Concrete Floor

In Malaysia, most of the people choose to upgrade their concrete floor by installing floor tiles. But here comes a better option!

Stencil Shield is an acrylic base coating that applicable on the floor and wall. It is a product that imported from Australia. It is so unique that you can never ever find another product similar to Stencil Shield in Malaysia!

More choice of pattern than floor tiles

Have you wonder why all the floor tiles pattern is almost the same? Thinking that if you could have something more special? Stencil Shield provides plenty of patterns. You can choose your favorite pattern or customize your own pattern that unique enough to shock the neighborhoods!

A safety environment for house surrounding

STENCIL SHIELD is an anti slippery product. It generates a rough finish surface that prevent slippery. You can feel safe to walk on your walkway on your wet car porch concentrate on washing your car even with bubble and water all over the ground without worrying of falling.

STENCIL can produce a rough surface to provide **Slip Resistant**

No More Falling!

For those who have old folks and children at home, Stencil Shield creates a safety environment surrounding your house.

Protect and prolonging the lifespan of your concrete floor

Sunlight and rain can rapidly shorten the lifespan of whatever has direct contact with. Concrete floor that always direct contact with water and sunlight is more vulnerable than you think. Without any protection, the concrete floor would crack and become crispy.

Stencil Shield is water resistant product that seal the concrete floor from water seeping and reflect heat.

It might seem to be just a little crack from the surface, but it could be a big hole inside already!

Give life…

to your concrete!

with **STENCIL** SHIELD

Before

After

Before

After

STENCIL SHIELD provides a new high quality acrylic coating to rejuvenate your existing concreted and exposed aggregate surfaces that are in reasonable repair. It will not only give an aesthetically pleasing finish, but will provide a very durable surface that is very resistant to cracking.

Believe it or not!

It isn't floor tiles, it's STENCIL SHIELD

The stencil pattern is placed on top of the concrete and then top treatments are applied to produce color, texture, and other special effects. The Stencil is then sealed with special hardeners *Covercoat* that produce durability for years.

Apply Mouldshield C and clean the concrete surface with high pressure water jet

Apply Primer Plus and repair concrete cracks

Apply base coat

Lay Stencil pattern

Apply top coat

Remove the Stencil pattern

Complete!

The Benefits

- Strong grip that prevent falling to protect old folks and children.
- More choice of patterns and customization provide your home with the perfect appeal and class you have been looking for. Your paths will have the look that will be the envy of all your neighbors.
- Water resistant and heat resistant to protect and prolong the lifespan of concrete floor.
- Quick and effective finish of work application.
- Stencil Shield is an acrylic stencil coating that is extremely durable and has been formulated to give a very long lasting surface that is resistant to cracking and colour fade.

Stencil Shield VS Floor Tile

Stencil Shield

- Strong grip to anti slippery thus create a safety environment.
- More choice of patterns. You can even design pattern that suit your taste!

Floor Tile

- Poor grip. You got to walk slow and extra caution in rainy days or when the floor is filled with bubbles.
- The pattern is mostly in square shape. Limited choice of size in the market

Stancil Shield VS Concrete Paver

- Anti fungus, dirt and grass growth. Strong grip to prevent accident falling.
- Easy to clean and wash
- The color is very durable and it's about to reflect sunlight. The water resistant feature will prolong the lifespan of concrete floor.

- Gaps between pavers retain dirt and collect moss easily. The accumulation of moss will make the pavers very slippery and dangerous.
- Hard to clean the gap area.
- Frequent direct contact with sunlight and rain will cause the color fade rapidly.
- Surface might sink overtime due to the erosion of the sand.

SLIP RESISTANT
Provide a slip resistant surface to your concrete slab. It is also resistant to oil spills.

DURABLE
Durable acrylic stencil coating formulated to give a very long lasting surface and resistant to cracking and colour fade.

What makes STENCIL SHIELD so different?

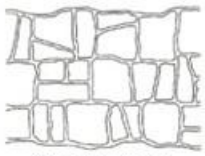
CLASS
Perfect appeal and class for your paths that will be the envy of all your neighbours.

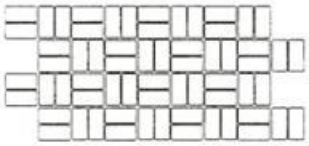
ECONOMICAL
Cost effective system that adds value to your property.

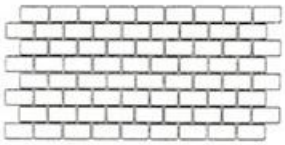
FAST
Quick and effective finish.

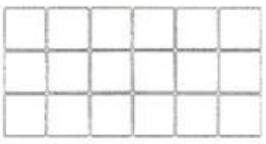
STENCIL Patterns…

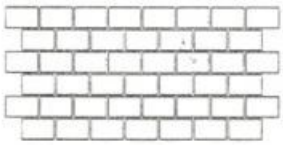
STENCIL SHIELD is available in a range of stencil patterns and a comprehensive range of main colours and grout colours.

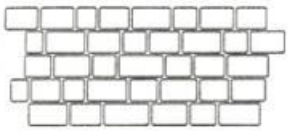

Convict Brick


Large Blockweave

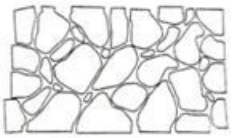

Running Bond

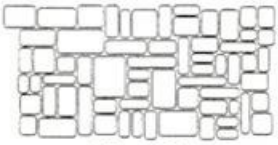

Tile (200 and 300)

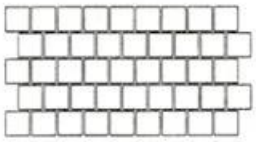

Large Stretcher Bond

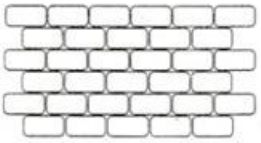

Random Bluestone

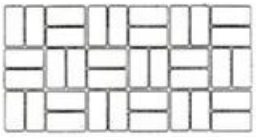

Roman Stone


Riverstone

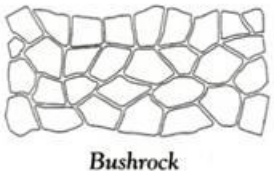

Ashlar Tile

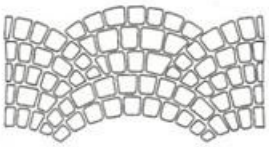

Offset Tile

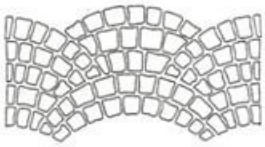

Regal (10" and 16")

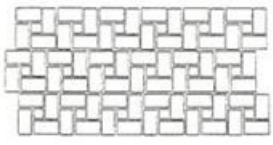

Basket Weave

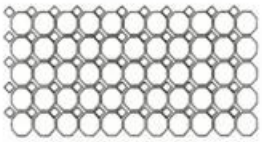

Cobble Brick

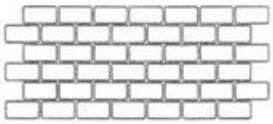

Bushrock


European Fan

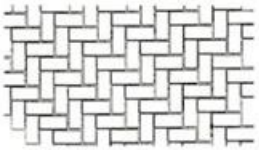

Cobble Fan

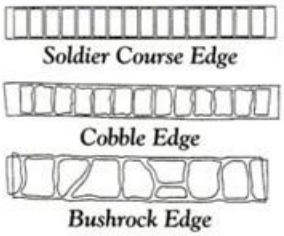

Heritage Weave

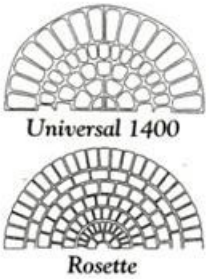

Octagon Tile

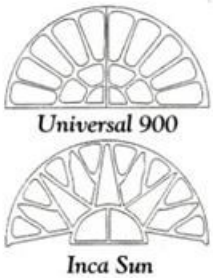

Cobblestone

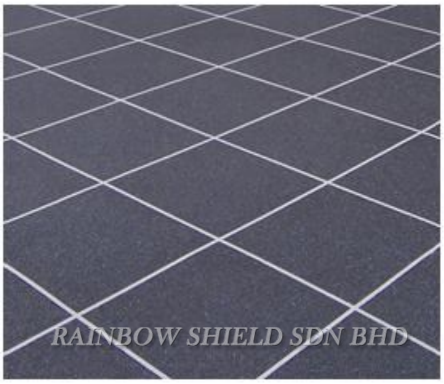

Star Compass


Original Herringbone


Soldier Course Edge
Cobble Edge
Bushrock Edge


Universal 1400
Rosette


Universal 900
Inca Sun



Select your favourite Stencil pattern

You can join different patterns together with ease

F. Stencil Shield

ii. MSDS

ABN: 79 090 620 410
Unit 2/1075 Beaudesert Road
ARCHERFIELD QLD 4108
Phone: (07) 3274 6911
Fax: (07) 3274 6414
www.shieldcoat.com.au

MATERIAL SAFETY DATA SHEET INFORMATION

For further information: Please refer to the Material Safety Data Sheet following

Issue: December 12

PRODUCT: Stencilshield

Other Names: None

Uses: Construction materials

UN No.:	N/R
Dangerous Goods Class:	N/R
Subsidiary Risk:	None
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	N/R

Hazardous Nature:	This product is not hazardous according to Australian Safety and Compensation Council criteria.
Exposure Standards:	TWA: No data available for this type of product; STEL: No data available for this type of product; Peak Limitation (if any): None; Skin Sensitiser (if any): none. Refer to Section 8 for further information and definitions.

Physical Characteristics (Typical)	**Section 9 of the MSDS**
Appearance	Clear, cementitious, viscous product
Boiling Point/Range (°C):	Not applicable
Flash Point (°C):	Not applicable
Specific Gravity/Density (g/ml @ 15°C):	2.88
pH:	7.0 - 8.0
Chemical Stability:	This product is stable at room temperature and pressure.
Reactivity:	None known

Product Ingredients		**Section 3 of the MSDS**
Ingredient	CAS Number	Proportion
Texturisers	None	> 50
Acrylate block copolymer resin	various	< 30
Water	7732-18-5	< 10
For further ingredients information, please refer to the full MSDS		

Risk Phrases	**Section 2 of the MSDS**
Not hazardous: intentionally left blank	

DEFINITIONS

Dangerous Goods	Products that are regulated for transport by Road and Rail under the national guide are Dangerous Goods. Products can be classed as Dangerous Goods if they have a flash point below 60.5°C, a pH below 3 or above 11, are explosives or toxic. These goods will be allocated a UN No., Packing Group, Hazchem Code, and possibly a subsidiary risk.
Hazardous Substances	Hazardous Substances are those products that are intrinsically hazardous by nature, rather than by misuse. These include mutagens, teratogens, carcinogens, products that are toxic (but not sufficiently toxic to be classed as Dangerous Goods or carry a subsidiary risk), and products that pose environmental risks.
Poisons	Poisons are products that are regulated by the dose or exposure, often having physical and chemical effects at certain concentrations particular to the nature of the product. For example, in small doses, some products are harmless, but with increased concentration or exposure these products can be extremely harmful. The classification indicates First Aid, etc.

SUMMARY INFORMATION ONLY

1. IDENTIFICATION

Product Name:	Stencilshield
Other Names:	None
Chemical Family:	Textured polymer product
Molecular Formula:	Not Applicable
Recommended Use:	Construction materials
Supplier:	Shieldcoat Pty Ltd
ABN:	79 090 620 410
Address:	2/1075 Beaudesert Road, Archerfield Qld 4108
Telephone:	+61 7 3274 6911
Fax:	+61 7 3274 6414
Emergency Phone:	**0414 479 458**
All other inquiries:	+61 7 3274 6911

2. HAZARDS IDENTIFICATION

Hazard Classification

This product is not hazardous according to Australian Safety and Compensation Council criteria.

Hazard Category

This section is intentionally left blank.

Risk Phrases

Not hazardous: intentionally left blank

Safety Phrases

Not hazardous: intentionally left blank

Dangerous Goods Classification

N/R

Poisons Schedule

N/R

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS Number	Proportion (% v/v)
Texturisers	None	> 50
Acrylate block copolymer resin	various	< 30
Water	7732-18-5	< 10
Propylene Glycol	57-55-6	< 5
Surfactants	various	< 4

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affective victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Seek immediate medical attention.

First Aid Facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress providing fire fighters with this Material Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable Extinguishing Media

Product will not burn.

Hazards from combustion products

None: product will not burn.

Precautions for fire fighters and special protective equipment

None: product will not burn.

Hazchem Code

N/R

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent product from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours or dusts from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard, where present.
- Prevent product from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled product using the resources in the spill kit.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard, where present.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.

- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See “First Aid Measures” and “Stability and Reactivity”.

7. HANDLING AND STORAGE

Precautions for Safe Handling

There are no specific safety requirements for handling this product. Standard industrial hygiene and safety practice is recommended when using this product.

Conditions for Safe Storage

There are no specific safety requirements for storing this product. Consider checking containers for leaks periodically and protect the packaging from physical damage (store out of direct sunlight, away from high traffic areas, etc.).

Incompatible Materials

None known

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: No data available for this type of product, which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short term exposure limit (STEL) is: No data available for this type of product, which is the maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a Peak Limitation value (Peak): None applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitiser, represented as (Sk), where none applies in this case.

Biological Limit Values (BLV)

No data available for this type of product

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion proof equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may approach or exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type ‘A’ filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/Body Protection: Always wear long sleeves, long trousers, or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical Value
Appearance	None	Clear, cementitious, viscous product
Boiling Point/Range	°C	Not applicable
Flash Point	°C	Not applicable
SG/Density (@ 15°C)	g/ml; kgm^{-3}	2.88
Vapour Pressure @ 20°C	kPa	No data available
Vapour Density @ 20°C	g/ml; kgm^{-3}	No data available
Autoignition Temperature	°C	Not applicable

Property	Unit of measurement	Typical Value
Explosive Limits in Air	% vol/vol	Not applicable
Viscosity @ 20°C	cPs, mPas	> 10 000
Percent volatiles	% vol/vol	None
Acidity/alkalinity as pH	None	7.0 - 8.0
Solubility in Water	g/l	Water soluble
Other solvents	-	None

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Technical Data Sheet.

10. STABILITY AND REACTIVITY

Chemical stability

This product is stable at room temperature and pressure.

Conditions to avoid

None known

Hazardous decomposition products

None known

Hazardous reactions

None known

Hazardous polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Effects

Ingestion

Ingestion will result in discomfort on swallowing. No narcotic effects are expected.

Eye Contact

Particulate matter in the eyes will result in temporary discomfort. Temporary corneal damage may occur due to abrasion irritation.

Skin Contact

Temporary abrasion irritations (due to particulates) may occur and can be avoided with the use of appropriate skin protection.

Inhalation

Inhalation of this product is unlikely and no vapours are present in the formula.

Chronic Effects

None known

Other Health Effects Information

None known

Toxicological Information

Oral LD_{50}: No data available

Dermal LD_{50}: No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Toxicity:

Fish Toxicity LC_{50}: No data available
Daphnia Magna EC_{50}: No data available
Blue-green algae: No data available
Green algae: No data available

Persistence/Biodegradability:

This product is expected to persist.

Mobility:

This product is unlikely to be very mobile.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure that empty packaging is managed in accordance with Dangerous Goods regulations.

Special Precautions

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be incinerated in a regulated facility. In the absence of a designated industrial incinerator, this product should be treated and disposed through chemical waste treatment, or considered for use in solvent recycling.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	N/R	UN No.	N/R	UN No.	N/R
Proper Shipping Name	Glaze coating	Proper Shipping Name	Glaze coating	Proper Shipping Name	Glaze coating
DG Class	N/R	DG Class	N/R	DG Class	N/R
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Packing Group	N/R	Packing Group	N/R	Packing Group	N/R
Hazchem	N/R	Hazchem	N/R	Hazchem	N/R

Dangerous Goods Segregation

This product is not classified as Dangerous Goods for Transport by Road and Rail.

15. REGULATORY INFORMATION

Country/Region: Australia
Inventory: AICS
Status: Listed
Poisons Schedule: N/R

16. OTHER INFORMATION

Reasons for Issue: Upgraded MSDS. New information in all sections.

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

ASCC: Australian Safety and Compensation Council

References:

- Supplier Material Safety Data Sheets
- *Sax's Dangerous Properties of Industrial Materials*, Richard J Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Shieldcoat Pty Ltd.

STENCIL SHIELD is an ideal solution for garden and parks walkways, driveways, pool sides, car parks, corridors, patios, basketball courts, badminton

STENCIL SHIELD

provides a safe and

modern environment

for you and your family

F. Stencil Shield

iii. Anti-slip Test Result

CLASSIFICATION CRITERIA – AS/NZS 4586 - 1999

Compliance

TABLE 1
TEST AND CLASSIFICATIONS COMBINATIONS

Test conditions	Test method	Classification table to be used
Wet pendulum	Appendix A	Table 2
Wet pendulum and dry floor friction	Appendices A and B	Tables 2 and 3
Dry floor friction	Appendix B	Table 3*

*Samples tested under dry conditions only are assumed to have a default wet classification of Z and shall be reported as classification ZF or ZG.

TABLE 2
CLASSIFICATION OF PEDESTRIAN SURFACE MATERIALS ACCORDING TO THE WET PENDULUM TEST

Class	Pendulum* mean BPN		Contribution of the floor surface to the risk of slipping when wet
	Four S rubber	TRRL rubber	
V	>54	>44	Very low
W	45-54	40-44	Low
X	35-44	-	Moderate
Y	25-34	-	High
Z	<25	-	Very high

*While either of these test methods may be used, the test report shall specify which method was used.
NOTE: It is expected that these surfaces will be more slip resistive when dry.

TABLE 3
CLASSIFICATION OF PEDESTRIAN SURFACE MATERIALS ACCORDING TO THE DRY FLOOR FRICTION TEST

Classification	Floor friction tester mean value
F	≥0.4
G	<0.4

NOTE: Tables 2 and 3 estimate the contribution only of the floor surface to an occurrence of a slip under the wet or dry conditions. Estimates of the total risk of a slip should include consideration of other possible contributory factors which may include type of footwear, use of walking aid, speed of gait, lighting, wear, surface gradient, contamination and similar.

Means of demonstrating compliance

Pedestrian surfaces that are classified in accordance with Table 2 and, where appropriate, Table 3 shall meet the following criteria:

(a) The mean test results shall be as follows:
  (i) For the classifications in Table 2, the mean of the test results shall be above the relevant criteria set out in the Table, and each individual result shall be either within the limit for the classification or, if below the classification, within the mean of the result minus 20%. If either of these criteria is not met, the lot shall be considered to be a lower classification.
  (ii) For Classification F in Table 3, the mean of the test results shall be equal to or greater than 0.4 and each individual result shall be equal to or greater than 0.35. If either of these criteria is not met, the lot shall be considered to be Classification G.

(b) The classification in accordance with Table 2 or Table 3 shall be determined by:-
  (i) selecting and testing at least five specimens at random as defined in Appendices A and B; or
  (ii) carrying out continuous testing and process control in accordance with AS 3942.

(c) When testing individual lots, if a particular test fails to produce the expected classification it shall be permissible to:-
  (i) disregard the first sample, re-sample a minimum of 10 specimens from the whole lot, retest and apply the criteria to the new sample; or
  (ii) subdivide the lot into smaller lots of different quality, re-sample, retest and reclassify each of the smaller lots.

27/134 Springvale Road, PO Box 286, SPRINGVALE VIC. 3171
Phone: (03) 9574 6144 Fax: (03) 9574 6133
www.attar.com.au Email: admin@attar.com.au

ATTAR
Advanced Technology Testing and Research

*Acoustic Emission * Slip Resistance Testing
*Materials Failure Analysis *Corrosion Monitoring
*Non-Destructive Testing Training

A Division of Engineering Materials Evaluation Pty. Ltd.
A.B.N. 14 006 554 785

ATTAR TEST REPORT NUMBER: 04/6108.3

March 25, 2004 **Total Pages: 1**

WET SLIP RESISTANCE

Job No: M04/4244

Prepared for:	Shieldcoat Pty Ltd Unit 2/1075 Beaudesert Road ARCHERFIELD QLD 4108
Attention:	Mark Slater
Test Site:	ATTAR, Unit 27, 134 Springvale Road, Springvale.
Test Date:	March 25, 2004
Test Specimens, Size and Quantity:	Stencilshield applied on smooth side of masonite board. 30x30 cm, 5 off.
Preparation:	As received, washed in tap water and dried.
Fixed/Unfixed:	Unfixed.
Air Temperature:	23°C
Test Equipment:	Stanley Skid Resistance Tester (Pendulum) Serial Number 0320, Calibrated 20/05/2003.
Test Standard:	AS/NZS 4586 - 1999 Slip resistance classification of new pedestrian surface materials – Appendix A.
Slider Rubber:	Four S Batch No. (96-100)
Classification Criteria:	Refer Appendix 1 – Classification Criteria, attached.

British Pendulum Number	**Specimen Number**					**Mean**
	1	2	3	4	5	
	59	59	59	56	59	58
Classification:	V					

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

ATTAR

Marcus Braché
Engineering Technician

\\ROBYN\My Documents\Reports\2004\SLIPT046108.3.doc

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A.B.N. 14 006 554 785

ATTAR TEST REPORT NUMBER: 04/6108.2

March 25, 2004 **Total Pages: 1**

WET SLIP RESISTANCE

Job No: M04/4244

Prepared for:	Shieldcoat Pty Ltd Unit 2/1075 Beaudesert Road ARCHERFIELD QLD 4108					
Attention:	Mark Slater					
Test Site:	ATTAR, Unit 27, 134 Springvale Road, Springvale.					
Test Date:	March 25, 2004					
Test Specimens, Size and Quantity:	Concreshield X (aluminum anti-slip) applied on smooth side of masonite board, 30x30 cm, 5 off.					
Preparation:	As received, washed in tap water and dried.					
Fixed/Unfixed:	Unfixed.					
Air Temperature:	23°C					
Test Equipment:	Stanley Skid Resistance Tester (Pendulum) Serial Number 0320, Calibrated 20/05/2003.					
Test Standard:	AS/NZS 4586 - 1999 Slip resistance classification of new pedestrian surface materials – Appendix A.					
Slider Rubber:	Four S Batch No. (96-100)					
Classification Criteria:	Refer Appendix 1 – Classification Criteria, attached.					
British Pendulum Number	**Specimen Number**					**Mean**
	1	2	3	4	5	
	64	59	69	59	63	63
Classification:	V					

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

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Marcus Braché
Engineering Technician

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ATTAR TEST REPORT NUMBER: 04/6108.1

March 25, 2004 **Total Pages: 1**

WET SLIP RESISTANCE

Job No: M04/4244

Prepared for:	Shieldcoat Pty Ltd Unit 2/1075 Beaudesert Road ARCHERFIELD QLD 4108
Attention:	Mark Slater
Test Site:	ATTAR, Unit 27, 134 Springvale Road, Springvale.
Test Date:	March 25, 2004
Test Specimens, Size and Quantity:	Concreshield X (wax bead anti-slip) applied on smooth side of masonite board, 30x30 cm, 5 off.
Preparation:	As received, washed in tap water and dried.
Fixed/Unfixed:	Unfixed.
Air Temperature:	23°C
Test Equipment:	Stanley Skid Resistance Tester (Pendulum) Serial Number 0320, Calibrated 20/05/2003.
Test Standard:	AS/NZS 4586 - 1999 Slip resistance classification of new pedestrian surface materials – Appendix A.
Slider Rubber:	Four S Batch No. (96-100)
Classification Criteria:	Refer Appendix 1 Classification Criteria, attached.

British Pendulum Number	**Specimen Number**					**Mean**
	1	2	3	4	5	
	54	55	55	54	56	55
Classification:	V					

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

ATTAR

Marcus Braché
Engineering Technician

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F. Stencil Shield

iv. Project Photos

Basketball Court - Bakri, Muar　　篮球场 – 峇吉里, 麻坡

独立式洋房 - 峇株巴辖 Bungalow - Batu Pahat

G. Waterproofing Projects

Waterproofing

Building and houses needs waterproofing as concrete will not be waterproof on its own. Rainbow Shield has a complete solution for r.c. flat roofs, concrete gutters and etc.

Masjid Sultan Ibrahim Ismail - Batu Pahat

Balai Police Masai

Holiday Plaza

Holiday Plaza

BCB Group

BCB Group

Quill Capital KL

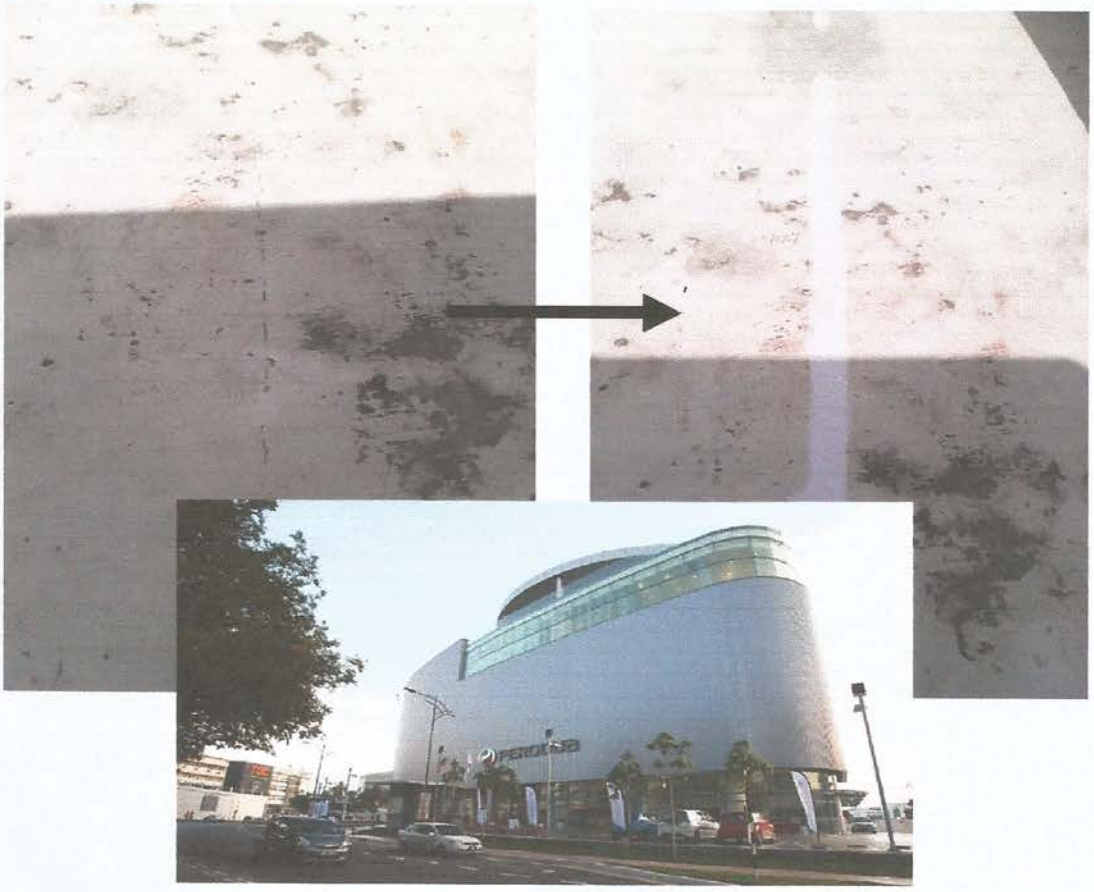
Complex Makamah

Project Picture

Monorail

1) RSC1 – Genting Highlands Malaysia

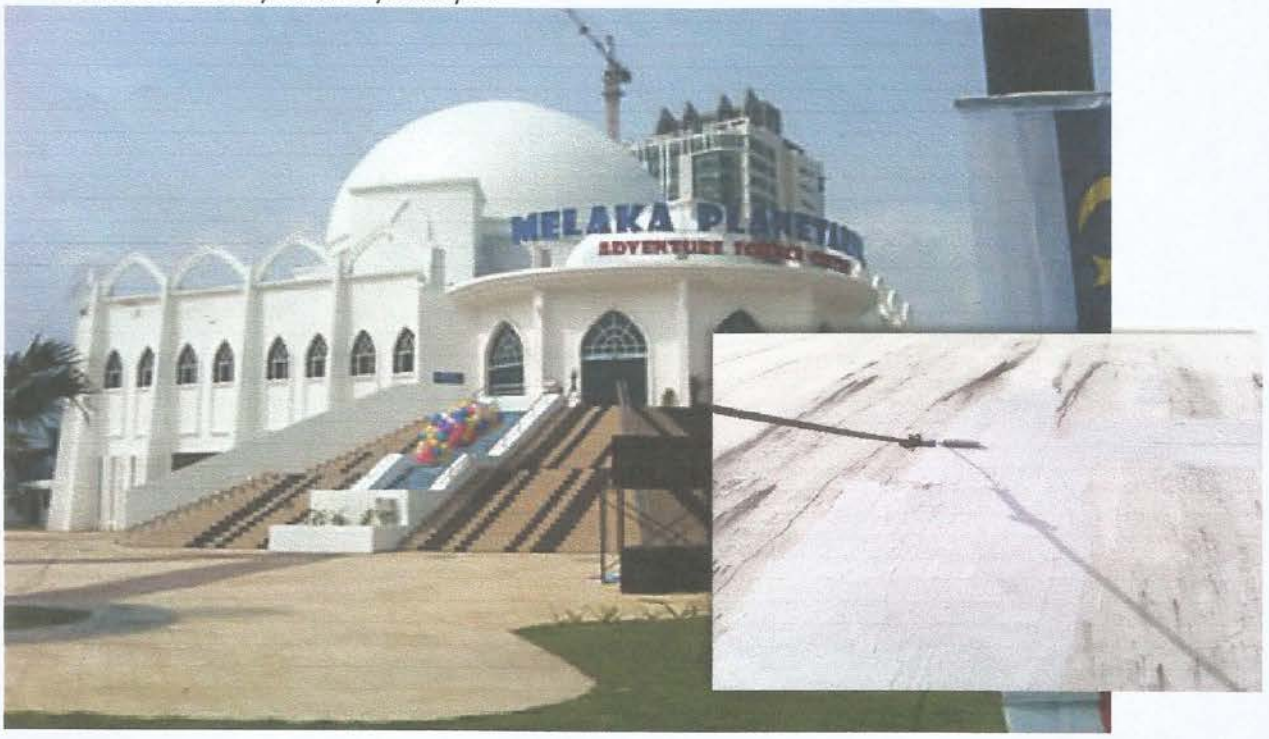
2) **Perodua Showroom Section 16, PJ**



3) Kem TUDM Sungai Besi

4) Hyatt Regency Kuantan, Pahang, Malaysia.

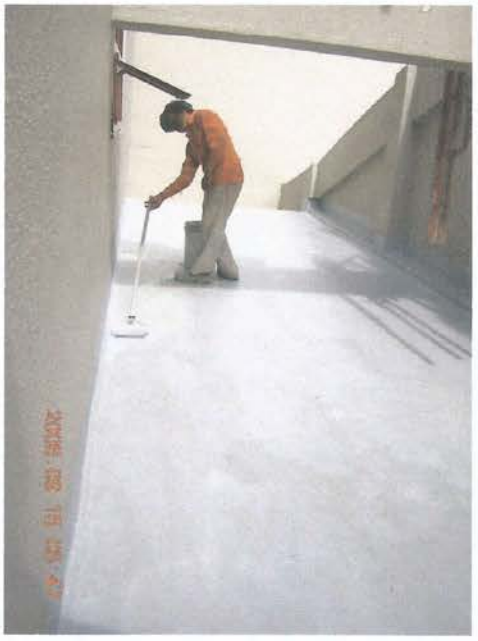
5) Planetarium Malacca, Malacca, Malaysia



6) Residential At Puchong, Selangor, Malaysia

Project Picture

Complex Makamah



Project Picture

Quill Capital KL

Testimonial

Y.B. Datuk Haji Ahmad Zahri Bin Jamil

HAJI AHMAD ZAHRI BIN JAMIL,
PIS.
AHLI MAJLIS MESYUARAT KERAJAAN
NEGERI JOHOR

BIL. (188) Dlm. EXCO/NJ. Jld. 11/02 (A)
03 Mei 2007

Kepada,
Pihak Yang Berkenaan,

Tuan,

SOKONGAN BAGI PERKHIDMATAN SYARIKAT RAINBOW ROOFGUARD (J) SDN. BHD.

Dengan hormatnya, perkara diatas adalah dirujuk.

02. Sukacita dimaklumkan, Syarikat Rainbow Roofguard (J) Sdn. Bhd. merupakan sebuah syarikat yang mempunyai pengalaman luas dalam memberikan perkhidmatan penyelenggaraan bangunan khususnya dalam penyelenggaraan bumbung bangunan, mempunya tenaga kerja yang berpengalaman serta peralatan yang mencukupi bagi melaksanakan kerja-kerja yang berkenaan.

03. Saya menyokong perkhidmatan Syarikat ini, kerana mampu melaksanakan dan mempunyai kelayakan dalam kerja-kerja penyelenggaraan bangunan pejabat atau kediaman khususnya berhubung dengan bumbung.

Sekian dimaklumkan dan terima kasih.

" BERKHIDMAT UNTUK NEGARA "

Yang Ikhlas,

HJ. AHMAD ZAHRI BIN JAMIL
PENGERUSI
JAWATANKUASA PERTANIAN INDUSTRI ASAS TANI,
KEMAJUAN LUAR BANDAR DAN WILAYAH,
KESENIAN, KEBUDAYAAN DAN WARISAN
NEGERI OHOR DARUI TA'ZIM.

Pejabat Pengerusi Jawatankuasa Pertanian, Industri Asas Tani, Kemajuan Luar Bandar
Dan Wilayah, Kesenian, Kebudayaan dan Warisan Negeri Johor
Pejabat Pertanian Negeri Johor, Jalan Taruka, 80350 Johor Bahru.
Tel.: 07-2355501 Fax: 07-2355502

Mohd. Yamin Ismail & Partners

MOHD. YAMIN ISMAIL & PARTNERS
PEGUAMBELA & PEGUAMCARA
(ADVOCATES & SOLICITORS)
40A, Tingkat 1, Jalan Rahmat,
83000 Batu Pahat, Johor.

Tel: 07-4347931 & 4348291 Fax: 07-4318440

MOHD YAMIN B. HJ. ISMAIL L.L.B. (Hons) Malaya
MOHD ASHRI B. RAIS L.L.B. (Hons) Malaya
MISLIYAH BT. HJ. MAHFOZ L.L.B. (Hons) I.I.U

RUJUKAN TUAN :
(YOUR REF)

RUJUKAN KAMI :
(OUR REF)

Mohd. Yamin Bin Hj. Ismail,
1A, Jalan Seroja,
Taman Lim Poon,
83000 Batu Pahat,
Johor.

9th. January, 1997.

M/s Rainbow Roofguard Sdn. Bhd.,
83000 Batu Pahat,
Johor.

Dear Sir,

Re : Roof Restoratian Work On Premises
No. 1A, Jalan Seroja, Taman Lim Poon,
83000 Batu Pahat, Johor Darul Ta'zim

With great pleasure I am informing you that your roof restoration works on my house sometime on January 1997 was completed to my satisfaction. Your method of work and workman employed for the execution of the work was done professionally.

The new colour coating applied to the existing roof looks good and new. Furthermore, your 5 years warranty for the work is appreciated.

Thank you.

Yours faithfully,

Sila catitkan rujukan kami bila menjawab
Please quote our reference when replying

马来西亚柔佛州
峇株吧辖中华商会
CHINESE CHAMBER OF COMMERCE, BATU PAHAT
(Member of The Associated Chinese Chambers of Commerce & Industry Malaysia) (馬來西亞中華工商聯合會成員)
32, Jalan Rahmat, 83000 Batu Pahat, Johor, Malaysia. Tel : (07)4311989, 4315989 Fax : (07)4314660
http://www.chinesechamber-bp.org Email : cccbp@streamyx.com
ISO 9001 : 2000 Certified

日期: 2009 年 8 月 12 日

敬致: 彩虹防护镀层有限公司
Rainbow Shield Sdn Bhd
董事经理冯文尧先生

关于:屋瓦防护镀层事

本会会所屋顶十年前由贵公司承包维修并喷上屋瓦镀层历经多年风吹雨打，至今依旧保持亮丽美观。鄙会对贵公司工作专业及产品优质印象深刻。

专此函达致谢!

Chinese Chamber Of Commerce 峇株吧辖中華商會 Batu Pahat

陈茂华
总务

慈光亭

鳴謝

慈光亭觀音廟位于昔加末市区，因年久廟頂色彩失均，曾二次刷新，但効果不佳，反造成漆片脫落之象。幸有馮君創辦之彩虹漆質工之協助，令此廟重現莊嚴。

謹此，聊述片語，表達謝意。

南無阿彌陀佛——

佛曆二五四四年五月　慈光亭能妙合十

Ling Shan Monastery - Palor 灵山寺 - 巴罗

柔佛巴罗灵山寺
Ling Shan Monastery
Jalan Klinik,
86600 Paloh,
Kluang, Johor.

Tel : 07-7811034
Fax : 07-7811403

谨致：彩虹屋瓦镀层有限公司东主
冯文尧先生

9.3.2008

鸣谢为本寺屋瓦镀层

本寺屋瓦常年失修，损坏漏水，色泽暗淡，为此发布筹款募捐活动，以重新修建。承蒙贵公司乐意为其镀层，并经 2008 年 2 月 8 日竣工。

贵公司员工施工期间，服务态度及效率表现出色，施工细心。

完工后，所镀层的屋顶美观大方，众人赞扬不绝。

谨此致以万二分谢意。

灵山寺当家

巴羅靈山寺
LING SHAN MONASTERY
JALAN KLINIK,
86600 PALOH, JOHOR.
TEL: 07-7811403 FAX: 07-7811034

释行一法师

柔佛州篮球总会峇株巴辖分会

柔佛州籃球總會峇株吧轄分會
PERSATUAN BOLA KERANJANG NEGERI JOHOR CAWANGAN BATU PAHAT
(Johor State Basketball Association Batu Pahat Branch)
NO. 32, JALAN RAHMAT, 83000 BATU PAHAT, JOHOR.

謹致：彩虹屋瓦鍍層有限公司 東主
馮文堯先生

事項：鳴謝

您好！

本會提倡及推動篮球運動，數十年來因未擁有球場，每年各項各級球賽均借用学校球場，諸多不便。

現經知得峇株丹絨拉务路三英里路旁一地段興建可供各項球類活動，社团文娛活動及集會婚宴等用途之体育館。

承蒙 貴公司樂意承此体育館之司阆屋150万尺屋頂鍍層，並經於十一月十九日施工。

貴公司工作效率既敏捷又美观，同人等欽佩之至，讚揚不絕，謹此修函致以萬分謝意！

會長 劉健民
(劉健民 AMN)

1998年11月22日

Stylemaster Sleep Products

STYLEMASTER SLEEP PRODUCTS

AUSTRALIAN BEDDING MANUFACTURERS SINCE 1899

Date : May 23, 2000

To : Rainbow Roofguard Sdn Bhd
Attn : Mr. Phang

RE: TESTIMONIAL FOR ROOFGUARD

Dear Mr Phang,

This is to certify that your roof coating system using wapol coatings on our factory roofing is still in very good condition and we have found no leakage or on whatsoever from the day (16.08.1999) it was done until this date (23.05.2000).

Our compliments to your job well done and we will not hesitate to recommend any customers to your company should there be any enquiry.

Thank you and best regards,

(Mr. SL Teck)
Factory Manager

MGC Corporation (M) Sdn. Bhd.
16 Jalan Bakau, 86000 Kluang Johor, Malaysia. Tel : 07-7731940 Fax : 07-7741392. (Reg No. 270111-W)
A wholly owned subsidiary of Matsushita Greatwall Corpn. Pte. Ltd.
No. 83 Sungei Kadut Drive, Tiong Aik Building. Singapore 729566. Tel : 2698155 Fax : 3655639/3659091

FFM Marketing Sdn Bhd

FFM MARKETING SDN BHD

(180433-A)

LOT 973, Off JALAN KEMPAS LAMA, MUKIM TEBRAU, 81300 JOHOR BAHRU, JOHOR DARUL TAKZIM, MALAYSIA

Tel: 607-554 9343 *Fax: 607-554 9336, 607-554 9336*

RAINBOW ROOFGUARD (J) SDN BHD 10-07-2007
No. 3, Jalan Jenang, 83000 Batu Pahat.
Johor Darul Takzim,
Malaysia

Dear Mr. Pang,

Rainbow Roofguard helped with the waterproofing and roof restoration at my premise on 23-12-2005. I would like to extend my compliments to Rainbow Roofguard and all the staff for the works well done. The impeccable professionalism and quality service provided during the restoration works process caused minimum disruption to activities in our premise. Furthermore, the 5-years warranty period extends the confidence the company has in its products and commitment to their clients. Thanks for job well done!

FFM MARKETING SDN BHD
(180433-A)
Lot 973, Off Jalan Kempas Lama,
Mukim Tebrau, 81300 Johor Bahru.
Tel: 07-5549343 Fax: 07-5549336/7

Jimmy Wong Tsue Hwai
Area Sales Manager
10-07-2007

March 18, 2015

RAINBOW SHIELD SDN BHD
115, JalanGemilang,
Taman Banang Jaya, 83000,
BatuPahat, Johor.

To Whom It May Concern:

I would like to testify that I am very pleased with Rainbow Shield's service.

In the year 2012, the roof of my house encountered leakage, fungus and bad, stubborn black stains. I have used the services of a few contractors to solve my problem but the condition remained disappointing.

However I was very impressed with the condition of the roof of my neighbour's house which also had lots of problem. But after the special service technology and treatment done by Rainbow Shield, the roof still looks very new, clean and fresh, even after 14 year later. Based on the living testimony of this house right in front of me, I engaged the services of Rainbow Shield to do a roof coating of my house.

Two years on, the roof of my house still looks new and shiny. Thus without hesitation I would strongly recommend to anyone the roof treatment services provided by RAINBOW SHIELD SDN BHD

Yours sincerely,

Datuk Syed Abu Bakar Almohdzar
1, Lengkok Aminuddin Baki
Taman Tun Dr Ismail
60000 Kuala Lumpur

RAINBOW SHIELD SDN BHD

05/12/2015

115, Jalan Gemilang,

Taman Banang Jaya, 83000

Batu Pahat, Johor, Malaysia.

To Whom It May Concern:

The above company did a roof restoration and roof coating of the roof of my house in Gemas, N. Sembilan in July. 1997 and until today, we have had no leaking problems. The company did a four coat roof restoration process and were available for after sales service. The staff were very prompt at attending to any problems i had after the job was done, and were polite and professional in dealing with us.

My family was very happy and satisfied with the work done by Rainbow Shield and we will call them again if we want to re-coat our roof.

Best Regards,

Dr A Sivandan.

Gemas, N. Sembilan.

SAMSUNG Electronics Display

SAMSUNG ELECTRONICS DISPLAY (M) SDN. BHD.
(Company No. 336585 - M)
(HSD) 69244, No. P.T.12692 Mukim Ampangan,
Tuanku Jaafar Industrial Park, 71450 Seremban,
Negeri Sembilan Darul Khusus, Malaysia.
Tel : 606-6787914 (General Line) Fax : 606-6787389

RAINBOW SHIELD SDN BHD

05/09/2013

115,JalanGemilang,

Taman Banang Jaya,83000

BatuPahat,Johor,Malaysia

Dear Mr Pang

To Whom It May Concern:

It is with great pleasure that we recommend Rainbow Shield SdnBhd as a roof expertise whom had solved our leaking problem.

Our company factory roof was covered by metal roof tiles, and it is very hot during daytime. Although we had fixed theVentilator, water sprinkle, and sprayed the roof tile continuously, but it did not worked out. In fact it caused lots of problem, such as rusty roof, water leaking, causing our product to get wet, and thus we lost much money. Moreover, we have to spend high cost of water bills and maintenance fees, monthly water bills so high up to RM3000.00.

As we all know, the weather recently is even hotter than usual, and so does the temperature of the factory ,it also rise so much higher, and we are so lucky to have Rainbow Shield SdnBhd, with their technical skills, Apply the THERMOBOND heat reflecting coating (HRC), and thus solved the terrible leaking problem.

The THERMOBOND product is very effective in heat reducing , it soon reduce the temperature of the factory, improve the working environment , even more to help my company to save cost up to 100 thousand Ringgit per year.

Rainbow Shield SdnBhd is professional, responsible, their heat reflective coating and full of concern attitude is much appreciated by our company, we would like to recommend them to all through this letter.

Thank you and best regards

Yours faithfully,

Eng Kin Huat

Facility Group

KIN HUATSDMA--Facilities G 20130913073912

235451379083152

THERMOBOND HRC
Keeps you cool - when the heat is on!

Heat Reflective Coating (KEEP YOU COOL WHEN THE HEAT IS ON)

ROOFBOND

Your Roof Solution (Roof Restoration And Roof Waterproofing Membranes Coating).

ULTRASHIELD

Ten Years Warranty's Interior & Exterior High Performance Acrylic.

WATER SHIELD
Waterproof Membranes

100% Acrylic Waterproof Membranes.

NaturaTex
Acrylic Renders & Textures
Leading by Design

Acrylic Renders & Textures Coating.

STENCIL SHIELD
patterned coatings

Anti slip floor coating system.

Address : 115, Jalan Gemilang, Taman Banang Jaya,
83000, Batu Pahat, Johor,Malaysia.
Tel/Fax : (07) 428 8240
Web Site: www.rainbowshiel.com.my
Web Site(Parner Austrialia): shiledcoat.com.au

ISO 9001 ISO 14001 Find us on facebook

Malaysia Sole Distributor of SHIELDCOAT *Australia*