

Nutech NXT Cool Zone[®]

Fact Sheet



Tomorrow's Technology Today

NXT Cool Zone[®] is a remarkable new heat reflective roof coating utilising revolutionary Thermal Protection Technology[®] to reduce the temperature of your home in summer.

For the first time, you can reduce the heat of your roof and live more comfortably without sacrificing colour choice. This will save energy and cooling costs. It will also reduce greenhouse emissions and the impact of your home on the environment while your roof looks great.

What you are about to read will change your thinking about roof restoration, the cost of cooling your home and the impact of your home on the environment!

NXT Cool Zone[®] is manufactured by the multi award winning Nutech Paint, Australia's largest and oldest roof coating specialists. In the past 38 years Nutech has spent more on roof coating research and development than all the competition combined and is widely regarded as Australia's leading manufacturer of innovative roof coatings.

It is well known that traditional dark colored roofs tiles and metal sheet roofs soak up the sun getting hotter and hotter as the day progresses. When the roof space becomes superheated, the temperature of rooms can become unbearable. Due to rising energy costs air conditioning is becoming increasingly prohibitive in terms of both cost and resources.

Amazingly NXT Cool Zone[®] helps keep your roof and home cooler without sacrificing colour and design. This nu-technology reduces the amount of sunlight your roof absorbs, dramatically lowering its heat build up and allows the use of traditional dark colours and light colours.

Unlike other solar reflective roof coatings which only function in white and light pastel colours, NXT Cool Zone[®] is available in a full colour range including all the rich earthy colours used currently by roof tile and coloured metal sheet manufacturers that are so popular in Australian homes

Conventional darker coloured roof paint and unpainted cement tiles absorbs between 60% and 95% of the sun's infrared heat. New NXT Cool Zone[®] is a significant technological and environmental break through because it reflects between 37% and 91% of the infrared heat subject to colour.

This means that it is up to 70°F to 90°F cooler on the surface of your roof and 43-50°F cooler inside your house.

Features of NXT Cool Zone[®]

NXT Cool Zone[®] is enhanced with nano-technology for improved water beading and self cleaning properties. Nutech has used Nano Technology in the TileFlex 2000[®] roof coating system for more than 10 years with more than 750,000 roofs in Australia and overseas successfully restored.

Heat accelerates the degradation of all roof coatings causing a reduction in elasticity, gloss, adhesion, colour and other physical properties of coatings. By keeping the coating cooler NXT Cool Zone[®] technology will enhance and extend the life of the coating. Because the life of the coating is extended, replacement or refurbishment is required less frequently which further adds value to the original job and conveys longer term cost savings to the consumer. This is a winning formula for both the consumer and our environment.

Other features of NXT Cool Zone[®] include:

- environmentally friendly water based very low VOC technology
- Advanced cross linking polymer chemistry for ultra durability
- Fade resistant micronized pigments infused with saturated colour and highly resistant to chemicals, UV light and heat



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Features of NXT Cool Zone® (cont'd.)

- Revolutionary defoamer technology and advanced formula to eliminate micro foam, bacteria and biological contamination
- 100% waterproof guarantee

Drinking Water Safe

NXT Cool Zone is suitable for roofs used for the collection of drinking water for human consumption and for livestock, garden irrigation or grey water toilet or septic tank usage.

Technical Information

Coating Specification & Properties	NXT Cool Zone
Classification	Non Flammable
Colours	38 standard & tint
Application	Exterior/Roofs
Total Solids	>40%
Dirt Pick Up Resistance	Excellent
Waterproof	100%
Flammable	No
VOC - Volatile Organic Compounds	Extremely Low
Pigment Acid & Temperature Resistance	High
Repaint	12-15 years
Estimated Investment per year per 10 sq.ft.	32 cents
Environmentally Friendly	Yes
Saves You Money \$\$\$	Yes
Cross Linking technology	Yes
Nano-Technology	Yes
Heat Reflective Pigments	Yes
High Emissivity	Yes
Reduce Urban Heat Island	Yes
Lower cooling costs	Yes
Socially Responsible	Yes
Reduces Summer Building Temperature	Yes
Unlimited Colour Range	Yes
Advanced Defoamer and Biocide Package	Yes
Satisfies Council Urban Design Requiements	Yes
Contributes to 5 Star House Energy Rating	Yes
12 Year Manufacturers Warranty	Yes

Thermal Properties	
Infrared Reflectance	30-91
Thermal Emittance	88-94
Total Solar Reflectance	>25% to 91% * **
* US EPA Energy Star threshold for Steep Slopes (>10 Degrees) = 25%	
** Subject to colour - dark colours lower, white highest	

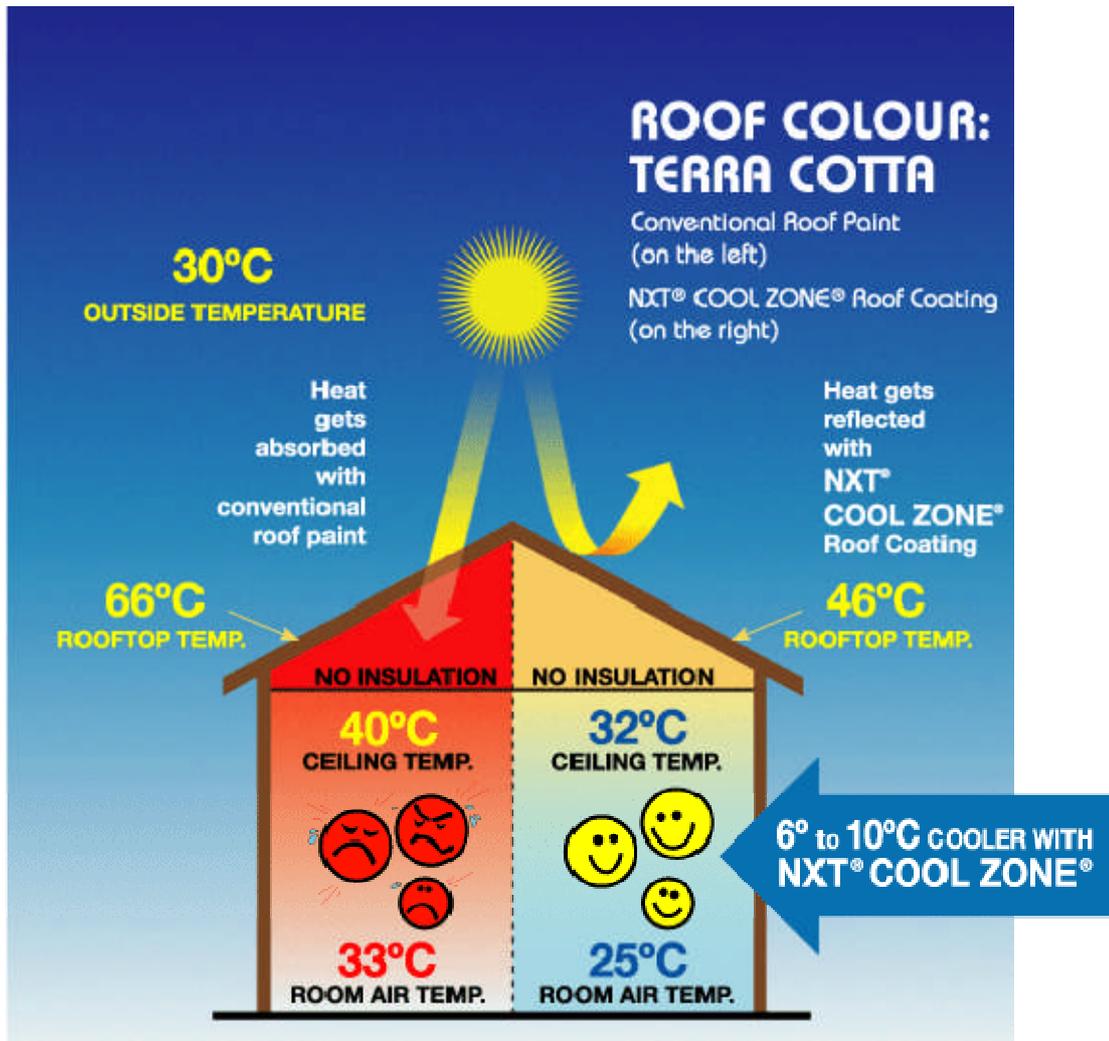
Physical Properties	
Water Resistance	100% Passes
Alkali Resistance	Passes
Scrubability	Passes
Flexibility	Passes
Cracking	Passes
Blistering	Passes
Water vapour Transmission	15 Perms
Accelerated Weathering	Passes

Application Information	
2 coats @ 160 square feet per Gallon per coat	
Undercoat/Sealer Required	Yes
Container Size	5 Gallon
Dry Time @75°F (50% relative humidity)	30 to 60 minutes
Minimum Film Formation Temperature	50°F
Re-Coat (@75°F – longer if cooler)	2 hours *
Thinning Not Required	Water wash up
Shelf Life	24 -36 months
Wet Film Thickness - 2 coats	20 Mils
Dry Film Thickness - 2 coats	8 Mils
Application Temperature	50°F - 86°F *
* Subject to the number of coats, ambient temperature, wind, humidity and time of application.	



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Manufacturer's 12 Year Warranty

Nutech is proud to offer a USA 12 Year Manufacturer's Warranty. Refer to Nutech NXT Cool Zone[®] Warranty documentation for full warranty details and conditions.

NXT Cool Zone[®] is no ordinary paint. This revolutionary coating combines advanced technology developed exclusively by Nutech Paint over more than 38 years with the special properties of Nano Technology to deliver superior durability and performance.

NXT Cool Zone[®] is guaranteed not to peel, fade or crack subject to correct surface preparation, product selection/quantity and application conditions.



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How NXT Cool Zone Saves You Money

Lower cooling requirements translate into cost savings for home owners and more:

- Water savings from reduced evaporative air conditioning
- Lower urban heat island build up resulting in reduced ozone and healthier living
- Reduced electricity usage conserving energy and valuable resources
- Encourages recycling of older viable roof structures
- Cooler buildings mean reduced chemicals and pollution for healthier cities
- Cooler homes mean less dehydration and chemical emissions
- Reduced product replacement costs i.e. air conditioning equipment & roofs

Help Protect our Environment with a Socially Responsible Roof Coating

Utilizing advanced technology, NXT Cool Zone[®] is a high energy efficient coating that reduces summer cooling costs, reduces peak energy usage and helps reduce pollution, fossil fuel usage, land fill and extends building lifespan.

NXT Cool Zone[®] helps reduce pollution, smog, the urban heat island effect and global warming. Outdoor and indoor air quality is improved due to compliant VOC levels, no Hazardous Air Pollutants and low odour. Unused liquid coating and dry coating can be fully recycled.

To help our environment NXT Cool Zone[®] is the first roof paint manufactured in Australia is fully compliant with EU and USA regulations regarding VOC content and biocides.

Volatile Organic Compounds (VOC's) are organic compounds found in paints, fuels and some household products. VOC's are a major source of environmental pollution (ozone) and studies have shown that breathing air with high ozone concentrations aggravates symptoms of people with pulmonary disease and to increase rates of asthma attacks. People with respiratory problems such as asthma, young children, elderly, and persons with heightened sensitivity to chemicals may be more susceptible to illness from VOC exposure. NXT Cool Zone[®] is classified as ultra low VOC under California's Clean Air regulations.

In many cases light coloured and reflective roofs are not permitted by Council planning controls. These controls are intended to prevent glare for neighbours and for visual aesthetics. Council's often require roofs to blend into the local environment and colours such as green, brown, red and ochre are encouraged.

In these cases consumers want the option of having dark roofs including red, brown, terracotta and even black without compromising the energy efficiency of their homes. Until now, design choice has always involved a battle between environmental impact and energy efficiency.

For the first time, NXT Cool Zone[®] Roof Coating now allows owners to achieve a solution which incorporates design flexibility and energy and resource efficiency.

The Australian Federal Government Greenhouse, Victorian Government 5 Star, NSW Government Green Home and WA Government Energy Smart Programs are part of our national environmental policies aimed at saving our limited energy and water resources.

For example, since 2005 the Victorian State Government has required all new residential buildings to meet the 5 Star Energy Rating. Existing buildings are not yet required to satisfy these standards, however the achievement of the standard is made significantly easier with NXT Cool Zone[®] Roof Coating. These types of controls are being introduced in many Countries as Governments implement responsible building and resource policies. NXT Cool Zone[®] will contribute significantly to achieve a 5 Star Energy Rating.



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Help Protect our Environment with a Socially Responsible Roof Coating cont'd..

In 2004 the California Energy Commission estimated that heat reflecting building technology could help save \$USD 250 million per year in air-conditioning costs in the Los Angeles region alone. They estimate that the cooling effect in turn would reduce ozone by 4% - 8% saving another \$USD250 million in health related costs.

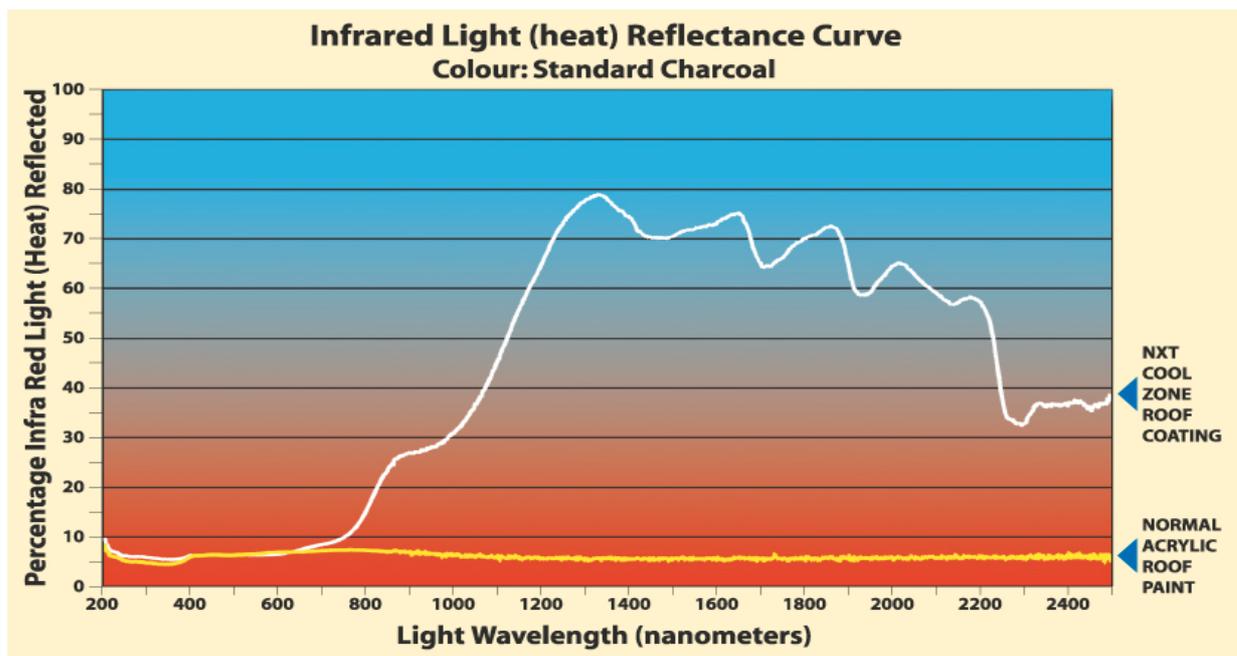
According to Hashem Akbari, a physicist with the Lawrence Berkeley National Laboratory, a 1,000-square-foot roof -- the average size on an American home -- offsets 10 metric tons of planet-heating carbon dioxide emissions in the atmosphere if dark-colored shingles or coatings are replaced with white material.

A hot roof increases a building's energy consumption. An immediate benefit of using NXT Cool Zone[®] Roof Coating will be energy cost savings. These savings are so significant that heat reflecting roof coatings are now included in the US Environment Protection Authority Energy Star program. Energy Star is a Government backed program helping businesses and individuals protect the environment through superior energy efficiency. Additionally, more and more USA states and communities are including heat reflectivity in building codes and incentive programs.

The Energy Star Program requires residential steep slope roofs (>10° roof slope) to have a solar reflectance exceed 25%. NXT Cool Zone[®] colours have a solar reflectance exceeding between 30% and 91% depending on the colour.

The US Department of Energy research has shown that one additional percent of reflectivity in a coating, on average, will reduce roof temperature by one degree. NXT Cool Zone[®] Charcoal has a Total Solar Reflectivity of 30%, compared to a conventional charcoal coloured roof paint which has a reflectivity of less than 5%. This confirms that a roof coated with NXT Cool Zone[®] Charcoal will be up to 77°F cooler than a roof coated with conventional charcoal coloured roof paint.

Many of the standard NXT Cool Zone[®] colours also comply with Council Planning and Building controls which often require roofs to have a SRV (Solar Reflectance Value) of less than 40%. White and light coloured roofs do not meet this requirement having SRV's in excess of 70%.



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Superior Durability and Appearance

Nutech NXT Cool Zone[®] is manufactured from premium 100% acrylic resins and fade resistant micronized pigments infused with saturated colour and highly resistant to chemicals, UV light and heat. NXT is enhanced with Nano-technology for improved dirt resistance and water beading.

The result is a next generation high performance roof coating with superior durability that is heat reflective, 100% waterproof and a guaranteed long lasting beautiful appearance.

Protect Your Roof with NXT Cool Zone[®]

There are now two important reasons why you should restore your roof. Firstly, the appearance of your home is greatly improved with a clean glossy coloured roof and a durable coating protects your roof from the effects of ageing. Secondly you can save money on air conditioning and improve living comfort levels.

All exterior surfaces and coatings undergo an ageing process caused by moisture, UV light radiation, temperature extremes, dirt, pollution, moss, lichen and bacteria. This ageing can result in gloss reduction, chalking, discolouration, blistering, flaking, loss of adhesion, and unsightly moss and lichen build up resulting in general coating failure.

The key to the success of NXT Cool Zone[®] is its amazing ability to resist the causes of ageing better than any other acrylic roof coating. To repel dirt pick up and contamination this amazing coating stays cooler and develops a non-tacky micro-nano surface film. This microfilm does not discolor and does not affect recoating adhesion.

NXT Cool Zone[®] contains highly effective and environmentally safe preservatives which provide long lasting broad spectrum, algacide and fungicide protection to prevent polymer discolouration and deterioration and moss and lichen growth. NXT Cool Zone[®] is fully compliant with stringent European and USA biocide legislation.

NXT Cool Zone[®] contains UV resistant non-fading pigments and tough flexible 100% acrylic polymers which will transform any roof into an attractive and functional surface.

With NXT Cool Zone[®] you can be confident that you will obtain “a perfect finish” every time.

Is NXT Cool Zone[®] better than ceiling insulation?

Rather than allowing the Sun to superheat the roof space, then trying to control heat transfer with ceiling insulation, it is much better to reflect heat away from the surface of the roof. The same principle applies with glass windows. It is better to stop the Sun from hitting the glass with external blinds rather than trying to deal with the problem once the heat has entered your home. In summer external shading is much more efficient at keeping your home cool than internal blinds. Shading your windows from the outside can reduce heat gain in your home by up to 80%.

NXT Cool Zone[®] works in a similar manner to shading your roof by reflecting the heat before it can enter the roof space. Ceiling insulation will still be required for an energy efficient home but it will work more efficiently as peak temperatures will be much lower.

Coating your roof with NXT Cool Zone[®] will also maximise the Emissivity of the roof resulting in more rapid night cooling as the temperature of the thermal building mass will be cooler and emit heat to the atmosphere more efficiently.



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Important Application and Usage Warnings

Do not apply multiple roof coats in very low temperatures or late in the day particularly on non porous substrates such as sheet metal to avoid coating adhesion problems and blistering. Each coat should be independently cured before applying subsequent coats. Do not overcoat primers or sealers including Nu-Prime, SupaPrime, Master Sealer, Metal Primer, GP Primer, SS Membrane, Asbestos Sealer or Nu-Bond until the undercoat is completely dry.

Application in very hot conditions may reduce gloss, affect adhesion and durability and may cause a patchy appearance. The use of **NXT Cool Zone® Low Sheen** is recommended for metal roofs to eliminate the potential for application banding due to overspray and gloss level variations.

To maximise heat reflecting performance standard full gloss **NXT Cool Zone®** is recommended.

Nutech **NXT Cool Zone®** TSR information is based on a comparison of **NXT Cool Zone®** with conventional roof coatings. Coating a white or lighter colored roof with a much darker color **NXT Cool Zone®** may not produce acceptable results. Ask your local distributor for detailed advice before purchasing product or refer to **NXT Cool Zone®** TSR Data. Nutech warrants that the TSR of a specific **NXT Cool Zone®** color will be better than a conventional roof coating which is a similar color.

Refer to Nutech Material Safety Data Sheet for additional safety and user information before using or opening the container.

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Important Note

The information given on this data sheet is based on many years experience and is correct to the best of our knowledge. However since the use of our product, surface conditions, weather and a number of other factors are completely beyond our control, we can only be responsible for the quality of our product at the time of dispatch. For more information please contact our Company. As this information is of a general nature, we cannot assume any responsibility in individual cases.



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