

# New Zealand green systems and resources

## Green Star NZ

Green Star NZ is New Zealand's first comprehensive environmental rating system for buildings. Green Star NZ does not approve products. To earn Green Star NZ points, the project specifier must show documentation proving that the specific product/method etc meets the Green Star NZ specifications. If the product/service meets the Green Star NZ specifications and compliance criteria the points are awarded.

At present (January 2008), in the paint category the Green Star NZ specification differs from the Environmental Choice specification on the VOC limits. Environmental Choice is due to release a new paint specification and when released the current Green Star NZ documentation states that this will become the new paint specification for Green Star NZ. We understand this is yet to be confirmed by NZ Green Building Council.

The Green Star NZ programme is focused mainly on VOCs with one credit available in the IEQ-13 Volatile Organic Compound section if 95% of all painted surfaces are low-VOC paints OR no paint is used. (Other credits in this section are for carpet, and adhesives and sealants). An additional credit is available in the Mat-10 Paints section for products that are independently verified to be environmentally preferable – e.g. Environmental Choice approved or approved by any GEN-aligned certification system recognised by the NZ Green Building Council.

The Green Star NZ points are weighted so that the maximum 2 paint points detailed above, once weighted, equate to:

- IEQ – 1 paint point out of 26 IEQ points, total Green Star NZ weighting for IEQ of 20% = 0.77 Green Star NZ points. ONLY APPLIES TO the INTERIOR paint specification and paint applied on site (excludes internal carparks and paint applied off-site). If you use an exterior paint inside then the VOC limit above will apply.
- MAT - 1 paint point out of 24 MAT points, total Green Star NZ weighting for MAT of 10% = 0.42 Green Star NZ points. Applies to exterior and interior paints applied onsite (excludes those applied off-site).
- Giving a maximum potential Green Star NZ paint points = 1.2 points (rounded).

To achieve maximum Green Star NZ points a product needs to meet the VOC limits (if used inside) **and** have independent environmental certification, such as Environmental Choice. These points are awarded if the paint system meets the Green Star NZ specifications. No additional points are awarded if the paint system is better than the Green Star NZ specifications. If two products meet the Green Star NZ standard and one is better on some aspect than the other, they still both get the same Green Star NZ points.

The Green Star NZ points are weighted so that the maximum 2 paint points detailed above, once weighted, equate to:

- IEQ – 1 paint point out of 26 IEQ points, total Green Star NZ weighting for IEQ of 20% = 0.77 Green Star NZ points.
- MAT - 1 paint point out of 24 MAT points, total Green Star NZ weighting for MAT of 10% = 0.42 Green Star NZ points.
- Giving a maximum potential Green Star NZ paint points = 1.2 points (rounded).

## Certification Standards:



4 Star Green Star NZ Certified Rating (score 45-59) signifies 'Best Practice'



5 Star Green Star NZ Certified Rating (score 60-74) signifies 'New Zealand Excellence'



6 Star Green Star NZ Certified Rating (score 75-100) signifies 'World Leadership'

## Current environmental weighting factors for Green Star NZ Office Design:

NZ weightings	
Management	10%
Indoor Env. Quality	20%
Energy	25%
Transport	10%
Water	10%
Materials	10%
Land use and Ecology	10%
Emissions	5%
TOTAL	100%

### **NZ Green Building Council**

The NZ Green Building Council facilitates the Green Star NZ programme and assists building owners, specifiers, etc to learn and understand what is required to achieve Green Star NZ rating points and make sustainable improvements via seminars, consultations etc. The NZ Green Building Council also disseminates information and resources for improving the environmental footprint of buildings, products, specifications etc.

The NZ Green Building Council does not provide independent verifications for products.

Companies, specifiers, owners, etc can choose to join the NZ Green Building Council. This does not mean that they are more or less environmentally preferable to non members.

Web: [www.nzgbc.org.nz](http://www.nzgbc.org.nz)

### **Greenbuild**

Greenbuild is an online database of a vast range of building related products. These products may or may not be environmentally preferable. Manufacturers and distributors of products can choose to have a basic listing or pay more for an enhanced listing. The enhanced listing includes additional features to showcase the environmental credentials of a product. Products are sorted and displayed with products with enhanced listings displayed first then products with basic listings.

For some products independent environmental verification, such as Environmental Choice, is unavailable. For these products, if they wish to sign up to a more detailed listing/service, Greenbuild will allow them to show the environmental credentials they do have regardless of whether they have recognised environmental approval from a body, such as Environmental Choice.

Greenbuild is designed to help specifiers, building owners etc find products to use in their designs and buildings.

Web: [www.greenbuild.co.nz](http://www.greenbuild.co.nz)

### **Environmental Choice**

Environmental Choice is an independent product verification programme run by the Ecolabelling Trust and owned by the NZ Government. Products must meet Environmental Choice specifications to become Environmental Choice approved. Over time, specifications for products are gradually tightened, so that products complying with Environmental Choice have to meet a better standard of environmental preferability as time passes.

Environmental Choice takes a broader view than the Green Star NZ VOC specification and considers the wider impact of the product, including manufacturing, packaging, banning the use of many ingredients that are known to be hazardous and/or cancer causing, etc.

Environmental Choice does not have a specification available for all products at this stage, however many recent specifications have been developed due to demand from industry for specifications for some materials. Paint does have an Environmental Choice specification.

Environmental Choice costs are based on company size. This is to ensure that smaller companies have equal opportunity to gain an Environmental Choice specification as larger companies.

Web: [www.enviro-choice.org.nz](http://www.enviro-choice.org.nz)

*Please refer to the NZ Green Building Council for verification of requirements for any Green Star NZ specifications.*

# New Zealand Green systems and resources - Resene context

(January 2008)

## Green Star NZ

Resene products may be used to achieve Green Star NZ rating points. The maximum points available are:

- IEQ-13 - 1 point (unweighted) – paint must meet VOC limits stated (or the VOC limits of the new Environmental Choice specification, to be clarified by NZGBC)
- Mat-10 Paint - 1 point (unweighted) – paint must have independent verification that it is environmentally preferable, such as Environmental Choice.

At present (January 2008), in the paint category the Green Star NZ specification differs from the Environmental Choice specification on the VOC limits. Environmental Choice is due to release a new paint specification and when released the current Green Star NZ documentation states that this will become the new paint specification for Green Star NZ. We understand this is yet to be confirmed by NZ Green Building Council.

## The current VOC limits (gm per litre) are:

Latex primer for galvanised iron and zincalume	60
Exterior latex undercoat	55
Interior latex undercoat	65
Interior sealer	65
Exterior timber primer	50
Interior gloss	75
Interior semi-gloss	16
Interior low sheen	16
Interior flat-washable	16
Interior flat-ceilings	14
Exterior gloss	75
Exterior semi-gloss	70
Exterior flat and low sheen	50
Solvent-based	200
Recycled paints	100

To achieve maximum Green Star NZ points a product needs to meet the VOC limits (if used inside) **and** have independent environmental certification. The Green Star NZ points are weighted so that the maximum 2 paint points detailed above, once weighted, equate to:

- IEQ – 1 paint point out of 26 IEQ points, total Green Star NZ weighting for IEQ of 20% = 0.77 Green Star NZ points. ONLY APPLIES TO the INTERIOR paint specification and paint applied on site (excludes internal carparks and paint applied off-site). If you use an exterior paint inside then the VOC limit above will apply.
- MAT - 1 paint point out of 24 MAT points, total Green Star NZ weighting for MAT of 10% = 0.42 Green Star NZ points. Applies to exterior and interior paints applied onsite (excludes those applied off-site).
- Giving a maximum potential Green Star NZ paint points = 1.2 points (rounded).

Resene has a wide range of Environmental Choice and low or no VOC paints available that meet the general Green Star NZ VOC limit requirements and that will enable you to earn the maximum Green Star NZ points of IEQ 1 point (unweighted) and MAT 1 point (unweighted).

How to maximise your Green Star NZ rating points:

- Ensure you specify Environmental Choice approved products wherever possible to ensure the MAT-10 Paints 1 point is achieved.
- Select products for the interior that meet the VOC limits above. Products that you wish to use that do not meet the VOC requirements above may still be used, provided they account for no more than 5% of the total paint use. Use this 5% for Resene Lustacryl or Resene SpaceCote waterborne enamels, etc that may be desired for wet areas and trim but that will not meet the VOC limits above. Please note Resene Enamacryl does meet the VOC limits so can be comfortably specified inside and out.

When specifying Resene paint, refer to the Resene VOC summary to view VOC levels and Environmental Choice approval by product. Please ensure your list is current prior to specification, as product reformulations may result in a change in VOC levels and Environmental Choice approval. Resene staff are happy to assist with writing or checking specifications to ensure the optimum paint

## NZ Green Building Council

Resene was a Gold Foundation sponsor of the NZ Green Building Council when it first started and is a current member.

## Greenbuild

A selection of Resene products are listed on Greenbuild, some as basic listings and some as enhanced listings. Specifiers wanting general information on Resene products are best to visit the Resene website [www.resene.co.nz](http://www.resene.co.nz) – Data Sheets section and to view the Resene VOC Summary list that details VOC levels and Environmental Choice approval by product.

## Environmental Choice

Most Resene waterborne products are Environmental Choice approved. Refer to the Resene VOC Summary list to see Environmental Choice approval by product. Copies are available from Resene representatives or the Resene website.

## What is a VOC?

A VOC is a volatile organic compound – in the case of paint, this is solvents that are released into the air as the coating cures over time. Most waterborne paints now have VOC levels of 100gm or less per litre. Traditional solventborne paints have considerably higher levels of VOCs – often 400gm per litre or higher. For example 7 litres of Resene Waterborne Woodsman has around the same VOCs as just 1 litre of Resene solventborne Woodsman and it is more durable so will last longer before requiring recoating.

To put this VOC level into context, the San Joaquin Valley Air Pollution Control District estimates that the average dairy cow emits 19.3 pounds (8.75kg) of VOCs a year. This equates to 23gm VOC emitted per day per cow.

New Zealand has a dairy population of 5.35 million cows (2006). With an average VOC emission rate of 23gms per cow per day, the total daily VOC emissions of the NZ cattle population is 128,319kg of VOC. The annual VOC emissions for the NZ cattle population is 46,836,468kgs. Australia has a cattle population of 27 million cows. With an average VOC emission rate of 23gms per cow per day, the total daily VOC emissions of the Australian cattle population is 647,592kg of VOC. The annual VOC emissions for the Australian cattle population is 236,370,960kgs.

The VOC emissions from paint are dwarfed by the emissions from cows. Total Resene VOC emissions from **all** decorative paint manufactured in NZ **both** waterborne **and** solventborne would be equivalent to less than one week of NZ cow emissions. For waterborne products only, which comprise well over 90% of Resene's decorative paint production, NZ made Resene decorative paint VOC emissions would be less than 3 days of NZ cow emissions. Over a period of 10 years, 1L of Resene Lumbersider will emit a total of just 35gm of VOCs while one average cow will emit 37kg (87,545gm) of VOCs.

A Californian study of vehicle VOC emissions in 1997, showed an average VOC emission of 9.3gms per litre of petrol. The average car used 5.9 litres per day, so the total average car usage resulted in 55gm of VOC emissions per day. Over a period of 10 years, 1L of Resene Lumbersider will emit a total of just 35gm of VOCs while (based on the California study) one car with average usage will emit over 200kg (200,000 gm) of VOCs.

Closer to home, hairsprays, deodorant sprays and many cleaning products release VOCs. In early 2007, Hong Kong enacted a regulation for hairsprays that no more than 80% of their content by weight could be VOCs. For a 500gm can of hairspray, this means potentially 400gm is VOCs. Most hairspray users would use a can every 1-2 months, which would equate to up to 4800gm of VOCs emitted per annum. This is the same level of VOCs emissions as you would get from using 87 litres of paint of a low VOC waterborne enamel, such as Resene SpaceCote Low Sheen, which would be sufficient to apply one coat to an area of around 1000 square metres. Over a period of 10 years, 1L of Resene SpaceCote Low Sheen will emit a total of just 55gm of VOCs while someone using one can of hairspray per month will emit up to 48kg (48,000gm) of VOCs.

The stated paint VOC level is the maximum VOC that may be released for the full life of the paint and it is anticipated in most cases it will be much lower, which means that the total environmental impact over the product's life is considerably less than items such as motor vehicles, hairsprays and cattle, which continue to emit VOCs on an ongoing basis. The drivers to reduce VOCs internationally come from two different interest groups - the first is interested in internal air quality (usually European), the second is interested in localised pollution and low level smog (driven by a number of organisations in California). More recently there has been a concern for possible interactions with so called "green house gases" but these are tenuous and not historically linked to the interest in VOC reduction.

Resene has always believed that our best contribution to sustainability is to offer longevity and thus reduce the need for repainting. Reducing toxicity has always been a way of life at Resene but quality remains paramount.

See the Resene Architects Memo Very 'orrible compounds and In the valley of the blind (both available from <http://www.resene.co.nz/archspec/archmemo/memoindx.htm>) for more information on VOCs.

There is a range of local and international standards and the Resene Technical Team are happy to support specifiers and architects with information on products and their compliance.

*Please refer to the NZ Green Building Council for verification of requirements for any Green Star NZ specifications.*