

**GOLDSEAL
INDUSTRIAL
RUSTPROOFING
COMPOUNDS**

GOLDSEAL GROUP INFORMATION FOR THE SPECIFIER OR MAINTENANCE ENGINEER

*Providing cost
effective extension
of life for oxidising
surfaces in extreme
environments*

**NOTE: This is an interactive pdf.
To access areas of interest please click on the index
to take you directly to the relevant page.**



Chemical Environments



Marine Assets



Bridges



Steel / Timber / Bolt combination

GOLDSEAL INDUSTRIAL RUSTPROOFING COMPOUNDS

OVERVIEW:

The Goldseal range of rustproofing compounds are formulated as single pack, single application encapsulating barrier coats to protect oxidising steel. They are corrosion neutralising and lubricating. Goldseal is a niche solution in extreme environments.

These environments are often associated with aggressive chemicals, marine deposits, volcanic fumes and condensation (leading to chemical combinations). The maintenance program is then often complicated by lack of access, time/tide constraints or difficulties with surface preparation and inter-coat contamination.

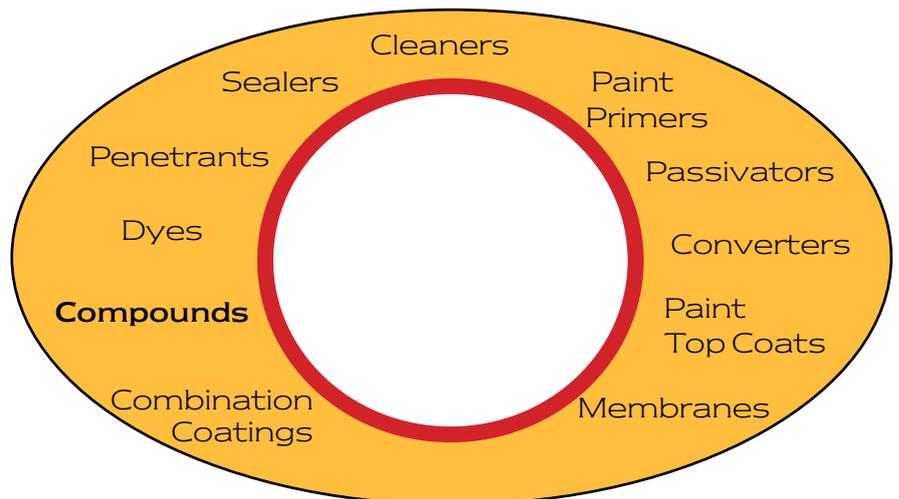
Points of Difference:

Goldseal Industrial Rustproof has a 40 year plus history, as a cost effective corrosion solution.

There is documented performance in the field from 10 to 30 years in Ph environments from 1-11.

- Single pack/single coat minimum 300 microns
- Combined Product/Application Warranty
- Cost effective
- Proven extension of asset life
- No solvent
- 90% solids
- Penetrating/self healing
- No sandblasting
- Spill recyclable
- No crack/peel
- Environmentally friendly
- Storage safe
- Weldable/no fume
- Simple hand repair

Technology Wheel of surface treatment options:



The technology wheel identifies 11 categories of products that treat surfaces. Each product category identifies a group with different functionality.

Goldseal is a compound. Compounds are not dry film build paints. They are designed for application directly to oxidising steel and spalling concrete with minimal preparation.

The substrate can be new, oxidised, previously coated or galvanised.

Sandblasting or surface grinding is seldom required.

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The Maintenance Challenge:

Mainstream maintenance coatings are often straight forward to specify, for basic contracts. However, where aggressive environments combine with difficult access, compounded with time constraints, the coating and contracting options reduce quickly.

Hi Tech coatings with good service lives are often applied in a factory controlled environment prior to assembly.

Maintaining spot breakdown in many coatings is not straight forward in a marine or process environment. A paint manufacturers guarantee can mean nothing if surface preparation to their specification is not achieved. The Goldseal combined "Product and Licenced Application" process excels in this environment.

Goldseal is a valuable addition to the Specifier or Maintenance Engineers options providing Superior Solutions in difficult situations:

- Sheet Piling & Wharf undersides
- Fertiliser stores, roof trusses & conveyor frames
- Steel Pile interiors / Mine Head frames
- Abattoirs and Process environments
- Spalling concrete
- Cool Store attics
- Port Facilities
- Bridges
- Barge and Ferry voids
- Galvanising Plants
- Wood/concrete/bolt combinations
- Rusty Z or C purlins (Viable rescue coating)
- Mobile assets
- Swing bridges and cables



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Marine Assets

Port Facilities, wharfs and assets within 1 Km of the coast.

Experience in this Category 25 Years plus.

Buildings : Warehouses, loading canopies and cool store attics often have salt laden air circulating at levels above the reach of convenient maintenance washing. Where these facilities also store fertiliser there can be aggressive combinations of fertiliser and salt deposited on rafters, purlins and horizontal surfaces. Holding primers applied when the building was erected and high build 2 pack epoxies can crack with building movement and corrosion occurs.

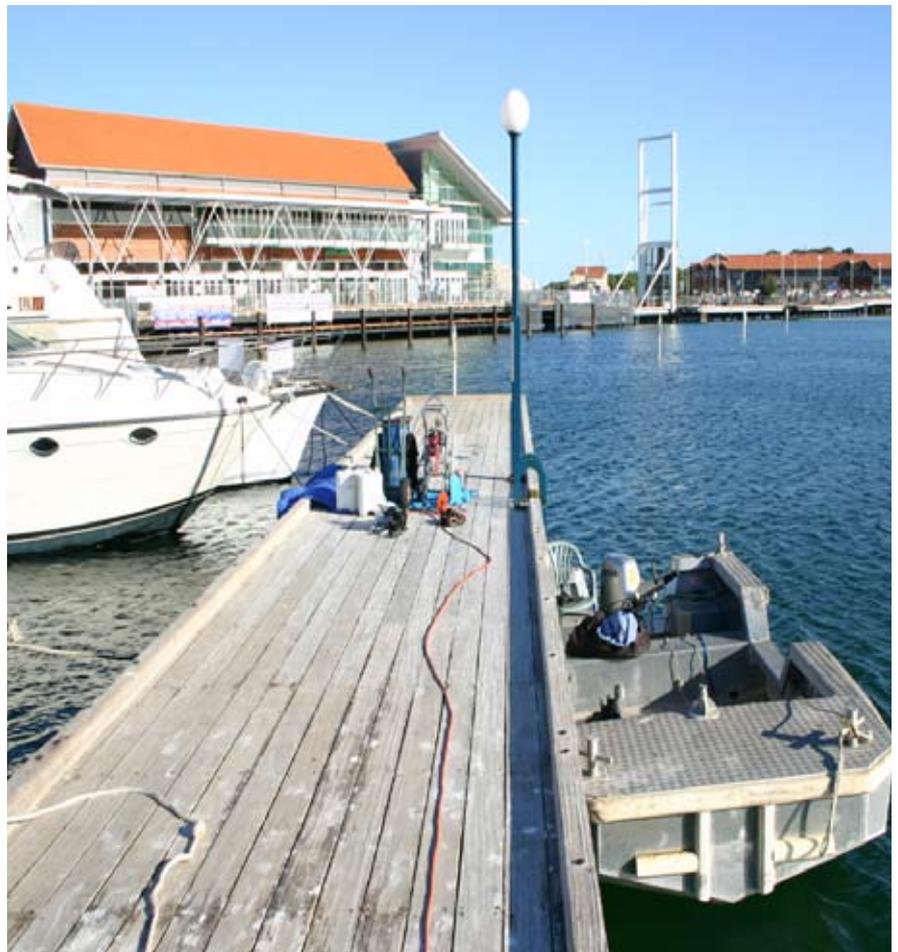
Recoating these areas can be difficult :

1. Neutralising or removing corrosion cells can require sandblasting or grinding.
2. Primers and intermediate coats will attract overnight salt deposits.

Recommendation:

Wash, clean and coat with Goldseal Industrial Spray Grade according to the Industrial Spray Grade Specification.

Clean and coat by section, completing the coating of that section in one work shift.



Goldseal is an ideal spot repair or complete overcoat option for the underside of fixed marine assets

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Marine Assets

Port Facilities, wharfs and assets within 1Km of the coast.

Experience in this Category 25 Years plus.

Wharfs - The undersides of wharfs are an aggressive unwashed environment. Goldseal is an effective barrier to salt, chloride ions and moisture vapour.

- Where there are combinations of wood decking on steel, or concrete decking on steel, Goldseal will protect the concrete from spalling, the steel from oxidising and fill the joint cavities between the two, with a flexible seal that will not crack or peel.

- Goldseal can be applied down to water level. The coating has a penetration phase that soaks into the physical structure of steel and concrete. It then forms a firm dry coating over 8-12 weeks, similar to plastercine.

- Wave action and particularly detritus will remove the coating over time to wave height.

- Where cathodic or anodic or other electrical corrosion systems are in place, Goldseal is an excellent partner as these systems often produce protection 200mm above wave height/wet zone. This overlaps with the Goldseal protection above .

Recommendation - Use Industrial Spray Grade Specification.



Failing paint coating



Goldseal on Chelsea wharf after 24 years



Chelsea Sugar works. NZ

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Marine Assets

Port Facilities, wharfs and assets within 1Km of the coast.

Experience in this Category 25 Years plus.

Sheet Piling – Sheet piling driven over 20 years ago was designed to be sacrificial and was not protected. Replacing this is now an expensive process with areas under vessel loading wharfs even harder to maintain.

- As a rescue coating , Goldseal can be applied directly to the 20mm thick rust on sheet piles. If the sheet piling already has holes in it Goldseal can be trowelled into these cavities as a filler before overcoating the whole area by airless spray.

- As Programmed Maintenance, Goldseal can be applied to a clean air chiselled sheet pile (when all the rust scale has been removed) without sandblasting. It is very effective at filling the gap between the concrete wharf deck and the sheet pile top or filling vertical gaps in the sheet pile overlap where sea water often has free access.

Steel Pile interiors – Goldseal can be applied by 360 degree nozzle to new steel piles that have yet to be driven or to existing pile interiors exhibiting internal salt and condensation oxidation.

- The internals should be washed and large nodes removed if practical, to help lay down a coherent coating.

- The Goldseal is sprayed at over 70 degrees Celsius. It flows into cracks and, self levels, penetrates and capillaries into spray shadow areas.

- The pile cap can then be re-fitted.



Goldseal as a rescue coating



Sand blasted sheet piling



Marine pile before



Marine pile after Goldseal

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Marine Assets

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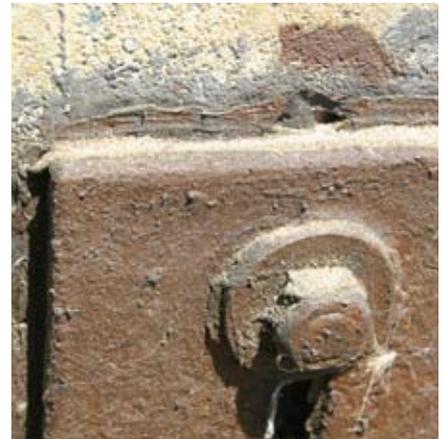
Wharf Conservation - Older wharfs are a combination of timber / concrete and steel. Fixings can be countersunk into timber or concrete. Some flange, bolt and rod reinforcing or triangulation braces are difficult to prepare or consist of bolted intersections which can be prepared and paint coated but will move. This movement cracks most coatings allowing salt water and chloride ions to create localised corrosion cells. These undermine the coating and blow it out from underneath.

Recommendation:

- Remove rot, fill timber cracks with cold Goldseal. .
- Coat replacement bolts with Goldseal, fit and fill the countersink.
- When replacing decking apply Goldseal to seal the top of the support member and relay deck.
- Spot coat corrosion cells with Brush Grade or completely coat with Industrial Spray Grade.
- Goldseal will capillary behind nuts and flanges and will not crack or peel with movement.
- Prepare and coat by section the same day.



Western Australia full sun



Western Australia two years old



Example of restoration

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Structural Assets

Structures enclosing storage spaces or manufacturing processes. Greater than 1 km from the coast.

Experience in this Category 35 years plus.

This Category includes most large storage, processing or manufacturing facilities.

- Mine ore processing producing acid & condensation.
- Galvanising Plants producing acid fumes.
- Cool Store Attics producing condensation corrosion.
- Fertiliser Stores / Bolt, flange and horizontal deposit corrosion.
- Abattoirs /Tanneries/Canneries/Wool Scours producing Ph environments from 1-11, including washing.
- Concrete Plants and Paper mills producing mainly condensation and steam.
- Salt Mines or processing producing salt slurry.

Most large buildings are not maintenance washed internally in a programmed regime.

Therefore with time there is a build up of dust, dirt and contaminants.

These are either:

1. A product of the process within the structure.
2. An accumulation of material and deposits blown in from the local environment / nearby processes.
3. A combination of 1 & 2 that create an issue the structural coating was not designed to resist.



Individual purlins can be replaced or sleeved then encapsulated with Goldseal

A Maintenance Challenge :

1. How do you shut down the service a large building provides, long enough, to clean, prepare and recoat a complicated internal support structure?
2. If the structure houses a process, how do you protect the machinery from detritus produced from stripping, grinding or sandblasting?
3. If there is not the time or budget to address 1 & 2 what is the long term cost of partial or spot corrosion control? The Goldseal coating can be applied without extensive preparation and where the debris from preparation can be controlled.

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Often maintenance is long overdue and a complete strip back to the steel would be required, in order to apply a paint type coating system. In the case of corroded Z or C purlins, Goldseal is an excellent rescue coating avoiding roof removal. Depending on the situation, Goldseal Industrial Spray Grade is applied in a single application after waterblasting or manual cleaning, chipping or scraping.

Sandblasting is not a prerequisite.

This allows sections of a warehouse, fertiliser store, meat works or galvanising plant to be coated, while the production process is maintained. Critical areas can be coated with the shut down of a single shift.

Example: The BHP Billeton Fertiliser store in Townsville, Queensland, Australia, now owned by Incitec Pivot. Each 200 ton bay was prepared and coated in 3-4 days using a 140 foot boom lift.



Coating from new

Field evidence supports applying Goldseal to new structures, portals or roof purlins in what is typically be an aggressive environment.

Costing this in to the capital expenditure gives an economical maintenance budget, return on investment.

Example 1: AFFCO Meat works Horotiu New Zealand 1974 (New Zealand's largest meat processor)

Goldseal was applied to mild steel portals in 1974. An updated 2004 reference confirms effective protection from surface corrosion since that time, in Ph environments from 1-11, without major maintenance.

Example 2: The Galvanising Industry in Australia and New Zealand

Goldseal has been applied in New Zealand since 1983 in this Industry and Australia since the early 1990's. The acid fumes generated by the galvanising process will cause most single pack, 2 pack and galvanised coatings to fail in 2-5 years. Having used Goldseal for many years leading Australian plants are now applying Goldseal to new facilities as a capital expense due to excellent coating life.

Recommendation: Apply Goldseal according to the Industrial Spray Grade Specification.

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Bridges

Most New Zealand district councils specify or use the Goldseal coating for steel structures.

Experience in this category 30 years plus.



There are Goldseal applications on :

- Steel flatdeck farm style bridges.
- Calender Hamilton bridges (Top structure).
- Wood deck on steel.
- Concrete deck on steel.
- Heritage bridges
- Wood and cable swing bridges.
- Bridge bearings & confined spaces.

Goldseal exhibits the following advantages;

1. Sandblasting is not required.
2. Detritus and paint flake encapsulation system has been approved for eco-sensitive areas.
3. Single coat application to several thousand microns is possible. 300 plus microns is standard.
4. Filling and sealing of the deck / support structure join.

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Bridges continued

5. Application on concrete to inhibit spalling
e.g. Raglan Wharf 20+ years without maintenance
6. Can be applied to bridge bearings and bearing plates.
Can be applied in confined spaces.
7. Can be applied to hollow bridge foundation legs in
condensation environments.
8. Can be applied by 360 deg fan to hollow members
and lighting poles.
9. Can be applied to cracked timber and steel cables as
a conservation technique.
10. Hand rail and maintenance painting services can be
offered by our Licensed contractor.
11. Can be applied above estuarine salt water and in
Geothermal environments.

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Barge Interiors and Condensation voids in Steel Vessels

Experience in this category 20 years +.

Many barges or older vessels were assembled from steel with only a holding primer. Although the interior is a relatively closed environment there is usually a build up of contaminants in the bilge which slowly corrodes the interior. As with many closed steel environments corrosion goes unnoticed until it appears through the hull from the inside out.

Recommendation:

- Clean the bilge and contaminated areas.
- Remove scale.
- Coat the whole interior with Goldseal. Barges are usually warm inside and some airflow will be required. As Goldseal has no catalysts or solvents it has a distinct advantage in this application.
- Goldseal in this environment lasts substantially longer than traditional coatings.



Inspection shows Goldseal continues to perform very well after 15 years in this marine barge

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Miscellaneous Areas

- Fire sprinkler pipe systems – hand application – no overspray.
- Marine winches and cables.
- Hand Application – A brush grade is available for bolts, nut and flange reassembly or application to damp machinery foot/concrete areas.
- Corroding Colorsteel .Colorbond and Polypanel as a rescue coating.
- Flange, nut and bolt corrosion - horizontal flanges accumulate contaminants that are not removed by rain washing.

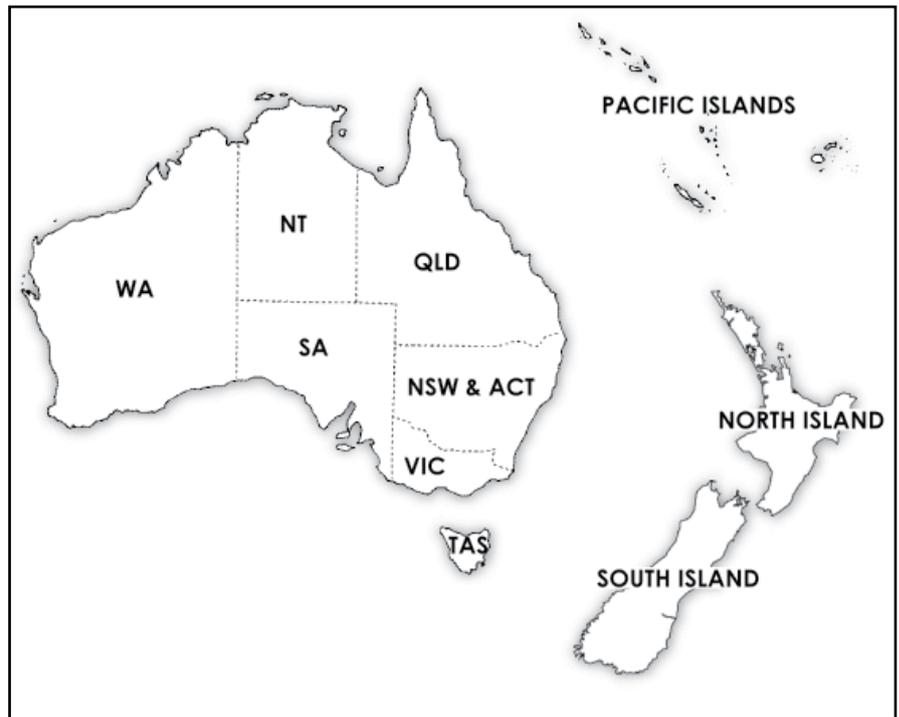


Example of Flange corrosion on Fiji flour conveyor housing which can be controlled with Goldseal



Auckland Sky Tower top mast flange sealed with Goldseal

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RustProof Services NZ (2005) Ltd.

Contact Charles Stevenson. General Manager

Rustproof Services (NZ) 2005 Ltd

P.O. Box 186, Whitianga, 3542. N.Z.

Telephone: 07 866 2304

Freephone: 0800 78 78 77

Mobile: 0276 315 657

E-mail: rustproofservices@goldseal.co.nz

www.goldsealrustproofing.com

■ Covering: Pacific Islands, Northern Territories,
Western Australia

Gold Seal Rustproofing Ltd.

Contact Colin Townshend. Director

Head Office P.O. Box 177. Cambridge. New Zealand

Telephone: 0064 7 827 2111. Fax : 00 64 7 827 2118

Mobile : 0274 949 507

Email : gold.seal@extra.co.nz

■ Covering: South Island (New Zealand)
South Australia, Victoria, New South Wales, ACT,
Tasmania

Rustproof Coatings Ltd.

Contact : Ross Fleming. Director

Head Office : PO Box 9033, Hamilton, 3240, NZ

Telephone: 0064 7 847 9142. Fax: 0064 7 846 7414

Email: ross@rustproof.co.nz

■ Covering: North Island (New Zealand)
Queensland (Australia)

Shore Water Marine

Contact Shaun Williamson

Telephone: 0061 8930 12521

Mobile: 040 777 0676 or 041 151 3280

Email: shorewatermarine@bigpond.com

■ Covering: Western Australia.