

GL

AmcanColors[®]

Pre-painted GL

**55% Al-Zn Alloy
Coated Steel**



Corrosion resistance

High temperature resistance

Heat reflectivity

Formability and drawability

Cost effective performance

GL Coated Steel Technical Data

COIL COATING

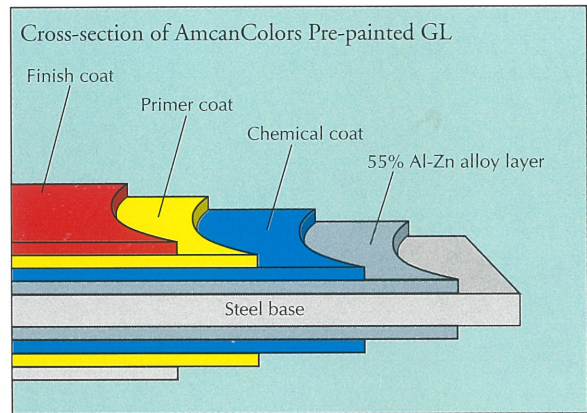
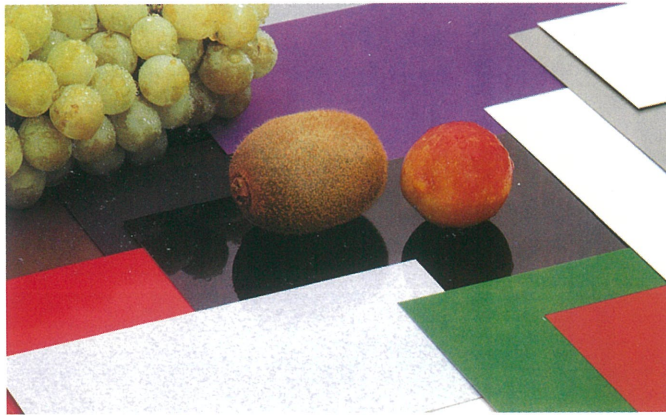
Amcan Coil Coating was established in year 2000 to produce Pre-painted Steel Sheet in coil form with the technology collaboration with Yodogawa Steel Works Ltd of Japan and a Swedish paint company, Beckers on our Multi-Purpose Color Coating Line.

Fully backed up by the Japanese Technology in steel and Becker's expertise in paint, Amcan Color Coating Line is capable of applying a wide variety and range of colors on high quality (GL) 55% Al-Zn Alloy coated steel coils as the standard material to meet our customers' requirement.

With an integrated quality control system in place at every stage of our production, the line system is able to offer a wide range of coated products like the Double Coat Double Bake for Regular Polyester.

Our Premium Series of Amcan Durafresh and Amcan Durafluor is another superior paint system offering higher durability and protection against common problem in tropical climates.

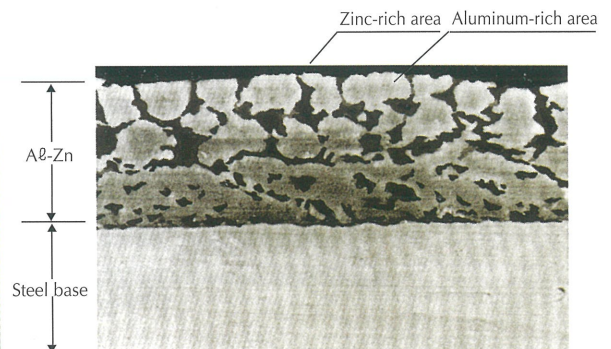
All these systems are able to cater the requirements and standards of our customers in both the domestic and overseas markets.



COATING COMPOSITION OF GL

GL is a corrosion-resistant, alloy coated steel produced by a continuous hot dip process. The alloy coating comprises about 55% aluminum, 43.4% zinc and 1.6% silicon. This coating provide a balance between the superior corrosion resistant quality of aluminum and the sacrificial galvanic protection ability of zinc. Thus, quality performance of GL extends the range of applications more essentially.

Element	Weight ratio (%)	Volume ratio (%)
Aluminium	55.0	80
Zinc	43.4	19
Silicon	1.6	1



(Photo-1) GL coating structure highly magnified (x1,000)

ATMOSPHERIC CORROSION RESISTANCE

The alloy coating of GL provides the optimum composition of aluminum and zinc for corrosion resistance and galvanic protection. Atmospheric exposure test results confirm that corrosion resistance of GL is quite good, compared with zinc-coated steel sheet.

As shown in Photo-1, the alloy coating has Al-rich phase and Zn-rich phase formed like net structure.

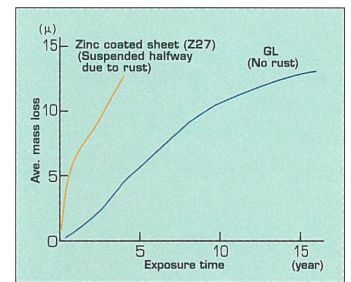
Accordingly, it provides galvanic protection to bare steel by a similar mechanism to zinc coatings, and also corrosion resistance of aluminum prevents the steel from rusting in good balance with zinc function. On the other hand, aluminum 100% coating itself cannot prevent the steel from rusting on its cut end section or if it has a scratch which reveals the bare steel.

(a) Atmospheric exposure test

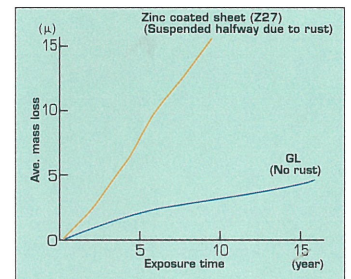
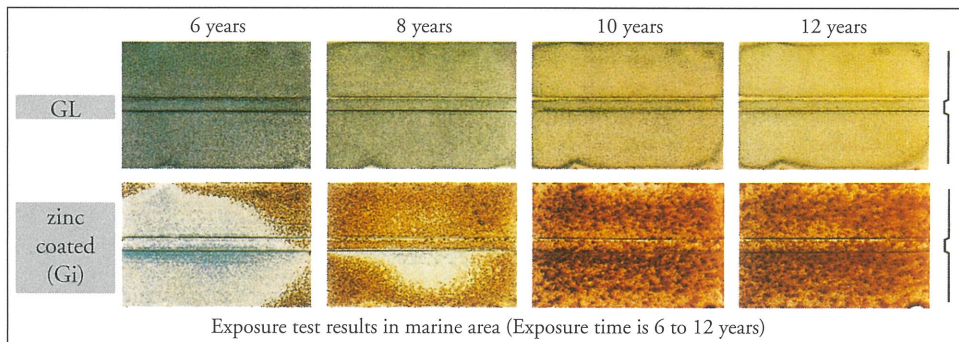
Atmospheric exposure tests have been carried out in USA for a long time. Each site is, for example, severe marine, industrial or rural, and the results are as per Figure 1 to 3.

Each figure shows the relation between exposure time and corrosion rate in each area. The result of the tests indicates that GL sheet exhibits no evidence of rust on its flat portion under the condition where zinc-coated steel sheet (z27) has red rust on its whole surface.

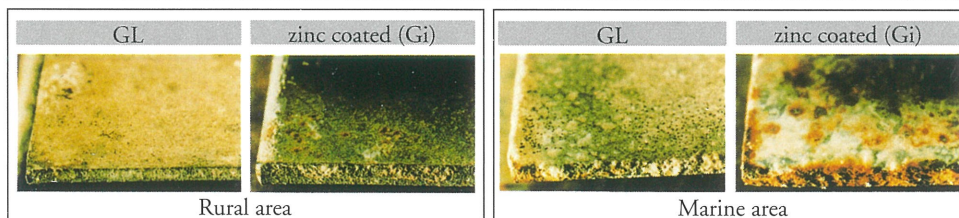
GL sheet is confirmed to endure 3 to 6 times as zinc-coated steel sheet (z27), especially in the area of severe marine and industrial.



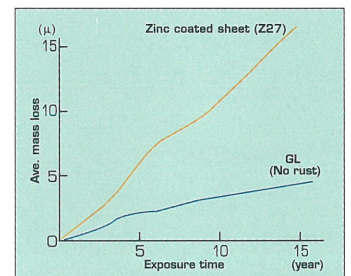
(Figure-1) Comparison of corrosion rate in severe marine area



(Figure-2) in industrial area



Exposure test results on cut edges (13 years)



(Figure-3) in rural area

(b) Salt water spray test

The salt water spray test was carried out to the flat portion of GL in accordance with JIS Z2371 (35°C, 5% solution). The results is as per Photo-2.

Photo 2 shows that GL has no red rust while GI has red rust entirely.

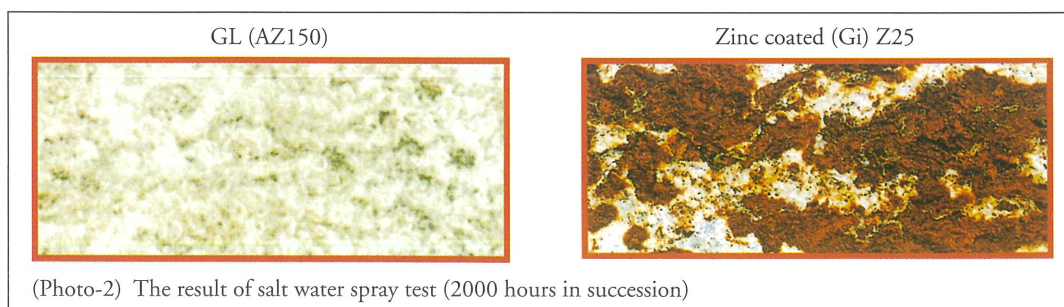
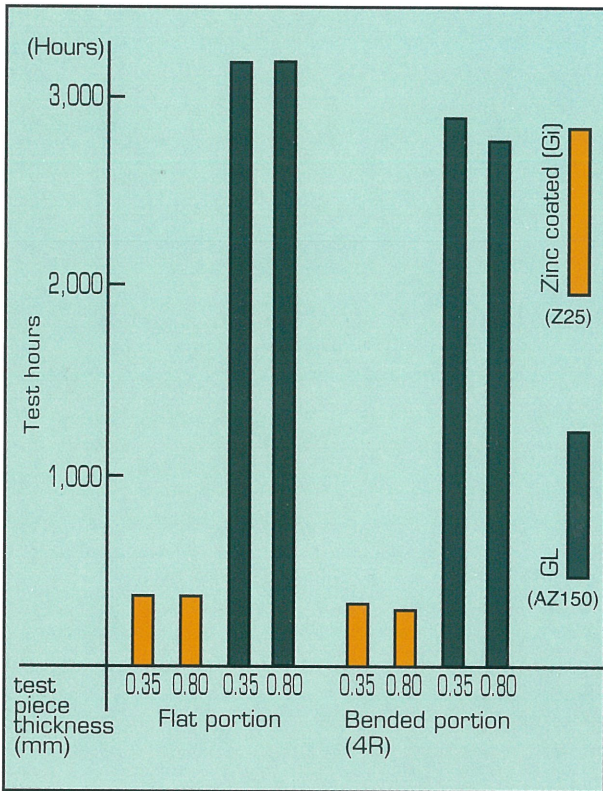


Figure-4 is the results of salt water spray in both portion flat and bended (4R) between zinc coated sheet and GL sheet. It shows that GL has about 10 times of durability in corrosion resistance to zinc coated.

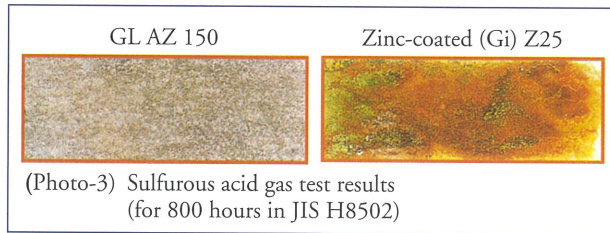


(Figure-4) Hours until rust begins to take place (Salt water spray test)

(c) Sulfurous acid gas test

A sulfurous acid gas test was carried out to examine the resistant quality of GL against exhausted gas from cars and factories which leads to acid rain issue now brought up at various parts of the world.

As the results, GL has proven to be 6 to 8 times more durable than zinc-coated steel sheet. The test results for 800 hours is as per Photo-3.



(d) Humidity test

Humidity resistance is an important factor to be tested for building materials. In the humidity test, time for rust to begin to take place is as per Table shows.

Test piece	Hours for rust to take place
Zinc coated (Gi) Z25	6,000 hours
GL sheet (AZ150)	35,000 hours

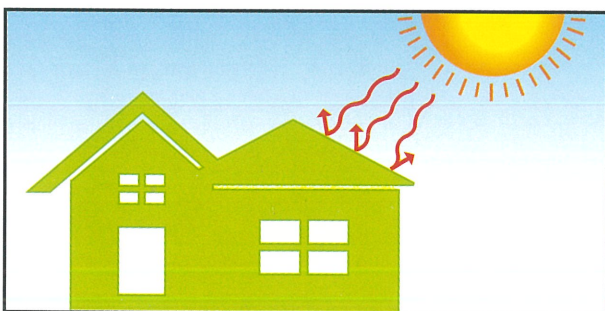
Humidity test (Temp.50°C x Humidity 95%)

HEAT REFLECTIVITY

GL sheet is the most suitable as roofing materials for buildings to be designed for energy saving and also heat reflectors for toasters and cooking ovens, since the surface of GL is very fine and shiny enough to reflect heat and sunshine.

Heat reflectivity

Articles	Reflectivity (%)
GL	70~75
Galvanized (Gi)	30~40

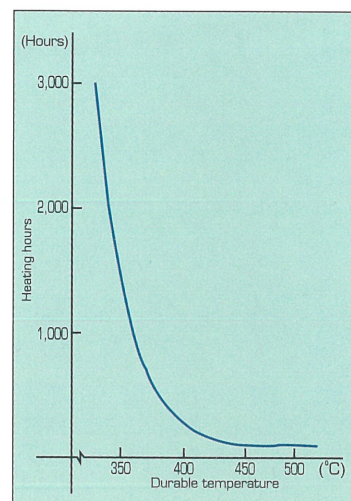


Heat resistance

Aluminum accounts for 80% (in volume ratio) of the Al-Zn alloy coating and consequently the GL sheets have heat oxidation resistance close to aluminum coated sheet.

GL sheets can be employed for long time under the temperature as high as 300 to 350°C.

The Figure-5 shows a relation between the durable temperature and heating hours for your reference. This figure shows that GL sheets have heat oxidation resistance under the condition of less than 300°C. Prior to practical use, the test piece is provided for your trial application.



(Figure-5) Heat resistance of GL

PREMIUM SERIES

Endless
Freshness In Color

Amcan Durafresh

Amcan Durafresh Pre-painted GL steel is coated with a paint system that was formulated using super durable binder and high performance pigments for long term weathering, color vibrancy and freshness. This premium pre-painted GL system provides excellent corrosion protection and surpasses performances of many other conventional pre-painted steel products. Amcan Durafresh has very good resistance against tropical dirt staining, prolonging the freshness of color on buildings.

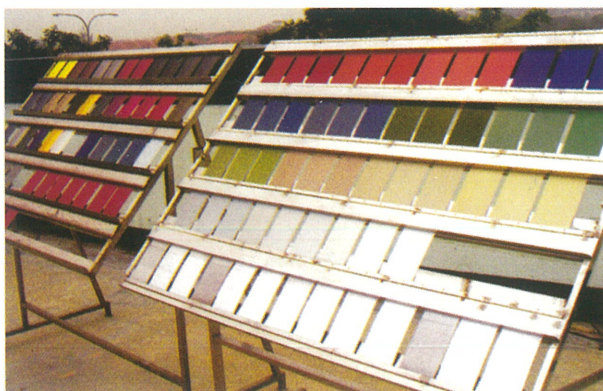
Timeless
Protection In Color

Amcan Durafluor

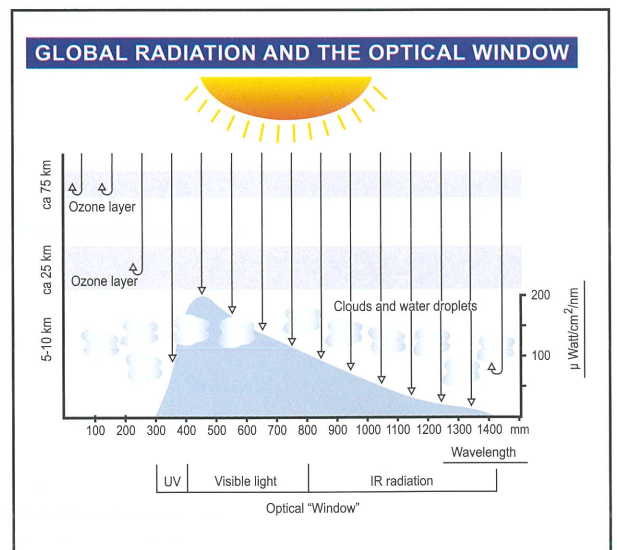
Amcan Durafluor Pre-painted GL steel is developed to provide outstanding weathering properties of color durability, resistance to chalking and peeling and excellent chemical resistance. The superior coating system comprises of minimum 70% PVDF binder (Hylar 5000 or Kynar 500) and comes in wide range of colors. Amcan Durafluor offers performance of long term protection for buildings in any environment, even in the harshest weathering conditions in all climates for a period of more than 20 years.

Exposure Test Carried Out Worldwide

The exposure test carried out at Bohus Malmon, Sweden is one of the world's harshest environments. But the tests do not end there. The weathering test facilities at Florida, Arizona, South Africa and Asia ensure that our coatings are capable of withstanding a wide range of extreme environment.



The Pre-painted panels are rigorously tested not only in the laboratory but also in the extreme environmental weathering tests globally.





AmcanColors®

Pre-painted GL

For more detailed information on Amcan Prepainted GL steel products, please ask for Amcan prepainted product brochures or visit our website: <http://www.amcancolor.com>



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All Technical informations in this brochure are abstracted from Yodogawa Technical Data for GL (02 1 3000W) and Beckryfluor - Beckryfresh of Beckers Sweden

Informations content in this brochure are subject to change without prior notice

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