PT. CITRA GALVANIZING INDONESIA

INDUSTRIAL GALVANIZER

Hot Dip Galvanizing Services

Company **Profile**

Certificate No. 234217

PROPER

Member of:

AGI

ASOSIASI GALVANIS INDONESIA

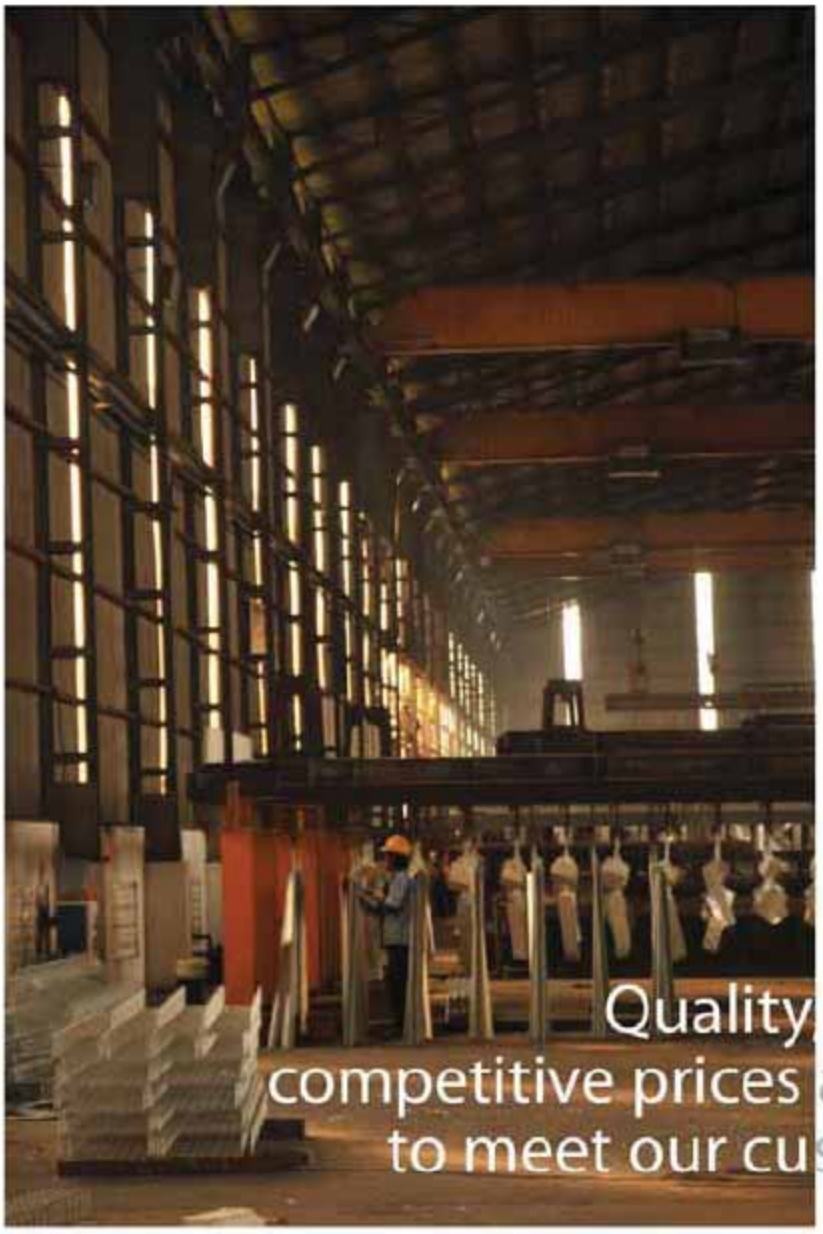
PT. CITRA GALVANIZING INDONESIA
INDUSTRIAL GALVANIZER

A BRIEF DESCRIPTION OF THE COMPANY

PT. Citra Galvanizing Indonesia (CGI) is a national private company that has been operating since April 2009, which moves in the field of employment services coating Hot Dip Galvanizing.

With technological innovation capability and supported by professional, qualified and certified, **PT. Citra Galvanizing Indonesia (CGI)** present to provide solutions and assist the implementation of private projects and government and participates actively in international markets through cooperation with our customers who have been exporting products abroad and has meet the applicable standard requirements.

PT. Citra Galvanizing Indonesia (CGI) in operations supported by professional personnel and reliable field, with a technical background such as metallurgy, chemical engineering, and so on to ensure that the product produced in accordance with applicable standards.



Quality, service delivery and competitive prices are our commitment to meet our customers' satisfaction.

The company offers the below services :

- Galvanization for steel structure or general
- Galvanization consultant to have the perfect layer
- Fabrication consultant to create the perfect layer

ZINC BATH

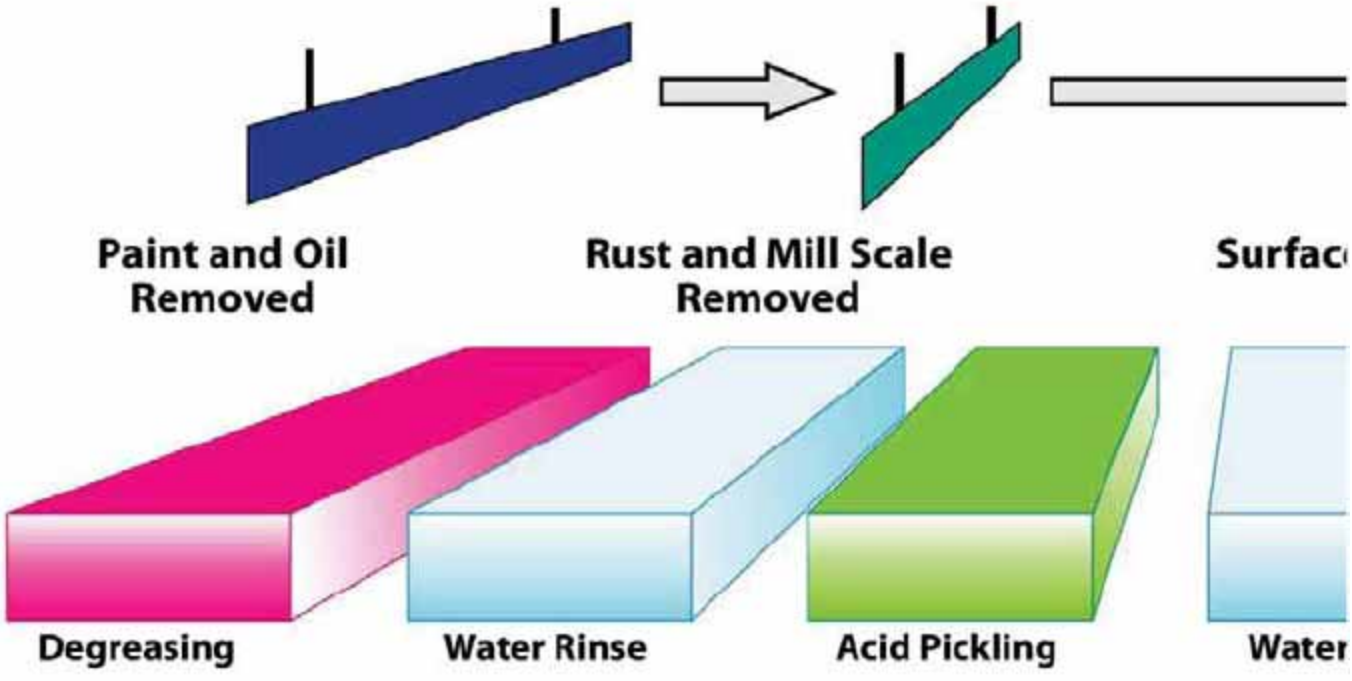
Length : 13 Meter
Width : 1,8 Meter
Depth : 2,5 Meter
Capacity : 50.000 tonnes per year

with 9,000 M2 factory building property and 3,2 hektare on dedicated land

ABOUT THE PROCESS

Below are the processes to have a perfect layer on Hot Dip Galvanizing :

1. Degreasing. Steel products are immersed in a hot alkaline cleaner (Sodium Hydroxide - Caustic Soda) to remove oil, paint or varnish.
2. Water rinsing. Products are water - rinsed before immersion into the pickling acid.
3. Pickling. Steel products are immersed in Hydrogen Chlorides acid to remove rust.
4. Water rinsing. The pickled product is water-rinsed to prevent carrying over of acid into prefluxing.
5. Prefluxing. Cleaning the steel surface with zinc ammonium chloride to form a bonded thick zinc-iron alloy layer.
6. The steel is immersed into a molten zinc bath to get the perfect zinc-iron layer
7. Quenching. Helps to neutralization zinc to avoid oxidation.



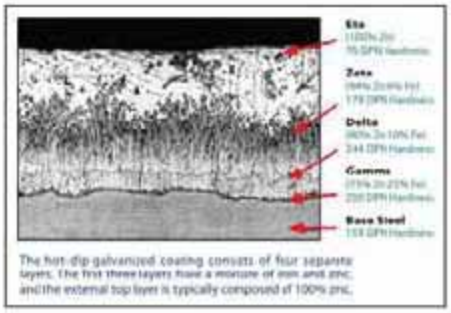
FACTORS affecting hot dip galvanized coatings, include :

- the size and shape of the item
- the steel chemistry
- the steel surface condition
- the design of the item with respect to galvanizing
- the metallurgy of the galvanizing process.

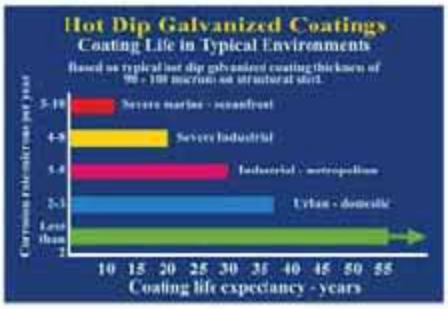
Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods (ISO 1461 : 1999)

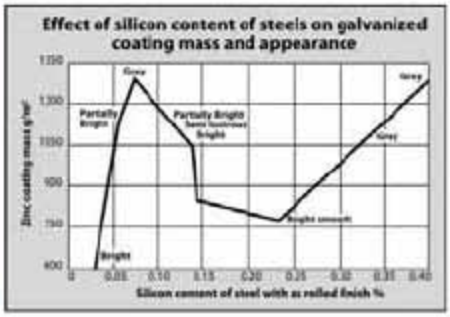
Coating minimum masses (related to thickness) on samples that are not centrifuged

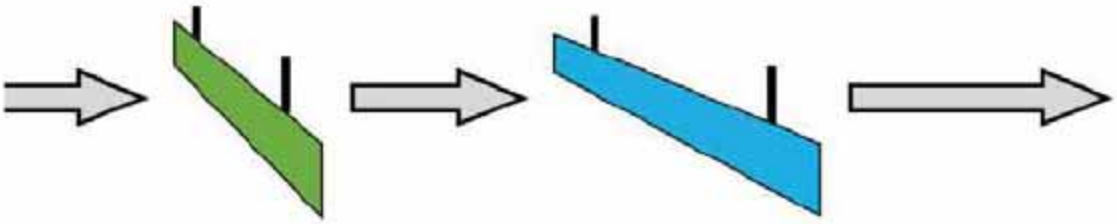
Article and its thickness	Local coating (minimum)		Mean coating (minimum)	
	g/m²	µm	g/m²	µm
Steel ≥ 6 mm	505	70	610	85
Steel ≥ 3 mm to < 6 mm	395	55	505	70
Steel ≥ 1.5 mm to < 3 mm	325	45	395	55
Steel < 1.5 mm	250	35	325	45
Castings ≥ 6 mm	505	70	575	80
Castings < 6 mm	430	60	505	70



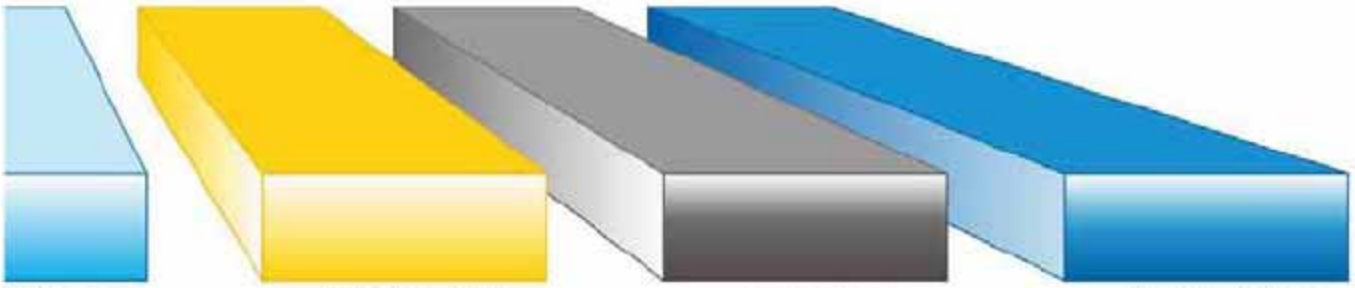
The hot-dip galvanized coating consists of four separate layers. The first three layers have a mixture of iron and zinc, and the external top layer is typically composed of 100% zinc.







e Fluxed **Steel Galvanized** **Quenched to cool**



Rinse **Prefluxing** **Zinc Bath** **Quenching**

Designing Articles for Galvanizing

Points to consider when designing fabrications for hot dip galvanizing

More extensive guidance on design for hot dip galvanizing can be found in BS EN ISO 14713 and other Galvanizers Association publications.

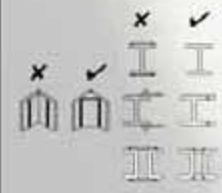
External stiffeners, welded gussets and webs on columns and beams, and gussets in channel sections should have their corners cropped.

Cropping the corners of these brackets will aid access and drainage of molten zinc and a cleaner coating will be obtained.

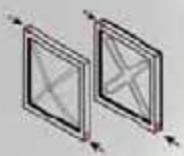
Angle bracings should, if possible, be stopped short of the main boom flange. This will allow the free flow of molten zinc across the surface of the flange, enchancing drainage from the structure. This will assist the development of a smoother galvanized coating, reduce the potential for retention of ash on the surface of the flange and help to avoid air traps within the structure, which could lead to uncoated areas.

On structural hollow sections, provision must be made for venting and draining. With vertical members, drilled holes or V notches should be provided diagonally opposite each other at top and bottom.

External stiffeners for beams or channels should have the corners cropped.

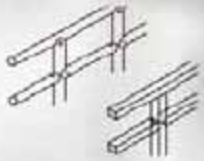


Welded joint should be continuous if they are not enclosing an otherwise unvented surface. Bolted joints are best made after galvanizing.



To minimize the risk of distortion, flat panels should be braced, e.g. dished or ribbed. Opening should be provided in the corners.

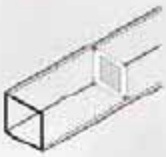
Large open top tanks should be stayed to minimize distortion. Where angles are used to rim the tank, appertures must be provided in the corners. Angles or flats used as stays should be as close as possible to the tank wall thickness.



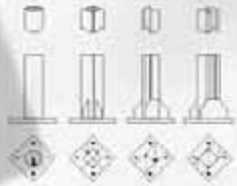
Every sealed section of a fabrication must be vented for reasons of safety and to allow access and drainage of molten zinc. Holes diagonally opposite each other should be as close as possible to the sealed end.

Overlapping or contacting surfaces are potentially dangerous as pretreatment solutions trapped between surfaces is converted to superheated steam in the galvanizing bath and can lead to an explosion.

If contacting surfaces can not be avoided, as with these channels, then the edges of the contacting areas should be continuously welded. One hole should be drilled through both member for each 100 cm2 of overlap, the minimum holes diameter being 10 mm, or the thicknessof the section, which ever is greater in order to eliminate the danger of an explosion in the galvanizing bath.



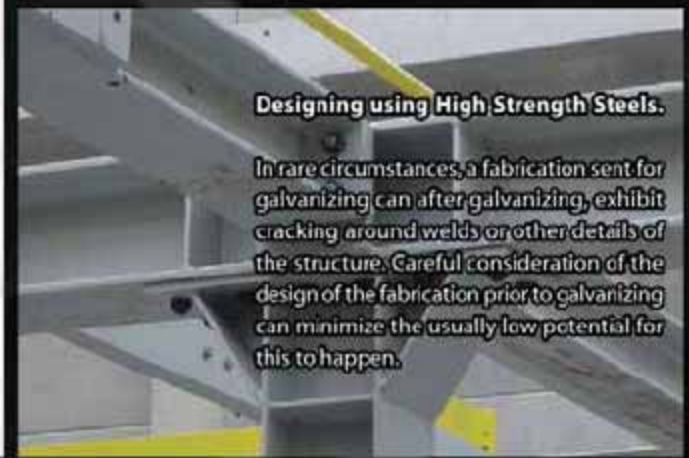
If this is not possible, then welding should be intermittent in service there may be some weeping of trapped pretreatment solutions from between the plates leading to brown staining but this will not be detrimental to the protection given by coating. It will not generally be necessary to make any provision if the enclosed areais less than about 100 cm2 (e.g. 10 cm x 10 cm).



Internal diaphragms in large box sections should have cropped corners and a 'manhole'. Internal diaphragms on small box sections should have cropped corners. Where any hollow section is vented internally it is essential, for safety reasons, that the galvanizer is able to view such venting.

Alternative designs for venting sections fixed to base plates.

Vents should be diametrically opposite and at least 50mm in diameter. Internal baffles should be cropped top and bottom. Lifting lugs are required as indicated. It should be possible to view the baffles through either the vent holes or an inspection hole - the placement of the inspection hole should be disscussed with the galvanizer.



Designing using High Strength Steels.

In rare circumstances, a fabrication sent for galvanizing can after galvanizing, exhibit cracking around welds or other details of the structure. Careful consideration of the design of the fabrication prior to galvanizing can minimize the usually low potential for this to happen.

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LNG Project

Incinerator
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Steel Bridge

Galvanize
Corrugated Plate

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