



*Mythri*

METALLIZING (P) LTD

[www.mythrimetallizing.net](http://www.mythrimetallizing.net)

AN ISO 9001:2008 Certified Company







# About US

**Mythri Metallizing (P) Ltd.** is India's Leading Engineering contractor in the field of Surface Preparation by Abrasive blasting (Sand, Grit, Shot, Copper slag, Aluminium oxide blasting, etc) & Thermal metal spray coatings of Zinc & Aluminium (Spray Galvanizing/Aluminizing) for corrosion protection on steel structural.

Established in Bangalore, Mythri Metallizing(P) Ltd has made its mark as a leading service provider imparting excellent processes for avoiding corrosion on steel structures since 1999. We have successfully extended our clients/customers to understand the advantages of thermal spray coating of Zinc or Aluminium. We are backed by a team of committed professionals who function efficiently to complete the projects with accuracy and perfection. Mythri Metallizing (P) Ltd. has always been keen to adopt the emerging technologies and requirements so as to deliver precise and excellent output. In our journey to perfection, we have gained incomparable experience that aids us in serving our customers with excellence and gaining their confidence in our services. Team Mythri comprises of well-trained professionals who work in stringent adherence to prescribed work standards. Being committed to offer quality performance and gain clients satisfaction, we have gained credibility among our clientele for our various services.

## Process

- Surface of steel structural is blasted by compressed air pressure with abrasives to remove all traces of rust or any foreign contamination and thus facilitate exposure of the base metal, within a few hours, the blasted surface is coated with zinc or aluminium. This is done by melting a zinc or aluminum wire in an electric arc or flame and atomizing the molten particles. These particles are then propelled by compressed air on to a blasted surface.
- Additional sealant provides barrier protection to the surface. Though surface painting has to be done periodically for luster-retention, the basic Zinc / Aluminium coating remains intact and will protect the structure for years.





# Surface Preparation

## Abrasive Blasting

For the application of any protective coating, Abrasive blasting is an essential process. In this process the metal surface is thoroughly cleaned and roughened using compressed air with suitable abrasives like Grit, Sand, Shot, Quartz, Aluminium Oxide etc., The abrasives are propelled using compressed air on to the substrate to remove Millscale, Oil, Grease, Dirt, Rust, Oxides or Paint to create a profile for any protective coating to adhere.

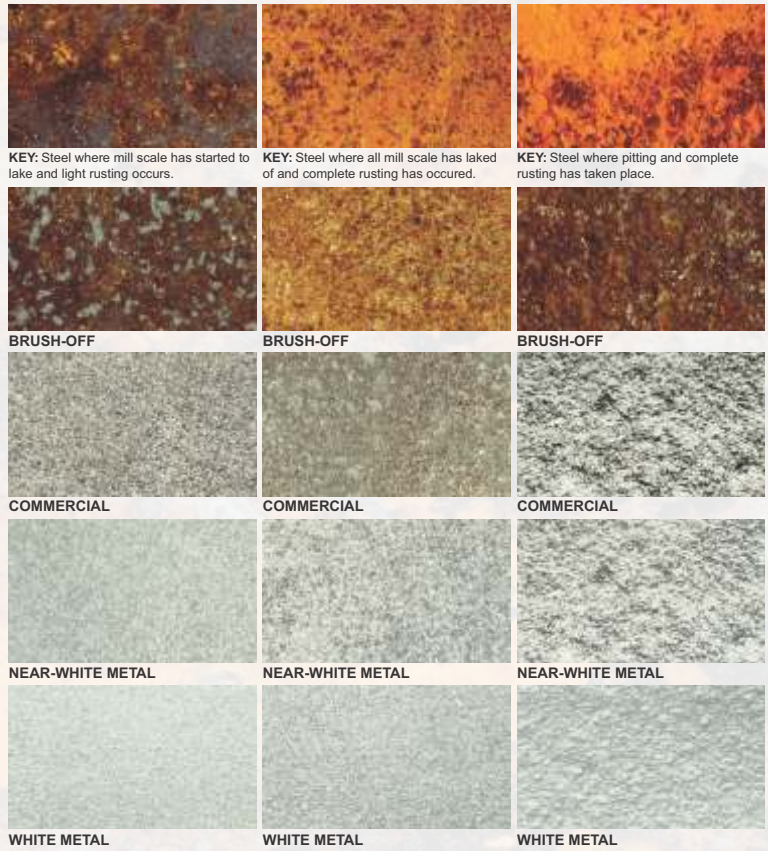
### The Standards followed by us are:

ISO 8501 - 1

Swedish Standards SIS 05 - 5900 - 1967

SSPC - PA 15213

SSPC Std.	NACE Std.	SIS Std.	ISO
SSPC-SP 5	NACE No. 1	SA-3	ISO - 1
SSPC-SP 10	NACE No. 2	SA-2 ½	ISO - 2
SSPC-SP 6	NACE No. 3	SA-2	ISO - 3
SSPC-SP 7	NACE No. 4	SA-1	ISO - 4



### Degrees of Cleanliness of Blast-Cleaned Surfaces\*

*\*Images shown are previously uncoated surfaces, viewed without magnification.*

#### BRUSH-OFF

Tightly adherent mill scale and rust may remain on the surface. Mill scale and rust are considered adherent if they cannot be removed with a dull putty knife.

SSPC-SP 7  
NACE No. 4  
SA-1

#### COMMERCIAL

Evenly dispersed very light shadows, streaks and discolorations caused by stains of rust and mill scale may remain on no more than 33% of the surface.

SSPC-SP 6  
NACE No. 3  
SA-2

#### NEAR-WHITE METAL

Evenly dispersed very light shadows, streaks and discolorations caused by stains of rust and mill scale may remain on 5% of the surface.

SSPC-SP 10  
NACE No. 2  
SA-2-1/2

#### WHITE METAL

Free of all visible oil, grease, dirt, dust, mill scale and rust.

SSPC-SP 5  
NACE No. 1  
SA-3





# Spray Galvanizing

## Thermal Spray Coating of Zinc

Atomized particles of molten Zinc are projected on to abrasive blasted steel surface from a special flame or arc pistol fed with Zinc wire. The process is often applied to structural components too large to be dipped in a galvanizing bath and to structures which are likely to distort during hot dip galvanizing. Zinc coatings for iron and steel provide excellent corrosion resistance in most atmospheres and in contact with many natural and synthetic substances. Zinc coatings are widely used to protect finished products ranging from structural steelwork for Chemical, Fertilizer, Refinery, Cement, Power Plant, Buildings, Bridges, Pipelines, etc.

The electrochemical relationship between zinc and steel enables zinc coatings also to protect steel at cut edges and at breaks in the coating by a sacrificial action.

### Applications

- All steel structures
- Transformer tanks
- Radiators
- Dairy Coils
- Communication towers
- Steel Tanks
- Wind Mill Towers
- Electric Poles
- Gates
- Windows
- Building Structures
- Gutters in chemical-related industries

### Advantages

- Proven long-term protection
- Cold process
- No size limitations
- Ideal surface for painting
- Site-jobs possible
- No hydrogen embrittlement
- Preferred even under alkaline condition

### Standards

- IS: 5905      IS: 6586
- BS: 5493





# Aluminizing

Thermal Spray coating of Aluminium involves deposition of Aluminium of 99.5% purity over the prepared abrasive blasted surface. The sprayed metal is melted by using electric arc that is atomized with compressed air and projected over the substrate. According to the IS & BS Standards, the coating should be resistant up to 950°C temperature.

The Aluminizing process is used to protect parts operating in high temperature environments against corrosion and oxidation. As a result, the most common parts coated are high temperature industrial chimney and muffler.

- Railway bridges are aluminium metallized for corrosion protection.
- Ship hulls are aluminium metallized periodically for corrosion protection.



## Advantages

- Site-job possible
- No size limitation
- Better surface preparation
- Cold process
- Pure aluminium coating
- Ideal surface for painting

## Sealant

The metal-sprayed coating applied over steel and iron structures is a complete protective system within itself. However, sealant is used in order to enhance the protection level and give the coated metal a pleasing appearance. Among the beneficial characteristics of sealant are :

- It perforates and fills the pores, thus reducing the total area of the exposed metal and therefore decreasing the rate of dissolution of the coating.
- It smoothens the surface texture preventing the retention of grime and other contaminants, thus reducing still further the rate of surface attack.
- By smoothing the surface texture the appearance of the coating will remain cleaner and more attractive than without a sealant, and may more readily be maintained in a clean condition.

## Standards

- IS: 739
- BS: 2569 Part I & II
- IS: 2590
- BS: 1475







# Advantages

## Advantages of Aluminizing and Spray Galvanizing in comparison to ordinary painting

All metals have properties that cause them to react as an anode or a cathode when coupled to another material in a corrosive environment. The application of zinc (anodic coating) to iron substrates forms a protective layer and results in corrosion protection referred to as cathodic protection or sacrificial protection.

Aluminizing or Spray Galvanizing provides good mechanical interlocking based on quality abrasive blasted pre-treatment. Coating thickness of up to 500 microns can be applied though the industry standard is 100-150 microns. Aluminizing process is ideal in high temperature environments to prevent oxidation and corrosion. Coating with sealants provides a base for paints for longer life to structures.



## Testing Process

### The advantages of our services can be understood by the following

Every coating process is tested for adherence to IS & BS standards. We carry out the job of Spray Galvanizing / Aluminizing to the coating thickness of 175 to 200 microns to be confirmed by thickness measurement gauge before and after the coating process.

The brief details of the tests carried out on zinc or aluminized coating surfaces are:

- **THICKNESS OF COATING:** This test is carried out to ensure that the coating provided is to the accepted standards. A self calibrated coating thickness gauge with test pieces is used for testing the thickness of Zinc/Aluminium Coating as per IS: 3203:1982.
- **PURITY TEST:** Purity of Zinc / Aluminium wire used is tested in an external laboratory to ascertain, which should be 99.95% pure as per IS:209. A certificate to this effect can be provided to the customer along with our test certificate if desired.





## BOND TESTS:

This tests indicates the mechanical bonding of Zinc/Aluminium coating to the substrate. This is carried out by using an special Bond Tester as per ASTM-D 4541-1955.

A dolly is fixed on a sample piece using an adhesive material and by forcing it to be pulled out by using the Bond Tester. The load at which this dolly gets separated from the test piece indicates the bonding strength in terms of PSI (Pound Per Square Inch). Secondly by using a scribe, several lines at close intervals are drawn on the coated surface as per IS:5905. The coating along the lines should not peel-off.





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