Our galvanizing services have been developed to meet the strict requirements of customers.

Our goal is to help people and contribute to society by manufacturing these and other products which provide high quality and performance.

Looking for best quality galvanizing services?

We provide best hot-dip galvanizing services to the steel suppliers, manufacturers, and customers who is looking for galvanize services. We are typically part of larger steel fabrication company.

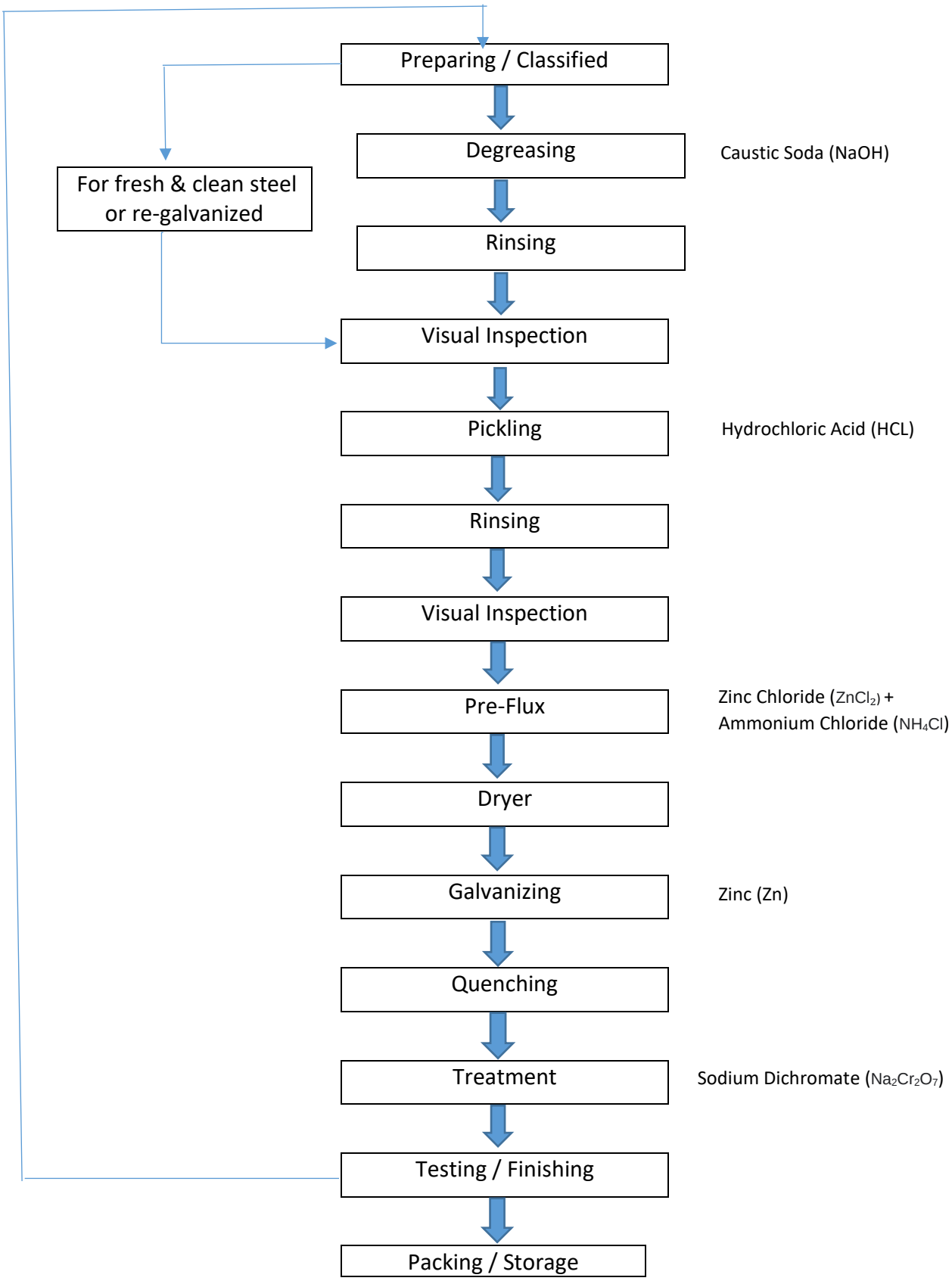
Maximum Size of Kettle: 8.0M x 1.0M x 1.3M

Contact Us

Head Office –
Atlanta Steel & Technologies Ltd - ASTL
House # 14 ,Road No# 09
Kabi Faruque Sharoni, Nikunja - 1,
Khilkhet , Dhaka – 1229.

Plant Address-
Bangabondhu Sharok, Ashulia, Savar, Dhaka.
Mobile: 0173077905

Galvanizing Process Flow Chart



Hot Dip Galvanizing Process

The galvanizing process consists of three basic steps: surface preparation, galvanizing and inspection.

SURFACE PREPARATION

Surface preparation is the most important step in the application of any coating. Any failures or inadequacies in surface preparation will immediately be apparent when the steel is withdrawn from the molten zinc because the unclean areas will remain uncoated and immediate corrective action must be taken.

Caustic Cleaning - A hot alkali solution often is used to remove organic contaminants such as dirt, paint markings, grease and oil from the metal surface. Epoxies, vinyl, asphalt or welding slag must be removed before galvanizing by grit-blasting, sand-blasting or other mechanical means.

Pickling - Scale and rust normally are removed from the steel surface by pickling in ambient temperature hydrochloric acid.

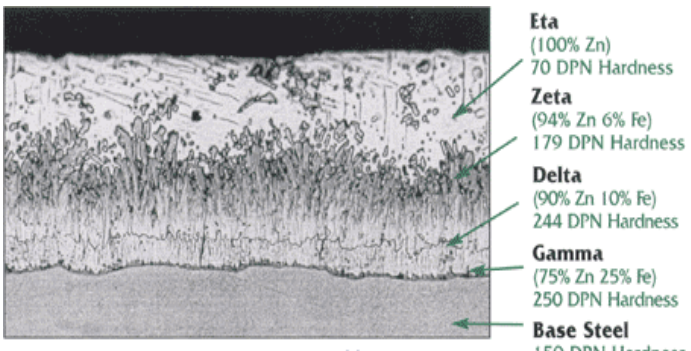
Fluxing - Fluxing is the final surface preparation step in the galvanizing process. Fluxing re- moves oxides and prevents further oxides from forming on the surface of the metal prior to galvanizing.

GALVANIZING -In this step, the material is completely immersed in a bath consisting of a mini- mum of 98% pure molten zinc. The bath temperature is maintained at about 840 ° F (450 ° C). Fabricated items are immersed in the bath until they reach bath temperature. The zinc metal then re- acts with the iron on the steel surface to form a zinc/iron intermetallic alloy.

INSPECTION - A variety of simple physical and laboratory tests may be performed to determine thickness, uniformity, adherence and appearance. Products are galvanized according to long- established, well-accepted, and approved standards of ASTM A123/A123M, AS/NZS 4680, and BS EN ISO 1461.

Hot Dip Galvanized Coating Structure

Galvanizing forms a metallurgical bond between the zinc and the underlying steel or iron, creating a barrier that is part of the metal itself. The figure (Right side) is a photomicrograph of a galvanized steel coating cross-section and shows a typical coating microstructure consisting of three alloy layers and a layer of pure metallic zinc.



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.

Hot Dip Galvanized Benefits

Why Galvanize?

The benefit of using zinc in the preservation of iron and steel has been known since the early 1800's. Over the last 200 years the process has not changed significantly.

How does zinc work to safeguard ferrous metal?

Hot-dip galvanizing produces a coating resulting from a metallurgical reaction between the liquid zinc and iron in the steel. The coating consists of four layers, three of which are zinc-iron alloys and the fourth (top layer) of pure zinc.

CORROSION RESISTANCE-

Galvanized coatings protect steel in three ways:

1. The zinc weathers at a very slow rate giving a long and predictable life.

2. The coating corrodes preferentially to provide sacrificial protection to small areas of steel exposed through drilling, cutting or accidental damage.

3. If the damaged area is larger, sacrificial protection prevents sideways creep which can undermine coatings.

COATING TOUGHNESS - Galvanizing is unique. The process produces a coating which is bonded metallurgical to the steel.

COMPLETE COVERAGE - All parts of the surface of the steelwork are coated - external, internal, awkward corners and areas with narrow gaps.

RELIABILITY - Able to specified to many standard BS EN ISO 1461, ASTM A123/123 M, and AS/NZS 4680

SPEED OF APPLICATION - Can be applied in minutes

LOWEST LIFETIME COST - Competitive initial cost and long life make hot dip galvanizing the most versatile, economic method of protecting steelwork.

EASE OF INSPECTION - The nature of the process is such that if the coating looks continuous and sound, it is so.

COMPETITIVE FIRST COST - For many applications the cost is lower than alternative coatings.

BARRIER PROTECTION -Galvanizing provides a barrier between all internal and external steel surfaces and their environment. Galvanizing is a term often wrongly used to describe zinc coatings in general. The diagram below illustrates how the different types of zinc coatings vary in terms of coating thickness. The life expectancy of a zinc coating is largely determined by its thickness. Thicker coatings give longer life.

Zinc(Hot-Dip Galvanized) coatings on fabricated iron and steel

British Standard: BS EN ISO 1461:2009

Coating minimum thicknesses on samples that are not centrifuged

Article and its thickness	Local coating thickness (minimum)[a] µm	Mean coating thickness (minimum)[b] µm
Steel ≥ 6mm	70	85
Steel ≥ 3.0 mm to < 6.0 mm	55	70
Steel ≥ 1.5 mm to < 3.0 mm	45	55
Steel < 1.5 mm	35	45
Casting ≥ 6mm	70	80
Casting < 6mm	60	70

a = local coating thickness
the mean value of coating thickness obtained from the specified number of measurements within a reference area for a magnetic test or the single value from gravimetric test

b = mean coating thickness
the average value of the local thicknesses either on one large article or on all the articles in the control sample

Coating minimum thicknesses on samples that are centrifuged

Article and its thickness	Local coating thickness (minimum)[a] µm	Mean coating thickness (minimum)[b] µm
Article with threads:		
≥ 20 mm diameter	45	55
≥ 6.0 mm to < 20 mm diameter	35	45
< 6.0 mm diameter	20	25
Other articles (including castings):		
≥ 3.0 mm	45	55
< 3.0 mm	35	45

a = local coating thickness
the mean value of coating thickness obtained from the specified number of measurements within a reference area for a magnetic test or the single value from gravimetric test

b = mean coating thickness
the average value of the local thicknesses either on one large article or on all the articles in the control sample

American Standard: ASTM A123/A123 M-09

Minimum Average Coating Thickness Grade by Material Category (unit measured in µm)

Material Category	All Specimens Tested Steel Thickness Range (Measured).				
mm.	<1.6	1.6 to 3.2	3.2 to 4.8	4.8 to 6.4	≥6.4
inches.	$<1/16$"	$1/16$" to $1/8$"	$1/8$" to $3/16$"	$3/16$" to $1/4$"	$\geq 1/4$"
Structural Shapes	45	65	75	85	100
Strip and Bar	45	65	75	85	100
Pipe and Tubing	45	45	75	75	75
Wire	35	50	60	65	80
Reinforcing Bar					100

The weighing test:

For large articles, or where comparatively heavy weights are concerned, weighing the work before and after galvanizing is a simple and fairly accurate expedient. If weighed before pickling, allowance must be made for the loss in weight due to pickling. In some cases the calculation of surface area may be tedious, but it is justified where batches or repeated runs of one type of article are encountered

*Table relating coating thickness to coating weight**

Thickness		Weight		Thickness		Weight	
µm	in	g/m²	oz/ft²	µm	in	g/m²	oz/ft²
5	0.0002	36	0.12	70	0.0028	504	1.68
10	0.0004	72	0.24	76	0.0030	549	1.80
20	0.0008	144	0.48	80	0.0032	576	1.92
30	0.0012	216	0.72	85	0.0033	610	2.00
40	0.0016	288	0.96	90	0.0035	648	2.16
42	0.0017	305	1.00	97	0.0038	702	2.30
47	0.0019	335	1.10	100	0.0039	720	2.40
50	0.0020	360	1.20	139	0.0055	1000	3.28
60	0.0024	432	1.44	150	0.0059	1080	3.60
64	0.0026	458	1.50	208	0.0082	1500	4.92

*Relationship assumes the density of the coating to be 7.2 g/cm³.

ASTM A153/ A153M –09: Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

Minimum Weight and Thickness Coating on Samples that are centrifuged

Class of Material	Weight [Mass] of Zinc Conting, oz/ft2 [g/m2] of Surface, Minimum		Coating Thickness,mils [microns],Minimum	
	Average of Specimens Tested	Any Individual Specimen	Average of Specimens Tested	Any Individual Specimen
Class A-Castings-Malleable Iron,Steel	2.00[610]	1.80[550]	3.4[86]	3.1[79]
Class B-Rolled, Pressed, and forged articles (except those which would be included under Classes C and D):				
B-1-3/16 in.(4.76 mm.)and over in thickness and over 15 in. (381 mm) in length	2.00[610]	1.80[550]	3.4[86]	3.1[79]
B-2-under3/16 in (4.76 mm) in thickness and over 15 in. (381 mm) in length	1.50[458]	1.25[381]	2.6[66]	2.1[53]
B-3- any thickness and 15 in. (381 mm) and under in length	1.30[397]	1.10[336]	2.2[56]	1.9[48]
Class C-Fasteners over 3/8 in. (9.52 mm) in diameter and similar articles. Washers 3/16 in.and 1/4 in. (4.76 and 6.35 mm) in thickness	1.25[381]	1.00[305]	2.1[53]	1.7[43]
Class D-Fasteners 3/8 in. (9.52 mm) and under in diameter , rivets, nails and similar articies. Washers under 3/16 in. (4.76 mm) in thickness	1.00[305]	0.85[259]	1.7[43]	1.4[36]

Australian/New Zealand Standard

AS/NZS 4680:2006

Requirements for coating thickness and mass for articles that are not centrifuged

Article thickness mm	Local coating thickness minimum µm	Average coating thickness minimum µm	Average coating mass minimum µm
≤ 1.5	35	45	320
>1.5 to ≤ 3	45	55	390
>3 to ≤ 6	55	70	500
>6	70	85	600

Requirements for coating thickness and mass for articles that are centrifuged

Thickness of articles (all components including castings) mm	Local coating thickness minimum µm	Average coating thickness minimum µm	Average coating mass minimum µm
<8	25	35	250
≥ 8	40	55	390

Notes:

1. For requirements for threaded fasteners refer to AS1214
2. 1 g/m2 coating mass = 0.14 µm coating thickness.

Inspection of 2.5mm fabricated Galvanized Plate

Inspection of 12mm fabricated Galvanized Angle

Inspection of 20 mm fabricated Galvanized Steel Angle

Inspection of 6 mm fabricated Galvanized Steel

Inspection of 10 mm fabricated Galvanized Steel H-Beam