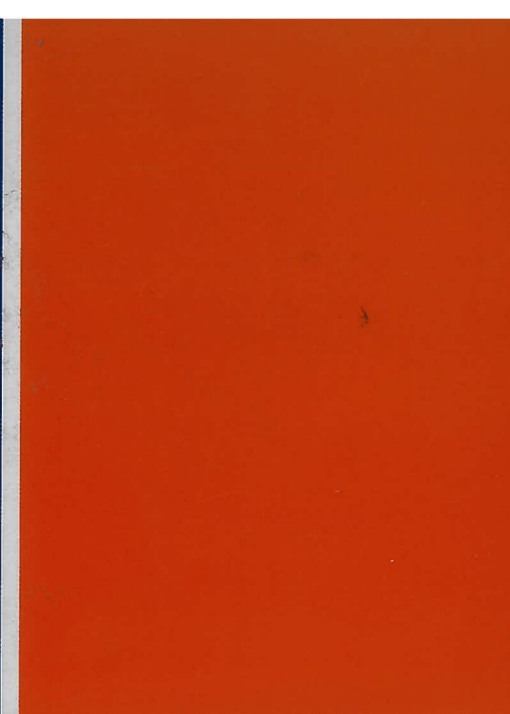




**energyya**<sup>®</sup>

**STEEL SOLUTIONS**

A Division of Energyya Industries



[www.energyasteel.com](http://www.energyasteel.com)



# Galvanization

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**elsewedy HELAL**<sup>®</sup>



## INDEX

Galvanization Plant .....	2
Our Vision, Mission & Values .....	3
Scope of HDG .....	4
Why HDG? .....	4
Service of galvanizing plant .....	5 - 6
HDG Process .....	7
1- Loading .....	8
2- PRETREATMENT AREA .....	8
3- Drying .....	8
4- Hot dip galvanizing .....	8
Double HDG Technique .....	9
5- Quenching .....	9
6- Passivating .....	9
7- Unloading & Finishing .....	9
8- High Quality product .....	10
9- Inspection .....	10
10- Storing .....	10
OUR Policy .....	11
OUR COMPETITIVE EDGE .....	11
OUR CERTIFICATES .....	12



## Galvanization Plant

INDEX



**energya** Hot dip galvanization factory is the biggest plant in the Middle East with most update technology.

**energya** Hot dip galvanization plant has the most biggest Kettle Dimension in the Middle East with more than 16.5 L \* 2 w \* 2.75 h(m) and biggest production about 60.000 ton / year.



### Our Vision

To be the leading Hot Dip Galvanization Factory in Middle east.

### Our Mission

- To Present world class service to our clients.
- To provide the best services quality on time at competitive prices.
- To reach the highest possible levels of customer satisfaction.
- To improve our services, and remain competitive.

### Our Values

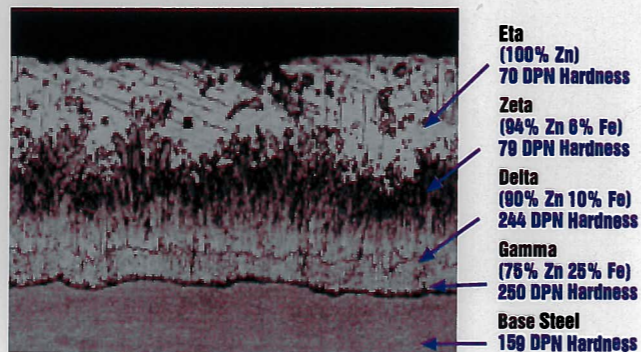
- High standards of integrity
- Outstanding customer services.
- On time, in full delivery.
- Products superiority.
- High Levels of self-esteem, and trust.



## Scope of HDG

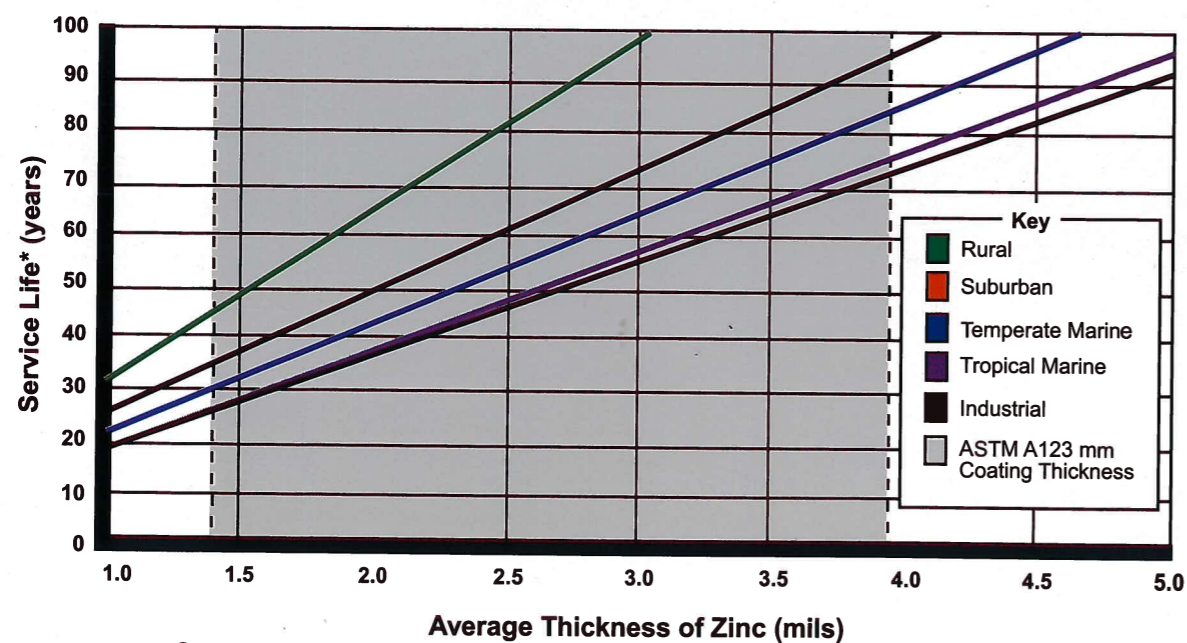
Hot-dip galvanizing (HDG) process known as (Cathodic Protection) general galvanizing produces a zinc coating on iron and steel products by immersion of the material in a bath of liquid zinc at 450°C.

The zinc metal then reacts with the iron on the steel surface to form a zinc/iron layers above this layers the pure Zinc layer with suitable thickness.



## Why HDG?

- > HDG perform long life Steel protection.
- > The zinc coating has a good resistance against mechanical damages
- > Good surfaces appearance.
- > Good adhesion.
- > Low cost.



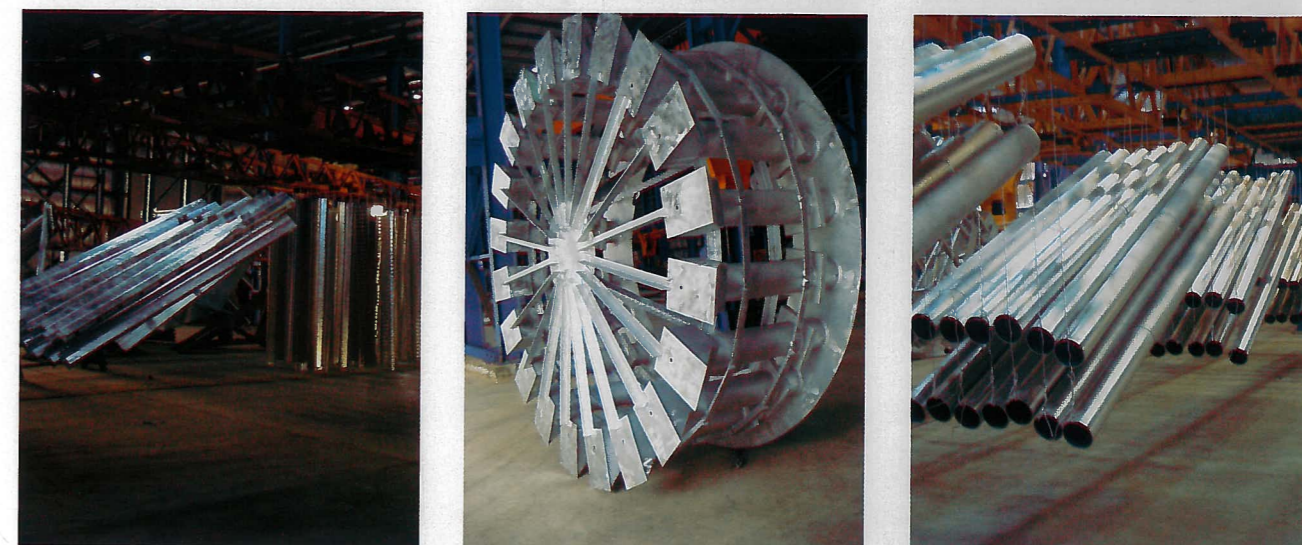
Service life is defined as the time to 5% rusting of the steel surface 1 mil = 25.4  $\mu$ m = 0.58 oz/ft<sup>2</sup>

## Service of galvanizing plant

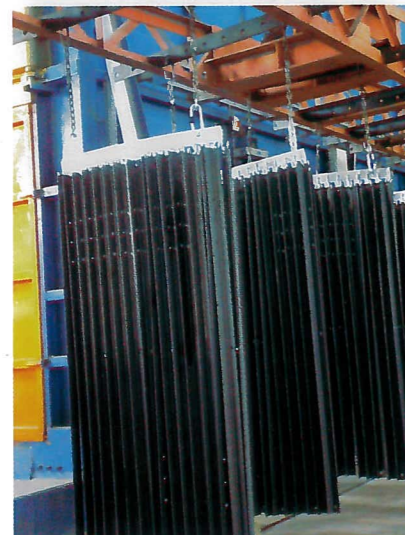
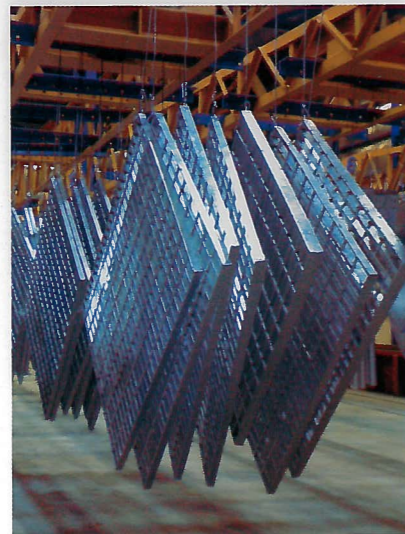
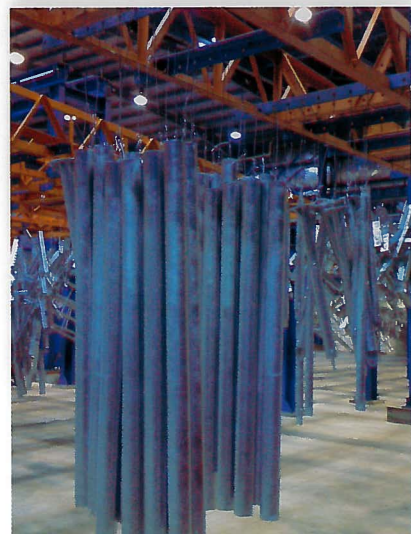
Energya Hot dip galvanization plant is ready to Galvanize products with 16.5 m length, 2 m width, 2.75 m depth & 10 ton weight.

Energya Hot dip galvanization plant is ready to Galvanize products as:-  
Lighting poles, Transmission Towers, Steel Structure (Beams, Girders, Columns), Cable trays, Grating, high masts, hand rails, communication Towers, Piping and All Steel products.

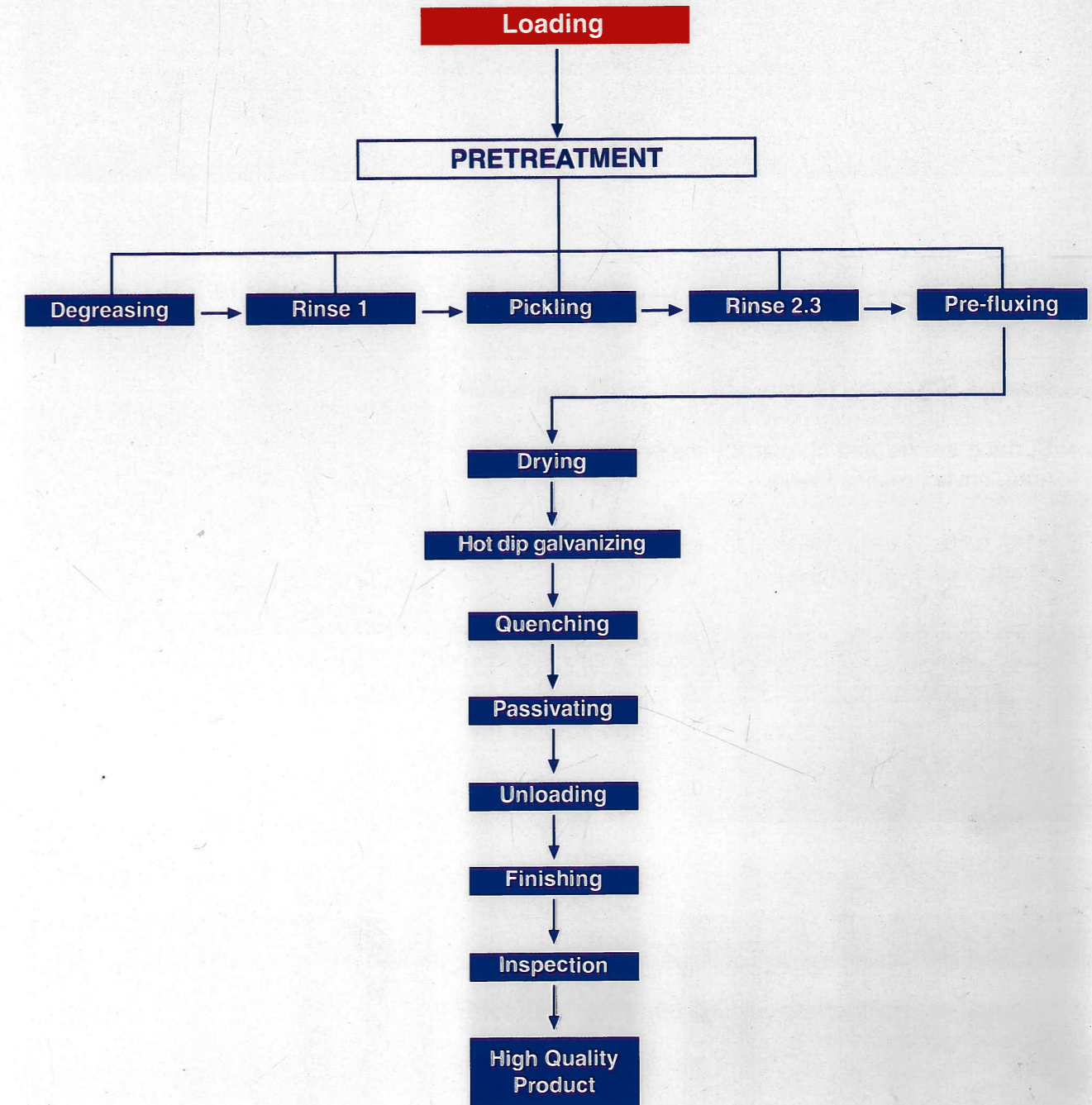
Transmission Towers	Lighting Poles	Beams	Grating
Communication Towers	High Masts	Columns	Hand rails
Lighting Towers	Cable trays	Girders	Piping
Storage Tanks	Mono-Poles	Ladders	All Steel products







## HDG Process





## 1- Loading

The steel items need to be supported during the hot dip galvanizing process.

Solutions and molten zinc must be able to flow into all sections and drain off all sections.

Jig Capacity 10 ton.



## 2- PRETREATMENT AREA

**energya HDG plant Unique with hot Acidic degreaser**

Surface are treated chemically inside a pretreatment area, environmental friendly.

A hot Acidic solution (at 35°C) is used to remove grease, oil from the steel surfaces.

Scale and rust normally are removed from the steel surface by pickling in hot Hydrochloric Acid (at 35°C).

Fluxing is the final surface preparation step in the galvanizing process.



## 3-Drying

The material is then dried at (100: 150) °C before immersing in molten zinc.



## 4-Hot dip galvanizing

In this step, the material is completely immersed in a bath consisting of 99.995% pure molten zinc at 450°C until they reach bath temperature. The zinc metal then reacts with the iron on the steel surface to form zinc / iron layers above these layers the pure Zinc layer with suitable thickness.

Kettle Dimension is 16.5 L \* 2 w \* 2.75 h (m).

### Double HDG Technique

**energya Hot dip galvanization plant** is ready to Galvanize products with 16.5m length, 2m width, 2.75m depth. Also we can galvanize products within lengths up to 20 m & depth up to 4.2 m with double dip technique



## 5- Quenching

After hot dip galvanized steel item is removed from the galvanizing bath, it is immediately quenched in water to prevent reaction between Zinc layers.



## 6- Passivating

**energya HDG plant Unique with passivation process.**

The passivation cools the item so that it can be quickly handled and passivates the surface of the galvanized coating to maintain its bright appearance.

The passivation will reduce white rusting problems. White rust forms when rainwater reacts with newly galvanized steel to form zinc hydroxide.





## 7- Unloading & Finishing

Known as Touch up, it is final operation that is applied to the coating in order to remove excess zinc, sharp edge tears, or spikes, and also repair of un-galvanized areas according to galvanization standards.



## 8- High Quality product

**energya HDG plant Unique with Q.C during the galvanization process.**

During the galvanization process we have excellent Q.C .

We have check Thickness & Appearance before Unloading .

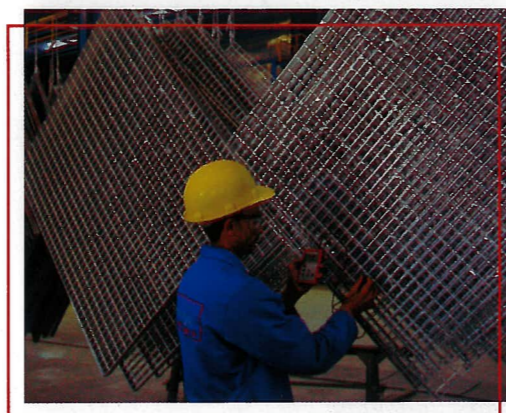


## 9- Inspection

Finally, products are tested by the quality control department to assure the galvanization thickness, Surface appearance and the adhesion of zinc to the products surface.

### International standard of HDG:-

- ASTMA-123 , A-153 , A-385, A-780
- DIN 50976
- BS 729
- ISO EN 1461



## 10- Storing

## OUR Policy

**energya Steel Solutions** is a specialized company into design, fabrication, installation of steel structure, transmission towers, telecommunication towers, lighting poles, high masts, distribution poles, tanks, mechanical equipment of production lines for industrial applications and hot dip galvanization to match with high quality requirements and ISO 9001:2008(E).

In addition to a continuous improvement in performance, energya steel aims to improve customer satisfaction in all of its business activities situated at various countries through:

- 1- Instantaneous response to client inquiries.
- 2- Implementation of latest production technique using high quality raw materials.
- 3- Extended warranty & technical support for all products.

**energya Steel Solutions** is aiming to achieve pre-planned transitory & future goals within reasonable time as per the terms committed by technical development committee.

## OUR COMPETITIVE EDGE

Here are a few facts to see if you really are making a proper comparison between galvanizers:

- We are an ISO 9001:2008 Certified.
- We are an AGA member.
- We are an BS OHSAS 18001:2007 .
- We are ARAMCO approved supplier.
- We are an PP, U & S ASME Stamp Certified.
- We are SASO approved supplier
- We are an NB & R Stamp Certified.
- We are SEC approved supplier
- We operates the largest kettle (within dimensions of 16.5 L\*2.0 W\*2.75 D)at the middle east area which allows us to galvanize a products within dimensions which cannot be galvanized at any other galvanizing plant at Saudi Arabia.
- We operate the most fully computerized up to date materials transportation system , so that we can be very flexible in meeting our customers' needs. Our operating control systems ensure that each customer's work is processed properly and reliably allowing us to make realistic delivery promises. Our turnaround times are generally quite low.
- We has been providing after fabrication hot dip galvanizing service to a wide range of customers.
- We use the most recommended high quality chemicals at the pre-treatment process (SOPRIN Chemicals, Italy),controlled by the most updated software from (KOERNER, Austria)
- We has been providing after fabrication hot dip galvanizing service to a wide range of customers.

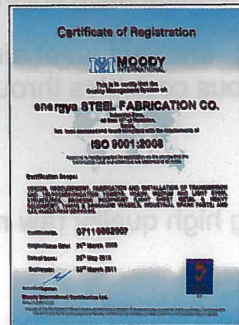


# OUR CERTIFICATES

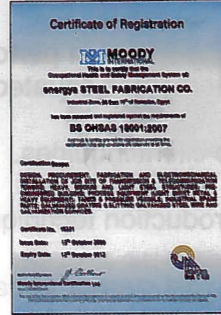
**ISO 9001-2008  
(KSA)**



**ISO 9001-2008  
(Egypt)**



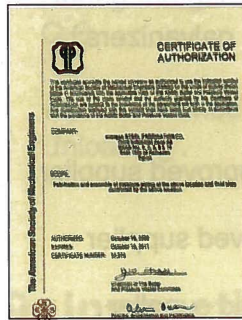
**Gaynor-1**



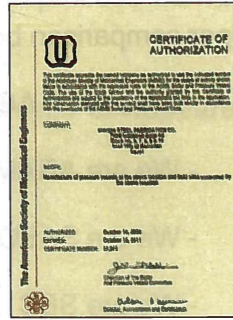
**NB**



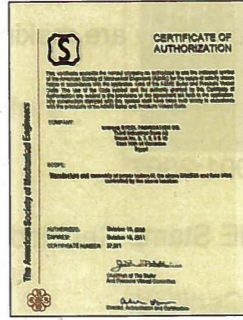
**PP Stamp**



**U stamp**



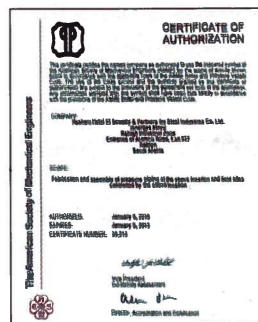
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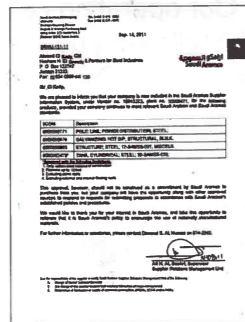
**R Stamp**



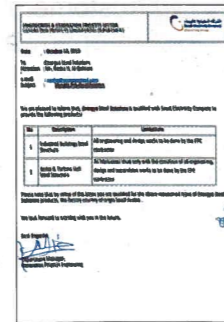
**PP Stamp**



**ARAMCO  
Approval**



**SEC  
Approval**



**SASO  
Certificate**

