

# Manufacturer Galvanized Pipes and Profiles



Committed manpower in a company plays the role of family members contributing to the progress of each other and organization

development and keeping customers' interests through the trajectory of achieving the goals. Manpower of the company can overcome all challenges and ups and downs with empathy and wisdom. In this lieu, experience-efforts integration results in manufacturing high-quality products that make Iran's name reputable in export markets.

Having production lines for manufacturing black industrial pipe and profiles with the size varying between 1.2inch and 4inch, automatic and conventional galvanization tubs, this company has provided the field for annual production of 50.000 tons of steel artifacts. In the development phase under a 2-year project, this company would enhance the production potential of over 120.000 tons per year by increasing production lines.

This company has confirmed its enthusiasm for providing the highest quality products and after-sales service because of its membership in Iran Chamber of Commerce and joint chambers of Iran and other countries of the Region, membership in Iran Electricity Industry Syndicate and Board of Directors of various technical committees, National Association of Iran's Mass Builders, Iran Greenhouse Builders Association, Iran's National Galvanization Association; presence in vendor list of large industrial, oil, and refinery organizations; and obtaining certificates from Razi and Amir Kabir Laboratory Centers.



We believe that consideration and satisfaction of customer needs, not only increase the number of satisfied and loyal customers but also bring the winning card and business success.

We are by your side so that you can have the best choice among online services and high-quality products.

Best quality and price, perfect inventory and products, credit and clearing sale, and membership in the vendor list of famous oil and construction organizations have placed our name among the best pipes and fittings manufacturers in Iran.

**Member of Iran  
Greenhouse Builders  
Association**



**Member of Iran  
Galvanization Industries  
Association**



The simple answer to this question is that this operation makes metals resistant to corrosion. When the galvanization process is not done on the metal surface, oxidation or corrosion occurs in metals in contact with oxygen and hydrogen elements in the environment (humidity), causing the worn-out and destruction of metals. As the manufacturer and exporter of Galvanized pipes and profiles and a member of the National Greenhouse Association and Galvanization Industries, Petrogerayesh Company tries to follow standards on pure zinc ingots and continuous control and supervision over galvanization phases to maximize the shelf life of products and satisfy customers more than before.

## Hot Dip Galvanization

Hot dip galvanization in molten zinc is one of the processes divided into the following phases:

- ▶ Preparation
- ▶ Immersion into the molten bath
- ▶ Quality control and inspection

### Preparation

#### Degreasing

In this phase, an alkali solution such as caustic soda ( $\text{NaOH}$ ) is used at 70–90°C temperature to remove greases from the surface of pieces caused by manufacturing steps, including rolling, welding, cutting, transporting, and depot products.

#### Pickling

The oxide crusts remaining from the production and degreasing phases are cleaned using acid in this step. Chloric acid is usually used in this step, or sulfuric acid at 100°C temperature may be used. The concentration of acid varies between 10 and 20 volume percent depending on the amount of oxide crusts existing on the surface of the pieces.

#### Washing

The products are washed thoroughly in a bath after the degreasing and pickling phases.

#### Fluxing

In this phase, products are immersed in an ammonium chloride tub. This solution creates a thin and smooth coating on the metal surface that leads to adhesion and better coating of zinc metal.

## Immersion in molten bath

The melting point of zinc is around 420°C, and the molten temperature reaches up to 460°C to reduce viscosity and increase covering power. The considered products are then immersed in the molten zinc bath and are with drawn from the bath after a certain time. The coating rate varies depending on the duration when the product is immersed in the molten zinc bath.

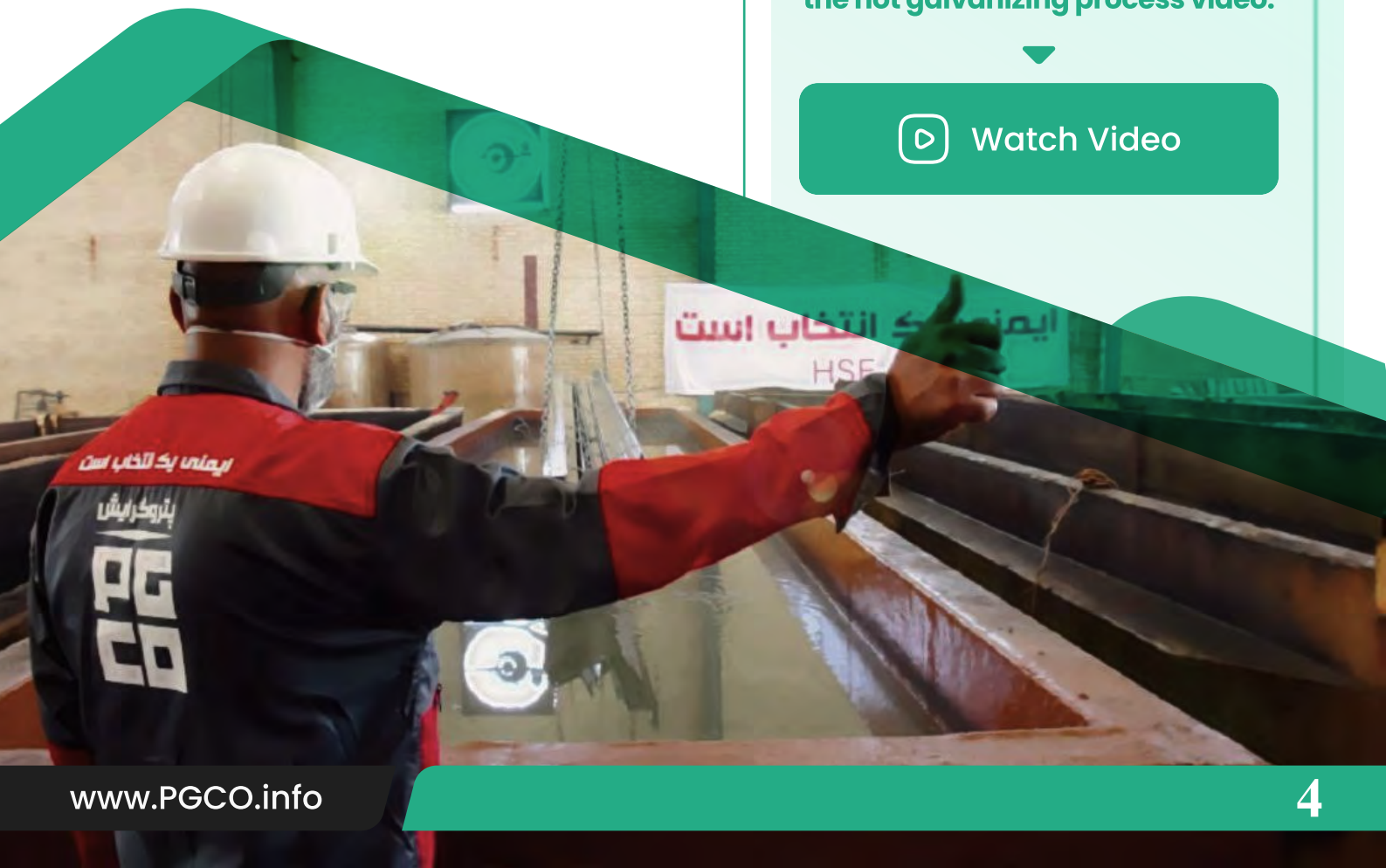
## Quality Control and Inspection

After the products' temperature is decreased to ambient temperature, the residuum remaining from the previous phase on the piece is removed through manual or electrical polishing. The galvanization quality, galvanized coating thickness (according to ASTM A123 Standard), and mechanical-dimensional controls of pieces are tested, and possible defects are corrected based on the guideline. If the defects are not correctable based on the standard requirements, the piece is rejected in the quality control phase and must repeat the galvanization steps.

Ultimately, pieces are packed and stored based on the customers' orders after obtaining quality control approval.

Please Click to watch  
the hot galvanizing process video.

 Watch Video



Components of greenhouse structure are fundamental elements that allow designers and greenhouse keepers to create a controlled environment structure to breed plants. These pieces include greenhouse columns, pipes, profiles, bars, gutters, and different fittings that all play a vital role in creating resistant and efficient structures. For instance, galvanized pipes of greenhouses are designed in different types based on the structure needs.

## Galvanized pipe of greenhouse

Galvanized pipe is used to create components of the structure, including arches, main components of the greenhouse, and fittings. The galvanization of tubes makes them resistant to corrosion and rust.



## Greenhouse column capital

Column capitals are the upper parts of columns that stabilize and support the upper components of the structure.



## Column (profile) of greenhouse

Columns are the underlying parts of the greenhouse structure that bear the weight load of the structure. Proper design of columns is highly important for the greenhouse's strength and stability.



## Different kinds of industrial manufacturing pipe and profile bar of Petrogerayesh under PGCO Brand

- ▶ **Hot galvanized pipe and profile bar:** the pickled and degreased black tube and profile are immersed in a molten zinc bath to be deep galvanized. The final galvanization coating size equals 50–65 microns. The shelf life of these pieces is over 25 years due to the high galvanization thickness and galvanized coating of the internal surface of the profile.
- ▶ **Cold galvanized pipe and profile bar:** the galvanization process is done through an electrolysis technique in a zinc salt solution. Finally, the galvanization coating range varies between 5 and 8 microns, which may be easily separated when colliding with another object. In this type of industrial profile, the internal surface of the profile is not galvanized, so it is prone to rust. The shelf life of cold galvanization equals 3–5 years.
- ▶ **Fabric (sheet) galvanized pipe and profile bar:** in this technique, sheets are galvanized first, and then are cut, rolled, and welded based on the customer demand. Finally, sheets are cut in 6m lengths. In fabric galvanized profile, galvanization coating thickness equals 8–12 microns. The shelf life of these profiles is 8–10 years. Fence base, fencing, metal base, and telecommunication mast are the widely used structures for fabric galvanized profiles.





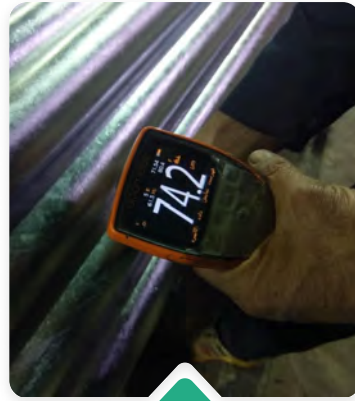
**Electric Resistance Welded (ERW)**

Petrogerayesh have been pipes welded strongly, so are resistant to pressure and hit.



**Flexibility**

The tubes manufactured by Petrogerayesh flexible and suitable for greenhouses' arche or rafters.



**The high thickness of galvanization**

The high thickness of the galvanized coating of pipes manufactured by Petrogerayesh would enhance their lifespans.



**Non-scale of galvanization**

The galvanization coating of pipes is not peeled off or scaled due to its high adherence.





## Specification of Galvanized Pipe for Greenhouse

Pipe No.	Nominal Diameter		Outside Diameter (mm)	Wall Thickness (mm)	Standard Length (m)	Weight of Galvanized Pipe (kg)
	Inch	Millimeter				
2	1/2"	15	20	1.8	6	6
				2		6.2
				2.2		6.8
				2.5		8.5
2.5	3/4"	20	26	1.8	6	7.5
				2		8
				2.2		9
				2.5		10
3	1"	25	32	1.8	6	9
				2		10
				2.2		11
				2.5		12.5
4	1-1/4"	32	42	1.8	6	12
				2		13.2
				2.2		14.2
				2.5		16.2
5	1-1/2"	40	48	1.8	6	13.5
				2		15
				2.2		16.2
				2.5		18.5
6	2"	50	60	1.8	6	16.7
				2		18.5
				2.2		20.5
				2.5		23

The Above Values May Differ By Up To 5% Compared To The Manufactured Product



# Weight Table Of Galvanized Water Test Pipe

Specification of Water Pipe According to ISIRI 3765/DIN 2440/DIN2441

Pipe No.	Nominal Diameter		Outside Diameter	Wall Thickness	Standard Length	Weight of
	Inch	Millimeter				
2	1/2"	15	21.3	2	6	6.6
				2.3		7.6
				2.5		8.2
				3		9.9
2.5	3/4"	20	26.7	2	6	8.3
				2.3		9.5
				2.5		10.3
				3		12.3
3	1"	25	33.4	2	6	10.3
				2.3		11.8
				2.5		12.8
				2.8		14.4
				3		15.4
4	1-1/4"	32	42.2	2	6	13
				2.3		15
				2.5		16.3
				2.8		18.1
				3		19.5
5	1-1/2"	40	48.3	2	6	14.8
				2.3		17
				2.5		18.6
				2.8		20.8
				3		22.3
6	2"	50	60.3	2.5	6	23.2
				2.8		26
				3		27.8
				4		37
7	2-1/2"	65	76	2.5	6	29.3
				2.8		32.8
				3		35
				4		46.8
8	3"	80	88.9	2.5	6	34.2
				2.8		38.3
				3		41
				4		54.8
10	4"	100	114.3	2.5	6	44
				2.8		49.3
				3		52.8
				4		70.5
12	5"	125	141.3	3	6	65.3
				4		87
				5		108.8
				6		130.5
15	6"	150	168.3	3	6	77.8
				4		103.7
				5		129.5
				6		155.5
-	8"	200	219.1	4	6	135
				5		168.7
				6		202.5
-	10"	250	273	4	6	168
				5		210.2
				6		252.3

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## Specification of Galvanized Square Pipe (PROFILE) for Greenhouse

Size	Wall Thickness (mm)	Standard Length (m)	Weight of Galvanized Square Pipe (kg)
20*20	2	6	8
	2.2		8.7
	2.5		10
30*30	2	6	12
	2.2		13
	2.5		14.8
40*40	2	6	15.8
	2.2		17.5
	2.5		19.8
50*50	2	6	19.8
	2.2		21.8
	2.5		24.8
60*40	2	6	19.8
	2.2		21.8
	2.5		24.8
60*60	2	6	23.8
	2.2		26.2
	2.5		29.8
70*70	2	6	27.9
	2.2		30.5
	2.5		35
80*40	2	6	23.8
	2.2		26.2
	2.5		29.8
80*80	2	6	31.5
	2.2		34.5
	2.5		39.6

The Above Values May Differ By Up To 5% Compared To The Manufactured Product

## Specification of HDG Conduit According To DIN49020

QUANTITY PER BUNDLE	WEIGHT(Kg) 3 METER	THICKNESS (mm)	WEIGHT(Kg) 3 METER	THICKNESS (mm)	OD (mm)	SIZE
19	1.65	1.2	1.50	1.0	20.4	PG 13.5
19	1.85	1.2	1.65	1.0	22.5	PG 16
14	2.40	1.2	2.10	1.0	28.3	PG 21
10	3.30	1.5	3.00	1.2	37.0	PG 29
5	4.50	1.5	3.70	1.2	47.0	PG 36
4	5.50	1.5	4.90	1.2	59.3	PG 48

The above values may differ by up to 5% compared to the manufactured product

## Specification of HDG Conduit According To BS31

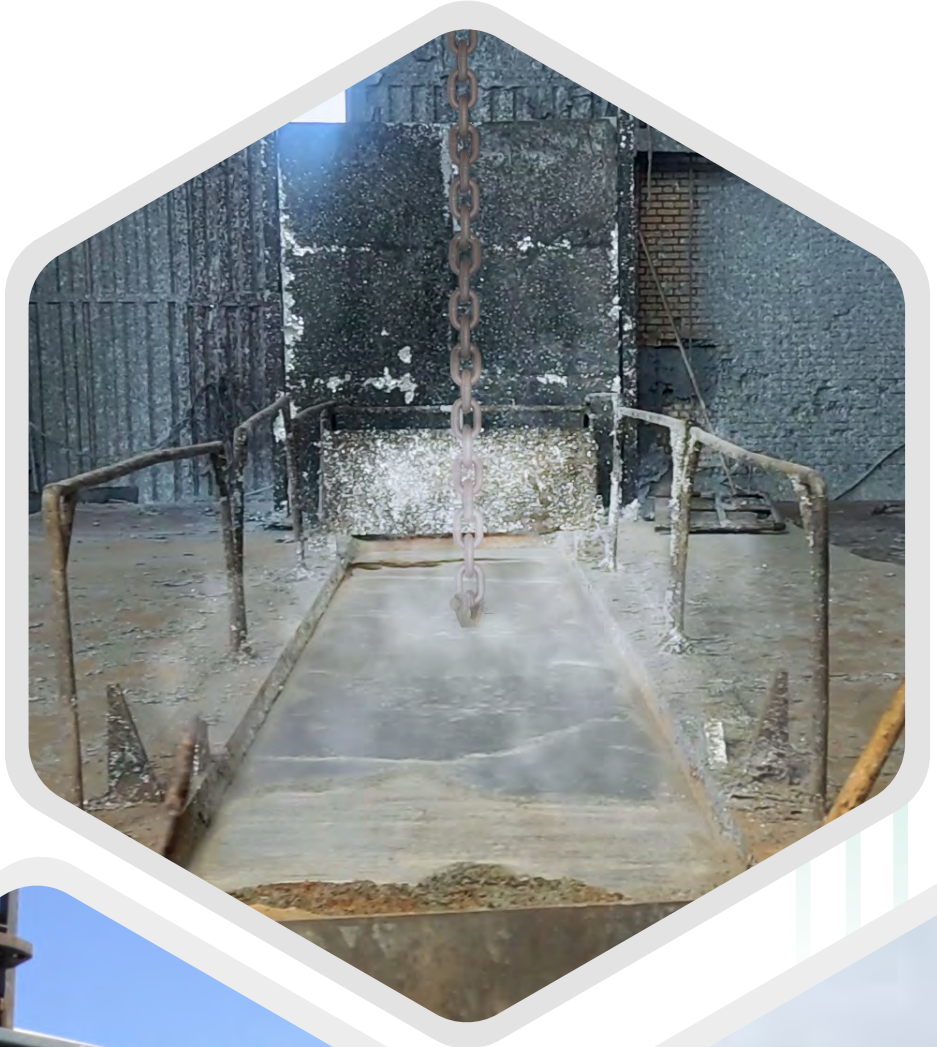
WEIGHT(Kg) 6 METER	THICKNESS(mm) (HEAVY CONDUIT)	WEIGHT(Kg) 6 METER	THICKNESS(mm) (LIGHT CONDUIT)	OD	SIZE (INCH)
8.0	2.5	6.4	2.0	21.3	1/2
10.2	2.5	8.2	2.0	26.7	3/4
12.8	2.5	10.3	2.0	33.4	1
16.3	2.5	13.2	2.0	42.2	1-1/4
18.5	2.5	15.0	2.0	48.3	1-1/2
23.0	2.5	18.4	2.0	60.3	2
29.0	2.5	23.0	2.0	73-75	2-1/2
41.5	3.0	34.2	2.5	88.9	3
62.0	3.5	53.0	3.0	114.3	4

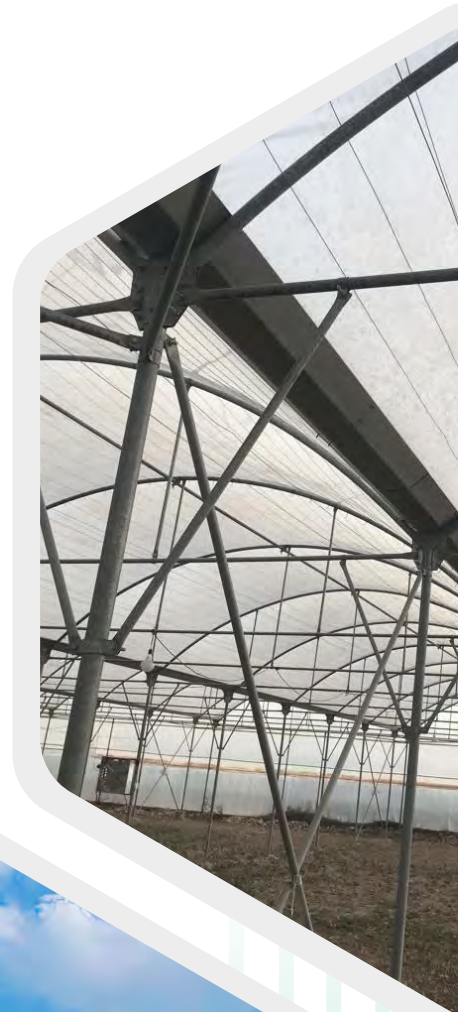
The above values may differ by up to 5% compared to the manufactured product

## Specification of HDG Explosion-Proof Conduit

HEAVY		LIGHT		OD	SIZE (INCH)
WEIGHT(Kg) 6 METER	THICKNESS (mm)	WEIGHT(Kg) 6 METER	THICKNESS (mm)		
9.0	2.7	8.2	2.5	21.3	1/2
11.5	2.8	10.5	2.5	26.7	3/4
17.0	3.3	13.0	2.5	33.4	1
23.0	3.5	18.5	2.8	42.2	1-1/4
27.0	3.6	21.0	2.8	48.3	1-1/2
36.5	3.9	26.5	2.8	60.3	2
56.5	5.0	36.0	3.2	73.0	2-1/2
74.5	5.4	48.0	3.5	88.9	3
106.0	6.0	71.0	4.0	114.3	4

The above values may differ by up to 5% compared to the manufactured product



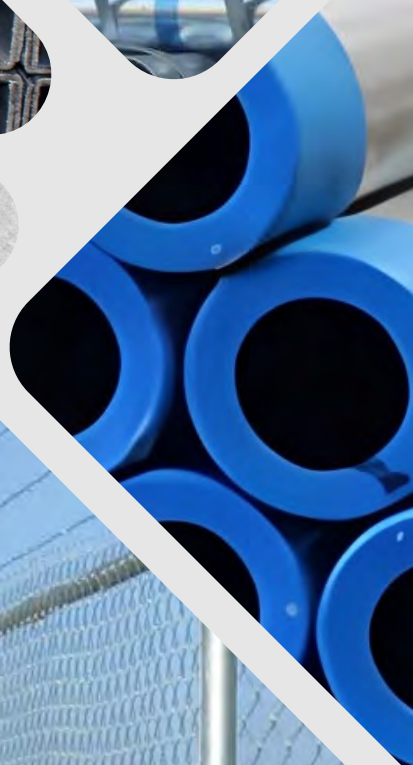
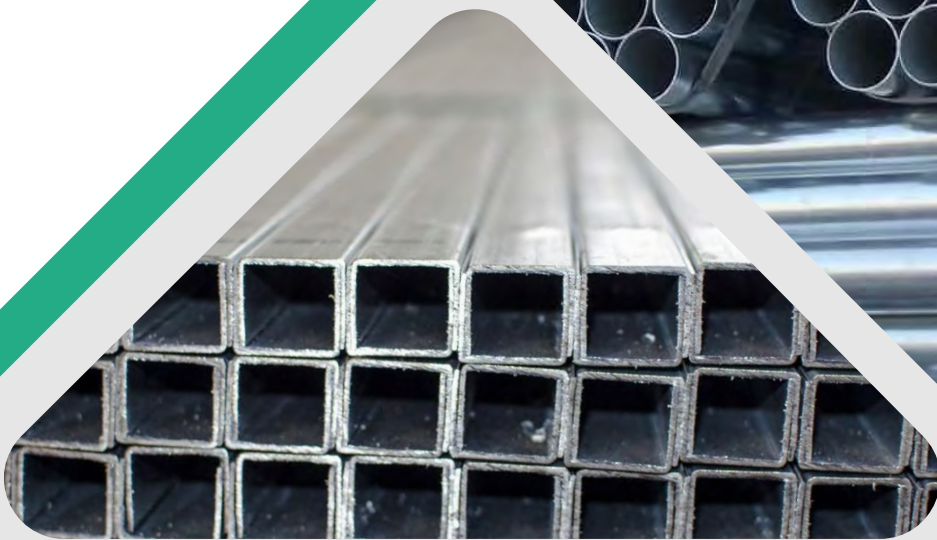


Despite all the limitations and sanctions imposed on the different industries and steel industry of Iran, this country has become one of the largest steel manufacturers and exporters worldwide.

According to statistics published in 2020, Iran could manufacture 29 million tonnes of steel leading to the 10th world rank of Iran above Ukraine, Italy, France, and Mexico.

Regarding the steel production rate in Iran, Petrogerayesh could not only cover domestic needs but also export the production surplus. This case made this company one of the top exports of galvanized pipe profiles and steel pieces in the Region. Petrogerayesh Company now significantly exports galvanized pipes and profiles by exporting pipes to neighboring countries, including Oman, Iraq, Tajikistan, Uzbekistan, Armenia, Azerbaijan, and some East European countries.





- ✓ **Galvanized Pipe For Greenhouse**
- ✓ **Galvanized Profile For Greenhouse**
- ✓ **Water Pipe For Greenhouse**
- ✓ **Galvanized Pipe For Fence**
- ✓ **Galvanized Conduit Pipe**