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AFA STEEL / PRODUCT CATALOGUE

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ENGLISH REVIEW EDITION

Read with the accompanying technical review notes.

About Azar Foulad Amin

Azar Foulad Amin Industries was established in 2009 (early 1388 SH) on a 23-hectare site in Tikmeh Dash, under a licence issued by Iran's Ministry of Industry, Mine and Trade. The company's AFA STEEL trade name is registered with the Industrial Property Office.

With steelmaking, rebar rolling, and tube and section manufacturing operations, the group has a combined nominal production capacity of nearly one million tonnes per year.

The rebar range references INSO 3132 and GOST 5781: AI and AII in 8 and 10 mm, and AIII, AIV, A500 and B500 in 8-32 mm. The standard sales range and made-to-order products are detailed on pages 12-13.

The company first obtained ISO 9001 certification in 2013/14 (1392 SH). Its management-system credentials include ISO 9001, ISO 14001, ISO 45001, ISO 10002 and ISO 10004, issued by DQS.

Production and laboratory facilities, skilled personnel and extensive industrial experience support domestic and regional steel requirements and the development of local manufacturing capabilities.

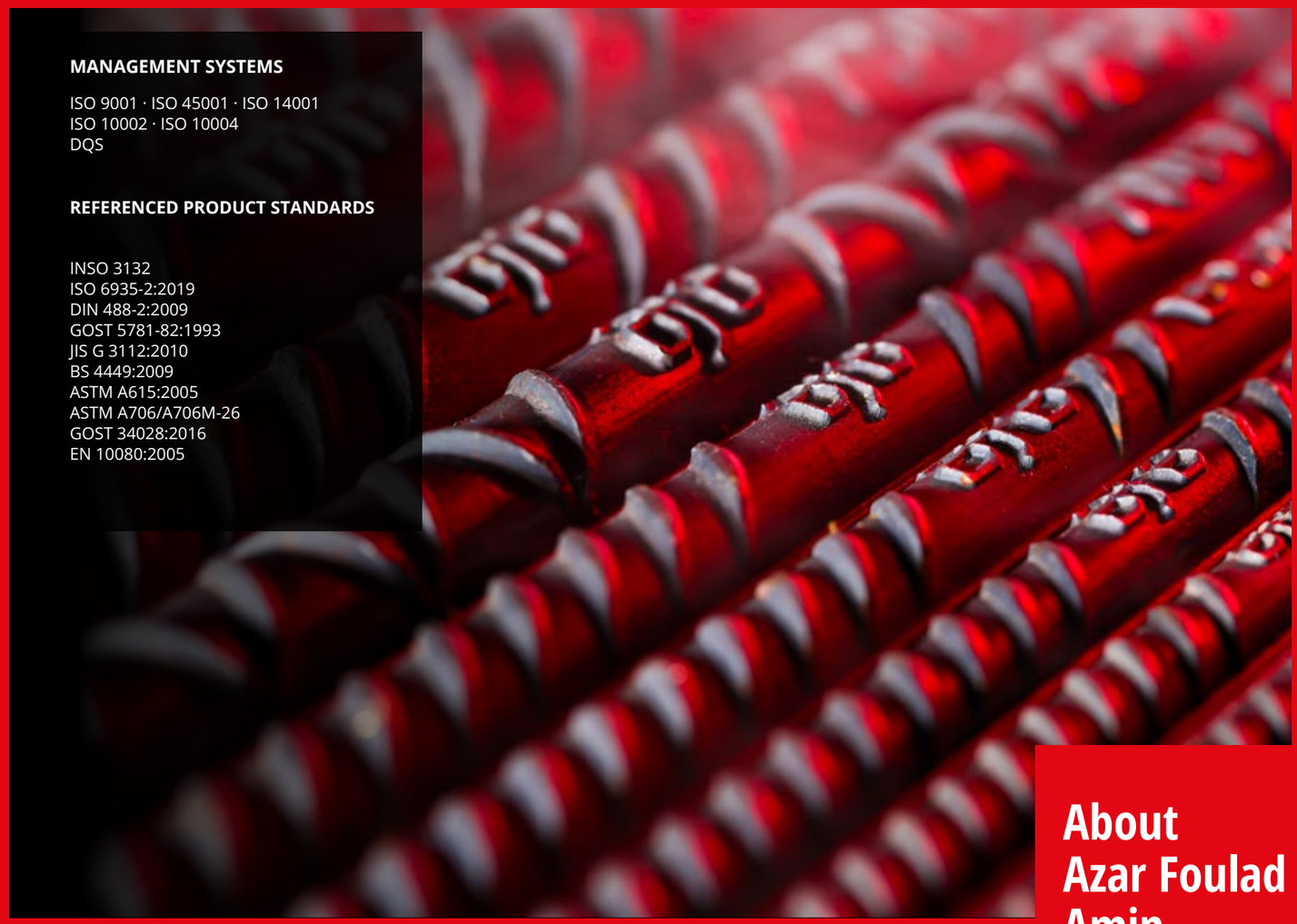
Hazrati / Chief Executive Officer

MANAGEMENT SYSTEMS

ISO 9001 · ISO 45001 · ISO 14001
ISO 10002 · ISO 10004
DQS

REFERENCED PRODUCT STANDARDS

INSO 3132
ISO 6935-2:2019
DIN 488-2:2009
GOST 5781-82:1993
JIS G 3112:2010
BS 4449:2009
ASTM A615:2005
ASTM A706/A706M-26
GOST 34028:2016
EN 10080:2005



About
Azar Foulad
Amin

AFA AT A GLANCE

23

HECTARES

An integrated industrial site in Tikmeh Dash, East Azerbaijan, bringing together steelmaking, rolling, tube and section production, and specialist equipment design and manufacturing workshops.

962,500

tonnes / year

Combined nominal production capacity across the group's steel operations, serving regional and national markets.

850

PEOPLE

Skilled and experienced employees support production continuity, product quality and the group's long-term objectives.

2009

ESTABLISHED (1388 SH)

From steelmaking and billet casting to rebar, tubes, sections and industrial equipment.



AFA Industrial Complex

Tikmeh Dash · East Azerbaijan · Iran

Rebar Rolling Mill

The rolling mill was designed and commissioned for 300,000 tonnes per year, producing AII rebar in 8 and 10 mm and AIII rebar in 8-32 mm to INSO 3132.

A pusher-type reheating furnace feeds the mill. After reheating, 150 × 150 mm billets pass through the roughing stage, where the section is reduced to 70 × 70 mm. Roughing, intermediate and finishing stands then produce the required bar diameter.

AIII, AIV, A500 and B500 bars pass through the Thermex quenching and self-tempering system before entering the cooling bed. AII bars do not require this stage.

After cooling, the bars are cut to standard lengths, automatically bundled and tagged, and prepared for storage.



ROLLING & DIMENSIONAL REFERENCE

Nominal diameter (mm)	8	10	12	14	16	18	20	22	25	28	32
Core diameter, nom. (mm)	7.5	9.3	11	13	15	17	19	21	24	26.5	30.5
Mass / m, min. (kg/m)	0.364	0.580	0.836	1.151	1.503	1.902	2.349	2.834	3.698	4.640	6.061
Mass / m, nom. (kg/m)	0.395	0.616	0.888	1.210	1.580	2.000	2.470	2.980	3.850	4.830	6.310
Mass / m, max. (kg/m)	0.428	0.654	0.943	1.272	1.661	2.102	2.596	3.132	4.006	5.026	6.566
Mass tolerance	±8%	±6%	±6%	±5%	±5%	±5%	±5%	±5%	±4%	±4%	±4%
12 m bar mass, min. (kg)*	4.386	6.989	10.074	13.870	18.111	22.919	28.305	34.150	44.561	55.912	73.035
12 m bar mass, nom. (kg)*	4.760	7.423	10.700	14.581	19.039	24.100	29.764	35.909	46.393	58.202	76.036
12 m bar mass, max. (kg)*	5.157	7.881	11.363	15.328	20.015	25.329	31.282	37.741	48.272	60.563	79.120
Bars / 2 t at min. mass*	456	286	199	144	110	87	71	59	45	36	27
Bars / 2 t at nom. mass*	420	269	187	137	105	83	67	56	43	34	26
Bars / 2 t at max. mass*	388	254	176	130	100	79	64	53	41	33	25
Transverse rib h1, centre min.	0.52	0.65	0.78	0.91	1.04	1.17	1.30	1.43	1.63	1.82	2.08
Transverse rib h1, 1/4 min.	0.36	0.45	0.54	0.63	0.72	0.81	0.90	0.99	1.13	1.26	1.44
Transverse rib width b, min.	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.50	2.80	3.20
Transverse rib width b, max.	1.60	2.00	2.40	2.80	3.20	3.60	4.00	4.40	5.00	5.60	6.40
Longitudinal rib h2, nom.	0.75	1.00	1.25	1.25	1.50	1.50	1.50	1.50	1.50	2.00	2.00
Longitudinal rib h2, max.	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.75	4.20	4.80
Rib pitch C, nom.	5.70	6.50	7.20	8.40	9.60	10.80	12.00	13.20	15.00	16.80	19.20
Pitch tolerance	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%	±15%
Section area S0 (mm²)	50.3	78.5	113	154	201	254	314	380	491	616	804
Bend 160-180°: mandrel	3d	3d	3d	3d	3d	6d	6d	6d	6d	6d	6d
Rebend 90° / 20°: mandrel	5d	5d	5d	5d	5d	8d	8d	8d	8d	10d	10d

Rib dimensions and mandrel diameters: mm. d = nominal bar diameter.

Reference grade	S240 / AI	S340 / AII	S400 / AIII	S500 / AIV
Rib pattern / mark	Plain	Spiral / JU	Herringbone / CT	Compound / ST
Min. yield strength (MPa)	240	340	400	500
Min. tensile strength (MPa)	360	500	600	650
Min. tensile / yield ratio	≥ 1.25	≥ 1.25	≥ 1.25	≥ 1.25
Min. elongation A5 (%)	25	18	16	10

* Source values retained. Bar masses and bundle-count basis require reconciliation; see technical notes.



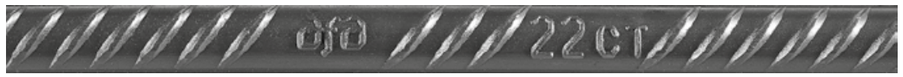
Rebar Technical Specifications

INSO 3132 / Iranian National Building Regulations

Rib pattern	Designation	GOST class	Yield (MPa)*	Tensile (MPa)*	Elong. (%)*
Spiral	Rib 340	AII	340 / 425	500 / 625	18 / 15
Herringbone	Rib 400	AIII	400 / 500	600 / 750	16 / 12
Compound	Rib 500	AIV	500 / 625	650 / 812	10 / 8

Rm / ReH ≥ 1.25. *Paired values reproduced as supplied; subcolumn definitions are missing in the source.

Nom. Ø mm	Core Ø mm	Core Ø tol. mm	Mandrel Ø mm	Mass min. kg/m	Mass max. kg/m	12 m min.* kg	12 m max.* kg	Outer Ø mm	Area mm²
8	7.5	+0.3 / -0.5	24	0.366	0.427	4.410	5.145	9.0	50.3
10	9.3	+0.3 / -0.5	30	0.581	0.653	7.001	7.869	11.3	78.5
12	11.0	+0.3 / -0.5	60	0.838	0.941	10.098	11.339	13.5	113
14	13.0	+0.3 / -0.5	70	1.152	1.271	13.882	15.316	15.5	154
16	15.0	+0.3 / -0.5	80	1.505	1.659	18.135	19.991	18.0	201
18	17.0	+0.3 / -0.5	90	1.905	2.100	22.955	25.305	20.0	254
20	19.0	+0.3 / -0.5	100	2.352	2.594	28.342	31.258	22.0	314
22	21.0	+0.4 / -0.5	110	2.838	3.129	34.198	37.704	24.0	380
25	24.0	+0.4 / -0.5	125	3.702	4.004	44.609	48.248	27.0	491
28	26.5	+0.4 / -0.7	140	4.644	5.023	55.960	60.527	30.5	616
32	30.5	+0.4 / -0.7	160	6.067	6.562	73.107	79.072	34.5	804



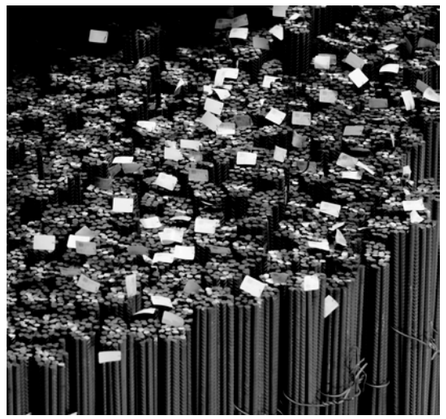
Chemical composition & carbon equivalent (%)

Rib pattern	Grade	C	Si	Mn	P	S	CE
Spiral	Rib 340	0.32	0.60	1.30	0.045	0.045	0.50
Herringbone	Rib 400	0.37	0.60	1.60	0.045	0.045	-
Compound	Rib 500	0.40	0.60	1.80	0.045	0.045	-

* Source bar-mass data require confirmation against the reference weights on pages 12-13.

Rebar Product Range

Azar Foulad Amin manufactures hot-rolled ribbed reinforcing steel in two main grades: A2 spiral-ribbed and A3 herringbone-ribbed rebar. Products are supplied as 12 m straight bars in bundles.





S340 / A2 · SPIRAL-RIBBED REBAR

- Nominal diameters: 8 and 10 mm.
- Minimum yield strength: 340 MPa.
- Nominal bundle mass: approximately 2 tonnes. Reference quantities: about 420 bars for 8 mm and 269 bars for 10 mm.

S400 / A3 · HERRINGBONE-RIBBED REBAR

- Nominal diameters: 8, 10, 12, 14, 16, 18, 20, 22, 25, 28 and 32 mm.
- Minimum yield strength: 400 MPa.
- Nominal bundle mass: approximately 2 tonnes.

S500 / A4 · COMPOUND-RIBBED / MADE TO ORDER

Available subject to technical review and sales approval. Sizes and packaging are agreed for each order.

Nominal Ø (mm)	Grade	Nominal mass (kg/m)	12 m reference bar mass (kg)	Approx. bars per bundle
8	A2 / A3	0.395	4.740	420
10	A2 / A3	0.616	7.392	269
12	A3	0.888	10.656	187
14	A3	1.210	14.520	137
16	A3	1.580	18.960	105
18	A3	2.000	24.000	83
20	A3	2.470	29.640	67
22	A3	2.980	35.760	56
25	A3	3.850	46.200	43
28	A3	4.830	57.960	34
32	A3	6.310	75.720	26

Bar mass is calculated from a 12 m length and nominal mass per metre. Actual bundle mass and bar count may differ from these reference values.

Laboratory & Quality Control

THE LABORATORY

AFA's laboratory is equipped to assess the quality of manufactured products. Inspections follow documented quality plans. Product quality certificates and laboratory test results are provided for customer shipments as required.

TESTING & INSPECTION EQUIPMENT

- 100-tonne tensile testing machine
- Bend testing machine
- Bend and rebend testing equipment
- Optical emission spectrometer (OES)
- Metallographic examination equipment
- Hardness tester
- Digital balances and weighing equipment



MANAGEMENT SYSTEMS & REFERENCED STANDARDS

ISO 9001 · ISO 45001
ISO 14001 · ISO 10002
ISO 10004 / DQS

DIN 488-2:2009
ISO 6935-2:2019
GOST 5781-82:1993
JIS G 3112:2010
BS 4449:2009
ASTM A615:2005
ASTM A706/A706M-26
GOST 34028:2016

Production Technology

TUBE & SECTION MANUFACTURING

This specialist division extends AFA's steel value chain through open sections, structural hollow sections (HSS), industrial sections and steel tubes.

Production focuses on compliance with technical requirements, close process control and the ability to meet both standard and bespoke specifications.

The group's industrial infrastructure, access to steel feedstock and location in East Azerbaijan support supply to construction, structural, industrial and infrastructure projects.

By converting flat steel and sheet into open and closed sections, the division adds value and serves steel construction, machinery manufacturing and industrial equipment applications.



CONTINUOUS ROLL FORMING

Steel sheet or strip is prepared and inspected before entering the forming line. A sequence of forming stages progressively shapes the material into the required cross-section.

The process controls geometry, dimensions, wall thickness, surface finish, weld quality and compliance with the specified technical requirements.

The plant's access to the Bostanabad-Mianeh corridor supports regional and nationwide distribution.

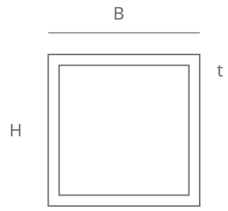
PRODUCTION SEQUENCE

1 Steel sheet / strip	2 Preparation & slitting	3 Progressive forming	4 Welding (closed sections)
5 Sizing & calibration	6 Cut to length	7 Quality control	8 Packing & dispatch

Tubes & Hollow Sections

Square Hollow Section (SHS)

ALL DIMENSIONS IN mm

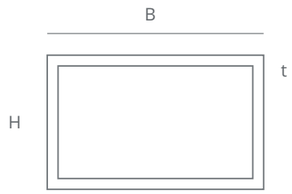


Dimensions (B × H)	Wall thickness
35 × 35	1.5
40 × 40	1.5-2.0
50 × 50	2.0
60 × 60	2.0
70 × 70	2.0
80 × 80	2.0
90 × 90	2.0
100 × 100	2.0

t = wall thickness

Rectangular Hollow Section (RHS)

ALL DIMENSIONS IN mm

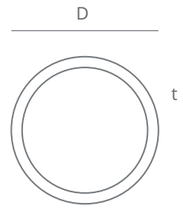


Dimensions (B × H)	Wall thickness
60 × 40	1.5-2.0
80 × 40	2.0
120 × 80	2.0

t = wall thickness

Circular Hollow Section (CHS)

ALL DIMENSIONS IN mm

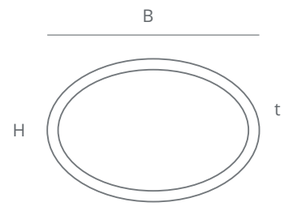


Outside diameter (D)	Wall thickness
27	1.5-2.0
32	1.5-2.0
34	1.5-2.0
42	1.5-2.0
48	1.5-2.0
51	2.0
60	1.5-2.0
76.1	1.5-2.0
89	2.0-2.5

t = wall thickness

Oval Hollow Section

ALL DIMENSIONS IN mm



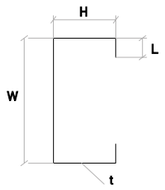
Dimensions (B × H)	Wall thickness
60 × 50	1.5

t = wall thickness

C Section

Web, flange and lip dimensions; light- and heavy-gauge production.

Web W	100-400
Flange H	50-100
Lip L	10-25
Thickness / light line	1.5-3.0
Thickness / heavy line	2.0-6.0
Steel grade	ST37 / ST52
Sheet type	Hot-rolled / galvanized
Lip angle	90° / 135°
Length	To order

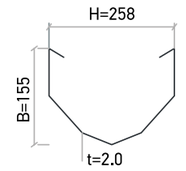


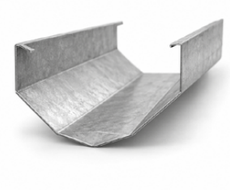


Gutter

Reference geometry, bending and optional punching.

Reference B × H*	258 × 155
Wall thickness t	2.0
Developed strip width	501.4
Reference bend radius R	4
Material	Galvanized steel
Length	To order
Punching	Optional

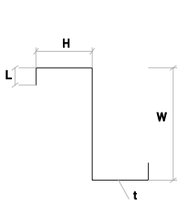




Z Section

Sheet type and lip angle as specified; length made to order.

Web W	120-400
Flange H	50-100
Lip L	10-25
Thickness / light line	1.5-3.0
Thickness / heavy line	2.0-6.0
Steel grade	ST37 / ST52
Sheet type	Hot-rolled / galvanized
Lip angle	90° / 135°
Length	To order

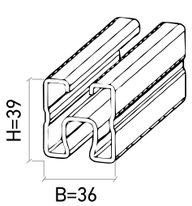




H1 Section

Type 1: overall geometry, thickness and bending data.

Overall B × H	36 × 39
Wall thickness t	2.0
Developed strip width	163.4
Reference bend radius R	3
Material	Galvanized steel
Length	To order

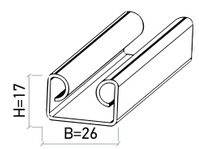




U Section

Overall dimensions, return lip and developed strip width.

Overall B × H	26 × 17
Wall thickness t*	12
Internal opening	10
Return lip	8
Developed strip width	84
Material	Galvanized steel
Length	To order

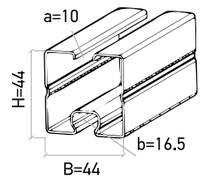




H2 Section

Type 2: overall and internal section dimensions.

Overall B × H	44 × 44
Wall thickness t	1.0
Top opening a	10
Lower internal width b	16.5
Upper portion	17
Reference bend radius R	2
Length	To order





* U-section thickness and gutter B/H orientation require technical confirmation. Values and drawings retained from source.

Quality at Every Stage

01 / RAW MATERIALS

Quality control extends from incoming raw materials to the finished tube or section.

02 / INCOMING INSPECTION

- Review of material analysis certificates
- Thickness checks
- Dimensional checks
- Surface condition
- Mechanical properties

03 / IN-PROCESS CONTROL

- Section dimensions
- Wall thickness
- Forming quality
- Straightness
- Weld quality, where applicable
- Geometric tolerances

04 / FINAL INSPECTION

- Dimensions and thickness
- Length and mass
- Appearance and surface
- Joint / weld quality
- Required mechanical and metallurgical tests

STANDARDS & TECHNICAL COMPLIANCE

Products are manufactured and inspected to the standard agreed with the customer and the project specification.

Structural sections / HSS: EN 10219
Hot-finished hollow sections: EN 10210
Steel tubes: agreed product standard
Raw materials: applicable EN / ASTM / DIN
Custom products: agreed specification

Product Applications

ENGINEERED FOR INDUSTRY

AFA steel tubes and sections provide durable, strong and versatile structural solutions for a wide range of industries.

Manufactured with advanced production technology and close quality control, they support major construction and industrial projects, from steel frames and industrial halls to solar mounting systems, greenhouse structures and machinery chassis.

BUILDINGS & STRUCTURES

Steel frames · Industrial sheds and halls · Light and heavy structures · Trusses and columns · Support structures

MACHINERY MANUFACTURING

Machine chassis · Equipment frames · Machine structures · Industrial equipment

MANUFACTURING INDUSTRIES

Factory equipment · Production lines · Support frames · Material-handling equipment

Solar & Greenhouse Structures

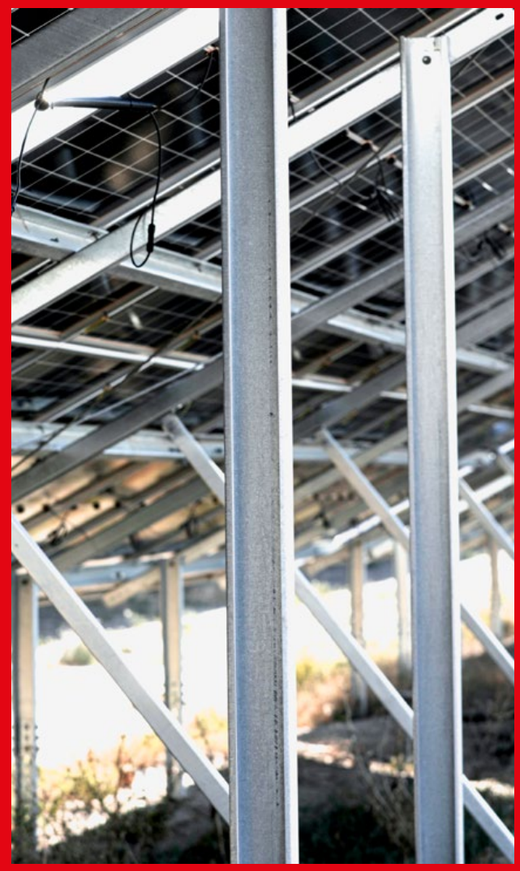
Steel tubes and sections for solar mounting structures, equipment bases and frames, panel supports, energy infrastructure and greenhouse structures.

SOLAR PROJECTS

Location	Project company	MW
Jolfa	Gozal Tabiat Aras	7
Jolfa	Aras Tarla Amir	43
Akhval	Tamin Energy Paydar Yanar	12
Salmas	Tamin Energy Paydar Yanar	12
Yekanat	Tamin Energy Paydar Yanar	120
Yekanat	Tamin Energy Paydar Yanar	129
Nain	Tamin Energy Paydar Yanar	28
Nain	Aras Tarla Amir	27
Akhval	Aras Tarla Amir	66
Shahreza	Aras Tarla Amir	25
Shahreza	Tamin Energy Paydar Yanar	25

GREENHOUSE PROJECTS

Project	Area (ha)
Aras Tarla Amin	30
Aras Tarla Amir	60
Gozal Tabiat Aras	51
Paral Tejarat	40





Energy & Agriculture

181
ha
Greenhouse steel structures: design, manufacture and installation

≈500
MW
Solar mounting posts and sections: manufacture and supply

120
MW
Solar structures: engineering, design, manufacture and installation

STEELMAKING & CONTINUOUS CASTING



Foulad Amir
Azerbaijan

Steelmaking Process

The production route includes scrap sorting and processing at three dedicated sites, melting scrap and direct reduced iron (DRI) in induction furnaces, transfer to the ladle furnace for refining and alloying, continuous casting, and billet cutting.

Access to the main transit road, proximity to rail and gas infrastructure, and modern steelmaking technology strengthen the company's industrial position.

Management's long-term priorities include higher-quality production, reduced occupational health and safety risks, lower environmental impacts, and the implementation and certification of national and international standards within an integrated management framework.



BILLET CHEMICAL COMPOSITION (%)

Grade	Limit	C	Si	Mn	P	S	Cr	Cu	Ni
5SP	Max.	0.37	0.30	0.80	0.04	0.05	0.30	0.30	0.30
5SP	Min.	0.28	0.15	0.50	0	0	0	0	0
3SP	Max.	0.22	0.30	0.65	0.04	0.05	0.30	0.30	0.30
3SP	Min.	0.14	0.15	0.40	0	0	0	0	0

Foulad Amir Azerbaijan

Foulad Amir Azerbaijan

STEELMAKING & CONTINUOUS CASTING

Foulad Amir Azerbaijan, a subsidiary of Azar Foulad Amin, was established in 2021/22 (1400 SH) on an approximately 10-hectare site in Bostanabad County. With a nominal capacity of 400,000 tonnes of steel billets per year, it is a key part of the AFA STEEL production chain.

The plant operates three OTTO JUNKER induction-furnace sets from Germany, with 40 tonnes per furnace as stated in the source narrative, a ladle furnace (LF), and a four-strand continuous casting machine (CCM). It can produce structural and alloy steel billets from 120 × 120 to 200 × 200 mm.

Production covers scrap preparation at three dedicated sites, melting of scrap and DRI, refining and chemical adjustment, continuous casting, and billet cutting. Specialist production facilities, an equipped laboratory and experienced personnel support process control, product quality and feedstock supply for the group.

400k
tonnes / year
Nominal billet capacity

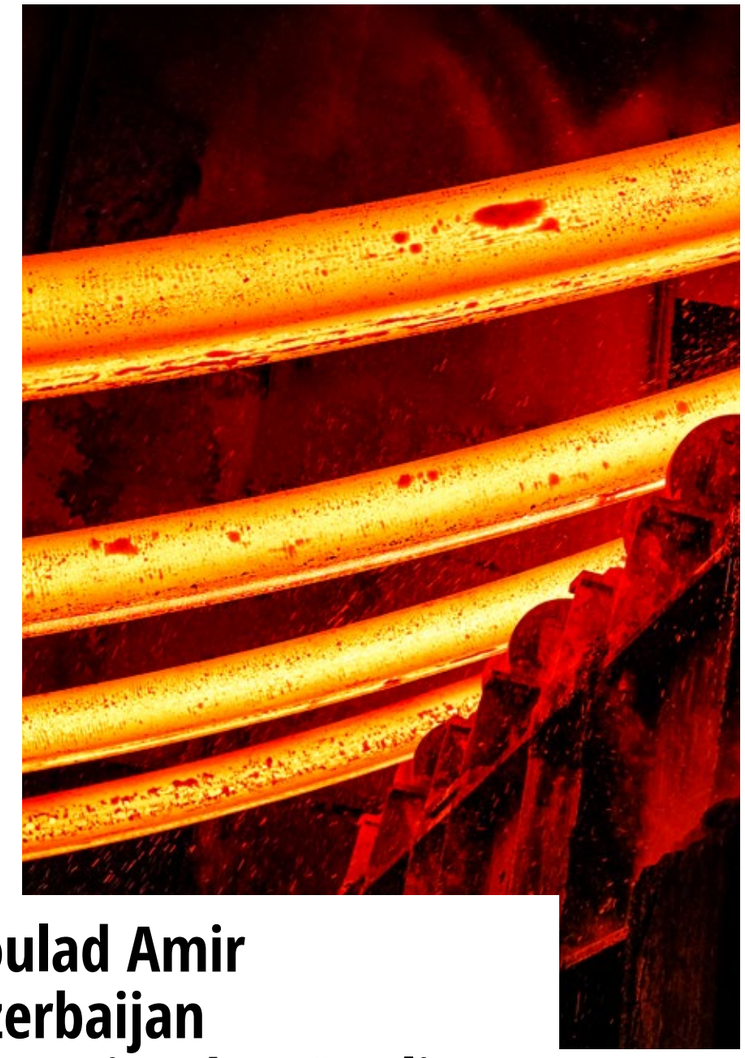
3
OTTO JUNKER furnace sets
Six 40 t furnaces*

45*
tonnes
Source headline capacity

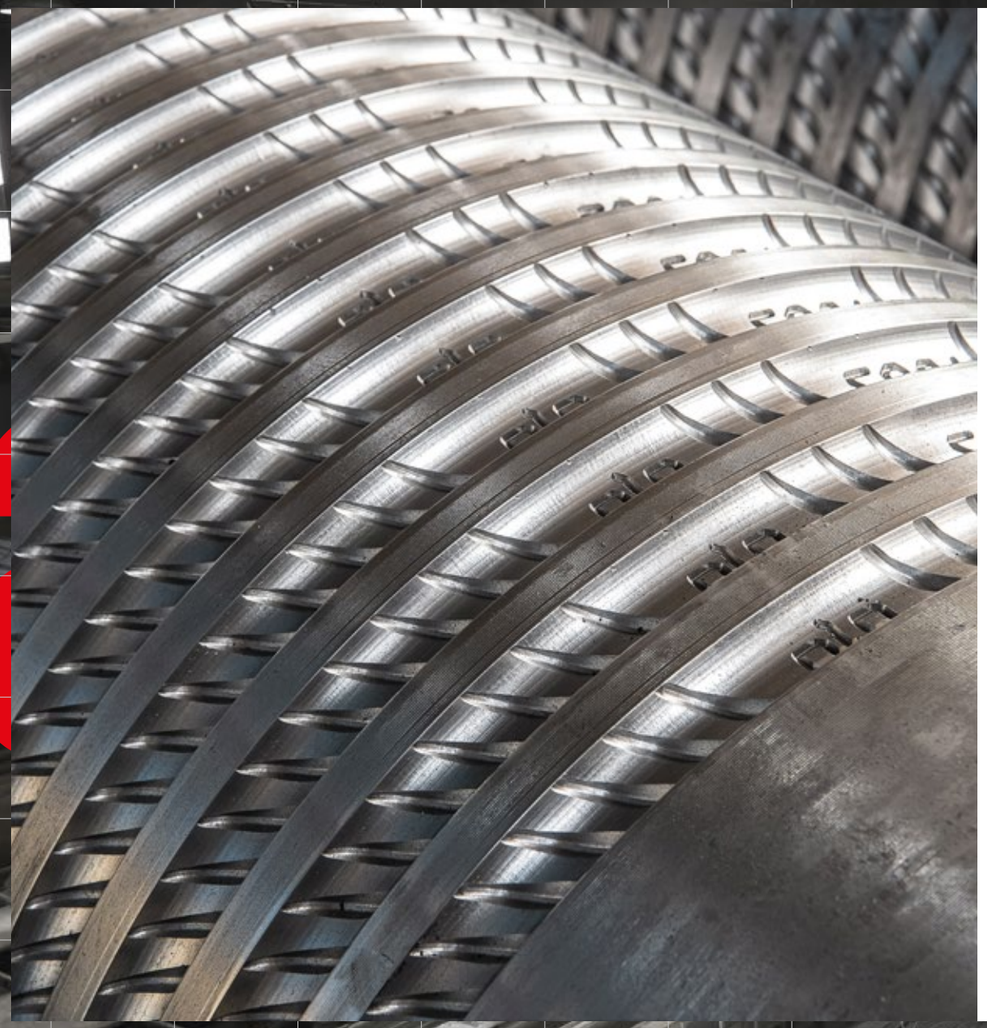
4
strands
Continuous casting machine

10
hectares
Site area

* Furnace count and capacity require confirmation: the source states 40 t in the narrative and 45 t in the headline.



Foulad Amir Azerbaijan Committed to Quality



Engineering & In-house Manufacturing

Established when the company was founded, the fabrication and machine workshops were equipped to manufacture rolling-mill components and assemblies. More than 70% of the existing mill's equipment was designed by the technical and engineering team and manufactured and assembled in-house.

In recent years, the team has designed, manufactured and installed CCM equipment and steelmaking buildings. It also delivered the steel structures for the Aras Tarla Amin and Aras Tarla Amir greenhouse complexes, stated in the source as a combined 120 hectares*.

Experienced personnel and engineering hardware and software support the design, manufacture and installation of industrial components, assemblies, steel structures and equipment.

MADE-TO-ORDER CAPABILITIES

Steelmaking: Custom alloy-steel billet capability in sections from 120 × 120 to 200 × 200 mm.

Rolling: Custom rebar in AI, AVI*, B500A, B500B, B500C and A500 grades, in 8-32 mm diameters.

Tubes and sections: Custom production subject to the technical capability of the relevant production line.

* Greenhouse area and the source grade “AVI” require confirmation; see technical notes.



Design & Manufacturing Projects

SELECTED ENGINEERING & FABRICATION WORK

STEELMAKING

- Billet cooling beds - manufacture and installation
- Billet shifters - manufacture and installation
- Scrap charging cars - manufacture and installation
- Material-handling systems - manufacture and installation
- Continuous casting machine (CCM) equipment - manufacture and installation
- Cross-transfer cars - manufacture and installation
- Tundishes of various types - manufacture
- Light and heavy steelmaking buildings - design, manufacture and installation
- DRI storage vessels - design, manufacture and installation
- Substation steel structures - manufacture and installation
- Steelmaking spare parts - manufacture

ROLLING MILLS & UTILITIES

- Cooling beds - design, manufacture and installation
- Rolling-mill boxes* - design, manufacture and installation
- Cooling-bed gearboxes - design, manufacture and installation
- Rolling-mill stands - design, manufacture and installation
- Billet cutting equipment - design, manufacture and installation
- Rolling-mill rolls - design and machining
- Thermex systems - design, manufacture and installation
- Cooling towers - design, manufacture and installation
- Overhead cranes, 16 / 25 / 32 t - design, manufacture and installation
- Reheating-furnace steelwork - design, manufacture and installation
- Furnace-stack steelwork - design, manufacture and installation
- Rolling-mill spare parts - design, manufacture and installation

GREENHOUSES

- Industrial greenhouse steel structures - design, manufacture and installation
- Greenhouse spare parts - manufacture and installation
- Greenhouse coagulation systems* - design, manufacture and installation
- Greenhouse piping systems - manufacture and installation

* Source terminology for “rolling-mill boxes“ and “greenhouse coagulation systems“ requires technical clarification.

Request a Quotation

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Product specifications and order enquiries

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TECHNICAL & COMMERCIAL ENQUIRIES

Share the product specification, order quantity and technical requirements with AFA sales to receive a proposal tailored to your project.

REBAR ENQUIRY

- Rebar grade
- Nominal diameter
- Required tonnage
- Delivery destination
- Required delivery date

TUBE & SECTION ENQUIRY

- Section type
- Dimensions and wall thickness
- Required length and steel grade
- Sheet type and coating
- Quantity or tonnage
- Punching details and special requirements
- Drawings and project specifications for custom orders
- Delivery destination and required date



Certificates & Recognition