

LAXCON

LAXCON STEELS LIMITED

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Nov 2024

LAXCON
The 'Stain' less People

LAXCON STEELS LIMITED



STEEL BEYOND *expectations.* *Legacy* BEYOND TIME.



- Bright Bars
- Precision Shaft Quality Bars
- Hexagonal Bars
- Square Bars
- Flat Bars
- Cold Drawn Flat Bars
- Equal Angles
- Un-Equal Angles
- T-Profile
- Channels
- Forged & Proof Machined Bars
- Threaded Bars
- Hot Rolled Round Bars
- Hot Rolled Round Cornered Squares (RCS)
- Deformed Bars
- Continuous Cast Billets / Blooms
- Forging Quality Ingots



STAINLESS STEEL LONG PRODUCTS



ENGINEERING TOMORROW'S STRENGTH



TOGETHER TOWARDS FUTURE



PIONEERING THE *art* OF *steelmaking* SINCE 1979

Great companies are built without steering away from their core competence and invest all their energy in mastering their art.

Since 1979, Laxcon has steered its organizational capability in only one direction – to make the finest steel. Over the years, the high standards of quality and customer delight have been achieved by investing in people, process that emanate out of a singular focus.

With quality so evident, our steel doesn't just sell — it creates lasting partnerships, built on trust and proven performance.

1,40,000 Metric ton per annum






















1500+ Experienced team members

82+ Countries served

FROM *passion* TO *obsession, 45+ years* OF **STAINLESS** *evolution.*

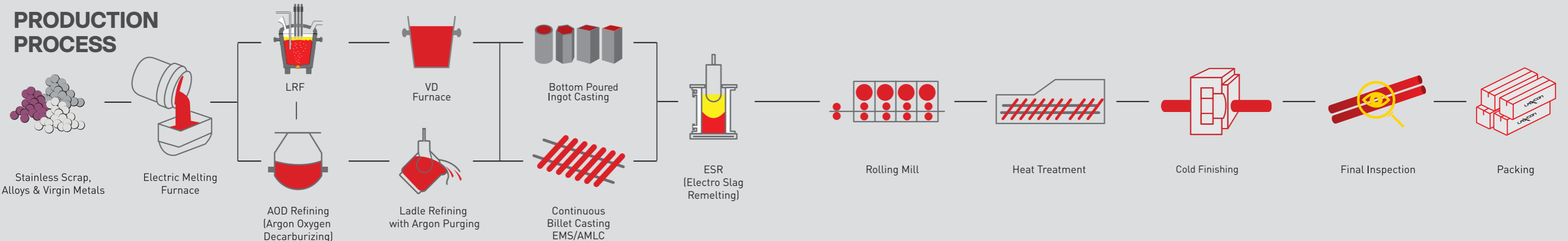
Driven by a relentless pursuit of excellence, we've transformed passion into a powerful force that shapes the future of steel.

Our journey of global footprints arises from singular focus of sticking to our core competency - steel. Over the years, we have kept ploughing capital back into the business to improve our capabilities and upgrade our infrastructure that empowers us to consistently produce the finest stainless steel.

<p>1 MT. Induction Furnace Unit Producing SS Ingots in Delhi</p> <p>1985</p> 	<p>Acquired 3 MT. Induction Furnace in Delhi</p> <p>1994</p> 	<p>Acquired 3 MT. Induction Furnace in Ahmedabad</p> <p>2002</p> 	<p>Added Continuous Caster (CCM)</p> <p>2005</p> 	<p>Installation of 20" Rolling Mill</p> <p>2007</p> 	<p>Acquired 8 MT. Induction Furnace in Ghaziabad, UP</p> <p>2010</p> 	<p>Installation of EMS & AMLC</p> <p>2012</p> 	<p>Installation of ESR</p> <p>2018</p> 	<p>An Award Winning Office Block Built</p> <p>2021</p> 	<p>Installation of 25 MW Hybrid (Wind + Solar) green power generation project for captive use</p> <p>2023</p> 	
<p>Started with Hot & Cold Rolling Mill for SS Sheets in Delhi</p> <p>1979</p> 	<p>Acquired 3 MT. Induction Furnace in Chennai</p> <p>1991</p> 	<p>Acquired another 3 MT. Induction Furnace in Delhi</p> <p>1996</p> 	<p>10 MT. AOD Installed in Ahmedabad</p> <p>2003</p> 	<p>Started Bright Bar Manufacturing Facility</p> <p>2006</p> 	<p>Added another 12" Rolling Mill</p> <p>2009</p> 	<p>Installed Ladle Refining Furnace (LRF) & Vacuum Degassing (VD)</p> <p>2011</p> 	<p>Enhanced Capacities with 25 MT. Induction Furnace & AOD of 35 MT.</p> <p>2015</p> 	<p>Acquired another unit having Two Rolling Mills 14" & 16"</p> <p>2019</p> 	<p>Started a New Profile Division with enhanced capacity</p> <p>2022</p> 	<p>Installed A Fully Automatic Bar Peeling Line Increasing the capacity by 4000 MT.</p> <p>Started an In-house R&D Centre for improving and developing new products for wider applications</p> <p>Automatic Billet Grinding Machine</p> <p>2024</p> 

& BEYOND
Our growth story continues...

PRODUCTION PROCESS



THE *pillars* OF LAXCON *steelmaking* EXCELLENCE.

Based out of the industrial state of Gujarat, our manufacturing plants are built for scale and efficiency. It is one of the most technologically advanced stainless steel & special steel manufacturing company in India. It utilizes a wide range of modern steel manufacturing techniques and accurate melting statistics along with stringent monitoring processes.



Unit 1

SMS, Rolling Mills,
Heat Treatment,
Research & Development Center



Unit 3

Cold Finishing Facility
and Rolling Mills



Unit 2

Cold Finishing Facility

Office

Fusion of architecture,
climate sensitivity & function.



OUR *steel* DOESN'T JUST MEET *expectations*, IT EXCEEDS THEM.

Steel Melting Shop

We produce high quality Stainless Steel, Alloy Steel and Tool Steel, Billets & Blooms in our advanced Steel Melting Shop.

- We employ a range of state-of-the-art steel making technologies. Every batch is monitored and recorded by a robust production control system with precise melting data.
- Vibro feeder for the addition of lime, dolomite & ferro alloys.
- Top Lancing Facility.
- Electric Melting Furnaces - 140,000 Metric Ton Capacity per Annum
- Electro Slag Refining (ESR)
- Argon Oxygen Decarburization (AOD) Converter with Automatic Gas Mixing Station
- LRF (Ladle Refining Furnace)
- VD/VOD (Vacuum Degassing/Vacuum Oxygen Decarburizer)
- Billet / Bloom / Round Twin-strand Continuous Caster of 9/16 Metre Radius, PLC Operated with Mould Electro Magnetic Stirrer (M-EMS & AMLC)
- Bottom Poured Ingot Casting up to 22 MT.
- Fully Automatic State-of-the-art Billet Grinding Machine
- Ti, S & CaSi Cored Wire Injection



From the very beginning, our approach to steel production has been rooted in a deep commitment to innovation, precision and excellence.

Our facilities are not just individual units; they are interconnected components of a finely tuned machine, each contributing to the creation of steel that stands out in the global market.

Heat Treatment Facilities

In order to accomplish customer specific material, quality and mechanical properties, Laxcon Steels has state-of-the-art heat treatment facilities.

- Our PLC controlled heat treatment furnaces give us precise control over temperature, resulting in greater uniformity and thereby achieve excellent mechanical properties.
- Our specially designed heat treatment furnace can treat bars up to 7 metres.
- Two PLC controlled Electrical Tempering furnaces 10 MT capacity & 18 MT capacity
- Gas fired PLC controlled Soft Annealing furnace 40 MT capacity
- Three Gas fired PLC controlled Solution Annealing furnaces 6 MT each
- Water quenching tank for Solution Annealing 60 KL capacity
- Oil quenching tank for Hardening 50 KL capacity
- Quench delay time is less than 1 minute
- Heat Treatment Graph Facility



Advanced Hot Rolling Mills

Our robust rolling lines are a result of our perseverance towards forward integration and this gives us the ability to roll steel.

- 20"-5 Stand Semi-Automatic Cross-Country Mill
- 16"-5 Stand Semi-Automatic Cross Country Mill
- 14"-5 Stand Semi-Automatic Cross Country Mill
- 12"-6 Stand Semi-Automatic Cross Country Mill
- Billet Reheating Pusher Type Furnace (Automatic)
- Online Hot Saw Cutting Facility
- HMD (Hot Metal Discharge) for monitoring input and output

Cold Finishing Facility

We offer a wide tolerance range, sizes and finishing options. We produce Bright Bars and Precision Shaft Bars owing to our versatile automatic bar processing and finishing lines.

- Automatic Bar Peeling Lines
- Automatic Bar Polishing Lines
- Belt Polishing Machines
- Centreless Grinding Machines
- Combined Wire Drawing Machines
- Automatic Draw Benches
- Bar Straightening Machines
- Section Straightening Machines
- Section Polishing Machines
- Automatic Chamfering Machines
- Grit Polishing Machines
- Band Saw Cutting Machines
- Shot Blasting Line
- Threaded Bar Rolling
- Eddy Current Facility





- | | | |
|---|--------------------|---|
| 1. Forging Quality Ingots | 6. Flat Bars | 12. Hot Rolled Round Bars |
| 2. Continuous Cast Billets / Blooms | 7. Channels | 13. Bright Bars / Duplex Steels
Precision Shaft Quality Bars |
| 3. Forged & Proof Machined Bars | 8. Un-Equal Angles | 14. Square Bars |
| 4. Hot Rolled Round
Cornered Squares (RCS) | 9. Equal Angles | 15. Hexagonal Bars |
| 5. Cold Drawn Flat Bars | 10. T-Profile | 16. Threaded Bars |
| | 11. Deformed Bar | |

FROM *strength* TO *versatility*
OUR PRODUCT RANGE
CONTINUES TO *expand.*

Our integrated manufacturing edge gives us the ability to produce steel in a variety of finishes, surface options and profiles. Our bright bars and precision shaft bars are reputed for their quality and metallurgy. Our ingots and RCS are popular among processors who use them for further machining.



STREAMLINED *operations* *optimum* **EFFICIENCY.**

Precision in cold finishing processing and logistics handling has always been our central focus and we continuously upgrade our machinery and train our team for enhanced efficiency and accuracy.

AUTOMATION **IN** *action.*

To streamline the processing of bars and increase output, we have installed automated lines that delivers straightening, centreless grinding, chamfering and facing in back to back steps.



YOUR *vision*, OUR *steel* — *customized* TO MEET EVERY *challenge*.

Facilities

- Optical Emission Spectrometers
- Leco Gas Analyzer for H₂, O₂, N₂
- Mobile Handheld Spectrometers
- Brinell Hardness Testing Machine
- Rockwell Hardness Testing Machine
- Digital Portable Hardness Tester
- Impact Testing Machine Assisted with Notch Broaching & Profile Projector
- Subzero Impact Testing Facility
- Optical Microscope for Determination of Microstructure / Grain Size / Defect Depth/ Delta Ferrite Measurement, Non-Metallic Inclusion Rating, Decarburization
- Universal Testing Machine for Testing Tensile Strength / Elongation / Reduction in C/S Area
- High Temperature Tensile Testing upto 1000°C
- Optical Pyrometer for Temperature Measurement
- Eddy Current Testing
- Leica Make Optical Microscope

- State-of-the-art NABL Accredited Testing Laboratory
- Ultrasonic NABL Accredited Testing Facility
- 0.2% Proof Stress & 1 % Proof Stress by Electronic Extensometer
- Inter Granular Corrosion Testing Facility as per ASTM A262 / ISO 3651
- Delta Ferrite Content Testing by "Ferritoscope"
- Magnetic Particle Inspection
- Radio Activity Testing
- Surface Roughness Tester
- Wet Analysis Laboratory for the Testing of Incoming Raw Material
- Straightness Measurement Table



APPROVED AND *accredited* — *quality* YOU CAN *trust* IN EVERY *piece.*

Approved Supplier for

- Ministry of Defence, Govt. of India
- Bharat Heavy Electricals Limited (BHEL)
- Department of Atomic Energy (DAE)
- Nuclear Power Corporation of India Limited (NPCIL)
- Indian Space Research Organisation (ISRO)
- BEML Limited, Government of India
- Electronics Corporation of India Limited (ECIL)
- Bhabha Atomic Research Centre (BARC)
- Indira Gandhi Centre of Atomic Research (IGCAR)
- Liquid Propulsion Systems Centre (LPSC)
- Mazgaon Dock
- Garden Reach Shipbuilders
- Vikram Sarabhai Space Centre (VSSC)

Certifications

- ISO 9001 - TUV NORD, Germany
- ISO 14001 - TUV NORD, Germany
- ISO 45001 - TUV NORD, Germany
- AS 9100 - Aerospace & Defense Applications
- IATF - International Automotive Standard
- LR Marine Approval
- DNV Marine Approval
- ABS Marine Approval
- PED - Pressure Equipment Directive TUV NORD, Germany
- CE Marking Approval under CPR (Construction Products Regulations)
- Norsok Approval - TUV NORD, Germany
- NABL Certification
- IBR - Well-known Steel Maker, Central Boiler Board, Govt. of India
- BIS (Bureau of Indian Standards)
- REACH & RoHS Compliance - TUV NORD, Germany



ISO 9001
TUV NORD, Germany



ISO 14001
TUV NORD, Germany



ISO 45001
TUV NORD, Germany



AS 9100 - Aerospace
& Defense Applications



IATF - International
Automotive Standard



LR Marine
Approval

AWARDS & *recognitions*



Material Recycling
Association of India



All India Induction
Furnaces Association



Bureau of International
Recycling

- 4 Star Export House
- Gold Trophy in Secondary Steel Sector Awards from Ministry of Steel Govt of India in 2018
- Ispat Rachna Award in 2019
- Ispat Udyog Ratna Award
- Ispat Agradoot Award in 2022
- IDA Design Award
- International Architecture & Design Award





BUILDING A *sustainable* tomorrow WITH GREEN STEEL.

The steel sector ranks as the fifth largest CO₂ emitter globally, making sustainable practices more crucial than ever. Green steel offers a powerful solution, significantly reducing the energy and resources needed for production while minimizing waste and emissions throughout the manufacturing process.

At Laxcon, we embrace 100% scrap recycling, eliminating the need for traditional methods like the blast furnace (BF) and basic oxygen furnace (BOF) routes, which contribute to 70% of total greenhouse gas emissions. We are committed to delivering sustainable and eco-friendly steel products that

not only lessen the environmental impact but also offer substantial economic advantages to our clients. It's time to prioritize energy efficiency and unlock significant cost savings.

By taking every measure to ensure our processes adhere to the highest environmental standards, we forge a sustainable future that balances performance with environmental responsibility. By choosing green steel for your next project, you join us in championing sustainable practices and contributing to a healthier planet.

Scope	GHG Emission (tCO ₂ e/annum)
Scope 1 (tCO ₂ e/annum)	16,140
Scope 2 (tCO ₂ e/annum)	41,375
Scope 3 (tCO ₂ e/annum)	42, 820
Total (scope 1 + scope 2 + scope 3)	1,00,335
Total GHG Emission Intensity (MTCO ₂ e/MT of production)	1.37



OUR STEEL IS AS STRONG ON SUSTAINABILITY AS IT IS ON PERFORMANCE.

At Laxcon, we believe that true strength lies in the ability to protect our planet while delivering exceptional quality. Our commitment to sustainability means every piece of steel we produce not only meets rigorous performance standards but also contributes to a greener future.

By utilizing advanced, eco-friendly production methods and incorporating recycled materials, we ensure that our steel products are both durable and responsible. Whether for construction or manufacturing, our steel is designed to withstand the test of time while minimizing environmental impact.

Environmental Benefits

- Lower carbon emissions
- Improved energy efficiency
- Reduced waste and pollution
- Sustainable land management

Client Benefits

- Durable and efficient materials
- Cost-effective energy savings
- Versatile, eco-friendly solutions

Installation of Wind Solar Hybrid Power Project capacity 25 MW

Our completed measures towards becoming a green steel company.

- Our carbon footprint is verified and validated by DQS
- Rainwater harvesting systems installed at all units
- Solid waste management steps include making bricks from waste slag
- Plantation of saplings and trees across plants
- Regular assessment of carbon footprints

Scheduled green activities in the pipeline.

- Development of green products
- Sourcing of eco-friendly materials
- Work towards a green supply chain
- Process re-engineering and adopting clean technology
- Electric buses for transportation
- Use of battery-operated vehicles inside the plant
- Installing a bigger AOD heat size with shorter process time that will reduce the heat generated during the exothermic reactions in the converter



Packaging WITH PURPOSE — vigilant PROTECTION TO preserve PERFECTION.

Our materials are meticulously packed to ensure security and protection during high seas and surface transport. We offer bundles ranging from 500 to 1000 kg (1000 to 2000 lbs), securely covered with HDPE / LDPE and equipped with two lifting slings per bundle.

We also offer ISPM 15-compliant wooden boxes and fiber tube packing for bars, with customized options available on request. Each bundle is marked with heat number, grade, size, net weight and gross weight for easy identification.



DIFFERENT grades. SAME excellence.

As an integrated steelmaker, popular steel grades are readily available and most grades can be supplied within a short lead time. We can make several exotic and special grades on demand. In aggregate terms, we possess the capability to make over 1000 grades of steel.

Austenitic Steels

DIN	ASTM	JIS
1.4310	301	SUS 301
1.4319	302	SUS 302
1.4305	303	SUS 303
1.4301	304	SUS 304
1.4307	304L	SUS 304L
1.4948	304H	SUS F 304H
1.4311	304LN	SUS 304 LN
-	304N	-
1.4312	305	SUS 305 J1
1.4845	310	SUS 310
1.4842	310S	SUS 310 S
1.4841	314	-
1.4401	316	SUS 316
1.4404	316L	SUS 316L
1.4919	316H	-
1.4406	316LN	SUS 316LN
1.4432	-	-
1.4435	-	-
1.4436	-	-
1.3952	-	-
1.4571	316Ti	SUS 316Ti
1.4438	317L	SUS 317L
1.4541	321	SUS 321
1.4878	321H	SUS 321H
1.4460	329	SUS 329 J1
1.4550	347	SUS 347
-	347H SUS	SUS 347H
-	201	-
-	202	-
-	204	-
-	204 CU	-
-	XM 19	-
1.4815	-	-
-	HK30	-
-	S30432	-
1.4828	309	-
1.4418	-	-

Martensitic Steels

DIN	ASTM	JIS
1.4003	-	-
1.4000	403	SUS 403
1.4006	410	SUS 410
1.4005	416	SUS 416
1.4021	420	SUS 420 J1
1.4028	420B	SUS 420 J2
1.4031	420C	-
1.4034	-	-
1.4104	-	-
1.4057	431	SUS 431
1.4313	F 6NM	-
1.4923	X22CrMoV12-1	-
1.4122	-	-

Precipitation Hardening Steels

DIN	ASTM	JIS
1.4542	17-4-PH	SUS 630
1.4545	15-5 PH	-
1.4594	-	-
-	15-7 PH	-
-	17-7 PH	-
-	13-8 Mo	-

Ferritic Steels

DIN	ASTM	JIS
1.4002	405	SUS 405
1.4512	409	SUS 409
1.4016	430	SUS 430
-	430F	SUS 430F
1.4113	434	SUS 434
1.4509	441	-
1.4105	-	-

Oil & Gas Industries

GRADES
Super 13Cr Ksi 110/95
13Cr80 Ksi
9Cr80 Ksi

Alloy Steels

INTERNAL STANDARD	EN	DIN	SAE/AISI
EN 18	EN 18	37Cr4	5140
EN 19	EN 19	42Cr4Mo2	4140/4142
EN 24	EN 24	34CrNiMo6	4340
EN 353	EN 353	-	-
EN 354	EN 354	-	4320
SAE-8620	EN 362	-	SAE 8620
EN 45	EN 45	55Si7	9255
EN 45A	EN 45A	60Si7	9260
50CrV4	EN 47	50CrV4	6150
SAE 4130	-	25CrMo4	SAE 4130
SAE 4140	-	42CrMO4	SAE 4140
15CDV6	-	1.7734	-
21CrMoV5-7	-	1.7709	-
20CrMoVTi B4-10	-	-	-

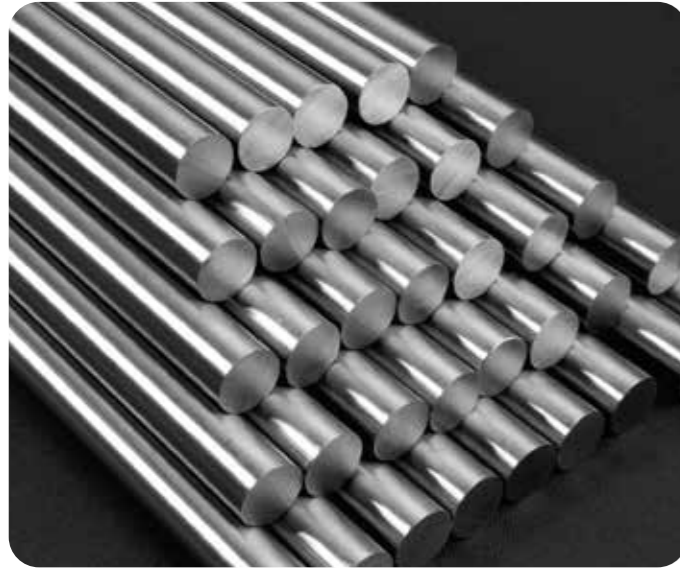
ASTM	UNS	DIN
F 5/F 5A	K 41545	12CrMo195
F 9	K 90941	X12CrMo91
F 11 (CL2)	K 11572	13CrMo44
F 22 (CL3)	K 21590	10CrMo910
F 91	-	X10CrMoVNb9-1
F 12	K 11562	-

EN	DIN	SAE/AISI
EN - 31	100 Cr6	52100
H - 11	1.2343	X37CrMov5-1
H - 13	1.2344	X40CrMov5-1
H - 12	1.2605	X35CrWMoV5
DB - 6	1.2714	---

Duplex Steels

DIN	ASTM	JIS
1.4410	F-53 (S32750)	-
1.4462	F-51 (S31803)	SUS 329 J3L
1.4362	2304 (S32304)	-
-	F-60 (S32205)	-

Bright *Bars*



Size Range
5 mm - 115 mm (3/16 inch - 4-1/2 inch)

Supply Conditions
Length - Upto 6.5 meters
Cold Drawn, Centreless Ground, Peeled & Polished, Rough Peeled or Smooth Turned Bars
Tolerance - h7, h8, h9, h10, h11, k12, k13, ASTM A484
Surface Finish Ra upto 0.2 mm (8.7 RMS)
Straightness upto 0.5 mm per metre
Grit Polish - K240, K320 or as per customer's requirement
Heat Treatment - Soft Annealing, Solution Annealing, Oil & Water Quenching, Tempering & Aging
Bars End Finish - Chamfered ends, 30°, 45°, 60° and Plain Ends without Burrs or Sharp Edges
Specifications - as per EN, DIN, JIS, ASTM, BS, ASME, GOST, AISI (NACE MR0175, MR0103)
Eddy current tested as per customers requirement
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

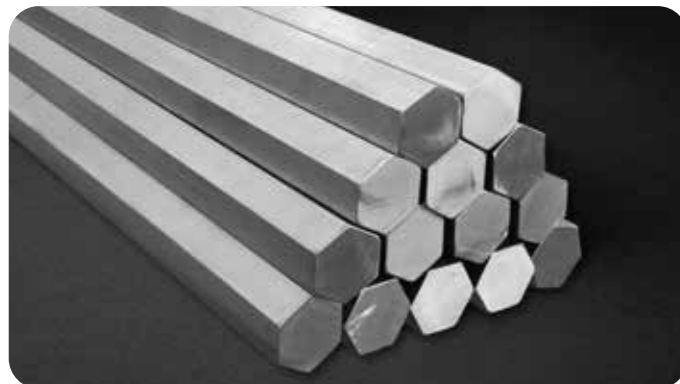
Precision Shaft *Quality Bars*



Size Range
8 mm - 81 mm (5/16 inch - 3 3/16 inch)

Supply Conditions
Length - Upto 6.4 meters
Tolerance - h7, h8, h9, j6, f7, f8
Straightness - 0.015" TIR per 10 ft.
Heat Treatments - Soft Annealing, Solution Annealing, Quench & Tempered
Eddy current tested as per customer's requirement
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

Hexagonal *Bright Bars*

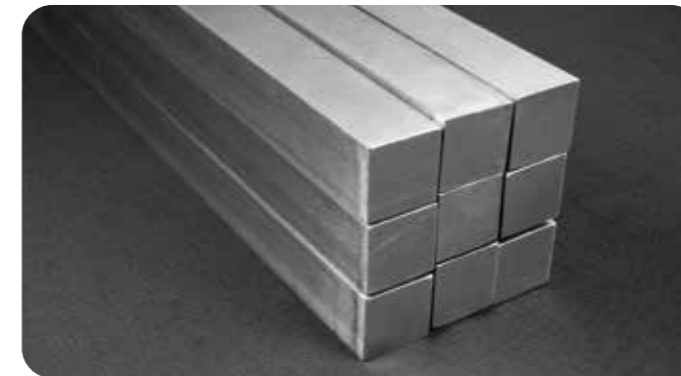


Size Range
16 mm - 55 mm (5/8 inch - 2 1/6 inch)

Supply Conditions
Length - Upto 6 meters
Tolerance - h11, k12, k13, ASTM A484
Grit Polish as per customer's request
Heat Treatment - Solution Annealed, Oil & Water Quenched / Tempered
Bars End Finish - Chamfered ends, 30°, 45°, 60°, and Plain Ends without Burrs or Sharp Edges
Specifications - as per EN, DIN, JIS, ASTM, BS, ASME, AISI, etc.
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

Black	Bright	Bright (inch)	Black	Bright	Bright (inch)	Black	Bright	Bright (inch)
16	15	3/5"	25	24	15/16"	40	38	1 1/2"
17	16	5/8"	26	25	1"	42	40	1-4/7"
18	17	2/3"	27	26	1-3/127"	43	42	1-2/3"
19	18	5/7"	28	27	1-1/16"	45	43	1-45/64"
20	19	3/4"	30	28	1 1/8"	47	45	1-4/5"
21	20	4/5"	32	30	1-3/16"	53	50	2"
22	21	5/6"	34	32	1 1/4"	55	52	2-1/16"
23	22	7/8"	36	34	1 3/8"	57	55	2-1/6"
24	23	-	38	36	1-3/7"			

Square *Bright Bars*



Size Range
12.70 mm - 55 mm (1/2 inch - 2-1/6 inch)

Supply Conditions
Length - Upto 6 meters
Tolerance - h11, k12, k13, ASTM A484
Grit Polish as per customer's request
Heat Treatment - Solution Annealed, Oil & Water Quenched / Tempered
Bars End Finish - Deburred Ends, Plain Ends without Burrs or Sharp Edges
Specifications - As per EN, DIN, JIS, ASTM, BS, ASME, AISI, etc.
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

Black	Bright	Bright (inch)	Black	Bright	Bright (inch)	Black	Bright	Bright (inch)
14	12	1/2"	24	23	-	40	38	1 1/2"
14	12.7	1/2"	25	24	15/16"	42	40	1-4/7"
16	14	5/9"	26	25	1"	43	41	1-5/8"
16	15	3/5"	27	26	1-3/127"	45	43	1-45/64"
18	16	5/8"	28	27	1-1/16"	46	44	1 3/4"
18	17	2/3"	30	28	1 1/8"	47	45	1-7/9"
19	18	5/7"	32	30	1-3/16"	50	47	1-7/8"
20	19	3/4"	34	32	1 1/4"	50	48	1-8/9"
21	20	4/5"	36	34	1 3/8"	53	50	2"
22	21	5/6"	38	36	1-3/7"	58	55	2-1/6"
23	22	7/8"						

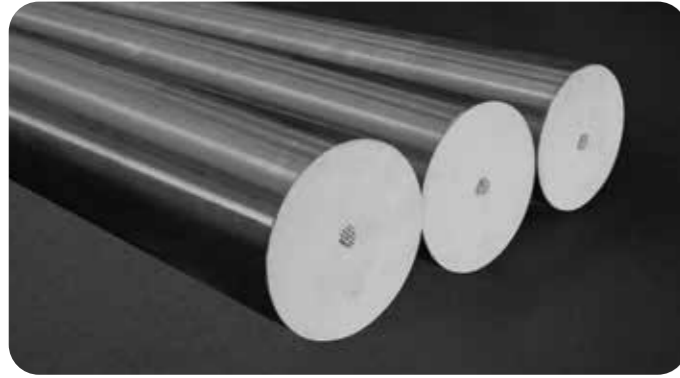
Cold Drawn *Flat Bars*



Supply Conditions
Length - 2 meters - 6 meters (8 feet to 20 feet)
Tolerance - h11 and ASTM A 484
Surface Finish - Cold Drawn and Pickled Condition
Heat Treatment - Solution Annealed
Grades - AISI: 304L, 316L, 316Ti, 321, DIN: 1.4307, 1.4404, 1.4571, 1.4541
Inkjet printing as per grade & size
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

Size (mm)	Thickness (mm)	Size (inch)	Thickness (inch)
20	10, 12, 15	4/5"	2/5", 15/32", 3/5"
25	10, 12, 15, 20	1"	2/5", 15/32", 3/5", 4/5"
30	8, 10, 12, 15, 20	1-3/16"	5/16", 2/5", 15/32", 3/5", 4/5"
40	8, 10, 12, 15, 20, 25, 30	1-4/7"	5/16", 2/5", 15/32", 3/5", 4/5", 1", 1-3/16"
50	10, 12, 15, 20, 25, 30, 40	2"	2/5", 15/32", 4/5", 3/5", 1", 1-3/16", 1-4/7"
60	10, 12, 15, 20, 30, 40	2-3/8"	2/5", 15/32", 3/5", 4/5", 1-3/16", 1-4/7"
64	33	2-1/2"	1-2/7"
70	10, 20	2-3/4"	2/5", 4/5"
80	10, 15, 20, 30	3-1/7"	2/5", 15/32", 4/5", 1-3/16"
100	10, 12	4"	2/5", 15/32"

Forged & Proof *Machined Bars*



Size Range
120 mm - 550 mm (4-3/4 inch - 21-2/3 inch)

Supply Conditions
Length - Upto 6 meters
Tolerance - ASTM A484, EN10060
Ultrasonic tested
Heat Treatment - Soft Annealed, Solution Annealed, Normalizing, Quenched & Tempered
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

HRAP Flat *Bars*



Supply Conditions
Length - Upto 6.4 meters
Hot Rolled, Annealed & Pickled (HRAP)
Tolerance - ASTM A484, EN 10058
Both ends are color coded as per customer's specific requirement
Specifications - as per EN, DIN, JIS, ASTM, BS, ASME, etc.
Inkjet printing as per grade & size
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

Size (mm)	Thickness (mm)	Size (inch)	Thickness (inch)
20	15, 16	4/5"	3/5", 5/8"
22	11, 13, 16, 17, 18	7/8"	7/16", 64/125", 5/8", 2/3", 5/7"
25	5, 6, 8, 10, 12, 15, 20	1"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 4/5"
26	11, 13, 16, 21	1-3/127"	7/16", 64/125", 5/8", 5/6"
30	5, 6, 8, 10, 12, 15, 16, 20, 25	1-3/16"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1"
32	5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 20, 21	1-1/4"	3/16", 1/4", 5/16", 23/64", 2/5", 7/16", 15/32", 64/125", 3/5", 5/8", 4/5", 5/6"
35	5, 6, 8, 10, 12, 15, 20	1-3/8"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 4/5"
40	5, 6, 8, 10, 12, 15, 20, 25, 30	1-4/7"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 4/5", 1", 1-3/16"
42	9, 11, 13, 16, 21, 26, 31	1-2/3"	23/64", 7/16", 64/125", 5/8", 5/6", 1-3/127", 1-2/9"
45	5, 6, 8, 10, 12, 15, 18, 20, 25	1-7/9"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 5/7", 4/5", 1"
50	5, 6, 8, 9, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40	2"	3/16", 1/4", 5/16", 23/64", 2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-1/4", 1-3/8", 1-4/7"
52	11, 13, 16, 21, 26, 31, 32, 42	2-1/16"	7/16", 64/125", 5/8", 5/6", 1-3/127", 1-2/9", 1-1/4", 1-2/3"
55	5, 6, 8, 10, 12, 15, 16, 20, 25	2-3/16"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1"
57	32	2-1/4"	1-1/4"
60	5, 6, 8, 10, 12, 15, 20, 25, 30, 32, 35, 40	2-3/8"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 4/5", 1", 1-3/16", 1-1/4", 1-3/8", 1-4/7"
63	5, 6, 8, 10, 11, 12, 13, 15, 16, 20, 21, 25, 30, 32, 42	2-1/2"	3/16", 1/4", 5/16", 2/5", 7/16", 15/32", 64/125", 3/5", 5/8", 4/5", 5/6", 1", 1-3/16", 1-1/4", 1-2/3"
65	10, 12, 15, 16, 20, 25, 30, 32, 35, 40	2-5/9"	2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-1/4", 1-3/8", 1-4/7"
70	6, 8, 10, 12, 15, 16, 20, 25, 30, 34, 35, 40	2-3/4"	1/4", 5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-1/3", 1-3/8", 1-4/7"
72	11, 21, 46	2-5/6"	7/16", 5/6", 1-4/5"
75	5, 8, 9, 10, 12, 15, 16, 20, 25, 30, 35, 40, 46	3"	3/16", 5/16", 23/64", 2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-3/8", 1-4/7", 1-4/5"
76	50, 55		2", 2-1/6"
80	8, 10, 12, 15, 16, 20, 25, 30, 35, 40, 50	3-1/8"	5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-3/8", 1-4/7", 2"
82	11, 13, 16, 21, 31	3-1/4"	7/16", 64/125", 5/8", 5/6", 1-2/9"
90	8, 10, 12, 15, 16, 20, 30, 40, 50	3-1/2"	5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1-3/16", 1-4/7", 2"
100	5, 6, 8, 10, 12, 15, 16, 20, 25, 30, 40	4"	3/16", 1/4", 5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1", 1-3/16", 1-4/7"
101.6	5, 11, 13	4"	3/16", 7/16", 64/125"
110	40		1-4/7"
120	10, 12, 15, 16	4-5/7"	2/5", 15/32", 3/5", 5/8"
140	45		1-7/9"
150	8, 10, 12, 15, 16, 20, 30	5-29/32"	5/16", 2/5", 15/32", 3/5", 5/8", 4/5", 1-3/16"

HRAP *Equal Angles*



Size (mm)	Thickness (mm)	Size (inch)	Thickness (inch)
20 X 20	3	3/4"X3/4"	1/8"
25 X 25	3, 4, 5, 6	1"X1"	1/8", 1/6", 3/16", 1/4"
30 X 30	3, 4, 5	1-1/6"X1-1/6"	1/8", 1/6", 3/16"
32 X 32	3, 4, 5, 6	1-1/4"X1-1/4"	1/8", 1/6", 3/16", 1/4"
35 X 35	3, 4, 5	1-3/8"X1-3/8"	1/8", 1/6", 3/16"
38.1 X 38.1	3.17, 4.76, 6.35	1-1/2"X1-1/2"	1/8", 3/16", 1/4"
40 X 40	3, 4, 5, 6	1-4/7"X1-4/7"	1/8", 1/6", 3/16", 1/4"
45 X 45	3, 4, 5, 6	1-7/9"X1-7/9"	1/8", 1/6", 3/16", 1/4"
50 X 50	3, 4, 5, 6, 7, 8, 9, 10	2"X2"	1/8", 1/6", 3/16", 1/4", 9/32", 5/16", 3/8", 2/5"
60 X 60	5, 6, 7, 8, 9	2-3/8"X2-3/8"	3/16", 1/4", 9/32", 5/16", 3/8"
63 X 63	5, 6, 7, 8, 9, 10	2-1/2"X2-1/2"	3/16", 1/4", 9/32", 5/16", 3/8", 2/5"
65 X 65	5, 6, 7, 8, 9	2-5/9"X2-5/9"	3/16", 1/4", 9/32", 5/16", 3/8"
70 X 70	6, 7, 8, 9, 10	2-3/4"X2-3/4"	1/4", 9/32", 5/16", 3/8", 2/5"
75 X 75	5, 6, 7, 8, 9, 10, 12	3" X 3"	3/16", 1/4", 9/32", 5/16", 3/8", 2/5", 1/2"
80 X 80	6, 7, 8, 9, 10	3-1/8"X3-1/8"	1/4", 9/32", 5/16", 3/8", 2/5"
90 X 90	6, 9	3-1/2"X3-1/2"	1/4", 3/8"
100 X 100	6, 8, 9, 10	4" X 4"	1/4", 5/16", 3/8", 2/5"
120 X 120	10, 12, 13, 15	4-3/4" X 4-3/4"	2/5", 1/2", 64/125", 3/5"
125 X 125	10, 12	4-15/16"X4-15/16"	2/5", 1/2"
127 X 127	9, 12	5" X 5"	3/8", 1/2"

Supply Conditions

Length - Upto 6.4 meters
Tolerance - ASTM A484, EN10056
Heat treatment process - Hot Rolled, Annealed & Pickled (HRAP)

Bars End Finish - Deburred Ends, Plain Ends without Burrs or Sharp Edges
Specifications - As per EN, DIN, JIS, ASTM, BS, ASME, etc.
Grit polish - As per customer's request

Shot Blasting as per customer's request
Inkjet printing as per grade & size
Free from Radioactive elements, Mercury & Lead contamination
Grade confirmation through PMI testing with Handheld Spectrometers

HRAP Un-Equal *Angles*



Size (mm)	Thickness (mm)	Size (inch)	Thickness (inch)
25 X 15	5	1" X 3/5"	3/16"
30 X 15	3	1-1/6"X3/5"	1/8"
30 X 20	3, 4	1-1/6"X4/5"	1/8", 1/6"
40 X 20	3, 4, 5, 6	1-4/7"X4/5"	1/8", 1/6", 3/16", 1/4"
40 X 30	5, 6	1-4/7"X1-1/6"	3/16", 1/4"
45 X 30	4, 5, 6	1-7/9"X1-1/6"	1/6"3/16", 1/4"
45 X 40	5	1-7/9"X1-4/7"	3/16"
50 X 25	4, 5, 6	2" X 1"	1/6", 3/16", 1/4"
50 X 30	4, 5, 6	2"X1-1/6"	1/6", 3/16", 1/4"
50 X 40	4, 5, 6	2"X1-4/7"	1/6", 3/16", 1/4"
60 X 30	5, 6	2-3/8"X1-1/6"	3/16", 1/4"
60 X 40	5, 6	2-3/8"X1-4/7"	3/16", 1/4"
70 X 50	6, 7	2-3/4"X2"	1/4", 9/32"
75 X 40	6, 10	3"X1-4/7"	1/4", 2/5"
76.2 X 38.1	6	3"X1-1/2"	1/4"
76.2 X 50.8	6, 9	3"X 2"	1/4", 3/8"
80 X 40	6, 8	3-1/8"X1-4/7"	1/4", 5/16"
80 X 65	8	3-1/8"X2-5/9"	5/16"
90 X 60	6	3-1/2"X2-3/8"	1/4"
100 X 50	6, 8, 10	4" X 2"	1/4", 5/16", 2/5"
100 X 75	6, 9, 10	4" X 3"	1/4", 3/8", 2/5"

Threaded *Bars*



Size Range
M 6 - M 45
(1/4 inch - 1-7/9 inch)

Grade
A2 / 304 (Class- 50, 70, 80)
B 8 / 304 (Class-1 & 2)
A4 / 316 (Class- 50, 70, 80)
B8M / 316 (Class-1 & 2)

Threading method -
Thread Rolling

Threading condition -
Fully Threaded

Thread Type -
ANSI B1.1 Class 2A Fit

Length - Upto 6 meters
Tolerance ASME B1.1 & B1.13 M

Applications
Fasteners, Construction,
Automotive, Fittings and many
others

Free from Radioactive
elements, Mercury & Lead
contamination

Grade confirmation through
PMI testing with Handheld
Spectrometers

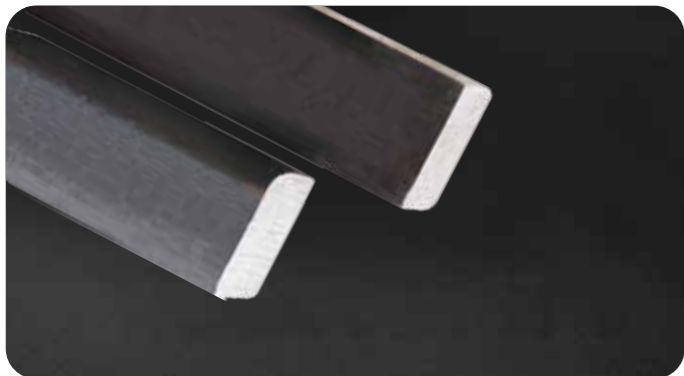
Deformed *Bars*



Rolled Size
16, 20, 25, 28, 32, 36, 40
Length - Upto 12 meters

Tolerance
IS 16651, BS 6744

Hot Rolled Round *Cornered Squares (RCS)*



Size Range
45 RCS 55 RCS 63 RCS
75 RCS 80 RCS 85 RCS
90 RCS 95 RCS 100 RCS

Length - Upto 8 meters

Hot Rolled (Black) Surface

100% Ultrasonic tested

Spot ground or fully ground condition

Free of surface defects/cracks

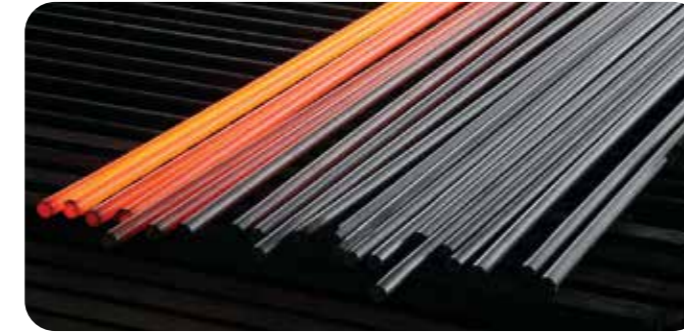
Cold-swappable

Smooth ends without sharp edges

Applications
Hot Forgings - Open die and close die forgings
Free from Radioactive elements, Mercury & Lead
contamination

Grade confirmation through PMI testing
with Handheld Spectrometers

Hot Rolled *Round Bars*



Size Range
16 mm - 125 mm (5/8 inch - 5 inch)

Supply Conditions

Length - Upto 8 meters

Tolerance - ASTM A484, EN10060

Hot Rolled (Black) Surface

100% Ultrasonic tested

Spot ground or fully ground condition

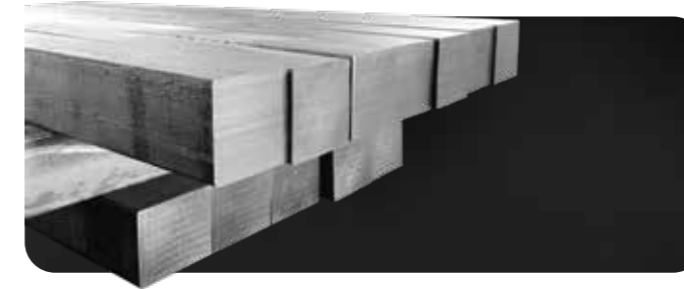
Cold-swappable

Heat Treatment - Soft Annealing, Solution Annealing,
Spheroidized Annealing, Oil and Water Quenching,
Tempered & Normalized

Free from Radioactive elements, Mercury & Lead
contamination

Grade confirmation through PMI testing
with Handheld Spectrometers

Continuous Cast *Billets / Blooms*



Supply Conditions

Length - Upto 8.5 meters

Saw end cuts

Spot ground or fully ground condition (as per request)

Suitable for Forging, Rolling, Ring Rolling & Up-setting

Marked with Heat number, Grade, Size & Weight

Applications

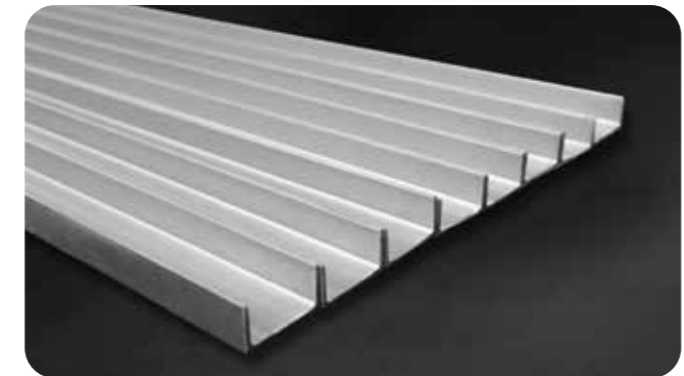
Rolling, Hot Forging and Ring Rolling

Free from Radioactive elements, Mercury & Lead
contamination

Grade confirmation through PMI testing
with Handheld Spectrometers

Size (mm)	Shape	Weight (Kg/Mtr.)	Size (mm)	Shape	Weight (Kg/Mtr.)
100	Square	78	150 MM	Round	140
120	Square	114	200 MM	Round	246
130	Square	130	250 MM	Round	385
140	Square	154	300 MM	Round	560
160	Square	200	220 X 250	Rectangular	428
200	Square	314	190 X 130	Rectangular	192
240 X 240	Square	452	280 X 140	Rectangular	305
300 X 300	Square	706	300 X 160	Rectangular	375

Channels



Length
- Upto 6.4 meters

Supply condition
- HRAP

Deburred ends
or plain ends

Inkjet printing as
per grade & size

Tolerance
- EN 10279

NON - TAPER Size

Size (mm) **Size (inch)**

101.6X44.45X6.35	4" X 1-3/4" X 1/4"
101.6X50.8X6.35	4" X 2" X 1/4"
100X50X5X5	4" X 2" X 1/5" X 1/5"
100X50X6X6	4" X 2" X 1/4" X 1/4"
80X40X6X6	3-1/7" X 1-4/7" X 1/4" X 1/4"
80X40X5X5	3-1/7" X 1-4/7" X 1/5" X 1/5"
75X40X6X6	3" X 1-4/7" X 1/4" X 1/4"
75X40X5X5	3" X 1-4/7" X 1/5" X 1/5"
50X25X5X5	2" X 1" X 1/5" X 1/5"

TAPER Size

Size (mm)	Size (inch)
101.6X40.23X4.76X7.52	4" X 1-3/5" X 3/16" X 2/7"
101.6X43.71X8.15X7.52	4" X 1-5/7" X 1/3" X 2/7"
100X50X6X8.5	4" X 2" X 1/4" X 1/3"
65X42X5.5X7.5	2-5/9" X 1-2/3" X 2/9" X 2/7"

Size (mm)	Size (inch)
50X38X5X7	2" X 1-1/2" X 1/5" X 2/7"
50X25X3X3.3	2" X 1" X 1/8" X 1/8"
50X25X5X6	2" X 1" X 1/5" X 1/4"

Forging Quality *Ingots*



Supply Conditions

Ingots are supplied in spot ground or fully ground condition
Free from surface defects or cracks

Every piece is marked with Heat number, Colour Code, Grade, Size and Weight

Applications

Open Die Hot Forgings, Re-Rolling and Ring Rolling

Free from Radioactive elements, Mercury & Lead contamination

Grade confirmation through PMI testing with Handheld Spectrometers

Size (inch)	Size (mm)	Shape	WT/PC	Size (inch)	Size (mm)	Shape	WT/PC
8X9X52"	200 X 230 X 1320	Square	470	20X24X73"	510 X 610 X 1855	Square	4100
9.75X8.75X60"	247 X 222 X 1524	Square	654	23X27X70"	585 X 685 X 1780	Fluted	5100
9X10.5X54"	230 X 270 X 1370	Square	630	26X31X62"	685 X 760 X 1575	Fluted	6100
10X12X52"	250 X 305 X 1320	Square	815	31.5X 38X73"(M-9)	800 X 965 X 1855	Fluted	10200
11X12X52"	280 X 305 X 1320	Square	875	38x47x70"(M-13)	965 X 1195 X 1780	Fluted	14500
11X13X52"(OPEN)	280 X 330 X 1320	Square	950	42.5X52.5X87.5"(M-18)	1080 X 1330 X 2220	Fluted	22000
13X15X62"	330 X 380 X 1575	Fluted	1160	16" X 16" X 90.5"	400 X 2.3 Mtr.	Round	2200
13X15X62"(OPEN)	330 X 380 X 1575	Square	1550	19-2/3" X 19-2/3" X 86.6"	500 X 2.2 Mtr.	Round	3800
14X17X72"	355 X 430 X 1830	Square	2050	24" X 24" X 79"	600 X 2 Mtr.	Round	5100
16.5X20X65"	420 X 510 X 1650	Square	2550	16" X 16" X 158"	400 X 4 Mtr.	Round	3800
18X21X67"	455 X 530 X 1700	Fluted	2500	19-2/3" X 19-2/3" X 158"	500 X 4 Mtr.	Round	5800
21X23X67"	530 X 585 X 1700	Fluted	3400				

Precipitation *Hardening Steels*



Precipitation Hardening stainless steels are chromium and nickel containing steels that provide an optimum combination of the properties of Martensitic and Austenitic grades. Like Martensitic grades, they are known for their ability to gain high strength through heat treatment and they also have corrosion resistance of austenitic stainless steel.

The high tensile strengths of precipitation hardening stainless steels come after a heat treatment process that leads to precipitation hardening of Martensitic or Austenitic matrix. Hardening is achieved through the addition of one or more of the elements Copper, Aluminium, Titanium, Niobium and Molybdenum.

The most well known precipitation hardening steel is 17-4 PH, the name comes from the additional 17% Chromium and 4% Nickel. It also contains 4% Copper and 0.3% Niobium, 17-4 PH is also known as stainless steel grade 630.

The advantage of precipitation hardening steels is that they can be supplied in a "solution-treated" condition, which is readily machinable, After machining or another fabrication method, a single, low-temperature heat treatment can be applied to increase the strength of the steel. This is known as aging or age-hardening. As it is carried out at low temperature, the component undergoes no distortion.

Our entire product range is available in this grade on request.

Industry Applications

Oil, Gas, Power, Offshore, Chemical, Nuclear, Food Industry, Aerospace, Pulp and Paper Industry, High Pressure Pump and Valves Components, Measuring and Control, Mechanical Components and Welding Applications.

Standards

AMS5642, DIN/EN10088-3, AMS 5622 & ASTM A564

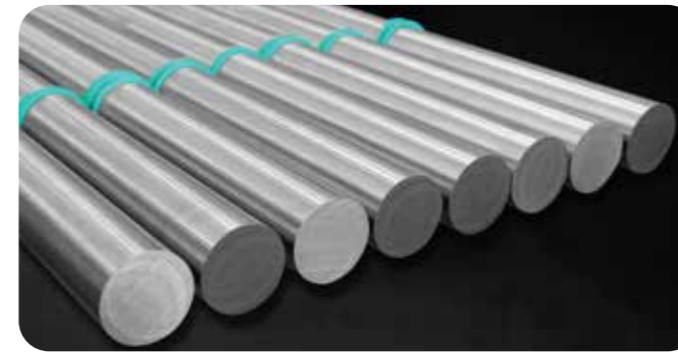
Grade

15-5PH, 17-4PH / 1.4542 & 1.4594

Heat Treatment Conditions

Solution Annealing, H 900, H925, H1025, H1075, H1100, H1150, H1150D, H1150M

Duplex *Steels*



Applications

Structural Design Components
Storage and Exchange Equipment
(High Pressure, Saline applications)
Heat Exchanger
Aerospace, Pulp and Paper Industry

Duplex stainless steels are called "duplex" because they have a two-phase microstructure consisting of phases of ferritic and austenitic stainless steel. This structure provides a unique set of benefits.

Strength

Duplex stainless steels are about twice as strong as regular austenitic or ferritic stainless steel.

Corrosion Resistance

As with all stainless steels, corrosion resistance depends mostly on the composition of the stainless steel.

The composition of this steel makes it better at resisting corrosion.

Toughness and Ductility

Duplex stainless steel has significantly better toughness and ductility than ferritic grades.

Pren Values

Steel Grade	PREN	Steel Grade	PREN
1.4307	18	1.4462	31
1.4404	24	2205	35

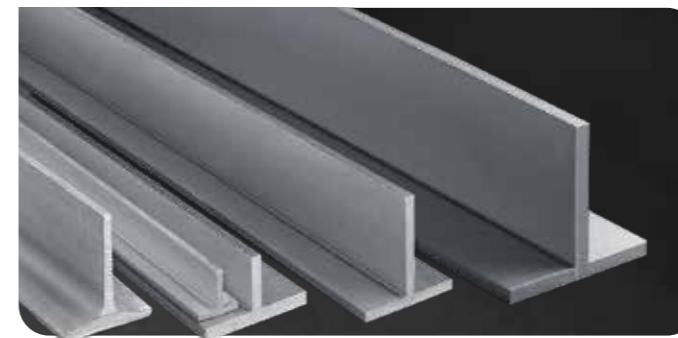
Mechanical Properties

Grade No.	Yield Strength (Rp 0.2%) (Min) (Mpa)	UTS (Mpa) (Min)	UTS (Mpa) (Max)	% Elongation (Min)	% Reduction Area (Min)	Hardness (BHN) (Max)
1.4462	450	650	880	25	---	270
UNS S31803	448	620	---	25	---	290
UNS S32205	450	655	---	25	---	290
1.4362	400	600	830	25	---	260
1.4460	450	620	880	20	---	260

Chemical Composition

Standard	Grade	C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni (Max)	Cu%	N2 (Max)
ASTM A 182	F-51	0.03	1	2	0.03	0.02	21-23	2.5-3.5	4.5-6.5		0.08-0.2
ASTM A 182	F-60	0.03	1	2	0.03	0.02	22-23	3.0-3.5	4.5-6.5		0.14-0.2
ASTM A 182	F-53	0.03	0.8	1.2	0.035	0.02	24-26	3-5	6.0-8.0	0.5	0.24-0.32
ASTM A 276	UNS S32205	0.03	1	2	0.03	0.02	22-23	3.0-3.5	4.5-6.5		0.14-0.2
ASTM A 276	UNS S31803	0.03	1	2	0.03	0.02	21-23	2.5-3.5	4.5-6.5		0.08-0.20
ASTM A 240	UNS S32750	0.03	0.8	1.2	0.035	0.02	24-26	3-5	6.0-8.0	0.5	0.24-0.32
DIN EN 10088-3	1.4462	0.03	1	2	0.035	0.015	21-23	2.5-3.5	4.5-6.5		0.1-0.22
DIN EN 10088-3	1.4460	0.05	1	2	0.035	0.03	25-28	1.3-2.0	4.5-6.5		0.05-0.2
EN 10095	1.4821	0.1-0.2	0.8-1.5	2	0.04	0.015	24.5-26.5		3.5-5.5		0.11
DIN EN 10088-3	1.4410	0.03	1	2	0.035	0.015	24-26	3.0-4.5	6.0-8.0		0.24-0.35
EN 10028-7	1.4362	0.03	1.0	2.0	0.035	0.015	22-24.5	0.1-0.6	3.5-5.5	0.1-0.6	0.05-0.2

T-Profile



Size (mm)	Size (inch)
50X50X5	2"X2"X3/16"

Length - Upto 6.4 meters

Tolerance & ASTM A484, EN 10055

Hot Rolled Annealed & Pickled (HRAP)

Inkjet printing as per grade & size

Free from Radioactive elements, Mercury & Lead contamination

Grade confirmation through PMI testing with Handheld Spectrometers