AWAL ENGINEERING CO.

CATALOGUE
EDITION-1



LEADERS IN HARD CHROME PLATED RODS AND TUBES

PRECISION THAT MAKES THE DIFFERENCE

MSME Zed Certification — Zero Defect Zero Effect

Certified ISO Company

MAKE IN INDIA

www.awalengineeringco.com

AWAL
ENGINEERING CO.

PRECISION
STRENGTH FOR
A BETTER
TOMORROW





Welcome to
Awal Engineering Co.

Awal Engineering Company is a leading manufacturer of chrome-plated rods and tubes in India, with over 25 years of experience in the industry. We specialize in producing high-quality, precision-engineered chrome-plated rods and tubes with diameters ranging from 8mm to 350mm and lengths up to 6 meters, along with a capacity of 500 metric tonnes in a month.

With a focus on advanced surface treatment, corrosion resistance, and durability, our products cater to industries such as hydraulics, pneumatics, automotive, and industrial machinery.

200+
Team Members

Our skilled team of over 200 professionals brings extensive industry experience and dedication to every project.

12,000
Square Meters

Our state-of-the-art factory spans more than 12,000 square meters, equipped for efficient assembly and large-scale production.

ISO Certified
Quality

We are proud to be ISO certified, ensuring our products and processes meet the highest international quality and safety standards.

AWAL
ENGINEERING CO.



INDUSTRIES WE SERVE

Our precision chrome-plated rods and tubes are trusted across diverse industries, helping them build stronger, more reliable and higher performing products.



Mining & Construction



Automotive & Transportation



Forestry & Logging



Oil & Gas



Industrial Handling



Fire & Rescue



Turf Equipment



Agriculture



Aerial Work Platforms (AWP)



Auto Hauling Equipment



Concrete & Asphalt



Waste & Recycling



Earth Moving



Material Handling



Defense



Snow & Ice Control

AWAL
ENGINEERING CO.

PRODUCT INTRODUCTION

HARD CHROME PLATED STEEL BAR

Engineered For High-performance Hydraulic Applications, Our Hard Chrome Plated Steel Bars Undergo a Controlled Process Of Straightening, Peeling, Centerless Grinding, Polishing, Hard Chrome Plating, And Precision Buffing To Deliver High Surface Hardness, Superior Surface Finish, Dimensional Accuracy, Wear Resistance, And Enhanced Corrosion Protection—ensuring Reliable, Long-term Cylinder Performance.



CORROSION RESISTANCE CHROME PLATING STANDARDS FOR CARBON STEELS

Standard Layer for dia. < 20 mm

Chromium layer 15 µm minimum
corrosion resistance 90h / R 9h NSS (ISO 10289 / ASTM B537)



Standard Layer for dia. ≥ 20 mm

Chromium layer 20 µm minimum
corrosion resistance 120h / R 9h NSS (ISO 10289 / ASTM B537)



Advanced Layer

Chromium layer 30 µm minimum
corrosion resistance 240h / R 9h NSS (ISO 10289 / ASTM B537)



Premium Layer

Chromium layer 40 µm minimum
corrosion resistance 500h / R 9h NSS (ISO 10289 / ASTM B537)



Ultra-Premium Layer

Chromium layer 60 µm minimum
corrosion resistance 1000h / R 9h NSS (ISO 10289 / ASTM B537)



STANDARD STEEL BARS

AWAL ENGINEERING CO.

MECHANICAL PROPERTIES

STEEL GRADE (IS)	STEEL GRADE EQUIVALENT			TS	YS	EL %	HARDNESS
	JIS	DIN	ASTM	MPa	MPa	%	BHN
EN8D	G4051	C45 (1.1191)	ASTM 1045	580-800	320-520	12-16	170-250
CK45	G4051	C45 (1.1191)	AISI1045	569-686	305-340	14-16	167-229
EN19 (Q&T)	SCM440	MAT.NO.(1.7225)	AISI 4140	850-1000	650- min	13 - 16	248-302
42CrMo4 (Q&T)	SCM440	MAT.NO.(1.7225)	A-29/ASTM 4140	900-1100	650 min	10-14	240-320

CHEMICAL COMPOSITION - IN % BY WEIGHT

STEEL GRADE (IS)	STEEL GRADE EQUIVALENT			C%	Mn%	Si%	P%	S%	Cr%	Mo%	Ni%
	JIS	DIN	ASTM								
EN8D	S45C	C45 (1.1191)	AISI1043/1045	0.40-0.45	0.70-0.90	0.10-0.40	0.050 MAX	0.050 MAX	.....	.....	.....
CK45	S45C	C45 (1.1191)	AISI1045	0.42-0.50	0.50-0.80	0.10-0.40	0.050 MAX	0.035 MAX	0.20-0.40	.....	0.20-0.40
EN19	SCM440	MAT.NO.(1.7225)	AISI 4140	0.35-0.45	0.50-0.80	0.10-0.35	0.035 MAX	0.040 MAX	0.90-1.50	0.20-0.40	.....
42CrMo4	SCM440	MAT.NO.(1.7225)	A-29/ASTM 4140	0.38-0.45	0.60-0.90	0.40 MAX	0.025 MAX	0.035 MAX	0.90-1.20	0.15-0.30	.....

PRODUCT SPECIFICATIONS

Diameter tolerance	ISO h7, f7, h8, f8, g6, g7
Surface roughness	Ra max. 0.20µm
Chrome layer hardness	HV850 min. (0.1)
Standard length	3000/6000 (mm)
Straightness	0.5mm/M
Roundness	1/2 Tolerance
Micro Crack Density	Min. 1000 Per dm^3



AWAL
ENGINEERING CO.

INDUCTION
HARDENED STEEL BARS

For applications requiring enhanced wear resistance and extended service life, Awal Engineering offers induction hardening as an additional process for chrome plated steel bars and hydraulic rods.

Case Depth : 1.0-3.0 mm

Induction hardening creates a hardened surface layer while retaining a comparatively tough and ductile core, providing an effective combination of surface hardness, wear resistance, fatigue strength, and core toughness.



CHROME PLATED TUBES

Chrome plated tubes are manufactured from seamless or welded cold drawn or hot roller tubes. It delivers excellent dimensional accuracy and enhanced corrosion protection.

MATERIAL GRADE :
STKM13A, STKM13C, SAE1020, ST52



MANUFACTURING PROCESS

AWAL ENGINEERING CO.

1 Raw Material



2 End Cutting



3 Straightening



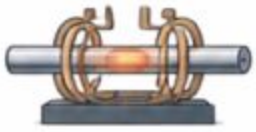
4 Peeling



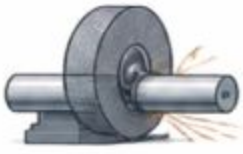
5 Reeling



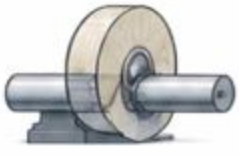
6 Induction (As per Customer)



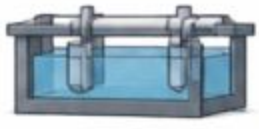
7 Grinding



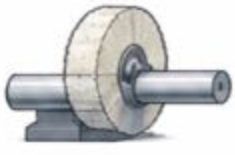
8 Polishing



9 Chrome Plating



10 Buffing



11 Final Inspection & Packing



12 Dispatch





AWAL
ENGINEERING CO.



QUALITY MANAGEMENT

We are committed to maintaining the highest standards of quality at every stage of our process. Our advanced testing and inspection facilities ensure accuracy, reliability and consistent performance of our products.



DIGITAL VERNIER CALIPER



THREE PIN MICROMETER



DIGITAL MICROMETER



HARDNESS TESTER



MICRO VICKER HARDNESS TESTER



CENTRIFUGE MACHINE



COATING THICKNESS TESTER



SURFACE FINISH TESTER



SALT SPRAY TESTING MACHINE

AWAL
ENGINEERING CO.

Call :
+91-8872061172

Mail :
Info@awalengineeringco.com

Address :
1743/A/1, Opposite Nahar Spinning Mills,
Flyover Bridge, Dhandari Kalan
Ludhiana - 141014, Punjab, India