

Abyssinia Group Of Industries

CONSTRUCTING THE
FUTURE AFRICA





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Introduction

The Abyssinia Group of Industries is the largest steel producer in East Africa with capacity in excess of 350,000 metric tons per annum. Using mineral resources from its own mining operations in Homa Bay County, the Abyssinia Group is the first Integrated Steel plant in East Africa.

Mission

To provide innovative product solutions to the construction industry and its changing needs by recruiting, developing and retaining outstanding people in a transparent and ethical manner that will help grow the East African region

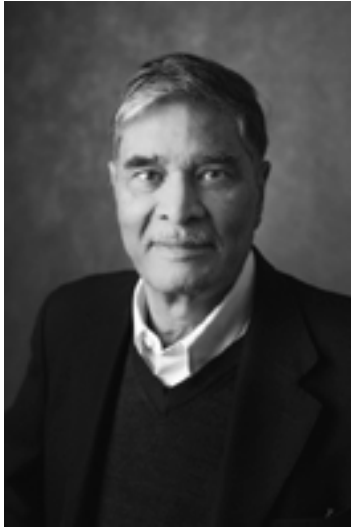
Subsidiary Companies

Skylight Limited





EXECUTIVES



“I have been in steel since I apprenticed in it in 1968 while studying Metallurgy at Sheffield.

We bought Kenya’s first rolling mill in 1969 and have been in steel since then. I have seen steel go from a labor-intensive network to fully integrated steel mills. With over 40 years in “a life of steel” Africa has gone through tremendous change, whereby today we must demand high production and quality products.” – AGI CHAIRMAN, Mahendra Patel.



“Ever since the establishment of Abyssinia Steel in 2003, we have sought to raise the satisfaction levels of our customers and business partners by providing them with innovative capabilities and services suited to the evolving times. It is this focus on research and development that has positioned Abyssinia Steel as a leading steel distribution company in the region, and our goal is to continue on this trend and become Africa’s number one integrated steel trading company by 2020.

The Global and African steel industry is growing and evolving faster than it ever has. By marshaling our group’s total capabilities, we will broadly coordinate and collaborate to achieve a resilient corporate structure and continuous growth, no matter what environmental changes may occur. Our corporate philosophy instills honesty, virtue, and creativity as the basis for all our group’s activities. We go about our day-to-day challenges knowing that as Global Citizens, it is our obligation to contribute to society, earn its trust and become a suitable, sustainable and superior organization.” – AGI CEO, Jateen Patel.

THE LARGEST STEEL PRODUCER IN EAST AFRICA

The Abyssinia Group of Industries is the largest steel producer in East Africa with capacity in excess of 350,000 metric tons per annum. Abyssinia Group has been operational in Kenya since 2003 and has utilized locally available resources, made substantial investments in the country, created employment opportunities for thousands of Kenyan citizens and has been a major contributor to the country's economy and infrastructure growth. The group has also actively participated in important Corporate Social Responsibility projects, such as building schools and assisting in the supply of water and power to rural areas. Using mineral resources from its own mining operations in Homa Bay County, the Abyssinia Group is the first Integrated Steel plant in East Africa. The group also manufactures a wide range of value-added iron and steel products for the construction industry ranging from TMT reinforcing bars, angle irons, window sections and BRC rolls, weld mesh, galvanized wire, barbed wire, black binding wire and wire nails. The Abyssinia Group is uniquely positioned to play a significant role in the realization of Kenya's Vision 2030 initiatives and meets the export market requirements in both the East African region and beyond.

PRESENCE IN ETHIOPIA

The Abyssinia Group of Industries has been present in Ethiopia for over a decade and has multiple business interests in the country catering to the building and construction needs. We are a significant market player having an integrated mill with production of billets and ingots from locally sourced raw material which is then converted in our in-house rolling mills to produce the widest range of long structural steel products. The group also has investments in the Cement Industry to complement our product offering to the customers. Our product range consists of various grades and sizes, such as: TMT – reinforced bars, angles, channels, flats, rounds to name a few. We believe in keeping pace with the changing technology to bring the best in class to our customers and are continuously expanding our investments in the country in line with the same.

CORPORATE SOCIAL RESPONSIBILITY

The Abyssinia Group has been involved in a wide variety of social projects. We have worked on Environmental protection projects including the publication of “green books”; we have participated in local and international “green events”, and worked alongside retail partners to create pleasant, eco-friendly shopping environments and innovative, eco-friendly technology. We also nurture and mentor young talent and work with local and international universities to develop sustainable production methods in various applications. The Abyssinia Group has also donated monetary funds towards relief and reconstruction following natural disasters, women’s rights projects, girl child education and orphan support.

CSR Activities include:

- Sponsoring the publication of “Abyssinia Go Green”
- Sustainable Development International (SDI) “Climate Action”
- Kenya Carbon points association
- Friends of Nairobi National Park
- Green Belt movement
- Company’s commitment to increase the green belt around our sites to 15% of the total area
- Community participation in growth of fruit trees



CSR



MISSION “GO GREEN”

Running an environmentally friendly business is no longer an option but a necessity that lessens the impact of its existence on the environment and preserves natural resources. With this mindset, we are committed to using products that reduce our reliance on natural resources. From product development, manufacturing, packaging and transportation, to disposal and recycling, we ensure that our operations offer a way of life that substantially benefits consumers as well as the environment.

Our Environmental Policy termed “**Building a Greener and Sustainable Tomorrow**”, strives to:

- Implement pollution-free processes in the entire product life cycle
- Use renewable or recyclable materials
- Comply with environmental legislation and industry code of practice
- Promote environmental protection awareness among staff and business partners

Policy Objectives:

- Better utilization of business resources
- Business wastage recycling
- Energy conservation
- Operation awareness
- Design for environment

Sustainable Development

Our internal “Design for Environment” program leads our product development towards sustainable development. Our goal is to make eco-friendly products that offer higher energy-efficiency, have minimal impact on the environment, avoid hazardous substances, and offer better durability and life expectancy through recyclability



Charcoal Briquettes

Prime Steel Mills Ltd. is an integrated steel plant producing the finished products from virgin steel. To accomplish this, high quality iron ore and bitumen coal is used in the rotary kiln to produce direct reduced iron. We also produce char fines briquettes from dolochar, which is a byproduct generated in the DRI process that has a calorific value around 4000 Kcal/kg. Char briquettes are an excellent source of fuel for boilers, steam generation plants, power plants, and fluidized bed boilers. Charcoal briquettes can be used as domestic fuel as a replacement for fire wood, charcoal, husk, barn coal, oil etc. Unburnt coal fines (0-3 mm) are mixed with molasses and hydrated lime so as to form a mixture which is briquetted under pressure and dried. Due to the binder, it forms uniform size briquettes which are easy to handle and are consistent in burning. The briquettes burn smokeless and leaves ash as residue. Compared to coal, charcoal briquettes are cheap and economical. They are environmentally friendly as they do not produce smoke and their heating is consistent. In addition, it can be effectively tried in existing systems without any modification.

The typical data sheet showing the characteristic of charcoal briquettes is as follows:

- **Briquette Size: 50 mm dia X 30 mm thick**
- **GCV: 3900 to 4200 Kcal /kg**
- **Shutter index: No fines generation up to 2.5 meters**
- **Binder: Molasses and hydrated lime**
- **Burning: Burns smokeless**







OUR RAW MATERIALS



Direct Reduced Iron (DRI)

DRI is formed when Iron ore is reduced by heating it with cold, from which impurities are segregated and isolated in the form of slag. The intermediate product is a high metal DRI, which is then used to achieve liquid steel.

CHEMICAL COMPOSITION		
Total Iron (T.fe)	85 -87%	Min
Metallic Iron (M.fe)	79-81%	Min
Metallization	92-93%	Min
Carbon (C)	0.16.0.18%	Min
Phosphorous (P)	0.050%	Max
Sulfur (S)	0.035%	Max
Total Gangue Material	10-12%	Max

PHYSICAL ANALYSIS	
Bulky Density (Ton/M3)	1.8%
Size under 5mm at loading port	5%



Billets

Billets are formed when liquid steel is passed through a continuous casting machine to form various cross sections ranging from 100mm x 100mm to 130mm x 130mm, in various customized lengths. It is then rolled through successive rolling stands (i.e: it passes through a series of roughing and finishing stands). The mill is a no twist design mill. The leading/front and trailing ends are cropped in order to maintain the same temperature throughout the process.

CHEMICAL COMPOSITION

GRADE	BS 4449:2009, ASTM A615, KS EAS 412-2:2019
	Gr B500B WR
Carbon (C) %	0.22 Max
Manganese (Mn) %	1.60 Max
Phosphorus (P) %	0.05 Max
Sulfur (S) %	0.05 Max
Carbon Equivalent (%)	0.5 Max

PHYSICAL ANYALISIS

Length	3 to 12 Meters (Tolerance + 50mm)
Section	100*100mm/ 130*130mm
Face Length	(+/-3mm, +/-4mm)
Rhombodity	3% Max
Corner Radius	8mm
Bending	Not more than 5mm in 1 meter
	Not more than 30mm in 6 meter
	Not more than 60mm in 12 meter
Angular Twist	Not more than 1 Degree
Cutting	Hydraulically Sheared or Gas Cut
Identification	Cast number will be stamped at the end of each billet
Surface	Billets will be free from any surface imperfections which impair the product quality such as longitudinal cracks, transverse cracks, deep ripple marks, thick scale, slag patches, surface blow holes etc.
Pipe	Non existence



HOT ROLLED PRODUCTS

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HOT ROLLED PRODUCTS



PRIME-TMT

Reinforcement Steel Bars (TMT)

Our TMT bars are available in the following sizes:

8mm	10mm	12mm	14mm	16mm	20mm	22mm	25mm	32mm	40mm
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Specifications

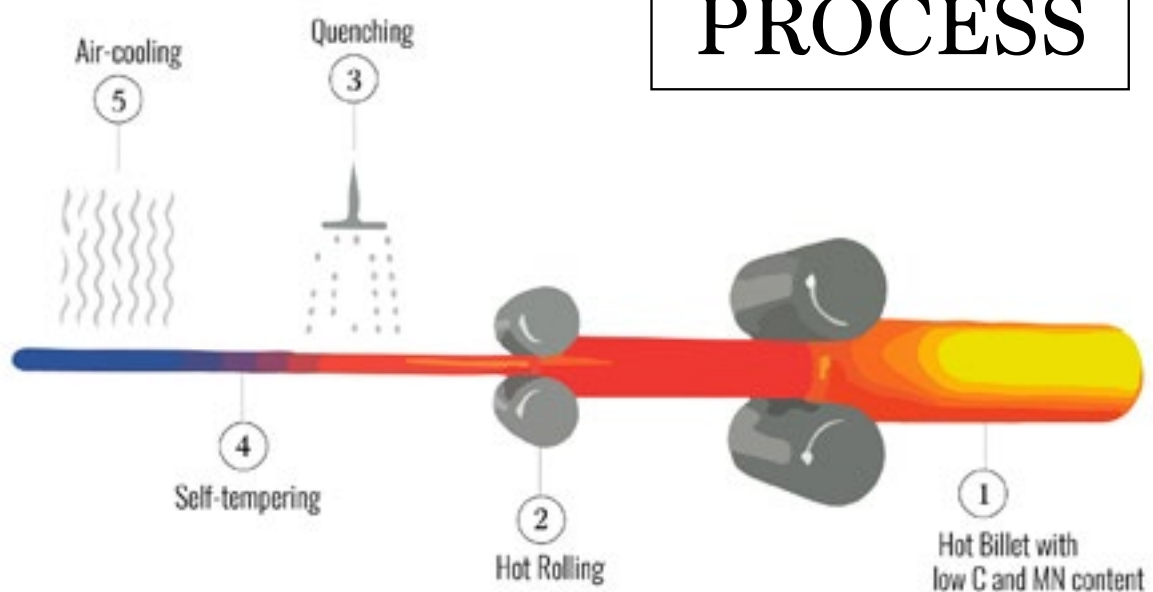
Our Reinforcement Steel Bars (TMT) conform to various national and international standards such as British Standards: 4449: 2009, ASTM A 615 Grade 40, Grade 60 and East African Standard KS EAS 412-2:2019.

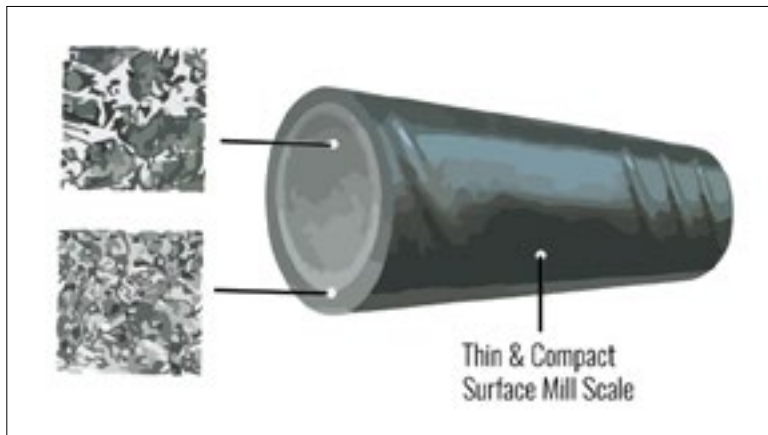
The Quenching Process

TMT bars are produced through a quenching process where the properties are attained by regulating the micro-structure of the steel allowing for better rebar ductility and good weld-ability. Billets are heated above the recrystallization temperature, soaked in a reheating furnace, rolled in successive stands, quenched, and air cooled on a cooling bed. TMT bars are manufactured from billets made of iron ore route which allows for more control over the quality producing clean steel and ensuring consistent mechanical properties, weld-ability and bend-ability.



THE QUENCHING PROCESS





Quenched Rebar Cross Section

Nominal Dimensions, Weight and Tolerance

DESIGNATION	NOMINAL DIA (d) mm	CROSS SECTION AREA (mm ²)	UNIT MASS (kg/m)	WEIGHT kgs PER 12MTR
D8	8	50.27	0.395	4.74
D10	10	78.54	0.617	7.4
D12	12	113.1	0.888	10.66
D14	14	153.9	1.21	14.52
D16	16	201.1	1.58	18.96
D18	18	254.4	2.00	24
D20	20	314.2	2.47	29.64
D22	22	380.1	2.98	35.76
D25	25	490.9	3.85	46.2
D28	28	615.8	4.83	57.96
D30	30	706.9	5.55	66.6
D32	32	804.2	6.31	75.72
D36	36	1017.9	7.99	95.88
D40	40	1256.6	9.86	118.37

Technical Features

Registered trademark for Prime Steel Mills Ltd & Abyssinia Iron and Steel Ltd are PRIME TMT - B500B WR, AIS TMT B500B WR and AGI PLUS B500B WR. These are respectively rolled on every meter length of the bar for unique identification.



APPLICATIONS

Our TMT bars have been specifically designed for high strength applications. This includes situations where high yield strength is required without compromise to elongation. Examples include: airports, bridges, dams, flyovers, high rise buildings, industrial structures, power plants, and other such critical structures.

ADVANTAGES

Excellent Bend-Ability: Fully conforms to East African and International Standards requirement of bending and re-bending.

Superior Weld-Ability: Low carbon equivalent which ensures superior weld-ability without preheating; irrespective of the welding used.

Higher Bond Strength: uniform and precise ribs providing for uniform bond strength

Superior Earthquake Resistance and Higher Fatigue Strength: TMT bars have high strength, durability, and a high ratio of UTS/YS which allows them to absorb shocks as well as cyclic loading conditions. Therefore TMT bars are recommended for areas prone to earthquakes.

Economy: Higher strength and elongation properties make TMT rebar extremely economical where steel consumption is concerned.

Technology & Quality Assurance: Our finished rebars undergo water quenching via the tempo process to achieve high strength and coupled with advanced thermo-mechanical treatment (TMT), resulting in excellent corrosion resistant properties. This process is known as quenched and self tempered (QST). They are also passed through series of rigorous tests to ensure performance under atmospheric conditions, in concrete conditions and in marine, coastal and tidal environments.

No Additional Treatment: Requires no additional corrosion resistant treatment

Cost Effectiveness: Provides at least 60% more corrosion resistance than conventional bars at only marginally higher costs.

Properties of Thermo-Mechanically Treated Bars

CHARACTERISTICS	KS EAS 412-2:2019
	GRADE: B500B WR
CHEMICAL COMPOSITION	
Carbon (C) %	0.22 Max
Manganese (Mn) %	1.60 Max
Silicon (Si) %	0.60 Max
Phosphorous (P) %	0.050 Max
Sulphur (S) %	0.050 Max
Nitrogen (N) ppm	120
Carbon Equivalent (CE) %	0.50 Max
MECHANICAL PROPERTIES	
Yield Strength (N/mm ²)	500 Min
Elongation (%)	14 Min
Ratio: YS/UTS (%)	1.08 Min

NB: We can produce B500A WR and B500C WR as per customer requirements. On specific demand we can also produce B550C WR.





Round and Square Bars

Round and square bars are widely used for construction and are weldable, formable and machinable.

Applications

Welding

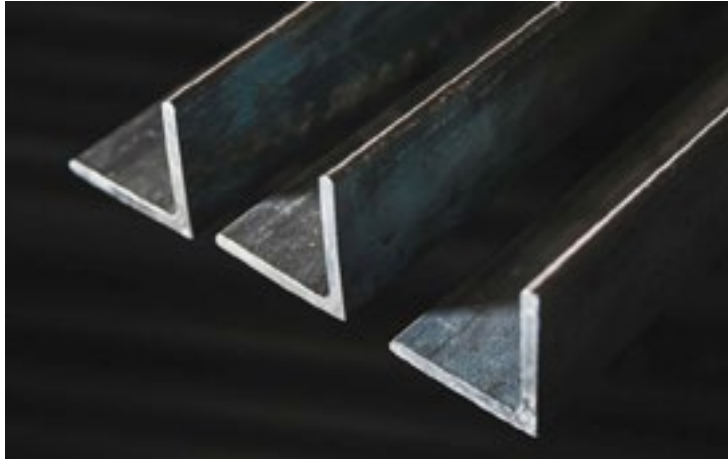
Construction of building and bridges

Engineering application

Reinforcement of window and door panels

Decorative application on windows, doors and parameter fence





Equal Angles

We produce steel structural profiles in a sophisticated, modern and highly precise state of the art rolling mill. The mill is designed to produce products with minimum tolerances with a better surface finish.

Size (mm)	Thickness (mm)	Weight kg / m	Size (mm)	Thickness (mm)	Weight kg / m	Size (mm)	Thickness (mm)	Weight kg / m
20 x 20	3.0	0.90	75 x 75	5.0	5.70	120 x 120	8.0	14.71
	4.0	1.10		6.0	6.80		10.0	18.20
20 x 25	3.0	1.10		8.0	8.90		12.0	21.62
	4.0	1.40		10.0	11.00		15.0	26.64
	6.0	2.22	80 x 80	6.0	7.30	130 x 130	8.0	15.90
30 x 30	3.0	1.40		8.0	9.60		10.0	19.90
	4.0	1.80		10.0	11.80		12.0	23.40
	6.0	2.72		12.0	14.00		15.0	28.90
40 x 40	3.0	1.80	90 x 90	6.0	8.20	150 x 150	10.0	22.80
	4.0	2.40		8.0	10.80		12.0	27.20
	6.0	3.50		10.0	13.40		15.0	33.60
50 x 50	3.0	2.30		12.0	15.80		18.0	39.60
	4.0	3.00	100 x 100	6.0	9.20	200 x 200	12.0	36.60
	6.0	4.50		8.0	12.10		15.0	45.40
60 x 60	6.0	5.40		10.0	14.90		18.0	54.00
	8.0	7.00		12.0	17.70		25.0	73.60
70 x 70	6.0	6.3		15.0	21.91			
	8.0	8.30						
	10.0	10.20						



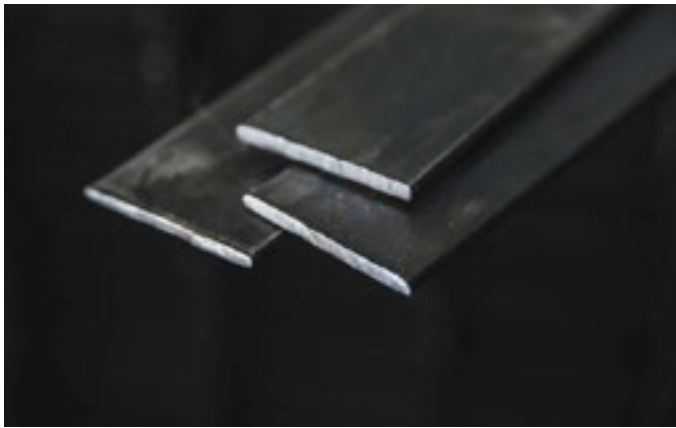
Equal Angles

APPLICATIONS

Constructing steel fabrications for both large and small scale structures

Engineering of transportation vessels, rail roads and industrial industry

Structure fabrication for industrial roofing



Flat Bars

Flat bars are produced with precise thickness and width.

Applications

Fabrication in industries
Manufacturing and engineering constructions
Constructing both commercial and residential structures

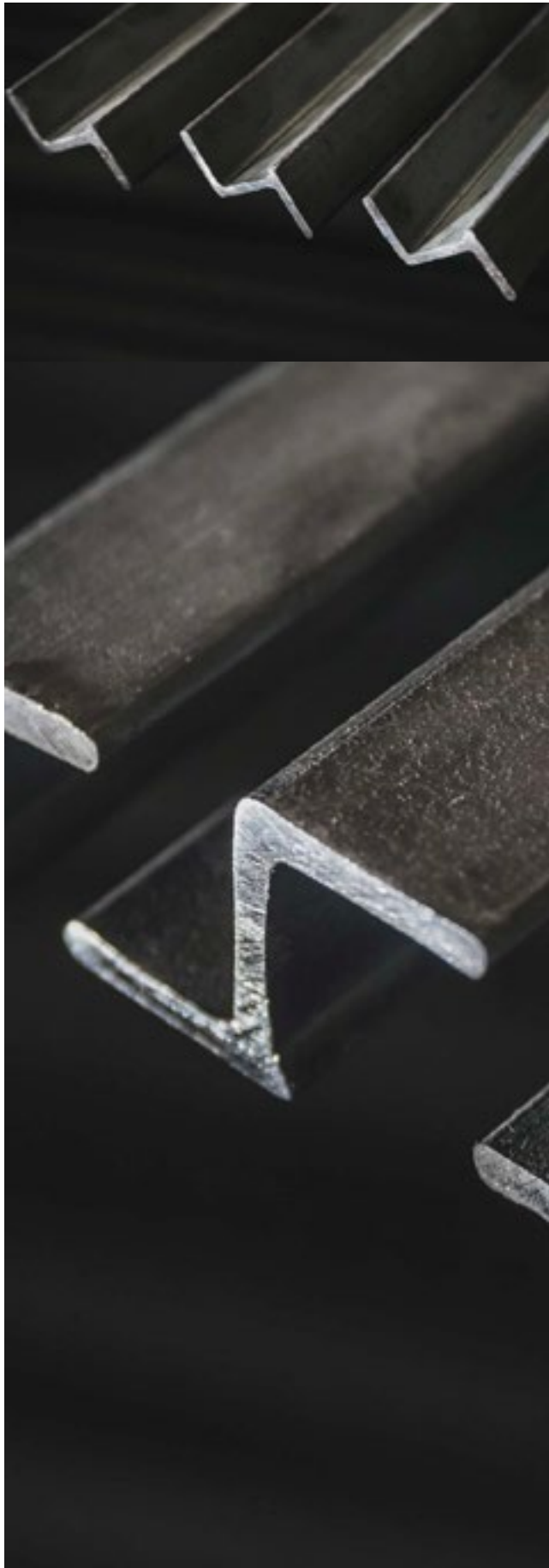
Length in 6 Meters					
Dimension (mm)	Weight / PC	Dimension (mm)	Weight / PC	Dimension (mm)	Weight / PC
20 x 3	2.82	40 x 8	15.06	70 x 10	33.0
20 x 4	3.76	40 x 10	18.84	70 x 12	39.54
20 x 6	5.64	40 x 12	22.62	70 x 16	52.74
20 x 8	7.56	50 x 3	7.08	75 x 6	21.18
20 x 10	9.42	50 x 4	9.42	75 x 9	31.80
25 x 3	3.54	50 x 6	14.16	75 x 12	42.42
25 x 4	4.71	50 x 8	18.84	100 x 6	28.26
25 x 6	7.08	50 x 10	23.58	100 x 8	37.68
25 x 8	9.42	50 x 12	28.26	100 x 10	47.10
25 x 10	11.76	60 x 6	16.98	100 x 12	56.52
25 x 12	14.16	60 x 8	22.62	100 x 16	75.36
30 x 3	4.26	60 x 10	28.00	130 x 8	48.96
30 x 4	5.65	60 x 12	26.26	130 x 10	61.26
30 x 6	8.46	65 x 6	18.36	130 x 12	73.50
30 x 8	11.28	65 x 8	24.48	130 x 16	97.98
30 x 10	14.16	65 x 9	27.54	150 x 6	42.35
30 x 12	16.98	65 x 10	30.60	150 x 8	56.52
40 x 3	5.64	65 x 12	36.72	150 x 10	70.68
40 x 4	7.53	70 x 6	19.80	150 x 12	84.78
40 x 6	11.28	70 x 8	26.40	150 x 16	113.04

Steel Sections - TEE



DIMENSION	WEIGHT IN kg / 6 METERS
20 x 20 x 3	5.2
25 x 25 x 3	6.66

These window sections conform to Kenyan Standards: 02-445. They are hot rolled from mild steel with a maximum carbon content of 0.30% making them suitable for welding purposes. This particular section results in a TEE section. They are used to make inner and outer frames of doors & windows.



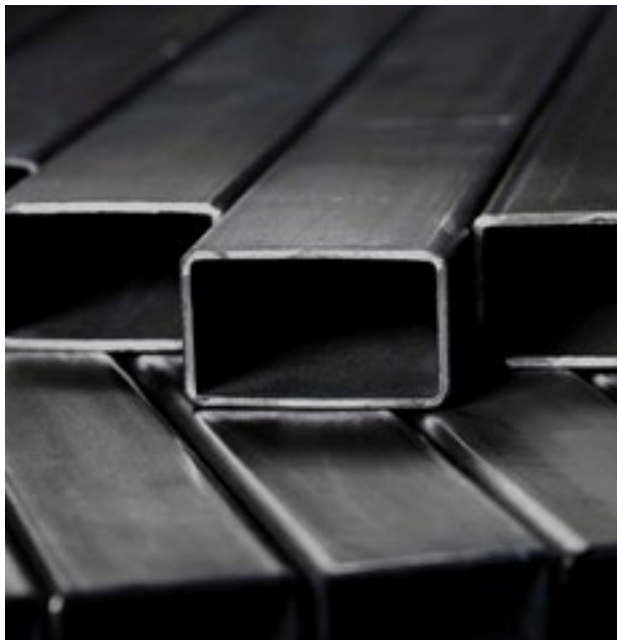
Steel Sections - ZED

These window sections conform to Kenyan Standards: 02-445. They are hot rolled from mild steel with a maximum carbon content of 0.30% making them suitable for welding purposes. This particular section results in a ZED section. They are used to make inner and outer frames of doors & windows.

DIMENSION	WEIGHT IN kg / 6 METERS
20 x 20 x 3	8.5
25 x 25 x 3	11.1



COLD ROLLED PRODUCTS



Mild Steel Rectangular Hollow Sections - RHS



Our Rectangular Hollow Sections (RHS) conform to KS EAS 134:2019

Applications

RHS can be used in the furniture industry, for domestic applications, for bus body fabrication, for general fabrication, and for fencing/ gate poles.

Size (mm)	Thickness (mm)	Weight kg / m
40 x 20	1.00	3.86
	1.20	1.08
	1.50	1.40
	2.00	1.76
40 x 25	1.05	1.18
	1.20	1.46
	1.50	1.91
	2.00	2.78
50 x 25	1.20	1.37
	1.50	1.69
	2.00	2.23
	3.00	3.25
60 x 40	1.20	1.84
	1.50	2.28
	2.00	3.01
	3.00	4.43
75 x 50	2.00	3.73
	3.00	5.60
	4.00	7.34
100 x 50	3.00	6.78
	4.00	8.92

Size (mm)	Thickness (mm)	Weight kg / m
120 x 60	2.00	5.53
	3.00	8.20
	4.00	10.80
	6.00	15.83
125 x 75	2.00	6.15
	3.00	9.14
	4.00	12.06
	6.00	17.71
150 x 50	3.00	9.14
	4.00	12.06
	6.00	17.71
150 x 100	3.00	11.49
	4.00	15.20
	6.00	22.42
200 x 50	2.00	7.72
	3.00	11.49
	4.00	15.20
	6.00	22.42
200 x 100	3.00	13.85
	4.00	18.34
	6.00	27.13



Mild Steel Square Hollow Sections - SHS

Our Square Hollow Sections (SHS) conform to KS EAS 134:2019

Applications

SHS can be used in the furniture industry, for domestic applications, for bus body fabrication, for general fabrication, and for fencing/ gate poles.

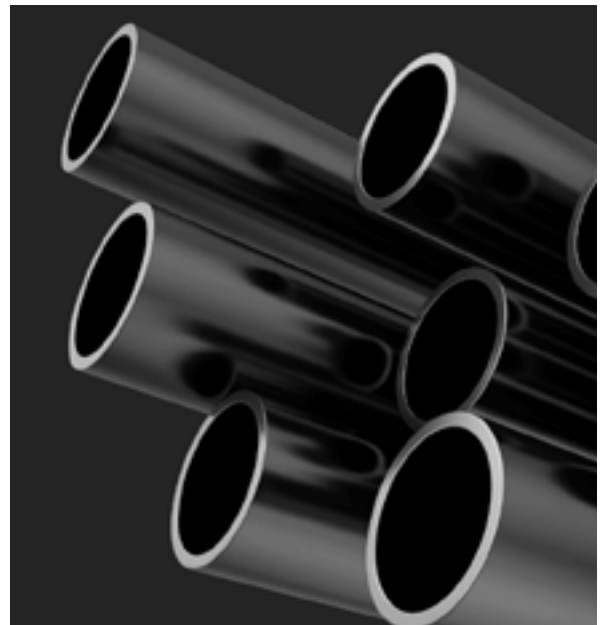
Size (mm)	Thickness (mm)	Weight kg / m
12 x 12	1.00	0.37
	1.20	0.41
	1.50	0.49
16.x 16	1.00	0.46
	1.20	0.63
	1.50	0.68
20 x 20	1.05	0.61
	1.20	0.71
	1.50	0.87
	2.00	1/13
25 x 25	1.05	0.80
	1.20	0.90
	1.50	1.11
	2.00	1.75
	3.00	2.07
30 x 30	1.05	0.93
	1.20	1.08
	1.50	1.34
	2.00	1.75
	3.00	2.54
40 x 40	1.05	1.46
	1.20	1.81
	1.50	2.39
	2.00	3.48
	3.00	4.72
50 x 50	1.05	2.28
	1.50	2.28
	2.00	3.01
	3.00	4.43
	4.00	5.91

Size (mm)	Thickness (mm)	Weight kg / m
60 x 60	1.00	2.28
	1.20	2.241
	1.50	2.796
	2.00	3.01
	3.00	5.37
75 x 75	4.00	7.03
	2.00	4.58
	3.00	6.78
	4.00	8.92
100 x 100	6.00	13.0
	2.00	6.15
	3.00	9.14
	4.00	12.18
125 x 125	6.00	17.71
	3.00	11.49
	4.00	15.20
150 x 150	6.00	22.42
	3.00	13.85
	4.00	18.34
175 x 175	6.00	27.13
	3.00	16.288
	4.00	21.718
200 x 200	6.00	31.84
	4.00	24.62
	6.00	36.55

Our Circular Hollow Sections (CHS) conform to KS EAS 134:2019.

Size (mm)	Thickness (mm)	Weight kg / m
20	1.2	3.36
	1.5	4.14
	2.0	5.40
25	1.0	3.54
	1.2	4.20
	1.5	5.22
32	1.0	4.56
	1.2	5.46
	1.5	6.78
	2.0	8.88
	3.0	12.84
38	1.0	5.46
	1.2	6.72
	1.5	8.28
	2.0	10.92
	3.0	15.90
42	1.0	6.06
	1.2	7.26
	1.5	9.24
	2.0	11.88
48	1.0	6.96
	1.2	8.34
	1.5	10.32
	2.0	13.62
50	1.2	8.70
	1.5	10.80

Mild Steel Circular Hollow Sections - CHS



Applications

CHS can be used in the furniture industry, for domestic applications, for bus body fabrication, for general fabrication, and for fencing/ gate poles.



Black Pipes

Black pipes are manufactured from accurately sized strips, cut from high quality hot rolled mild steel coils that are then fed into the tube mill. The flat strip is gradually formed into a round profile with an open seam along its length. A high frequency induction welding technique is used to form a strong continuous seam joint.

The formed pipe passes through an external bead scarfing and sizing process to bring its dimensions to specified tolerances. The pipes are then cut to the desired lengths.

All black pipes are manufactured as per KS 06-259 (BS 1387/85).

Black Pipes

CLASS A (LIGHT)				
NOMINAL		WALL THICKNESS	APPROXIMATE OUTSIDE DIAMETER	WEIGHT OF BLACK PIPES
mm	Inches	mm	mm	kg/m
15	½	2.00	21.30	0.95
20	¾	2.35	26.90	1.41
25	1	2.65	33.70	2.01
32	1 ¼	2.65	42.40	2.58
40	1 ½	2.90	48.30	3.25
50	2	2.90	60.30	4.11
65	2 ½	3.25	76.20	5.80
80	3	3.25	88.20	6.81
100	4	3.65	114.30	9.89

CLASS B (MEDIUM)				
NOMINAL		WALL THICKNESS	APPROXIMATE OUTSIDE DIAMETER	WEIGHT OF BLACK PIPES
mm	Inches	mm	mm	kg/m
15	½	2.65	21.30	1.22
20	¾	2.65	26.90	1.58
25	1	3.25	33.70	2.44
32	1 ¼	3.25	42.40	3.14
40	1 ½	3.25	48.30	3.61
50	2	3.65	60.30	5.10
65	2 ½	3.65	76.20	6.51
80	3	4.05	88.20	8.47
100	4	4.50	114.30	12.10
125	5	4.85	139.7	16.20
150	6	3.65	165.1	19.20

Black Pipes

CLASS C (HEAVY)				
NOMINAL		WALL THICKNESS	APPROXIMATE OUTSIDE DIAMETER	WEIGHT OF BLACK PIPES
mm	Inches	mm	mm	kg/m
15	½	3.25	21.30	1.45
20	¾	3.25	26.90	1.90
25	1	4.05	33.70	2.97
32	1 ¼	4.05	42.40	4.43
40	1 ½	4.05	48.30	4.43
50	2	4.50	60.30	6.17
65	2 ½	4.50	76.20	7.90
80	3	4.85	88.20	1.10
100	4	5.40	114.30	14.40
125	5	5.4	139.7	17.80
150	6	5.4	165.1	21.20

Applications

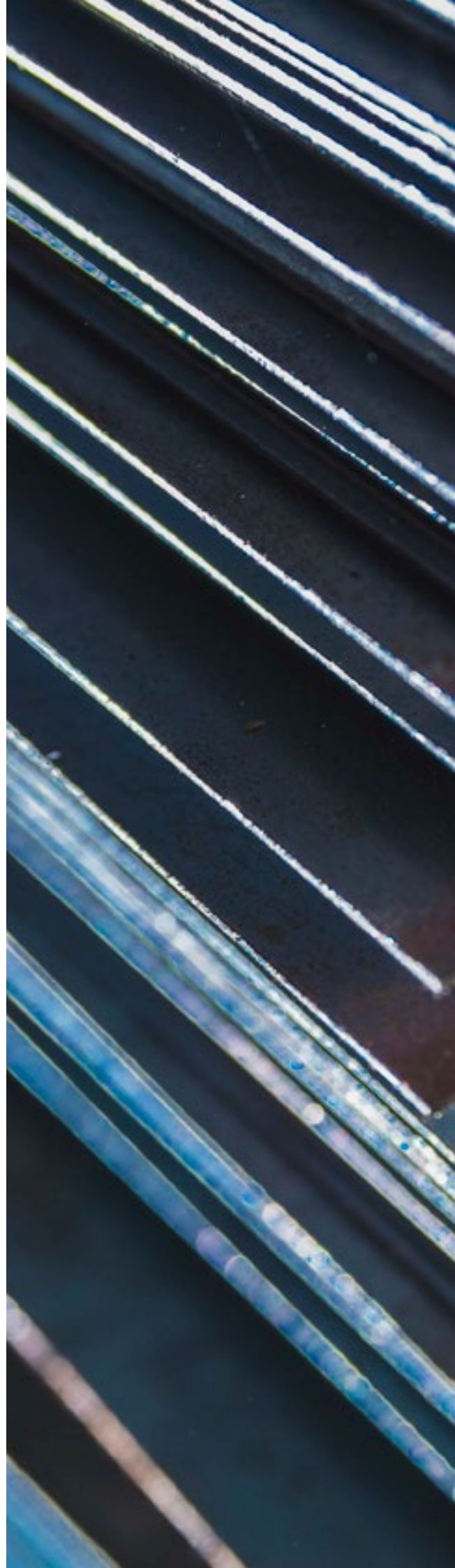
Black pipes are generally used for heating systems of houses, other general fabrications and engineering.

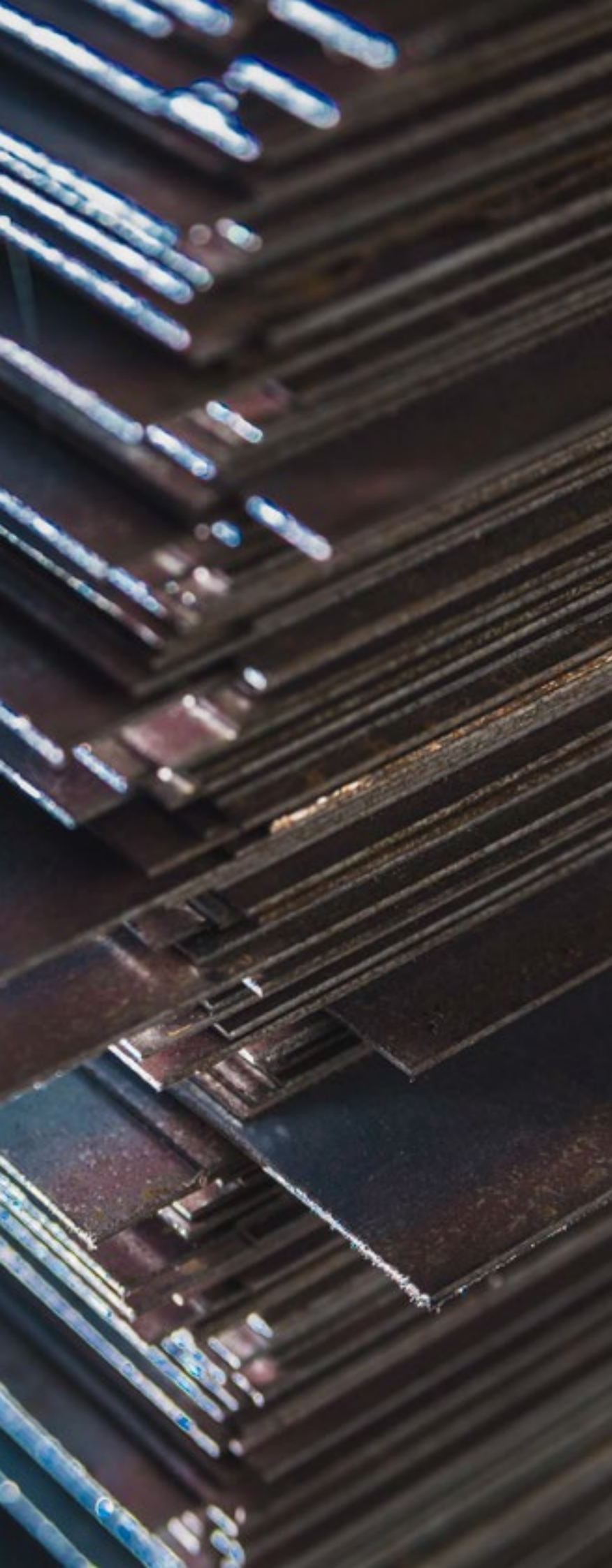
Mild Steel Plates

Our mild steel plate sheets measure from 0.80mm - 12mm in thickness with the dimensions of 8ft x 4ft. These plates can also be cut into specified lengths if needed.

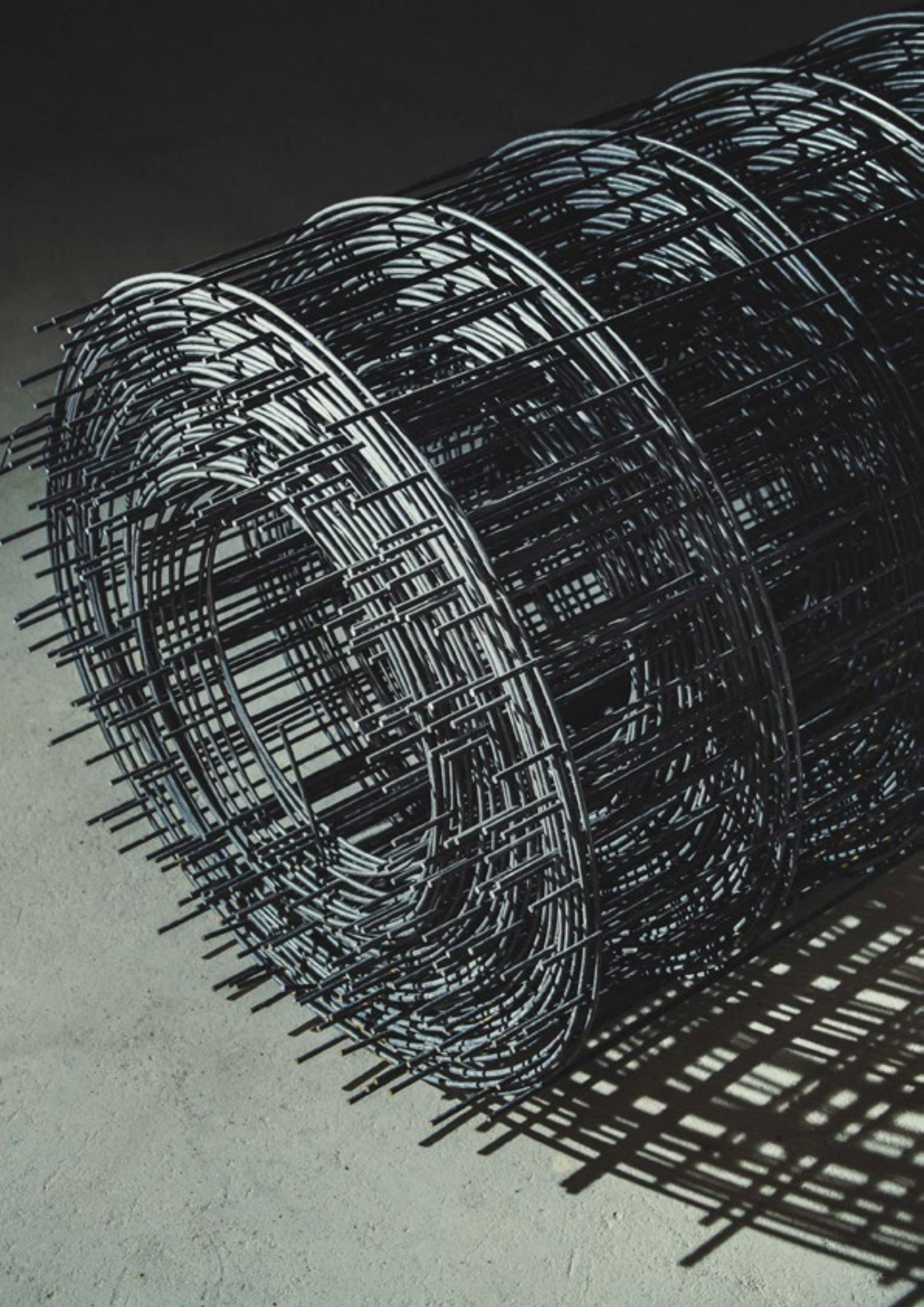
Applications

Mild steel plates can be used for canopies, metal fabrication, platforms, pedestals, structures and stands.





THICKNESS (mm)	WEIGHT (8ft x 4ft)
0.8	18.7
1.0	23.4
1.2	28.1
1.5	35.1
2.0	46.8
2.5	58.5
2.8	65.5
3.0	70.2
4.0	93.6
4.5	105.3
6.0	140.4
7.0	163.8
8.0	187.2
9.0	210.6
10.0	234.0
12.0	280.8



WIRE PRODUCTS

British Reinforcement Concrete (BRC)

British Reinforcement Concrete (BRC) is manufactured as per KS EAS 412-3:2019. It is a welded mesh fabric which can be supplied either in a roll form or panels of various dimensions.

Applications

BRC is widely used in agricultural, industrial, transportation, horticultural and food sectors. It is also used in mines and for machine protection.

Type	Wire Diameter (mm)	Mesh Size (mm)	Width (m)	Lenth (m)
A66	4.0	200 x 200	2.1 & 2.4	30 & 48
A98	5.0	200 x 200	2.1 & 2.4	30 & 48
A142	6.0	200 x 200	2.1 & 2.4	30 & 48





Mild Steel Nails





Our Mild Steel Nails conform to KS EAS 914:2019. These nails are manufactured from drawn wire using the most advanced and automatic machines.

Applications

Mild steel nails are used for construction and furniture applications

Size (Inches)	Length (mm)	Shank Diameter (mm)	Kgs/ Bags
1.0	29.4	2	50
1.5	38.1	2.5	50
2.0	50.8	3	50
2.5	63.5	3.5	50
3.0	76.2	4	50
4.0	101.6	5	50
5.0	127	5.5	50
6.0	150.4	5.9	50

TOLERANCE: +/- 2.5% on shank diameter and length.

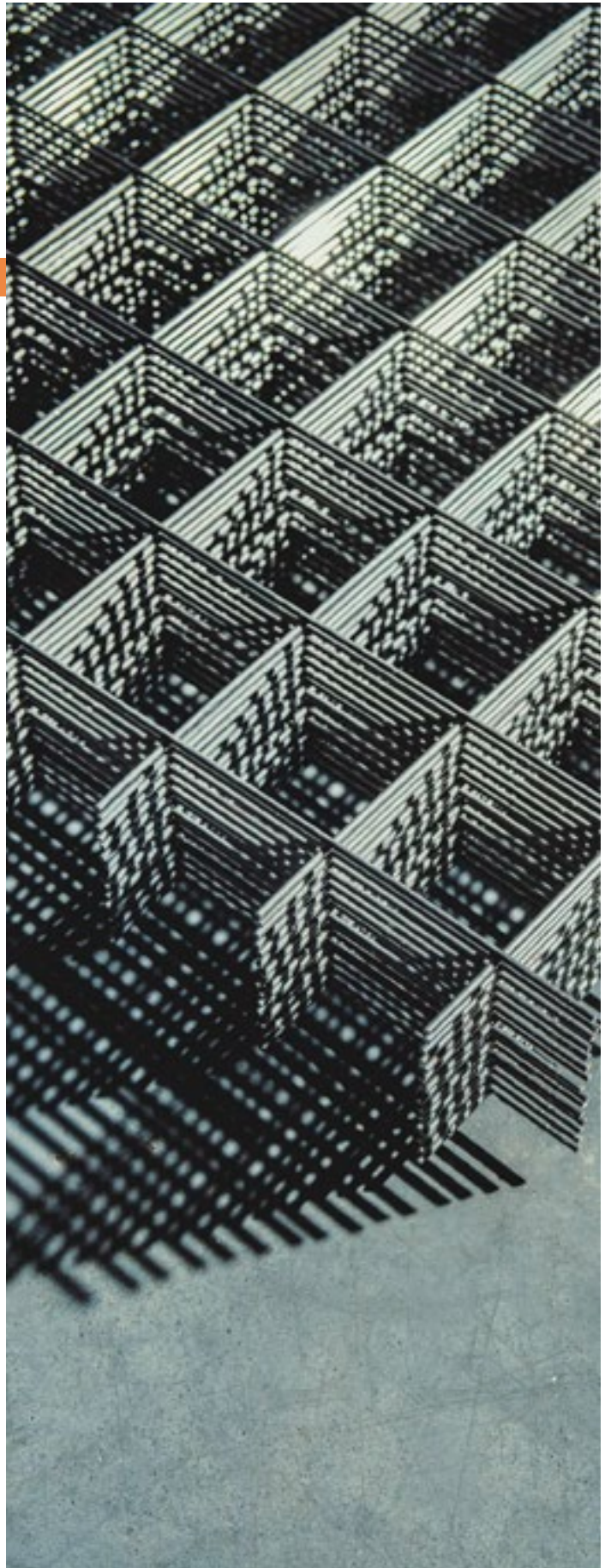
Weld Mesh

Our Weld Mesh comes in various sizes depending on customer requirements. ‘

In addition, the mesh can be supplied in galvanized or plain black wire form.

SIZE (mm)
50 x 50
60 x 60
65 x 65
75 x 75

DIMENSION (ft)
8 x 4
8 x 6
8 x 10





Binding Wire



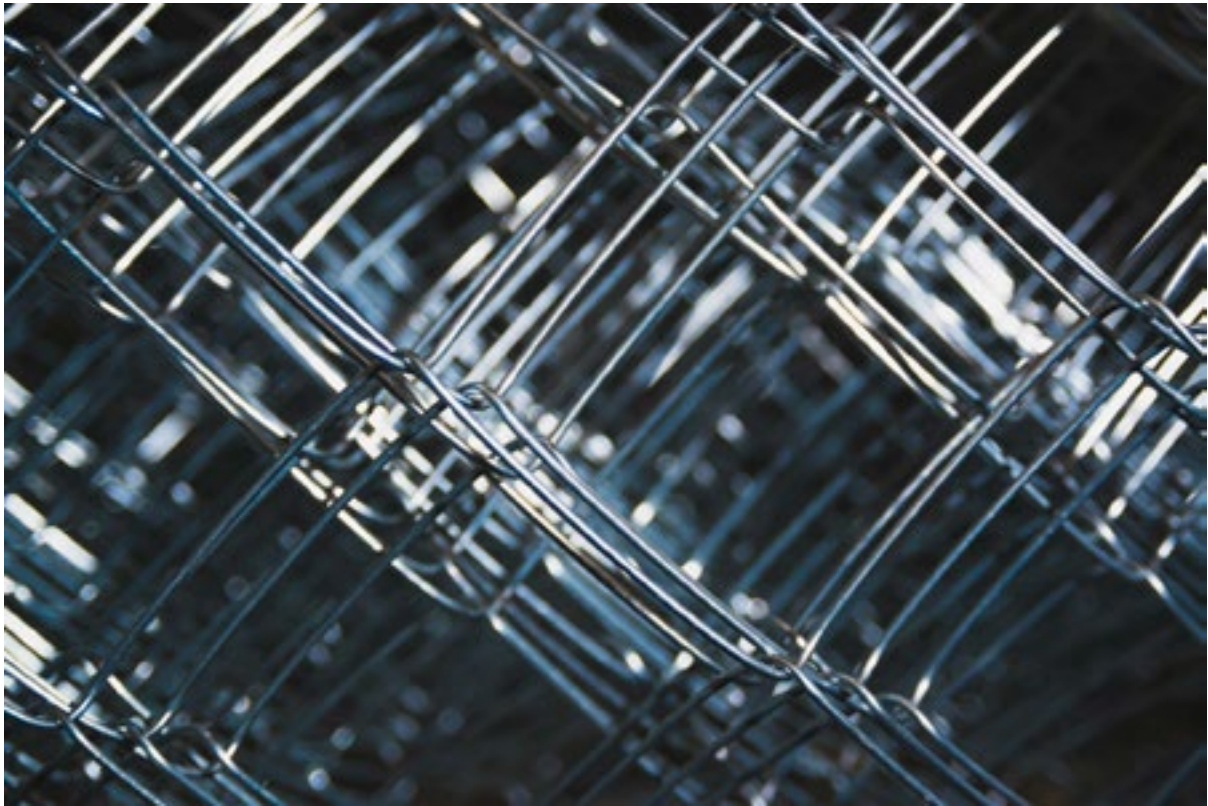
Our Binding Wire is drawn from a 5.5mm wire rod and annealed at intermediate stages. Annealing wire is available in 1.6mm and 1.8mm diameters.

The binding wire comes in pre-packed bundles of 25kg.

Applications

Binding wire is used for binding reinforcement bars in construction.

WIRE SIZE (Gauge)	WEIGHT (kg)
11	50
14	50
16	25



Galvanized Chainlink

Wire Gauge	Length (m)	Width (ft)
14	18	4
14	18	5
14	18	6
14	18	7
14	18	8

Galvanized chainlinks are manufactured as per KS EAS 135:2021.

Woven in rolls of various widths, comprising of mesh size 50mm and 75mm.

Applications

Mostly used for fencing and barricading.



Galvanized Barbed Wire

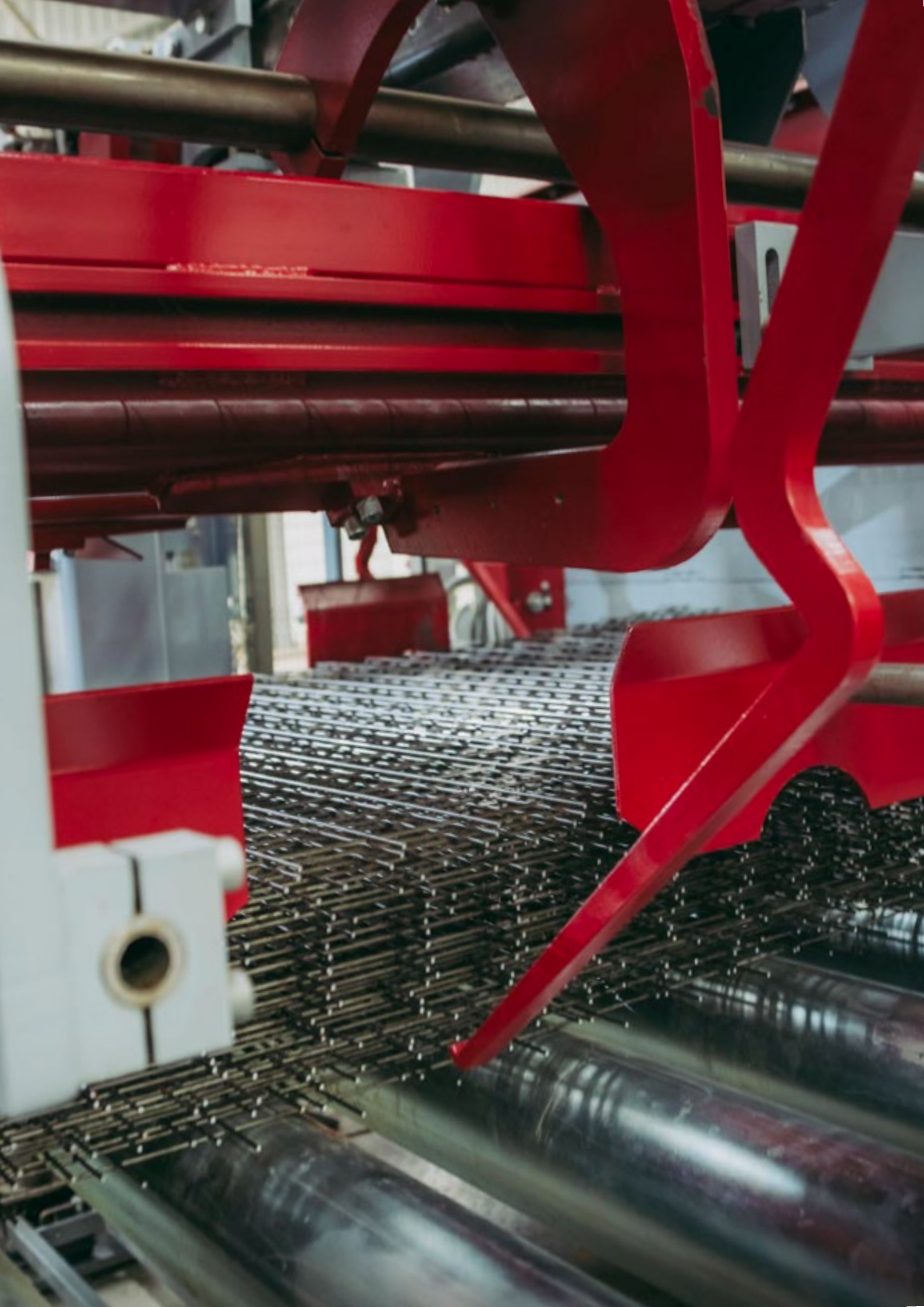
Galvanized Barbed Wire are manufactured as per KS EAS 135:2021, using double strand reverse twist.

Applications

Mostly used for fencing and barricading.



WIRE GAUGE	LENGTH (m)	WEIGHT (kg)
16	610	25
16	480	20
12.5	220	25
12.5	180	20



OTHER PRODUCTS

Hoop Iron

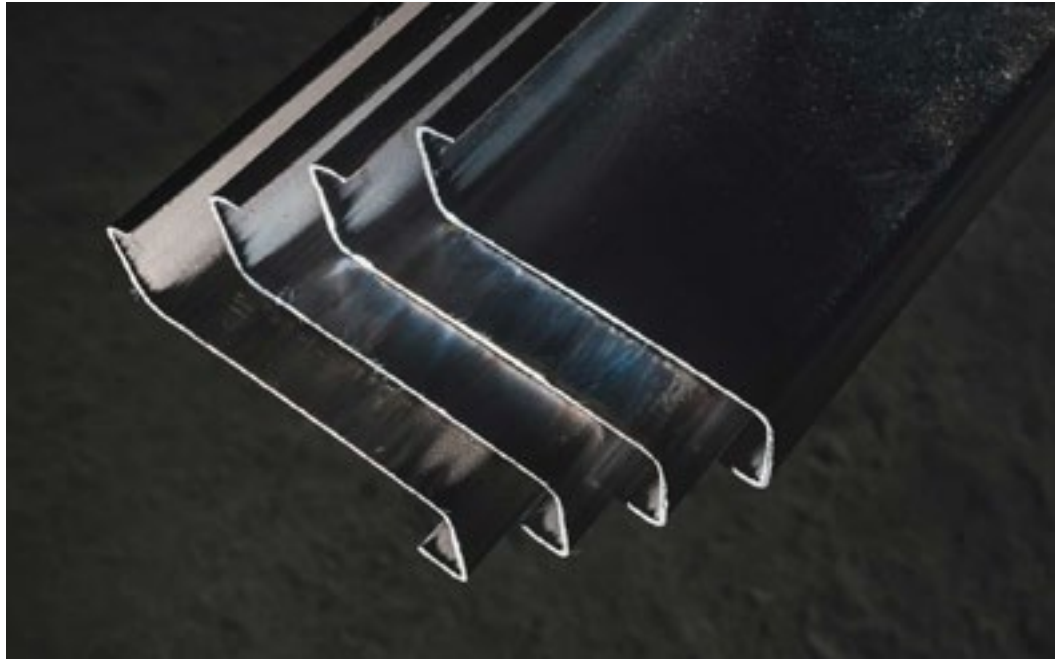
Hoop Iron is flattened iron in long thin strips. They are supplied in coils with either punched or un-punched nail holes.

The hoop iron has flat strapping of different thicknesses and can be galvanized or stainless steel. The sizes sold are as long as a 20kg roll with a 20mm width and 1mm in thickness.

Applications

Hoop iron is used for attaching roofing to structures and can also be used to connect brickwork to columns.





Zed Purlins

Our Zed Purlins are manufactured to KS EAS 134:2019.

Applications

Zed purlins are high in strength and are thus used to support roofs and/or walls of large industrial and commercial buildings.

SIZE / THICKNESS (mm)	WEIGHT (kg / m)	DIMENSIONS (mm)		
		A	B	C
4" x 2" x 2.0mm	3.65	101.6	50.8	12.60
4 1/2" x 2" x 2.0mm	3.85	114.6	50.8	22.20
5" x 2" x 2.0mm	4.05	127.0	50.8	22.20
5 1/2" x 2" x 2.0mm	4.24	139.7	50.8	22.20
6" x 2" x 2.0mm	4.44	152.2	50.8	22.20
7" x 2" x 2.0mm	4.95	177.8	50.8	22.20
7" x 2" x 2.5mm	6.15	177.8	50.8	22.20



Roofing Nails

Our Roofing Nails are manufactured according to KEBS Standards KS 72-1:2007. They have wide flat heads and short shanks and are available in different sizes. The nails are graded based on inch and gauge. The

standard weight is sold in bags of 50kgs. Their length is 2.5inches and their diameter is 3.5mm.

Applications

Roofing nails are used for reinforcing iron sheets for roofing.



Wire Rod

Abyssinia Group of Industries manufactures high-quality wire rods conforming to international standards ASTM-A510M. The rod is rolled from billets into control-cooled coils, yielding a suitable microstructure for direct drawing.

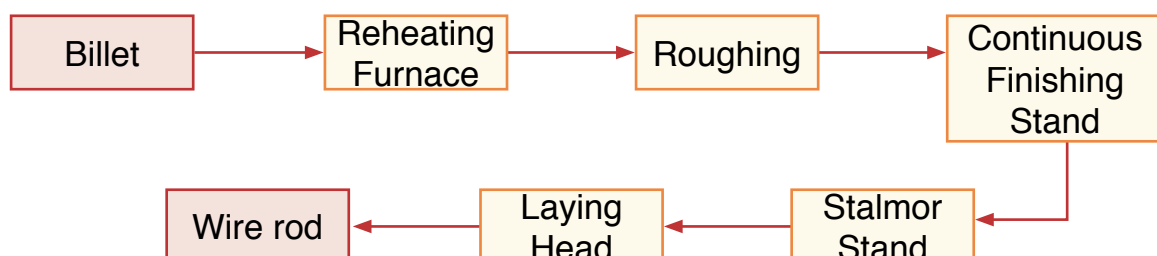
Wire rod has a number of end uses and applications, including mesh, fencing, shelving, welding rods, wire hangers, and nails. In addition, wire drawn from the rod can be galvanized, plated, and painted.



AGI can produce wire rods to meet our customers' needs with technical service support available to match customer requirements with our production process options. Our commitment to quality provides assurance that our customers' requirements will be successfully met with the highest quality products and superior customer service.

Manufacturing Process

Powered by state-of-the-art facility and technology, AGI operates a totally computerized, end-to-end full automatic production system. This allows us to deliver high-quality and high-performance products that fit to the needs of customers. Manufacturing carefully adheres to the stated process;





1. Reheating

The temperature within the furnace and the duration of reheating depend on where the product will be used. To avoid decarburization, which can affect the surface quality of the product, a billet is pre-heated sufficiently at a low temperature before being rolled within the reheating furnace. For this purpose, the fuel and air ratio are strictly controlled.

2. Rolling

The temperature, draft, and speed of deformation with which the product is rolled are controlled to meet customer requirements for material features. Further measures to ensure the surface quality include the adjustment of roll roughness and gap, detection of any cracks, and dimension correction.

3. Cooling

Coiling temperature at the laying head, the airflow and movement speed of the blower on the cooling bed, and the cooling speed of the insulation cover are controlled to ensure that the product has the features required for each application. High carbon steel wire rods are subject to fast cooling to achieve the microstructure required for successful drawing while low carbon steel is subject to slow cooling to ensure that the product provides the softness required for the customer to eliminate an annealing process.

4. Inspection

Samples are taken from the front and rear edges of the product after rolling and cooling for testing to identify any defects in the dimension or surface or material integrity. Packaging and tagging are also inspected according to customer requirements prior to shipping.



Technical parameters of the wire rod

DIAMETER OF WIRE ROD (mm)	MASS (kg)	HEIGHT (mm)	OUTER DIAMETER (mm)	INNER DIAMETER (mm)
5.5 – 16.0	1000 – 1200	Max 1000	Max 1250	Min 750

Dimensional Tolerance

SIZES (mm)	TOLERANCE (mm)	MAXIMUM OVALITY (mm)
5.2 – 8.5	±0.20	0.3
9.0 – 14.0	±0.25	0.4
14.5 – 22.0	±0.30	0.5

Chemical and Physical Composition

GRADE	SIZE	CHEMICAL COMPOSITION (%)				PHYSICAL PROPERTIES	
		C (max)	Mn	S (max)	P (max)	UTS N/mm ² (max)	%EL (min)
1006	5.20 - 16.0	0.08	0.30 - 0.50	0.03	0.04	410	30
1008	5.20 - 16.0	0.10	0.30 - 0.50	0.03	0.04	420	30
1018	5.20 - 16.0	0.15 - 0.20	0.60 - 0.90	0.03	0.04	500	30



Packaging

In order to avoid various damages that can occur during the shipping and handling process, individual coils are strapped with four straps evenly spaced around the periphery. To provide increased visibility and positive product identification, a resin label with white background is added after the pickling process.



Galvanized Wire

Galvanization is the process in which the material is provided with the polymeric coating. Abyssinia Group of Industries is being widely appreciated in the market for its premium quality galvanized wire. AGI manufactures high quality galvanized wire conforming to standards ASTM A641 and KS EAS 135:2021.

Advantages of Hot Dip Galvanized wires

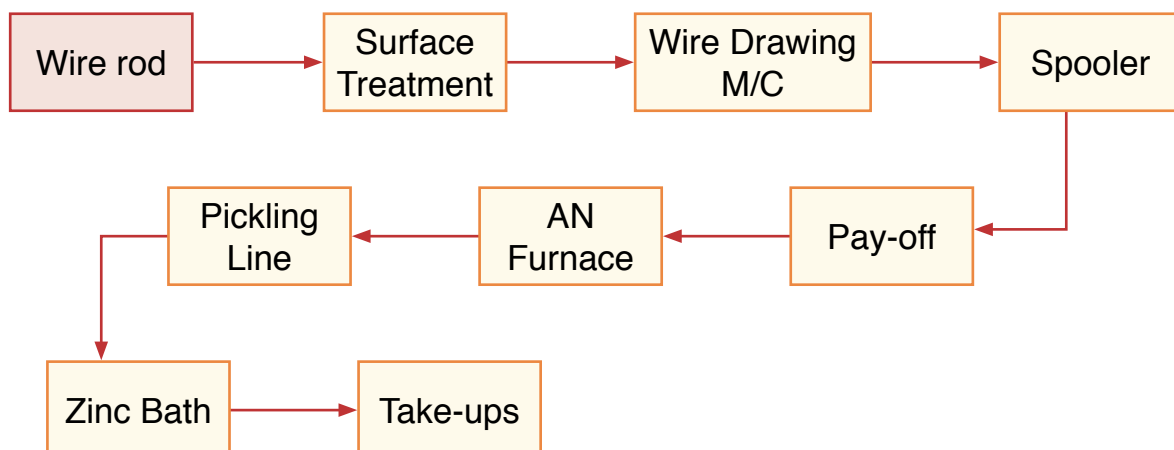
- Rust and Corrosion protection
- Durability
- Excellent flexibility & softness
- Longevity
- Reduced Long term costs



Manufacturing Process

We are having continuous wire galvanizing plant which carries out the complete process online in a single sequence ensuring the best quality product.

1. Annealing is a heat treatment process that alters the microstructure of a material to change its mechanical properties. Typically, in steels, annealing is used to **reduce hardness, increase ductility and help eliminate internal stresses**.
2. Scale, rust, oil, paint, and other surface contaminants are carefully removed from the steel by suitable preliminary treatment and subsequent acid cleaning or pickling in hydrochloric acids, followed by rinsing.
3. The acid-cleaned steel is immersed in a flux solution maintained at about 60°C. The flux solution removes the oxide film which forms on the highly reactive steel surface after acid cleaning and prevents further oxidation before galvanizing. The work is then dried and ready for galvanizing.
4. On immersion in the galvanizing bath, the steel surface is wetted by the molten zinc and reacts to form a series of zinc-iron alloy layers. To allow the formation of the coating the work remains in the bath until its temperature reaches that of the molten zinc, in the range of 445° C to 465°C.



Due to its strong mechanical and corrosion-resistant properties, it is widely used in manufacturing barbed wire, chain-link, and nails in addition to Construction, Agriculture, Power and many more.

Galvanized Wire Specifications:

Size mm	1.60	1.80	2.00	2.50
Tolerance mm (+/-)	2.50%	2.50%	2.50%	2.50%
Tensile Strength Mpa	350 - 550	350 - 550	350 - 550	350 - 550
Zinc Coating Gm/Sq. Mt. (min)	50	56	69	72



Advantages of using perfect galvanized wire

- Softness of wire
- The smoothness makes the appearance look better
- Shining.
- Uniform coating increases the product life
- Perfect G.I wire ensures double life than any other ordinary galvanized wire available on the market.
- Saving nearly 10% to customers due to the correct size.
- Our commitment
- Test certificate.
- Appropriate coil formation increases productivity.

Welding Rod



Type – Carbon Steel electrode with rutile coating.

DIN EN499: 1994: E 43 O RC 1 1

AWS: A5.1:2004: E6013

Rod Sizes: 2.50mm 3.20mm 4.00mm

Applications:

Welding joints on steel constructions in car body works and fitting shops. Assembly and repair welding, especially in industry and crafts. Suitable for welding in all positions especially in the horizontal position.

Characteristics:

As per standards KS 322:1988, AGI Weld E6013 is the best all round rutile electrode and is relatively insensitive to rust or other surface impurities.

It deposits smooth weld beads in all positions including vertical–down and the slag is easy to remove. AGI Weld E6013 is very easy to strike and re–strike, making it ideal for short welds, root runs and tacking.

Current mode: AC / DCEP / DCEN

Welding current:				
Æmm	2.5 × 350	3.20 × 350	4.0 × 350	5.0 × 350
Amps	70 – 900	90 – 130	140 – 180	180 – 250

Mechanical properties

Tensile strength: 430 N/mm² min

Yield strength: 330 N/mm² min

Elongation: 17% min

Chemical analysis of weld deposit, typical values in %:

C	Mn	Si	S	P
≤0.12	0.3 – 0.60	≤0.35	<0.035	<0.040

Packaging

In order to avoid various damages that can occur during the shipping and handling process, we package the rods in a compact box.





Collated Nails

AGI nails are manufactured out of cold worked carbon steel, which is used when corrosion resistance is not a concern.

Nails are manufactured by high performance machines which ensures consistent quality of the nails

Nail head are circular and flat which are widely used in framing nails, the diamond nail point are consistent in measurement and guaranteed to penetrate under correct usage.



Available shank type:



Available finish: Smooth Vinyl coated.

Collated Nails available in



Technical parameters of the nails

DESCRIPTION	NAIL SIZE	SHANK	FINISH	COLLATION TYPE	POINT STYLE
Framing nails	3" x 0.120"	Smooth	Bright	21 Deg plastic	Diamond
Framing nails	3" x 0.131"	Smooth	Bright	21 Deg plastic	Diamond
Framing nails	3" x 0.120"	Screw	Bright	15 Deg wire	Diamond
Framing nails	2-3/8" x 0.113"	Ring	Bright	15 Deg wire	Diamond
Framing nails	3" x 0.120"	Smooth	Bright	15 Deg wire	Diamond





Ethiopia



Kenya



Uganda

CONSTRUCTING THE
FUTURE AFRICA

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