



**POWER TO BUILD**





## ABOUT US

---

Dating back to 1970 inside a successful general hardware and construction material trading and supply house in Mombasa, our company founders had a vision. What they saw led to a company that, 50 years later, now manufactures the best structural steel in East and Central Africa.

Producing the region's best steel doesn't happen by chance; it requires a strategy. From the start Apex Steel decided to do things differently, focusing on innovation, creation of value for their customers and an uncompromising commitment to quality. Kenya Bureau of Standards (KEBS) recognized the superior quality of Apex Steel leading to the company becoming the first to be awarded the Diamond Mark of Quality.

Apex Steel can claim another important first. It is the only steel company in East and Central Africa that manufactures steel that is globally recognized as nature-friendly, making it the only local steel company to be awarded a Leadership in Energy and Environmental Design (LEED) certificate, allowing customers to build strong and go-green.

Apex Steel has also been awarded SUPERBRANDS status three years in a row.

Apex Steel also manufactures tubes, rectangular hollow sections, square hollow sections, circular hollow sections, furniture tubes, black pipes for scaffolding, MS plates, angles, flats, and T and Z sections.

It is one of the region's largest importers of beams, channels, shafts, seamless pipes, and deals in more than 4,000 general hardware items and wire products. It also sells roofing sheets and zed purlins

## APEX TMX INSIDE

---

### Projects

#### Commercial Complexes

1. Sameer Business Park
2. Delta Towers
3. Riverside Park
4. Two Rivers

#### Residential Estates

1. Garden City Estate
2. Fourways
3. Delta Plains Athi River
4. Marina Apartments

#### Hotels and Institutions

1. KAM Office
2. Villa Rosa
3. Sankara
4. UAP Tower

#### Roads and Bridges

1. Thika Superhighway
2. Athi River Namanga Highway
3. Nile Bridge
4. Southern bypass

#### Infrastructure

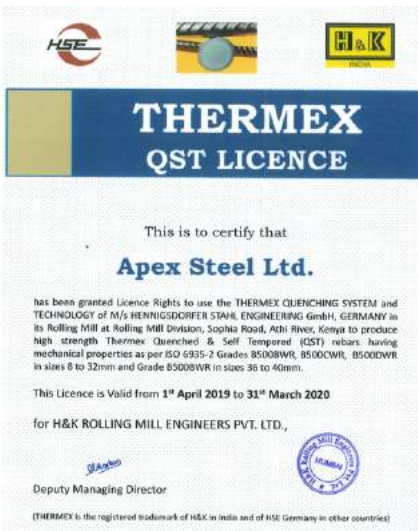
1. SGR
2. Sondu Miriu
3. Tana River Hydro Power Plant
4. Kwale Sugar Mill

#### Certifications

1. KEBS
2. Diamond Mark
3. TMX Certificate from Germany
4. Superbrands
5. LEEDS

# CERTIFICATIONS

## Certification from Thermex; Germany



## The Diamond Mark of Quality

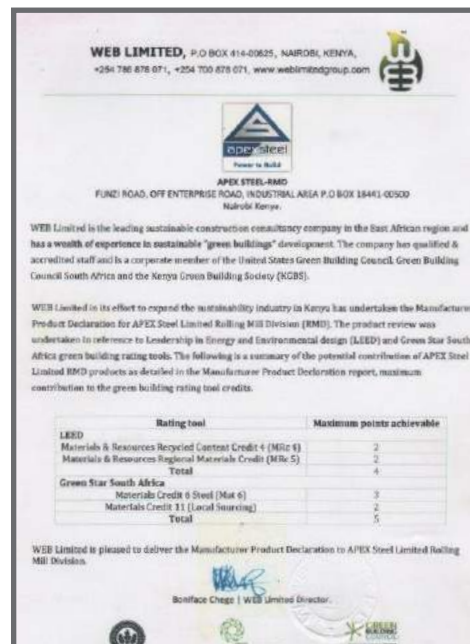


## FKE CERTIFICATE OF MEMBERSHIP



## LEEDS

(Leadership In Energy and Environmental Design)



## TABLE OF CONTENTS

---

### Hot Rolled Products

- Deformed Bars (APEX TMX) - Rebars/Ribbed Bars
- Round Bars
- Square Bars
- Angles
- Flat Bars
- Window Sections - Tee and Zed

### Cold Formed Sections

- Rectangular Hollow Section (RHS)
- Square Hollow Section (SHS)
- Circular Hollow Section (CHS)
- Black Pipes
- Galvanized Pipes
- Zed Purlins
- Steel Door Frames Section
- Mild Steel Plates
- Perforated Plates
- Galvanized Plates
- Chequered Plates
- Cold Rolled Close Annealed (CRCA) Plates
- Expanded Metal
- Guard rails

### Structural Steel

- Universal Beams
- IPE Sections/IPE A.A. Sections
- Mild Steel Channels

### Special Steel

- Stainless Steel Plates
- Stainless Steel Flats
- Stainless Steel Square Tubes
- Stainless Steel Rectangular Tubes
- Stainless Steel Round Pipes
- Stainless Steel Shafting
- Seamless Pipes and Fittings
- Aluminium Plates
- Shafting Bars

### Wire Products

- BRC
- Gabion mattresses and baskets
- Binding and Galvanized Wire
- Barbed wire
- Razor wire
- Chicken wire
- Chain link and PVC Coated Chainlink
- Mild Steel Nails
- Weld Mesh

#### Agricultural Tools

- Wheel barrows
- Shovels
- Hammer
- Axes
- Hoes
- Rakes
- Knapsack Sprayers
- Machete

#### Hardware Items

- Hoop Iron
- Polythene
- Cutting/Grinding Discs
- Pliers
- Welding Rods - Apex True Weld
- Nuts and Bolts
- Roofing Sheets
- Clamps
- Galvanized Pipe Fittings
- Green Shade Netting
- Plywood/Marine Ply/Blackboard

#### Sanitary Equipment

- Sanitary Ware
- Grohe

#### Roofing Sheets

- Plain Sheets
- Coloured Sheets
- Industrial Sheets
- Fiberglass Sheets

#### Roofing Sheets Accessories

- Roofing Washers
- Screws
- Roofing Gutters
- Downpipes

#### Construction Chemicals

- Oxides
- White Cement
- Wall Putty

#### Safety Equipment

- Safety Shoes
- Reflector Jackets
- Gloves
- Helmets
- Ear Plugs

## DEFINITIONS

---

### TENSILE TEST

Test pieces are used for establishing mechanical properties. When the test is done, four values (a,b,c and d ) are obtained.

#### 1. TENSILE STRENGTH

The stress required to rupture in tension (pull), expressed in Megapascals (MPa). Also called Breaking Strength, Ultimate Strength and Ultimate Tensile Strength.

#### 2. YIELD STRENGTH

The stress at which a material exhibits a specified limiting set, commonly taken by the offset method as 0.20 percent of the specimen`s original length, expressed in Megapascals.

#### 3. ELONGATION

The amount of permanent stretch, after fracturing in tension, expressed as a percentage of the specimen`s original length.

#### 4. REDUCTION OF AREA

The difference between the original cross sectional area of a specimen and the least cross sectional area after rupturing in tensile tests, expressed as a percentage of the original cross-sectional area.

### IMPACT STRENGTH

A measure of toughness. The force to fracture a notched specimen with a single blow. Expressed in Joules (J) or foot-pounds of the energy absorbed. Designated as "Charpy" or "Izod" Impact Strength depending on the testing machine used.

### HEAT TREATMENT

An operation or combination of operations involving the heating and cooling of a metal to obtain certain desirable conditions or properties, and not for the sole purpose of mechanical working.

### ANNEALING

Heating and cooling primarily:

1. To induce softness
2. To relieve internal stresses
3. To obtain the optimum combination of strength and ductility.

### DUCTILITY

The property which permits deformation under tension without rupture. Values of 'Elongation' and 'Reduction of Area' are generally taken as a measure of ductility.

## **HARDNESS**

Resistance to plastic deformation by indentation, penetration, scratching or bending. Expressed by means of 'Brinell', 'Rockwell', 'Scleroscope' or 'Vickers' hardness numbers depending upon the testing machine used. Should be read in conjunction with specified mechanical required.

## **STRESS RELIEVING**

Heating and cooling to effect the release of stresses contained in material induced by heating, welding or machining.

## **TEMPERING**

Bringing about an intermediate condition in steel between being ductile and very hard, to provide a desired combination of hardness and ductility to achieve prescribed mechanical properties.

## **QUENCHING**

This is the process carried out after the material has been heated to the required temperature. The material is then immersed in specific cooling agents to attain hardness which is dependent on the cooling speed which is possible for the hardening temperature concerned.

## **CASE HARDENING**

In applications where it is necessary for components to have great toughness but at the same time must have a high resistance to wear, the required hardness can be achieved by case hardening the outer surface by means of one of the following methods:

1. Carburizing
2. Carbonitriding
3. Nitriding
4. Nitrocarburizing
5. Tufriiding
6. Flame Hardening
7. Induction Hardening

## **CASE HARDENING**

The maximum section on which certain mechanical properties are guaranteed according to the British Standard Specification, BS 970 Pt of 1983.



# HOT ROLLED PRODUCTS

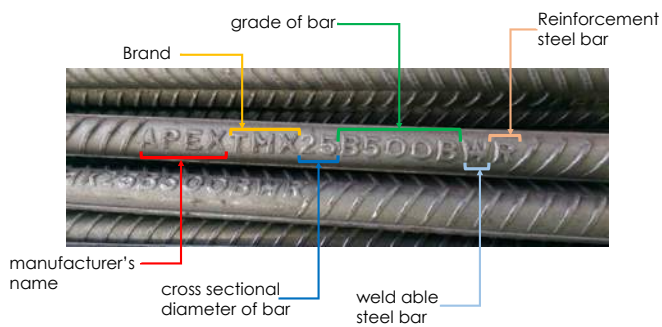
## DEFORMED BARS - APEX - TMX

### ABOUT THE PRODUCT

In 2007, Apex Steel revolutionized the way steel is made in East Africa and became the first local company to manufacture steel to international standards. Apex Steel makes Grade 500+ Deformed Bars – BS 4449:2005 at its technologically advanced manufacturing unit at Athi River. Locally, Kenya Bureau of Standards (KEBS) requires deformed steel bars of Grade 460.

Every meter of the deformed bars bears the trademark, APEX TMX. That's how customers know they are getting the genuine best steel.

**BS: 4449-2005, ISO 6935-2**



### APPLICATIONS

Primarily deformed bars are used for concrete reinforcement in:

1. Buildings - Commercial and Residential
2. Infrastructure - Dams and Power
3. Roads and Bridges

### SPECIFICATIONS

Nominal Diameter mm	Cross Sectional Area mm	Mass per Metre Kg	Minimum Mass per Meter	Maximum Mass Per Meter	Weight kgs/12 Metre
8	50.3	0.39	0.37	0.41	4.74
10	78.5	0.61	0.59	0.64	7.39
12	113	0.88	0.85	0.92	10.66
16	201	1.58	1.51	1.64	18.95
20	314	2.47	2.37	2.56	29.59
25	491	3.85	3.69	4.00	46.25
32	804	6.31	6.05	6.56	75.76
40	1257	9.86	9.26	10.45	118.37

Other unconventional sizes like D14, D22, D28 can be produced subject to a minimum order quantity.

## TOLERANCES

The permissible deviation from nominal mass per meter shall be not more than +/- 4.5% on the nominal diameters greater than 8mm, and +/- 6.0% on nominal diameters less than or equal to 8mm.

## LENGTH

The nominal length of steel bars is 12 meters.

The permissible deviation from the nominal length shall be +100/- 0mm; other tolerances may be agreed at the time of enquiry and order

## CHEMICAL COMPOSITION

Element	Element Content Maximum %
Carbon	0.25
Manganese	1.6
Sulphur	0.05
Phosphorous	0.05
Silicon	0.35
Chromium	0.5
Manganese plus Chromium	1.6

## DEFORMED BARS APEX - TMX GRADE 500

S. No.	Properties	Characteristic Value	Typical Values
1	Yeild Strength. Mpa	500	520 – 625
2	Stress Ratio (TS/YS)	1.13	1.15 – 1.30
3	A5 Elongation, % (L=5Dn)	16	18 – 25

## MILD STEEL SQUARE BARS AND ROUND BARS

### ABOUT THE PRODUCT

Round Bar is a round cross sectional long piece of metal that is known for its high tolerance and dimensional accuracy.

### APPLICATIONS

Round bars are commonly used to separate mesh in concrete slabs and are used in a range of commercial and infrastructure applications.

Plain round bar has a range of applications from reinforced concrete piers, bored piles, footings, walls, beams, columns, slabs, and precast products



The Ultimate  
Splicing System



**Dextra**



**The only rebar splice that maintains the full ductility of the reinforcing bar while**



### Product features

Bartec is a parallel-threaded mechanical splicing system designed for the connection of concrete reinforcing bars Ø12 to 56 mm (ASTM #4 to # 18).

Designed and manufactured in compliance with ACI 318, IBC 2006, BS 8110, Eurocode 2, DIN 1045, CalTrans, ASME Sec III Div 2.

### Benefits

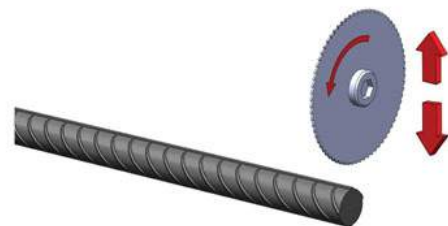
- No reduction of the bar cross section area.
- Full-Tension splice : Bar-break under tensile load.
- Allows full ductile elongation of bars.
- Easy installation, no torque wrench required.
- One standard coupler for all splicing requirements (Standard / Position).
- Manufactured under strict quality assurance plan ISO 9001 and ASME. Third party tested.
- Full traceability of material origin and production batch.
- Type 2 coupler suitable for seismic areas.
- Tested under reverse-cyclic conditions.
- Solves bar congestion problems.
- No staggering of splices bars required.



### A 3 steps process

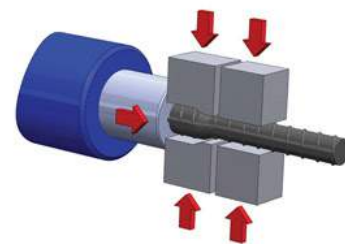
#### 1) Cutting

The end of the reinforcing bar is sawn square.



#### 2) Cold forging

The sawn end of the reinforcing bar is then enlarged by a patented cold forging process. The core diameter of the bar is increased to a pre-determined diameter.



#### 3) Threading

Finally, the thread is mechanically cut onto the enlarged end of the bar.



**Note :** The information in this catalogue is considered up to date at the time of publication. We reserve the right to make technical and design changes at any time. Dextra shall not accept liability for the accuracy of the information in this publication or for any printing errors.



## using the same coupler for standard and position connections

### Applications



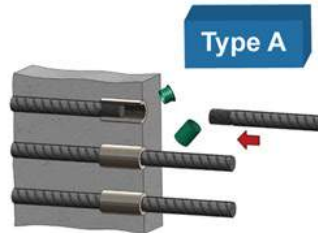
### No torque wrenching required !



### Splicing methods

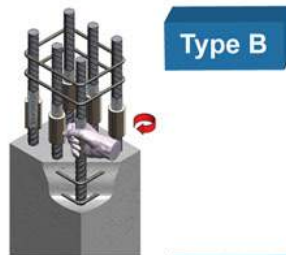
#### Standard splice

Easy connection by bar rotation until full thread engagement.  
Parallel thread : No risk of thread mis-match. No risk of cross-threading.

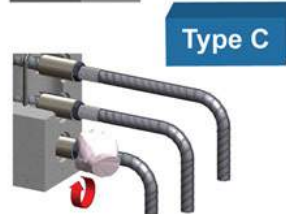


#### Position splice

Even when both bars cannot be turned, the Bartec system uses a standard Bartec coupler (exactly the same as used for type A) :  
The coupler is fully engaged onto the extended thread of the connecting bar. The assembly is simply completed by butting the bars end to end and screwing back the coupler onto the first bar until full engagement.

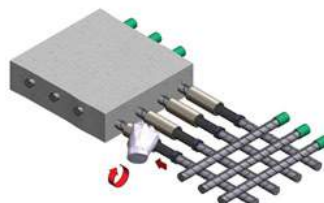


This assembly method is similar to Type B, with the addition of a lock-nut to maintain the second bar in position.



#### Bridging splice

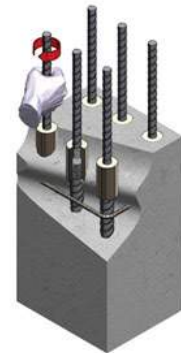
When the bars cannot be brought butt to butt (as it may happen in cages manufacturing), Bartec bridging splices are the answer. This is a variant of the position splice that uses a longer coupler.



#### Transition splice

When there is a need to splice bars of different sizes, it is allowable in most cases to reduce the size of the larger bar and to use a standard coupler.

However the Bartec system also proposes special transition couplers that conveniently avoid the difficult task of planning in advance the need of transitions.



#### Mechanical anchorages

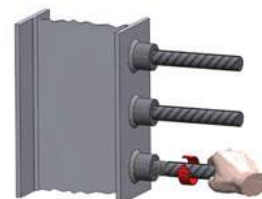
A convenient alternative to hooked bars to provide end anchorages in congested areas.

Bartec standard anchorage heads are circular and have a net bearing area of 4 times or 9 times the cross-section of the bar, but can also be made to order in other shapes or dimensions to fit the application requirement.



#### Weldable couplers

For composite construction where concrete reinforcement bars must be welded to structural steel, Bartec weldable couplers, specially made from low carbon steel, are available.





### Generic specification

- No reduction of the ductility of the reinforcing bar.
- Tensile failure guaranteed to occur away from the joint.
- No reduction of the nominal cross section area of the parent bars.
- Couplers are individually marked to allow full traceability of the material.
- Parallel-thread system.



### Some major references



San Francisco Bay Bridge, U.S.A.



Marina Bay Sands, Singapore



Green point stadium, South Africa



<b>HEADQUARTERS (THAILAND)</b> Tel : (66) 2 726 5731 Fax : (66) 2 328 0374 E-mail : thailand@dextragroup.com	<b>CHINA &amp; TAIWAN</b> Tel : (86) 20 8703 2601 Fax : (86) 20 8703 3281 E-mail : china@dextragroup.com	<b>HONG KONG</b> Tel : (852) 2511 8236 Fax : (852) 2519 0852 E-mail : dplbuilding@dextragroup.com	<b>SOUTH AMERICA</b> Tel : (55 11) 3170 3072 Fax : (55 11) 3170 3072 E-mail : brasil@dextragroup.com
<b>MIDDLE EAST</b> Tel : (971) 4886 5620 Fax : (971) 4886 5621 E-mail : middleeast@dextragroup.com	<b>EUROPE</b> Tel : (33) 1470 47211 Fax : (33) 1470 42897 E-mail : europe@dextragroup.com	<b>INDIA</b> Tel : (91) 22 2839 6824 Fax : (91) 22 2839 2674 E-mail : india@dextragroup.com	<b>NORTH &amp; CENTRAL AMERICA</b> Tel : (1) 562 944 0011 Fax : (1) 562 944 1144 E-mail : america@dextragroup.com



**Dextra**  
www.dextragroup.com



## HOT ROLLED PRODUCTS

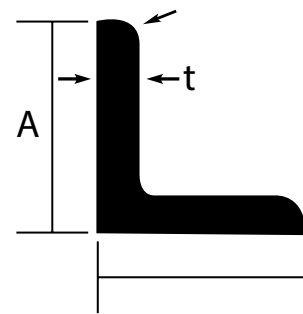
### EQUAL AND UNEQUAL ANGLES

#### EQUAL ANGLES

##### ABOUT THE PRODUCT

Steel for structural sections is normally produced to SANS 1431 grade 350WA and BS EN 10025 grade 275JR.

For improved atmospheric resistance, COR-TEN® A should be used.



#### APPLICATIONS

1. Engineering Construction
2. Residential Construction
3. Non-Residential Construction
4. Mining Infrastructure
5. Transport and Storage
6. Manufacturing

#### EQUAL ANGLES

Size A x B (mm x mm)	Thickness (mm)	Sectional Area (cm <sup>2</sup> )	Weight Per Meter (kg)	Moduli of Section (cm <sup>3</sup> )
20 X 20	3.0	1.12	0.9	0.3
	4.0	1.45	1.1	0.4
25 X 25	3.0	1.41	1.1	0.4
	4.0	1.84	1.4	0.6
	6.0			
30 X 30	3.0	1.73	1.4	0.6
	4.0	2.26	1.8	0.8
	6.0			
40 X 40	3.0	2.34	1.8	1.2
	4.0	3.07	2.4	1.6
	6.0	4.47	3.5	2.3
50 X 50	3.0	2.95	2.3	1.9
	4.0	3.88	3.0	2.5

## HOT ROLLED PRODUCTS

Size A x B (mm x mm)	Thickness (mm)	Sectional Area (cm <sup>2</sup> )	Weight Per Meter (kg)	Moduli of Section (cm <sup>3</sup> )
	4.0	3.88	3.0	2.5
	6.0	5.68	4.5	3.6
60 X 60	6.0	6.84	5.4	5.2
	8.0	8.96	7.0	6.8
70 X 70	6.0	8.06	6.3	7.3
	8.0	10.58	8.3	9.5
	10	13.02	10.2	11.7
75 X 75	5.0	7.27	5.7	7.1
	6.0	8.66	6.8	8.4
	8.0	11.38	8.9	11.0
	10	14.02	11	13.5
80 X 80	6.0	9.29	7.3	9.6
	8.0	12.21	9.6	12.6
	10	15.05	11.8	15.5
	12	17.81	14	18.3
90 X 90	6.0	10.47	8.2	12.2
	8.0	13.79	10.8	16.0
	10	17.03	13.4	19.3
	12	20.19	15.8	23.3
100 X 100	6.0	11.67	9.2	15.2
	8.0	15.39	12.1	20.0
	10	19.03	14.9	24.7
	12	22.59	17.7	29.2
	15		21.91	
120 X 120	8.0		14.71	
	10		18.2	
	12		21.62	
	15		26.64	
130 X 130	8.0	20.22	15.9	34.5
	10	25.06	19.9	42.7
	12	29.82	23.4	50.7
	15	36.81	28.9	62.3
150 X 150	10	29.03	22.8	56.9
	12	34.59	27.2	67.7
	15	42.78	33.6	83.5
	18	50.79	39.9	98.7
200 X 200	12	46.61	36.6	122.2
	15	57.8	45.4	151.4
	18	68.81	54	179.9
	25	93.8	73.6	243.3



## UNEQUAL ANGLES



DESIGNATION	NOMINAL MASS	TYPICAL RADIUS	SECTIONAL AREA	DISTANCE OF CENTRE OF GRAVITY						Inclination of V-V	PAINT AREA	
				$C_x$ mm	$C_x$ mm	$C_x$ mm	$e_x$ mm	$e_u$ mm	$C_u$ mm		axis tana	m <sup>2</sup> /m length
A x A x t mm	kg/m	Root mm	10 <sup>3</sup> mm <sup>2</sup>	$C_x$ mm	$C_x$ mm	$C_x$ mm	$e_x$ mm	$e_u$ mm	$C_u$ mm	axis tana	m <sup>2</sup> /m length	m <sup>2</sup> /ton
100 x 75 x 6	8,044	10	1,025	30,1	17,9	30,1	36,7	69,9	53,9	0,548	0,341	42,44
100 x 75 x 7	9,316	10	1,187	30,6	18,3	30,7	36,6	69,7	54,1	0,549	0,341	36,67
100 x 75 x 8	10,572	10	1,347	31,0	18,7	31,3	36,5	69,5	54,2	0,547	0,341	32,29
100 x 75 x 9	11,812	10	1,505	31,5	19,1	31,8	36,5	69,4	54,3	0,546	0,341	28,92
100 x 75 x 10	13,037	10	1,661	31,9	19,5	32,4	36,5	69,2	54,5	0,544	0,341	26,18
125 x 75 x 7	10,707	11	1,364	40,9	16,4	28,9	42,2	86,7	58,4	0,360	0,391	36,58
125 x 75 x 8	12,160	11	1,549	41,4	16,8	29,8	42,0	84,4	58,6	0,360	0,391	32,11
125 x 75 x 9	13,596	11	1,732	41,8	17,2	30,3	41,9	84,1	58,8	0,358	0,391	28,81
125 x 75 x 10	15,017	11	1,913	42,3	17,6	30,8	41,7	83,8	59,1	0,357	0,391	26,00
125 x 75 x 12	17,812	11	2,269	43,1	18,4	31,7	41,5	83,3	59,5	0,354	0,391	21,92
150 x 75 x 9	15,362	11	1,957	52,7	15,7	28,7	45,0	90,0	51,1	0,260	0,441	23,77
150 x 75 x 10	16,979	11	2,163	53,2	16,1	29,1	44,8	97,7	56,3	0,261	0,441	25,94
150 x 75 x 11	18,581	11	2,367	53,6	16,5	29,5	44,7	97,4	61,6	0,260	0,441	23,77
150 x 75 x 12	20,167	11	2,569	54,1	16,9	29,9	44,5	97,1	66,9	0,259	0,441	21,34
150 x 90 x 9	16,441	12	2,095	49,5	20,0	35,6	50,5	101,5	70,4	0,368	0,470	28,63
150 x 90 x 10	18,176	12	2,315	50,0	20,4	36,1	50,3	101,0	70,6	0,361	0,470	25,84
150 x 90 x 12	21,599	12	2,751	50,8	21,2	37,1	50,0	100,5	71,1	0,358	0,470	21,75
150 x 90 x 15	26,615	12	3,390	52,0	22,3	38,4	49,8	99,8	71,6	0,354	0,470	17,64

## HOT ROLLED PRODUCTS

### MILD STEEL FLAT BARS

#### ABOUT THE PRODUCT

Flat bars are a flat, rectangular section with square edges that come in varying sizes. This cost-effective steel product is suitable for a wide variety of applications and is distributed in the construction, engineering, manufacturing, mining, grating, and fabrication industries. The flat bar's versatility is the main reason it is used throughout various industries, along with the excellent strength and formability combination of steel.



#### TYPICAL USES

1. Engineering Construction
2. Manufacturing
3. Mining Infrastructure
4. Non-Residential Construction
5. Residential Construction
6. Transport & Storage

Length 6meters	
Dimension	Weight
20 x 3mm	2.82
20 x 4mm	3.76
20 x 6mm	5.64
20 x 8mm	7.56
20 x 10mm	9.42
25 X 3mm	3.54
25 x 4mm	4.71
25 x 6mm	7.08
25 x 8mm	9.42
25 x 10mm	11.76
25 x 12mm	14.16
30 x 3mm	4.26
30 x 4mm	5.65
30 x 6mm	8.46
30 x 12mm	16.98
40 x 3mm	5.64
40 x 4mm	7.53
40 x 6mm	11.28
40 x 8mm	15.06
50 x 3mm	7.08
50 x 4mm	9.42
50 x 6mm	14.16
50 x 8mm	18.84
50 x 10mm	23.58
50 x 12mm	28.26
60 x 6 mm	16.98
60 x 8mm	22.26
60 x 10mm	28
60 x 12mm	26.26
65 x 6mm	18.36

Length 6meters	
Dimension	Weight
65 x 8mm	24.48
65 x 9mm	27.54
65 x 10mm	30.6
65 x 12mm	36.72
70 x 6mm	19.8
70 x 8mm	26.4
70 x 10mm	33.0
70 x 12mm	39.54
70 x 16mm	52.74
75 x 6mm	21.18
75 x 9 mm	31.8
75 x 12mm	42.42
100 x 6mm	28.26
100 x 8mm	37.68
100 x 10mm	47.1
100 x 12mm	56.52
100 x 16mm	75.36
130 x 8mm	48.96
130 x 10mm	61.26
130 x 12mm	73.5
130 x 16mm	97.98
150 x 6mm	42.35
150 x 8mm	56.52
150 x 10mm	70.68
150 x 12mm	84.78
150 x 16mm	113.04

## HOT ROLLED PRODUCTS

### MILD STEEL WINDOW SECTIONS

#### ABOUT THE PRODUCT

The window profiles are hot rolled from mild steel with a maximum carbon content of 0.30% making it suitable for welding using any standard welding processes, usually without special precautions. The final result is a moulding of two types of sections; the Zed and the Tee section.

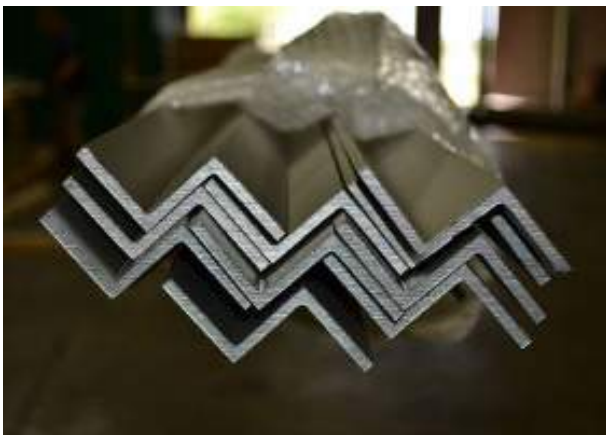
#### MILD STEEL ZED SECTIONS



#### APPLICATIONS

Making window and door frames

Dimension	Weight 6m length in kg
20 x 20 x 3mm	6.50
25 x 25 x 3mm	11.1



#### MILD STEEL TEE SECTIONS



#### APPLICATIONS

Making window and door frames

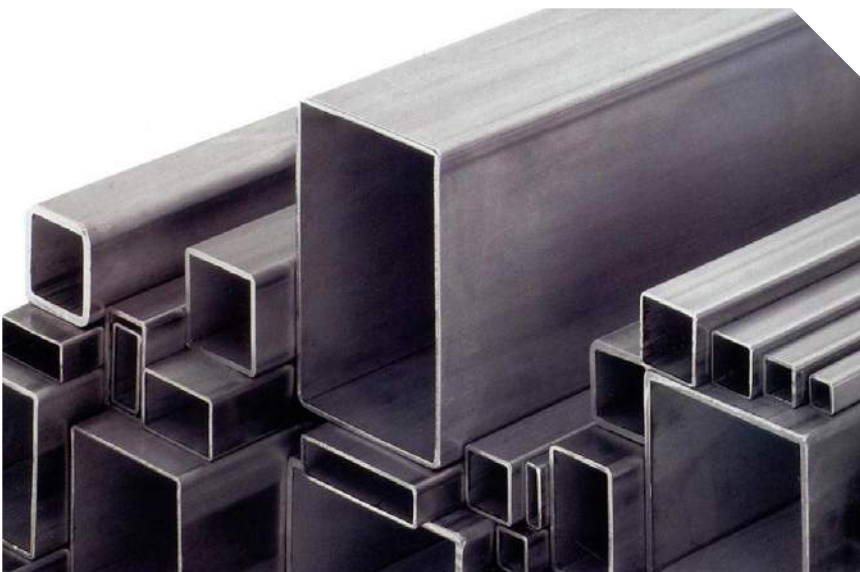
Dimension	Weight 6m length in kg
20 x 20 x 3mm	5.20
25 x 25 x 3mm	6.66



### MILD STEEL RECTANGULAR HOLLOW SECTIONS - RHS

#### ABOUT THE PRODUCT

Rectangular Hollow sections conform to Kenya Bureau of Standards KS02-104. Hollow sections are manufactured in tube mills using a high-frequency induction welding technique. The strip is continuously seam welded while round in shape and then gradually brought to the desired section in the sizing mill. The welded seam is placed under a greater amount of cold working while being sized, testing the strength of a seam weld and ensuring that each length of hollow sections is welded for maximum strength.



#### FEATURES AND BENEFITS APEX TUBES:

1. Strength - The use of welded joints throughout their extension means that the resistant section in the joints is used completely.
2. Quality - Lighter and more diaphanous structures. Pieces of greater length with fewer joints.
3. Precision - Easily executed direct joints, shorter construction times and easy maintenance.

#### APPLICATIONS

1. Furniture industries
2. Domestic applications
3. Bus body
4. General fabrication
5. Fencing etc.



# COLD FORMED SECTIONS

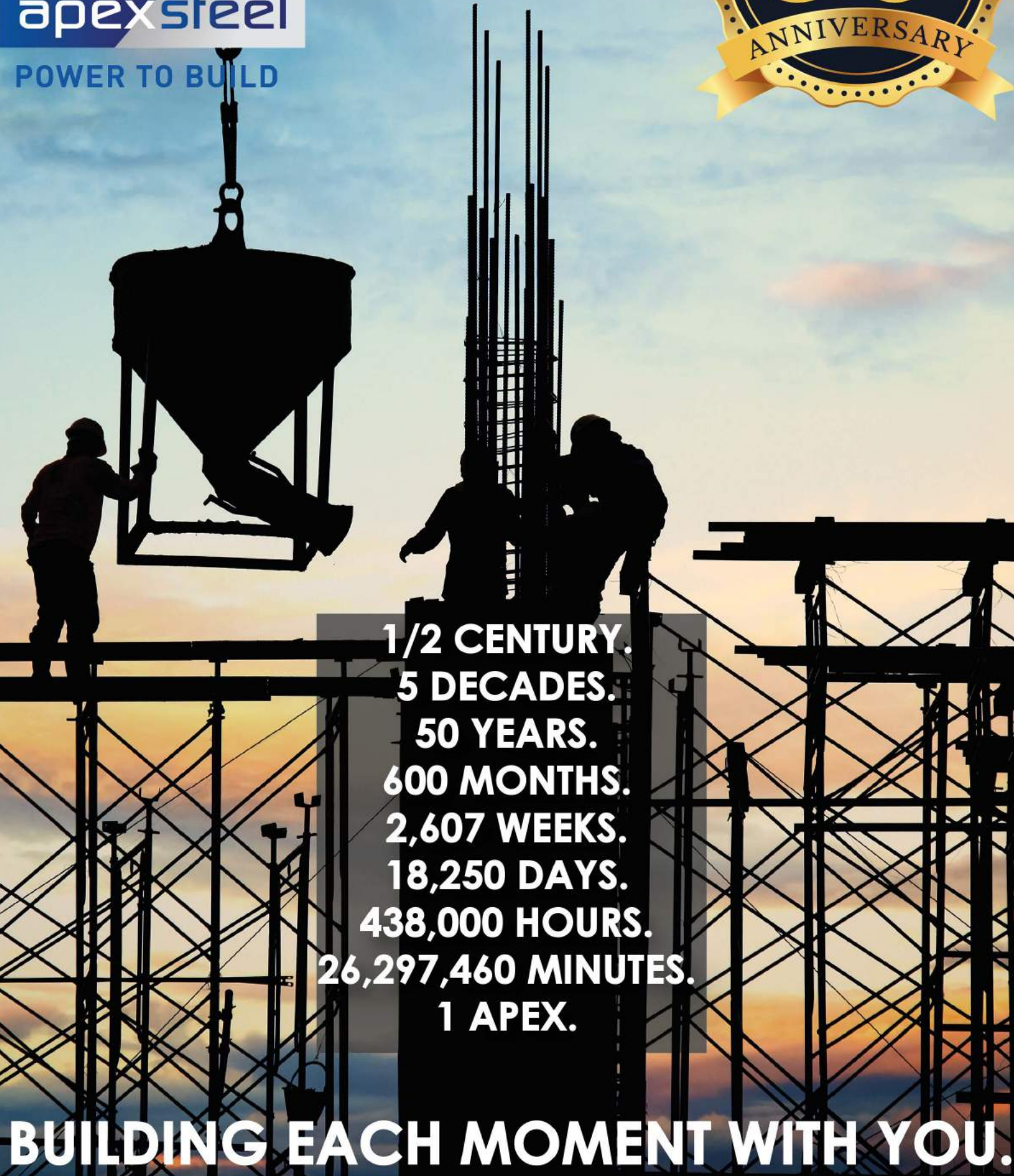
## TOLERANCES IN DIMENSIONS

CHARACTERISTICS	TOLERANCES
Outside Dimensions	±1.5mm or 2% whichever less
Deviation from straightness	0.17% of total length
Squareness of corners	90°±2°
Twist	Not to exceed 2mm + 0.5mm per meter
Concavity/Convexity	(i)For dimensions up to 50mm,2% or 0.5mm whichever is less (ii)For dimensions up to 50mm,1% or 1.5mm whichever is less
Outside bend radii for right angle bends	3t max
Length (6meters) - exact	- 0 and +10mm
- Standard	-10mm and +100mm
Thickness	±10%

SIZE (DXB)	THICKNESS (t)	WEIGHT	PIECES /M.T	SECT AREA	MOMENT OF INERTIA		RADIUS OF GYRATION		SECTION MODULES	
mm	mm	Kg/m		cm <sup>2</sup>	1x(cm <sup>2</sup> )	1y(cm <sup>4</sup> )	1x(cm <sup>4</sup> )	1y(cm <sup>4</sup> )	Zx(cm <sup>3</sup> )	Zy(cm <sup>3</sup> )
40x20	1.0	3.86	154	1.38	2.87	0.96	1.44	0.83	1.44	0.96
40x20	1.2	1.08	154	1.38	2.87	0.96	1.44	0.83	1.44	0.96
	1.5	1.4	119	1.71	3.49	1.15	1.43	0.83	1.75	1.15
	2.0	1.76	95	2.24	4.44	1.44	1.14	0.8	2.22	1.43
40x25	1.2	1.18	141	1.5	3.32	1.59	1.49	1.03	1.66	1.27
	1.5	1.46	114	1.86	4.04	1.73	1.47	1.01	2.02	1.54
	2.0	1.91	87	2.44	5.17	2.43	1.45	0.99	2.59	1.94
	3.0	2.78	60	3.54	7.11	3.26	1.42	0.96	3.59	2.61
50x25	1.2	1.37	122	1.74	4.73	1.93	1.81	1.05	2.29	1.54
	1.5	1.69	99	2.15	7	2.43	1.8	1.04	2.8	1.87
	2.0	2.23	75	2.84	9	2.96	1.78	1.02	3.6	2.37
	3.0	3.25	51	4.14	12.55	3.99	1.74	0.96	5.02	3.19
60x40	1.2	1.84	91	2.34	12.12	6.43	2.27	1.66	4.04	3.24
	1.5	2.28	73	2.9	14.89	7.93	2.26	1.65	4.96	3.96
	2.0	3.01	55	3.83	19.31	10.22	2.24	1.63	6.43	5.11
	3.0	4.43	38	5.64	27.83	14.31	2.21	1.59	9.12	7.1
75x50	2.0	3.73	45	4.84	38.5	20.5	2.82	2.06	10.2	8.21
	3.0	5.6	30	7.14	55.3	29.1	2.78	2.02	14.7	11.6
	4.0	7.34	23	9.36	70.5	36.7	2.74	1.98	18.8	14.7
100x50	2.0									
	3.0	6.78	25	8.64	112	37.4	3.6	2.08	22.4	14.9
	4.0	8.92	19	11.3	144	47.3	3.56	2.04	28.8	18.9
120x60	2.0	5.53	30	7.04	135.58	46.24	4.39	2.56	22.6	15.41
	3.0	8.2	20	10.44	197.31	66.41	4.35	2.52	32.88	22.14

## COLD FORMED SECTIONS

SIZE (DXB) mm	THICKNESS (t) mm	WEIGHT Kg/m	PIECES /M.T	SECT AREA cm <sup>2</sup>	MOMENT OF INERTIA		RADIUS OF GYRATION		SECTION MODULES	
					1x(cm <sup>2</sup> )	1y(cm <sup>4</sup> )	1x(cm <sup>4</sup> )	1y(cm <sup>4</sup> )	Zx(cm <sup>3</sup> )	Zy(cm <sup>3</sup> )
	4.0	10.8	15	13.76	255.2	84.77	4.31	2.48	42.53	28.26
	6.0	15.83	11	20.16	360.12	116.47	4.23	2.4	60.02	38.82
125x75	2.0	6.15	27	7.84	172.53	78.56	4.69	3.17	27.6	20.95
	3.0	9.14	18	11.64	251.74	113.68	4.65	3.13	40.28	30.32
	4.0	12.06	14	15.36	326.47	146.21	4.61	3.09	52.24	38.99
	6.0	17.71	9	22.56	463.18	203.99	4.53	3.01	74.11	54.4
150x50	3.0	9.14	18	11.6	311	54	5.18	2.15	41.5	21.6
	4.0	12.06	14	15.3	404	68.5	5.14	2.11	53.8	27.4
	6.0	17.71	9	22.56	574.03	93.15	5.04	2.03	76.54	37.26
150x100	3.0	11.49	15	14.64	473	253	5.69	4.16	63.1	50.7
	4.0	15.2	11	19.36	617	329	5.65	4.12	82.3	65.7
	6.0	22.42	7	28.56	885	466	5.57	4.04	118	93.3
200x50	2.0	7.72	22	9.84	447	49.4	6.74	2.24	44.7	19.74
	3.0	11.49	15	14.64	656	70.6	6.69	2.2	65.62	28.25
	4.0	15.2	11	19.36	856	89.8	6.65	2.15	85.61	35.92
	6.0	22.42	7	28.56	1229	122.4	6.56	2.07	122.92	48.95
200x100	3.0	13.85	12	17.64	947	324	7.33	4.28	94.72	64.78
	4.0	18.34	9	23.36	1240	421	7.29	4.24	124.03	84.15
	6.0	27.13	6	34.56	1794	599	7.2	4.16	173.39	119.81



**1/2 CENTURY.  
5 DECADES.  
50 YEARS.  
600 MONTHS.  
2,607 WEEKS.  
18,250 DAYS.  
438,000 HOURS.  
26,297,460 MINUTES.  
1 APEX.**

**BUILDING EACH MOMENT WITH YOU.**



# COLD FORMED SECTIONS

## MILD STEEL SQUARE HOLLOW SECTIONS - SHS

### ABOUT THE PRODUCT

Square Hollow Sections are made to the Kenya Bureau of Standards specifications KS02 – 104:2001. The manufacturing process is similar to that of RHS, after which the pipes pass through sizing rolls and their profiles are converted into Square Hollow Sections.



### APPLICATIONS

1. Furniture industries
2. Domestic applications
3. Bus body
4. General fabrication
5. Fencing etc.

SIZE (DXB)	THICKNESS (t)	WEIGHT	PIECES /M.T	SECT AREA	MOMENT OF INERTIA		RADIUS OF GYRATION		SECTION MODULES	
					1x(cm <sup>2</sup> )	1y(cm <sup>4</sup> )	1x(cm <sup>4</sup> )	1y(cm <sup>4</sup> )	Zx(cm <sup>3</sup> )	Zy(cm <sup>3</sup> )
12X12	1.0	0.37	450	0.44	0.08	0.08	0.45	0.45	0.12	0.12
	1.2	0.41	407	0.52	0.1	0.1	0.44	0.44	0.17	0.17
	1.5	0.49	340	0.63	0.11	0.11	0.43	0.43	0.18	0.18
16X16	1.0	0.46	362	0.6	0.22	0.22	0.61	0.61	0.27	0.27
	1.2	0.63	298	0.71	0.26	0.26	0.6	0.6	0.32	0.32
	1.5	0.68	245	0.87	0.3	0.3	0.59	0.59	0.38	0.38
20X20	1.0	0.61	273	0.76	0.46	0.46	0.78	0.78	0.46	0.46
	1.2	0.71	235	0.9	0.53	0.53	0.77	0.77	0.53	0.53
	1.5	0.87	192	1.11	0.64	0.64	0.76	0.76	0.64	0.64



# COLD FORMED SECTIONS

	2.0	1.13	147	1.44	0.79	0.79	0.74	0.74	0.79	0.79
25X25	1.0	0.8	208	0.96	0.92	0.92	0.98	0.98	0.74	0.74
	1.2	0.9	185	1.14	1.08	1.08	0.97	0.97	0.86	0.86
	1.5	1.11	150	1.41	1.3	1.3	0.96	0.96	1.04	1.04
	2.0	1.75	95	2.24	2.94	2.94	1.14	1.14	1.96	1.96
	3.0	2.07	81	2.64	2.17	2.17	0.9	0.9	1.74	1.74
30X30	1.0	0.93	179	1.16	1.63	1.63	1.18	1.18	1.08	1.08
	1.2	1.08	154	1.38	1.91	1.91	1.17	1.17	1.27	1.27
	1.5	1.34	124	1.71	2.32	2.32	1.16	1.16	1.55	1.55
	2.0	1.75	95	2.24	2.94	2.94	1.14	1.14	1.96	1.96
	3.0	2.54	66	3.24	3.99	3.99	1.1	1.1	2.66	2.66
40X40	1.2	1.46	114	1.86	4.67	4.67	1.58	1.58	2.34	2.34
	1.5	1.81	92	2.31	5.71	5.71	1.57	1.57	2.86	2.86
	2.0	2.39	70	3.04	7.34	7.34	1.55	1.55	3.67	3.67
	3.0	3.48	48	4.44	10.2	10.2	1.51	1.51	5.1	5.1
	4.0	4.72	48	4.44	10.2	10.2	1.51	1.51	5.1	5.1
50X50	1.0	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	1.2	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	1.5	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	2.0	3.01	55	3.84	14.77	14.77	1.96	1.96	5.91	5.91
	3.0	4.43	38	5.64	20.85	20.85	1.92	1.92	8.34	8.34
	4.0	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
60X60	1.0	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	1.2	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	1.5	2.28	73	2.91	11.42	11.42	1.98	1.98	4.57	4.57
	2.0	3.01	55	3.84	14.77	14.77	1.96	1.96	5.91	5.91
	3.0	5.37	31	6.84	37.14	37.14	2.33	2.33	12.38	12.38
	4.0	7.03	24	8.96	47.07	47.07	2.29	2.29	15.69	15.69
75X75	2.0	4.58	36	5.84	51.91	51.91	2.98	2.98	13.84	13.84
	3.0	6.78	25	8.64	74.78	74.78	2.94	2.94	19.94	19.94
	4.0	8.92	19	11.36	95.75	95.75	2.9	2.9	25.53	25.53
	6.0	13.0	13	16.56	132.4	132.4	2.83	2.83	35.31	35.31
100X100	2.0	6.15	27	7.84	125.54	125.54	4	4	25.11	25.11
	3.0	9.14	18	11.64	182.71	182.71	3.96	3.96	36.54	36.54
	4.0	12.18	14	15.36	236.34	236.34	3.92	3.92	47.27	47.27
	6.0	17.71	9	22.56	333.59	333.59	3.85	3.85	66.72	66.72
125X125	3.0	11.49	15	14.6	363	363	4.98	4.98	58.14	58.14
	4.0	15.2	11	19.36	473	473	4.94	4.94	75.67	75.67
	6.0	22.42	7	28.56	676	676	4.86	4.86	108.12	108.12
150X150	3.0	13.85	12	17.64	636	636	6	6	84.74	84.74
	4.0	18.34	9	23.36	831	831	5.96	5.96	110.74	110.74
	6.0	27.13	6	34.56	1196	1196	5.88	5.88	159.53	159.53
175X175	3.0	21.48	8	27.36	1334	1334	6.98	6.98	152.47	152.47
	4.0	21.48	8	27.36	1334	1334	6.98	6.98	152.47	152.47
	6.0	31.84	5	40.56	1933	1933	6.9	6.9	220.93	220.93
200X200	4.0	24.62	7	31.36	2009	2009	8	8	200.87	200.87
	6.0	36.55	5	46.56	2923.35	2923.35	7.92	7.92	292.33	292.33

# COLD FORMED SECTIONS

## MILD STEEL CIRCULAR HOLLOW SECTIONS - CHS

### ABOUT THE PRODUCT

Circular Hollow Sections (CHS) are made to Kenya Bureau of Standards KS 02-104:2001. The hot rolled coil is slit suitably and fed into the mill and gradually shaped from the flat strips to the required circular profile, while the edges are prepared for high frequency welding. A flying shear then cuts the pipe to the exact length required.



### APPLICATIONS

- Furniture industries
- Domestic applications
- Bus body fabrication
- General fabrication
- Fencing and gate poles

SIZE (D)	THICKNESS (t)	WEIGHT	PIECES /M.T	SECT AREA	MOMENT OF INERTIA	RADIUS OF GYRATION	SECTION MODULES
<b>mm</b>	<b>mm</b>	<b>Kg/m</b>		<b>cm<sup>2</sup></b>	<b>1(cm<sup>4</sup>)</b>	<b>1(cm)</b>	<b>Zy(cm<sup>3</sup>)</b>
16	1.0	0.37	451	0.47	0.13	0.53	0.17
	1.2	0.44	379	0.56	0.15	0.52	0.19
	1.5	0.54	309	0.68	0.18	0.52	0.23
19	1.0	0.44	379	0.57	0.23	0.64	0.24
	1.2	0.53	315	0.67	0.27	0.63	0.28
	1.5	0.65	256	0.82	0.32	0.62	0.33
20	1.0	0.50	333	0.60	0.27	0.67	0.27
	1.2	0.59	283	0.71	0.31	0.67	0.31
	1.5	0.75	222	0.87	0.38	0.66	0.38

## COLD FORMED SECTIONS

SIZE (D)	THICKNESS (t)	WEIGHT	PIECES /M.T	SECT AREA	MOMENT OF INERTIA	RADIUS OF GYRATION	SECTION MODULES
22	1.0	0.52	322	0.66	0.36	0.74	0.33
	1.2	0.62	269	0.78	0.43	0.74	0.39
	1.5	0.76	220	0.97	0.51	0.73	0.46
25	1.0	0.59	282	0.75	0.54	0.85	0.44
	1.2	0.70	237	0.90	0.64	0.84	0.51
	1.5	0.87	192	1.11	0.77	0.83	0.61
32	1.2	0.91	183	1.16	1.38	1.09	0.86
	1.5	1.13	148	1.44	1.68	1.08	1.05
33.5	1.2	0.96	174	1.22	1.59	1.14	0.95
	1.5	1.18	141	1.51	1.93	1.13	1.15
38	1.2	1.12	149	1.39	2.35	1.3	1.24
	1.5	1.38	121	1.72	2.87	1.29	1.51
42.25	1.2	1.21	137	1.55	3.26	1.45	1.54
	1.5	1.54	108	1.92	3.99	1.44	1.89
	2.0	1.90	87	2.53	5.13	1.42	2.43
45	1.2	1.30	129	1.65	3.96	1.55	1.76
	1.5	1.61	104	2.05	4.85	1.54	2.16
	2.0	2.12	79	2.70	6.26	1.52	2.78
48.25	1.2	1.39	120	1.77	4.91	1.66	2.04
	1.5	1.73	96	2.20	6.02	1.65	2.5
	2.0	2.28	73	2.91	7.78	1.64	3.23
51	1.5	1.87	89	2.33	7.15	1.75	2.8
	2.0	2.42	69	3.08	9.25	1.73	3.63
60	1.5	2.16	77	2.76	11.8	2.07	3.93
	2.0	2.86	58	3.64	15.34	20.5	5.11
	2.5	3.54	47	4.52	18.7	2.03	6.23
76	2.0	3.75	44	4.65	31.85	2.62	8.38
	2.5	4.53	37	5.77	39.02	2.6	10.27
89	2.0	4.29	39	5.47	51.74	3.08	11.63
	2.5	5.37	31	6.79	63.59	3.06	14.29

## COLD FORMED SECTIONS

### GALVANIZED(WATER PIPES) AND BLACK PIPES

#### ABOUT THE PRODUCT

Accurately sized strips, cut from high quality hot rolled mild steel coils, are fed into the tube mill. The flat strip is gradually formed to 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 create its dimensions.

Within specified tolerances. The pipes are then cut to the desired length. The cut pipes are end-faced, straightened and hydro tested. Each pipe is subjected to a specified pressure by the hydro tester to ensure that the welding is strong and free from leakage. After this stage, the pipes are galvanized, threaded and socketed. Galvanization is the process of applying a protective zinc coating to steel to prevent it from rusting.



#### APPLICATIONS

1. Galvanized Pipes - Irrigation, pumping, plumbing, sewerage
2. Black pipes – Scaffolding pipes, fire protection

#### COIL SLITTING

We offer medium gauge mild steel coil precision slitting. Fitted with interchangeable slitter heads, our machine features the use of shimless tooling with software generated setups to provide repeatable accuracy during the slitting operation.



# COLD FORMED SECTIONS

## GALVANISED AND BLACK STEEL PIPES AS PER KS 06-259 AND BS 1387

	NOMINAL BORE		WALL THICKNESS	APPROXIMATE OUTSIDE DIAMETER	WEIGHT OF BLACK PIPES PLAIN END		WEIGHT OF BLACK PIPES THREADED & SOCKETED		WEIGHT OF GALVANISED PIPE THREADED & SOCKETED	
	mm	in			Kg/m	m/M.T	Kg/m	m/M.T	Kg/m	m/M.T
LIGHT 'A'	15	½"	2.00	21.3	0.95	1053	0.96	1042	1.04	962
	20	¾"	2.35	26.9	1.41	709	1.42	704	1.53	654
	25	1"	2.65	33.7	2.01	498	2.03	493	2.19	457
	32	1¼"	2.65	42.4	2.58	388	2.61	383	2.82	355
	40	1½"	2.90	48.3	3.25	308	3.29	304	3.55	282
	50	2"	2.90	60.3	4.11	243	4.18	239	4.51	222
	65	2½"	3.25	76.2	5.8	172	5.92	169	6.39	156
	80	3"	3.25	88.9	6.81	147	6.98	143	7.54	133
	100	4"	3.65	114.3	9.89	101	10.2	98	11.02	91
MEDIUM 'B'	15	½"	2.65	21.3	1.22	820	1.23	813	1.33	752
	20	¾"	2.65	26.9	1.58	633	1.59	629	1.72	581
	25	1"	3.25	33.7	2.44	410	2.46	407	2.66	376
	32	1¼"	3.25	42.4	3.14	318	3.17	315	3.42	292
	40	1½"	3.25	48.3	3.61	277	3.65	274	3.94	254
	50	2"	3.65	60.3	5.10	196	5.17	193	5.58	179
	65	2½"	3.65	76.2	6.51	154	6.63	151	7.16	140
	80	3"	4.05	88.9	8.47	118	8.64	116	9.33	107
	100	4"	4.50	114.3	12.10	83	12.40	81	13.39	75
	125	5"	4.85	139.7	16.2	62	16.7	60	18.04	55
	150	6"	4.85	165.1	19.2	52	19.8	51	21.38	47
HEAVY 'C'	15	½"	3.25	21.3	1.45	690	1.46	685	1.58	633
	20	¾"	3.25	26.9	1.9	526	1.91	524	2.06	485
	25	1"	4.05	33.7	2.97	337	2.99	334	3.23	310
	32	1¼"	4.05	48.3	4.43	226	4.47	224	4.83	207
	40	1½"	4.05	48.3	4.43	226	4.47	224	4.83	207
	50	2"	4.50	60.3	6.17	162	6.24	160	6.74	148
	65	2½"	4.50	76.2	7.9	127	8.02	125	8.66	115
	80	3"	4.85	88.9	1.1	99	10.3	97	11.12	90
	100	4"	5.40	114.3	14.4	69	14.7	68	15.88	63
	125	5"	5.40	139.7	17.8	56	18.3	55	19.76	51
	150	6"	5.40	165.1	21.2	47	21.8	46	23.54	42

### 200mm and 100mm GALVANISED AND BLACK STEEL PIPES (Detailed specification on request)

200	8	5.20	219.1	27.71	36	28.56	35	30.84	32
200	8	6.00	219.1	31.82	31	32.57	31	35.18	28
250	10	6.00	267.0	39.09	26	40.01	25	43.23	23

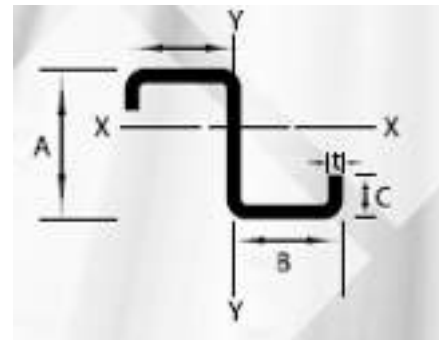
# COLD FORMED SECTIONS

## ZED PURLIN

### ABOUT THE PRODUCT

Z-sections feature one broad and one narrow flange allowing the two sections to fit together snugly, making them suitable for lapping. Z sections of the same depth and different thickness' can be lapped in any combination. Purlins and girts that are lapped form a structurally continuous line along the length of the building, a factor that contributes significantly to the reduction in building costs.

They are manufactured to KS02 – 104 Kenya Bureau of Standards. Advantages are high strength and saving on structural steel used.



### APPLICATIONS

Support roof or wall sheeting primarily in sheds and large industrial and commercial buildings.

SIZE (AXB)		THICKNESS (t)	WEIGHT	SECT AREA	DIMENSIONS			MOMENT OF INERTIA		RADIUS OF GYRATION		SECTION MODULES	
mm	inch	mm	Kg/m	(cm <sup>2</sup> )	A	B	C	I <sub>x</sub>	I <sub>y</sub>	z <sub>x</sub>	z <sub>y</sub>	i <sub>x</sub>	i <sub>y</sub>
					mm	mm	mm	(cm <sup>4</sup> )	(cm <sup>4</sup> )	(cm)	(cm)	(cm <sup>3</sup> )	(cm <sup>3</sup> )
101.6x50.8	4''x 2''	2.0	3.64	4.63	101.6	50.8	12.60	70.18	33.87	13.81	6.80	3.83	2.70
114.6x50.8	4½x2''	2.0	3.85	4.90	114.6	50.8	22.20	98.24	33.87	17.19	6.80	4.47	2.62
127.0x50.8	5''x2''	2.0	4.05	5.16	127.0	50.8	22.20	125.99	33.87	19.84	6.80	4.94	2.56
139.7x50.8	5½x2''	2.0	4.24	5.40	139.7	50.8	22.20	157.80	33.87	22.60	6.80	5.40	2.50
152.4x50.8	6''x2''	2.0	4.44	5.66	152.2	50.8	22.20	194.14	33.87	25.47	6.80	5.85	2.44
177.8x50.8	7''x2''	2.0	4.95	6.30	177.8	50.8	22.20	285.83	34.57	32.15	6.94	6.73	2.34
177.8x50.8	7''x2''	2.5	6.15	7.84	177.8	50.8	22.20	350.49	41.58	39.42	8.39	6.68	2.30

# COLD FORMED SECTIONS

## PLAIN CHANNELS (COLD FORMED)

### ABOUT THE PRODUCT

Cold formed plain channels are manufactured in our modern rolling mill from 12 Ga. (2.6mm), 14 Ga. (1.9mm), and 16 Ga. (1.5mm) low carbon steel strips. A continuous slot with in-turned lips provides the ability to make attachments at any point.

Plain channels are commonly used in a number of structures enhancing and edging projects; offering a durable, reliable and long lasting finish.



### APPLICATIONS

- Engineering Construction
- Residential Construction
- Non-Residential Construction
- Mining Infrastructure
- Transport and Storage
- Manufacturing

SIZE (DXB)	THICKNESS (t)	WEIGHT	SECT AREA	MOMENT OF INERTIA		SECTION MODULES		RADIUS OF GYRATION		P
				Ix	Iy	Zx	Zy	ix	iy	
mm	mm	Kg/m	(cm <sup>2</sup> )	(cm <sup>4</sup> )	Iy(cm <sup>4</sup> )	Ix(cm)	Iy(cm)	Zx(cm <sup>3</sup> )	Zy(cm <sup>3</sup> )	mm
50X50	1.5	1.88	2.39	11.24	6.62	4.43	2.02	2.17	1.67	17.81
	2.0	2.32	2.96	13.69	8.16	5.40	2.50	2.15	1.66	18.03
	3.0	3.62	4.61	20.23	12.36	7.97	3.85	2.10	1.64	18.69
65X50	2.0	2.46	3.14	23.63	8.54	7.27	2.50	2.71	1.63	15.91
	3.0	3.60	4.59	33.99	12.41	10.46	3.68	2.67	1.61	16.28
75X50	2.0	2.62	3.34	32.62	8.95	8.70	2.56	3.09	1.62	15.04
	3.0	3.84	4.89	47.12	13.03	15.56	3.77	3.05	1.60	15.04
100X50	2.0	3.13	3.99	65.55	10.36	12.90	2.79	3.05	1.61	13.64
	3.0	4.91	6.25	98.93	15.94	19.69	4.34	3.94	1.59	14.20
150X50	2.0	3.94	5.02	168.89	11.69	22.17	2.93	5.80	1.52	11.04
	3.0	6.21	7.90	260.08	18.02	34.14	4.95	5.73	1.51	11.58

# COLD FORMED SECTIONS

## STEEL DOOR FRAMES SECTIONS

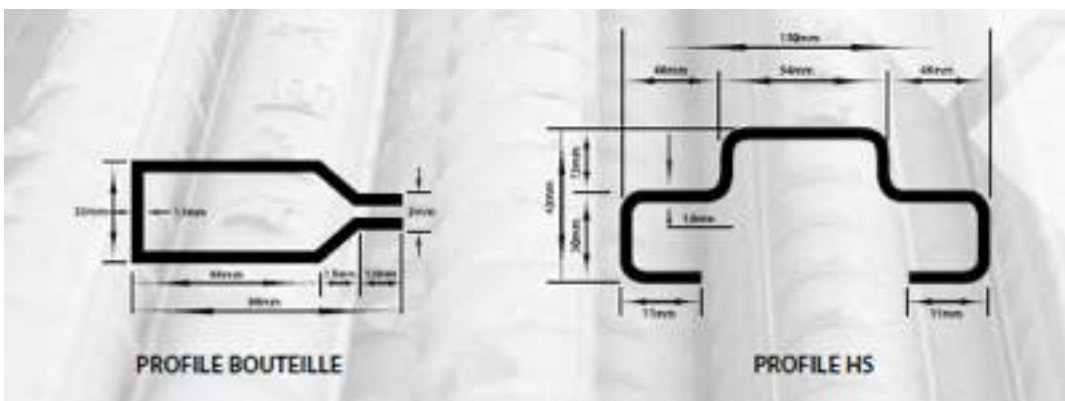
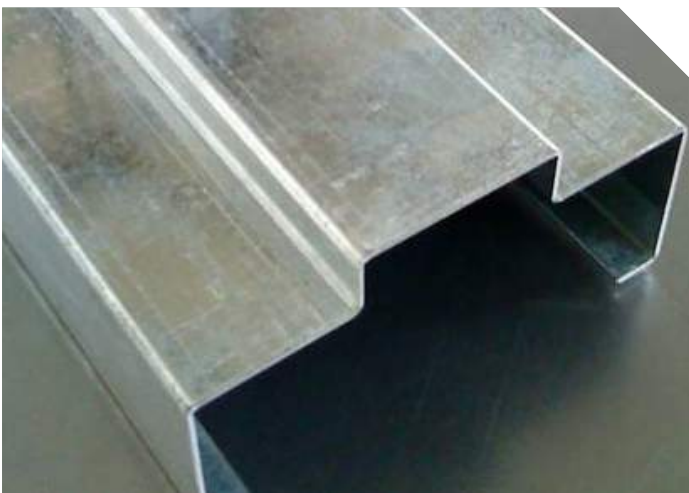
### ABOUT THE PRODUCT

Steel door frame sections are cold formed using hot rolled steel strips. During rolling, care is taken to ensure dimensional uniformity, an extremely smooth surface finish and accurately finished edges. The section being of structural strength has of late come to be a better alternative to timber door frames.

### APPLICATIONS

Timber door frames sections have issues such as deterioration due to weather, warping and difficulty of installation.

Steel door frame sections can be used in any modern building, from apartments to educational institutions, low-cost housing to high rise office complexes.



### PROFILE DIMENSIONS AND WEIGHT OF SECTIONS

PROFILE	SIZE (mm)	THICKNESS(mm)	WEIGHT Kgs/pc(6m)	THICKNESS (mm)	WEIGHT Kgs/pc(6m)
Bouteille	94x33	12	12.80	1.5	15.60
HS	150x43x11	12	13.60	1.5	18.00



# PLATES

## MILD STEEL PLATES

### ABOUT THE PRODUCT

Apex Steel supplies mild steel plates from 1mm - 100mm in thickness in dimensions of 8ft x 4ft. plates can also be cut into special lengths.



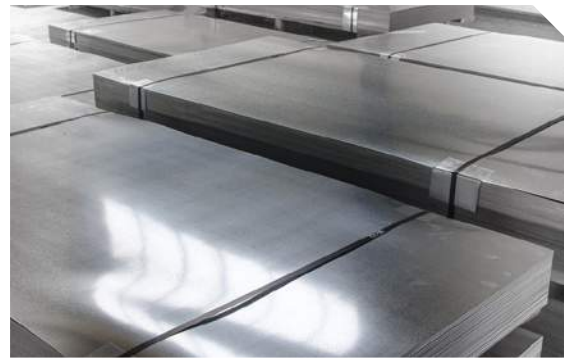
### APPLICATIONS

They are used in canopies, metal fabrication, platforms, pedestals, structures and stands.

## GALVANIZED PLATES

### ABOUT THE PRODUCT

Galvanizing is a process of coating iron or steel with zinc in order to provide greater protection against corrosion of the iron or steel base. Galvanized sheets are stocked in standard sizes; 0.3mm-2mm thickness in the dimension of 8ft x 4ft. Sheets can also be cut into special lengths.



### APPLICATIONS

1. Door and window hoods.
2. Sheet metal for flashing, gutters and downspouts.
3. Hot-dipped galvanized steel nails.

## CRCA PLATES

### ABOUT THE PRODUCT

Cold Rolled Close Annealed Sheets (CRCA) are cut from CRCA coils and can be supplied in standard or customized sizes. CRCA sheets are soft (annealed) and have better and controlled dimensional accuracy.



### APPLICATIONS

1. Fabrication
2. Drawing and forming applications
3. Manufacturing components
4. Painting or surface coating application

# PLATES

THICKNESS in mm	MILD STEEL, STAINLESS STEEL, C.R.C.A SHEETS, GALVANISED PLATES in 8ft x 4ft	ALUMINIUM in 8ft x 4ft
0.4	9.33	3.23
0.5	11.7	4.03
0.6	14	4.48
0.8	18.7	6.45
1.0	23.3	8.6
1.2	28	9.68
1.5	35	12.10
2.0	46.7	16.10
1.5	35	12.10
2.0	46.7	16.10
2.5	58.3	20.20
2.8	65.3	22.60
3.0	70	24.20
4.0	93.3	32.30
4.5	105	36.30
6.0	140	48.40
7.0	164	
8.0	187	
9.0	210	
10.0	234	
12.0	280	
15.0	350	
18.0	420	
20.0	468	
22.0	514	
25.0	585	
30.0	702	
32.0	749	
38.0	887	
50.0	1170	
65.0	1515	
75.0	1750	

- MS Plates - Available sizes - 1mm to 75mm
- CRCA Plates - Available sizes - 0.6mm to 3mm
- Galvanized Plates - Available sizes - 0.4mm to 2mm

# COLD FORMED SECTIONS

## TEARDROP/CHEQUERED PLATES

### ABOUT THE PRODUCT

Chequered plates are plates with a regular pattern of projections on one side, showing diamond or other shapes, with the reverse side being smooth. There are tear drop mild steel chequered plates, diamond shaped mild steel chequered plates and embossed mild steel plates. This kind of plate is frequently made of steel, stainless steel or aluminium plate materials. Chequered plates are skid-proof because of the projections. Steel chequered plates enjoy good wearability, slip resistance and a self-draining surface.

They are available in either mild steel or aluminium



MS Chequered Plate



Aluminium Chequered Plate

### APPLICATIONS

In the engineering and construction industry, chequered plates are widely applied in the construction sector for stair treads, platforms and walkways, as well as automobiles and agricultural sectors. In enterprises, especially shops, stairs and catwalks usually employ chequered plates to protect workers' safety.

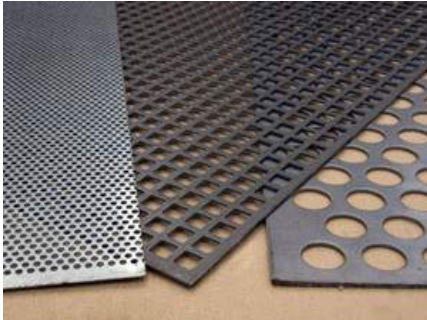
THICKNESS in mm	MILD STEEL(Kgs)	ALUMINIUM (5 Thread) (Kgs)
1.2	28.08	12.00
1.5	35.10	15.35
1.6	43.2	
1.8	48.6	1
2.0	54	19.3
2.3	62.1	
2.5	67.5	
2.8	71.0	
3.0	76.0	32.2
4.0	98.7	
4.5	115.0	
6.0	150.0	
8.0	187.20	

# COLD FORMED SECTIONS

## MILD STEEL PERFORATED SHEETS

### ABOUT THE PRODUCT

Perforated steel sheets are sheet products that are punched with a wide variety of hole sizes and patterns in order to provide an aesthetic appeal. Perforated steel sheets offer savings in weight, the passage of light, liquid, sound and air.



### APPLICATIONS

Perforated steel is extremely versatile and applies itself to a variety of applications such as balustrade infill panels, railings infill panels, acoustics, sound proofing, security screens, louvres and ventilation, and air conditioning grilles.

Perforated metal sheets are also widely utilized in interior design, stage design, exhibition and shop fittings, suspended ceilings, and lighting and outdoor advertising. In architecture, it is often used for internal and external cladding. Perforated mesh is a material extensively used across many industries.

SIZE		
HOLE SIZE mm		
2m x 1m	0.4	0.5
2m x 1m	0.6	0.8
2m x 1m	0.8	1.0
2m x 1m	0.9	1.2
2m x 1m	1.2	1.5
2m x 1m	1.2	2.0
2m x 1m	1.2	2.5
2m x 1m	1.5	3.0

#### PLEASE NOTE:

We can cut sheets in special lengths.  
We can also give hoops in coils.



# COLD FORMED SECTIONS

## EXPANDED METAL

### ABOUT THE PRODUCT

Expanded metal is sheet or coil metal slit that's stretched into a non-ravelling unit of uniform-size diamond-shaped openings. The metal is available in various thicknesses with different opening sizes, from micro mesh to grating.



### APPLICATIONS

1. Air and fluid filters
2. Ventilation systems
3. Strainers
4. Partitions
5. Outdoor furniture and cooking grills
6. Security walls, ceilings, floors, doors
7. Machine and window guards
8. Fencing
9. Shelving and racks
10. Walkways and stair treads
11. Architectural facades, interior walls
12. Ceiling tiles
13. Railing infill panels

MESH SIZE	STRAND THICKNESS (MM)	STRAND WIDTH (MM)
1/2"	1.2	1.2
1/2"	1.2	2.0
1/2"	1.5	2.0
1/2"	1.5	3.0
1/2"	2.5	3.0
1/2"	3.0	3.0
3/4"	1.2	1.2
3/4"	1.2	1.5
3/4"	1.5	2.0
3/4"	1.5	3.0
3/4"	2.5	3.0
3/4"	3.0	3.0
1"	1.2	2.0
1"	1.2	4.0
1"	1.5	3.0

MESH SIZE	STRAND THICKNESS (MM)	STRAND WIDTH (MM)
1"	1.5	4.0
1"	1.5	6.0
1"	2.5	3.0
1"	2.5	6.0
1"	3.0	3.0
1"	3.0	6.0
1 1/4"	1.2	2.0
1 1/4"	1.2	4.0
1 1/4"	1.5	3.0
1 1/4"	1.5	4.0
1 1/4"	1.5	6.0
1 1/4"	2.5	3.0
1 1/4"	2.5	6.0
1 1/4"	3.0	3.0

Standard sheet sizes are 8ft x 4ft but special lengths and widths can be provided.

## COLD FORMED SECTIONS

### GUARD RAILS

#### ABOUT THE PRODUCT

They are made to the British Standard BS: 6579 Part 1 :1988. Hot rolled coils are split in the desired width and are fed into the open profile mill. The thickness and the profile are closely monitored as per the prevailing standard.



#### APPLICATION

They are made to the British Standard BS: 6579 Part 1 :1988. Hot rolled coils are split in the desired width and are fed into the open profile mill. The thickness and the profile are closely monitored as per the prevailing standard.

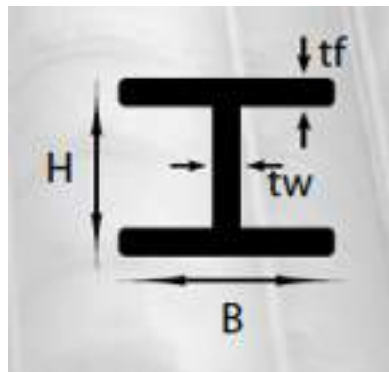
#### TS- 09 Technical Specification for Guard Rails

SIZE (mm)	WT/PC (kgs)
314 x 85 x 3.0 x 4.320m L	47.00

## UNIVERSAL COLUMNS

### ABOUT THE PRODUCT

Universal columns are the most used section for structural steel purposes. Due to their section shape, they are often called “I-sections” or “H-sections.” Unlike a universal beam, the UC’s width is roughly equal to their depth.



### APPLICATIONS

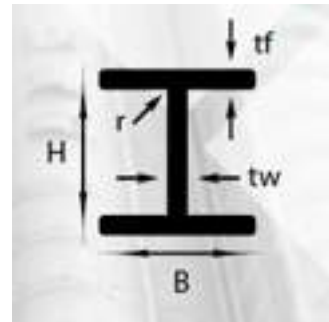
Universal columns are mainly used for columns, however, their small depth compared to universal beams make them ideal load bearing members when height is limited (which is quite often the case for residential projects).

mm	Mass kg/m	mm	mm	Thickness (mm)	Thickness (mm)
152 x 152	23.00	152.4	152.4	6.8	6.1
	30.00	157.2	152.9	9.4	6.6
	37.00	161.8	154.4	11.5	8.1
203 x 203	46.10	203.2	203.2	11.0	7.3
	52.00	206.2	203.9	12.5	8.0
	60.00	209.6	205.2	14.2	9.3
	71.00	215.9	206.2	17.3	13.0
	86.10	222.3	208.8	20.5	13.0
254 x 254	73.10	254.2	254.0	14.2	8.6
	88.90	260.4	255.9	17.3	10.5
	107.10	266.0	258.3	20.5	13.0
	132.00	276.4	261.0	25.1	15.6
	167.00	289.1	264.5	31.7	19.2
305 x 305	96.90	307.8	304.8	15.4	9.9
	117.90	314.5	306.8	18.7	11.9
	136.90	320.5	308.7	21.7	13.8
	158.10	327.2	310.6	25.0	15.7

## UNIVERSAL BEAMS

### ABOUT THE PRODUCT

Universal beams are referred to as “I-sections” or “H-sections.” The depth of a UB is greater than its width and the difference is quite big, making it easy to spot. The increased depth results in higher loading capabilities.



### APPLICATIONS

1. Engineering construction
2. Non-Residential construction
3. Mining infrastructure

NOMINAL SIZE	THEORETICAL	H HEIGHT	B WIDTH	tw FLANGE	tf WEB
mm	Mass kg/m	mm	mm	Thickness (mm)	Thickness (mm)
203 x 133	25.10	203.2	133.4	7.8	5.8
	30.00	206.8	133.8	9.6	6.3
254 x 146	31.10	251.5	146.1	8.6	6.1
	37.00	256.0	146.4	10.9	6.4
	43.00	259.6	147.3	12.7	7.3
305 x 102	24.80	304.8	101.6	6.8	5.8
	28.20	308.9	101.9	8.9	6.1
	32.80	312.7	102.4	10.8	6.6
305 x 16.5	40.30	303.8	165.1	10.2	6.1
	46.13	307.1	165.7	11.8	6.7
	54.00	310.9	166.8	13.7	7.7
356 x 171	45.00	352.0	171.0	9.7	6.9
	51.00	355.6	171.5	11.5	7.3
	57.00	358.6	172.1	13.0	8.0
	67.10	364.0	173.2	15.7	9.1



## STRUCTURAL STEEL

NOMINAL SIZE mm	THEORETICAL Mass kg/m	H HEIGHT mm	B WIDTH mm	tw FLANGE Thickness (mm)	ff WEB Thickness (mm)
406 x 140	39.00	397.3	141.8	8.6	6.3
	46.30	402.3	142.4	11.2	6.9
406 x 178	54.10	402.6	177.6	10.9	7.6
	60.10	406.4	177.8	12.8	7.8
457 x 191	67.10	409.4	178.8	14.3	8.8
	74.20	412.8	179.7	16.0	9.7
	67.10	453.6	189.9	12.7	8.5
	74.30	457.2	190.5	14.5	9.1
533 x 210	82.00	460.2	191.3	16.0	9.9
	89.30	463.6	192.0	19.6	11.4
	98.30	467.4	192.8	19.6	11.4
	82.20	528.3	208.7	13.2	9.6
	92.10	533.1	209.3	15.6	10.2
	101.00	536.7	210.1	17.4	10.9
533 x 210	109.00	539.5	210.7	18.8	11.6
	122.00	544.6	211.9	21.3	12.8

## I.P.E SECTIONS

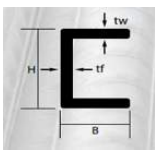
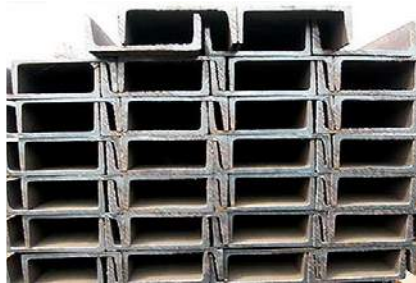
NOMINAL SIZE millimeters	THEORETICAL Mass kg/m	HEIGHT mm	WIDTH mm	FLANGE Thickness (mm)	WEB Thickness (mm)
100 x 55	8.10	100.0	55.0	5.7	4.1
120 x 64	1.40	120.0	64.0	6.3	4.4
140 x 73	12.90	140.0	73.0	6.9	4.7
160 x 82	15.80	160.0	82.0	7.4	5.0
180 x 91	18.80	180.0	91.0	8.0	5.3
200 x 100	22.40	200.0	100.0	8.5	5.6

## I.P.E AA SECTIONS

NOMINAL SIZE millimeters	THEORETICAL Mass kg/m	HEIGHT mm	WIDTH mm	FLANGE Thickness (mm)	WEB Thickness (mm)
100 x 55	6.72	97.6	55.0	4.5	3.6
120 x 64	8.36	117.0	64.0	4.8	3.8
135 x 74	6.98	135.0	74.0	3.2	2.9
140 x 73	10.05	136.6	73.0	5.2	3.8
160 x 82	12.31	156.4	82.0	5.6	4.0
180 x 91	14.90	176.4	91.0	6.2	4.3
200 x 100	17.95	196.4	100.0	6.7	4.5

# STRUCTURAL STEEL

## MILD STEEL CHANNELS



### ABOUT THE PRODUCT

Structural steel channels can be used for many different applications. Some examples can be seen in the manufacturing of buildings, tractor trailers, and frame chassis' for vehicles.

NOMINAL SIZE	THEORETICAL	H	B	tw	tf
millimeters	Mass kg/m	HEIGHT mm	WIDTH mm	FLANGE Thickness (mm)	WEB Thickness (mm)
257 x 51	6.84	57.2	50.8	6.1	6.1
76 x 38	6.70	76.2	38.1	6.8	5.1
100 x 50	10.60	100.0	50.0	8.5	6.0
120 x 55	13.40	120.0	55.0	9.0	7.0
127 x 64	14.90	127.0	63.5	9.2	6.4
140 x 60	16.0	140.0	60.0	10.0	7.0
152 x 76	17.90	152.4	76.2	9.0	6.4
160 x 65	18.80	160.0	65.0	10.5	7.5
178 x 54	14.51	177.8	54.0	8.3	5.8
178 x 76	20.84	177.8	76.2	10.3	6.6
180 x 70	22.00	180.0	70.0	11.0	8.0
200 x 75	23.30	200.0	75.0	11.5	8.5
200 x 80	29.40	220.0	80.0	12.5	9.0
229 x 76	26.10	229.0	76.0	11.2	7.6
254 x 76	28.27	254.0	76.0	10.9	8.1
254 x 89	35.70	254.0	89.0	13.6	9.1
260 x 90	37.90	260.0	90.0	14.0	10.0
300 x 100	46.20	300.0	100.0	16.0	10.0
35 x 89	41.80	305.0	89.0	13.7	10.2
381 x 102	55.05	381.0	101.6	16.3	10.4

## SPECIAL STEEL

### STAINLESS STEEL GRADE 304

#### ABOUT THE PRODUCT

G304 is the most versatile and widely used of all stainless steels. Its chemical composition, mechanical properties, weld ability and corrosion/oxidation resistance provide the best all-around performance stainless steel at relatively low cost. It also has excellent low-temperature properties and responds well to hardening by cold working

All the water pipes are threaded to BSPT specification and are fitted with a socket on one end.

#### APPLICATIONS

Temperature	C	550	600	650	700	800
Stress	MPa	120	80	30	30	10

G304 is used in all industrial, commercial and domestic fields because of its good corrosion and heat resisting properties.

Some applications include:

Tanks and containers for a large variety of liquids and solids. Processing equipment in the mining, chemical, cryogenic, food, dairy and pharmaceutical industries.

#### CHEMICAL COMPOSITION

C	Mn	P	S	Si	Cr	Ni
0.08Max	2.0	0.045	0.03	1.0	18.0 to 20.0	8.0 to 10.5

Temperature	C	-78	-161	-198
Tensile strength	MPa	1100	1450	1600
Proof stress(offset 0.2%)	MPa	300	380	400
Impact strength (Charpy V-Notch)	J	180	160	155

#### TYPICAL PROPERTIES IN THE ANNEALED CONDITION

The properties quoted in this publication are of mill production and unless indicated should not be regarded as guaranteed minimum values specification purposes.

Tensile strength	MPa	600	600	515
Proof stress(offset0.2%)	MPa	310	310	205
Elongation(% in 50mm)		60	60	40
Hardness(Brinell)		170	170	-
Endurance(fatigue)limit	MPa	240	240	-

## PROPERTIES AT ELEVATED TEMPERATURES

Time elevated temperature tensile strength

Temperature	C	600	700	800	900	1000
Tensile strength	MPa	380	270	170	90	50

## CREEP DATA STRESS FOR A CREEP RATE OF 1% IN 10000H

Maximum recommended service temperature  
(Oxidizing conditions)

Continuous services	925c
Intermittent services	850c

## CORROSION RESISTANCE

### Aqueous

As a rough guide the following examples are given for certain pure acid-water mixtures

Temperature	20						80					
	Concentration% by mass											
	10	20	40	60	80	100	10	20	40	60	80	100
Sulphuric acid	2	2	2	2	1	0	2	2	2	2	2	2
Nitric acid	0	0	0	0	2	0	0	0	0	0	1	2
Phosphoric acid	0	0	0	0	0	2	0	0	0	0	1	2
Formic acid	0	0	0	0	0	0	0	1	2	2	1	0

Key: 0 = resistant – corrosion rates less than 100µ/year  
 1 = partly resistant – corrosion rates 100µ/year  
 2 = non-resistant – corrosion rate more than 1000µ/year

## ATMOSPHERIC

The performance of G304 compared with other metals in various environments is shown in the following table – the corrosion rates are based on 10 years exposure

	G304	Aluminum- 3s	Mild steel
	0.0025	0.025	5.8
Rural	0.0076	0.432	34.0
Marine	0.0076	0.686	46.2
Marine industrial			



### THERMAL PROCESSING

1. Annealing. Heat from 1010C and cool rapidly in air or water. The best corrosion resistance is obtained when the annealing is above 1070C and cooling is rapid.

2. Hot working.

Initial forging and pressing 1150C to 1260C.

Finishing temperature 900C to 925C

All hot working operations should be followed by annealing.

Note: Soaking times to ensure uniformity of temperature are approximately one and a half times longer for stainless steel than for carbon steel.

### COLD WORKING

G304 are readily fabricated by cold working due to being extremely tough and ductile. Typical operations include bending, forming deep drawing and upsetting.

## STAINLESS STEEL SHEETS GRADE 304

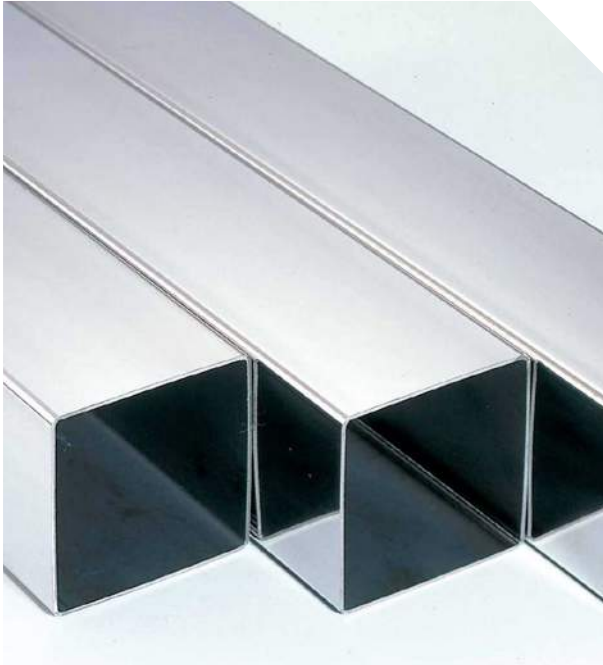
SIZE	THICKNESS mm	Kg/Sheet
8x4	0.5	11.4
8x4	0.6	14
8x4	0.8	19
8x4	0.9	21
8x4	1.0	24
8x4	1.2	28
8x4	1.5	35
8x4	2.0	47
8x4	2.5	58
8x4	3.0	70
8x4	4.0	94
8x4	5.0	117
8x4	6.0	140
10x5	10.0	365
10x5	12.0	437
10x5	15.0	546
10x5	20.0	728
10x5	25.0	910

## STAINLESS STEEL FLAT GRADE 304



SIZE	Kg/m
30x4mm	1.0
40x4mm	1.3
65x5mm	2.6
65x10mm	5.2
75x6mm	3.6
75x10mm	6.0
100x20mm	16.0
150x10mm	12.0
150x15mm	18.1
150x20mm	24.1

**STAINLESS STEEL SQUARE TUBES GRADE 304-6MTRS LENGTH**



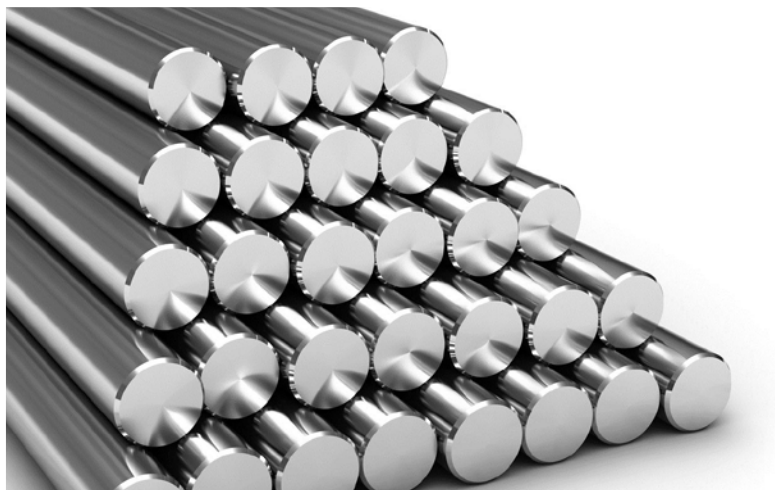
SIZE( Inches)	THICKNESS (mm)
$\frac{3}{4} \times \frac{3}{4}$	1.0
1x1	1.0
1x1	1.5
$1\frac{1}{2} \times 1\frac{1}{2}$	1.2
$1\frac{1}{2} \times 1\frac{1}{2}$	1.5
2x2	1.5

**STAINLESS STEEL ROUND TUBES GRADE 304 6MTRS LENGTH**



DIAMETER ( Inches)	THICKNESS (mm)
$\frac{1}{4}$	1.5
$\frac{3}{8}$	1.0
$\frac{1}{2}$	1.0
$\frac{3}{8}$	1.0
$\frac{3}{4}$	1.0
$\frac{3}{4}$	1.2
1	1.0
1	1.2
1	1.5
$1\frac{1}{4}$	1.0
$1\frac{1}{4}$	1.2
$1\frac{1}{4}$	1.5
$1\frac{1}{2}$	1.2
$1\frac{1}{2}$	1.5
2	1.2
2	1.5
$2\frac{1}{2}$	1.5
3	1.5
4	1.5
6	2.0

## STAINLESS STEEL RODS GRADE 304



SIZE (mm)	Kg/m
3	0.06
4.5	0.13
6	0.25
8	0.4
10	0.6
12.5	0.9
16	1.6
20	2.5
25	3.8

## STAINLESS STEEL ANGLES GRADE 304



SIZE (mm)	Kg/m
20x20x3mm	1.0
30x30x3mm	1.3
40x40x4mm	2.4
50x50x5mm	3.7



### SEAMLESS PIPES

#### ABOUT THE PRODUCT

Seamless pipes, as the name suggests, are pipes without a seam or a weld-joint in contrast to seam or welded pipes. In a seam or welded pipe, the seam, or the weld-joint, is the weaker part of the pipe limiting the strength of the pipe to the strength of the weld-joint. In contrast, the seamless pipe does not have any such joint and thus has uniform structure and strength across the entire pipe body, allowing the seamless pipe to withstand higher pressures, temperatures, mechanical stresses and corrosive atmospheres.



#### APPLICATIONS

1. Oil & gas
2. Refinery
3. Petrochemical
4. Chemical
5. Fertilizer
6. Power
7. Automotive
8. Bearing
9. Mechanical & structural applications

FITTING	SIZES
Elbow	1/2'' to 14''
Reducers	1'' to 14''
Tees	1'' to 14''
Cups	1/2'' to 14''
Stub Ends	1/2'' to 14''
Flanges	1/2'' to 14''
Socket Weld	Up to 2''
Nipples	Up to 4''
Couplings	Up to 4''

### SHAFTING

#### ABOUT THE PRODUCT

This is a medium carbon steel used extensively in induction hardening applications. It is not normally considered a screw machine steel and is only used for brazing and welding. However, it can be forged satisfactorily and is the most common shafting steel in the medium carbon range. This material has been turned, ground and polished for a nicer finish and tighter diameter tolerance.



#### APPLICATIONS

Hafts, bolts, nuts, studs, coupling and machinery components where a low tensile strength material is required.

070M20(En3)

BS970 of 1955	EN3
AISI (American)	1020

#### CHEMICAL COMPOSITION

Carbon	0.16-0.24
Silicon	0.10-0.40
Manganese	0.50-0.90
Sulphur	0.05 Max
Phosphorus	0.05 Max

	CONDITION	Tensile Strength Rm MPa	Yield Stress Re MPa	Rp 0.2	A min on 5.65 √s0	Hardness HB	Limiting Ruling section
HR	CD or	560	440	420	10	-	≥6≤13
	CD&G	530	420	390	12	-	≥13≤16
		490	370	340	12	-	≥16≤40
		480	355	290	13	-	≥40≤63
		450	325	280	14	-	≥63≤76

## SPECIAL STEEL

### STANDARD STOCK SIZES

SIZE (Inches)	ROUND	HEXAGON	SQUARE
1/4			0.3
3/8	0.6		
7/16	0.8		
1/2	1.0		1.3
9/16	1.3		
5/8	1.6	1.9	2.1
3/4	2.2	2.7	3.1
7/8	3.0	3.6	4.2
1	4.0	4.7	5.5
1 1/8	5.0		
1 1/4	6.2	7.5	8.6
1 3/8	7.5		
1 1/2	9.0	10.7	
1 3/4	12.2	14.5	
2	15.9	19.0	
2 1/4	20.2	24.0	
2 1/2	24.9	30.0	
2 3/4	30.0		
3	35.8		
3 1/2	48.7		
4	63.6		
5	99.5		
6	143.2		

### SHAFTING

070M55 (En9)	
BS970 of 1955	EN9
W. Stoff (German)	1.1203
AISI (American)	1055

### CHEMICAL COMPOSITION

Carbon	0.05-0.60
Silicon	0.10-0.40
Manganese	0.05-0.90
Sulphur	0.05 Max
Phosphorus	0.05 Max

Properties minimal unless stated

Heat treatment	Tensile Strength Rm Mpa	Yield Stress		A min 5.65 √SO	Hardness HB	Limiting Ruling Section
		Re Mpa	Rp0.2 Mpa			
N	700	355	-	12	201/255	63
	600	310	-	13	170/223	250
R	700/850	415	385	14	201/255	100
S	775/925	480	450	14	233/277	63
T	850/1000	570	555	12	248/302	19

### STANDARD STOCK SIZES

SIZE mm	Kg/m
16	1.6
20	2.5
25	3.9
30	5.6
35	7.6
40	9.9
45	12.5
50	15.5
55	18.5
60	22.5
65	26.0
70	30.0
75	35.0
80	40.0
90	50.0
100	62.0
115	82.0
130	104.0
140	121.0
150	139.0
170	178.0
180	200.0
200	247.0
230	326.0
250	385.0
270	450
305	586.0
350	756.0

N.B.

- Actual mass will vary from theoretical mass due to manufacturing tolerances.
- 6% allowance should always be made for record of surface defects during machining



### BRC MESH TABLES

#### ABOUT THE PRODUCT

BRC wire mesh is a steel reinforcement material in concrete. The mesh is used for replacing the traditional “cut and bend” process used in the placement of steel thermo-mechanical treated bars. The mesh is an electric fusion welded prefabricated reinforcement consisting of a series of parallel longitudinal wires with accurate spacing welded to cross wires at the required spacing. Machines are used to produce the mesh with precise dimensional control. The product results in considerable savings in time, labour and money.



#### APPLICATIONS

The welded wire mesh is a metal screen that is made up of low carbon steel wire or stainless steel wire. It is available in various sizes and shapes. It is widely used in the agricultural, industrial, transportation, horticultural and food procuring sectors. It is also used in mines, and for gardening and machine protection.

#### SQUARE MESH FABRIC

MESH REF.	MESH SIZES (NORMAL PITCH OF WIRES)		WIRE SIZES		CROSS-SECTIONAL AREA PER METRE WIDTH		NORMAL MASS PER M <sup>2</sup>
	Main mm	Cross mm	Main mm	Cross mm	Main mm	Cross mm	
610	200	200	2.5	2.5			
66	200	200	3	3			
65	200	200	4	4			
A 393	200	200	10	10	393	393	6.16
A 252	200	200	8	8	252	252	3.95
A 193	200	200	7	7	193	193	3.02
A 142	200	200	6	6	142	142	2.22
A 98	200	200	5	5	98	98	1.54

## WIRE PRODUCTS

### STRUCTURAL MESH FABRIC

MESH REF.	MESH SIZES (NORMAL PITCH OF WIRES)		WIRE SIZES		CROSS-SECTIONAL AREA PER METRE WIDTH		NORMAL MASS PER M <sup>2</sup> kg
	Main mm	Cross mm	Main mm	Cross mm	Main mm	Cross mm	
B 503	100	200	8	8	503	252	5.93
B 385	100	200	7	7	385	193	4.53
B 283	100	200	6	7	283	193	3.75
B 196	100	200	5	7	196	193	3.05
A 252	200	200	8	8	252	252	3.95
A 193	200	200	7	7	193	193	3.02
A 142	200	200	6	6	142	142	2.22

### LONG MESH FABRIC

MESH REF.	MESH SIZES (NORMAL PITCH OF WIRES)		WIRE SIZES		CROSS-SECTIONAL AREA PER METRE WIDTH		NORMAL MASS PER M <sup>2</sup> kg
	Main mm	Cross mm	Main mm	Cross mm	Main mm	Cross mm	
C 785	100	400	10	6	785	70.8	6.72
C 503	100	400	8	5	503	49.0	4.34
C 385	100	400	7	5	385	49.0	3.41
C 100	100	400	6	5	283	49.0	2.16

### LONG MESH FABRIC

MESH REF.	MESH SIZES (NORMAL PITCH OF WIRES)		WIRE SIZES		CROSS-SECTIONAL AREA PER METRE WIDTH		NORMAL MASS PER M <sup>2</sup> kg
	Main mm	Cross mm	Main mm	Cross mm	Main mm	Cross mm	
D 98	200	200	5	5	98.0	70.0	1.54
D 49	100	100	2.5	2.5	49.1	49.0	0.77

STANDARD SHEET AND ROLL SIZES – THE SHEET AND ROLL OF FABRICS SHALL BE AS SPECIFIED IN TABLE

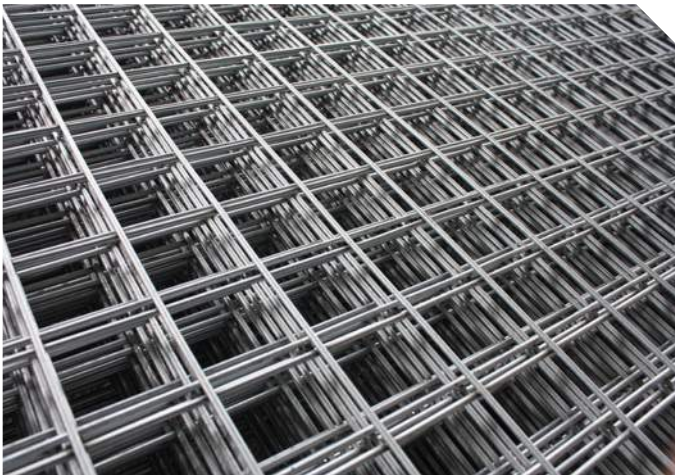
LENGTH OF SHEET OR ROLL	WIDTH OF SHEET OR ROLL
Sheet of 48m	2.4m
Roll of 48m	2.4m

## WIRE PRODUCTS

### WELD MESH

#### ABOUT THE PRODUCT

There are various weld mesh sheets in various sizes available depending on a customer's requirements. The mesh can be supplied in galvanized form or plain black wire form. The galvanized form does not need any further painting or rust prevention measures, while plain black requires further rust prevention measures.



#### OVERALL DIMENSIONS

The dimensions vary as follows

- 8ft by 4ft
- 8ft by 6ft
- 8ft by 10ft

#### MESH SIZE

It refers to the hole size of the mesh.

Common sizes include:

- 50mm by 50mm
- 60mm by 60mm
- 75mm by 75mm
- 80mm by 80mm
- 100mm by 100mm
- 200mm by 200mm

### GABION MATTRESSES AND BASKETS

#### ABOUT THE PRODUCT

Gabions are best thought of as large, wire baskets that are filled with a local stone or other cheap aggregates, including reclaimed and recycled material. It's then linked together to form terracing, retain river banks, support earth banks in addition to countless other uses in the civil engineering field.



#### GABION BASKETS

- SIZE: 3M X 1M X 0.5M
- SIZE: 3M X 1M X 1M
- SIZE: 2M X 1M X 1M
- SIZE: 2M X 1M X 0.5 M
- SIZE: 1M X 1M X 1M
- SIZE: 1M X 1M X 0.5M

#### GABION MATTRESSES

- SIZE: 2M X 2M X 0.3M
- SIZE: 2M X 1M X 0.3M
- SIZE: 1M X 1M X 0.3M
- SIZE: 6M X 2M X 0.3M

#### SPECIFICATION: (BS 443: 1982 AND EQUIVALENT TO KS-04 261 - 1981

1. The steel wire conforms to bs 1052 for tensile strength, the wire tensile strength will be between 33kg to 55kg per mm<sup>2</sup>.
2. The zinc coating conforms to bs 443 1982 i.E. Between 240gms to 290gms per square metre
3. The diameter of the wire is subject to usual tolerance of  $\pm 2 \frac{1}{2} / 2 \%$
4. The height and width of the gabion boxes will have a manufacturing gabion tolerance of 5% and a length of 3%

### BINDING WIRE

#### ABOUT THE PRODUCT

Binding wire is successively drawn from 5.5mm of wire rod and annealed at intermediate stages. Annealing wire is available in 1.6mm and 1.8mm diameter. The binding wire comes in pre-packed bundles of 25kg and is very soft and annealed. This soft nature of the binding wire enables it to twist and tie properly.



#### APPLICATIONS

Binding wire is used for binding reinforcement slabs, metal mesh processing, beams, walls, columns and so on. In particular, it is used in concrete construction. Binding wire provides reinforcing bars of different diameters.

Type of Product	Wire Size	Weight (kg)
Black Binding Wire	16 gauge	25kg
	16 gauge	50kg
	14 gauge	50kg
	11 gauge	50kg

### BARBED WIRE

#### ABOUT THE PRODUCT

Barbed wire is a type of fencing wire constructed with sharp edges or points arranged at intervals along the strand(s).



#### APPLICATIONS

It is used to construct inexpensive fences and also on walls surrounding secured property.

Wire Gauge	Length	Weight (kg)
16g / 17g	610m	25kg
16g / 17g	480m	20kg
16g / 17g	500m	25kg
16g / 17g	400m	20kg
12 1/2g	180m	25kg
12 1/2g	140m	20kg
16g / 17g	600m	25kg



## GALVANIZED WIRE

### ABOUT THE PRODUCT

Galvanized steel wire is made of carbon steel zinc plates. The zinc coating offers corrosion resistance, allowing for the weaving of galvanized wire mesh, galvanized hardware cloth, welded iron wire mesh, and chicken netting.



### APPLICATIONS

It is used in many different industries such as fencing and farming.

Type of Product	Wire Size	Weight (kg)
Galvanized Wire	8gauge	50kg coils
	10gauge	50kg coils
	12 1/2 gauge	50kg coils
	14gauge	50kg coils
	16gauge	50kg coils
	12 1/2 gauge H.T.	50 kg
Heavily Galvanized Wire	16gauge H.T.	50 kg
	12 1/2 gauge H.T.	50 kg
	16gauge H.T.	50 kg
	12 1/2 gauge H.T.	50 kg

	Wire gauge	Length		Mesh Size
Coffeenet Wire	18g	30m	3 Ft	1 5/8"
	18g	30m	4 Ft	1 5/8"
	18g	30m	6 Ft	1 5/8"

## RAZOR WIRE

### ABOUT THE PRODUCT

Razor wire is a mesh of metal strips with sharp edges. It has a central strand of high tensile strength wire and a steel tape punched into shape with barbs. The steel tape is then cold-crimped tightly to the wire.



### APPLICATIONS

Razor Wire is mainly used for the purpose of security fencing.

### Sizes Available

- Razor Wire 18"
- Razor Wire 24"
- Razor Wire 28"
- Razor Wire 38"

## WIRE PRODUCTS

### CHICKEN WIRE

#### ABOUT THE PRODUCT

Chicken wire, or poultry netting, is a woven hexagonal (6-sided) mesh of wire and it is made of thin, flexible galvanized wire. The commercial term for chicken wire is hex netting.

TYPE OF PRODUCT	WIRE GAUGE	LENGTH		MESH SIZE (APERTURE)
		m	ft	
Chicken Wire	22g	30m	3 Ft	1/2"
	22g	30m	3 Ft	3/4"
	22g	30m	3 Ft	1"
	22g	30m	3 Ft	1 1/2"
	22g	30m	6 Ft	1/2"
	22g	30m	3 Ft	3/4"
	22g	30m	3 Ft	1"
	22g	30m	6 Ft	1 1/2"
	TripleTwist Netting	15g	18m	3 Ft
18g		30m	4 Ft	60×80
18g		30m	5 Ft	60×80
18g		30m	6 Ft	60×80
18g		30m	7 Ft	60×80

#### APPLICATIONS

It is commonly used to fence poultry livestock. You can also buy chicken wire and fence posts to build a chicken coop or a garden fence around a vegetable or flower garden.



### CHAIN LINK

#### ABOUT THE PRODUCT

A chain link fence is a type of woven fence usually made from galvanized wire. The wires run vertically and are bent into a zigzag pattern so that each "zig" hooks with the wire immediately on one side and each "zag" with the wire immediately on the other.



TYPE OF PRODUCT	WIRE GAUGE	LENGTH		MESH SIZE (APERTURE)
		m	ft	
Chainlink Fencing Wire	14g	18m	4 Ft	3"
	14g	18m	5 Ft	3"
	14g	18m	6 Ft	3"
	14g	18m	7 Ft	3"
	14g	18m	8 Ft	3"
	15g	18m	4 Ft	3"
	15g	18m	5 Ft	3"
	15g	18m	6 Ft	3"
	15g	18m	7 Ft	3"
	15g	18m	8 Ft	3"

#### APPLICATIONS

Chain link fences are ideal for security and property protection.

## PVC COATED CHAIN LINK



### ABOUT THE PRODUCT

These products are thermally bonded and protected against rust. This product is mainly used in fences for playgrounds, gardens, highways, railways, airports, ports and residences.

### Available wire thickness:

We can provide fencing in thickness starting from 2.00 mm to 5.00 mm

### Available Mesh sizes:

Starting from 1 to 6 inches, however, most popular sizes are 25mm, 40mm, 50mm, 55mm, 60mm, 65mm, 75mm.

### Available Length:

Normally, fencing roll is supplied in 50mtr / 30ft. length. However, we can supply the roll as per individual requirement.

### Available width:

Starting from 300mm to 4000mm (1ft. to 13ft. )

## HOOP IRON



### ABOUT THE PRODUCT

These are flattened iron in long thin strips. They are supplied in a range of hoop iron (in coils with punched nail holes), un-punched strapping (coils) and flat strapping of different thicknesses. Galvanised and stainless steel options are available too.

### APPLICATION

Used for connecting brickwork to columns, attaching roofing to structures.

### SIZES

20mm width x 1mm thickness. Normally sold as 20kg roll.

## MILD STEEL NAILS



### ABOUT THE PRODUCT

Nails are manufactured from drawn wire. The nail points are sharp and the heads clean, while the shank maintains sufficient strength to withstand a hammering action. These are produced by high-speed automatic machines.

SIZE (Inches)	LENGTH (mm)	SHANK DIAMETER (mm)	STD/BAG (kgs)
6.0	150	6.5	50
5.0	125	5.5	50
4.0	100	4.5	50
3.0	75	4.0	50
2.5	65	3.3	50
2.0	50	2.7	50
1.5	38	2.3	50
1.0	25	1.8	50

## PANEL PINS

### ABOUT THE PRODUCT

These are light slender nails with narrow heads, used for fastening thin pieces of wood together. Made in accordance to KEBS Standard KS 72-1:2007.



Weight (kgs)	Length (in)	Diameter (mm)
25	0.75	1.2
25	0.75	1.6
25	1.0	4.0
25	1.5	4.0
25	1.0	1.8
25	1.5	3.0
25	2.0	2.8
25	1.5	1.8
25	1.5	3.0
25	1.5	1.8

## CLOUT NAILS

### ABOUT THE PRODUCT

These usually have a short shank and a large, flat head and can be used for a wide variety of exterior and interior woodworking and building purposes, such as furniture repair, cabinet making, fastening roof shingles, as well as box and crate construction. One common use for these nails is for fastening sheet metal to wood.



Weight (kgs)	Length	Diameter
25	14mm	3.5mm
25	17mm	3.5mm
25	20mm	3.5mm
25	0.75"	2.50-2.80
25	1.25"	2.90-3.20
25	28mm	2.65
25	2"	3.50-4.00

## ROOFING NAILS



### ABOUT THE PRODUCT

These are nails that have wide flat heads and short shanks. Roofing nails are made of many different materials and are available in many different sizes. A nail is typically graded based on inch and gauge.

They are manufactured in accordance to KEBS Standards – KS 72-1:2007

Weight (kgs)	Type	Length (in)	Diameter (mm)
25	Galvanized	2.5	3.5

## FENCING STAPLES (U-NAILS)

### ABOUT THE PRODUCT

Fence staples are bent into a U-shape nail with two sharp points. Single or double barbed version staples are ideal for safety fences. They are resistant to traction, even if the wood cracks as it dries, and are made in accordance to KEBS Standard KS 72-1:2007.



Weight (kgs)	Length (in)	Diameter (mm)
25	1.5	3.60-4.00
25	2.0	4
25	1.0	3
25	1.25	3
25	1.5	3

## CONCRETE NAILS

### ABOUT THE PRODUCT

They are the most popular type of fasteners securing objects into masonry and other hard and brittle materials. They are manufactured using hardened steel which provides higher rigidity to make sure that it will not bend and break off when penetrating the solid concrete. A flat head and sharp conical design allow for easy penetration.



### APPLICATIONS

This versatile nail is popular with architects and commonly used in building construction and home improvement projects, such as:

1. Securing furring strips and wood framing to concrete wall and blocks.
2. Fastening a ledger board to a foundation.
3. Securing hand rails on a concrete patio.
4. Finishing off a basement.
5. Building a garage on a poured slab, etc.

Length	Gauge	Length	Gauge
3/8"	20	2"	12 / 11
1/2"	20 / 19 / 18	2-1/2"	11 / 10
5/8"	19 / 18	3"	10 / 8
3/4"	18 / 17	3-1/2"	8 / 7
7/8"	18 / 17	4"	8 / 7 / 6
1"	16	4-1/2"	7 / 6 / 5
1-1/4"	15 / 14	5"	6 / 5
1-1/2"	14	6"	6 / 5 / 4
1-3/4"	13	7"	5 / 4

Tips: Custom sizes are also available.

Nails are packed in 50 kg bags



## GENERAL HARDWARE ITEMS

## AGRICULTURAL TOOLS

WHEEL BARROW



SHOVEL



KNAPSACK SPRAYERS



PLIERS



## POWER AND WELDING TOOLS

WELDING RODS



POWER TOOLS



CUTTING AND GRINDING DISC



## CEMENT AND POWDERS

WHITE CEMENT



WALL PUTTY



OXIDE POWDERS



CONSTRUCTION CHEMICALS



AND MANY MORE...

## GENERAL HARDWARE ITEMS

### SHEETS - ROOFING AND PLYWOOD

ROOFING SHEETS



FIGREGLASS SHEETS



PLYWOOD



### PERSONAL PROTECTIVE EQUIPMENT(PPE)

SAFETY SHOES



REFLECTIVE JACKETS



SAFETY GLOVES



EAR MUFFS



HELMETS



### GENERAL HARDWARE

SCAFFOLDING CLAMPS



GREEN SHADE NETTING



BLACK POLYTHENE





FOR MORE INFORMATION CALL +254 20 6969000, +254 732 888820  
EMAIL SALES@APEX-STEEL.COM WEBSITE WWW.APEX-STEEL.COM

