

حديده حمار  
**HAMMAD STEEL**  
INDUSTRIES

**ISO9001**

**Excellence In Steel Manufacturing**

Hammad Steel Industries is leading and Reliable Source of Steel Products offering lowest CNF Prices, including Reliability and Complete Quality Assurance with Timely Deliveries

# CONTENTS

1	— Hammad Steel Industries	01 - 02
	— ISO 9001 : 2008	
2	— Products	03 - 04
	— Steel Rebar	05 - 06
	— American Standard ASTM A 615 M	07
	— Turkish Standard TS 708 VCH	08 - 09
	— British Standard BS 4449 : 97	10 - 11
	— Greece Standard ELOT 971 : 90	12 - 13
	— Germany Standard DIN 488 : 86	14
	— French Standard NF A 35 – 016 : 96	15
	— Portugal Standard PS 90 : 98	16
	— Steel Wire	17 - 18
	— SAE International Standard	19
	— American Standard ASTM A 510 M	20
	— Steel Billet	21 - 22
	— Steel Beam	23 - 25
	— Steel Channel	26 - 28
3	— Services	29 - 30
4	— Shipments	31
5	— Contact	32





## Hammad Steel Industries

Hammad Steel Industries is leading Certified ISO 9001: 2008 manufacturers and exporter of Steel Rebar and other steel products to Africa and other Middle Eastern countries respectively from Turkey and Middle East, with a growing presence in markets around the world.



Hammad Steel has an extensive production and inventory of both billets and rebar for immediate and prompt deliveries. We manufacture for the conduction of exports of imperial sizes starting from 6MM upto 40MM. To minimize waste we carry a wide variety of lengths depending on the size and grade required. Commonly available lengths include 6m, 9m and 12m. We accomplish several standards including British Standard BS-4449 GR460B and American Standard ASTM A615 GR60.

## Why Hammad Steel Industries?



Hammad Steel Industries is famous for its Reliable Quality, Wide Production Capacity, Extensive Inventory and most of all Prompt Shipments. Fully integrated and reliable Steel Rebar Prices and Steel News published regularly and forwarded to our customers regardless of their volumes purchased. Hammad Steel Industries has developed very strong and friendly relationships with many African customers and consumers. The importance of Hammad Steel Industries to this market has grown over the past years, as surging demand in African countries for Hammad Steel Industries products enable us to struggle more to keep up with demand.

## History

Hammad Steel Industries was established in year 2007 for the conduction of its exports business of Long Products and Structural Products in Jebel Ali Free Zone – UAE , just 5 KMs from the Jebel Ali Port, which possess design capacity of 0.36 million TEUs per annum and is capable of handling vessels up to 272 meters in length. Hammad Steel Industries is wholly owned subsidiary of H.Y. Group of Companies, consortium of leading international trading and manufacturing companies. Having strong presence and subsidiary worldwide including Middle East, Far East, South East Asia, African Countries, Europe, UK, USA and Canada.





# Quality Certification ISO 9001:2008



## ISO 9001:2008

The ISO 9001-2008 quality certification process applies to all aspects of Hammad Steel Industries businesses in all locations worldwide. Thus ensuring that we deliver what we promise, when we promise it, every time!

Our all steel products is well known for its high standard. Our high standards insure that our products and services are the highest quality for our customers. This enables us to earn a reputable name in the steel industry.

By creating an environment that encourages a commitment to quality and which sponsors continuous improvement, we are able to ensure that we remain focused on consistently delivering value and excellence for our clients.



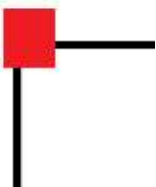
## What is ISO?



ISO is an International Standard Organization that differentiates public and private sectors. On the one hand, ISO is a network of the national standards institutes of 159 countries, one member per country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system.

ISO is a non-governmental organization that forms a bridge between the public and private sectors. On the one hand, many of its member institutes are part of the governmental structure of their countries, or are mandated by their government. On the other hand, other members have their roots uniquely in the private sector, having been set up by national partnerships of industry associations.

Therefore, ISO enables a consensus to be reached on solutions that meet both the requirements of business and the broader needs of society.







## Our Products

### Steel Rebar

Today Steel Rebar is the most admired building material across the globe and is used in a variety of residential, commercial and industrial structures from tall skyscrapers to huge sports stadium to homes and shopping malls. Especially steel rebars have found extensive usage to provide strength to the building structure. Concrete is basically high density material and has less strength when applied tension. To counter this problem, steel rebar sticks are used to carry the tensile loads in a composite structure.



### Steel Wire

Hammad Steel produces wire rods having wide range of qualities conforming to the customers needs and purpose for use in welding electrode, steel mesh, wire, bolts, spring, etc. manufacturing. In our opinion, you, the esteemed customer of ours, choosing the right product or material form, constitutes the most critical point (the key point) in this matter. Wire rod is made from plain round bars, with the range including several different diameters and qualities, presented in coils.



### Steel Billet

Hammad Steel Industries is Leading Manufacturer, Exporter and Supplier of Steel Billets from Turkey and Middle East respectively, offering lowest CNF prices of various diameters in containers. Accomplying several International Standard's. Our modern steel melting Shop consists of an induction furnace, LRF and a continuous casting machine. The quality is controlled by highly trained personnel by means of continuous testing and process control. This shop produces billets / blooms in various special steel grades as per ASTM, TS 708, BS 4449, ELOT 971 & NF A 35 Standards.





## Steel Beam

Hammad Steel Industries is a reliable source of superior quality IPE, IPEA & IPEAA Steel Beams in a variety of different sizes, maintaining extremely close dimensional tolerance and accurate mechanical properties. Built to international specifications, the light weight IPEAA steel beams are most suited to GCC markets, and primarily used in commercial and residential building structures and warehouses.



## Steel Channel

Hammad Steel Industries is a reliable source of superior quality, light-weight UPN Steel Channels in a variety of different sizes, maintaining extremely close dimensional tolerances and accurate mechanical properties. Built to international specifications, UPN Steel Channels are found to be best suited for applications that require a strong steel framework, like warehouses etc.













## Steel Rebar

HAMMAD STEEL INDUSTRIES, Your Single Reliable Source for Steel Rebar from Turkey and Middle East. Today, Hammad Steel Industries is the mostly admired leading supplier of Steel Rebar in the African Countries specifically in East and West Africa. Recognized by International Consultants for their infrastructure needs in the developing Africa Continent.



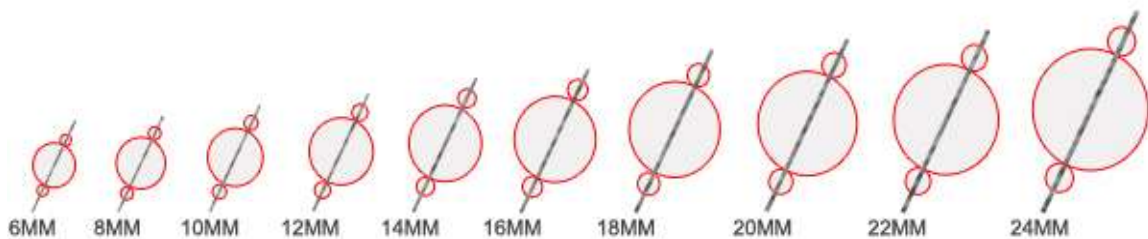
### HAMMAD STEEL INDUSTRIES STANDARDS:

Steel Rebar Standards is the main decisive factors / requirements by International for infrastructure. Several international standards are available with HAMMAD STEEL INDUSTRIES including:

- |  |  |  |
|--|--|--|
|  ASTM A 615          |  TS 708-VCH |  BS 4449:97         |
|  ELOT 971:90         |  DIN 488:86 |  NF A 35 - 016 : 96 |
|  A 400 NR / A 500 NR |  |  |

### HAMMAD STEEL INDUSTRIES DIAMETERS:

Rebar size is another decisive factor when creating shop drawings for a structure or a building. Two conventions are being used by HAMMAD STEEL INDUSTRIES for rebar sizes – Imperial sizes and Metric sizes. Imperial bar method (USA convention) represents rebar diameters in fractions of 1/8 inch, such that #8 = 8/8 inch = 1 inch diameter. Metric bar method (Canadian convention) represents the rebar diameter in millimeters rounded to the nearest 5 mm. Steel Rebar Sizes available in Metric Bar method are from 6MM upto 40MM.





HAMMAD STEEL INDUSTRIES PACKAGING:

Rebar packaging can be arranged as per requirements ranging from:



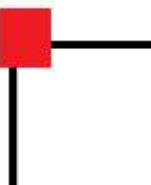
U Shaped folded Bundles weighing upto 2 Metric Tons and lengths ranging from 12 Meters upto 24 Meters.



Unfolded / Straight Bundle's weighing upto 2 Metric Tons and lengths ranging from 6 Meters upto 24 Meters.



Rounded Coils - upto 2 Metric Ton Coils for Bending / Cutting Machine use.





American Standard  
Accomplying: ASTM A 615 M



## ASTM A 615 M Specification – GR 40 / GR 60

ASTM A 615 / M BY STANDARD Kg. / m.

DIMENSION (mm.)	LENGTH (m.)	NUMBERS OF REBARS (QUANTITY)	ASTM A 615 / M Grade 60	
			Kg / m.	THEORETICAL WEIGHT OF BUNDLE ( Kg. )
8	12	420	0.395	1990.800
10	12	270	0.617	1999.080
12	12	184	0.888	1960.704
14	12	136	1.208	1971.456
16	12	104	1.578	1969.344
18	12	82	2.000	1968.000
20	12	66	2.466	1953.072
22	12	54	2.984	1933.632
24	12	47	3.550	2002.200
25	12	42	3.853	1941.912
26	12	40	4.168	2000.640
28	12	33	4.834	1914.264
30	12	30	5.550	1998.000
32	12	26	6.313	1969.656
36	12	21	7.990	2013.480
40	12	17	9.865	2012.460





## TS 708-VCH Specification - VCH III A / VCH IV A

TS 708 - VCH III A / VCH IV A												
RATED DIAMETER (mm.)	WEIGHT		CUT AREA mm2	EN to the Ribs			Longitudinal Ribs		Pitch / STEP (mm)		Ribs TIP DISTANCE (~) mm.	
	Kg / m. Nominal	Tolerance %		Height (mm.)	Width (mm.)	Height (mm.)	Height (mm.)	Min.	Max.	Min.		Max.
8	0.395	+4 -6	50.3	0.4	0.8	0.8	0.8	0.48	1.12	4.0	8.0	2.4
10	0.617		78.5	0.5	1.0	1.0	1.0	0.60	1.40	5.0	10.0	3.0
12	0.888		113.0	0.6	1.2	1.2	1.2	0.72	1.68	6.0	12.0	3.6
14	1,210		154.0	0.7	1.4	1.4	1.4	0.84	1.96	7.0	14.0	4.2
16	1,580		201.0	0.8	1.6	1.6	1.6	0.96	2.24	8.0	16.0	4.8
18	2,000		254.4	0.9	1.8	1.8	1.8	1.08	2.52	9.0	18.0	5.0
20	2,470		314	1.0	2.0	2.0	2.0	1.20	2.80	10.0	20.0	6.0
22	2,985		380.0	1.1	2.2	2.2	2.2	1.32	3.08	11.0	22.0	6.6
24	3,550		452.3	1.2	2.4	2.4	2.4	1.44	3.36	12.0	24.0	7.2
25	3,850		491.0	1.25	2.5	2.5	2.5	1.50	3.50	12.0	25.0	7.5
26	4,168		531.0	1.3	2.6	2.6	2.6	1.56	3.64	13.0	26.0	7.8
28	4,830		616.0	1.4	2.8	2.8	2.8	1.68	3.92	14.0	28.0	8.4
30	5,550		706.5	1.5	3.0	3.0	3.0	1.80	4.20	15.0	30.0	9.0
32	6,310		804.0	1.6	3.2	3.2	3.2	1.92	4.48	16.0	32.0	9.6
40	9,860		1256.0	2.0	4.0	4.0	4.0	2.40	5.60	20.0	40.0	12.0
50	1,5410		1963.5	2.5	5.0	5.0	5.0	3.00	7.00	25.0	50.0	15.0







# Turkish Standard

Accomplying: TS 708

## TS 708-VCH Specification - VCH I A

TS 708, VCH I a FLAT SURFACE STEEL BARS						MECHANICAL PROPERTIES TEST			
Rated Diameter Tolerance		Max. Of OVAL	Weight		Cut Area	AKMA ( N / mm2 ) ( Min. )	VCH I a	VCH III a	VCH IV a
Diameter mm.	Tolerance mm.	mm.	Kg / m.	Tolerans %			Pull ( N / mm 2) (Min.)		
6	± 0.4	0.64	0.222	+ 4 - 6	28.3	Akma / Pull ( Min. )	220	420	500
8			0.395		28.3	Elongation	18	12	12
10			0.617		28.3	Lo = 10 x d	18	10	10
12			0.888		28.3	Ø 6-28( Min.)	FLAT ROUND (branded)		
14			1,210		28.3	Ø 32-50( Min.)			
16	1,580	201.0	VCH I A						
18	± 0.5	0.80	2,000		254.4	VCH III A			
20			2,470		314.0	VCH IV A			
22			2,985		380.0				
24			3,550		452.3				
25			3,850	452.3					
26	± 0.6	0.96	4,168	531.0					
28			4,830	616.0					

CHEMICAL PROPERTIES							
		VCH I A		VCH III A		VCH IV A	
		Casting Max.	Product Max.	Casting Max.	Product Max.	Casting Max.	Product Max.
Carbon %	C	0.25	0.27	0.40	0.42	0.22	0.24
Phosphorus %	P	0.050	0.055	0.050	0.055	0.050	0.055
Sulfur %	S	0.050	0.055	0.050	0.055	0.050	0.055
Nitrogen %	N	-	-	-	-	0.012	0.013
Carbon Equivalent	CE	-	-	-	-	0.50	0.52
						Mn Cr+Mo+V Ni+Cu	
						CE = C + ----- + ----- + -----	
						6 5 15	

British Standard  
Accomplying: BS 4449 : 97



## BS 4449 : 97 Specification – GR 250 / GR 460 A / GR 460 B

BS 4449 : 97 GR 250 / 460 A / 460 B

Rated Diameter	Nominal Cross Section Area	Weight		EN to the ribs (mm)				Longitudinal Ribs (mm)				Pitch / STEP mm		Ribs TIP Distance mm.	
		Kg / m	Tolerance %	Height		Width		Height		Width		min.	max.	min.	max.
mm.	mm <sup>2</sup>			min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
6	28.3	0.222	± 9	0.3	0.6	0.48	0.72	0.3	0.84	0.48	1.2	3.0	4.8	1.5	2.3
8	50.3	0.395	± 6.5	0.4	0.8	0.64	0.96	0.4	0.84	0.64	1.6	4.0	6.4	2.0	3.1
10	78.5	0.616		0.5	1.0	0.8	1.2	0.5	0.84	0.8	2.0	5.0	8.0	2.5	3.9
12	113.1	0.888	± 4.5	0.6	1.2	0.96	1.44	0.6	0.84	0.96	2.4	6.0	9.6	3.0	4.7
16	201.1	1.579		0.8	1.6	1.28	1.92	0.8	0.84	1.28	3.2	8.0	12.8	4.0	6.2
20	314.2	2.466		1.0	2.0	1.6	2.4	1.0	0.84	1.6	4.0	10.0	16.0	5.0	7.8
25	490.9	3.854		1.25	2.5	2.0	3.0	1.25	0.84	2.0	5.0	12.5	20.0	6.2	9.8
32	804.2	6.313		1.60	3.2	2.56	3.84	1.60	0.84	2.56	6.4	16.0	25.6	8.0	12.5
40	1256.6	9.864	2.0	4.0	3.2	4.8	2.0	0.84	3.2	8.0	20.0	32.0	10.0	15.7	
50	1963.5	15.413	2.5	5.0	4.0	6.0	2.5	0.84	4.0	10.0	25.0	40.0	12.5	19.6	








# British Standard

Accomplying: BS 4449:97

## BS 4449 : 97 Specification - GR 250 / GR 460 A / GR 460 B

MECHANICAL PROPERTIES TEST				
Quality	Akma N / mm2	Akma / Pull Rate N/mm2	Elongation Elasticity	Total max. % AGT
	min.	min.	min.	min.
GR 250	250	Akma x 1.15	22	-
GR 460 A	460	Akma x 1.05	12	2.5
GR 460 B	460	Akma x 1.08	14	5

CHEMICAL COMPOSITION					Ribs and Marking Method
Element	GR 250 % max.		GR 460 A / B % max.		
	Casting	Product	Casting	Product	
C	0.25	0.27	0.25	0.27	<p>GR 250</p>  <p>GR 460 A ( 8.18 )</p>  <p>GR 460 B ( 8.18 )</p> 
P	0.060	0.065	0.050	0.055	
S	0.060	0.065	0.050	0.055	
N	0.012	0.013	0.012	0.013	
CE	0.42	0.45	0.51	0.54	
Mn Cr+Mo+V Ni+Cu					
CE = C + ----- + ----- + -----					
6 5 15					



## ELOT 971 : 90 Specification – S 500 S

ELOT 971: 1990 S 500 S															
Rated Diameter	Nominal Cross Section Area	Weight		EN to the ribs (mm)				Longitudinal Ribs (mm)				Pitch / STEP mm		Ribs TIP Distance mm.	
		Kg / m	Tolerance %	Height		Width		Height		Width		min.	max.	min.	max.
mm.	mm2			min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
6	28.3	0.222	± 10	0.39	0.6	0.48	0.72	0.3	0.6	0.48	0.72	3,57	4.83	0.6	1.2
8	50.3	0.395	± 8	0.52	0.8	0.64	0.96	0.4	0.8	0.64	0.96	4.76	6.44	0.8	1.6
10	78.5	0.617		0.65	1.0	0.8	1.2	0.5	1.0	0.8	1.2	5.52	7.47	1.0	2.0
12	113	0.888	± 6	0.78	1.2	0.96	1.44	0.6	1.2	0.96	1.44	6.12	8.28	1.2	2.4
14	154	1.21		0.91	1.4	1.12	1.68	0.7	1.4	1.12	1.68	7.14	9.66	1.4	2.8
16	201	1.58		1.04	1.6	1.28	1.92	0.8	1.6	1.28	1.92	8.16	11.04	1.6	3.2
18	254	2.00		1.17	1.8	1.44	2.16	0.9	1.8	1.44	2.16	9.18	12.42	1.8	3.6
20	314	2.47	± 5	1.3	2.0	1.6	2.4	1.0	2.0	1.6	2.4	10.2	13.8	2.0	4.0
22	380	2.98		1.43	2.2	1.76	2.64	1.1	2.2	1.76	2.64	11.22	15.18	2.2	4.4
25	491	3.85		1.63	2.5	2.0	3.0	1.25	2.5	2.0	3.0	12.75	17.25	2.5	5.0
28	616	4.83		1.82	2.8	2.24	3.36	1.4	2.8	2.24	3.36	14.28	19.32	2.8	5.6
32	804	6.31		2.08	3.2	2.56	3.84	1.6	3.2	2.56	3.84	16.32	22.08	3.2	6.






# Greece Standard

Accomplying: ELOT 971 : 90

## ELOT 971 : 90 Specification – S 500 S

Mechanical Properties Test			
Quality	Akma ( N / mm2)	Pull ( N / mm2)	Elongation%
	min	min	min
S 500 S	500	550 (min. AK x 1.05)	12

Chemical Composition			
Element	S 500 S % max.		Ribs Method
	Casting	Product	
C	0.22	0.24	 8.19
P	0.050	0.055	
S	0.050	0.055	
N	0.012	0.013	
CE	0.50	0.53	
Mn Cr+Mo+V Ni+Cu			
$CE = C + \frac{\text{Mn}}{6} + \frac{\text{Cr+Mo+V}}{5} + \frac{\text{Ni+Cu}}{15}$			

Germany Standard  
Accomplying: DIN 488 : 86



## DIN 488 : 86 Specification – BSt 420 S / BSt 500 S

DIN 488 : 1986 BSt 420 S / BSt 500 S



Rated Diameter	Weight		Nominal Cross Section Area	EN to the Ribs (mm)				EN to the Ribs (mm)				BSt 420 S				BSt 500 S	
	Kg / m.	Tolerans %		Height		Width		Height		Width		Pitch (mm.)				HATVE (mm.)	
				min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
mm.			mm2	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
6	0.222	± 4	28.3	0.39	0.6	0.48	0.72	0.3	0.6	0.48	0.72	4.93	6.67	3.57	4.83	4.25	5.75
8	0.395		50.3	0.52	0.8	0.64	0.96	0.4	0.8	0.64	0.96	5.61	7.59	4.08	5.52	4.76	6.44
10	0.617		78.5	0.65	1.0	0.8	1.2	0.5	1.0	0.8	1.2	6.37	8.62	4.67	6.32	5.52	7.47
12	0.888		113	0.78	1.2	0.96	1.44	0.6	1.2	0.96	1.44	7.05	9.54	5.18	7.01	6.12	8.28
14	1.21		154	0.91	1.4	1.12	1.68	0.7	1.4	1.12	1.68	8.24	11.15	6.03	8.16	7.14	9.66
16	1.58		201	1.04	1.6	1.28	1.92	0.8	1.6	1.28	1.92	9.35	12.65	6.97	9.43	8.16	11.04
20	2.47		314	1.3	2.0	1.60	2.4	1.0	2.0	1.60	2.4	11.73	15.87	8.67	11.73	10.2	13.8
25	3.85		491	1.63	2.5	2.0	3.0	1.25	2.5	2.0	3.0	14.70	19.89	10.79	14.60	12.75	17.25
28	4.83	616	1.82	2.8	2.24	3.36	1.40	2.8	2.24	3.36	16.40	22.19	12.15	16.44	14.28	19.32	

Mechanical Properties Test

Quality	Akma N / mm <sup>2</sup> min	Drawing N / mm <sup>2</sup>	Elongation % (10d) min
BSt 420 S	420	500 ( min. Akma x 1.05 )	10
BSt 500 S	500	550 ( min. Akma x 1.05 )	10



Chemical Composition

Element	BSt 420 S		Ribs Method
	BSt 500 S		
C	0.22	0.24	BSt 420 S 8.19 
P	0.050	0.055	
S	0.050	0.055	
N	0.012	0.013	BSt 500 S 8.19 

# French Standard

Accomplying: NF A 35 – 016 : 96



## NF A 35 – 016 : 96 Specification – FE E 500 2 / FE E 500 3

NF A 35 - 016 : 1996 Fe E 500 2 / Fe E 500 3								
Rated Diameter		Nominal Cross Section Area	Nominal Weight & Tolerance		Ribs Height mm		Pitch Step mm	
Fe E 500 - 2	Fe E 500 - 3		Kg / m.	Tolerans %	min	max	min	max
6	6	28.3	0.222	± 4.5	0.39	0.90	4.1	6.1
8	8	50.3	0.395		0.52	1.20	5.0	7.0
10	10	78.5	0.617		0.65	1.50	5.5	7.5
12	12	113	0.887		0.78	1.80	6.1	8.3
14	14	154	1.21		0.91	1.90	7.1	9.7
16	16	201	1.58		1.04	2.00	8.2	11.0
-	20	314	2.47		1.30	2.25	10.2	13.8
-	22	380	2.98		1.43	2.35	11.2	15.2
-	24	452	3.55		1.56	2.40	12.3	16.6
-	25	491	3.85		1.63	2.50	12.7	17.2
-	32	804	6.31		2.08	3.20	16.3	22.1
-	40	1256	9.86		2.60	4.00	20.4	27.6

Mechanical Properties Test						
Quality	Akma N / mm2		Akma / Pull Rate		Elongation & AGT	
	max.	min.	max.	min.	max.	min.
Fe E 500 - 2	500	475	1.03	1.01	2.5	2
Fe E 500 - 3	500	475	1.08	1.05	5	4



Chemical Properties					
Fe E 500 - 2 / Fe E 500-3 max					
	C max.	P max.	S max.	N max.	CEV max.
Casting %	0.22	0.050	0.050	0.012	0.50
Product %	0.24	0.055	0.055	0.013	0.52
Mn Cr+Mo+V Ni+Cu			Ribs Method		
CE = C + ----- + ----- + -----			Fe E 500 - 3 (9.19)		
	6 5 15				



# Portugal Standard

Accomplying: PS 90 : 98



## PS 90 : 98 Specification – A 400 NR / A 500 NR

PS 90 : 1998 A 400 NR / A 500 NR									
Rated Diameter	Weight		Nominal Cross Section Area	Min Ribs Height	Pitch / Step (Nom)				
	Kg / m.	Tolerans%			A 400 NR			A 500 NR	
mm.	Nom.		mm2	mm.	C1 mm.	C2 mm.	Tolerans %	C mm.	Tolerans %
6	0.222	± 4.5	28.3	0.39	5.8	4.2	± 20	5.0	± 20
8	0.395		50.3	0.52	6.6	4.8		5.7	
10	0.617		78.5	0.65	7.5	5.5		6.5	
12	0.888		113	0.78	8.3	6.1		7.2	
16	1.58		201	1.04	11.0	8.2	± 15	9.6	± 15
20	2.47		314	1.30	13.8	10.2		12.0	
25	3.85		491	1.63	17.3	12.7		15.0	
32	6.31		804	2.08	22.1	16.3		19.2	
40	9.86	1257	2.60	27.6	20.4	24.0			

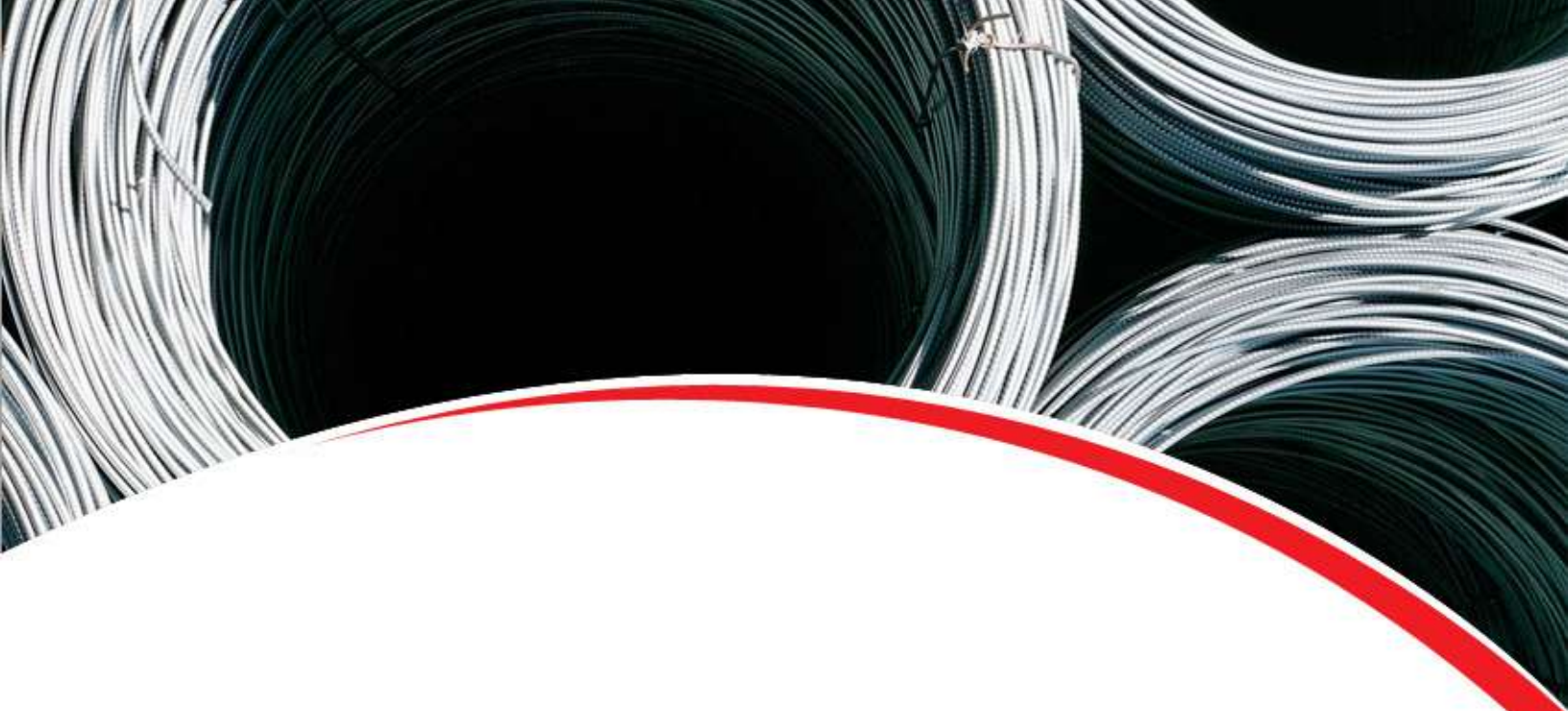
Mechanical Properties Test				
Quality	Akma (Min.) MPa	Drawing (Min.) MPa	Extension Rate Akma Min	Elongation % min
A 400 NR	400	460	Akma x 1.05	14
A 500 NR	500	550	Akma x 1.08	Agt % 5



Chemical Composition (A 400 NR / A 500 NR)					
Analysis	C max.	P max.	S max.	N max.	CE max.
Casting %	0.22	0.050	0.050	0.012	0.50
Product %	0.24	0.055	0.055	0.013	0.52
Mn Cr+Mo+V Ni+Cu					
CE = C + ----- + ----- + -----					
6 5 15					

A 400 NR ( 8.18 )

A 500 NR ( 8.18 )



## Steel Wire

Hammad Steel offers Steel Wire Rods having wide range of standards and qualities conforming to the customers needs and purpose for use in welding electrode, steel mesh, wire, bolts, spring, bending / cutting machine use, cut to bend sizes. In our opinion, you, the esteemed customer of ours, choosing the right product or material form, constitutes the most critical point (the key point) in this matter.



### HAMMAD STEEL INDUSTRIES STANDARDS:

Steel Wire Rods Standards is the main decisive factors / requirements for the use by a vast number of different industrial processes, whose end products are as diversified.

Several international standards are available with HAMMAD STEEL INDUSTRIES for prompt deliveries including: STANDARDS (PLAIN / DEFORMED) :

**SAE** SAE 1006 / SAE 1008       ASTM A510M

### HAMMAD STEEL INDUSTRIES DIAMETERS:

Wire rod is made from plain round bars and used as a raw material in calibration, stamping and wire drawing by reduction of the diameter, having certain mechanical and surface characteristics suitable for each application. Hammad Steel Industries range includes several different dimension diameters starting from 5.5MM upto 40MM.

 Starting from 5.5 mm upto 20 mm in diameter (PLAIN)

 Starting from 6 mm. upto 16 mm. in diameter (DEFORMED)





#### HAMMAD STEEL INDUSTRIES PACKAGING:

Steel Wire Rod packaging can be arranged as per the customer requirements ranging from:



200 KG ~ upto 3 Metric Ton Steel Wire Rod presented in coils are used by a vast number of different industrial processes, whose end products are as diverse as cutting heads, springs for mattresses and springs for vehicles, wrapping meshes, products obtained for machining, pre-stressed for railway sleepers, high pressure pipes and beams, covers for the automobile sector, wire for electricity conduction (ACSR) and communications, products obtained for stamping for agricultural uses or wires for pneumatic tires.

#### SPECIFIC REQUIREMENTS:

We like to point out that our technical service is always at your service to assist you in your choosing of the proper material and also like to remind you that your selection and usage of the right products shall reduce your losses (in terms of labor, material, etc.) and increase your production quality and assertiveness.





SAE Standard  
 Accomplying: SAE 1006 / SAE 1008



SAE International Specification – SAE 1006 / SAE 1008

SAE 1006 / SAE 1008 BY STANDARD Kg / m.				
Nominal Diameter (mm)	Permissible Deviation (mm)	Nominal Cross Section (mm <sup>2</sup> )	Nominal Weight (kg/m)	Permissible out - of Roundness(mm)
5.5	-/+ 0.3	0.238	0.186	0.48
6.0	-/+ 0.3	0.283	0.222	
6.5	-/+ 0.3	0.332	0.260	
7.0	-/+ 0.4	0.385	0.302	
(*)8.0	-/+ 0.4	0.503	0.395	0.64
(**)10.0	-/+ 0.4	0.785	0.617	
(**)12.0	-/+ 0.4	1.131	0.888	
(**)14.0	-/+ 0.4	1.539	1.208	
(**)16.0	-/+ 0.5	2.011	1.578	0.80

(\*) It is also produced in Bars form, 12m long  
 (\*\*)Upon agreement can also be produced in bars form 12m long

Chemical Composition					
Grade	C	Mn	S Max	p Max	n Max
SAE 1006	0.8 max	0.25-0.40	0.025	0.020	0.012
SAE 1008	0.10 max	0.30-0.50	0.030	0.020	0.012





## ASTM A 510 M Specification

ASTM A510M									
Grade	% C	% Si	% Mn	% P Max	% S Max	% Cr Max	% Mo Max	% Ni Max	% Cu Max
AISI 1045	0.44-0.48	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1049	0.46-0.50	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1050	0.48-0.42	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1053	0.50-0.54	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1055	0.54-0.58	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1059	0.56-0.60	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1060	0.58-0.62	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1064	0.60-0.64	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1065	0.64-0.67	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1069	0.66-0.70	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1070	0.68-0.72	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15
AISI 1080	0.78-0.82	0.10-0.30	0.50-0.70	0.020	0.025	0.10	0.03	0.10	0.15





## Steel Billet

Hammad Steel Industries is mostly preferred for the Steel Billets from Turkey and Middle East respectively, offering lowest CNF prices of various diameters in containers and break bulk. Accomplying several International Standards through modern steel melting Shops consisting of induction furnace, LRF and a continuous casting machine. The quality is controlled by highly trained personnel by means of continuous testing and process control. Shop produces billets / blooms in various special steel grades as per American Standard ASTM A 615 Grade 40 and 60 and British Standard BS 4449 Grade 460



### HAMMAD STEEL INDUSTRIES STANDARDS:

Steel Billet Standards is the main decisive factors / requirements by International for infrastructure. Several international standards are available with HAMMAD STEEL INDUSTRIES including:

 ASTM A 615 Grade 40 and 60       BS 4449 Grade 460

ASTM A 615 Grade 40 and 60 and BS 4449 Grade 460	
<b>Cross Section</b>	<b>Weight</b>
130 mm X 130 mm	132 kg/meter for 130 mm X 130 mm
150 mm X 150 mm	175 kg/meter for 150 mm X 150 mm
<b>Length</b>	<b>Nominal Corner Radius</b>
3.5 meter to 12 meter	6 mm max. for 130 mm X 130 mm 8 mm max. for 150 mm X 150 mm
<b>Allowable Variation on Size</b>	
Face Length	± 3 mm
Difference in Diagonals	< 8 mm
Cut Length	± 50 mm

Type	Cross Section (mm)	Length (m)
Steel Billets	100 x 100	6 ~12m
Steel Billets	120 x 120	6 ~12m
Steel Billets	130 x 130	6 ~18m
Steel Billets	140 x 140	6 ~18m
Steel Billets	150 x 150	6 ~18m
Steel Billets	180 x 180	6 ~18m
Steel Billets	200 x 200	6 ~18m







### Chemical Properties

Element	BS 4449 Grade 460		ASTM A 615 Grade 40		ASTM A 615 Grade 60	
	min.	max.	min.	max.	min.	max.
C%	0.18	0.23	0.22	0.31	0.32	0.38
Si%	0.16	0.30	0.15	0.30	0.16	0.30
Mn%	0.85	1.25	0.75	1.10	1.00	1.40
P%	-	0.045	-	0.045	-	0.040
S%	-	0.045	-	0.045	-	0.040
Cr%	-	0.30	-	0.30	-	0.30
Ni%	-	0.30	-	0.30	-	0.30
Mo%	-	0.10	-	0.15	-	0.10
Cu%	-	0.50	-	0.50	-	0.45
V%	-	0.10	-	0.050	-	0.05
Sn%	-	0.05	-	0.05	-	0.045
Ca%	-	0.10	-	0.10	-	0.005
N ppm	-	115	-	115	-	115
CE	0.42	0.50	0.40	0.50	0.56	0.65

#### Mechanical Properties:

Conforming to customer's requirement and as per ASTM and BS.

#### Product Identification:

Billets are identified by color coding across section surface of each billet with reference of heat number and grade.

#### Test Certificate:

Test Certificates are issued from our central testing Lab, in accordance with product specification as required by the customer.

#### Product Applications:

Our carbon & alloy steel products have extensive application in automotive, engineering and forging industries.

#### Qualities:

American Standard ASTM A 615 Grade 40 and 60 and British Standard BS 4449 Grade 460.





## Steel Beam

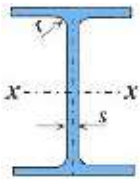
Hammad Steel Industries is a reliable source of superior quality IPE, IPEA & IPEAA Steel Beams in a variety of different sizes, maintaining extremely close dimensional tolerance and accurate mechanical properties. Built to international specifications, the light weight IPEAA steel beams are most suited to GCC markets, and primarily used in commercial and residential building structures and warehouses.

HAMMAD STEEL INDUSTRIES STANDARDS:

Steel Beam Standards is the main decisive factors / requirements by International for infrastructure. Several international standards are available with HAMMAD STEEL INDUSTRIES including:

 ASTM A 36, ASTM A 572 Gr.50     DIN 1025 Part 5     EN 10034, EN 10025, S275, S355

## I Beam



Sizes: 80 mm to 200 mm

Dimensional Specifications: DIN 1025 part 5 & EN 10034

Material Specifications: ASTM A36, ASTM A572 Gr.50, EN 10025, S275, S355 or Equivalent

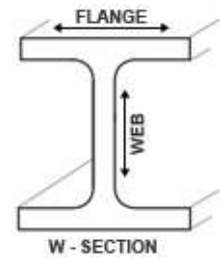


# Steel Beam

## Mass and Sectional Dimensions

H = Height of Beam – B = Flange Width – S = Thickness of Web – T = Flange Thickness – R = Root Radius

SECTION	Standard Sectional Dimensions					MASS kg / m
	mm					
	H	B	S	T	R	
IPE 80	80	46	3.8	5.2	5	6.00
IPEA 80	78	46	3.3	5.2	5	5.00
IPEAA 80	78	46	3.2	4.2	5	4.95
IPE 100	100	55	4.1	5.7	7	8.10
IPEA 100	98	55	3.6	4.7	7	6.90
IPEAA 100	97.6	55	3.6	4.5	7	6.72
IPE 120	120	64	4.8	6.3	7	10.40
IPEA 120	117.6	64	3.8	5.1	7	8.70
IPEAA 120	117	64	3.8	4.8	7	8.36
IPE 140	140	73	4.7	6.9	7	12.90
IPEA 140	137.4	73	3.8	5.6	7	10.50
IPEAA 140	136.6	73	3.8	5.2	7	10.05
IPE 160	160	82	5.0	7.4	9	15.80
IPEA 160	157	82	4.0	5.9	9	12.70
IPEAA 160	156.4	82	4.0	5.6	9	12.31
IPE 180	180	91	5.3	8.0	9	18.80
IPEA 180	177	91	4.3	6.5	9	15.40
IPEAA 180	176.4	91	4.3	6.2	9	14.94
IPE 200	200	100	5.6	8.5	12	22.40
IPEA 200	197	100	4.5	7.0	12	18.40
IPEAA 200	196.4	100	4.5	6.7	12	17.95





# Steel Beam

## Dimensions and Sectional Properties

SECTION	Sectional Area	Surface Area	Position of Centre of Gravity (cm)		Geometric Moment of Inertia (cm <sup>4</sup> )		Radius of Gyration of Area (cm)		Modulus of Section (cm <sup>3</sup> )	
	cm <sup>2</sup>	m <sup>2</sup> /m	Cx	Cy	Lx	Ly	Ix	Iy	Wx	Wy
IPE 80	7.64	0.328	0	0	80.1	8.49	3.24	1.05	20.0	3.69
IPEA 80	6.38	0.325	0	0	64.4	6.85	3.17	1.04	16.5	2.98
IPEAA 80	6.31	0.325	0	0	64.1	6.86	3.19	1.04	16.4	2.98
IPE 100	10.30	0.400	0	0	171.0	15.90	4.17	1.24	34.2	5.79
IPEA 100	8.73	0.397	0	0	141.2	13.12	4.01	1.22	28.8	4.77
IPEAA 100	8.56	0.396	0	0	135.9	12.59	3.98	1.21	27.9	4.58
IPE 120	13.20	0.475	0	0	318.0	27.70	4.90	1.45	53.0	8.65
IPEA 120	11.03	0.472	0	0	257.4	22.49	4.83	1.42	43.7	7.00
IPEAA 120	10.65	0.470	0	0	244.1	21.08	4.79	1.41	41.7	6.59
IPE 140	16.40	0.551	0	0	541.0	44.90	5.74	1.65	77.3	12.30
IPEA 140	13.40	0.547	0	0	434.9	36.40	5.70	1.65	63.3	9.90
IPEAA 140	12.79	0.544	0	0	407.4	33.82	5.64	1.63	59.6	9.27
IPE 160	20.10	0.623	0	0	869.0	68.30	6.58	1.84	109.0	16.70
IPEA 160	16.18	0.619	0	0	689.0	54.40	6.50	1.83	87.8	13.20
IPEAA 160	15.69	0.617	0	0	659.1	51.73	6.48	1.82	84.3	12.62
IPE 180	23.90	0.698	0	0	1320.0	101.0	7.42	2.05	146.0	22.20
IPEA 180	19.58	0.694	0	0	1063.0	81.90	7.36	2.04	120.0	18.00
IPEAA 180	19.03	0.693	0	0	1020.0	78.13	7.32	2.03	115.6	17.17
IPE 200	28.50	0.768	0	0	1940.0	142.0	8.26	2.24	194.0	23.50
IPEA 200	23.50	0.764	0	0	1591.0	117.0	8.20	2.24	161.6	23.40
IPEAA 200	22.87	0.463	0	0	1533.6	112.49	8.19	2.20	156.2	22.50

## Steel Channel

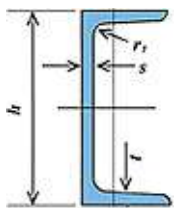
Hammad Steel Industries is a reliable source of superior quality, light-weight UPN Steel Channels in a variety of different sizes, maintaining extremely close dimensional tolerances and accurate mechanical properties. Built to international specifications, UPN Steel Channels are found to be best suited for applications that require a strong steel framework, like warehouses etc.

HAMMAD STEEL INDUSTRIES STANDARDS:

Steel Beam Standards is the main decisive factors / requirements by International for infrastructure. Several international standards are available with HAMMAD STEEL INDUSTRIES including:

 ASTM A 36, ASTM A 572 Gr.50     DIN 1026 Part 1     EN 10279, EN 10025, S275, S355

## UPN Channels



Sizes: 50 mm to 200 mm

Dimensional Specifications: DIN 1026 part 1 & EN 10279

Material Specifications: ASTM A36, ASTM A572 Gr.50, EN 10025, S275, S355 or Equivalent



# Steel Channel

## Mass and Sectional Dimensions

H = Height of Beam – B = Flange Width – S = Thickness of Web – T = Flange Thickness – R1 = Root Radius – R2 = Toe Radius

SECTION	Standard Sectional Dimensions mm						MASS kg / m
	H	B	S	T	R1	R2	
<b>II Standard Channels</b>							
UPN 50X25	50	25	5	6	6	3	3.86
UPN 50X38	50	38	5	7	7	3.5	5.59
UPN 60X30	60	30	6	6	6	3	5.07
UPN 65X42	65	42	5.5	7.5	7.5	4	7.09
UPN 80X45	80	45	6	8	8	4	8.64
UPN 100X50	100	50	6	8.5	8.5	4.5	10.6
UPN 120X55	120	55	7	9	9	4.5	13.4
UPN 140X60	140	60	7	10	10	5	16
UPN 160X65	160	65	7.5	10.5	10.5	5.5	18
UPN 180X70	180	70	8	11	11	5.5	22
UPN 200X75	200	75	8.5	11.5	11.5	6	25.3
<b>II Economic (Light Weight) Channels</b>							
UPE 80X40	80	40	4.5	7.4	6.5	2.5	7.1
UPE 100X46	100	46	4.5	7.6	7	3	8.6
UPE 120X52	120	52	4.8	7.8	7.5	3	10.4
UPE 140X58	140	58	4.9	8.1	8	3	12.3
UPE 160X64	160	65	5	8.4	8.5	3.5	14.2
UPE 180X70	180	70	5.1	8.7	9	3.5	16.3
UPE 200X76	200	76	5.2	9	9.5	4	18.4



# Steel Channel

## Dimensions and Sectional Properties

SECTION	Sectional Area F	Sectional properties about axes					
		Moment of Inertia (cm <sup>4</sup> )		Radius of Gyration (cm)		Modulus of Section (cm <sup>3</sup> )	
		Lx	Ly	Ix	Iy	Wx	Wy
UPN 50X25	4.92	16.8	2.49	1.85	0.71	6.73	1.48
UPN 50X38	7.12	26.4	9.12	1.92	1.13	10.6	3.75
UPN 60X30	6.46	31.6	4.51	2.21	0.84	10.5	2.16
UPN 65X42	9.03	57.5	14.1	2.52	1.25	17.7	5.07
UPN 75X40	8.818	75.9	12.4	2.93	1.19	20.02	4.45
UPN 80X45	11.0	106	19.4	3.10	1.33	26.5	6.36
UPN 100X50	13.5	206	29.3	3.91	1.47	41.2	8.49
UPN 120X55	17.0	364	43.2	4.62	1.59	60.7	11.1
UPN 140X60	20.04	605	62.7	5.45	1.75	86.4	14.8
UPN 160X65	24.0	925	85.3	6.21	1.89	116	18.3
UPN 180X70	28.0	1350	114	6.95	2.02	150	22.4
UPN 200X75	32.2	1910	148	7.70	2.14	191	27.0



## Our Services

### High Quality

Our Quality Policy is "To produce products complying with the national and international product and quality standards, to achieve the main target of ensuring customer and employee satisfaction, and to demonstrate perpetual improvement and development, by working in collaboration during all the activities"



### Flexible Finance

We offer several flexible finance options to our regular steel buyers, including Letter of Credit at Sight, 30% Advance and 70% on presentation of Original documents, 50% Advance and 50% on Fax/email of Copy document's, credit line option is also available for our regular buyers.



### Lowest Delivery Time

We offer guaranteed lowest delivery time to our esteemed buyers, understanding their needs for timely deliveries. We usually commit only spot deals which enables us to ship our steel products on time. Our fleet of 56 carriers enables us to deliver the merchandise on time to the port.





## Freight Arrangements

We also negotiate best container freight prices from reliable shipping lines and carriers on behalf of our Steel buyers and consumers. Our local presence and volumes enable us to get the required freight prices, shortest transit time, no shut-outs, more free time at destination ports and waiver of several port charges. Our freight prices are filed every quarterly with several shipping lines and carriers.



## Container Inspection

Our offered steel prices always include third party inspection to ensure our buyer's interest. We recommend SGS, Bureau Veritas (BIVAC), Intertek, and Cotecna for inspections at loading port. Inspections include complete physical and chemical analysis with comprehensive batch-wise Mill Test reports.



## Insurance Cover

Our offered steel prices also include comprehensive insurance of the cargo covering all risks to avoid any losses occurred during the handling of the cargo including loading, transportation and unloading. Providing cover to customer's from our steel plant to their warehouse.







## Shipments

### Turkey

Through high contractile productivity and investments, to become the leader in the Steel Sector in terms of products and services provided with universal quality and standards. Hammad Steel Industries has become a pioneer in its sector by constantly improving its technology and quality since 1973.



### Middle East

We are regularly exporting Steel Rebar & Steel Wire Accomplying Birtish Standards BS 4449:97, cares approved to several GCC Countries including Jebel Ali, Abu Dhabi, Muscat, Doha, Um-e-Qasr, Bahrain, Kuwait, Sharjah, Basra, Port Rashid, Shuaikah Port and other countries in Middle East.



### Other Countries

Hammad Steel Industries exported huge quantities of Steel Rebar in 2009 through its contractile facilities located in Turkey & Middle East to Africa and Other Countries in 20'ft & 40'ft FCL Containers. Exporting most of its production to foreign countries, Hammad Steel Industries assumed an important role in African Continent integration with the modern world with the advanced technology and its superior quality perception.



## Contact

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