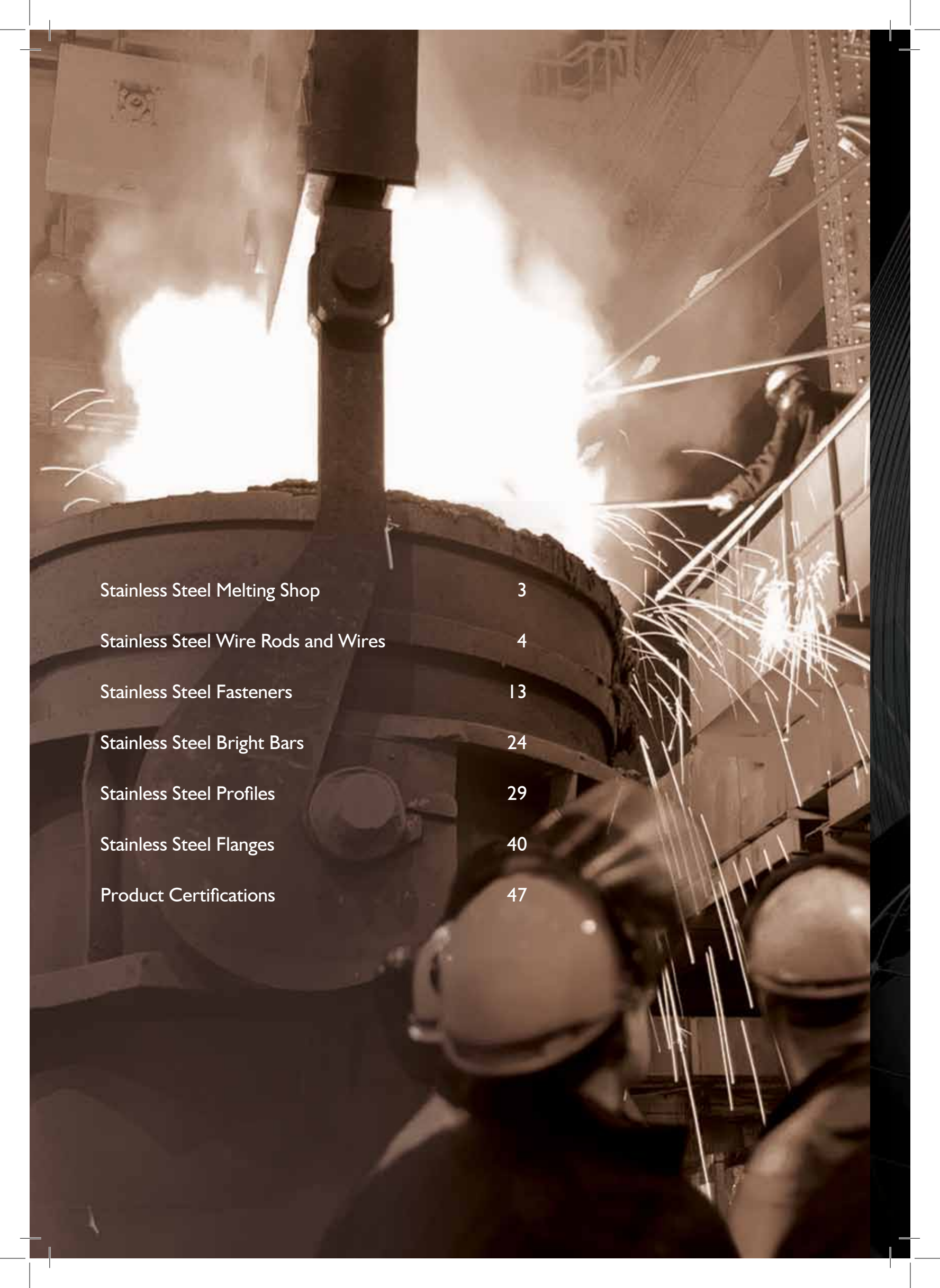


ONE VISION MANY WORLDS



PRODUCT CATALOGUE





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Stainless Steel Melting Shop

Our stainless steel melt shop encompasses five induction furnaces, two AOD converters with computerised Intelligent Refining System and two continuous billet / bloom casters.

Process Route:

- Induction melting
- AOD refining
- Continuous / Ingot casting

Capacity:

528,000 TPA

Grades:

Austentic, Ferritic, martensitic, austentic – ferritic (duplex) and precipitation hardening
304, 304L, 316, 316L, 321, 304H, 304HC, 316Ti, 303, 410, 420, 347, 201, 302, 302HQ, 430, 310, F-51, 416, 317L, LER grade and other Duplex grades.

Products:

Square Billet:

100 mm, 120 mm, 140 mm, 160 mm, 170 mm, 200 mm, 250 mm & 300 mm

Round Billet:

200mm and 300 mm

Ingot:

13 inch x 17 inch, 16 inch x 20 inch
& Polygonal Ingot of 7 Tons, 9 Tons, 12 Tons and 15 Tons

Stainless Steel
**Wire Rods
& Wires**



Stainless Steel Wire Rods and Wires

This division is engaged in manufacturing stainless steel wire rods and wires. The quality of our product is well established in the international market.

Wires manufactured in this division are mainly used in industries like ship building, medical, agriculture, springs, vineyard, chemical, petroleum, automobile, weaving, braiding, fasteners, food processing, paper mills, welding electrodes and house hold applications.

This division is capable of producing wire rods in extensive size ranges from 5.5 mm to 39.5 mm and wires from 0.09 mm to 15 mm.

Our wire rod division is well equipped with a fully automatic wire rod mill and solution annealing, soft annealing and pickling plants with high end automation facilities, and proven quality standards.

Our wires division is well-equipped for producing high quality products having in-house facilities for solution annealing, bright annealing (continuous strand annealing), dry and wet wire drawing, high speed drawing, medium wire pattern laying, fine wire spooling, layer winding, random winding, TIG wire straightening, and cutting facilities.

Grades:

ASTM:

201, 202, 204Cu, 301, 302, 303, 304, 304Cu, 304HC, 304L, 304H, 310, 310S, 312, 314, 316, 316L, 316LN, 316Ti, 316LCu, 321, 410, 420, 430, 430L

DIN/EN:

1.4301, 1.4306, 1.4307, 1.4310, 1.4401, 1.4404, 1.4567, 1.4841, 1.4842, 1.4541, 1.4845, 1.4570, 1.4571, 1.4578, 1.4597, 1.4362, 1.4370 and 1.4016

Electrode Grades:

ER304, ER304L, ER307, ER307Si, ER308, ER308L, ER308LSi, ER310, ER316, ER316L, ER316LSi, ER347, ER347Si, ER309, ER309L, ER430, ER420

*Specialized Grades – As per customer's requirements

Specifications:

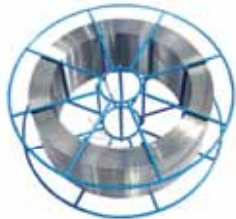
As per ASTM, DIN, BS, JIS, NACE, AWS, GOST, etc. international standards and customer specific requirements.

Product Range and Sizes:

Description	Size Range
Medium / Thick wire	0.80 to 16.00 mm
Welding wire	MIG – 0.8 to 1.6 mm, TIG – 1 to 4 mm, Core wire – 2.0 to 5.0
Cold heading wire	2.00 to 16.00 mm
Fine wire	0.09 to 0.70 mm
Electro Polish wire	1.0 to 12.0 mm
Spring wire	0.10 to 12.0 mm
Rope wire	0.10 to 4.0 mm
Redraw wire	0.70 to 5.0 mm
Tie wire (soft range)	0.7 to 4.0 mm
Tie wire (bright drawn)	1.60 to 4.0 mm
Nail wire	1.50 to 16.0 mm
Conveyor belt wire	1.60 to 4.0 mm
Staple Pin wire	0.80 to 1.6 mm
Nickle coated spring wire	0.80 to 1.6 mm
Nicket coated base wire for spring	2 to 4 mm

A. GMAW (MIG) – GAS Metal Arc Welding Wire

MIG wire bright drawn bright finish / soap drawn (de-coated) matte finish in precision layer wound spools

Sr. No.	Sizes (Inches)	Sizes (mm)	SD 200 Plastic Spools	SD 300 Plastic Spools	K 300 Metallic Basket Spools
1	0.033"	0.838	10 lbs/5 KGs	25 lbs/12.50 KGs 30 lbs/15.00 KGs	25lbs / 12.50 KGs 30lbs/15.00 KGs
2	0.035"	0.889			
3	0.040"	1.016			
4	0.045"	1.143			
5	0.062"	1.575			

- Spools packed in cardboard boxes, finally packed in wooden boxes / pallets
- We also offer customized packing and labelling solutions as per customer requirements and drawings

B. GTAW (TIG) – GAS TUNGSTEN INERT ARC WELDING WIRE

Tig Wire Bright Drawn Bright Finish in cut length 13.79 inches / 350 – 2000 mm

Sr. No.	Sizes (Inches)	Sizes (mm)	Plastic Tubes	Packing Type 5 Tubes in one corrugated box 1000 lbs / 500 KGs wooden box
1	0.0300"	0.800		
2	0.0350"	0.900		
3	0.0400"	1.000		
4	0.0450"	1.200		
5	0.0620"	1.600		
6	0.0800"	2.000		
7	0.0930"	2.400		
8	0.1250"	3.200		
9	0.1560"	4.000		

- Tubes packed in cardboard boxes, finally packed in wooden boxes / pallets
- We also offer customized packing and labelling as per customer requirements
- Grade and size embossed on both the sides of box for size 1.60mm (0.062") and above
- Customised marking such as: heat no., brand name, batch no., etc. possible on request

C. SAW – SUBMERGED ARC WELDING WIRE

SAW wire bright drawn bright finish / soap drawn (de-coated) matte finish in precision layer wound spools

Sr. No.	Sizes (Inches)	Sizes (mm)	Layer wound coils
1	0.0620"	1.600	
2	0.0800"	2.000	
3	0.0930"	2.400	
4	0.1250"	3.200	
5	0.1560"	4.000	

Spools packed in cardboard boxes, finally packed wooden boxes / pallets

We also offer customized packing and labelling as per customer requirements and drawings

D. MMAW – Manual Metal Arc Welding Wire

MMAW wire bright drawn bright finish in cut length / coils

Sr. No.	Sizes (Inches)	Sizes (mm)	Cut Length	Continuous Coil	Loose Coils
1	0.0620"	1.600	300, 350, 1000, 2000mm, 12", 14", 40", 79" Inch	600 2000 lbs 300 1000KGs	200 600 lbs 100 300KGs
2	0.0800"	2.000			
3	0.0930"	2.400			
4	0.1250"	3.200			
5	0.1560"	4.000			

We also offer customized packing and labelling as per customer requirements and drawings

Annealed / Soft Wire:

Size: 0.09 – 7.00 mm

Packing: SPOOL, Loose Coil, drum, Tube, Continuous Coil

Sizes	Type of Packing	
0.09 – 2.5 mm	SPOOL DIN I 25, DIN I 60, DIN 200, DIN 250, DIN 355	
0.71 – 10.00 mm	Loose Coil	
0.80 – 1.60 mm	Drum, Tube & carrier	

Spring Hard Wire (Bright Finish)

Size: 0.15 – 12.00 mm

Packing: Loose Coil, Invertor coil, Metal spool, Plastic Spool

Sizes	Type of Packing	
0.15 – 0.70 mm	SPOOL DIN I 25, DIN I 60, DIN 200, DIN 250	
0.71 – 12.00 mm	Loose Coil	

0.40 – 3.00 mm

Metal Spool
DIN560,
DIN760



Spring Hard Wire Soap Coated Matte Finish

Size: 0.40 – 12.00 mm

Sizes	Type of Packing	
0.40 – 3 mm	Loose Coil Spool SH390, SH460, DIN 560 Metal, DIN 760 Metal	
3 – 12 mm	Loose Coil	

Bright Drawn Wire

Size: 0.09 – 16.00 mm

Sizes	Type of Packing	
0.09 – 2.5 mm	SPOOL DIN125, DIN160, DIN200, DIN250, DIN 355	
0.71 – 16.00 mm	Loose Coil	

Bright Drawn Wire

Size: 1.80 – 12.00 mm

Sizes	Type of Packing	
1.80 – 4.00 mm	Continuous Coil	
2.00 – 12.00 mm	ESPOOL/ LESPOLL	

Nickel Coated Spring Wire

Sizes	Sizes mm	Type of Packing
1	0.80 – 1.60	
3	2.00 – 4.00	

Supply Conditions:

Wires: Soft finish wires with matte or bright condition, 1/8 hard, 1.4 hard (suitable for electro polish quality), 1/2 hard, 3/4 hard, full hard with coated or de-coated condition.

Types of Packaging:

- M.S. carrier packaging
- Basket spools packaging
- Carton case packaging
- Spools packaging
- Packing in corrugated drums
- Pattern layered coils packaging
- Packing in corrugated boxes
- Euro coil packaging
- Packing in spiral corrugated tubes
- Mill coil packaging

Testing Facilities:

- Computerised tensile testing machine (capacity range 20kg to 40 ton)
- Bend testing, wrap testing, torsion testing machine
- Hardness testing machine
- Microscope with image analyser with micro photo facilities
- IGC test facilities
- Cold upset test facility
- PMI tester (Niton gun X-ray analyser)
- Spectro and Leco analysers for chemical composition-optical emission spectro and gas analysers
- Radioactive contamination testing

Applications of Wires:

Wires: Soft finish wires with matte or bright condition, 1/8 hard, 1/4 hard (suitable for electro polish quality), 1/2 hard, 3/4 hard, full hard with coated or de-coated condition.

Product	Applications
Welding wire	For electrode core wire, submerged arc welding wire, TIG and MIG welding wire
Cold heading wire	For nut, bolt, tapping screws, machine screw, Philip head screws, wood screw, screw cross head
Weaving / braiding/knitting wire	For meshes, nets, screens, conveyer belts, kitchen appliances, wire cloths
Electro polish wire	For pet cages, kitchen ware, grill racks, decorative handles, wire baskets
Spring wire	For corrosion resistant springs, heat resistant springs, electronic and electrical appliance
Rope wire	For corrosion and wear resistant wire ropes
Redraw wire	For further drawing into fine and superfine wires
Tie wire	For fastening cables, garden wattles, wattled walls, fencing
Staple wire	For corrosion resistant industrial staple
Nail wire	For corrosion resistant nails

Stainless Steel Fasteners



Stainless Steel Fasteners

The Viraj fasteners division is specialised in the manufacturing of stainless steel fasteners products. Viraj has sophisticated, state-of-the-art machines employed for production and stringent quality controls that ensure flawless quality. SPC analysis is used as a tool to supervise the ongoing processes. We have an in-house facility for inspection and testing to produce world class quality products. Multi stage inspection checks by a trained and skilled workforce ensures that defect free products are delivered to customers. Our product range consists of more than 20,000 SKUs. Our customers span six continents and include the market leaders in every geography. Since its inception in 2006, the Viraj fastener division has become a world leader in the manufacturing of stainless steel fasteners and is a reputed brand worldwide.

Grades

304, 304L, 316, 316L, 316Ti, 200 series, Alloy group A2 and A4.

Property Class

For Bolt & Screws:

A2-70, A2-80, A4-70, A4-80, F593C, F593D, F593G, F593H.

For Nut:

A2-70, A2-80, A4-70, A4-80, F594C, F594D, F594G, F594H, A2-035, A4-040.

For SHCS:

F837B, F837C, F837E, F837.

For Threaded rod:

A2-70, A2-80, A4-70, A4-80, F593C, F593D, F593G, F593H, B8, B8M CLI & CL2.

Product Range

Hexagon Head Bolt				Hexagon Head Screw			
DIN 931/ISO 4014		ANSI B 18.2.1		DIN 933/ISO 4017		ANSI B 18.2.1	
Size	Length	Size	Length	Size	Length	Size	Length
M3	20-40	1/4"	1 1/4" - 6"	M3	10-40	1/4"	3/8" - 6"
M4	25-40	5/16"	1 1/4" - 7"	M4	10-40	5/16"	1/2" - 7"
M5	25-100	3/8"	1 1/2" - 10"	M5	10-70	3/8"	5/8" - 8"
M6	25-150	7/16"	1 3/4" - 6"	M6	10-150	7/16"	3/4" - 6"
M8	30-180	1/2"	1 7/8" - 10"	M8	10-180	1/2"	3/4" - 8"
M10	35-250	9/16"	2" - 8"	M10	16-200	9/16"	1" - 8"
M12	40-250	5/8"	2" - 10"	M12	20-200	5/8"	1" - 8"
M14	45-250	3/4"	2 5/8" - 10"	M14	25-200	3/4"	1 1/2" - 8"
M16	50-250	7/8"	2 3/4" - 10"	M16	25-200	7/8"	1 1/2" - 8"
M18	60-250	1"	3 1/4" - 10"	M18	40-200	1"	1 3/4" - 8"
M20	60-250	1 1/8"	4" - 14"	M20	40-200	1 1/8"	2" - 6"
M22	70-250	1 1/4"	4" - 14"	M22	40-200	1 1/4"	2-1/2" - 6"
M24	80-250	1 3/8"	4 1/2" - 14"	M24	40-200	1 3/8"	3" - 6"
M27	90-350	1 1/2"	4 1/2" - 14"	M27	50 - 200	1 1/2"	3" - 6"
M30	90-350	-	-	M30	50-200	-	-
M33	110-350	-	-	M33	70-200	-	-
M36	110-350	-	-	M36	80-200	-	-

Hexagon Socket Head Cap Screw**DIN912/ISO4762****ANSI B 18.3**

Size	Length		Size	Length	
	F/T	H/T		F/T	H/T
M3	10 - 40	25 - 40	1/4"	3/8" - 4"	1 1/2" - 6"
M4	10 - 40	30 - 40	5/16"	1/2" - 6"	1 3/4" - 6"
M5	10 - 50	30 - 70	3/8"	5/8" - 6"	1 3/4" - 6"
M6	10 - 100	35 - 150	7/16"	3/4" - 6"	2" - 6"
M8	12 - 160	40 - 160	1/2"	3/4" - 6"	2 1/4" - 6"
M10	16 - 150	45 - 150	5/8"	1 1/4" - 6"	2 1/2" - 6"
M12	20 - 150	55 - 150	3/4"	2" - 8"	3" - 8"
M14	30 - 150	60 - 150	7/8"	2" - 8"	3 1/4" - 8"
M16	30 - 150	65 - 150	1"	2" - 8"	3 1/2" - 8"
M18	50 - 200	70 - 200	-	-	-
M20	50 - 200	80 - 200	-	-	-
M22	50 - 200	80 - 200	-	-	-
M24	50 - 200	90 - 200	-	-	-

Round Head Square Neck Bolt or Carriage Bolt**DIN 603****ANSI B 18.5**

Size	Length	Size	Length	
			F/T	H/T
M 5	16 - 65	1/4"	5/8" - 3"	1-1/4" - 4"
M 6	16 - 75	5/16"	3/4" - 4"	1-1/2" - 6"
M 8	20 - 100	3/8"	3/4" - 4"	1-3/4" - 6"
M 10	20 - 100	-		
M 12	30 - 100			
M 16	55 - 130			

Hex Wood/Lag Screw**DIN 571****ANSI B 18.2.1**

Size	Length	Size	Length
M5	25 - 70	1/4"	1" - 3"
M6	25 - 100	5/16"	1" - 4"
M8	30 - 150	3/8"	1" - 4"
M10	40 - 150	-	-
M12	45 - 150	-	-

Hexagon Socket Button Head Screw**ISO7380-1**

Size	Length	Size	Length
M3	10 - 40	#6	3/8" - 1 1/2"
M4	10 - 50	#8	3/8" - 2"
M5	10 - 60	#10	3/8" - 2 1/4"
M6	10 - 100	1/4"	3/8" - 4"
M8	12 - 150	5/16"	1/2" - 6"
M10	16 - 150	3/8"	5/8" - 6"
M12	20 - 150	1/2"	3/4" - 6"

ANSI B 18.3**Hexagon Socket Flange Button Head Screw****ISO7380-2**

Size	Length	Size	Length
M3	10 - 40	M8	12 - 150
M4	10 - 50	M10	16 - 150
M5	10 - 60	M12	20 - 150
M6	10 - 100		

Hexagon Socket Countersunk Head Cap Screw**DIN7991/ISO10642****ANSI B 18.3**

Size	Length		Size	Length	
	F/T	H/T		F/T	H/T
M3	10 - 40	25 - 40	#5	3/8" - 1 1/2"	
M4	10 - 50	30 - 50	#6	3/8" - 1 1/2"	1 1/4" - 1 1/2"
M5	10 - 75	35 - 75	#8	3/8" - 2"	1 1/4" - 2"
M6	10 - 100	40 - 100	#10	1/2" - 2"	1 1/2" - 2 1/2"
M8	12 - 150	50 - 150	1/4"	1/2" - 4"	1 3/4" - 4"
M10	16 - 200	50 - 200	5/16"	1/2" - 4"	2" - 6"
M12	20 - 200	60 - 200	3/8"	5/8" - 6"	2 1/4" - 8"
M14	40 - 200	60 - 200	1/2"	1" - 6"	2 1/2" - 8"
M16	40 - 200	70 - 200	5/8"	1 5/8" - 8"	3 1/4" - 8"
M18	40 - 200	70 - 200	3/4"	1 5/8" - 8"	3 1/2" - 8"
M20	40 - 200	80 - 200	-	-	-

Slotted CSK Head Screw**Slotted Raised CSK Oval Head Screw****Slotted Chesse Head Screw****Slotted Pan Head Screw****DIN 963****DIN 964****DIN 84****DIN 85**

Size	Length	Size	Length	Size	Length	Size	Length
M3	10 - 40	M3	10 - 40	M3	10 - 40	M3	10 - 40
M4	10 - 50	M4	10 - 50	M4	10 - 50	M4	10 - 50

M5	10 - 60	M5	10 - 60	M5	10 - 60	M5	10 - 60
M6	10 - 80	M6	10 - 80	M6	10 - 80	M6	10 - 80

Cross Recessed CSK Flat Head Screw DIN 965 (TYPE H & Z / TORX)		Cross Recessed Raised CSK Oval Head Screw DIN 966 (TYPE H & Z)		Cross Recessed Raised Cheese Head Screw DIN 7985 (TYPE H&Z/TORX)	
Size	Length	Size	Length	Size	Length
M3	10 - 40	M3	10 - 40	M3	10 - 40
M4	10 - 50	M4	10 - 50	M4	10 - 50
M5	10 - 75	M5	10 - 75	M5	10 - 75
M6	10 - 100	M6	10 - 100	M6	10 - 100
M8	12 - 150	M8	12 - 150	M8	12 - 150
M10	16 - 150	M10	16 - 150	M10	16 - 150

Slotted Pan Head Tapping Screw DIN-7971		Slotted CSK Flat Head Tapping Screw DIN-7972		Slotted Raised CSK (Oval) Head Tapping Screw DIN-7973	
Size	Length	Size	Length	Size	Length
ST 2.9	9.5 - 38	ST 2.9	9.5 - 38	ST 2.9	9.5 - 38
ST 3.5	9.5 - 45	ST 3.5	9.5 - 38	ST 3.5	9.5 - 38
ST 3.9	9.5 - 38	ST 3.9	9.5 - 38	ST 3.9	9.5 - 38
ST 4.2	9.5 - 50	ST 4.2	9.5 - 50	ST 4.2	9.5 - 50
ST 4.8	9.5 - 60	ST 4.8	9.5 - 60	ST 4.8	9.5 - 60
ST 5.5	13 - 60	ST 5.5	13 - 60	ST 5.5	13 - 60
ST 6.3	13 - 60	ST 6.3	13 - 60	ST 6.3	13 - 60

Cross Recessed Pan Head Tapping Screw (TYPE H & Z / TORX) DIN-7981		Cross Recessed CSK Flat Head Tapping Screw (TYPE H & Z / TORX) DIN-7982		Cross Recessed Raised CSK (Oval) Head Tapping Screw (TYPE H & Z / TORX) DIN-7983	
Size	Length	Size	Length	Size	Length
ST 2.9	9.5 - 38	ST 2.9	9.5 - 38	ST 2.9	9.5 - 38
ST 3.5	9.5 - 45	ST 3.5	9.5 - 38	ST 3.5	9.5 - 38
ST 3.9	9.5 - 38	ST 3.9	9.5 - 38	ST 3.9	9.5 - 38
ST 4.2	9.5 - 50	ST 4.2	9.5 - 50	ST 4.2	9.5 - 50

ST 4.8	9.5 - 60	ST 4.8	9.5 - 60	ST 4.8	9.5 - 60
ST 5.5	13 - 60	ST 5.5	13 - 60	ST 5.5	13 - 60
ST 6.3	13 - 60	ST 6.3	13 - 60	ST 6.3	13 - 60

ANSI B 18.6.3

Cross Recessed Pan Head Machine Screw		Cross Recessed Truss Head Machine Screw		Cross Recessed Flat CSK Head Machine Screw		Cross Recessed Raised CSK Oval Head Machine Screw	
Size	Length	Size	Length	Size	Length	Size	Length
#4	3/8" - 1 1/2"	#4	3/8" - 1 1/2"	#4	3/8" - 1 1/2"	#4	3/8" - 1 1/2"
#5	3/8" - 1 1/2"	#6	3/8" - 1 1/2"	#6	3/8" - 1 1/2"	#6	3/8" - 1 1/2"
#6	3/8" - 1 1/2"	#8	3/8" - 2"	#8	3/8" - 2"	#8	3/8" - 2"
#8	3/8" - 2"	#10	1/2" - 2"	#10	1/2" - 2"	#10	1/2" - 2"
#10	1/2" - 2"	1/4"	3/8" - 4"	#12	1/2" - 2 1/2"	#12	1/2" - 2 1/2"
#12	1/2" - 2 1/2"	-	-	1/4"	3/8" - 4"	1/4"	3/8" - 4"
1/4"	3/8" - 4"	-	-	5/16"	1/2" - 5"	-	-
5/16"	1/2" - 5"	-	-	-	-	-	-
3/8"	7/8" - 5"	-	-	-	-	-	-

ANSI B 18.6.4

Cross Recessed Pan Head Tapping Screw		Cross Recessed Truss Head Tapping Screw		Cross Recessed Flat CSK Head Tapping Screw		Cross Recessed Raised CSK Oval Head Tapping Screw	
Size	Length	Size	Length	Size	Length	Size	Length
#6	3/8" - 1 1/2"	#6	3/8" - 1 1/2"	#6	3/8" - 1 1/2"	#6	3/8" - 1 1/2"
#8	3/8" - 2"	#8	3/8" - 2"	#8	3/8" - 2"	#8	3/8" - 2"
#10	3/8" - 2 1/4"	#10	3/8" - 2 1/4"	#10	3/8" - 2 1/4"	#10	3/8" - 2 1/4"
#12	3/8" - 2 1/4"	#12	3/8" - 2 1/4"	#12	3/8" - 2 1/4"	#12	3/8" - 2 1/4"
#14	1/2" - 2 1/4"	#14	1/2" - 2 1/4"	#14	1/2" - 2 1/4"	-	-

Hexagon flange bolt (FT) - DIN 6921

Size	Length	
	min	max
M8	16	60
M10	16	60
M12	20	70

TORX Products

Hexalobular socket pan Head Screw ISO 14583 TX			Hexalobular socket CSK Flat Head Screw ISO 14581 TX		
Size	Len (Min)	Len (Max)	Size	Len (Min)	Len (Max)
M3	10	40	M3	10	40
M4	10	40	M4	10	40
M5	10	50	M5	10	50
M6	12	100	M6	12	100
M8	12	100	M8	12	100
M10	16	100	M10	16	100

Hexalobular socket Cheese Head Screw ISO 14580 TX			Hexalobular raised CSK Head Screw ISO 14584 TX		
Size	Len (Min)	Len (Max)	Size	Len (Min)	Len (Max)
M3	10	40	M3	10	40
M4	10	40	M4	10	40
M5	10	50	M5	10	50
M6	12	100	M6	12	100
M8	12	100	M8	15	100
M10	16	100	M10	16	100

Hexalobular Pan Hd. Tapping Sc. (Cross Recess) ISO 14585 TX			Hexalobular CSK Tapping Sc. (Cross Recess) ISO 14586 TX		
Size	Len (Min)	Len (Max)	Size	Len (Min)	Len (Max)
ST 2.9	9.5	38	ST 2.9	9.5	38
ST 3.5	9.5	38	ST 3.5	9.5	38
ST 4.2	9.5	50	ST 4.2	9.5	50
ST 4.8	9.5	60	ST 4.8	9.5	60
ST 5.5	13	60	ST 5.5	13	60
ST 6.3	13	60	ST 6.3	13	60

Hexalobular Raised CSK (Oval) Head Tapping Screw ISO 14587

Size	Length	Size	Length
ST 2.9	9.5 - 38	ST 4.8	9.5 - 60
ST 3.5	9.5 - 38	ST 5.5	13 - 60
ST 4.2	9.5 - 50	ST 6.3	13 - 60

DIN934 / ISO4032		DIN439 / ISO4035		ANSI B18.2.2	
Hexagon Nuts		Hexagon Thin Nuts		Heavy Hexagon Nuts	Hexagon Nuts
M5 - M27		M6 - M27		1/4" - 7/8"	1/4" – 1"
DIN557		DIN562		DIN928	DIN929
Square Nuts		Square Thin Nuts		Square Weld Nuts	Hexagon Weld Nuts
M5 - M12		M6 - M8		M6 - M10	M5 - M12
DIN982		DIN985		IFI 100 - 107	
Thick Nyloc Nuts		Thin Nyloc Nuts		Thick Nyloc Nuts	
M 6 - M 12		M6 - M12		1/4" - 3/8"	
Nylock Nut-Thick		Hexagon Flange Nut		Hexagon Flange Nut with Serration	
ISO7040		IFI-145 / 18.16.4		IFI-145 / 18.16.4	
M10 - M12		1/4" - 1/2"		1/4" - 1/2"	
DIN6923		Hexagon Flange Nuts with Serration		BS 1083	
Hexagon Flange Nuts		Hexagon Nuts		Hexagon Nuts	
M 6 - M 12		M 6 - M 12		1/4" - 1"	
Threaded Rod					
DIN 975/DIN 976			ANSI B 18.31.3/IFI 136/ASTM A 193		
	Size	Length	Size	Length	
Long Length	M5	0.50 Mtr - 1.0 Mtr	1/4"	0.5 mtr - 3 mtr	
	M6-M36	0.5 mtr - 3 mtr		3' - 12'	
Short Length	M6	30 - 130	5/16" - 1 1/2"	0.5 mtr - 3 mtr	
Short Length	M8	30 - 130		3' - 12'	
	M10	40 - 170			
	M12	40 - 170			
	M14	50 - 130			
	M16	50 - 130			
	M18	60 - 170			
	M20	60 - 170			

Hexagon socket thin head cap screw with Blind hole DIN6912, FT&HT		Hexagon socket thin head cap screw DIN7984 , FT		Hexagon socket thin head cap screw DIN7984, HT	
Size	Length	Size	Length	Size	Length
M6	20 - 100	M6	10 - 100	M6	30 - 150
M8	20 - 150	M8	12 - 150	M8	35 - 150
M10	20 - 150	M10	16 - 150	M 10	40 - 150
M12	40 - 150	M12	16 - 150	M 12	50 - 150

Dowel Screw Hexagon End		Dowel Screw Middle Hex		Dowel Screw Without Hex	
Size	Length	Size	Length	Size	Length
M10	160 - 250	M10	80 - 200	M6	50 - 160
M12	200 - 300	M12	100 - 250	M8	60 - 160

Future development

Bolt Section		
Sr. No.	Standard	Product Description
1.	DIN478	Square Head Bolts with Collar
2.	DIN479	Square Head Bolts with Short Dog Point
3.	DIN561	Hexagon Head Set Screws with Small Hexagon & Full Dog Point
4.	DIN938	Studs (Metal End)
5.	DIN939	Studs (Threaded End)
6.	DIN940	Studs (Metal End)
7.	DIN961	Hexagon Bolts (Fine Threads) M8x1.0 to M52x3.0
8.	DIN913	Hexagon Socket Set Screw with Flat Point
9.	ASME B18.2.1	Square Head Bolt
10.	ASME B18.2.1	Hexagon Flange Screws
11.	ASME B18.5	Round Head Bolts
12.	ASME B18.5	Round Head Bolts (CSK Slotted)
13.	IFI-148	Threaded Projection Weld Studs
14.	ASME B18.3	Low Head Socket Cap Screws
15.	ASME B18.3	Hexagon Socket Set Screws with Flat Point

Header Section		
Sr. No.	Standard	Product Description
1.	DIN7995	Cross Recessed Raised CSK Head Wood Screw (M5 & Above)
2.	DIN7996	Cross Recessed Pan Head Wood Screw (M5 & Above)
3.	DIN7997	Cross RecessedCSKHead Wood Screw (M5 & Above)

4.	WS9330	Slotted Mushroom Head Screws
5.	ASME B18.6.2	Slotted Flat CSK Head Cap Screws
6.	ASME B18.6.2	Slotted Round Head Cap Screws
7.	ASME B18.6.2	Slotted Fillister Head Cap Screws

Nut Section

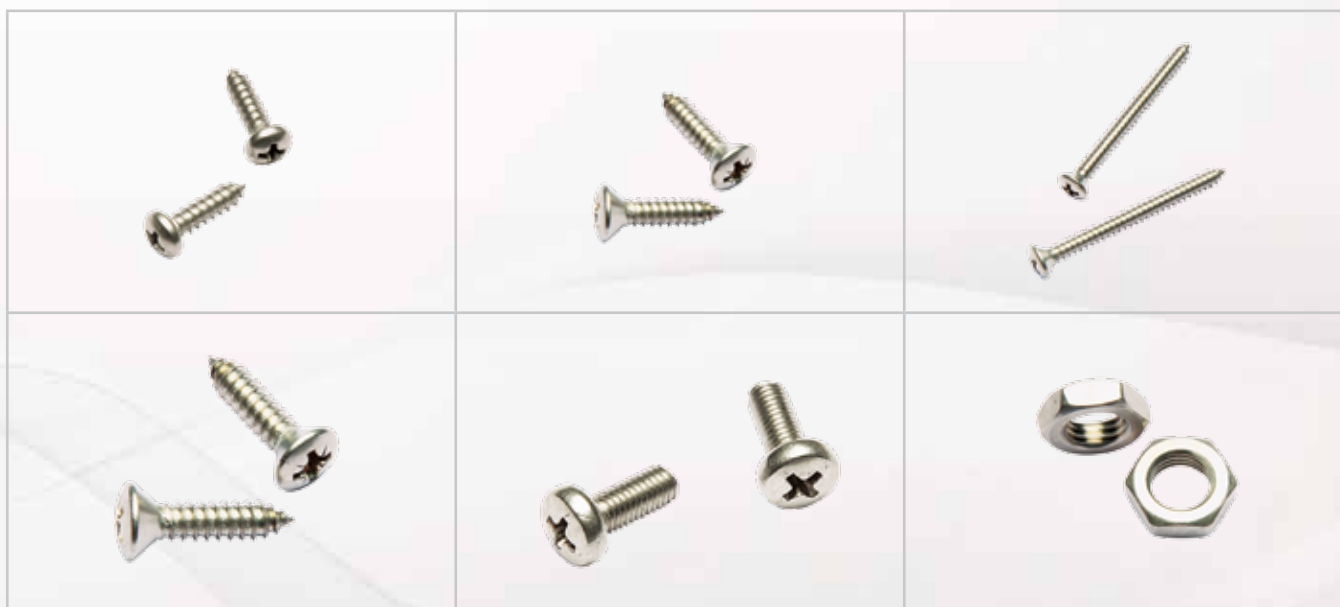
Sr. No.	Standard	Product Description
1.	ASME B18.2.2	Square Nut
2.	DIN936	Hexagon Thin Nuts
3.	DIN6331	Hexagon Nuts With Collar (Height 1.5d)
4.	ASME B18.6.4	Serrated Hex Flange Lock Nuts

T. Bar

Sr. No.	Standard	Product Description
1.	DIN976	Threaded Rod (A4-80 Grade) Upto M24

Testing Facilities	Certifications	Certified from (TUV)
Tensile Test	EN-ISO 10204-3.1	ISO 9001-2008
Impact Test	PPAP level 3	CE
Hardness Test	EN-ISO 10204-3.2	ADW2 / PED
IGC Test	-	PED

Following RoHS compliance



Stainless Steel
**Bright
Bars**



Stainless Steel Bright Bars

Viraj is equipped with a state-of-the-art, continuous hardening and tempering furnace for the heat treatment of Ferritic and Martensitic stainless steel this fulfilling the requirements of the most discerning and quality conscious customers.

Apart from Austenitic, Martensitic and Ferritic, we have also developed Duplex, Precipitation Hardening and High Sulphur – super machinability grades.*

On the value addition and quality enhancement front, Viraj is now offering Pump Shaft Quality (PSQ) Bright bars from ½” to 2” diameter and will further increase it up to 150 mm. The PSQ quality will be achieved with precision equipment required for the manufacture of the same.

Forged bars are produced in size ranges from 6 ½” to 23” (160 mm to 600 mm)

Viraj has commissioned an automatic storage and retrieval system for improving the service level to customers.

Grades:

AISI:

201, 202, 301, 303, 304, 304H, 304/304L, 316, 316H, 316/316L, 309, 309S, 310, 310S, 316Ti, 317, 317L, 347, 321, 321H, 410, 416, 420, 430, 430F, 431, 630, 17-4PH, F51, F60

DIN:

WNRI.4301, WNRI.4305, WNRI.4306, WNRI.4307, WNRI.4401, WNRI.4404, WNRI.4571, WNRI.4541, WNRI.4828, WNRI.4841, WNRI.4845, WNRI.4449, WNRI.4438, WNRI.4310, WNRI.4550, WNRI.4541, WNRI.4878, WNRI.4006, WNRI.4005, WNRI.4021, WNRI.4028, WNRI.4016, WNRI.4104, WNRI.4105, WNRI.4057, WNRI.4542, WNRI.4462

Supply Conditions:

- Annealed
- Strain Hardened
- Centre less Ground
- Centre less Ground and Polished
- Cold Drawn
- Smooth Turned
- QT 700
- QT 850
- Forged and Rough Turned
- Buffed (Mirror Finish)
- 100% Ultrasonically Tested
- Chamfered
- Hardened and Tempered
- PSQ
- QT 800
- QT 900

*Special calcium treated and finished with high Sulphur material ideal for improved machinability.



Product	Size Range (mm)	Size Range (inch)	Tolerances
Cold Drawn Bars or Cold Drawn + Polished Bars			
Round	2 to 35	0.08 to 1 1/2	H8, H9, H10, H11
Hexagon	5 to 76.2	0.196 to 3	H11
Square	5 to 76.2	0.196 to 3	H11
Peeled and Polished			
Round	16 to 200	5/8 to 8	H9, H11, K12
Rolled Bar (Rough Peeled)			
Round	100 to 200	4 to 8	DIN 1013, EN 10060
Forged Bar (Rough Peeled)			
Round	160 to 600	6 1/4 to 24	DIN 1013, EN 10060
Centerless Ground			
Round	12 TO 50	1/2 to 2	H9, H11
Chamfered (Both Side)			
Round	12 to 120	1/2 to 4.7	H9, H11, K12, K13
Pump Shaft Quality			
Round	12 to 50	1/2 to 2	H8, H9

Testing Facilities:

- Tensile testing machine
- Impact testing machine
- Hardness testing machine
- Microscope with image analyzer and micro photo facilities
- Ultrasonic testing machine with continuous bar feeling facility
- Precision digital laser micrometer
- Eddy current tester
- Surface roughness tester
- IGC test facilities
- Radiation servo meter



Hexagon Bars	Square Bars	Forged Bars
		

Packing:

Bars are packed in 500 kg to 3000 kg bundles. Each bar is colour coded then wrapped in HDPE cloth and strapped along with identification labels on each bundle.

Applications of Bright Bars:

- Automobile industry – This is the major sector which consumes bright bars in all the engine components. Nuts, bolts and shafts are made out of special grades of bright bars.
- In pumps / electric motor industries.
- In railways for the manufacture of engines as well as coaches.
- In the defense sector for making various arms and ammunitions.
- For various fabrication jobs where accuracy is important.
- For making shafts in conveyors.
- In all other engineering industries such as
 - Auto industry
 - Agricultural equipment
 - Health & sports equipment
 - Textile industry
 - Food processing industry
 - Decorative & furniture
 - Hoses & fittings
 - Tools & Fixtures
 - Bearings, hinges & gears
 - Material handling & storage
 - Oil & petroleum sector
 - Mining

Stainless Steel Profiles



Stainless Steel Profiles

The profile division engaged in manufacturing and exporting stainless steel angles, flats, special profiles like channels (tapered and non-tapered), unequal angles and beams in an extensive size range.

This division has all in-house facilities for rolling, straightening, shot blasting, solution annealing, pickling and buffing, and a well-equipped laboratory with testing facilities to ensure high product quality. This division has got a high demand in the international market because of its superior quality products and on time delivery.

Grades:

ASTM:

304, 304I, 304h, 303, 316, 316L, 321, 316Ti, 630

DIN:

1.4301, 1.4307, 1.4306, 1.4841, 1.4305, 1.4401, 1.4404, 1.4541 and 1.4571, 17 4 PH

List Of Drawn Flat Bar Sizes

Sr. No.	Sizes (Inch)	Sr. No.	Sizes (mm)
1	19.05 X 6.35	1	20X 5
2	19.05 X 7.94	2	20 X 6
3	19.05 X 9.53	3	20 X 8
4	19.05 X 12.7	4	20 X 10
5	19.05 X 15.88	5	20 X 12
6	25.4 X 6.35	6	25 X 5
7	25.4 X 7.94	7	25 X 6
8	25.4 X 9.53	8	25 X 8
9	25.4 X 12.7	9	25 X 9
10	25.4 X 15.88	10	25 X 10
11	25.4 X 19.05	11	25 X 12
12	31.75 X 4.76	12	25 X 15
13	31.75 X 6.35	13	25 X 20
14	31.75 X 9.53	14	30 X 5
15	31.75 X 12.7	15	30 X 6
16	31.75 X 15.88	16	30 X 8
17	31.75 X 19.05	17	30 X 9
18	31.75 X 25.4	18	30 X 10
19	31.75 X 4.76	19	32 X 12
20	31.75 X 6.35	20	32 X 15
21	31.75 X 7.94	21	38 X 9

List Of Drawn Flat Bar Sizes

Sr. No.	Sizes (Inch)	Sr. No.	Sizes (mm)
22	38.1 X 9.53	22	38 X 12
23	38.1 X 12.7	23	38 X 15
24	38.1 X 15.88	24	40 X 5
25	38.1 X 19.05	25	40 X 6
26	38.1 X 25.4	26	40 X 8
27	38.1 X 31.75	27	40 X 9
28	44.45 X 6.35	28	40 X 10
29	44.45 X 15.88	29	40 X 12
30	44.45 X 19.05	30	40 X 15
31	44.45 X 25.4	31	40 X 20
32	44.45 X 31.75	32	50 X 5
33	50.8 X 6.35	33	50 X 6
34	50.8 X 7.94	34	50 X 8
35	50.8 X 9.53	35	50 X 9, 50 X 10
36	50.8 X 12.7	36	50 X 12
37	50.8 X 15.88	37	50 X 15
38	50.8 X 19.05	38	50 X 20
39	50.8 X 25.4	39	50 X 25
40	50.8 X 31.75	40	50 X 30
41	50.8 X 38.1	41	50 X 40
42	63.5 X 6.35	42	54 X 12
43	63.5 X 9.53	43	60 X 6
44	63.5 X 12.7	44	60 X 8
45	63.5 X 15.88	45	60 X 9
46	63.5 X 19.05	46	60 X 10
47	63.5 X 25.4	47	60 X 12
48	63.5 X 31.75	48	60 X 15
49	76.2 X 6.35	49	60 X 20, 60 X 25
50	76.2 X 9.53	50	60 X 30
51	76.2 X 12.7	51	60 X 40
52	76.2 X 15.88	52	65 X 9
53	76.2 X 19.05	53	65 X 12
54	76.2 X 25.4	54	70 X 8
55	101.6 X 6.35	55	70 X 9
56	101.6 X 9.53	56	70 X 10
57	101.6 X 12.70	57	70 X 12
58	101.6 X 9.53	58	70 X 15

List Of Drawn Flat Bar Sizes

Sr. No.	Sizes (Inch)	Sr. No.	Sizes (mm)
59	101.6 X 12.70	59	70 X 20, 70 X 25, 70 X 30
60	101.6 X 15.88	60	75 X 6
61	101.6 X 19.05	61	75 X 8
62	101.6 X 25.4	62	75 X 9
63	101.6 X 31.75	63	75 X 10
64		64	75 X 12
65		65	75 X 15, 75 X 20, 75 X 25, 75 X 30
66		66	80 X 8
67		67	80 X 10
68		68	80 X 12
69		69	80 X 15, 80 X 20, 80 X 25, 80 X 30
70		70	100 X 6
71		71	100 X 8
72		72	100 X 9
73		73	100 X 10
74		74	100 X 12
75		75	100 X 15, 100 X 20, 100 X 25, 100 X 30

Sr. No.	Equal Angle Size Range
1	19 X 19 X 3
2	19.05 X 19.05 X 3.17
3	20 X 20 X 3 / 4
4	25 X 25 X 3 / 4 / 5 / 6
5	25.4 X 25.4 X 3.17 / 4.76 / 6.35
6	30 X 30 X 3 / 4 / 5 / 6
7	31.7 X 31.7 X 3.17 / 4.76 / 6.35
8	32 X 32 X 3
9	35 X 35 X 3 / 4 / 5 / 6
10	38 X 38 X 3 / 4 / 5 / 6
11	38.1 X 38.1 X 3.17 / 4.76 / 6.35
12	40 X 40 X 3 / 4 / 4.5 / 5 / 6
13	44.45 X 44.45 X 3.17 / 4.76 / 6.35
14	45 X 45 X 3 / 4 / 5 / 6
15	50 X 50 X 3 / 4 / 4.5 / 5 / 6 / 7 / 8 / 9 / 10
16	50.8 X 50.8 X 3.17 / 4.76 / 6.35 / 7.94 / 9.53
17	60 X 60 X 5 / 6 / 7 / 8 / 10
18	63.5 X 63.5 X 4.76 / 6.35 / 7.94 / 9.53
19	65 X 65 X 5 / 6 / 7 / 8 / 9 / 10

20	70 X 70 X 5 / 6 / 7 / 8 / 9 / 10
21	75 X 75 X 5 / 6 / 7 / 8 / 9 / 10 / 12
22	76.2 X 76.2 X 4.76 / 6.35 / 7.94 / 9.53 / 12.7
23	80 X 80 X 6 / 7 / 8 / 10
24	88.9 X 88.9 X 6.35 / 7.94 / 9.53
25	90 X 90 X 6 / 8 / 9 / 10
26	100 X 100 X 6 / 7 / 8 / 9 / 10 / 12
27	101.6 X 101.6 X 6.35 / 7.94 / 9.53 / 12.7

Large Angle

28	120 X 120 X 10 / 12 / 13
29	127 X 127 X 9.53 / 12.7
30	150 X 150 X 10 / 12 / 13 / 15
31	152.4 X 152.4 X 9.53 / 12.7

Sr. No.	Unequal Angle Size Range
1	50 X 30 X 5
2	60 X 30 X 5
3	60 X 40 X 5 / 6
4	75 X 50 X 6
5	80 X 40 X 6
6	100 X 50 X 6
7	120 X 80 X 8 / 10
8	130 X 65 X 8 / 10
9	50.8 X 25.4 X 6.35
10	76.2 X 38.1 X 6.35
11	76.2 X 50.8 X 4.76 / 6.35 / 9.53
12	101.6 X 76.2 X 6.35 / 9.53
13	125 X 75 X 9
14	127 X 76.2 X 6.35 / 9.53
15	150 X 100 X 10
16	152 X 76.2 X 9.53
17	152.4 X 101.6 X 9.53 / 12.7

Sr. No.	Flat Size Range, Width X Thickness (mm)
1	19.05 x 3.17 / 4.76 / 6.35 / 7.94 / 9.53 / 12.7 x 15.88
2	20 x 3 / 4 / 5 / 6 / 8 / 9 / 10 / 12 / 15
3	25 x 3 / 4 / 4.5 / 5 / 6 / 8 / 9 / 10 / 12 / 15 / 20
4	25.4 X 3.17 / 4.76 / 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05
5	30 X 3 / 4 / 4.5 / 5 / 6 / 8 / 9 / 10 / 12 / 15 / 16 / 20 / 22 / 25
6	31.7 X 3.17 / 4.76 / 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4
7	32 X 4 / 4.5 / 5 / 6 / 8 / 9 / 10 / 12 / 15
8	35 X 4 / 5 / 6 / 8 / 9 / 10 / 12 / 15 / 20 / 22 / 25 / 30
9	38 X 4 / 4.5 / 5 / 6 / 9 / 12 / 15 / 19 / 20 / 25

10	38.1 X 3.17 / 4.76 / 6.35 / 7.94 / 9.53 / 11.11 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75
11	40 X 3 / 4 / 4.5 / 5 / 6 / 8 / 9 / 10 / 12 / 15 / 16 / 20 / 25 / 30
12	44.45 X 4.76 / 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75
13	45 X 4 / 5 / 6 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 / 35 / 40
14	50 X 4 / 4.5 / 5 / 6 / 8 / 9 / 10 / 12 / 14 / 15 / 16 / 19 / 20 / 25 / 30 / 35 / 40
15	50.8 X 4.76 / 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75 / 38.1
16	55 X 10 / 12 / 15 / 16
17	60 X 5 / 6 / 8 / 9 / 10 / 12 / 15 / 16 / 19 / 20 / 25 / 30 / 35 / 40
18	63.5 X 6.35 / 7.94 / 9.53 / 11.11 / 12.7 / 15.88 / 19.5 / 25.4 / 31.75 / 38.1
19	65 X 5 / 6 / 8 / 9 / 10 / 12 / 15 / 16 / 20 / 25 / 30 / 35 / 40
20	70 X 5 / 6 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 / 35 / 40
21	75 X 5 / 6 / 7 / 8 / 9 / 10 / 12 / 15 / 16 / 19 / 20 / 25 / 30 / 35 / 40 / 50
22	76.2 X 4.76 / 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75 / 38.1 / 50.8
23	80 X 5 / 6 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 / 35 / 40 / 50
24	88.9 / 6.35 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75 / 38.1
25	90 X 6 / 8 / 10 / 12 / 15 / 16 / 19 / 20 / 25 / 30 / 40
26	100 X 6 / 8 / 9 / 10 / 12 / 15 / 16 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 60
27	101.6 X 6.35 / 7.94 / 9.53 / 12.7 / 15.88 / 19.05 / 25.4 / 31.75 / 38.1 / 50.8
28	110 X 10 / 15 / 20 / 25 / 30
29	120 X 8 / 10 / 12 / 15 / 16 / 20 / 25 / 30 / 40
30	125 X 9 / 10 / 12 / 15 / 20 / 25 / 30 / 40
31	127 X 9.53 / 12.7 / 15.88 / 19.5 / 25.4 / 31.75 / 38.1
32	130 X 10 / 15 / 20 / 25 / 30
33	140 X 10 / 12 / 15 / 20 / 25 / 30
34	150 X 9 / 10 / 12 / 15 / 16 / 20 / 25 / 30 / 40
35	152.4 X 9.53 / 12.7 / 15.88 / 19.5 / 25.4 / 31.75 / 38.1
36	175 X 16

List of Polish Flat Bar Sizes

Sr. No.	Sizes	Sr. No.	Size	Sr. No.	Sizes
1	20 X 5	38	50 X 10	75	75 X 20
2	20 X 6	39	50 X 12	76	75 X 25
3	20 X 8	40	50 X 15	77	75 X 30
4	20 X 10	41	50 X 16	78	80 X 5
5	20 X 12	42	50 X 20	79	80 X 6
6	20 X 15	43	50 X 25	80	80 X 8
7	25 X 5	44	50 X 30	81	80 X 10
8	25 X 6	45	50 X 32	82	80 X 15
9	25 X 8	46	50 X 40	83	80 X 20

10	25 X 10	47	54 X 12	84	80 X 25
11	25 X 12	48	60 X 5	85	80 X 30
12	25 X 15	49	60 X 6	86	100 X 6
13	30 X 5	50	60 X 8	87	100 X 8
14	30 X 6	51	60 X 10	88	100 X 10
15	30 X 8	52	60 X 12	89	100 X 12
16	30 X 9	53	60 X 15	90	100 X 15
17	30 X 10	54	60 X 20	91	100 X 20
18	30 X 12	55	60 X 30	92	100 X 25
19	30 X 15	56	60 X 40	93	100 X 30
20	30 X 20	57	65 X 9	94	120 X 8
21	32 X 12	58	65 X 12	95	120 X 10
22	32 X 15	59	65 X 15	96	120 X 12
23	38 X 9	60	70 X 6	97	120 X 15
24	38 X 12	61	70 X 8	98	120 X 20
25	38 X 15	62	70 X 9	99	120 X 25
26	40 X 4	63	70 X 10	100	120 X 30
27	40 X 5	64	70 X 12	101	127 X 9
28	40 X 6	65	70 X 15	102	127 X 12
29	40 X 8	66	70 X 20	103	150 X 9
30	40 X 10	67	70 X 25	104	150 X 10
31	40 X 12	68	70 X 30	105	150 X 12
32	40 X 15	69	75 X 6	106	150 X 15
33	40 X 20	70	75 X 8	107	150 X 20
34	40 X 30	71	75 X 9	108	150 X 25
35	50 X 5	72	75 X 10	109	150 X 30
36	50 X 6	73	75 X 12		
37	50 X 8	74	75 X 15		

Sr. No.	Channel Size Range Inch (mm)	Type
1	3" X 1.41" X 0.17" X 0.273" (76.2 X 35.81 X 4.32 X 6.93)	Taper
2	4" X 1.584" X 0.184" X 0.296" (101.6 X 40.23 X 4.67 X 7.52)	Taper
3	4" X 1.721" X 0.321" X 0.296" (101.6 X 43.71 X 8.15 X 7.52)	Taper
4	5" X 1 7/8" X 3/8" (127 X 47.625 X 9.52)	Taper
5	5" X 1.75" X 0.19" X 0.32" (127 X 44.45 X 4.83 X 8.13)	Taper
6	5" X 1.885" X 0.325" X 0.32" (127 X 47.88 X 8.26 X 8.13)	Taper
7	6" X 1.92" X 0.2" X 0.343" (152.4 X 48.77 X 5.08 X 8.71)	Taper
8	6" X 2.034" X 0.314" X 0.343" (152.4 X 51.66 X 7.98 X 8.71)	Taper
9	8" X 2.53" X 0.487" X 0.39" (203.2 X 64.26 X 12.37 X 9.90)	Taper
10	40 X 35 X 5 X 7	Taper
11	50 X 25 X 5 X 6	Taper

12	50 X 38 X 5 X 7	Taper
13	60 X 30 X 6 X 6	Taper
14	65 X 42 X 5.5 X 7.5	Taper
15	75 X 40 X 4.7 X 6.9	Taper
16	80 X 45 X 6 X 8	Taper
17	100 X 50 X 6 X 8.5	Taper
18	120 X 55 X 7 X 9	Taper
19	140 X 60 X 7 X 10	Taper
20	160 X 65 X 7.5 X 10.5	Taper
21	2" X 1" X 1/8" (50.8 X 25.4 X 3.18)	Non - Taper
22	2" X 1" X 3/16" (50.8 X 25.4 X 4.76)	Non - Taper
23	2" X 1" X 1/4" (50.8 X 25.4 X 6.35)	Non - Taper
24	3" X 1 3/8" X 3/16" (76.2 X 34.925 X 4.76)	Non - Taper
25	3" X 1 1/2" X 3/16" (76.2 X 38.1 X 4.76)	Non - Taper
26	3" X 1 1/2" X 1/4" (76.2 X 38.1 X 6.35)	Non - Taper
27	4" X 2" X 1/4" (101.6 X 50.8 X 6.35)	Non - Taper
28	4" X 1 3/4" X 1/4" (101.6 X 44.45 X 6.35)	Non - Taper
29	60 X 30 X 5 X 5	Non - Taper
30	80 X 40 X 5 X 5	Non - Taper
31	80 X 40 X 6 X 6	Non - Taper
32	100 X 50 X 5 X 5	Non - Taper
33	100 X 50 X 6 X 6	Non - Taper
34	120 X 60 X 6 X 6	Non - Taper
35	130 X 65 X 6 X 6	Non - Taper
36	150 X 75 X 6 X 6	Non - Taper
Sr. No.	I (S) Beam Size Range	
1	76.2 X 59.2 X 4.3 X 6.6 (S 3)	
2	101.6 X 67.6 X 4.9 X 7.4 (S 4)	
3	127 X 76.3 X 5.4 X 8.3 (S 5 X 10)	
4	152.4 X 84.6 X 5.9 X 9.1 (S6 X 12.5)	

Automatic Packaging Facility: Angle/Flats/Special profile packed in 500 to 1000 kg weight by using fully automatic, auto packing bundling machine. This automatic machines carry all the bars without any manual operation from pickling line. This machine makes all the bundle in auto sequence and wrapped top & bottom by LLDPE poly film and radially wrap by another LLDPE film to make it air tight. Finally wrapped bundle strapped by metal bands at equal interval by automatic signode strapping. Bundle identification tag is provided at the bundle end

Testing Facilities:

- Tensile testing machine
- Hardness testing machine
- Impact testing machine
- Metallurgical microscope with image analyser
- IGC test facility
- Ultrasonic testing
- PMI test



Auto Packing:

Angle/Flats/Special profile packed in 500 to 1000 kg weight in fully automatic, auto packing bundling machine. This automatic machines carry all the bars without any manual operation from pickling line. This machine makes all the bundle in auto sequence and wrapped top & bottom by LLDPE poly film and radially wrap by another LLDPE film to make it air tight. Finally wrapped bundle strapped by metal bands at equal interval by automatic signode strap-ping. We provide bundle identification tag at the bundle end. The identification labels and respective grade color code at both ends.



Applications of Profiles:

- Used in the construction of buildings because of the durability
- Used in hoardings or billboards because of the strength and non-corrosive properties.
- Used in transmission and communication towers because of the strength and non-corrosive properties.
- Used in the power industries because of heat resistance.
- Used in the ship building industries because of non-corrosive properties.

Equal & Unequal Angle



Non Tapered Channel



Flat



Tapered Channel



I-Beam



Stainless Steel Flanges



Stainless Steel Flanges

Viraj is the world leader in stainless steel forged flanges. We serve customers across 90 countries and six continents. Viraj flanges are reputed and well known across the PVFF Industry for their reliability and quality.

The flanges division encompasses an integrated forge shop which manufactures all types of pipe fitting i.e. flanges, butt welding fittings (stubends) in various specifications (ASME, EN, DIN, AFNOR, AWWA, GOST, BS, JIS, AS, MSS, SA, UNI SABS/SANS, NS, VSM.) as well as forged bars.

Flanges are produced in size ranges from ½” to 40”

Viraj has an established and stringent quality system with 90 approvals / certificates till date in accordance with various specific requirements and applications. These approvals and certifications enable our customers to supply Viraj flanges to major end users across a variety of industries.

Our integrated operations include facilities for cutting, forging, ring rolling and machining with CNC lathes, VMC (machining centre), high capacity forging press and mobile manipulator for making big diameter forged round bars. We also have an in-house heat treatment shop and well equipped laboratory facilities for mechanical and metallurgical testing, PMI testing with X-ray and emission spectrometers as well as radiation contamination test facilities.

Industries we serve:

- Pipeline engineering
- Oil & gas – upstream & downstream
- Mechanical & plant engineering
- Ship building
- Boiler and Pressure Vessels
- Fertilizer industry
- Waste water
- Chemical & petrochemical
- Power industries (nuclear, natural gas, wind, solar)
- Aerospace
- Food processing

Makeability Chart:

Dimensional specifications with size range

Specification	Item description	Size Range	Pressure Class
ASME – B16.5	Slip on flange, Welding neck flange, Blind flange, Threaded flange, Lap joint flange, RTJ flange	½" to 24" ½" to 24"	150, 300, 400, 600, 900, 1500, 2500
ASME – B 16.47	Welding neck flange, Blind flange	26" to 40" (A-MSS) 26" to 36" (B-API)	150, 300, 400, 600, 900, (30") 75, 150, 300, 400, 600, 900 (32")
ASME – B 16.36	Welding neck flange Slip on flange, Threaded flange	1" to 24"	300, 400, 600, 900, 1500, 2500 (12")
DIN FLANGE	DIN2512, DIN2513, DIN 2514, DIN2527, DIN 2566, DIN2573, DIN2576, DIN2627, DIN2628, DIN2629, DIN2631, DIN2632, DIN2633, DIN2434, DIN2635, DIN2637, DIN2628, DIN2641, DIN2642, DIN2655, DIN2656, DIN2673	10 to 1000	PN6 to PN 320
Pr EN 1092 – I	Plate flange (01) Loose plate flange (02,04) / Blind flange (05) Welding neck flange (11) / Hubbed slip on flange (12) Hubbed threaded flange (13) / Integral flange (21), weld-on collar (32) Lapped pipe end (33) Weldneck collar (34)	10 to 1000	ISO-PN2.5 to PN100
EN 1759 – I	Plate flange (01)/ blind flange (05) Welding neck flange (11)/Hubbed slip on flange (12) Hubbed threaded flange (13)/Hubbed socket weld (14) Loose Hubbed flange (15) Integral flange (21)	½" to 24" (15 to 600)	150, 300, 400, 600, 900, 1500, 2500 (12")

Specification	Item Description	Size Range	Pressure Class
AFNOR NEF 29-203	Plate flange (01)/Loose plate flange (02,04)/ Blind flange (05) Welding neck flange (11)/ Hubbed slip on flange (12) Screwed flange (13) Hubbed socket Welding (14) Loose Hubbed (15)/Integral flange(21)	10 to 600	ISO-PN2.5 to PN420
JIS B2220/B2291	Slip on plate flange (SOP), Slip on Hub (SOH), Socket Welding flange (SW), Welding neck flange (WN), Lapjoint (LJ), Threaded flange (TR)/ Integral flange (IT) Blank flange (BL)	10 to 600	5K, 10K, 15K, 20K, 30K
BS4504 SECTION 3.1	Weldingneck (111)/slip on plate (101)/screwed boss (113)/slip on boss (112)/ blind plate flange (105)	0.375" To 36"	PN2.5 to PN40
BS4504 PART 1	Welding neck (2), Plate slip on (30), Screwed boss (4), Slip on boss (5), Blind plate flange (8)	0.375" to 36"	PN2.5 to PN 400
BS 1560 SECTION 3.1	Welding neck (111), Socket Weld (114), Screwed Boss (113), Slip on Boss (112), Blind flange (105), Lapped flange (115)	To 24"	150 LBS to 2500 LBS
BS 10: 1962	Welding neck, Plate Slip on, Screwed Boss, Slip on Boss, Plate Blind flange	To 36"	TABLE D/E/F/H
SABS/SANS 1123	Integral (1), welding neck (2), Plate for welding (3), Screwed Boss (4), Slip-on Boss (5) Plate Blank (8)	10 to 1000	250, 600, 1000, 1600, 2500, 4000kPa
AWWA C228	Ring type slip on flanges, blind flanges	2" to 40"	SA (50Psi), SB (86Psi), SD (150/75Psi), SE (275Psi), SFPsi)
Italian standard UNI FLANGES	Plan flanges (2276, 2277, 2278, 6083, 6084) Welding neck (2280, 2281, 2282, 2283, 2284, 2285, 2286) Lapped flanges (6088, 6089, 6090, 2999, 2300) Blind flanges (6091, 6092, 6093, 6094, 6095, 6096, 6097) threaded flanges (2253, 2254)	15 to 200	PN 6 to PN 40
Norwegian Standard (NS)	Blind flanges, Plain welding flanges	150 to 800	PN 6 to PN 40
Flanges to VSM (Swiss) Standards	Flat flange for welding (18695, 19696, 18697) Weld neck (18716, 18718), blind flange (18703)		PN 6 to PN 16

AS 4087 AS 2129	Blank, Plate, Screwed, weld neck (W.N/ W.O.N), Integral flange Blank, Plate, Boss, weld neck, Integral flange	50 to 1000 15 to 1000	PN16, PN21, PN35, TABLE D & E
GOST	Plate flange (GOST 12820-80), Weld neck flange GOST 12821-80, Blind flange (GOST 12836-67)	10 to 1000	0.6MPa to 6.3 MPa
ASME/ANSI B 16.9 MASS SP-43	STUB END – TYPE A,B,C (Short pattern)	0.5 to 24"	All Schedules

Grades:

ASTM182/182M ASMESA182/182M ASTM A403/403M	F 304, F304L, F304H, F310, F316, F316L, F316H, F347, F347H, F317, F317L, F321, F321H, F316Ti, F347, F347H, F51, F60 & F53
JIS G3214	SUS F304, SUS F304L, SUS F304H, SUS F316, SUS F316L, SUS F316H, SUS F347, SUS F347H, SUS F317, SUS F317L, SUS F321, SUS F321H
NF E29 – 204 (AFNOR)	BF Z7 CN 18-09 (F304), BF Z3 CN 19-09 (304LO), BF Z7 CND 17.11.02 (F316), BF Z3 CND 17.11.02 (F316L), BF Z6 CNDT 17-12 (316 Ti), BF Z6 CN Nb 18-10 (F347), BF Z6 CNT 18-10 (F321)
DIN 10222-5	1.4301, 1.4306, 1.4307, 1.4541, 1.4571, 1.4401, 1.4404, 1.4410, 1.4438, 1.4450, 1.4462
OTHER PRODUCTS	Long welding neck, Plate flanges (Light weight pattern), Backup flanges (BEV & STD), Beveled ID flanges, Reducing flanges, Case-end

Flanges bore schedules:

S5S, S10, S10S, S20, S30, S40, S40S, S60, S80, S80S, S100, S120, S140, S160, STD, XS, XXS

Flange facing types:

Flat face, Raised face, Large Raised face, Ring joint, Tongue & Groove face (large & small), Male-Female face

Flange face finish:

Stock Finish serration, Spiral or Phonographic Serration, concentric Serration, Smooth Finish

Manufacturing facilities:

- Raw material cutting: band saw
- Open / Close Die Forging & Rolling: Hammer / Press / Ring Rolling
- Machining: CNC lathes/SPM lathes
- Bolt Hole Drilling: CNC, VMC
- Heat treatment: Solution Annealing (batch annealing furnaces)

Testing facilities:

- Tensile testing machine (screw driven & Computerized)
- Impact testing machine (RT & Sub zero)
- Hardness testing machine
- Microscope (Image analyzer with color view camera, motorized stage & inclusion inspector)
- Mobile spectrometer for PMI test (emission & X-ray)
- Surface roughness tester
- IGC test facilities
- Dye penetrate test
- Ultrasonic testing machine
- Radiation servo meter
 - Dynamic radiation detection system with weight-bridge portal monitors
 - Gamma ray spectroscopy – identifies nuclides & quantifies contamination
 - Portable radiation detection servo meters

Packing:

Protect raised face and bevel end with plastic protection caps

Using plywood boxes size 800 x 1200 mm (Euro pallet) for shipment



Blind Flange	Weld Neck Flange
	
Slip on Flange	Socket Weld Flange
	
Threaded Flange	Lap Joint Flange
	
Orifice Flange	Stubend
	



Product Certifications

A	B	C	D	E	F	G	H
CERTIFICATIONS & APPROVALS		PRODUCTS					
1	ISO 9001-2008	FL	FA	BB	PR	WR	SM
2	PRESSURE EQUIPMENT DIRECTIVE - PED 97/23/EC	FL	FA	BB	PR	WR	SM
3	AD 2000 Merkblatt WO	FL	FA	BB	PR	WR	SM
4	CPR/CE MARKING		FA	BB	PR	WR	
5	SIRIM			BB	PR		
6	NORSOK	FL		BB			
7	REACH -LPR					WR	
8	CANADIAN REGISTRATION - FITTINGS	FL					
9	CANADIAN REGISTRATION - FLANGE	FL					
10	INDIAN RAILWAYS		FA				
11	Deutsche Bahn (DB) German Railway		FA				
12	Vd TUV VIRAJ 307 Si					WR	
13	Vd TUV VIRAJ 308 L					WR	
14	Vd TUV VIRAJ 308 L					WR	
15	Vd TUV VIRAJ 308 L Si					WR	
16	Vd TUV VIRAJ 308 L Si					WR	
17	Vd TUV VIRAJ 309 L					WR	
18	Vd TUV VIRAJ 309L Si					WR	
19	Vd TUV VIRAJ 316 L					WR	
20	Vd TUV VIRAJ 316 L Si					WR	
21	Vd TUV VIRAJ 316L					WR	
22	American Bureau of shipping (ABS) -AWC -309L-MIG					WR	
23	American Bureau of shipping (ABS) -AWC -309L-TIG					WR	
24	American Bureau of shipping (ABS) -AWC -316L Si-MIG					WR	
25	American Bureau of shipping (ABS) -AWC -316L -TIG					WR	
26	American Bureau of shipping (ABS) -AWC -316L-MIG					WR	
27	American Bureau of shipping (ABS)-AWC -308L Si-MIG					WR	
28	American Bureau of shipping (ABS)-AWC -308L-MIG					WR	
29	American Bureau of shipping (ABS)-AWC -308L-TIG					WR	
30	American Bureau of shipping (ABS)	FL		BB	PR		SM

* : FL- Flange, FA- Fastener, BB- Bright Bar, PR- Profile, WR-Wire, SM- Steel melting shop



Product Certifications

A	B	C	D	E	F	G	H
CERTIFICATIONS & APPROVALS		PRODUCTS					
31	Det Norske Veritas & Gemanischer Lloyds(DNV-GL)	FL		BB	PR		SM
32	Lloyd's Register (LR)	FL		BB	PR		SM
33	Korean Register of shipping (KR)	FL					SM
34	Bureau Veritas (BV)	FL					SM
35	Nippon Kaiji Kyokai (Class NK)	FL					SM
36	BADISCHE ANILIN- UND SODA-FABRIK (BASF)	FL					
37	BECHTEL	FL					
38	BOROUGE	FL					
39	BRITISH PETROLEUM (BP)	FL					
40	CANADIAN NATURAL RESOURCE	FL					
41	CHEVRON	FL					
42	CHICAGO BRIDGE & IRON (CB&I)	FL					
43	CHIYODA	FL					
44	CONOCOPHILLIPS	FL					
45	DOW CHEMICAL (DOW)	FL					
46	DRY DOCK WORLD	FL					
47	ENAGAS - SPAIN	FL					
48	ENGINEERS INDIA LIMITED (EIL)	FL					
49	EQUATE PETROCHEMICAL COMPANY-KUWAIT	FL					
50	THE KUWAIT AROMATICS COMPANY(KARO)	FL					
51	THE KUWAIT OLEFINS COMPANY(TKOC)	FL					
52	THE KUWAIT STYRENE COMPANY(TKSC)	FL					
53	KUWAIT NATIONAL PETROLEUM COMPANY (KNPC)	FL					
54	KUWAIT OIL COMPANY (KOC)	FL					
55	ABU DHABI COMPANY FOR ONSHORE OIL OPERATIONS (ADCO)	FL					
56	ABU DHABI NATIONAL OIL COMPANY (ADNOC)	FL					
57	ABU DHABI OIL REFINING COMPANY (TAKREER)	FL					
58	NATIONAL PETROLEUM CONSTRUCTION COMPANY (NPCC)	FL	FA				

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Product Certifications

A	B	C	D	E	F	G	H
CERTIFICATIONS & APPROVALS		PRODUCTS					
59	ZAKUM DEVELOPMENT COMPANY (ZADCO)	FL	FA				
60	ESSAR	FL					
61	EXXON MOBIL	FL					
62	FLUOR	FL					
63	GOST-R	FL					
64	IPS/Turner	FL					
65	McJUNKIN	FL					
66	OXY - OMAN	FL					
67	PETROLEUM DEVELOPMENT - OMAN (PDO)	FL					
68	PEMEX EXPLORACION Y PRODUCCION – USA	FL					
69	PEMEX GAS Y PETROQUIMICA BASICA – USA	FL					
70	PEMEX PETROLEOS MEXICANOS – USA	FL					
71	PEMEX PETROQUIMICA AND ITS AFFILIATES – USA	FL					
72	PEMEX REFINACION – USA	FL					
73	QATAR CHEMICAL COMPANY LTD (Q-CHEM I&II)	FL					
74	QATAR PETROLEUM (QP) (Under renew)	FL					
75	RAS LAFFAN OLEFINS COMPANY LTD (RLOC)	FL					
76	RELIANCE (RIL)	FL					
77	RÉPSOL	FL					
78	SAIPEMFL	FL					
79	SAMSUNG	FL					
80	SASOL	FL					
81	SAUDI ARAMCO	FL					
82	SAUDI CHEVRON	FL					
83	SABIC - EPM	FL					
84	SABIC - SMO	FL					
85	SHELL -GLOBAL (TAMAP- PFF)	FL					
86	SYNCRUDE	FL					
87	TECNIMONT	FL					
88	TRAVIS PERKINS	FL					
89	TSE-TURKEY	FL					
90	VALERO	FL					
91	WIKA - GERMANY	FL					
92	WILSON	FL					

* : FL- Flange, FA- Fastener, BB- Bright Bar, PR- Profile, WR-Wire, SM- Steel melting shop

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