

TUBE PRODUCTS INCORPORATE

COMPANY PROFILE

CERTIFICATE



Management system as per
DIN EN ISO 9001 : 2008

In accordance with TÜV NORD CERT procedures, it is hereby certified that

TUBE PRODUCTS INCORPORATE
OFFICE : 748/8, GIDC, Makarpura,
Vadodara – 390 010,
WORKS : Plot No. 460, GIDC Por,
Ramangamdi, Vadodara – 391 243, India

applies a management system in line with the above standard for the following scope

**Manufacture and Supply of Carbon Steel, Stainless Steel and Alloy Steel
Pipe Fittings (Forged, Seamless & Welded), Flanges (Forged & Plate)
Piping Spools and Supply of Bulk Pipes and Plates**

Certificate Registration No. 44 100 000615-E3
Audit Report No. 2.5-707/2000

Valid until 09.05.2012
Initial Certification 10.05.2000

Certification Body
at TÜV NORD CERT GmbH

Mumbai, 26.05.2009

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com



TGA-ZM-07-06-00



**BUREAU
VERITAS**

CERTIFICATE

relative to quality system certification
for metallic material producer
in accordance with essential safety requirements
defined in 97/23/EC Directive

award to

TUBE PRODUCTS INCORPORATE

.....

Bureau Veritas certifies that the above Company has been satisfactory evaluated for its quality assurance system and satisfied consequently to delivery conditions of certificates for its metallic production, listed below, in accordance with EN 10204 Standard and supplementary conditions in Pressure Equipment Directive 97/23/EC, Article 4, Appendix 1.

Certificate N° : PED- TPI- IND. V.4.06.0044

Description of products categories: laminated forged profile (formed fittings) cast extruded (see list of products by type and grade in page 2/2)

Production mill certified: **"Tube Products Incorporate."**
460/GIDC Por, Ramangamdi,
Dist: Baroda, Gujarat – 391 243, India.

Audit report N°: 1st Audit (System Audit) & 2nd Audit (Technical Audit)

This certificate is valid until: 30th June 2010

On conditions to satisfy continuously to quality requirements, and submitted to annual re-evaluation by BV Inspectors qualified for this.

Made at : Baroda

On : 1st July 2007

Signed by : VINIT CHAUHAN

This certificate is delivered in accordance with Bureau Veritas General Conditions of intervention.



**BUREAU
VERITAS**

CERTIFICATE N° PED-TPI-IND. V.4.06.0044

LIST OF STEELS SYMBOLISATION SUBJECT TO PRODUCER CERTIFICATION

<i>Standardized designation of product</i>	<i>Reference Standard</i>	<i>Comments</i>	
Seamless Fittings	ASME SA 234, SA 420 & SA 403		
ELBOW, SR	1½" to 20"	SA 234: Carbon Steel Grade : WP B/C <i>Alloy Steel</i> Grade : WP1, WP5, WP9, WP11, WP12, WP22, WP 91	
ELBOW, LR	½" to 24"		
Return Bend LR	1½" to 4"		
Return Bend SR	1½" to 14"		
Reducer Concentric	¾" to 26"		
Reducer Eccentric	¾" to 26"		
Tee	1½" to 24"		
Stub End	2" to 16"		
Nipple	½" to 4"		
Cross	1" to 16"		
Welded Fittings	ASME SA 234, SA 420	SA 403: Stainless Steel WP 304/304L/304H WP 316/316L/316H WP 317/317L WP 321/321H WP 347/347H	
ELBOW, SR	8" to 20"		
ELBOW, LR	8" to 66"		
Reducer Concentric	8" to 72"		
Reducer Eccentric	8" to 72"		
Tee	8" to 48"		
Stub End	8" to 24"		
Cross	4" to 16"		
Welded Fittings	ASME SA 403		SA 420: Low Temperature Carbon Steel WPL 3 /6
ELBOW, SR	1½" to 20"		
ELBOW, LR	½" to 66"		
Reducer Concentric	¾" to 72"		
Reducer Eccentric	¾" to 72"		
Tee	1½" to 48"		
Stub End	2" to 24"		
Cross	1" to 16"		
Fittings	ASME SA 234, SA 420 & SA 403		
Pipe Cap	½" to 72"		

* Dimension shall be as per B 16.9 for upto 48 NPS and above 48 NPS shall be as per manufacturer standards.



748/8, G.I.D.C., Makarpura, Vadodara 390 010, Gujarat, India.
Telephone #: 0091 265 6545211 to 14 / 2380190
Fax #: 0091 265 2831031 / 2831610
E-Mails : tpi@tubeproducts.in / tpi@tubeapro.com
Business URL : www.tubeproducts.in
Works: 460, G.I.D.C., Por-Ramangamdi, Dist. Vadodara-391 243

TPI/Regn/GM/Mktg/2009-10.

INTRODUCTION

Sub: Registration of our firm as an approved vendor to cater to your requirement of Carbon steel, Stainless Steel, LTCS, and Alloy steel Pipe Fittings, Flanges, Piping Spools & Induction High Radius Bends.

Dear Sir / Madam;

Tube Products Incorporate has been an ISO 9001, certified company for a long time, Manufacturing and Exporting “Stainless Steel, Alloy Steel, Carbon Steel, & LTCS Pipe Fittings & Flanges”, in different Sizes-Range, Type, Schedule - Class, supplying regularly to various core sector industries such as refineries, gas processing, off-shore oil drilling companies, petrochemicals, hydro-carbon, fertilizers, power generation, through renowned internationally recognized third party inspection agencies and consultants, Globally.

We are committed to serve your organization's sourcing needs of the above products with our quality products as well as our service; we have in-house infrastructure capabilities, and capacities plus comprehensive stock of raw material and finished products. We are a growing organization having strong work force of skilled, experienced and qualified employees. Our product size range is smallest (1/2"NB) to the largest size (48"NB for flanges & 100"NB for fittings & 6" NB up to 88" NB for Piping Spools) utilized by the process engineering.

Capabilities & Capacities: {Pipe Fittings & Flanges}

We are the one of the reputed manufacturer & exporter, who has the biggest/largest - size wise and quantity wise, manufacturing facilities for the subject B.W. pipe fittings. We produce 500 metric tons per month, approx. of 'seamless elbows' per month in various sizes i.e. 2"NB to 16"NB to various schedules & grades of materials with our hot forming machine, adopting the hamburger process. Also, we have additional approx 250 metric tons capacity per month for various sizes i.e. 2"NB to 24"NB to various schedules & grades of materials of installed facilities to produce other types of 'seamless' B.W. fittings viz. tees, reducers, stub ends, caps & crosses etc., adopting developed hydro forming machines. We also have separate unit with adequate manufacturing facilities to produce approx 550 metric tons per month "welded B.W. fittings" up to 64"NB sizes to various schedules & grades of materials for all pipeline schedule / thickness. Note: for welded B.W. the Maximum Size for reducer is 100"NB & 48"NB for stub ends. We also supply B.W. & Forged Fittings in sizes 1/2"NB to 2"NB to various schedules, class & grades of materials too.

We also produce & supply approx 500 metric tons per month, forged flanges viz. "slip-on, blind, weld neck, lap joint, spectacle, socket weld, threaded, ring joint, Orifice type etc," in various sizes : 1/2"NB to 48"NB to various schedules & grades of materials in bulk quantity duly forged and machined, delivered at the shortest period as per your specifications.

We have both Open die as well as Close Die Forging facilities where by Forged Flanges in Bulk quantity could be Forged and delivered duly Machined at the shortest period as per your specifications. We also have installed 10 Meters long X 2.6 Meters wide bed CNC Profile Plate Cutting M/C that can easily cut profiles of 75 mm thick Stainless Steel Material at a very high speed as per your specifications. This is advantageous to us for bulk requirements of Plate Flanges by the client at the shortest delivery period.



Piping Spools:

The Piping spools Manufactured are mainly ranging from **6" NB up to 88" NB**, of various combinations of Steels, viz. Stainless, Alloy and Carbon, in Mix Type OR Cladded Type forms. The Scope of these supplies were Designing & Preparation & obtaining approvals of engineering drawings from provided Isometrics, Procurements of Pipes, Valves, Instrumentations etc along with supply of our manufactured pipe fittings + flanges, Fabrication, Preparations of WPS-PQR-material wise, Assembling the complete spools as per the isometrics, Hydro-testing, NDE testing, Stage wise verifications + testing by third party inspection agencies, Sand blasting, Protective coating applications, Numbering the spools as per the pipe lay out drawings / isometrics, Packing spools in the boxes / cartons and loading them on to the trailer for dispatches.

INDUCTION BENDS:

We are also Capable to Undertake Tight Radius Bends of Thinner / Heavier Wall Thickness, Higher Degrees / Radius of R 3 D and Above in various Three Dimensional Axis Bending thru Induction Bending Process too, Producing High Quality Precision Bends. Our Range starts from **2" NB to 48" NB** of Various Piping Schedules. Bends Produces thru Induction Process has Many advantages Over the Conventional Bending Due to Instantaneous Forming / Prompt Heating and Cooling Process viz. No Special Requirement of Heat Treatment for Major of the Steel Material + No Oxidation / De-Carbonization on the Material, Wrinkle & Ovality Free with Negligible Inner Dimension Variation which is Easily Pig able due to Smooth Scratch less Bore. They are Economical to be Produced in Less Time too.

TOTAL QUALITY MANAGEMENT + APPROVALS

We are committed to quality and operate a fully integrated system, which is in line with ISO 9000 standards. We also pride ourselves on the quality of our service too. We have well established in-house infrastructure capabilities, and capacities plus comprehensive stock of raw material and finished products. We are a growing organization having strong work force of skilled, experienced and qualified employees.

Our workshop & operating systems have been accessed & granted approvals from the following global & local accredited agencies / consultants / organizations / EPC - LSTK contractors such as : TUV-NORD (ISO-9001), P.E.D.-BVIS, LLYODS, DNV, Bureau Veritas, TUV, S & GC, Bax Counsels, Steam Boiler Class (IBR), EIL, UHDE, TOYO, JACOBS H & GC, Kvaerner Power Gas, TATA, Technimont ICB, Bechtel, Daliem, Hyundai, Samsung, Petrofac, Chemtex, Chematur, MECON, Lurgi, Linde, Ha;dar Topsoe, M.W.Kellogs, Snam Progetti, Chiyoda, Larsen & Toubro, Mitsubishi, Mitsui, Dalal Consultants, R.J. Associates, IOCL, BPCL, HPCL, Reliance, GSFC, GAIL, ONGC, IPCL, MRPL, Nirma, Torrent, BHEL, ABB, BHPV, Praxair, P.D.I.L., Cochin Shipyards, N.T.P.C., Department of Atomic N.P.C., etc Domestically & P.D.O., KNPC, KOC, Qatar Petroleum, ADGAS, ADNOC, TAKREER, etc. Globally.

Raw Material Sources:

We are Procuring / Stocking, Pipes & Plates Raw Materials of Reputed Mill's {Procured Directly from them OR from their Indenting Stockiest Abroad} viz. Domestically: Maharastra Seamless, Indian Seamless, Kalyani Seamless, Ratnamani, Remi Metal, Essar, SAIL, Jindal Steel, & TISCO etc., in addition to Overseas Global Sources / Suppliers viz. Dalmine, Siderca, Sumitomo, Mannesmann, Tamsa, Tubacex, Acerinox, Productos Tubulares, Comex, J.S.W., N.K.K., Voest Alpine, Rautaarki, Ilva, Indu Steel, Dillinger Hutte, G.T.S., Sandvik, Butting, B.S.L., D.M.V. Outokumpu, Fabrieqe De Fer Charleroi, Acroni Jesenice, & Bulhmann etc. so as to cater to the client's immediate bulk / crash requirements.



Research & Developments:

Total Quality Management is of utmost Importance to us to serve clientele's needs of quality piping products. As regards to the R & D in technologies with our newly developed unique innovative technology of manufacturing process, stainless steel seamless pipe fittings in various sizes and schedules are being manufactured in mass quantity from plates instead from seamless pipes. To suit the process parameters of manufacturing, new methods for hydro forming of elbows, tees, reducers, stub ends and crosses had to be defined and developed. Through this cold forming process we are able to obtain maximum technology edge and unmatched aesthetics of the final products.

To achieve mass production ratios a fully integrated system is introduced, in line with new capabilities and capacities, which will provide prompt deliveries. As to achieve higher growth and to satisfy our demanding customers in these competitive times, no order is too small or too large for our experienced staff to process. Our delivery ranges from ex-stock or just in time schedule to minimum possible manufacturing or inspection time period.

We are Authorized Trade Partners / Representatives of M/s BULHMANN – Germany, who are the Largest Stockiest in Europe, for Carbon and Alloy Steel Pipes in Wide Range of Grades of Steel and of all Pipe Sizes / Schedules.

Company Profile:

You can also visit our web site: www.tubeproducts.in OR www.tubepro.com to know more about us and our organization and its products. Our company profile on the web site will give you brief inputs on our activities, Capacities & Capabilities, along with the Approvals & Credentials etc.

We look forward to your earliest favorable response to above to begin a long lasting association with your esteemed organization. In the meantime, we solicit your vendor registration formalities to enable us to Register ourselves + receive your valued enquiries.

Thanking you in anticipation,

Yours faithfully,
For TUBE PRODUCTS INCORPORATE.

ASHIT PATEL.
GENERAL MANAGER (Marketing & Business Development).

Contact / Reply on: ashit@tubeproducts.in
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Annexure-I

EVERYTHING / ANYTHING IN PIPING

TPI - PACKAGE

THE TPI PACKAGE starts right at the beginning. **A SINGLE SUPPLIER** for all your **PIPING NEEDS** who is a **GENUINE PARTNER**. TPI, a leading **Exporter & Manufacturer of pipe fittings, flanges, and valves** has now **diversified under third party inspection agencies** for the first time in India, the **full range of piping accessories** viz. **Pipes, Flanges, F.G.F. (Flanges, Gasket, Fasteners combination), pre-fabricated nozzles (nozzles / stub ends cum flanges), pre-fabricated piping, piping spools, fasteners, gaskets, Expansion bellows, flexible corrugated steel hoses** etc. This new concept of "**EVERYTHING AND ANYTHING IN PIPING**" with complete range type, grade and class of **ENTIRE PIPING REQUIREMENT** in various material which shall suffice the total requirement of client, **UNDER ONE ROOF**. This is the innovative idea behind the **TPI PACKAGE**.

THE PARTNER FOR YOU

This **PACKAGE** means you only need **one supplier** who can offer an extremely wide range of **PIPES & PIPELINE ACCESSORIES products** in mix match size, type & grade of material of construction for virtually all the applications.

Everything you could possibly need. **EVERYTHING AND ANYTHING** from an **expert partner**, backed by a world-class quality manufacturer of pipes. **TPI is a real partner**, who, apart from **supplying quality products manufactured by themselves also helps in sourcing of various pipeline accessories products from renowned quality / manufacturer locally and globally**.

PARTNER & ITS PERCEPTIONS

Whenever **New Industrial Project Plants** are being commissioned or whenever **expansion or re-engineering** or **shutdown for maintenance** takes place, it is often **critically important** to be able to obtain the "**right**" pipe product at the "**right**" time. In this business **down time can prove very costly**, as end users are in **need of many mix match types of products**, which includes **pipe, plates, pipe fittings, valves, flanges, gaskets, fasteners, expansion joints, flexible hoses** and many other components related to it, **in various sizes, types, grades and class of material in LARGE QUANTITIES**.



Purchasing all these items from the very specialized and economical suppliers means **splitting the list into many separate orders** so that the **co-ordination and handling can become a major management problem**, instead of **concentrating on getting the job finished, the time is lost and manpower is tied up with expediting and co-ordinating many different orders.**

Our **long experience** and **knowledge of the piping products** enable us to **supply the complete package** for this type of **requirement competitively, and also ensuring that "timely" deadlines are met.** Ours is an **ONE STOP SHOP** where client of consultants can **delegate complete responsibilities of the entire job to us.**

EVERYTHING / ANYTHING IN PIPING, TUBE PRODUCTS INCORPORATE'S ONE PACKAGE is a **unique concept** to offer the very best - the very best from a **"SINGLE PARTNER FOR ALL YOUR PIPING NEEDS". A really dynamic partner.**

Under **third party inspection agencies.** We have already started catering to the following needs of client :

- Pipes, Plates & coils from our huge stocks lying at International Stock Yard / Ware House at Singapore, as well as from own in house stocks from our monthly consumption of 1000 M.T. of pipes & 550 M.T. of plates / coils, in the shortest possible delivery, preferably Ex-stock.
- Indenting agents for various overseas principles on High Sea sales basis or from manufacturing programme depending upon your delivery requirement.
- We have made Tie-up with the leading indigenious pipe manufacturers like ESSAR, SAIL, Jindal Steel, TISCO, REMI METALS, CHOKSI TUBES, RATNAMANI, INDIAN SEAMLESS, KALYANI SEAMLESS, MAHARASHTRA SEAMLESS ETC. in addition to overseas sources like Dalmine, SUMITOMA, SIDERCA, MANNESMANN-BRAZIL, TAMSA, TUBACEX, ACERINOX, Tubulares, COMEX, JSW, NKK, Voest Alpine, Rauta arki, Ilva, Indu Steel, Dillinger Hutte, GTS-France, O uto Kumpu, Fabrieqe De Fer Charleroi, Acroni Jesenice, Sandvik, Butting, .B.S.L. , D.M.V. etc.

We have already made **tie-ups** with certain renowned **QUALITY MANUFACTURE** of **Piping Accessories / Components** who are **APPROVED** by leading third party inspection agencies, consultants, LSTK contractors & reputed core sector industries Globally and Locally. The **SUPPLIES** under this tie-up has already been **commenced** to our valuable clientele to **PROMOTE** our above **CONCEPT.**



Annexure-II

COMPANY'S CAPABILITIES & CAPACITIES

Strength cum Execution Facilities

The company has proven capability and installed capacity to handle pipeline accessories of following tonnage in wide spectrum of MOC, its class & grade in different sizes & types. Also additional/ supplementary requirements viz. NACE, IBR, IGC, CE, Bend Test, NDT & Radiography etc can be achieved.

Pipes, Plates, Tubes, Coils, Rods	12,600 MT P.A.
Pipe Fittings (Forges, Seamless & Welded)	13,850 MT P.A.
Flanges (Forged & Plate)	1,800 MT P.A.
Piping Spools (Claded) as per client's isometric	300 MT P.A.

We have qualified & quality staff of approx. 150 employees out of which 10 are Engineers, 13 are Technical Supervisors, 7 Employees in Quality Assurance Dept. , 20 Employees are qualified welders, 15 Employees are commercial officers & 85 employees are skilled, semi skilled & unskilled workmen.

We have well equipped, covered & established engineering fabrication shop in Vadodara (Makarpura/ Por) of 34,100 sq. mtrs, out of which approx. 15,200 sq. mtrs are covered, 18,000 sq. mtr is open & office are is about 700 sq. mtrs. We are a growing organisation and our employees avails most updated manufacturing techniques, **ERP & CRM** Programmes, IT/EDP Resources, latest State of the Art Auto Mandrel cum CNC Machines to produce quality products in mass batches & in economical time period to enable us to achieve deliveries on ex-stock to max 4-6 weeks basis. Our Quality Assurance Dept. & Lab is well established to handle check test with its own "Lloyds" calibrated equipments/instruments viz. Radiography, Radiography Film Development, Tensile Testing Machine for physical testing, Spectrometer for chemical element check of ferrous based alloys, chemical testing labs, calibrated check test instruments, hydro testing facilities, shot & sand blasting equipments, semi automatic conveyerised painting plant for quality painting etc.

Our company is having adequate material handling equipments like conveyor systems, freight elevators, overhead cranes & forklifts for in process handling, loading/unloading of raw material, semi finished & finished products so as to prevent damage & scratch marks. Utmost care is taken in packing, transportation & shipment of our products.



Quality Assurance

Ours is an independent QC Dept. headed by independent Q.C In-charge who is reporting to Managing Director. Our Quality Assurance Plan and the confirmation of the quality checks are based on ISO 9000 requirements. We do have our own quality manual with documented procedures, standards & codes which have stringent quality norms of acceptance. We carry out all the necessary quality formalities at the suppliers' end prior to bringing in the rawmaterial at our works. The acceptance is based on the qualified Q.A plans and necessary NDT checks are carried out as per the plans. Calibrated instruments and qualified labs are utilised for Calibration/Verification of measurements and NDT check. Detailed formats and records are maintained and submitted to our clients as and when needed. We have qualified Engineers in various level of NDT i.e. R.T, U.T & M.T. The programme is periodically upgraded, deleted and revised due to changes in the technology or revision in applicable codes.

Welding Qualifications

We have well organised welding department, headed by the qualified Engineer. All the necessary procedures, WPS/PQR for various process viz. S.M.A.W. & G.T.A. W. have been prepared for wide range/grade of material, as per applicable standards cum codes under renowned third party inspection agencies. Substantial numbers of rectifiers / transformers and T.I.G. welding machines plus qualified welders are available to undertake volumatic jobs. Jobwise weld plans are prepared and monitored. Welding consumables too are properly stores in electric ovens (Box types and portable types). We also undertake ultrasonic & radiography requirements for which we have necessary calibrated equipments.

Raw Material Sources

We are stocking reputed Mills' pipe & plate material such as ESSAR, SAIL, Jindal Steel, TISCO, REMI METALS, CHOKSI TUBES, RATNAMANI, INDIAN SEAMLESS, KALYANI SEAMLESS, MAHARASHTRA SEAMLESS ETC. in addition to overseas sources like Dalmine, SUMITOMA, SIDERCA, MANNESMANN-BRAZIL, TAMSA, TUBACEX, ACERINOX, Tubulares, COMEX, JSW, NKK, Voest Alpine, Rauta arki, Ilva, Indu Steel, Dillinger Hutte, GTS-France, O uto Kumpu, Fabrieqe De Fer Charleroi, Acroni Jesenice, Sandvik, Butting, .B.S.L., D.M.V. at our Por works with original test certificates. Due to our bulk consumption of approx. 7200 mt. of steel per year. We have an advantage of the economical rates, faster deliveries and genuinity of exotic materials which we are ready to pass on to our client's immediate bulk or crash requirements.

We are procuring raw forging & casting in bulk from reputed forging & casting shops approved by EIL, LLOYDS, DNV, TUV, BV, SGS etc. as well as IBR & TDC. The foundries are Forge & Forge/ Rajkot, Echjay Inds/Rajkot & Mumbai, Punjab Steel Works/New Delhi, Ajay Forging/Ghaziabad, Sadhu Forging/Faridabad, Choudhary Hammer/Ghaziabad, Gloden Iron/New Delhi, Kung Forging/Ghaziabad, CD Engg/Ghaziad, CD Industries/Ghaziabad, Sanghi Forging/Baroda Pradeep Metal/Mumbai etc. The casting shops are Gujarat Techno Cast/Ahmedbad, Upper India Special Castings/Ludhiana, Aditya Metal & Alloy/Halol etc. Due to bulk procurement & advance commitments of raw forging & castings for local and export market, these foundries supplies us the forging at most economical/competitive rates, which we pass on to our clients.

Codes & Standards

We have relevant / necessary latest original codes. We follow following standards to achieve conformity of the product and its quality norms/specifications viz. ASME, ANSI, ASTM, API, MSS, DIN, BS, JIS, IS & steam boiler class (IBR) etc.



INSTALLED MANUFACTURING CAPACITIES

MATERIAL : VARIOUS GRADES OF : CARBON / STAINLESS / ALLOY / L.T.C.S. /
DUPLEX / CUPRO NICKEL

SIZE : 1/2" NB to 4" NB FORGED
2" NB to 24" NB SEAMLESS
2" NB to 72" NB LONGITUDNALLY WELDED

(METRIC TONS PER ANNUM)

PRODUCTS PIPE FITTINGS	SEAMLESS	LONGITUDNALLY WELDED	FORGED	TOTAL
ELBOWS / RETURN BENDS	6,300	4,800	300	11,400
LARGE RADIUS BENDS / MITRES	25	25	--	50
REDUCERS / TEES / CROSS / CAPS	900	600	300	1800
SWAGE / BRANCH O'LETS / COUPLINGS	--	--	300	300
STUBENDS	300	--	--	300
	7,525	5,425	900	13,850

PRODUCTS FLANGES	FORGED (1/2" NB to 48" NB)	PLATE (1/2" NB to 64" NB)	TOTAL
SLIPON, WELDNECK, BLIND, SOCKET, RTJ, SPECTACLE	1200	600	1,800

TRADING CAPACITIES FOR SEAMLESS PIPES & PLATES

12.600 MT PER ANNUM



Annexure-III

OVERVIEW OF COMPANY'S SERVICES

Products: Pipes (Seamless / ERW), Plates, Sheets, Coils & Rods

Sr No.	Piping Components	Type	Material	Grade	Size Range (Inches) Nominal Bore (ID)	End Connecn	Sch No / Rating / Wt	Dimension Standard
1	Pipes	Seamless and ERW (Welded)	A 106 A 312 A 335 A 333 API IS SAW	GR. A/B/C 304/304L, 316/ 316L 321, 347, 410 P1, P5, P9, P11, P12, P22, P91 GR. 3, 6 5A, 5AX, 5L, 5LX, X46, X51, X60 1239, 3589 672	1/2" - 24" 1/2"-48 (ERW)	BW & Plain	All Schedules	B 36.10 B 36.19
2	Plates / Coils / Sheets / Rods	Cut To Size / Coils	A 285 A 515 / 516 A 203 A 204 A 240 A 387 IS 2062	C 60 / 70 D A, B 304/304L, 316/ 316L 321, 347, 410 1, 5, 9, 11, 22, 91 CL1 & CL2 A, B, C	Various Sizes	-	Various Thickness	-



Product : Steel & Alloy Steel "SEAMLESS BUTTWELDED" Pipe Fittings (Present Capacity p.a. 7525 MT)
(End Connections: BW as per ANSI B 16.9, MSS SP-43 & 75 case to case)

Sr No	Piping Component Items	Type	Material (ASTM)	Grade (ASTM)	Size, Range and Process		Sch. / Rating
					Hot Forming Sizes	Cold Forming Sizes	
1	Elbows (45° & 90°)	SR (R=1D) or LR (R=1.5D)	CS / A234	WPB, WPC	1/2" NB - 24" NB	—	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	1/2" NB - 24" NB	—	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	8" NB - 24" NB	1/2" NB - 6" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	1/2" NB - 24" NB	---	All Schedules
2	Return Bend (180°)	LR (R=1.5D)	CS / A234	WPB, WPC	1/2" NB - 12" NB	—	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	1/2" NB - 12" NB	—	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	8" NB - 12" NB	1/2" NB - 6" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	1/2" NB - 12" NB	---	All Schedules
3	Special High Radius Bends R=3D and above	LR (R=3D & above)	CS / A234	WPB, WPC	—	1/2" NB - 16" NB	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	—	1/2" NB - 16" NB	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	—	1/2" NB - 12" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	1/2" NB - 24" NB	---	All Schedules
4	Tee	Equal & Unequal	CS / A234	WPB, WPC	12" NB - 24" NB	2" NB - 10" NB	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	12" NB - 24" NB	2" NB - 10" NB	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	12" NB - 24" NB	2" NB - 10" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	12" NB - 24" NB	2" NB - 10" NB	All Schedules
5	Cross	Equal	CS / A234	WPB, WPC	—	2" NB - 16" NB	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	—	2" NB - 16" NB	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	—	2" NB - 16" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	---	2" NB - 16" NB	All Schedules
6	Reducer	Eccentric & Concentric	CS / A234	WPB, WPC	20" NB - 24" NB	2" NB - 18" NB	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	20" NB - 24" NB	2" NB - 18" NB	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	20" NB - 24" NB	2" NB - 18" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	20" NB - 24" NB	2" NB - 18" NB	All Schedules
7	Caps		CS / A234	WPB, WPC	—	2" NB - 24" NB	All Schedules
			AS / A234	WP1, WP5, WP7, WP9, WP11, WP22, WP91	—	2" NB - 24" NB	All Schedules
			SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327 / 347 / 410	—	2" NB - 24" NB	All Schedules
			LTCS / A420	WPL6 & WPL3	---	2" NB - 24" NB	All Schedules
8	Stub Ends	Long & Short pattern Necks	SS / A403	WP 304 / 304L, 316 / 316L, 321 / 327, 410	—	2" NB - 24" NB	All Schedules

- Notes: (a). Materials & Grade are ASTM std. equivalent to DIN, BS, JIS, UNI & AFNOR to respective produce can be supplied.
 (b). End connection to suit respective dimension standards product wise ANSI B 16.5, 16.9, 16.11, 16.28, 36.10, 36.19, MSS SP-43 & 75 with equivalent to API, DIN, BS JIS, UNI & AFNOR can be supplied.
 (c). Technical requirement including mandatory shall be as per respective applicable stds. & codes supplementary requirement can also be supplied as per client's needs.
 (d). Chemical cum Physical test: As per requirement of applicable codes & standards.
 (e). Heat treatment / Stress relieving: As per requirement of applicable codes & standards.
 (f). IGC test on SS & Impact test on LTCS: As per client's requirement.
 (g). Certain times, due to quantities limitations (piece mill qty) cold forming process are adopted considering optimising of cost benefits plus product quality.

Legend: CS: Carbon Steel SS: Stainless Steel AS: Alloy Steel LTCS: Low Temperature Carbon Steel



Product : Steel & Alloy Steel "WELDED TWO HALVES BUTTWELDED" Pipe Fittings (Present Capacity p.a.5425 MT)
(End Connections: BW as per ANSI B 16.9, MSS SP-43 case to case)

Sr No	Piping Component Items	Type	Material	Grade	Process		Sch. / Rating
					Hot Forming Sizes	Cold Forming Sizes	
1	Elbows (45° & 90°)	SR (R=1D) or LR (R=1.5D)	CS / A234	WPBW, WPCW	—	2" NB - 72" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	2" NB - 72" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	2" NB - 72" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	---	2" NB - 72" NB	All Schedules
2	Return Bend (180°)	LR (R=1.5D)	CS / A234	WPBW, WPCW	—	2" NB - 32" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	2" NB - 32" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	2" NB - 32" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	---	2" NB - 32" NB	All Schedules
3	Special High Radius Bends R=3D and above	LR (R=3D & above)	CS / A234	WPBW, WPCW	—	1/2" NB - 30" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	1/2" NB - 30" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	1/2" NB - 30" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	1/2" NB - 24" NB	1/2" NB - 30" NB	All Schedules
4	Tee	Equal & Unequal	CS / A234	WPBW, WPCW	—	2" NB - 48" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	2" NB - 48" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	2" NB - 48" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	---	2" NB - 48" NB	All Schedules
5	Cross	Equal	CS / A234	WPBW, WPCW	—	8" NB - 30" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	8" NB - 30" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	8" NB - 30" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	---	8" NB - 30" NB	All Schedules
6	Reducer	Eccentric & Concentric	CS / A234	WPBW, WPCW	—	8" NB - 72" NB	All Schedules
			AS / A234	WP1W, WP5W, WP7W, SP9W, WP11W, WP22W, WP91W	—	8" NB - 72" NB	All Schedules
			SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W / 347W / 410W	—	8" NB - 72" NB	All Schedules
			LTCS / A420	WPL6W & WPL3W	---	8" NB - 72" NB	All Schedules
8	Stub Ends	Long & Short pattern Necks	SS / A403	WP 304W / 304LW, 316W / 316LW, 321W / 327W, 410W	—	4" NB - 24" NB	All Schedules

- Notes: (a). Materials & Grade are ASTM std. equivalent to DIN, BS, JIS, UNI & AFNOR to respective produce can be supplied.
 (b). End connection to suit respective dimension standards product wise ANSI B 16.5, 16.9, 16.11, 16.28, 36.10, 36.19, MSS SP-43 & 75 with equivalent to API, DIN, BS, JIS, UNI & AFNOR can be supplied.
 (c). Technical requirement including mandatory shall be as per respective applicable stds. & codes supplementary requirement can also be supplied as per client's needs.
 (d). Chemical cum Physical test: As per requirement of applicable codes & standards.
 (e). Heat treatment / Stress relieving: As per requirement of applicable codes & standards.
 (f). IGC test on SS & Impact test on LTCS: As per client's requirement.
 (g). All longitudinal welds joints shall be 100% X-rayed. The construction of fittings shall be two halves for all piping components except special high long radius bends i.e. R=3D and above reducers & stubends.
 (h). Welding Process: CS/AS/LTCS - SMAW, SS - GTAW
 (i). Certain times, due to quantities limitations (piece mill qty) cold forming process are adopted considering optimising of cost benefits plus product quality.

Legend: CS: Carbon Steel SS: Stainless Steel AS: Alloy Steel LTCS: Low Temperature Carbon Steel



Product : Steel & Alloy Steel "FORGED" Pipe Fittings & Nipples (Present Capacity p.a. 900 MT)
(End Connections: Socket Weld, Screwed as per ANSI B 16.11)

Sr No	Piping	Type	Material	Grade	Sizes Range	Schedule / Raing	Process
1	Elbow		CS A105		1/2" NB - 4" NB	3000 lbs, 6000 lbs, 9000 lbs	Forge (Hot)
			SS A182	F304, F304L, F316, F316L, F321	1/2" NB - 4" NB		Forge (Hot)
			AS A182	F 1, F 5, F 9, F 11, F 22, F91	1/2" NB - 4" NB		Forge (Hot)
			LTCS A350	LF 1, LF 2, LF 3	1/2" NB - 4" NB		Forge (Hot)
2	Tee	Equal / Unequal	Do	Do	Do	Do	Do
3	Cross	Equal	Do	Do	Do	Do	Do
4	Reducer	Concentric / Eccentric	Do	Do	Do	Do	Do
5	Cap		Do	Do	Do	Do	Do
6	O'let	Elbolet, Thredolet, Socolet, Weldolet, Nippolet	Do	Do	Do	Do	Do
7	Nipples		CS A105	Gr. B	1/2" NB - 4" NB	All Schedules	Cold
			SS A182	TP304, TP304L, TP316, TP316L, TP321			
			AS A182	P 1, P 5, P 9, P 11, P 22, P 91			
			LTCS A333	Gr. 6, Gr. 3			
8	Swage Nipples		Do	Do	Do	Do	Do
9	Stub Ends		SS A182	WP 304 / 304L, 316 / 316L, 321	1/2" NB - 2" NB	3000 lbs, 6000 lbs, 9000 lbs	Forge (Hot)

- Notes: (a). Materials & Grade are ASTM std. equivalent to DIN, BS, JIS, UNI & AFNOR to respective produce can be supplied.
(b). End connection to suit respective dimension standards product wise ANSI B 16.5, 16.9, 16.11, 16.28, 36.10, 36.19, MSS SP-43 & 75 with equivalent to API, DIN, BS JIS, UNI & AFNOR can be supplied.
(c). Technical requirement including mandatory shall be as per respective applicable stds. & codes supplementary requirement can also be supplied as per client's needs.
(d). Chemical cum Physical test: As per requirement of applicable codes & standards.
(e). Heat treatment / Stress relieving: As per requirement of applicable codes & standards.
(f). IGC test on SS & Impact test on LTCS: As per client's requirement.
(g). Certain times, due to quantities limitations (piece mill qty) cold forming process are adopted considering optimising of cost benefits plus product quality.

Legend: CS: Carbon Steel SS: Stainless Steel AS: Alloy Steel LTCS: Low Temperature Carbon Steel

Product : Steel & Alloy Steel FLANGES (Forged & Plate - Present Capacity p.a. 1800 MT)
(End Connections: Socket Weld, Screwed as per ANSI B 16.11)

Type of Flanges Construction of Flanges Size of Flanges Rating Material of Construction (ASTM)	Slip on, Weldneck, Blind, Lap joing, Ring threaded joint, Spectacle, Orfic, Socket Weld	
	FORGE (F)	PLATE (P)
	1/2" NB to 48" NB Note: Socket Weld Flanges shall be of 1/2" NB to 4" NB	1/2" NB to 64" NB
	150 lbs to 2500 lbs	150 lbs to 2500 lbs
	CS (F): A105 AS (F): A182, Gr. F 1, F 5, F 9, F 11, F 12, F 22 SS (F): A182, Gr. F 304, F 304L, F 316, F 316L, F 321, F 347 LTCS (F): A350 Gr. LF 1, LF 2, LF 3	CS (P): A516, Gr. 60 / 70 AS (P): A387 Gr. P 1, P 5, P 9, P 11, P 22 SS (P): A240, TP 304 / 304L, 316 / 316L, 321 LTCS (P): A203-D & A516 Gr. 60
Facing / Finishing	Raised face / Flat face	
End Connections / Dimensions	ANSI B 16.5, BS 1560, BS 10, IS 6392, B-2.1, NPT, API, DIN, MSS SP-44, UNI, AFNOR	
Additional requirements / Options	IBR, NACE, IGC, CE, BEND test etc.	

- Notes: (a). Chemical cum Physical Test: AS per requirement of applicable codes & standards.
(b). Heat treatment / Stress relieving: As per requirement of applicable codes & standards.
(c). IGC test on SS & Impact test on LTCS: As per client's requirement.
(d). Plate flanges shall be profile cut on CNC Plasma Profile Cuttings Machine whose profile cutting capacity is 100mm thick CS / AS / LTCS & 75mm thick SS.
(e). Manufacturing Process: Hot

Legend: CS: Carbon Steel SS: Stainless Steel AS: Alloy Steel LTCS: Low Temperature Carbon Steel



Annexure-IV

PATRONAGE / APPROVALS

QUALITY SYSTEM ASSESSMENTS

- (1) TUV - NORD - EN ISO 9001 : 2000. Certificate # : 04 100 000615-E3
- (2) BVIS - Pressure Equipment Directive. Certificate # : PED-TPI-IND. V.4.06.0044

SHOP APPROVALS

Lloyds, Bureau Veritas, E.I.L., P.D.I.L., T.D.C., T.U.V., D.N.V., M.E.C.O.N., I.B.R.

STATUTORY APPROVAL

Steam Boiler Approval (Indian Boiler Regulatory Body)

CONSULTANTS, E.P.C. CUM PROJECT MANAGEMENT CONTRACTORS

E.I.L., U.H.D.E., Toyo, Kvaerner Power Gas, Jacobs H&G.C., Chemtex, Technimont ICB, Chematur Mecon, Lurgi, Linde, P.D.I.L., Halder Topsoe, M.W. KELLOGS, Snam Progetti, Chiyoda, L&T, L&T Chiyoda, Tata Consulting Engrs., Tata Projects Ltd., Mitsubishi, Mitsui, Bechtel, Daliem, Hyundai, Samsung, Dalal, R. J. Associates, PETROFAC, etc.

VALUABLE CLIENTELE (ALPHABETICALLY) DOMESTIC

ABB, A.T.V. PROJECTS, ANDHRA SUGAR, BHPV, BHEL, BRIDGE & ROOF, BPCL, BRPL, CFCL, CRL, DEUTSCHE BABCOCK BALCKE-DURR LTD., Cochin Shipyard, DAELIM, D.G.Q.A. NAVY, FACT-FEDO, GODREJ, GSFC, GNFC, GAEL, GAIL, GEI, HPCL, HIKAL CHEM., HYUNDAI, IPCL, IOCL (ALL REFINERIES) INGERSOLL RAND, IFFCO, INDO-RAMA, ISGEC, JINDAL PRAXAIR, KRIBHCO, L&T, MCFL, MRPL, MRL, MFL, MODERN PETROFILS, NFL, NRL, NIRMA LTD., NARMADA CHEMATUR, NICCO, ONGC, ONGC OFFSHORE, PAEL, RELIANCE, SPIC, SAIL, SIEMENS, TELCO, THERMAX LTD., TATA CHEMICALS LTD., TAMILNADU PETRO PRODUCTS, TORRENT GUJARAT BIOTECH LTD., ZAURI AGRO CHEMICALS LTD. etc.

VALUABLE CLIENTELE (ALPHABETICALLY) GLOBAL

- **USA** : FITTUBE INC. FORGINGS, FLANGES & FITTINGS CO., GLOBAL PRODUCTS, LIBERTY EQUPT. & SUPPLY CO., NORCA CORP., PROFIT PIPING COMPONENTS, SILBO IND. INC., UNIVERSAL SOUTHERN CORPN. W & O Supply Co
- **UK** : ASHWORTH FRAZER, BURTON DELINGPOLE, CARBERN, PETROFAC
- **BELGIUM** : ICARUS S.A.
- **FRANCE** : TROUVAY & CALVIN (INTL.) SA.
- **SPAIN** : SAYCALSA, TECHNINAS REUNIDAS S.A.
- **SINGAPORE** : RIMAGAS PTE LTD., VELCOMP (SOUTH EAST) ASIA PTE LTD. Y.S. SUPPLIES, MANNESMANN HANDEL S.E.A.
- **KUWAIT** : KNPC, KOC, ABDUL AZIZ YOUSUF AS-ESSA & COMPANY, KHALID E. ALRAGRUM GENERAL TRADING & CONSTRUCTION ESTABLISHMENT, PETROGAS.
- **QATAR** : QATAR PETROLEUM
- **OMAN** : PDO (Petroleum Development Oman SHELL)
- **U. A. E.** : ADNOC - TAKREER, ADGAS, PETROFAC

Note : Copies of approval cum Registration Certificates of E.I.L., I.B.R., Mecon, Chemtex, Troovay & Cauvin, Lloyds etc. attached for your ready reference.



Annexure-V

DETAILS OF COMPANY (PERTINENT INFORMATION SHEET)

NAME OF THE FIRM : **TUBE PRODUCTS INCORPORATE**

ADDRESS

FOR CORRESPONDENCE : TUBE PRODUCTS INCORPORATE
748/7, G.I.D.C. INDUSTRIAL ESTATE,
MAKARPURA, VADODARA - 390 010.
GUJARAT, INDIA.

DETAILS FOR

TEL : 0091-0265-6545211 to 14 / 2830190

COMMUNICATION

FAX : 0091-265-2831031 / 2831610

e-Mail : tpi@tubeproducts.in / tpi@tubepro.com

Web URL : www.tubeproducts.in / www.tubepro.com

WORKS

MAKARPURA

TUBE PRODUCTS INCORPORATE
748/7, G.I.D.C. INDUSTRIAL ESTATE,
MAKARPURA, VADODARA - 390 010.
GUJARAT, INDIA.

POR

TUBE PRODUCTS INCORPORATE
PLOT NO : 460, G.I.D.C. POR
RAMANGAMDI, DIST. VADODARA - 391 243
GUJARAT, INDIA.

YEAR OF ESTABLISHMENT : 1982

CONTACT PERSON : Mr. JANAK KATAKIA *C.E.O.*

ACTIVITIES :

- MANUFACTURER & EXPORTER OF STEEL & ALLOY STEEL PIPE FITTINGS, (FORGED, SEAMLESS & WELDED) PIPING SPOOLS, Bends & FLANGES (FORGE & PLATE).
- STOCKIST / DISTRIBUTOR OF PIPES, PLATES / COILS.

ISO 9001:2000 Certificate No : ● 0410000615-E3 Valid Upto : 09 / May / 2012

P.E.D. Certificate No : ● PED-TPI-IND.V.4.06.0044 Valid Upto : 30 / June / 2010

GROSS TURN OVER (SALES)	<u>YEAR</u>	<u>IRs in Million</u>	<u>US \$ in Million</u>
	2004-05	709.85	16.13
	2005-06	979.80	21.76
	2006-07	1350.80	30.68
	2007-08	1842.43	46.09
	2008-09	1580.63	31.03



REGISTRATION DETAILS	MAKARPURA	POR
Central Excise Regn No.	AAA CT 1429 RXM 001	AAA CT 1429 RXM 002
Range	4th Floor, INDUMATI BLDB. ,	Office of the Suptd.
Address	Opp. ARADHANA CINEMA VADODARA	Central Excise Range II (POR) Div. MAKARPURA, VADODARA
ECC No.	AAA CT 1429 RXM 001	AAA CT 1429 RXM 002

CENTRAL SALES TAX NO.	24691700078 19-8-93	24691700078 19-8-93
GUJARAT STATE (VAT - TIN)	24191700078	24191700078

COMPANY REGISTRATION : 11-56461 With Registrar of Companies Mumbai

INDUSTRIAL REGISTRATION: 3423 / SIA / IMO / 97 with Ministry of Industry (Secretariat for Industrial Assistance)

SERVICE TAX : GTA / VAD - II (CITY) / 67 / TPI / 2005

INCOME TAX : AAA CT 1429 - R

PROVIDENT FUND : PF GUJ. 16651 Group III

D.G.T.D. NO. (SIA) : 3423 / SIA / JMO / 97 DTD. 17-11-87

GUJARAT POLLUTION CONTROL NO. : PC-NOC.CRD-1218 / 8544 DTD. 9-6-94

BANKERS : STATE BANK OF SAURASHTRA, MAKARPURA, VADODARA.

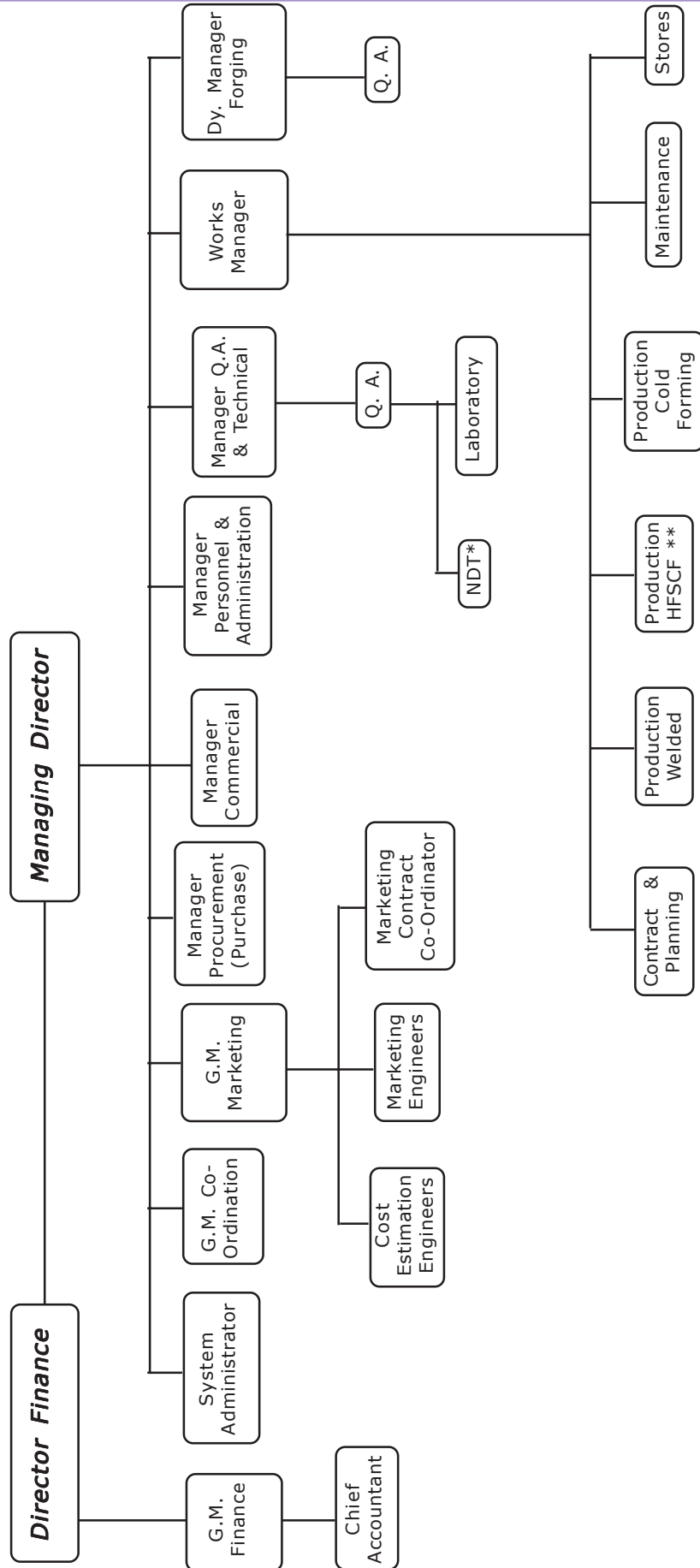
BOARD OF DIRECTORS : SHRI JANAK J. KATAKIA, SHRI DHIMANT J. KATAKIA
SHRI RAJESH I. MEHTA, SMT. JYOTI DAVE

MAN POWER :

ENGINEERS	:	40
OFFICERS	:	35
TECHNICAL SUPERVISORS	:	33
QUALITY CONTROL	:	27
QUALIFIED WELDERS	:	40
On Contract	:	
SKILLED Fitters / Fabricators	:	85
Semi Skilled / Un Skilled	:	300
TOTAL STRENGTH	:	560



ORGANISATION CHART



* Non Destructive Testing
** Hot Forming, Seamless, Conventional & Finishing



Annexure-VI

**DETAILS OF PLANT & LIST OF MACHINERIES CUM OFFICE
/ RESOURCES DETAILS AREA**

TUBE PRODUCTS INCORPORATE

OFFICES	:	AT VADODARA	:	350 sq. mtr.		
	:	AT POR	:	807 sq. mtr.		
FACTORIES	:	AT VADODARA	:	Plot Area 4100 sq. mtr.		
				Covered 3200 sq. mtr. &		Open 900 sq. mtr.
		AT POR	:	Plot Area	Covered	Open
		(460 G.I.D.C.)	:	36500 sq. mtr.	17000 sq. mtr.	19500 sq. mtr.
		(123 & 124 GIDC)	:	6117 sq. mtr.	1875 sq. mtr.	4242 sq. mtr.
		(456-A & 456-B)	:	9967 sq. mtr.	1153 sq. mtr.	8809 sq. mtr.
		Total At POR	:	52584 sq. mtr.	20028 sq. mtr.	32551 sq. mtr.

MATERIAL HANDLING EQUIPMENTS

Conveyors	:	Inclined (1 Mtr Wide x 3000 Kgs)	2 Nos
	:	Straight (1 Mtr Wide x 3000 Kgs).....	2 Nos
Overheads Cranes	:	5 M.T. TO 15 M.T.	6 Nos
Fork Lifts	:	5 M.T.	6 Nos
Pillar Cranes	:	1 M.T. to 3 M.T.	12 Nos
Mobile Crane	:	10 Mt	2 Nos
Freight Elevator	:	3 MT each.....	2 Nos

SPECIALISED EQUIPMENTS

Mandrel Process (Seamless)			
Hot Elbow Forming machine	:	2" NB to 18" NB.....	6 Nos
CNC Pipe Bending / Cold			
Elbow Forming machine	:	1" NB to 4" NB	2 Nos
Cold Hydroforming (Seamless)			
Tee, Cross & Reducers Forming M/C	:	1/2" NB to 12" NB	1 No
- DO -	:	2" NB to 24" NB.....	1 No
CNC Pipe Bending / Cold			
Elbow Forming machine	:	1/2" NB to 6" NB	2 Nos



I.T. / E.D.P & E.R.P. RESOURCES

Equiped with AMD Processor based PCs interconnected through Windows network, having 45 nodes alongwith several **hp4250 N LaserJet** and **hp P3005 dn LaserJet** network Printers and 2 mbps Wireless line for Internet, e-Mail and data transfer facilities. Company wide ERP System covering all the major functional departments for close monitoring of resources. Implemented CRM to facilitate our valued customers connecting online thru Internet, also expanding the scope for vendors to get enquiries online from the company. Hardware / Software resources of the dept. supported with experienced engineers.

FORMING EQUIPMENTS

Plate bending machines	:	25 mm thk. x 3200 mm wide.....	1 No
	:	15 mm thk. x 1000 mm wide.....	1 No
Forging Hammer	:	2500 Kgs.	2 Nos
Hydraulic Press	:	1000 Tons	2 Nos
		800 Tons	1 No
		600 Tons	3 Nos
		500 Tons	5 Nos
		Between 250 Tons & 500 Tons	9 Nos

CUTTING EQUIPMENTS

CNC Profile Plate Cutting Machine	:	10 Mtrs x 2.6 Mtrs. 100 mm thk CS & 75 mm thk SS	1 No
Plasma Units	:	16" thk.	8 Nos
Oxy-Acetylene Units	:	16" thk.	4 Nos
Hacksaw Machine :	:	24" dia.	2 Nos
Abrasive Pipe Cutter	:	16" dia.	2 Nos
Abrasive Pipe Cutter	:	12" dia.	2 Nos

WELDING EQUIPMENTS

Automatic Wedge Welding Positioners	:	Various Capacities	2 Nos
Rectifiers / Transformers	:	Standard Spec.	25 Nos
TIG Machines	:	Standard Spec.	4 Nos
Electrode Dryer (Oven Type)	:	2000 Watt	3 Nos
Electrode Dryer (Portable)	:	2000 Watt	15 Nos



FURNACES

Gas Fired Continuous Heat Treatment Furnace

(500 Kgs per Hr. with Quenching facility).....	1 No
Oil Fired Furnace upto 1200°C : 4m x 4m x 8m	2 Nos
Oil Fired Furnace upto 1200°C : 6m x 8m x 10m	3 Nos
Oil Fired Furnace upto 1200°C : 1.5m x 2m x 3.5m	1 No
Electric Furnace upto 1200°C : 4m x 6m x 8m	1 No
Electric Furnace upto 1200°C : 3m x 3m x 4m	1 No
Electric Furnace upto 1200°C : 2m x 2m x 2.5m	1 No
Electric Furnace upto 1200°C : 1.2m x 2.6m x 3.5m.....	1 No

MACHINING EQUIPMENTS

PLC Controlled Band Saw Pipe Cutting Machine : 16" (420mm) for Single Cutting &

350 x 250 Bundle cutting.....	2 Nos
CNC Lathe Machine : PSG-400 : 10" ϕ CAPACITY	1 No
Lathe Machine : Various sizes : 24" Centre Ht. x 10 ft. Bed lth.	27 Nos
: Various sizes : min. 8" Centre Height x 6 ft. Bed length	
Shaping machine : 24" Stroke.....	2 Nos
Shearing machine : Various capacities	3 Nos
Drilling machine : Radial	2 Nos
: Pillar - Various Capacities	3 Nos
: Hand - Various Capacities	3 Nos
Grinder machine : Angle Various Capacities	75 Nos
Bench : Various Capacities	20 Nos
Flexible : Various Capacities	50 Nos
Buffing Attachment : Various Capacities.....	1 No



UTILITIES / SURFACE PREPARATION FACILITIES

Connected Power Load	: Por 400 KVA & Makarpura 250 KVA	
LPG/Propan Gas Bullets	: 5 MT each	2 Nos
Electronic WeighBridge	: 60 MT	1 No
Compressors	: AIR (Various Capacities)	4 Nos
Power Generating Set	: Diesel (Various Capacities)	2 Nos
Shot Blasting Plant	: Various Capacities	5 Nos
Sand Blasting Machine	:	2 Nos
Auto Painting Plant	:	1 No

INHOUSE NDT & DT TESTING FACILITIES (CALIBRATED)

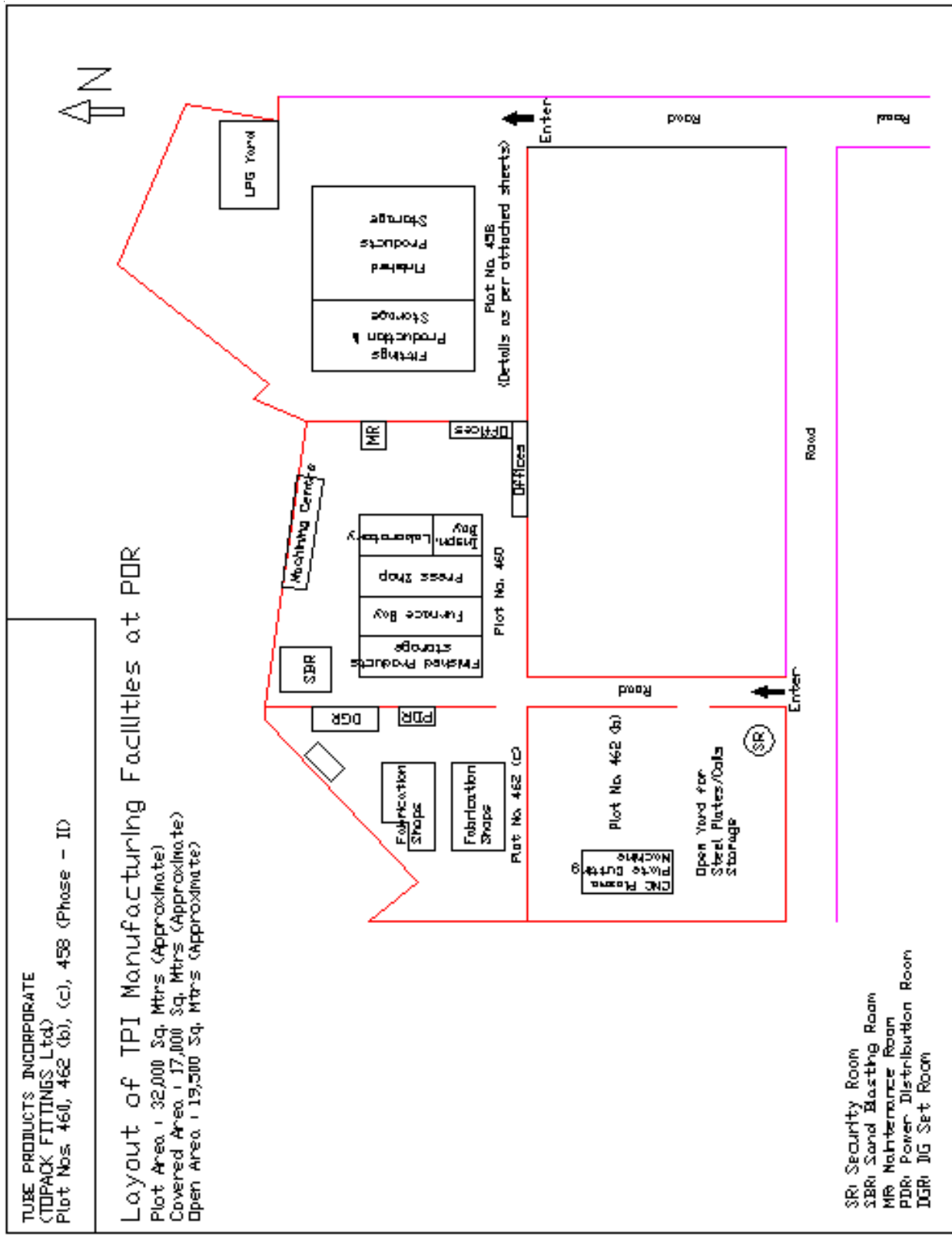
DT:-

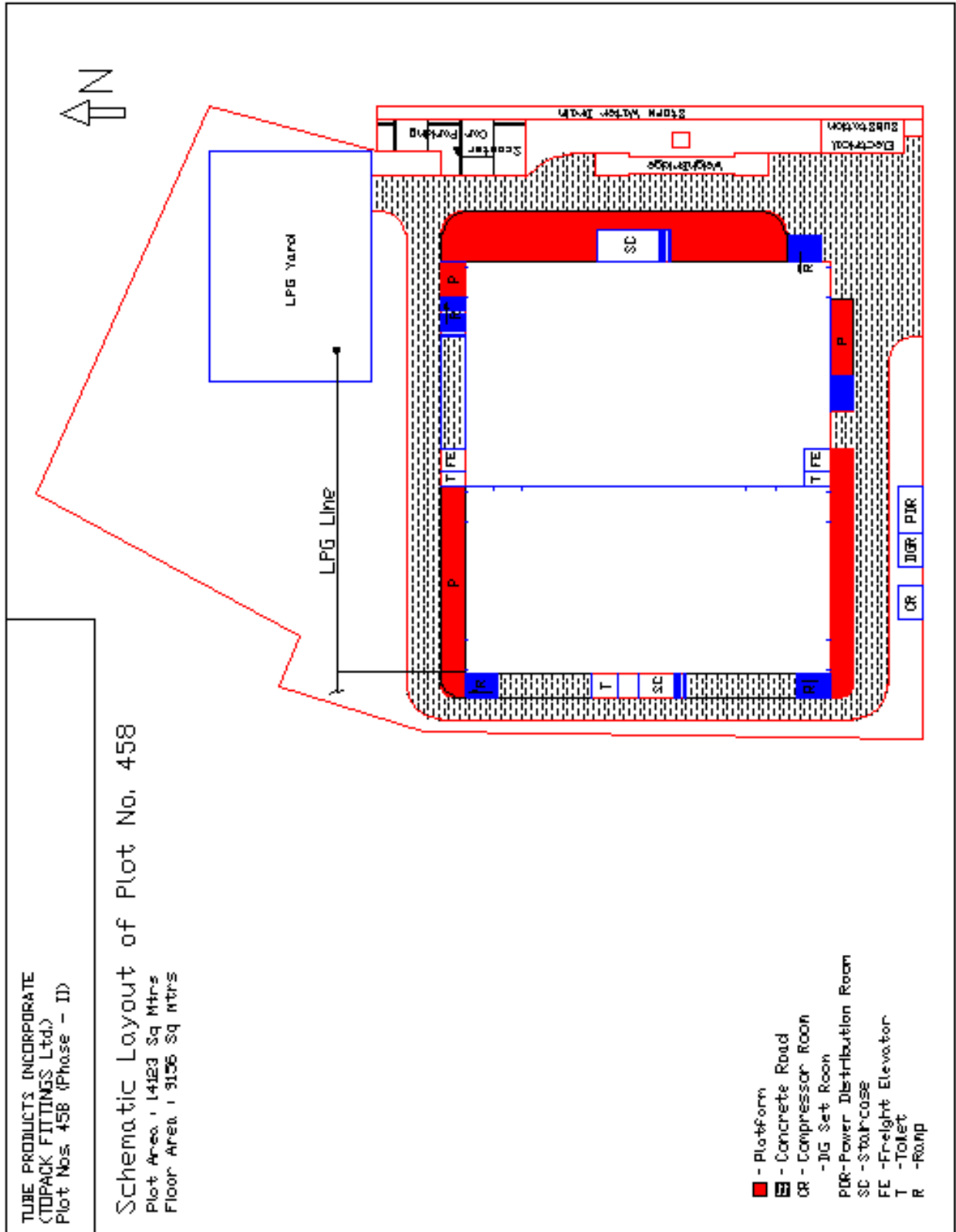
Spectrometer for the analysis of Ferrous based Alloys	1 No
Spectrometer for P.M.I. Portable	1 No
Impact Testing machine	1 No
Vicker's Hardness Tester with built in Optical system	1 No
Universal Tensile Testing Mc : Electronic - 40 M.T.	1 No
Hardness Tester (Elect.) : Various Capacities	2 Nos
Poldy Hardness Tester : Various Capacities	2 Nos
Moly Tester : Various Capacities	2 Nos

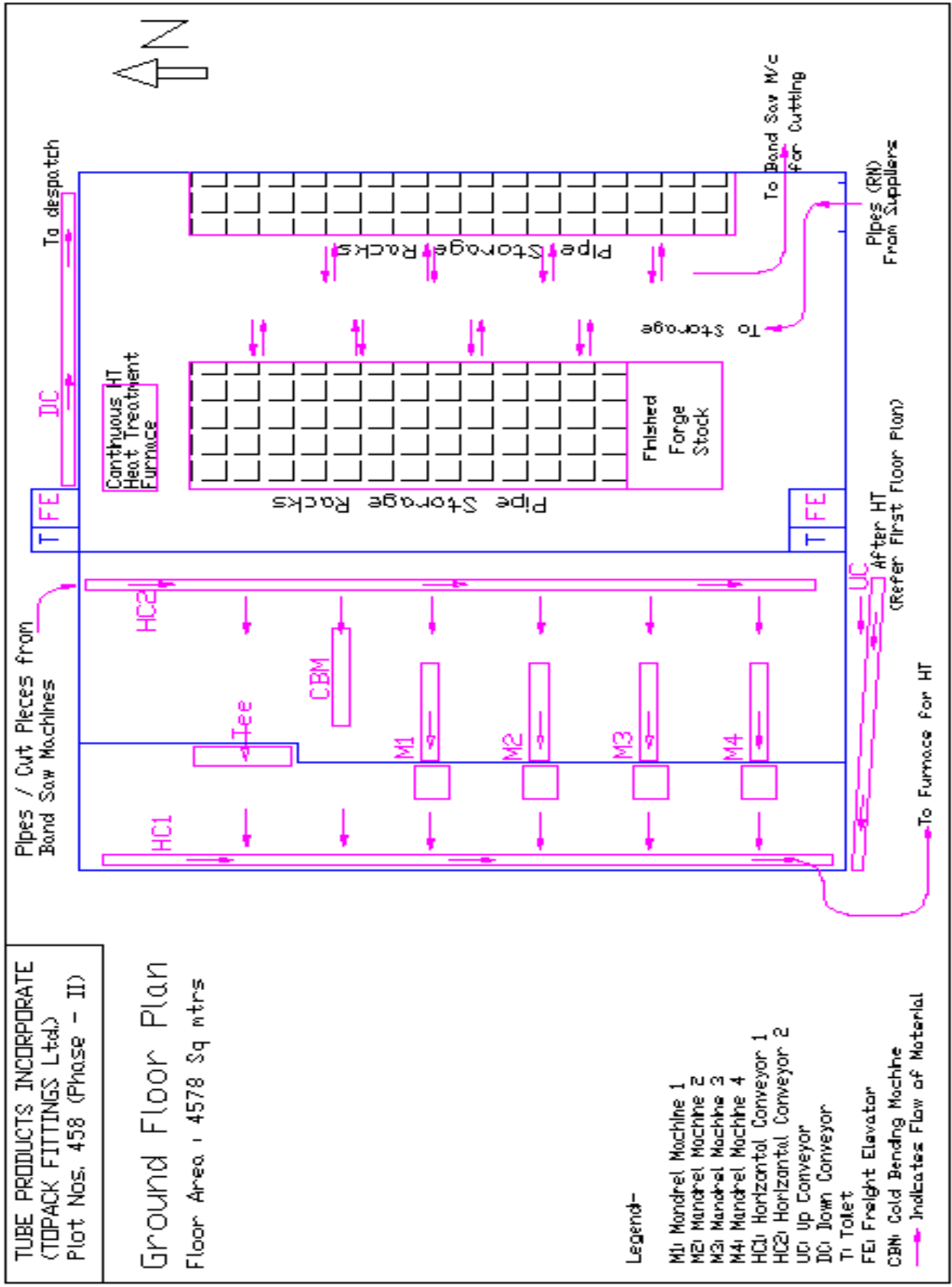
NDT:-

Ultrasonic Testing M/c :	1 No
X-Ray machine 300KVA :	1 No
x-Ray machine 200KVA :	1 No
Gamma Source :	2 Nos
D.P Test Sets : Various Capacities	10 Nos
Radiography Viewer : Various Capacities	3 Nos
Magnaflux : Various Capacities	2 Nos
(Black light for floroscence D.P test)	
Pyrometer : Various Capacities	2 Nos
Hydraulic Testing machine : Various Capacities	2 Nos
Ultra sonic thickness Guage: Various Capacities	2 Nos

Q.C. TESTING EQUIPMENTS / INSTRUMENTS (CALIBRATED) : Various Capacities

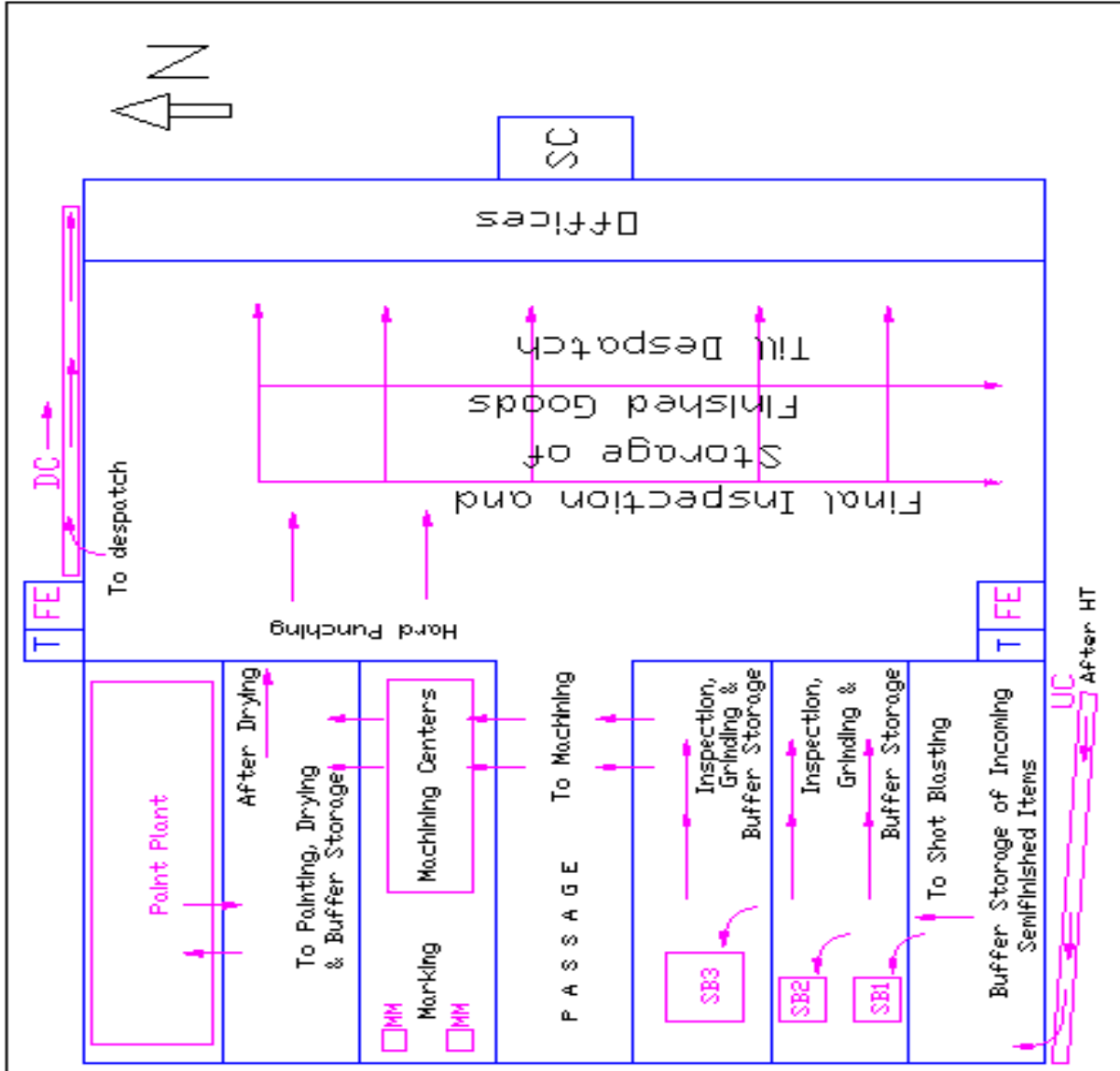






TUBE PRODUCTS INCORPORATE
(TOPACK FITTINGS L.td.)
Plot Nos. 458 (Phase - II)

Ground Floor Plan
Floor Area : 4578 Sq mtrs

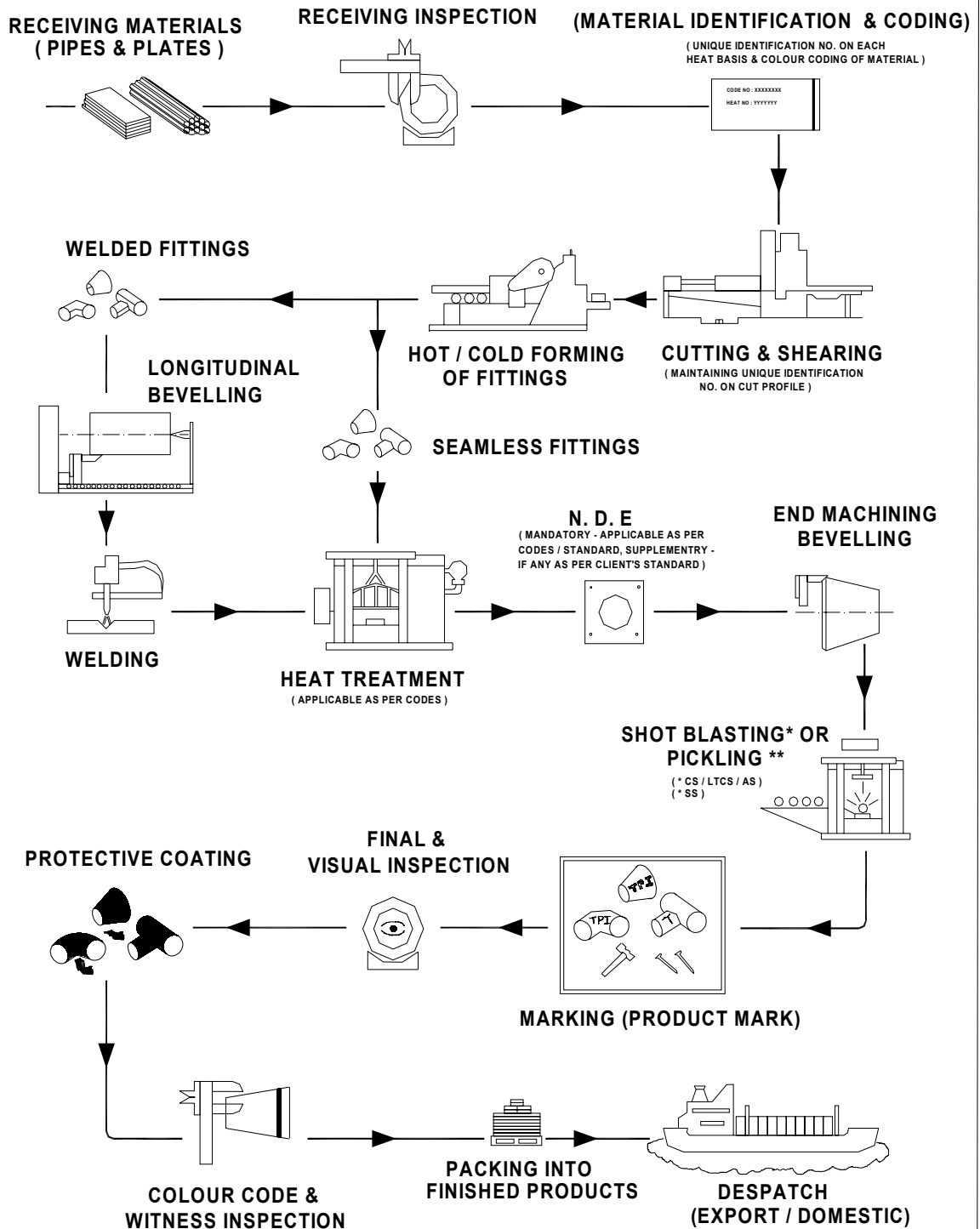


TUBE PRODUCTS INCORPORATE
(TOPACK FITTINGS Ltd.)
Plot Nos, 458 (Phase - II)

First Floor Plan
Floor Area : 4578 Sq mtrs

- Legend:-
- UC: Up Conveyor
 - DC: Down Conveyor
 - FE: Freight Elevator
 - SB1: ShotBlasting Machine 1
 - SB2: ShotBlasting Machine 2
 - SB3: ShotBlasting Machine 3
 - T: Toilet
 - MM: Marking Machine
 - Indicates Flow of Material
 - SC - Staircase

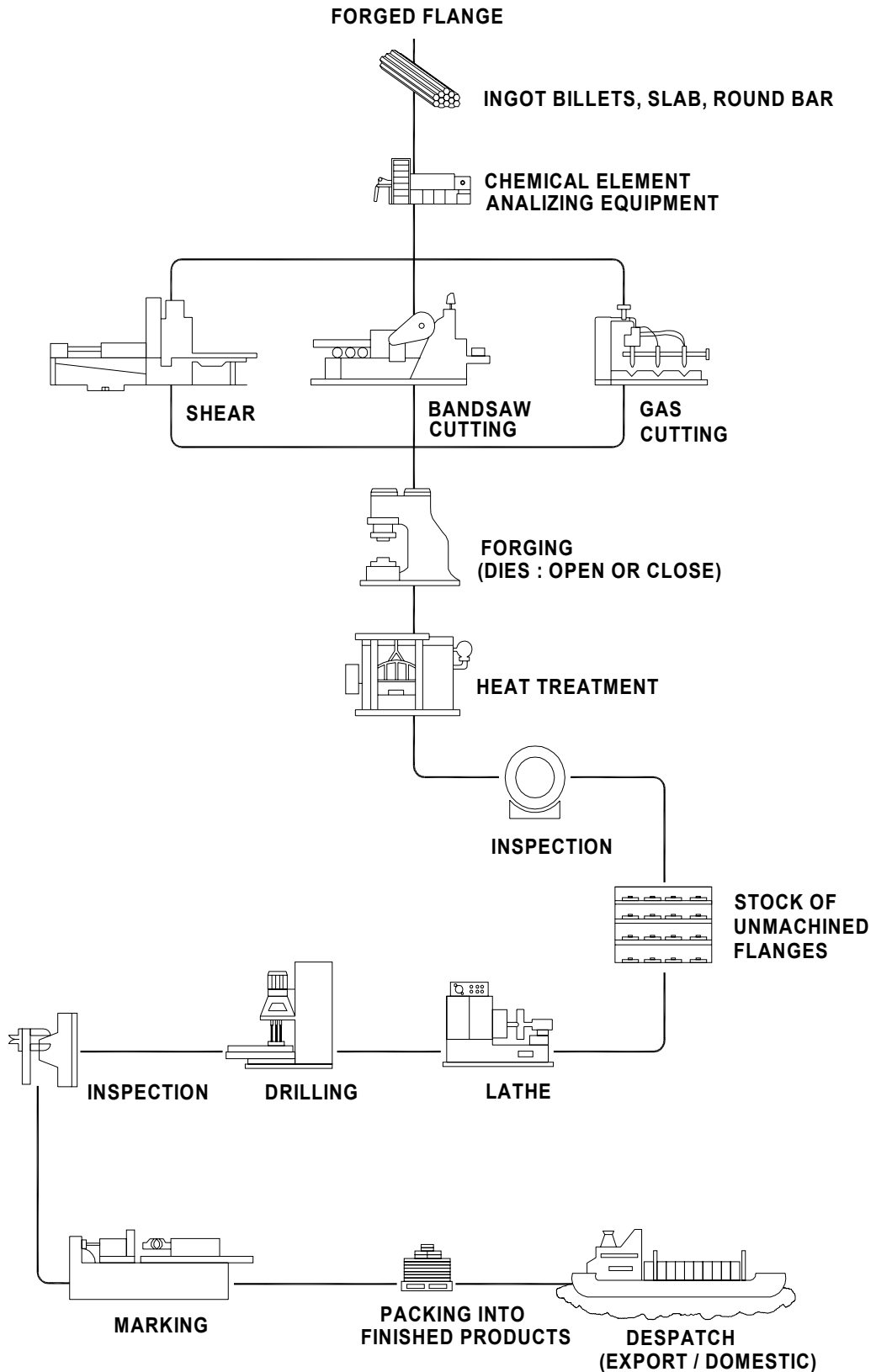
SCHEMATIC DETAILS OF MANUFACTURING PROCEDURE OF BW PIPE FITTINGS



NOTE :- 1) STAGE WISE & ONLINE INSPECTION AT EVERY STAGE AND PROCESS BY TUBE PRODUCTS INC. - 100%.

NOTE :- 2) UNIQUE IDENTIFICATION NO. MAINTAINED AT EACH & EVERY STAGE OF PROCESS FOR TRACEABILITY BACK TO THE STARTING RAW MATERIAL.

SCHEMATIC DETAILS OF PRODUCTION PROCESS FOR FLANGES





Annexure-VII

QUALITY ASSURANCE cum INSPECTION PLAN

[For WELDED / SEAMLESS CS, AS, LT, SS FITTINGS]

Client : _____			QAP NO : QAP. _____/STD/2008 REV.0				
Insp. : _____ / TPIA			DATE : 25.03.2008				
Ref.No. : _____							
							SHHET 01 OF 02
SR.NO.	OPERATION.	CHARACTERISTIC	REF.DOC	FORM OF RECORD	TYPE OF CHECK	SCOPE OF INSPN.	
						TPI	
A	RAW MATERIAL IDENTIFICATION PIPES & PLATES	Verification of size marking & correlation with mill TC	Applicable codes	Mill TC OR check test reports if any	Visual, dimensions, verification of marking with MTC & check test if any	100% H	R
B	INPROCESS CONTROL FORMING, FORM CORRECTION AND WELDING SET UP	Verification of form, shape, size & thk.	As per ANSI, ASME codes, approved drgs & applicable specn.	Internal inspection report	Visual, dimensions, verification of profile & dimension	100% H	-
	WELDING	Approved WPS/PQR/WPQ	ASME SEC. IX	WPS/PQR/WPQ	Witnessing welding & testing	100% H	R
	HEAT TREATMENT	Review of heat treatment records WLD, CS/LT FTGS. = N AS FITTINGS = N&T HF FITTINGS SS FITTINGS = SA	A 234/A 420 A234 A234 A403	} HT RECORDS	Visual & review	100% H	R
	MACHINING	COLD FORMED FTGS.: CS FTGS. = N / SR SS FTGS = SA	A234 A403		Visual & dimension	100% H	-
	CLEANING and FINISHING CS,AS,LT Fittings SS FITTINGS	Mechanical descaling Pickling & Passivation	A 234/A 420 A 403 Specn	-	Visual	100% H	-
	MARKING	Matl. Specn, Heat No., Lot No., Size Vendors monogram	A2 34/A 420 A 403 Specn.	-	Visual	100% H	-
C	DESTRUCTIVE TESTING TENSILE TEST	One test coupon from each material heat under same condition of Heat Treatment	A234, A420 & A403	Laboratory report	Witness / Scrutiny of report	100% H	R*

For TUBE PRODUCTS INCORPORATE



Inspection Authority



QUALITY ASSURANCE cum INSPECTION PLAN

[For WELDED / SEAMLESS CS, AS, LT, SS NACE FITTINGS]

Client : <input type="text"/>	QAP NO : QAP / /STD/2008 REV.0
Insp. : <input type="text"/> / TPIS	DATE : 25.03.2008
Ref.No. :	

SR NO.	OPERATION	CHARACTERISTIC	REF.DOC	FORM OF RECORD	TYPE OF CHECK	SCOPE OF INSPN.	
						TPI	BVIS
	IMPACT TESTING (LTCS FITTINGS)	1 Set of test coupon from each heat of Raw Matl.	Applicable Specn	Laboratory report	Witness / Scrutiny of report	100% H	R
	IGC PR 'E' (FOR SS FITTINGS)	1set having highest thk. & highest carbon per	A262 Pr.E	Laboratory report	Witness / Scrutiny of report	100% H	R
	Grain Size Test (For H Grade Fittings)	1set having highest thk. & highest carbon per HT lot.	Applicable Specn	Laboratory report	Witness / Scrutiny of report	100% H	R
D	NON DESTRUCTIVE TESTING ALL WELDED FITTINGS	Review of 100% Radiography	ASME Sec.V ASME Sec.VIII Div. I UW51	Rdiography report and radiographs	Review of radiograph	100%-H	R ** [10%]
		DP / MPI on BW ends	ASME Sec.V ASME Sec.VIII	DP / MPI reports	Visual	100% H	R
E	FINAL INSPECTION	Checking for dimensions, surface finish, marking, code stamping by & CFCL / TPIA stamping	A234, A420, A403, B16.9	Final offer list and other relevant documents	Visual and Dimensions	100% H	H [10%]
F	CERTIFICATION	Verification of chemical, (heat & product analysis from lab.), physical* specn, size, sch, qty and other test reports	A 234, A420&A 403 B16.9, & PO	Certificates and Test reports	Verification	100% H	H
G	DESPATCHING	Packing suitably to avoid transit damages marking each cartoon, for proper identification	CLIENT'S PO	LR, Invoice, challan despatch file etc.	Verification	100% - H	-

NOTE :

1 SUPPLIMENTARY CONDITIONS : IF ANY AS PER PO/PR SPECN. SHALL BE FULFILLED.

2. Type of Process :
- 1) Seamless Construction - Size up to 16"NB
 - 2) Welded Construction - Size - above 16"NB

* In case physical tests for a particular ID No. have been conducted under any Third Party Inspection agency, those shall be offered for review and acceptance by / TPIA

** 100% Radiographs of welded fittings will be reviewed / interpreted by ASNT Level II person (by Tube Products), & 10% by / TPIA basis on random basis.

ABBREVIATION :

V - VISUAL, R - REVIEW, T - TEMPERING, N - NORMALISING, SA - SOLUTION ANNEALING, SR - STRESS RELIEVING,

D - DIMENSION, LR - LABORATORY REPORT, W - WITNESS, S - SCRUTINY OF REPORT, H - HOLD,

TPI - Tube Products Incorporate, TPIA - Third Party Inspection Agency.

For TUBE PRODUCTS INCORPORATE



[Handwritten Signature]

Inspection Authority



TUBE PRODUCTS INCORPORATE

748/7, G.I.D.C ESTATE MAKARPURA
VADODARA-10

**TUBE
Products
Incorporate**



**QUALITY ASSURANCE CUM INSPECTION & TEST PLAN
(Forged CS Flanges & Fittings)**

F:QAD:001

Client : _____				QAP No. : QAP/FORGED/CS/2007			
Insp : _____ /TPIA				Date : 25/03/2008			
PO No : --				PROJ : --			
Dated : --							
Sr. No.	OPERATION	CHARACTERISTIC	REF. DOC.	FORM OF RECORD	TYPE OF CHECK	SCOPE OF INSPN.	
						Vendor	/TPIA
A	Identification of Fittings	Verification of TC / Cross Check Report	PO / As Per Code	Identification Report	Visual & Verification of Dimensions.	H	R
B	Internal ID No/ Marking/Punching	-	-	Register/PO		H	R
C	Heat Treatment (If Applicable)	-	PO / As Per Code	H.T. Chart/Report	Review of Report/ Mill Tc.	H	R
D	Product Analysis 1. (Chemical Test)	Product analysis	PO / As Per Code	Review of Lab Report	Review of Lab Report	H	R
	Product Analysis 2. (Hardness Test)	Product analysis	PO / As Per Code	Review of Report	Review of Report	H	R
	3. (Mechanical Test)	PHYSICAL	PO / As Per Code	Review of Lab Report	Review of Lab Report	H	R
E	Final Inspection	Verification of size and dimension	-	Internal Inspn.	Visual and Dimensions.	H	W (10%)
F	Finishing	-	PO / As Per Code	Review of Report	Review of Report	H	R
G	Certification	Review of chemical, physical, Material Specn. Size, Sch, Qty & other test reports.	-	Other Certificates & test reports.	Reviewed	H	R
H	Despatching	Packing suitably to avoid transit damages marking each cartoon for proper identification.	Client's PO	LR, Invoice, Challan, despatch file etc.	Verification	H	-

LEGEND : W-Witness, R-Review, H-Hold.

Vendor - Tube Products Incorporate, _____ /TPIA - Third party Inspection Agency.

Note : (1) All Die Forged Items/Materials to be offer Third Party Inspected. Raw forged duly Stamped by Third Party Insp. Agency Like BVDNV/IBR/TUV/PDIL Materials to be offer to your Nominated Insp. Agency for Final Insp. & TC Review only.

Note : (2) Redly stock items which is Inspected & Control our by QC. Dept. and not Possible Phy. Testing from items we will offer Your Nominated Insp. Agency. For final with Cross check Chemicals & Hardness as per ASTM Code.



FOR TUBE PRODUCTS INCORPORATE
HARIVADAN
(SR. Q.C. ENGINEER)

INSPECTION AUTHORITY



TUBE PRODUCTS INCORPORATE

748/7, G.I.D.C ESTATE MAKARPURA
VADODARA-10

**TUBE
Products
Incorporate**



**QUALITY ASSURANCE CUM INSPECTION & TEST PLAN
(Forged LTCS Fittings & Flanges)**

F:QAD:001

Client : _____	QAP No. : QAP/FORGED/LTCS/2007
Insp : _____/TPIA	Date : 25/03/2008
PO No : --	PROJ : --
Dated : --	

Sr. No.	OPERATION	CHARACTERISTIC	REF. DOC.	FORM OF RECORD	SCOPE OF INSPN.	
					TYPE OF CHECK	Vendor' /TPIA
A	Identification of Fittings	Verification of TC / Cross Check Report	PO / As Per Code	Identification Report	Visual & Verification of Dimensions.	H R
B	Internal ID No/ Marking/Punching	-	-	Register/PO		H R
C	Heat Treatment (If Applicable)	-	PO / As Per Code	H.T. Chart/Report	Review of Report/ Mill Tc.	H R
D	Product Analysis 1. (Chemical Test)	Product analysis	PO / As Per Code	Review of Lab Report	Review of Lab Report	H R
	Product Analysis 2. (Hardness Test)	Product analysis	PO / As Per Code	Review of Report	Review of Report	H R
	3. (Mechanical Test)	PHYSICAL	PO / As Per Code	Review of Lab Report	Review of Lab Report	H R
	4. Impact Test	-	As per Code	Review of Lab Report	Review of Lab Report	H R
E	Final Inspection	Verification of size and dimension	-	Internal Inspn.	Visual and Dimensions.	H W (10%)
F	Finishing	-	PO / As Per Code	Review of Report	Review of Report	H R
G	Certification	Review of chemical, physical, Material Specn. Size, Sch, Qty & other test reports.	-	Other Certificates & test reports.	Reviewed	H R
H	Despatching	Packing suitably to avoid transit damages marking each cartoon for proper identification.	Client's PO	LR, Invoice, Challan, despatch file etc.	Verification	H -

LEGEND : W-Witness, R-Review, H-Hold.

Vendor - Tube Products Incorporate, TPIA - Third party Inspection Agency.

Note : (1) All Die Forged Items/Materials to be offer Third Party Inspected. Raw forged duly Stamped by Third Party Insp. Agency Like BV/DNV/IBR/TUV/PDIL Materials to be offer to your Nominated Insp. Agency for Final Insp. & TC Review only.

Note : (2) Redly stock items which is Inspected & Control our by QC. Dept. and not Possible Phy. Testing from items we will offer Your Nominated Insp. Agency. For final with Cross check Chemicals & Hardness as per ASTM Code.



**FOR TUBE PRODUCTS INCORPORATE
HARIVADAN
(SR. Q.C. ENGINEER)**

INSPECTION AUTHORITY



TUBE PRODUCTS INCORPORATE

748/7, G.I.D.C ESTATE MAKARPURA
VADODARA-10

**TUBE
Products
Incorporate**



**QUALITY ASSURANCE CUM INSPECTION & TEST PLAN
(Forged A.S Fittings & Flanges)**

F:QAD:001

Client : _____				QAP No. : QAP/FORGED/A.S/2007			
Insp : _____ /TPIA				Date : 25/03/2008			
PO No : --				PROJ : --			
Dated : --							
Sr. No.	OPERATION	CHARACTERISTIC	REF. DOC.	FORM OF RECORD	TYPE OF CHECK	SCOPE OF INSPN.	
						Vendor	/TPIA
A	Identification of Fittings	Verification of TC / Cross Check Report	PO / As Per Code	Identification Report	Visual & Verification of Dimensions.	H	R
B	Internal ID No/ Marking/Punching	-	-	Register/PO		H	R
C	Heat Treatment (If Applicable)	-	PO / As Per Code	H.T. Chart/Report	Review of Report/ Mill Tc.	H	R
D	Product Analysis 1. (Chemical Test)	Product analysis	PO / As Per Code	Review of Lab Report	Review of Lab Report	H	R
	Product Analysis 2. (Hardness Test)	Product analysis	PO / As Per Code	Review of Report	Review of Report	H	R
	3. (Mechanical Test)	PHYSICAL	PO / As Per Code	Review of Lab Report	Review of Lab Report	H	R
	4. PMI Test	-	Tech. Spec/ As Per Code	Review of Report	Review of Report	H	W (10%)
E	Final Inspection	Verification of size and dimension	-	Internal Inspn.	Visual and Dimensions.	H	W (10%)
F	Finishing	-	PO / As Per Code	Review of Report	Review of Report	H	R
G	Certification	Review of chemical, physical, Material Specn. Size, Sch, Qty & other test reports.	-	Other Certificates & test reports.	Reviewed	H	R
H	Despatching	Packing suitably to avoid transit damages marking each cartoon for proper identification.	Client's PO	LR, Invoice, Challan, despatch file etc.	Verification	H	-

LEGEND : W-Witness, R-Review, H-Hold.
Vendor - Tube Products Incorporate, _____ /TPIA - Third party Inspection Agency.

Note : (1) All Die Forged Items/Materials to be offer Third Party Inspected. Raw forged duly Stamped by Third Party Insp. Agency like BV/DNV/IBR/TUV/PDIL Materials to be offer to your Nominated Insp. Agency for Final Insp. & TC Review only.

Note : (2) Redly stock items which is Inspected & Control our by QC. Dept. and not Possible Phy. Testing from items we will offer Your Nominated Insp. Agency for final with Cross check Chemicals & Hardness as per ASTM Code.



FOR TUBE PRODUCTS INCORPORATE
HARIVADAN
(SR. Q.C. ENGINEER)

INSPECTION AUTHORITY



TUBE PRODUCTS INCORPORATE
748/7, G.I.D.C ESTATE MAKARPURA
VADODARA-10

**TUBE
Products
Incorporate**



**QUALITY ASSURANCE CUM INSPECTION & TEST PLAN
(Forged SS Fittings & Flanges)**

F:QAD:001

Client : Insp : /TPIA PO No : -- Dated : --	QAP No. : QAP/FORGED/SS/2007 Date : 25/03/2008 PROJ : --					
Sr. No.	OPERATION	CHARACTERISTIC	REF. DOC.	FORM OF RECORD	SCOPE OF INSPN.	
					TYPE OF CHECK	Vendor /TPIA
A	Identification of Fittings	Verification of TC / Cross Check Report	PO / As Per Code	Identification Report	Visual & Verification of Dimensions.	H R
B	Internal ID No/ Marking/Punching	-	-	Register/PO		H R
C	Heat Treatment (If Applicable)	-	PO / As Per Code	H.T. Chart/Report	Review of Report/ Mill Tc.	H R
D	Product Analysis	Product analysis	PO / As Per Code	Review of Lab Report	Review of Lab Report	H R
	1. (Chemical Test)					
	2. (Mechanical Test)	PHYSICAL	PO / As Per Code	Review of Lab Report	Review of Lab Report	H R
	3. IGC Test	A 262 Practice "E"	As per Code	Lab Report	Review of Lab Report	H R
	4. PMI Test	-	Tech. Spec/ As Per Code	Review of Report	Review of Report	H W (10%)
E	Final Inspection	Verification of size and dimension	-	Internal Inspn.	Visual and Dimensions.	H W (10%)
F	Finishing	-	PO / As Per Code	Review of Report	Review of Report	H R
G	Certification	Review of chemical, physical, Material Specn Size, Sch, Qty & other test reports.	-	Other Certificates & test reports.	Reviewed	H R
H	Despatching	Packing suitably to avoid transit damages marking each carton for proper identification.	Client's PO	LR, Invoice, Challan, despatch file etc.	Verification	H -

LEGEND : W-Witness, R-Review, H-Hold.
Vendor - Tube Products Incorporate. /TPIA - Third party Inspection Agency.
Note : (1) All Die Forged Items/Materials to be offer Third Party Inspected. Raw forged duly Stamped by Third Party Insp. Agency Like BV/DNV/IBR/TUV/PDIL Materials to be offer to your Nominated Insp. Agency for Final Insp. & TC Review only.
Note : (2) Redly stock items which is Inspected & Control our by QC. Dept. and not Possible Phy. Testing from items we will offer Your Nominated Insp. Agency. For final with Cross check Chemicals & Hardness as per ASTM Code.



FOR TUBE PRODUCTS INCORPORATE
HARIVADAN
(SR. Q.C. ENGINEER)

INSPECTION AUTHORITY



WPS / PQR (Carbon, Stainless & Alloy Steel)

Sr. No.	Wps/Pqr/No.	Material spec.	Material P No. to P No.	F. No.	A. No.	Welder No.	Thk mm	Thk range from To	PWHT Cycle	Impact at Tem.	IGC	Hardness	Sr. No.
#													
1	101-1-02	API 5L Gr X 60	unassg	4	1	w 5	22	4.76 24.2	N(2)+WQ+T	yes	-	yes	50
2	101-1-01	A 737 Gr.B	1	"	"	w 4	18	" 19.8	N	yes	-	yes	
3	16/2/03	A 516 Gr.70	"	"	"	w 2	16	" 17.6	N+N+T	yes	-	yes	35
4	TPI/041/2000	"	"	"	"	w 19	12	" 13.2	N	yes	-	yes	
5	TPI/043/2000	"	"	"	"	w 25	14	" 15.4	N(2)times)	-	-	yes	
6	TPF/10	"	"	"	"	w 13	50	4.8 55	N	-	-	-	
#													
1	26/02-03	SA 240 TY 304L	8	5	8	w 11	8	1.6 16	SA+WQ	-	yes	-	
2	EIL/05	SA 240 TY 316L	"	"	"	w 28	55	4.76 60.5	"	-	"	-	
3	EIL/04	SA 240 TY 321	"	"	"	w 5	50	4.8 55	SA+WQ+STBL	-	"	yes	12
4	EIL/02	SA 240 TY 321	"	"	"	w 8	8	1.6 8.8	"	-	"	yes	3
5	TPF/037/2000	SA 240 TY 316L	"	"	"	w 19	10	1.6 20	-	-	-	-	
6	TPF/09	SA 240 TY 321	"	"	"	w 5	28	4.76 30.8	SA+WQ	-	yes	-	
#													
1	10/02-03	SA387 Gr P11CL1	4	4	4	w 4	30	4.76 60	T	-	-	yes	
2	22/02-03	SA387 Gr P5CL1	5B	6&4	"	w 3	16	" 32	T	-	-	"	
3	20/02-03	SA387 Gr P5CL1	"	4	4	w 12	16	" 32	T	-	-	"	
4	05/02-03	SA387 Gr P5CL1	"	6 / 4	"	w 4	16	" 32	T	-	-	"	
5	17/02-03	SA387 Gr P5CL1	5B	4	4	w 17	17	4.76 34	N+T+T	-	-	yes	35+
6	03/02-03	"	"	"	"	w 11	16	" 32	T+T	-	-	"	12
7	EIL/01	SA387 Gr P11	4	4	3	w 5	45	" 49.5	N+T	yes	-	"	9
8	TPI/040/2000	SA387 Gr P11CL1	4	4	3	w 23	10	" 11	"	"	-	"	9
9	TPI/039/2000	SA335 Gr P5	5B	4	4	w 19	34	" 37.4	N+T+T	-	-	"	75+
10	18/02-03	SA387 Gr P5CL1	"	"	"	w 13	16	" 17.6	N+T+SR	yes	-	"	35+
11	025/98	SA335 Gr P9	"	"	5	w 19	11	" 22	SR	-	-	"	
12	TPF/033/99	SA387 Gr P5	"	"	"	w 25	14	1.6 28	"	-	-	"	
13	02/02-03	SA387 Gr P5CL1	"	4	4	w 8	16	4.76 32	T	-	-	"	
14	04/02-03	SA387 Gr P22CL1	5A	"	"	w 18	40	4.76 44	N+T	-	-	-	3
15	TPF/022/98	SA203 Gr E	9B	"	10	w 25	8	1.6 16	SR	yes	-	-	
16	TPF/019/98	SA203 Gr E	9B	"	10	w 7	8	1.6 8.8	N	"	-	-	
17	TPF/020/98	SA 387 Gr. P5	5B	4	4	w 3	10	4.76 20	N+T	-	-	yes	



WPS / PQR (CLAD: Carbon+Alloy / Stainless+Alloy / Carbon+Stainless Steel)

Sr. No.	Wps/Pqr/No.	Material spec.	Material P to P No.	F. No.	A. No.	Welder No.	Thk mm	Thk range from to	PWHT Cycle	Impac	IGC	Hardness
1	06A/02-03	SA 264(SA387Gr P11+SA 240TY316L)	4./8 4./8	4./5 4./8	4./8 W8	W8	12+3	-	T	yes	-	yes
2	8/2/03	SA 264(SA387Gr P5 CL1+SA 240TY 316L)	4./8 4./8	6./5 8	W4&W8	W4&W8	20+3	-	T	-	-	yes
3	12/02.-03	SA 387Gr P11 to SA 240 TY 304	4 8	5./6 8	W11&W8	W11&W8	14	-	T,SR	-	-	yes
4	06/ 02.-03	SA 264(SA387Gr P11+SA 240TY316L)	4./8 4./8	4./5 4./8	W8	W8	12+3	-	T	-	-	yes
5	7/2/03	SA 264(SA387Gr P11+SA 240TY316L)	4./8 4./8	4./5 4./8	W13	W13	12+3	-	T	yes	-	yes
6	13A/02 -03	SA 387Gr P11 CL1 overlay 316L	4 -	5 8	W10	W10	30	4.76 200	T	-	-	yes
7	029/99	SA 387 Gr.P5 to SA 263(516Gr.70+ SA 240 Ty 410S)	5B 1./7	5 8	W 19	W 19	14	1.6 28	SR	-	-	Yes
8	038/2000	SA 516Gr 70 to AWS E 316L-16 OVERLAY	1 8	5 8	W 19	W 19	25+6	-	SR	-	-	-
9	028/99	SA 387 Gr.P5 to SA 263(516Gr.70+ SA 240 TY 410S)	5B 1./7	5 8	W 5	W 5	14	-	T	-	-	Yes
10	023/98	SA 335 Gr.P9 to SA 263(515Gr.70+ SA 240 410S)	5B 5B	5 8	W 19	W 19	12.5	1.6 25	SR	-	-	yes
11	031/99	SA 240TY410S	7 7	5 8	W 19	W 19	8	-	-	-	-	-
12	TPF/CL-02/98	SA263(SA516 Gr. 70+SA240TP410S) to SA263 (SA515Gr 70 + SA240TP410S)	1./7 1./7	5 8	W 5	W 5	12.5	1.6 16	-	-	-	-
13	TPF/CL-01/98	SA263(SA516 Gr. 70+SA240TP410S) to SA263 (SA515Gr 70 + SA240TP410S)	1./7 1./7	4./5 1./8	W 5	W 5	12.5	-	-	-	-	-
		P11+SA 240TY316L										

Abbreviation used
 WQ - Water Quenching
 N - Normalising
 T - Tempering
 SR- Stress Relieving
 WC- Weld chemical

SA- Solution Annealing
 STBL - Stabilising
 F- Ferrite check
 ST- Soaking Time (Minutes)

Prepared By.
Pankaj Parmar



BURST PROOF TESTING OF FITTING AS PER ASME B16.9 2003

- (1) FITTING SPECIFICATION :- ASTM A234 WPB
 (2) STARTING MATERIAL:- ASTM A516 Gr 70
 (3) SIZE OF TEST FITTING:- 1) 42"NB X SCH XS (12.7mm) 90°LR R=1.5D
 (WELDED FITTINGS) 2) 42"NB X SCH XS (12.7mm) EQ.TEE
 (4) TESTING PROCEDURE:- AS PER ASME B16.9-2003 PARA 9.3 (X-RAY NO.:T-34 E-1955/LOT NO. TPM 1042)

(5) BURST PROOF TEST PROCEDURE:- I.D No.-70P8325

LOT No.-TPM-1042

UTS OF FITTING - 491.66 MPa = 50.118 Kg/mm²

$$P = 2S/D$$

where S : ACTUAL TENSILE VALUE OF FITTING IN Kg/mm²

t : NOMINAL WALL THICKNESS OF FITTINGS IN mm.

D : SPECIFIED OUTER DIAMETER OF FITTINGS IN mm.

$$P_{comp} = (2 * 50.118 * 12.7) / 1066.8$$

$$= 1.1932 * (1422.48)$$

$$= 1697.42 \text{ psi}$$

$$P_{min} = 1697.42 * 105 / 100$$

$$= 1782.29 \text{ psi}$$

PROOF TEST PRESSURE = 125 Kg/cm²

PRESSURE GAUGE NO : MPC - 71917G, MPC - 51398G

CALIBRATION DUE DATE :- 04/08/2008

PRESSURE GAUGE RANGE : 0 TO 420 Kg/cm²

For
Tube Products Inc.
QA Engg.

Amethy
23/9/07



Pressure 135 kg/cm²

Test Witnessed By
TPIA

23/9/07



HYDRO TEST REPORT

CERTIFICATE NO : TPI/QA/TEST/024/2003

Date : 20th May 2003

TEST DATE : 20TH May 2003

DESCRIPTION :-

SIZE : 12"NB x Sch. 5S, WLD. LONG STUBEND, BW ✓

SPECIFICATION : ASTM A 403 WP 304 WX

ID NO : 304P3195

PRESSURE GAUGE NO. : 2H - 3327

PRESSURE GAGUE RANGE : 0 - 400 Kg/Cm²

CALIBRATION CERTIFICATE NO : 18341 27.08.2002
& DATE

Hydro test (For Proof Test) conducted & fitting withstood a pressure of 157 Kg/Cm² without failure


20/5/03
ENGINEERS INDIA LTD.





Job 3

TUBE PRODUCTS INCORPORATE
ANNEXURE
PROOF TEST DETAIL AS ON 30.04.2003

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE 9 OF ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	TYPE OF FITTINGS WITH SIZE RANGE THK AND MATL. QUALIFIED AS PER CALUSE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
I	ELBOW-LR	A 234 WPB / A 234 WPB W			
1)	A 234 WPB, 90° ELBOW 2"NB x Sch. 80	Raw Matl.used A106 Gr B - PIPE Tensile strength of the proof tested fittings 48.88 Kg/mm ²	0.092		TPI/QA/TEST/013/2003 DTD. 26/04/2003
2)	A 234 WPB, 90° ELBOW 4"NB x Sch. 40	Raw Matl.used A106 Gr B - PIPE Tensile strength of the proof tested fittings 45.62 Kg/mm ²	0.0566		TPI/QA/TEST/020/2003 DTD. 26/04/2003
3)	A 234 WPB W, 90° ELBOW 8"NB x Sch. 40	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 49.23 Kg/mm ²	0.037	1" to 48" - Sch.5S to 160/XXS	TPI/QA/TEST/010/2003 DTD. 26/04/2003
4)	A 234 WPB W, 90° ELBOW 8"NB x Sch. 20	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 49.15 Kg/mm ²	0.029		LRIS CERTIFICATE DTD. 31.03.2000
5)	A 234 WPB W, 90° ELBOW 30"NB x Sch.STD (9.53mm Thk.)	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.013		TPI/QA/TEST/009/2003 DTD. 26/04/2003
II	180° RETURN BEND - LR	A 234 WPB			
1)	A 234 WPB, 180° ELBOW 2"NB x Sch. 80	Raw Matl.used A106 Gr B - PIPE Tensile strength of the proof tested fittings 43.40 Kg/mm ²	0.092	1" x Sch.5S, 1" to 2" x Sch. 10S,40,40S,XS,80S 1" to 3" x Sch. 160/XXS 4" x Sch.120,160,XXS	TPI/QA/TEST/005/2003 DTD. 26/04/2003
III	EQUAL TEE	A 234 WPB / A 234 WPB W			
1)	A 234 WPB, EQUAL TEE 2"NB x Sch. 80	Raw Matl.used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.94 Kg/mm ²	0.092		TPI/QA/TEST/001/2003 DTD. 26/04/2003
2)	A 234 WPB, EQUAL TEE 3"NB x Sch. 40	Raw Matl.used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.25 Kg/mm ²	0.061	1" to 48" - Sch.5S to 160/XXS	TPI/QA/TEST/019/2003 DTD. 29/04/2003





2 of 3



SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE 9 OF ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	TYPE OF FITTINGS WITH SIZE RANGE THK AND MATL. QUALIFIED AS PER CALUSE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
3)	A 234 WPB W, EQUAL TEE 24"NB x Sch. STD (9.53mm)	Raw Matl. used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 49.44 Kg/mm ²	0.02	1" to 48" - Sch.5S to 160/XXS	TPI/QA/TEST/011/2003 DTD. 26/04/2003
4)	A 234 WPB, EQUAL TEE 6"NB x Sch. 40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 49.46 Kg/mm ²	0.042		LRIS CERTIFICATE DTD. 31.03.2000
IV	CONCENTRIC REDUCER	A 234 WPB / A 234 WPB W			
1)	A 234 WPB, CON. REDUCER 3"NBx2"NBxSch.80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.085 0.091	1" to 48" - Sch.5S to 160/XXS	TPI/QA/TEST/017/2003 DTD. 26/04/2003
2)	A 234 WPB, CON. REDUCER 4"NBx3"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.63 Kg/mm ²	0.052 0.061		TPI/QA/TEST/06/2003 DTD. 26/04/2003
3)	A 234 WPB, CON. REDUCER 8"NBx6"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 47.76 Kg/mm ²	0.037 0.042		TPI/QA/TEST/07/2003 DTD. 26/04/2003
4)	A 234 WPB W, CON. REDUCER 36"NBx34"NBxSch.STD (9.53mm)	Raw Matl. used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01 0.011		TPI/QA/TEST/02/2003 DTD. 26/04/2003
V	ECCENTRIC REDUCER	A 234 WPB			
1)	A 234 WPB, ECC. REDUCER 3"NBx2"NBxSch.80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.085 0.091	2" to 20" x Sch. 5S to Sch.XXS 22" TO 40" X Sch 40 TO Sch 160 LBS	TPI/QA/TEST/021/2003 DTD. 30/04/2003
2)	A 234 WPB, ECC. REDUCER 4"NBx3"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.63 Kg/mm ²	0.052 0.061		TPI/QA/TEST/014/2003 DTD. 26/04/2003
3)	A 234 WPB, ECC. REDUCER 8"NBx6"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 47.99 Kg/mm ²	0.037 0.042		TPI/QA/TEST/09/2003 DTD. 26/04/2003
4)	A 234 WPB, ECC. REDUCER 20"NB x 16"NB x Sch. STD	Raw Matl. used A516 Gr.70-PLATE Tensile str. of the proof test. J fil. gs 4.5 Mpa	0.018		WITNESSED BY LRIS & EIL



3 of 3

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE 9 OF ASME B 16.3	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	TYPE OF FITTINGS WITH SIZE RANGE THK. AND MATL. QUALIFIED AS PER CALUSE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
V	CAP	A 234 WPB			
1)	A 234 WPB, CAP 2"NB x Sch. XS	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 52.46 Kg/mm ²	0.091		TPI/QA/TEST/022/2003 DTD. 30/04/2003
2)	A 234 WPB, CAP 3"NB x Sch. 80	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 48.67 Kg/mm ²	0.09		TPI/QA/TEST/018/2003 DTD. 26/04/2003
3)	A 234 WPB, CAP 3"NB x Sch. STD (5.49mm Thk.)	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 45.37 Kg/mm ²	0.06		TPI/QA/TEST/016/2003 DTD. 26/04/2003
4)	A 234 WPB, CAP 4"NB x Sch. 40	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 48.40 Kg/mm ²	0.05	1" to 48" - Sch.5S to 160/XXS	TPI/QA/TEST/015/2003 DTD. 26/04/2003
5)	A 234 WPB, CAP 24"NB x Sch. STD (9.53mm)	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 49.44 Kg/mm ²	0.02		TPI/QA/TEST/012/2003 DTD. 26/04/2003
6)	A 234 WPB, CAP 34"NB x Sch. STD (9.53mm)	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01		TPI/QA/TEST/04/2003 DTD. 26/04/2003
7)	A 234 WPB, CAP 36"NB x Sch. STD (9.53mm)	Raw Matl.used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01		TPI/QA/TEST/03/2003 DTD. 26/04/2003



TUBE PRODUCTS INCORPORATE
[KAMLESH S RANA]



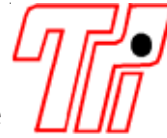


TUBE PRODUCTS INCORPORATE
ANNEXURE
PROOF TEST DETAIL AS ON 05.10.2007

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE 9 OF ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	DIA RANGE AS PER B 16.9 CL 9.4.2	T/D RATIO RANGE AS PER B 16.9 C 9.4.2	TYPE OF FITTINGS WITH SIZE RANGE THK AND MATL. QUALIFIED AS PER CALUSE B 6.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
I ELBOW - LR							
A 234 WPB / A 234 WPB W							
1)	A 234 WPB, 90° ELBOW 2"NB x Sch. 80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 48.88 Kg/mm ²	0.092	1"NB - 4"NB	0.046-0.276	ITEM NO. 1 to 5 Covers Sizes 1"NB to 48" NB Sch. 5S to 160/XXS	TPIQA/TEST/013/2003 DTD. 26/04/2003
2)	A 234 WPB, 90° ELBOW 4"NB x Sch. 40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 45.62 Kg/mm ²	0.0566	2"NB - 8"NB	0.028 - 0.168		TPIQA/TEST/020/2003 DTD. 26/04/2003
3)	A 234 WPB W, 90° ELBOW 8"NB x Sch. 40	Raw Matl. used A516 Gr 70-PLATE Tensile strength of the proof tested fittings 49.63 Kg/mm ²	0.037	4"NB-16"NB	0.018-0.111		TPIQA/TEST/010/2003 DTD. 26/04/2003
4)	A 234 WPB W, 90° ELBOW 8"NB x Sch. 20	Raw Matl. used A516 Gr 70-PLATE Tensile strength of the proof tested fittings 49.15 Kg/mm ²	0.029	4"NB-16"NB	0.0145-0.097		LRIS CERTIFICATE DTD. 31.03.2000
5)	A 234 WPB W, 90° ELBOW 30"NB x Sch STD (9.53mm Thk.)	Raw Matl. used A516 Gr 70-PLATE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.013	15"NB-60"NB	0.0065-0.039		TPIQA/TEST/009/2003 DTD. 26/04/2003
6)	A 234 WPB W, 90° ELBOW 42"NB x Sch XS (12.7mm Thk.)	Raw Matl. used A516 Gr 70-PLATE Tensile strength of the proof tested fittings 50.118 Kg/mm ²	0.0119	21"NB-84" NB	0.00595-0.0357		21" NB TO 48" Sch 5 S to Sch. 160 50"NB TO 84" NB 8mm To 30 mm Thk.
II ELBOW - SRR = 1 D							
A 234 WPB / A 234 WPB W							
1)	A 234 WPB, 90° ELBOW 8"NB x Sch. 30 (7.04mm Thk.)	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 46.62 Kg/mm ²	0.032	4"NB-16"NB	0.015-0.096	Covers Sizes 4" NB to 40" NB Upto Sch 5S to 160	TPIQA/TEST/003/04
2)	A 234 WPB W, 90° ELBOW 20" NB x Sch. XS (12.7 mm)	Raw Matl. used A516 Gr 70- PLATE Tensile strength of the proof tested fittings 53.168 Kg/mm ²	0.025	10"NB-40"NB	0.0125-0.075		
III 180° RETURN BEND - LR							
A 234 WPB							
1)	A 234 WPB, 180° ELBOW 2" NB X Sch 80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 43.40 Kg/mm ²	0.092	1"NB - 4"NB	0.046-0.276	1" X Sch 5 S 1" to 2" x Sch. 10S 40-40S XS, 80S 1" to 3" x Sch. 100 / XXS 4" x Sch. 120, 160, XXS	TPIQA/TEST/005/2003 DTD. 26/04/2003



CONTD. 2



TUBE PRODUCTS INCORPORATE
ANNEXURE
PROOF TEST DETAIL AS ON 05.10.2007

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	DIA RANGE AS PER B 16.9 CL. 9.4.2	T/D RATIO RANGE AS PER B 16.9 CL.9.4.2	TYPE OF FITTINGS WITH SIZE RANGE THK AND MATL. QUALIFIED AS PER CALUSE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
2	180° RETURN BEND - SR A 234 WPB, 180° ELBOW R = 1 D 4"NB x Sch. STD (6.02mm)	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 51.88 Kg/mm ²	0.052	2"NB - 8"NB	0.026-0.156	2" NB TO 20" NB Sch. 5 S To Sch. 160	TPI/QA/TEST/02/3/2003 DTD. 20/05/2003
		Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 52.76 Kg/mm ²					
2.2	A 234 WPB, 180° ELBOW/R=1D 10"NB x Sch. STD (9.27mm)	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.94 Kg/mm ²	0.033	5"NB-20"NB	0.0165-0.099		TPI/QA/TEST/03/2/2004 DTD. 27/12/2004
		Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.25 Kg/mm ²					
IV	EQUAL TEE A 234 WPB, EQUAL TEE 2"NB x Sch. 80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.94 Kg/mm ²	0.092	1"NB-4"NB	0.046-0.276		TPI/QA/TEST/001/2003 DTD. 26/04/2003
		Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.25 Kg/mm ²					
2)	A 234 WPB, EQUAL TEE 3"NB x Sch. 40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.25 Kg/mm ²	0.061	1 1/2"NB-6"NB	0.030-0.183	ITEM NO. 1 to 4 Covers Sizes 1" NB to 48" NB Sch. 5S to 160/XXS	TPI/QA/TEST/019/2003 DTD. 29/04/2003
		Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 49.44 Kg/mm ²					
3)	A 234 WPB W, EQUAL TEE 24"NB x Sch. STD (9.53mm)	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 49.44 Kg/mm ²	0.02	12"NB-48"NB	0.01-0.06		TPI/QA/TEST/011/2003 DTD. 26/04/2003
		Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 49.48 Kg/mm ²					
4)	A 234 WPB, EQUAL TEE 6"NB x Sch. 40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 49.48 Kg/mm ²	0.042	3"NB-12"NB	0.021-0.126		LRIS CERTIFICATE DTD. 31.03.2000
		Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 50.118 Kg/mm ²					
5)	A 234 WPB W, EQUAL TEE 42"NB x Sch. XS (12.7mm Thk.)	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 50.118 Kg/mm ²	0.0119	21"NB-84"NB	0.00595-0.0357	21" NB to 48" NB Sch. 5 S to Sch. 160 60"NB TO 84" NB 8 mm to 30 mm	-----
		Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 50.118 Kg/mm ²					
V	CONCENTRIC REDUCER A 234 WPB, CON. REDUCER 3"NBx2"NBxSch.80	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.085 0.091	1 1/2"NB-6"NB 1"NB-4"NB	0.0425-0.255 0.0455-0.273		TPI/QA/TEST/017/2003 DTD. 26/04/2003
		Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.63 Kg/mm ²					
2)	A 234 WPB, CON. REDUCER 4"NBx3"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.63 Kg/mm ²	0.061	1 1/2"NB-6"NB	0.026-0.156 0.030-0.183	ITEM NO. 1 to 4 Covers Sizes 1" to 48" - Sch 5S to 160/XXS	TPI/QA/TEST/06/2003 DTD. 26/04/2003
		Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 47.76 Kg/mm ²					
3)	A 234 WPB, CON. REDUCER 8"NBx6"NBxSch.40	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 47.76 Kg/mm ²	0.037 0.042	4"NB-16"NB 3"NB-12"NB	0.0185-0.111 0.021-0.126		TPI/QA/TEST/07/2003 DTD. 26/04/2003
		Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²					
4)	A 234 WPB W, CON. REDUCER 36"NBx34"NBxSch. STD (9.53mm)	Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.011	16"NB-72"NB 17"NB-66"NB	0.005-0.030 0.005-0.033		TPI/QA/TEST/02/2003 DTD. 26/04/2003



CONTD. 3

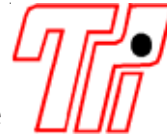


TUBE PRODUCTS INCORPORATE
AN EXHIBIT
PROOF TEST DETAILS AS ON 05.10.2007

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	DIA RANGE AS PER B 16.9 CL. 9.4.2	T/D RATIO RANGE AS PER B 16.9 CL. 9.4.2	TYPE OF FITTINGS WITH SIZE RANGE THK. AND MATL. QUALIFIED AS PER CALUISE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
VI	ECCENTRIC REDUCER	A 234 WPB A234 WPB-W					
1)	A 234 WPB, ECC. REDUCER 3"NBx2"NBxSch 80	Raw Matl used A106 Gr B - PIPE Tensile strength of the proof tested fittings 51.44 Kg/mm ²	0.085 0.091	1 1/2"NB-6"NB 1"NB-4"NB	0.0425-0.255 0.0455-0.273	TPIQA/TEST/005/2003 DTD. 26/04/2003	
2)	A 234 WPB, ECC. REDUCER 4"NBx3"NBxSch 40	Raw Matl used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.63 Kg/mm ²	0.052 0.061	2"NB-8"NB 1 1/2"NB-6"NB	0.026-0.156 0.030-0.183	TPIQA/TEST/014/2003 DTD. 26/04/2003	
3)	A 234 WPB, ECC. REDUCER 8"NBx6"NBxSch 40	Raw Matl used A106 Gr B - PIPE Tensile strength of the proof tested fittings 47.93 Kg/mm ²	0.037 0.042	4"NB-16"NB 3"NB-12"NB	0.0185-0.111 0.021-0.126	TPIQA/TEST/08/2003 DTD. 26/04/2003	
4)	A 234 WPB, ECC. REDUCER 20"NB x 16"NB x Sch. STD	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 51.44 kg./mm ²	0.018 0.023	10"NB-40"NB 8"NB-32"NB	0.009-0.054 0.011-0.069	WITNESSED BY LRIS & EIL	
5)	A 234 WPB, ECC. REDUCER 36"NBx34"NB x 6 53mm	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01 0.011	18"NB-72"NB 17"NB-68"NB	0.005-0.030 0.005-0.033	TPIQA/TEST/025/2003 DTD. 23.05.2003	
VII	CAP	A 234 WPB					
1)	A 234 WPB, CAP 2"NB x Sch. XS	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 52.46 Kg/mm ²	0.091	1"NB-4"NB	0.045-0.273	TPIQA/TEST/022/2003 DTD. 30/04/2003	
2)	A 234 WPB, CAP 3"NB x Sch. 80	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 48.67 Kg/mm ²	0.09	1 1/2"NB-6"NB	0.045-0.273	TPIQA/TEST/018/2003 DTD. 26/04/2003	
3)	A 234 WPB, CAP 3"NB x Sch. STD (5.49mm Thk.)	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 45.37 Kg/mm ²	0.06	1 1/2"NB-6"NB	0.030 - 0.180	TPIQA/TEST/016/2003 DTD. 26/04/2003	
4)	A 234 WPB, CAP 4"NB x Sch. 40	Raw Matl used A516 Gr.70-PLATE Tensile strength of the proof tested fittings 48.40 Kg/mm ²	0.05	2"NB-8"NB	0.025-0.150	TPIQA/TEST/015/2003 DTD. 26/04/2003	



CONTD. 4



TUBE PRODUCTS INCORPORATE
ANNEXURE
PROOF TEST DETAIL AS ON 05.10.2007

SR NO	SIZE THICKNESS AND TYPE OF FITTINGS TAKEN UP FOR TEST AS PER CLAUSE ASME B 16.9	MATERIAL & TENSILE STRENGTH OF PROOF TESTED FITTINGS	T/D RATIO	DIA RANGE AS PER B 16.9 CL. 9.4.2	T/D RATIO RANGE AS PER B 16.9 CL. 9.4.2	TYPE OF FITTINGS WITH SIZE RANGE THK AND MATL. QUALIFIED AS PER CLAUSE 9.4.1, 9.4.2 AND 9.4.3 OF ASME B 16.9	REMARKS
5)	A. 234 WPB, CAP 24"NB x Sch. STD (9.53mm)	Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 49.44 Kg/mm ²	0.02	12"NB-48"NB	0.010-0.060	ITEM NO. 1 to 7 Covers Sizes 1" to 48" - Sch. 5S to 160/XXS	TPI/QA/TEST/01/2/2003 DTD. 28/04/2003
6)	A. 234 WPB, CAP 34"NB x Sch. STD (9.53mm)	Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01	17"NB-68"NB	0.005-0.020		TPI/QA/TEST/04/2003 DTD. 28/04/2003
7)	A. 234 WPB, CAP 36"NB x Sch. STD (9.53mm)	Raw Matl. used A516 Gr. 70-PLATE Tensile strength of the proof tested fittings 53.70 Kg/mm ²	0.01	18"NB-72"NB	0.005-0.020		TPI/QA/TEST/03/2003 DTD. 28/04/2003
VIII STUBEND							
1)	A. 403 WP 304 S 4"NB x Sch. 5S	Raw Matl. used A312 TP 304-PIPE Tensile strength of the proof tested fittings 58.36 Kg/mm ²	0.01	2"NB-8"NB	0.005-0.020	Item NO. 1 to 2 Covers Sizes 2"NB TO 3"NB upto Sch. 10S & 4"NB x Sch. 40S to 24"NB x Sch. 40S	TPI/QA/TEST/02/6/2003 DTD. 30.05.2003
2)	A. 403 WP 304 WX 12"NB x Sch. 5S	Raw Matl. used A240 TP 304-PLATE Tensile strength of the proof tested fittings 60.77 Kg/mm ²	0.012	6"NB-24"NB	0.006-0.024		TPI/QA/TEST/02/4/2003 DTD. 20.05.2003
IX SEAMLESS CROSS							
1	A. 234 WPB, SMLS. CROSS 8"NB x Sch. 20	Raw Matl. used A106 Gr B - PIPE Tensile strength of the proof tested fittings 44.83 Kg/mm ²	0.029	4"NB-16"NB	0.0145 to 0.0870	Covers Sizes 4"NB to 48"NB Sch. 5 S to Sch. 160	TPI/QA/TEST/02/5/2006 DTD.
2	WELDED CROSS A. 234 WPB W. WLD. CROSS 24"NB x Sch. 20 (9.53mm)	Raw Matl. used A516, Gr 70 - PLATE Tensile strength of the proof tested fittings 53.045 Kg/mm ²	0.0156	12"NB-48"NB	0.007 -0.0468		

Note : ASME B 16.9 - 2003, Cl.9 Design Proof Test Cl. 9.1 Lap Joint Stub Ends are exempt from testing because they are used in a Flange assembly, which will have different ratings on service application

