



RAYMOND TUBE INDUSTRIES

CRITICALPIPINGMATERIALS | INDIA+DUBAI(UAE)

TECHNICAL PRODUCT CATALOGUE

CRITICAL PIPING MATERIALS

Nickel Alloys | Duplex & SuperDuplex | StainlessSteel

Fittings | Flanges | Pipes | Fasteners



ENGINEERED FOR CRITICAL INDUSTRIES.

TRUSTED FOR GLOBAL SUPPLY.

INDIA HEAD OFFICE | TALOJA WORKS | DUBAI BRANCH

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COMPANY AT A GLANCE

BUILT FOR CRITICAL SERVICE

Established in 2000, Raymond Tube Industries manufactures and exports Nickel Alloy, Duplex and Super Duplex pipe fittings, flanges and industrial fasteners, with in-house flange manufacturing and project supply of pipes, round bars, sheets and plates. Our India operations and Dubai branch support responsive coordination for GCC and global buyers.

2000

ESTABLISHED

Mumbai, India

4

CORE FAMILIES

Critical-service alloys

3.1

MTC SUPPORT

EN 10204 documentation

GCC

DUBAI SUPPORT

Export coordination

MATERIAL PORTFOLIO

GRADE AVAILABILITY IS ORDER AND SPECIFICATION DEPENDENT

Family	Core grades / designations	Typical product forms
Nickel Alloys	Inconel 600/601/617/625/686/690/718/725; Incoloy 800/800H/800HT/825; Hastelloy B2/B3/C22/C276/G30/G35; Monel 400/K500; Nickel 200/201; Alloy 20	Pipes, fittings, flanges, forgings, fasteners and custom components
Duplex	UNS S31803 (2205 / F51); UNS S32205 (2205 / F60)	Fittings, flanges, pipe, bar, sheet/plate, fasteners
Super Duplex	UNS S32750 (2507 / F53); UNS S32760 (F55)	Fittings, flanges, pipe, bar, sheet/plate, fasteners
Stainless Steel	304/304L/304H; 316/316L/316H; 317/317L; 321/321H; 347/347H; 310/310S	Pipes, butt-weld fittings, forged fittings, flanges and custom components

INDUSTRIES SERVED

Oil & Gas

Offshore & Subsea

FPSO

LNG

Refineries

Petrochemical

Chemical

Marine

Desalination

Power

Heat Exchangers

Process Plants





PIPE FITTINGS

Butt-weld|Forged|Threaded|Socket-weld | Drawing-specific

MANUFACTURING & SUPPLY RANGE

STANDARD AND PROJECT-SPECIFIC CONFIGURATIONS

Product group	Types	Range / rating	Primary standards
Butt-weld fittings	45 / 90 / 180 degree elbows, tees, reducers, caps, stub ends, crosses, bends and laterals	Standard NPS and schedule; seamless or welded construction as specified	ASTM B366 / A815 / A403; ASME B16.9 / B16.28; MSS SP-43 / SP-75
Forged fittings	Socket-weld / threaded elbows and tees, couplings, unions, crosses, plugs, bushings, bosses and branch outlets	SW Class 3000 / 6000 / 9000; threaded Class 2000 / 3000 / 6000	ASME B16.11 and project-specific material standard
Special fittings	Weldolet, Sockolet, Thredolet, Nippolet, swage nipple, fabricated and non-standard designs	Against approved drawing, MTO and service conditions	MSS / customer / EPC specification

CONFIGURATION CONTROL



Dimensional checks cover end preparation, centre-to-end, ovality, wall profile, angle, alignment and fit-up. Grade, heat number and item traceability can be maintained through manufacturing, inspection, marking and packing.

MATERIAL & SERVICE OPTIONS

CORROSION SERVICE

Nickel Alloy, Duplex and Super Duplex for aggressive media, seawater and sour-service requirements.

HIGH TEMPERATURE

Nickel and alloy-steel grades selected for thermal stability, pressure and creep-resistance requirements.

PROJECT DOCUMENTS

MTC, PMI, dimensional records, NACE compliance and third-party inspection support as specified.

Indicative supply range. Final dimensions, tolerances, testing and documentation follow the approved order specification.



FLANGES & FASTENERS

In-house flange capability | Precision drilling | Project traceability

FLANGE RANGE

Types	Size range	Pressure class	Faces	Standards
Weld neck, slip-on, blind, socket-weld, threaded, lap-joint, spectacle blind	1/2 in to 48 in	150#, 300#, 600#, 900#, 1500#, 2500#	RF, FF, RTJ and custom facing	ASME B16.5, B16.47, EN 1092-1
Long weld neck, orifice, custom / drawing flange	Project-specific	Against design and service conditions	Serrated, machined, coated or passivated	ASME B16.36, MSS / customer / EPC specification



FLANGE QUALITY POINTS

- Bore and schedule compatibility
- Facing finish and gasket interface
- PMI / TPI and certification package
- Drilling pattern and pressure class
- Heat number, marking and traceability

INDUSTRIAL FASTENERS

Product	Configurations	Materials / standards	Supply basis
Stud bolts & tie rods	Fully threaded, tap-end, double-end; DIN 2510-L	Nickel Alloy, Duplex, Super Duplex, stainless, alloy and carbon steel	Metric / imperial; standard and drawing-specific
Bolts, nuts & screws	Hex, heavy hex, Allen / socket head, anchor and special fasteners	ASTM A193 / A194, ASTM F467 / F468 and project specifications	Coatings, passivation and testing as specified



CUSTOM FASTENER SUPPORT

Non-standard lengths, thread forms, nuts, washers, marking and inspection can be aligned to the approved drawing and MTO.



PIPES, TUBES & HOLLOWS

Seamless | ERW | EFW | Standard schedule | Heavy-wall | Cut-to-length

PRODUCT MATRIX

Product group	Material families	Dimensional basis	Representative standards
Nickel Alloy pipe & tube	Inconel, Incoloy, Hastelloy, Monel, Nickel 200/201 and Alloy 20 grades	NPS or OD x WT; seamless, welded, heat-exchanger and instrumentation tube	ASTM product-form and grade-specific standards, including B444 where applicable
Duplex / Super Duplex	S31803 / S32205; S32750; S32760	Seamless or welded; pipe and tube dimensions	ASTM A790 / A789; ASME dimensional standards
Stainless steel	304/304L/304H, 316/316L/316H, 317/317L, 321/321H, 347/347H, 310/310S	Pipe, tube, schedule and OD x WT	ASTM / ASME product-form and grade-specific standards
Carbon steel seamless	A106 Gr B, A53 Gr B, API 5L grades	Standard schedule, heavy-wall and project lengths	ASTM A106, A53, API 5L
Alloy steel seamless	P5, P9, P11, P22, P91	Standard schedule and heavy-wall	ASTM A335
Large-diameter pipe	Carbon steel and project-specified grades	ERW / EFW / plate-bent; OD x WT x length	API, ASTM, EN or customer specification

ORDER DATA THAT DRIVES THE RIGHT PIPE



- Material / UNS
- Seamless or welded
- NPS or OD x WT
- Schedule / tolerance
- Length & ends
- Testing / coating
- MTC / TPI
- Destination



PROJECT SUPPLY SUPPORT

SCHEDULES: 5S | 10S | 20 | 40/40S | 80/80S | 120 | 160 | XXS

Cut lengths, bevelled or plain ends, protective end caps, anti-corrosion wrapping, marking, bundling and seaworthy export packing can be coordinated against the approved purchase order.



STOCK & PROJECT SUPPLY

FORMS BEYOND THE PIPING LINE

Material forms selected, cut and documented for fabrication, machining, maintenance and project packages.

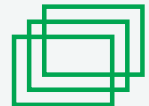
ROUND BARS

Hot-finished / cold-finished bars, solution-annealed or project-specific condition. Standard and cut lengths.



SHEET & PLATE

Standard sheets, heavy plate and cut sizes with surface and edge condition aligned to the order.



CIRCLES & BLANKS

Waterjet, plasma, saw-cut or machined blanks for flange and component production, subject to grade and thickness.



CUSTOM COMPONENTS

Machined and non-standard piping components against approved drawings, tolerances and inspection plans.



REPRESENTATIVE MATERIAL STANDARDS

Material family	Bars / forgings	Sheet / plate
Nickel Alloy	ASTM B166, B425, B574 and grade-specific standards	ASTM B168, B424, B575 and grade-specific standards
Duplex / Super Duplex	ASTM A276 / A479, ASTM A182 as applicable	ASTM A240
Titanium / Stainless / Steel	ASTM / ASME / EN grade-specific standards	ASTM / ASME / EN grade-specific standards



Standards shown are representative. Material specification, condition, dimensions and testing are confirmed against each RFQ.



QUALITY ASSURANCE

TRACEABLE. VERIFIABLE. EXPORT READY.



ISO 9001:2015 QUALITY MANAGEMENT SYSTEM

Inspection and documentation can be aligned to purchaser ITP, project specification and applicable ASTM, ASME, API, EN, DIN, NACE and ISO requirements.



QUALITY CONTROL & DOCUMENTATION

Stage	Typical controls	Available records
Material receipt	Grade, heat number, dimensions, surface and source-document verification	Mill test certificate / inward inspection
Manufacturing	Process control, dimensions, machining, drilling, end preparation and visual inspection Positive Material Identification (PMI) and chemistry review	Stage inspection and dimensional reports
Material verification		PMI / spectro report
Mechanical / corrosion	Tensile, hardness, impact, IGC and corrosion tests as applicable	Laboratory reports; ASTM A262 Pr. E / ASTM A923 Method C when specified
Pressure / NDT	Hydrostatic, pneumatic, UT, RT, PT or MT as product and order require	Test and NDT reports
Final release	Marking, quantity, packing, document dossier and dispatch review	EN 10204 3.1 / 3.2, packing list and export documents

INSPECTION & COMPLIANCE SUPPORT

TPI

SGS, TUV, Bureau Veritas, Lloyd's Register or buyer-nominated agency.

NACE

NACE MR0175 / ISO 15156 documentation where material, service and order require.

TRACEABILITY

Heat-number linkage through product marking, certificates, reports and packing.

EXPORT

Seaworthy packing, item marking, COO and shipment documentation coordination.



SEVERE CORROSION & TEMPERATURE

INCONEL ALLOY RANGE

Nickel-chromium alloys are selected where conventional steels may not provide sufficient resistance to chlorides, seawater, acids, sour environments, oxidation, thermal cycling, pitting, crevice corrosion or stress-corrosion cracking.

INCONEL 600

UNS N06600

Chemical processing, furnace components, heat treatment and heat exchangers.

Pipe | Tube | Fittings | Flanges | Bars | Fasteners

INCONEL 601

UNS N06601

Oxidation resistance for furnace, combustion and elevated-temperature systems.

Pipe | Fittings | Flanges | Forgings | Fasteners

INCONEL 617

UNS N06617

High-temperature strength and oxidation resistance for thermal process equipment.

Pipe | Fittings | Flanges | Forged parts | Fasteners

INCONEL 625

UNS N06625

Core RTI grade for offshore, subsea, seawater, chemical and marine service.

SMLS / welded pipe | Tube | B366 fittings | B564 flanges

INCONEL 686

UNS N06686

Aggressive acids, pollution-control equipment and severe chemical process streams.

Pipe | Fittings | B462 flanges / forgings | Fasteners

INCONEL 690

UNS N06690

High-temperature and corrosion-resistant pipe, tube and forged components.

Pipe / tube | Fittings | B564 flanges | Machined parts

INCONEL 718

UNS N07718

Precipitation-hardening grade positioned for high-strength bolting and components.

Fasteners | Bolting | Bars | Forgings | Machined parts

INCONEL 725

UNS N07725

High-strength alloy for demanding oilfield and oil-and-gas applications.

Bars | Fasteners | Bolting | Forgings | Oilfield parts



PRODUCT-FORM CONTROL

The governing ASTM / ASME specification, manufacturing method and heat-treatment condition must be selected for the exact alloy and product form.



INCOLOY | HASTELLOY | MONEL | NICKEL | ALLOY 20

EXTENDED NICKEL ALLOY MATRIX

A consolidated guide to RTI product positioning; final standards remain product-form and order dependent.

Alloy / UNS	Primary product focus	Representative service / positioning	Forging / fitting reference
Incoloy 800 / N08800 800H / N08810 800HT / N08811	Pipes, tubes, fittings, flanges, forgings and fasteners	Petrochemical heaters, furnaces, heat exchangers and elevated-temperature equipment	ASTM B564 where applicable
Incoloy 825 / N08825	SMLS / welded pipe, tube, BW and forged fittings, WN / blind / slip-on / RTJ flanges	Oil and gas, sour service, chemical processing, acid production and marine	ASTM B564; product-form standard
Hastelloy C22 / N06022 C276 / N10276	Pipe, fittings, flanges, forged fittings, fasteners, bars and special components	Aggressive chemical, acid, scrubber, pollution-control and waste-treatment service	ASTM B462 / B564 as applicable
Hastelloy B2 / N10665 B3 / N10675	Pipe, fittings, flanges, forgings and fasteners	Reducing-acid and alloy-specific chemical service	ASTM B462; product-form standard
Hastelloy G30 / N06030 G35 / N06035	Fittings, flanges, forged parts and project-specific components	Corrosive high-temperature process environments	ASTM B462 / B564 as applicable
Monel 400 / N04400	SMLS / welded pipe, fittings, flanges, fasteners, bars and custom parts	Marine, seawater, chemical processing, pumps, valves and heat exchangers	ASTM B564; product-form standard
Monel K500 / N05500	Fasteners, stud bolts, shafts, bars, forgings and machined parts	High-strength nickel-copper bolting and rotating / machined components	Project / product-form standard
Nickel 200 / N02200 Nickel 201 / N02201	Pipe, tube, fittings, flanges, bar, fasteners and custom parts	Commercially pure nickel selected to suit service temperature and carbon limits	ASTM B160 for bar; product-form standard
Alloy 20 / N08020	Pipe, fittings, flanges, forged fittings, fasteners and bars	Chemical plants, acid handling, pharmaceutical and process piping	Applicable product-form ASTM standard



IMPORTANT TECHNICAL NOTE

No single ASTM standard is universal for every form of an alloy. The purchase order must define alloy / UNS, product form, manufacturing route, heat-treatment condition, dimensions, testing and the current governing project specification.





HIGH STRENGTH IN CHLORIDE-BEARING SERVICE

DUPLEX & SUPER DUPLEX

Duplex grades combine ferritic and austenitic microstructures. They are widely selected for corrosive process systems requiring strength, resistance to localized corrosion and control of stress-corrosion cracking.

Grade	Designation	Product focus	Typical applications
Duplex 2205	UNS S31803 (F51) / S32205 (F60)	SMLS / welded pipe, tube, BW fittings, forged fittings, flanges, fasteners and forgings	Oil and gas, petrochemical, marine, chemical, desalination, pulp and paper
Super Duplex 2507	UNS S32750 / F53	Pipe, fittings, WNRF / WNRTJ / blind flanges, forgings, fasteners, bars and custom parts	Offshore, subsea, seawater injection, desalination and high-pressure piping
Super Duplex	UNS S32760 / F55	Pipe, fittings, flanges, forged fittings, fasteners and special components	Aggressive seawater, offshore, subsea, chemical and high-chloride systems

SPECIFICATION FAMILY

Product	Typical material family	Dimensional reference
Seamless / welded pipe	ASTM A790	ASME B36.19M
Butt-weld fittings	ASTM A815	ASME B16.9
Forged flanges	ASTM A182	ASME B16.5 / B16.47
Forged fittings	ASTM A182	ASME B16.11
Fasteners	Project-selected ASTM / ASME grade	Drawing / applicable standard

METALLURGICAL CONTROL

- Chemistry
- Heat treatment
- Phase balance
- Intermetallic phases
- Mechanical properties
- Corrosion resistance
- Weld quality
- Traceability





AUSTENITIC PIPING COMPONENTS

STAINLESS STEEL RANGE

Stainless-steel fittings and flanges for pressure piping, process equipment, heat and corrosion service.

Grade family	Grades	Representative positioning
18-8 austenitic	304 / 304L / 304H	General process, fabrication and temperature variants selected by specification
Moly-bearing	316 / 316L / 316H; 317 / 317L	Improved corrosion resistance for process and chloride-bearing service
Stabilized	321 / 321H; 347 / 347H	Elevated-temperature and intergranular-corrosion-control applications
High-temperature	310 / 310S	Oxidation and elevated-temperature service where technically suitable

PRODUCT & STANDARD MATRIX

Product	Available configurations	Typical standard family
Butt-weld fittings	45 / 90 / 180 elbows, equal / reducing tees, concentric / eccentric reducers, caps, stub ends, crosses and custom fittings	ASTM A403; ASME B16.9 / B16.28; MSS SP-43
Forged fittings	Socket-weld and threaded elbows, tees, couplings, unions, plugs, bushings and branch connections	ASTM A182; ASME B16.11
Flanges	WNRF, WNRTJ, SORF, blind, socket-weld, threaded, lap-joint, long weld neck and orifice	ASTM A182; ASME B16.5 / B16.47 / B16.36
Pipe & tube	Seamless / welded pipe, process tube, heat-exchanger and instrumentation tube as applicable	ASTM / ASME product-form standard

FLANGE PRESSURE CLASSES

150 | 300 | 600 | 900 | 1500 | 2500 Availability depends on size, material, facing, bore and governing dimensional standard.





TECHNICAL DATA DISCIPLINE

DEFINE THE COMPONENT CORRECTLY

FLANGE DATA

- Nominal pipe size
- Outside diameter
- Flange thickness
- Hub diameter / length
- Bore / pipe schedule
- Bolt circle and holes
- Facing / RTJ groove
- Approximate weight

PIPE DATA

- NPS / outside diameter
- Schedule / wall thickness
- Inside diameter
- Weight per metre
- Seamless / welded method
- Length and end condition
- Testing / NDT
- Certification

FITTING DATA

- Nominal size
- Schedule / wall
- Outside diameter
- Centre-to-end
- Overall length
- End preparation
- Seamless / welded
- Approximate weight

SAME NOMINAL SIZE. DIFFERENT CLASS. DIFFERENT DIMENSIONS.

An enquiry should never state only 6 in Inconel 625 flange. Pressure class changes flange OD, thickness, hub, drilling, facing and weight. Bore / schedule and service condition must also be defined.

CORRECT FLANGE ENQUIRY FORMAT

Add PMI, NDT, NACE, TPI and certification requirements where applicable.

6 in CLASS 600 WNRF | ASTM B564 UNS N06625 | SCH 80 BORE | RF | QTY ____

6 in CLASS 600 WNRTJ | ASTM B564 UNS N06625 | SCH 80 BORE | RTJ | QTY ____





BUYER-FACING COMPARISON

SERVICE-TO-MATERIAL GUIDE

Materials shown are commonly considered starting points - not final engineering selections.

Service environment	Materials commonly considered	Engineering focus
Seawater	Inconel 625, Monel 400, Super Duplex	Temperature, velocity, crevices, galvanic coupling and oxygenation
Offshore / subsea	Inconel 625, Super Duplex 2507, S32760	Chlorides, pressure, fatigue, sour exposure, seawater and design life
Chloride service	Duplex, Super Duplex or Nickel Alloy depending on severity	Chloride level, temperature, pH, oxidants and localized-corrosion risk
Aggressive chemical	Hastelloy C22 / C276 or alloy-specific selection	Fluid chemistry, concentration, contaminants, oxidizing / reducing conditions
Elevated temperature	Inconel 600 / 601 / 617; Incoloy 800H / 800HT	Oxidation, carburization, creep, thermal cycling and heat treatment
High-strength bolting	Inconel 718 / 725; Monel K500	Strength condition, temperature, corrosion, hydrogen and coating compatibility
General process piping	Duplex 2205, 316L or process-selected alloy	Pressure, temperature, chemistry, corrosion allowance and fabrication



FINAL MATERIAL SELECTION

Final selection must be performed by the project / materials engineer using operating temperature, pressure, fluid composition, concentration, pH, chloride content, H₂S / CO₂ exposure, design life and the governing project specification.

CHEMISTRY TABLE POLICY

Numerical limits must be taken from the exact current governing ASTM / ASME standard for the alloy and product form. Generic web comparison charts are not used as order data.

MECHANICAL PROPERTY POLICY

Annealed, solution-annealed, age-hardened and cold-worked conditions must not be mixed. Strength, elongation, hardness and impact values depend on form and heat treatment.



MANUFACTURING & INSPECTION

CONTROLLED FROM MATERIAL TO RELEASE

Stage	Control focus	Output / evidence
Raw material	Original certification, heat traceability, grade / dimensional verification, visual inspection and PMI where required	Verified input material and traceability record
Forging / forming	Controlled processing for sound structure, grain flow, geometry and mechanical-property development	Process and stage-inspection records
Heat treatment	Cycle selected to the material specification, grade, product form and required condition	Heat-treatment chart / certificate where specified
Machining	Bore, flange OD, hub, drilling, facing, RTJ groove, threads, end preparation and surface finish	Dimensional and visual inspection reports
Final release	PO, drawing, standard, ITP, testing, marking, packing and document-dossier review	Release note, MTC and dispatch documentation

TESTING CAPABILITY - AS SPECIFIED

MATERIAL

PMI | chemical / spectro analysis |
heat-number verification

MECHANICAL

Tensile | yield | elongation | hardness |
impact

NDT

UT | RT | PT / DPI | MT where permitted |
eddy current

CORROSION

IGC | pitting | ferrite | microstructure | ASTM
A923 where applicable

PIPE

Hydrostatic | pneumatic where permitted |
eddy current | UT | dimensional

FINAL

Visual | dimensional | marking | quantity |
packing | document review



THIRD-PARTY INSPECTION

SGS | TUV | Bureau Veritas | Lloyd's Register | Customer-nominated agency

Scope may include raw-material review, heat treatment, dimensions, PMI, mechanical tests, NDT, hydrotest, marking and packing.



FROM HEAT NUMBER TO DISPATCH

A COMPLETE TECHNICAL TRAIL

RAW MATERIAL

HEAT NUMBER

PROCESS

HEAT TREATMENT

MACHINING

TESTING

INSPECTION

MTC

FINAL MARKING

DOCUMENT PACKAGE

- EN 10204 3.1 / 3.2 as contracted
- PMI / chemistry / mechanical reports
- Heat-treatment and NDT records
- Hydro / dimensional / visual reports
- Ferrite / hardness / IGC reports
- TPI release and traceability dossier
- COO, invoice, packing list and export documents

PROJECT ENQUIRY CHECKLIST

Pipe	Grade / UNS spec SMLS / welded NPS / OD schedule / WT length ends testing
Flange	Grade / spec size class type facing bore / schedule quantity NACE / TPI
Fitting	Grade / spec type size schedule SMLS / welded quantity inspection
Fastener	Grade / spec type diameter length thread quantity coating testing

EXAMPLE COMPLETE RFQ

Product: WNR Flange

Material: Inconel 625 / UNS N06625

Material Spec: ASTM B564

Dimension: ASME B16.5

Size: 6 in

Class: 600

Facing: RF

Bore: SCH 80

Quantity: 18 Nos.

Certification: EN 10204 3.1

Inspection: PMI + dimensional

TPI: if required



**WHY RTI: MATERIAL EXPERTISE | ENGINEERING-ORIENTED QUOTATIONS | TRACEABILITY
CUSTOM MANUFACTURING | INSPECTION SUPPORT | EXPORT DOCUMENTATION**



RAYMOND TUBE INDUSTRIES

CRITICAL PIPING MATERIALS | INDIA + DUBAI (UAE)

LET'S BUILD YOUR NEXT PROJECT.

Send material, size, quantity, specification and destination
for a fast technical-commercial quotation.



HEAD OFFICE - MUMBAI, INDIA

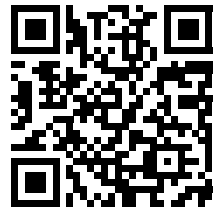
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