

1 Raw materials, tubes and accessories**1.1 Tubes, ferrous and alloys**

- 1.1.1 Carbon content (low)
- 1.1.2 Carbon content (high)
- 1.1.3 Other alloyed steel tubes
- 1.1.3.1 Duplex and nickel base alloy pipes and tubes
- 1.1.4 Bimetallic tubes

1.2 Stainless steel (rustproof)

- 1.2.1 Austenitic
- 1.2.2 Ferritic
- 1.2.3 Martensitic

1.3 Tubes, non-ferrous metal and alloys

- 1.3.1 Aluminium
- 1.3.2 Brass/bronze
- 1.3.3 Copper
- 1.3.4 Nickel
- 1.3.5 Zinc
- 1.3.6 Titanium
- 1.3.7 Other

1.4 Tubes, plastic and composite

- 1.4.1 Acrylonitrile Butadiene Styrene (ABS)
- 1.4.2 Cross-linked polyethylene (XLPE, PE-X)
- 1.4.3 Glass Fiber Reinforced Epoxy
- 1.4.4 Glass Reinforced Polymer (GRP)
- 1.4.5 Polyethylene (PE) HDPE, MDPE, LDPE
- 1.4.6 Carbon fibre reinforced
- 1.4.7 Hybrid tubes
- 1.4.8 Multi-layer composites
- 1.4.9 Nylon
- 1.4.10 PTFE
- 1.4.11 Polybutylene
- 1.4.12 Polypropylene (PP)
- 1.4.13 Polyvinyl chloride (PVC)
- 1.4.14 Other Tubes based on plastic and composite

1.5 Tubes, mineral raw materials

- 1.5.1 Concrete tubes, non-reinforced
- 1.5.2 Concrete tubes, reinforced
- 1.5.3 Concrete tubes with protective coating
- 1.5.4 Stoneware tubes (all types and applications)
- 1.5.5 Ceramic tubes
(measuring technology, hightemperature range)
- 1.5.6 Fibrated concrete tubes

1.6 Tubes made from various manufacturing and processing methods

- (welded, cold and hot drawn, pressed)
- 1.6.1 Welded steel tubes (also water boiler tubes)
- 1.6.2 Seamless steel tubes
- 1.6.3 Sintered tubes
- 1.6.4 Precision tubes
- 1.6.5 Threaded tubes
(seamless, welded, mediumweight, heavy)
- 1.6.6 Galvanized and clad tubes (Zn, Cu, Sn etc.)
- 1.6.7 Anodized tubes
- 1.6.8 Coated tubes
- 1.6.9 Surface-treated tubes
- 1.6.10 Formed tubes
- 1.6.11 Tubes (rolled, insulated, plastic-coated)
- 1.6.12 Rectified and chromium plated bars and tubes

1.6.13 Bored and grinded mirror finish tubes for hydraulic application

- 1.6.14 Extruded tubes
- 1.6.15 Pilger tubes
- 1.6.16 Hydro-formed tubes
- 1.6.17 Tailored Tubes

1.7 Conduits

- 1.7.1 Drainage
- 1.7.2 Discharge systems
- 1.7.3 Line construction (water, oil, gas, vapour)
- 1.7.4 Solids transportation (coal, cement, lime, other dust)
- 1.7.5 Nuclear power stations
- 1.7.6 Heat exchange and transfer
- 1.7.7 Drilling technology (water, oil, mineral wells)
- 1.7.8 Measuring technology
- 1.7.9 Mechanical engineering (hydraulics, pneumatics)
- 1.7.10 Blow tubes (steel production, oxygen tubes)

1.8 Construction tubes

- 1.8.1 Steel construction
- 1.8.2 Plant construction
- 1.8.3 General construction (scaffolding, stands, towers)
- 1.8.4 Masts (tubular masts, lighting, conductors)
- 1.8.5 Vehicles (bicycles and motorcycles, trailers, cars)
- 1.8.6 Shipbuilding and aircraft construction
- 1.8.7 Furniture, musical instruments etc.
- 1.8.8 Chemicals (including acidproof tubes)
- 1.8.9 Other (rocket, restrictor, telescopic tubes etc.)

1.9 Tube accessories

- 1.9.1 Flanges
- 1.9.2 Seals (screw, hermetic, snug fit)
- 1.9.3 Connecting pieces (straight and elbows)
- 1.9.4 Mountings (brackets)
- 1.9.5 Fittings
- 1.9.6 Packing, seals
- 1.9.7 Vibration damping elements
- 1.9.8 Pipe Couplings
- 1.9.9 Tube repair elements
- 1.9.10 Tube and pipe manipulation
- 1.9.11 Pipe protection caps
- 1.9.12 Flange protection caps
- 1.9.13 Thread protectors

2**Tube manufacturing machinery****2.1 Casting**

- 2.1.1 Continuous casting
- 2.1.2 Spin casting
- 2.1.3 Powder metallurgy installations
- 2.1.4 Forging

2.2 Rolling, drawing, extruding

- 2.2.1 Cold rolling mills
- 2.2.2 Hot rolling mills
- 2.2.3 Punches
- 2.2.4 Plug mills
- 2.2.5 Stretch rolling mills
- 2.2.6 Push and drawing benches
- 2.2.7 Pilger mills
- 2.2.8 Tube rolling mills
- 2.2.9 Rotary piercing mills



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2.2.10	Diescher mills
2.2.11	Sizing mills
2.2.12	Smoothing and polishing mills
2.2.13	Extruding presses (direct and indirect)
2.2.14	Ultrasonic drawing machines
2.3	Welding, soldering
2.3.1	Tube forming equipment
2.3.2	Tube welding equipment
2.3.3	High-frequency welding equipment
2.3.4	Induction welding equipment
2.3.5	Resistance welding equipment
2.3.6	Inert gas welding equipment (TIG, ERW, MIG)
2.3.7	Simple welding equipment
2.3.8	Soldering equipment
2.3.9	Fixing devices to centre pipes for welding
2.3.10	Forming gas chamber system for localised flooding with forming gas when welding pipes of stainless steel
2.3.11	Inside and outside scarfing systems for longitudinally welded tubes
2.3.12	Strip shaving equipment for aluminised or galvanised skelp
2.3.13	Coil and welding equipment
2.3.14	Spiral pipe welding machines
2.4	Heat treatment
2.4.1	Drying and heating furnaces
2.4.2	Pre- and re-heating systems
2.4.3	Tempering furnaces and systems
2.4.4	Annealing furnaces (batches and continuous furnaces)
2.4.5	Melting furnaces
2.4.6	Partial heating systems (including weld seams, edges)
2.4.7	Induction annealing furnaces
2.4.8	Sintering plants
2.4.9	Baking plants (for stoneware tubes etc.)
2.4.10	Thermo-mechanical processing plants
2.4.11	Heat treatment/Process and equipment
2.5	Tube processing equipment
2.5.1	Forming, bending, twisting, fabricating, hydroforming
2.5.2	Straightening
2.5.3	Sawing, separating, laser cutting
2.5.4	Expanding, deburring, peeling, folding
2.5.5	Upsetting, beading, compressing
2.5.6	Drilling, turning, chamfering, pointing
2.5.7	Attaching ribs, grooving, thread cutting
2.5.8	Scoring, slotting
2.5.9	Hardening, annealing, tempering
2.5.10	Spark erosion
2.5.11	Pickling, burnishing, phosphating
2.5.12	Enamelling
2.5.13	Galvanizing, cladding (with zinc, tin, copper, bronze etc.)
2.5.14	Anodizing
2.5.15	Blanking, profiling, stamping, punching, piercing
2.5.16	Grinding, polishing, lapping, honing
2.5.17	Insulating
2.5.18	Coating (with plastic, insulating material etc.)
2.5.19	Marking
2.5.20	Cleaning
2.5.21	Horizontal strip accumulators
2.5.22	Bull-blocks
2.5.23	Laser cutting equipment
2.5.24	Flying Shears, High-Speed
2.5.25	Water jet cutting systems

2.5.26	Surface pre-treaters for adhesion of printing ink, lacquer and glue (for polymer plastics, metal, glass, etc.)
2.5.27	edge milling machines
2.6	Duct Winding Machines
2.6.1	for flexible ducts
2.6.2	for rigid ducts

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Rebuilt and Reconditioned Machinery

3.1	Casting and forging
3.2	Drawing, extruding, rolling
3.3	Welding
3.4	Surface- and heat treatment equipment
3.5	Tube processing and finishing equipment
3.6	Materials handling
3.7	Measuring and control technology
4	Process technology tools and auxiliaries
4.1	Continuous casting
4.2	Pressing, extruding (dies, extrusion dies, arbors)
4.3	Drawing (dies)
4.4	Dies
4.5	Rolling
4.6	Welding, soldering (electrodes, solders)
4.7	Cutting, deburring
4.7.1	Saw blades, polishing wheels etc.
4.7.2	Technical brushes
4.8	Auxiliary and operating materials
4.8.1	Lubricants
4.8.2	Drawing and rolling aids
4.8.3	Auxiliary chemicals
4.8.4	Gases (fuel and protective gases)
4.9	Reconditioning
4.10	Other
4.11	Minimum lubrication for tube extrusion

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Measuring and control technology

5.1	Gauges
5.2	Measuring systems
5.2.1	Roll inspection machines
5.2.2	Length and Speed Measurement



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5.3	Sensors and controllers (temperature, moisture, flow rate)
5.4	Automatic control equipment
6	Testing
6.1	Testing of raw materials
6.2	Non-destructive testing of finished products
6.2.1	Radiographic testing
6.2.2	Laser beam testing
6.2.3	Eddy current test and magnetic particle examination
6.2.4	Sonic and ultrasonic testing
6.2.5	Leakage testing
6.2.6	Other tests
6.2.7	Endoscopes
6.2.8	Hydrostatic tube testing
6.2.9	Optical testing
6.2.10	Thermographic test
6.3	Destructive testing of finished products
6.3.1	Fracture and hardness tests
6.3.2	Notched bar impact test
6.3.3	Tests under tensile, compressive and torsional loads
6.3.4	Creep, fatigue and vibration tests
6.3.5	Corrosion tests
6.3.6	Other tests
7	Specialist areas
7.1	Plant engineering and construction
7.2	Logistics
7.2.1	Packaging
7.2.1.1	Machinery and constructions
7.2.1.2	Materials
7.2.1.3	Counting, weighing and sorting
7.2.2	Stock automation
7.2.2.1	Control and monitoring installations
7.2.2.2	Racking systems
7.2.2.3	Storing (automatic, mechanical)
7.2.3	Handling and transporting - automation
7.2.3.1	Auxiliaries (guides, feed devices, brakes etc.)
7.2.3.2	Small lifting devices
7.2.3.3	Conveying systems
7.2.3.4	Coiling and uncoiling (reels etc.)
7.2.3.5	Transportation
7.3	Safety technology
7.4	Environmental protection
7.4.1	Recycling
7.5	Restoration and repair
7.5.1	Tubes and pipes
7.5.2	Welding seams in the construction of bulk storage tanks
7.5.3	Special machines and fittings
7.5.4	Inside and outside cleaning
7.6	Sawblade grinding machines

7.7	HF-Electron Tubes
7.7.1	For capacitive and inductive applications
7.7.2	Rebuilt, for HF Induction Welders
7.8	Data technology/Production control
7.8.1	Roll design software
7.8.2	Software for bending
7.8.3	Other
7.9	Consulting and services
7.9.1	Management consulting
7.9.2	Construction of tubes and pipes
7.9.3	Services for tube and pipe pickling, electropolishing, annealing
7.9.4	Services for tube and pipe bending (induction or cold), cutting, fabricating
7.9.5	Coating services
7.10	Research and training
7.11	Trade literature, publications
7.12	Associations
7.13	Grinding machines
7.13.1	Ball valves grinding machine
7.13.2	Grinding machines for surface treatment
8	Trading, stockists of tubes of
8.1	Ferrous metal
8.1.1	Welded
8.1.2	Seamless
8.2	Non-ferrous metal and alloys
8.2.1	Welded
8.2.2	Seamless
8.3	Plastic and composite materials
8.4	Fiber glass
8.5	Glass
8.6	Ceramic
8.7	Concrete
8.8	Fibre-cement
8.9	Other
9	Pipeline and OCTG Technology
9.1	Pipeline construction
9.1.1	Machinery and equipment
9.1.2	Pipeline materials
9.2	Maintenance
9.2.1	Equipment condition monitoring, pigging etc.
9.2.2	Leak searching systems

9.3	Surface coating
9.4	Corrosion prevention systems
9.5	Reconditioning of plant and equipment
9.5.1	Analysis software
9.5.2	Coating services
9.6	Pipe laying systems
9.6.1	Alignment and measurement systems
9.7	Welding equipment ERW, Spiral, Seam, MIG TIG
9.8	Fittings
9.9	Construction
9.10	Planning, design, service
10	Profiles and machinery
10.1	Profiles
10.1.1	Steel profiles
10.1.2	Stainless steel profiles
10.1.3	Non-ferrous profiles
10.1.4	Alloys Profiles
10.2	Machinery
10.2.1	Profile Machinery
10.2.2	Profile bending machines
10.2.3	Profile roll forming machines
10.2.4	Profile working machines
10.2.5	Profile cutting machines
10.2.6	Profile end forming machines
11	PT – Plastic Tube
11.1	Competence area waste disposal
11.1.1	Sewer ducts and pipes
11.1.1.1	Solid-wall pipe systems
11.1.1.2	Multi-layer systems
11.1.1.3	Pipe systems with shaped walls
11.1.1.4	Waste-water pressure pipes
11.1.2	Plastic chambers
11.1.2.1	Accessible
11.1.2.2	Inaccessible
11.1.3	Fastener technology
11.1.3.1	Socket
11.1.3.2	Pipe couplings
11.1.3.3	Flange
11.2	Competence area utility supply
11.2.1	Drinking water
11.2.1.1	Pipes and pipe systems
11.2.1.2	Fittings
11.2.1.3	Valves
11.2.2	Gas
11.2.2.1	pipes and pipe systems
11.2.2.2	fittings

11.3	Competence area building technology
11.3.1	Radiator connections with plastic pipe systems
11.3.2	Underfloor heating
11.3.3	Wall heating
11.3.4	Air conditioning of buildings
11.3.5	Sprinkler systems
11.4	Competence area industrial tubes and pipes
11.4.1	Chemical and petrochemical industry
11.4.2	Disinfection and cleaning
11.4.3	Waste gas treatment
11.4.4	Energy production
11.4.5	Clean room
11.4.6	Paper production
11.4.7	Food and drinks industry
11.4.8	Mining industry
11.4.9	Swimming pool technology
11.4.10	Textile industry
11.4.11	Automotive industry
11.4.12	Electrical industry
11.4.13	Agriculture
11.5	raw material