

I Properties and applications

Austenitic stainless steels

1.4301	Good for water and weak waste water, food and organic acids; generally resistant up to a pH-value of 4.5 in low-chloride agents. Used in equipment and machines in the food industry and household purposes (weldable, easy to polish and ideal for deep drawing) <u>Construction and metal construction</u> Interior: Elevators, escalators, windows, railings, lamps, furniture frames, locker systems, safes, doors, wall and ceiling paneling Exterior: balustrades, roof cladding, roof parts (gutters, end caps, rain spouts, elbow bends), windows, railings, grids, lamps, portals, doors
1.4305	Used in turned parts for the food and dairy industry, photo industry, paint, oil, soap, paper and textile industries
1.4306	Used in equipment and parts exposed to organic and fruit acids in the food, oil, soap and synthetic fiber industries, water and weak waste water, food and organic acids; generally resistant up to a pH-value of 4.5 in low-chloride aggressive media
1.4310	Used in springs at temperatures up to 300°C, perforating knives, and high-strength sheet metal for vehicles
1.4401	Used in parts and equipment for the chemical and pulp industries, paint, oil, soap and textile industries, waste water treatment plants, dairies, breweries <u>Construction and metal construction</u> Exterior: balustrades, facades, windows, railings, chimney ducts, portals, plumbing technologies, chimneys, safes, doors Fasteners: unwelded anchorings of all kinds
1.4404	Used in parts and equipment for the chemical pulp industry and paper industry, especially at higher chloride levels; for the paint, oil, soap and textile industries, dairies, breweries
1.4435	Used in welded parts with greater chemical resistance in the pulp, rayon, textile and artificial silk industries
1.4436	Has greater resistance to non-oxidizing acids and aggressive media with chlorine
1.4541	Used in equipment and parts in the food industry, luxury-good, film and photo industries as well as items for household use <u>Construction and metal construction</u> see 1.4301; stabilized steels 1.4541 and 1.4571 are used for high-thickness parts, but these steels cannot be polished to a high gloss
1.4550	Used in equipment and parts in the food industry, luxury-good, film and photo industries as well as items for household use
1.4571	Used in equipment and parts in the chemical industry, textile industry, cellulose manufacturing, dyeing, and the photo, paint, artificial resin and rubber industries <u>Construction and metal construction</u> See applications for 1.4541 and 1.4401
1.4580	Used in equipment and parts for the chemical industry, photo, synthetic resins and rubber industries

Precipitation hardening of martensitic steel

1.4542	Used in bolts and spindles in fittings, disks and cover plates in compressors, sensory technology, automotive industry, medical technology, energy generation (nuclear power plants)
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Heat-resistant ferritic steels

1.4713	Used in plate girders and pipes in stoves; used in machine manufacturing for air pre-heaters, mounting superheaters, annealing bells, cover plates, thermocouple protection tubes, etc. Suitable filler metals: 1.4370, 1.4502, 1.4551, 1.4716, 1.4820, 1.4829
1.4724	Used in parts for manufacturing stoves and boilers such as walking beams, runners, carrier cables and hoisting cables, grids, coils, and thermoelement protection tubes. Suitable filler metals: 1.4773, 1.4820, 1.4829
1.4742	Used in construction parts under only moderate mechanical stress, such as oven fittings, transport elements, bolts, annealing tubes, annealing pots, annealing pans, etc. Suitable filler metals: 1.4773, 1.4820, 1.4829
1.4762	Used in parts exposed to high temperatures but only minor mechanical stress, such as baffle plates for boiler superheaters. Suitable filler metals: 1.4773, 1.4820, 1.4842

Heat-resistant austenitic steels

1.4828	Used in plates, supports and pipes in stove and machine manufacturing, for air pre-heaters, annealing bells, carburizing boxes and hardening boxes, annealing pots, annealing baskets, etc. Suitable filler metals: 1.4829, 1.4842
1.4841	Used in high-stress parts in stove and machine manufacturing, e.g. suspending superheaters, annealing muffles, enamel grids, firing baskets, heat conductors. Suitable filler metals: 1.4842
1.4878	Used in parts that withhold high mechanical stress such as annealing bells, annealing muffles, holding jigs, annealing baskets, cementing and hardening boxes, etc. Gases with nitrogen and a low oxygen content. Suitable filler metals: 1.4551, 1.4829

[Statements about the properties or applications are provided as a description.]

Ferritic stainless steels

1.4016	Used in highly corrosion-resistant parts with good drawability and polishability, such as cutlery, sink linings, bumpers, hubcaps, etc.
1.4021	Used in high-strength construction parts such as axles, shafts, pump parts, piston rods, valve stems, nozzle needles, ship propellers
1.4034	A hardenable steel used in cutting tools, table knives, machine blades, razor blades, scissors, measuring tools, ball bearings, ice skates
1.4057	Used in high-strength structural parts in the food industry and used in the production of soap and acetic acid
1.4104	Used in parts exposed to water or steam for automated processing such as screws, spindles, axles, bushings, etc. Lower corrosion resistance due to sulphur
1.4112	Wear-resistant parts, perforated discs, scale pans and blades, professional knives, precision surgical instruments, roller bearings
1.4122	Used in shafts, spindles, bolts, pistons, valves, perforation knives, fittings for temperatures of up to approx. 600°C

Austenitic - ferritic steels (duplex grade)

1.4462	High resistance to stress corrosion and corrosion fatigue. Used in applications in the chemical and petrochemical industry and desalination plants as well as off-shore technology, e.g. in acid-gas pipes and load-bearing constructions. Permitted for pressure tanks in a temperature range from -10° C to + 280° C (as outlined in the material safety sheet VdTÜV-Werkstoffblatt 418).
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