

weight): carbon not over 0.30, silicon not over 0.50, manganese not over 1.80, phosphorus not over 0.025, sulfur not over 0.001 and containing one or more of the following alloying elements: molybdenum not over 0.50, nickel not over 0.80, chromium not over 1.50, vanadium not over 0.08, niobium not over 0.05 and boron 0.001 to 0.005; mechanical properties: minimum Brinell hardness of 400 BHN; flatness of maximum deviation 1/2 of the values required by ASTM A6; fine-grained to austenitic grain size 6 or finer; water quenched after austenitization, followed by tempering, to achieve the specified hardness; vacuum degassed and desulfurized to maximum 0.001 percent to achieve the following standard of cleanliness: no inclusions greater than 1 mm in diameter on six polished test samples and not more than 3 inclusions greater than 1 mm in diameter per m² of the ground, finished surface; free from surface defects deeper than 0.3 mm or free from surface defects deeper than 0.5 mm if the affected area is not more than 5 percent of the total surface area;

- (cdxxiv) flat-rolled products of other alloy steel, designated as A-686 and entered in an aggregate annual quantity not to exceed 1,000 t; not further worked than hot-rolled, not in coils; abrasion-resistant, heat-resistant steel; air quenched to produce the mechanical properties set out below; physical properties: width 600 mm or more; thickness 4.75 mm to 25 mm; having the following chemical composition (percent by weight): carbon 0.16 to 0.19, silicon 0.30 to 0.50, manganese 1.30 to 1.50, phosphorus not over 0.015, sulfur not over 0.005, chromium 0.90 to 1.45, nickel 0.50 to 0.90 and molybdenum 0.15 to 0.60; mechanical properties: hardness of minimum Brinell hardness 340 HB for thickness less than 20 mm and 320 HB for thickness greater than or equal to 20 mm; ductility: capable of being cold-formed without cracking to a 90-degree bend with a radius five times the thickness of the plate longitudinal to the rolling direction; capable of being cold-formed without cracking to a 90-degree bend with a radius four times the thickness of the product transverse to the rolling direction; capable of being cold rolled without cracking to a 360-degree bend with an inside diameter 30 times the thickness of the product; heat-resistance: retains its abrasion resistance at temperatures up to 500 °C due to hard chromium and molybdenum microcarbides;
- (cdxxv) flat-rolled alloy steel structural products, the foregoing designated as A-697 and entered in an aggregate annual quantity not exceed 500 t; 4.0 mm to 16.0 mm in thickness; not over 3,350 mm in width; having the following chemical composition (expressed as percent by weight): carbon 0.145 to 0.194, silicon 0.15 to 0.30, manganese 1.15 to 1.35, phosphorus not over 0.02, sulfur not over 0.003, chromium 0.10 to 0.30, nickel not over 0.10, molybdenum not over 0.70, vanadium not over 0.055, titanium not over 0.01, copper not over 0.10, aluminum 0.045 to 0.080, niobium not over 0.020, boron 0.0007 to 0.0020 and nitrogen not over 0.0084; quenched and tempered; with a minimum yield strength of 960 N/mm²; grain refined; surface treated with a low zinc silicate primer of maximum 12 micrometers; formatted with a square edge; free of scale; guaranteed to a thickness tolerance of one-third of ASTM standards; and guaranteed to a flatness tolerance of 3 mm per mm or better;
- (cdxxvi) flat-rolled products of alloy steel, designated as A-729 and entered in an aggregate annual quantity not to exceed 525 t; the foregoing not further worked than hot-rolled; not in coils; of AISI 4142 of plastic mold quality, modified by decreasing phosphorus and sulfur content and increasing manganese content to produce a smoother surface with fewer inclusions; physical properties: width 1050 mm or more; thickness 4.75 mm or more; flatness less than or equal to 3 mm per mm; surface quality in accordance with EN 10 163, Class A; having the following chemical composition (percent by weight): carbon from 0.38 to 0.46, silicon from 0.15 to 0.40, manganese from 0.70 to 1.70, sulfur not over 0.002, chromium from 0.75 to 1.25, molybdenum from 0.15 to 0.30 and vanadium from 0.05 to 0.10; mechanical properties: prehardened (air hardened and tempered) to achieve Brinell hardness of 260 to 310 HB; tensile strength 880 MPa to 1,050 MPa; cleanliness of 2 or better in accordance with ASTM E45-A, including desulfurization to maximum 0.002 percent for high sulfidic cleanliness; vacuum degassing; argon stirring for oxide and sulfide cleanliness; special casting conditions to ensure high oxide cleanliness; ultrasonic testing performed on each plate in accordance with ASTM A 578, supplementary requirements S1 and S9; calcium treatment for inclusion shape control; modified by heat treatment and implementation of a rolling technique applying a rolling force of 11,000 t for high thickness reduction achieving a closely packed structure otherwise achieved only by forging (High Shape Factor Rolling) and resulting in low residual stress and homogeneous hardness distribution;
- (cdxxvii) flat-rolled electrolytic tin plate according to ASTM 624-98, designated as A-672 and entered in an aggregate annual quantity not to exceed 3,000 t, the foregoing single reduced with tin coating weight designation #10; with an unmelted coating; with a surface finish between 254 and 635 micrometers; with a chemical treatment yielding to 8,890 to 16,510 micrometers of chromium per 0.3048 square meter of surface; with DOS or ATBC oil applied at a level of 0.10 to 0.30 grams per 66.45 mm²; with a thickness of 0.167 mm to 0.194 mm; with a steel Type of "MR", a Temper Designation of "T-5" per ASTM A623 with a Non-Reflow Matte Finish Designation of 5C;
- (cdxxviii) continuous annealed interstitial free tin plated steel, designated as A-715 and entered in an aggregate annual quantity not to exceed 2,000 t; the foregoing of thickness 0.2290 mm to 0.2950 mm; width 949.71 mm to 959.94 mm; hardness of HR 27T to HR 33T; yield strength 19.0 kg/mm² to 29.0 kg/mm², tensile strength of 30.0 kg/mm² to 40.0 kg/mm²; having the following chemical composition per ASTM A623, type MR (percent by weight): carbon 0.00225 to 0.00375,