Steels - Material specifications

	AISI 201	AISI 301		AISI 304 W4		AISI 305		AISI 316 W5
ALLOYING ELEMENTS %	C 0,15 max Mn 5,5-7,5 Si 1 max Cr 16-18 Ni 3,5-5,5	C 0,15 max Mn 1 max Si 2 max Cr 16-18 Ni 6-8		C 0,08 Mn 1 max Si 2 max Cr 18-20 Ni 8-10,5		C 0,12 Mn 2 max Si 1 max Cr 17-19 Ni 10,5-13		C 0,08 max Mn 2 max Si 1 max Cr 16-18 Ni 10-14 Mo 2-3
PHYSICAL PROPERTIES								
Density gr/cm³	7,75	8,03		8,03		8,03		8,03
Structure	austenitic	austenitic		austenitic		austenitic		austenitic
Melting point ° C	1398 - 1454	1398 - 1421		1398 - 1454		1398 - 1454		1371 - 1398
Heat resistance Continuous service °C	760	810		835		835		835
ELECTRICAL PROPERTIES	non-magnetic	non-magnetic		non-magnetic		non-magnetic		non-magnetic
Magnetic permeability	μ = 1,02	μ = 1,02		μ = 1,008		μ = 1,008		μ = 1,008
Elec. Resistance microohm 21°C	69,0	72,0		72,0		72,0		72,0
MECHANICAL PROPERTIES		Annealed	Hardened	Annealed	Hardened	Annealed	Hardened	
Elongation %	40	50	18	50	7	50	7	5
Breaking strength kg/mm²	70,3	56	105	56	105	56	105	52
Yield strength kg/mm²	31,65	21,09	77	21,09	77	21,09	77	21,09
Hardness	90-95 R_{BO}	70-95 R_B		70-95 R_B		70-95 R_B		75-85 R_B
CORROSION RESISTANCE Atmosphere fresh water Atmosphere industrial Atmosphere salt water Atmosphere salt Acid Bases	 Good Good Fair No Fair No	 Good Good Fair No Fair No		 Very good Very good Good No Good No		 Very good Very good Good No Good No		 Excellent Very good Very good Good Good Good

	AISI 410	AISI 430 W3	CARBON STEEL	MONEL 400
ALLOYING ELEMENTS %	C 0,15 max Mn 1 max Si 1 max Cr 11,5-13,5	C 0,12 max Mn 1 max Si 1 max Cr 16-18	C 0,4-0,6 Mn 0,6-0,9 P 0,04 max S 0,05 max	C 0,3 max Mn 1,25 max Si 0,5 max Ni 63-70 S 0,024 max Fe 1,25 max Cu 31,5
PHYSICAL PROPERTIES				
Density gr/cm³	7,75	7,75	7,83	-
Structure	martensitic	ferritic	ferritic	-
Melting point ° C	1470 - 1560	1426 - 1510	-	1196 - 1220
Heat resistance Continuous service °C	635	760	-	485
ELECTRICAL PROPERTIES	magnetic	magnetic	magnetic	-
Magnetic permeability	μ = 700 - 1000	μ = 600 - 1100	μ = 1500 - 2000	-
Elec. Resistance microohm 21°C	57,0	60,0	17,2	5,1
MECHANICAL PROPERTIES				
Elongation %	20	20	10	40
Breaking strength kg/mm²	45	45	30	52
Yield strength kg/mm²	28,12	28,12	38,67	17
Hardness	75-85 R_{BO}	75-90 R_B	80-95 R_B	60-80 R_B
CORROSION RESISTANCE Atmosphere fresh water Atmosphere industrial Atmosphere salt water Atmosphere salt Acid Bases	 Good Fair Poor No Fair No	 Good Fair Poor No Fair No	 Good-Fair Fair Poor No No No	 Good Good Excellent Excellent Good Good