

Steel Grades for CNC Machining

Materials	Other names	Type	Descriptions	Applications	Corrosion resistance	Post treatment capability	Welding capability	Price index	Density - g/cm3	Young modulus - Gpa	Yield strength - Mpa	Ultimate tensile strength - Mpa	Elongation at break - %	Hardness - HB brinell	Electrical Conductivity - % at 20 °C IACS	Electrical resistivity - Ω mm2/m	Thermal conductivity - W/m-K
AISI 1010	C10, 1.0032	Steel	Belongs to class of plain low carbon steel with low strength, high ductility and formability. It has a very high electrical conductivity among wrought carbon or non-alloy steels.	Automotive Structural and building	Poor	Suitable for most of steel coating	Good	1	7.87	200-215	305 - 330	365 - 400	21 - 22	105 - 110	12	0,143	47 - 52
S235JR	1.0038, Q235B	Steel	It is a kind of mild steel with a low carbon steel, containing a carbon content of around 0.20%. It's known for its good balance of strength, plasticity, and welding properties.	Structural and building	Poor	Suitable for most of steel coating	Good	1	7.87	200	170 - 340	340 - 470	23 - 28	130-170	-	-	-
AISI 1018	C18, 1.1147	Steel	It is a mild/low carbon steel with a good balance of toughness, strength and ductility. It makes it one of the most common steel in this category.	Gears and automotive components Industrial application	Poor	Suitable for most of steel coating	Good	1	7.87	190-205	220 - 350	380 - 450	15	125	7	0,16	51.9
AISI 1045	C45, 1.0503	Steel	It is none alloyed medium carbon engineering steel with moderate tensile strengths.	Gears Automotive components General engineering:bolts, general-purpose axles and shafts, keys and studs.	Poor	Suitable for most of steel coating	Moderate	1	7.88	200-215	310	565	13 - 16	163 - 180	7	0,162	51,9
AISI 4140	42CD4, 1.7225	Steel	It is a low alloy steel with high fatigue strength, abrasion and impact resistance, toughness, and torsional strength.	Automotive: gear, shafts Defence	Moderate to poor	Suitable for most of steel coating	Moderate	1	7.88	208-216	415 - 660	655 - 740	17.7 - 26	197 - 200	7,3	0,22	42,6
A36	1.025, Fe 410	Steel	A36 is mild steel or low-carbon steel with some good formability, weldability, machinability, and ductility. The yield strength of A36 is less than that AISI 1018 for reference.	Gears and automotive components Industrial application	Poor	Suitable for most of steel coating	Good	1	7.88	195- 205	250-290	410 - 530	20 - 24	119-162	7	0,16	40,1
H13	X40CrMoV5-1, 1.2344	Steel	AISI H13 tool steel is characterized by it shigh heat resistance, high wear resistance, good toughness, thermal conductivity and hot cracks resistance.	Hot working dies (forging dies, extrusion dies, injection molding tools)	Moderate to poor	Suitable for most of steel coating	Moderate	2	7.88	195- 205	330	700	20-22	250	7	0,55	22-29