

1.7707, 30CrMoV9, 1.8519, 31CrMoV9 - Fasteners, Spare Parts, Maintenance Materials Datasheet

1.7707, 30CrMoV9 steel is low-alloyed, used in the energy industry for the parts working in high temperatures below 540 ° C. used in the manufacture of screws, nuts, parts of turbines and other equipment for the energy industry

Chemical Composition

Grade
1.7707, 30CrMoV9
1.8519, 31CrMoV9

Mechanical Properties

- Dia.40mm to 100mm
 - Tensile strength R_m MPa: Min 1080-1270
 - Yield Strength R_p MPa: Min 880
 - Elongtion after fracture ($l=5d$)A %: min 10
 - Necking: min 40 %
 - Absorbed energy: min 41 J
- Dia.100mm to 600mm
 - Tensile strength R_m MPa: Min 980-1180
 - Yield Strength R_p MPa: Min 780
 - Elongtion after fracture ($l=5d$)A %: min 11
 - Necking: min 45 %
 - Absorbed energy: min 48 J

- Condition +A(Annealed)
 - Hardness, HB: max 248
- Condition +QT
 - Tensile strength, R_m : 850 - 1300 MPa
 - The yield point, R_e : min 650 MPa
 - Elongation, A: min 9%
 - Impact resistance, KV: min 25J

Physical Properties

Modulus of elasticity [103 x N/mm²]: 210

Density [g/cm³]: 7.85

Heat Treatment

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Heat to 680-720°C, cool slowly. This will produce a maximum Brinell hardness of 248.

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Harden from a temperature of 850-880°C followed by oil quenching.

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Tempering temperature: 570-680°C.

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Gas/plasma nitriding temperature (gas, salt bath): 570-580°C

Gas/plasma nitriding temperature (powder, plasma): 580°C

Surface hardness after nitriding: 800 HV

Welding Properties

not suitable for welding

Machining Properties

Similar or Equivalent Steel Grade

30CrMoV9, 31CrMoV9, 31CrMoV9, 30CrMoV9, 1.7707, 1.8519, 30Ch3MF, 30H2MF, 30Kh3MF, 30 3 , 4340