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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

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

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

Tempering temperature: 570-680°C.

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 Equivalents Steel Grade

30CrMoV9, 31CrMoV9, 31CrMoV9, 30CrMoV9, 1.7707, 1.8519, 30Ch3MF, 30H2MF, 30Kh3MF, 30 X 3M Φ, 4340