

## Material: BS 316 S 11

### Standard Specification for steel forgings for pressure purposes

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** BS 316 S 11 steel forgings for pressure purposes

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Forging

| Chemical Composition |      |                 | Heat Treatment          |           |
|----------------------|------|-----------------|-------------------------|-----------|
| Carbon               | C %  | 0.030 max.      | Solution Annealing      |           |
| Silicon              | Si % | 1.000 max.      |                         |           |
| Manganese            | Mn % | 2.000 max.      |                         |           |
| Phosphorus           | P %  | 0.045 max.      |                         |           |
| Sulphur              | S %  | 0.025 max.      |                         |           |
| Chromium             | Cr % | 16.500 - 18.500 |                         |           |
| Nickel               | Ni % | 11.000 - 14.000 |                         |           |
| Molybdenum           | Mo % | 2.000 - 2.500   |                         |           |
| Titanium             | Ti % | 0.100 max.      | Mechanical Properties   |           |
| Niobium              | Nb % | 0.200 max.      | Tensile Strength in Mpa | 490 - 850 |
| Copper               | Cu % | 0.700 max.      | Yield Strength in Mpa   | 190 min.  |
| Iron                 | Fe % | Balance         | Elongation in %         | 12 min.   |
| -                    | -    | -               | Reduction of Area in %  | -         |
| -                    | -    | -               | Hardness in HB          | 320 max.  |
| -                    | -    | -               | Impact in Joule         | 55 @ RT   |

| Cross Reference Table |          |                |  |
|-----------------------|----------|----------------|--|
| Material              | Standard | Country        | Grade Belong to the Industry                 |
| 1.4404                | DIN      | Germany        | Cold Rolled, Strips, Slit, Coils and Forging |
| 1.4404                | EN       | European Union | Rod, Bars, Wire and Forging                  |
| 361L                  | AISI     | USA            | Bar, Wire, Strip, Plat, Sheet and Forging    |
| SUS 316L              | BS       | British        | Bar  |
| 03CH17N14M3           | GOST     | Russia         | Pipes, Fittings, Bar, Sheet and Forging      |
| A743 CF3M             | ASTM     | USA            | Casting                                      |
| A351 CF13M            | ASTM     | USA            | Casting                                      |

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