

## Material: ASTM A731 18Cr-2Mo

### Standard Specification for Castings, Seamless and Ferritic Stainless Steel Pipe

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** ASTM A731/ A731M Seamless and Ferritic Stainless Steel Pipe

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

**Grade Belongs to the Industry:** Pipe

| Chemical Composition |           |                 | Heat Treatment                                                                                                                                                                                      |  |
|----------------------|-----------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Carbon               | C %       | 0.025 max.      | Normalizing or Annealing or Hardening + Tempering                                                                                                                                                   |  |
| Silicon              | Si %      | 1.000 max.      |                                                                                                                                                                                                     |  |
| Manganese            | Mn %      | 1.000 max.      |                                                                                                                                                                                                     |  |
| Phosphorus           | P %       | 0.040 max.      |                                                                                                                                                                                                     |  |
| Sulphur              | S %       | 0.030 max.      |                                                                                                                                                                                                     |  |
| Chromium             | Cr %      | 17.500 - 19.500 |                                                                                                                                                                                                     |  |
| Molybdenum           | Mo %      | 1.750 - 2.500   |                                                                                                                                                                                                     |  |
| Ti + Nb              | Ti% + Nb% | 0.800 max.      |                                                                                                                                                                                                     |  |
| Nitrogen             | N %       | 0.035 max.      |                                                                                                                                                                                                     |  |
| Ni+Cu                | Ni% + Cu% | 1.000 max.      |                                                                                                                                                                                                     |  |
| Iron                 | Fe %      | Balance         | <b>Mechanical Properties</b><br>Tensile Strength in Mpa 415 min.<br>Yield Strength in Mpa 275 min.<br>Elongation in % 20 min.<br>Reduction of Area in % -<br>Hardness in BHN -<br>Impact in Joule - |  |
| -                    | -         | -               |                                                                                                                                                                                                     |  |
| -                    | -         | -               |                                                                                                                                                                                                     |  |
| -                    | -         | -               |                                                                                                                                                                                                     |  |
| -                    | -         | -               |                                                                                                                                                                                                     |  |
| -                    | -         | -               |                                                                                                                                                                                                     |  |

| Cross Reference Table |          |           |                              |
|-----------------------|----------|-----------|------------------------------|
| Material              | Standard | Country   | Grade Belong to the Industry |
| SA-731 18Cr-2Mo       | ASME     | USA       | Casting                      |
| 444                   | AS       | Australia | Plate, Sheet and Strip       |
| A176 S44400           | ASTM     | USA       | Plate, Sheet and Strip       |
| F.3123                | UNE      | Spain     | Plate, Sheet and Strip       |
| S44400                | UNS      | USA       | Plate, Sheet and Strip       |
| X2 CrMo TiNb 18-2     | UNE      | Spain     | Plate, Sheet and Strip       |
| 444                   | SAE      | USA       | Plate, Sheet and Strip       |

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