

# Material: BS 10213 EN 1.4470

## Standard Specification for Steel Castings for Pressure Purposes

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** BS 10213 Steel Castings for Pressure Purposes

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

**Belongs to the Industry:** Casting

| Chemical Composition    |              |                 | Heat Treatment   |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
|-------------------------|--------------|-----------------|--|--|-----------------------|--|-------------------------|-----------|-----------------------|----------|-----------------|---------|------------------------|---|-----------------|---|-----------------|--------------|
| Carbon                  | C %          | 0.030 max.      | Solution Annealing   |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Silicon                 | Si %         | 1.000 max.      |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Manganese               | Mn %         | 2.000 max.      |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Phosphorus              | P %          | 0.035 max.      |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Sulphur                 | S %          | 0.025 max.      |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Chromium                | Cr %         | 21.000 - 23.000 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Nickel                  | Ni %         | 4.500 - 6.500   |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Molybdenum              | Mo %         | 2.500 - 3.500   |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Copper                  | Cu %         | 0.500 max.      |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Nitrogen                | N %          | 0.120 - 0.200   |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Iron                    | Fe %         | Balance         | <table border="1"> <thead> <tr> <th colspan="2">Mechanical Properties</th> </tr> </thead> <tbody> <tr> <td>Tensile Strength in Mpa</td> <td>600 - 800</td> </tr> <tr> <td>Yield Strength in Mpa</td> <td>420 min.</td> </tr> <tr> <td>Elongation in %</td> <td>20 min.</td> </tr> <tr> <td>Reduction of Area in %</td> <td>-</td> </tr> <tr> <td>Hardness in BHN</td> <td>-</td> </tr> <tr> <td>Impact in Joule</td> <td>30 min. @ RT</td> </tr> </tbody> </table> |  | Mechanical Properties |  | Tensile Strength in Mpa | 600 - 800 | Yield Strength in Mpa | 420 min. | Elongation in % | 20 min. | Reduction of Area in % | - | Hardness in BHN | - | Impact in Joule | 30 min. @ RT |
| Mechanical Properties   |              |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Tensile Strength in Mpa | 600 - 800    |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Yield Strength in Mpa   | 420 min.     |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Elongation in %         | 20 min.      |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Reduction of Area in %  | -            |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Hardness in BHN         | -            |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| Impact in Joule         | 30 min. @ RT |                 |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| -                       | -            | -               |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| -                       | -            | -               |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| -                       | -            | -               |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |
| -                       | -            | -               |  |  |                       |  |                         |           |                       |          |                 |         |                        |   |                 |   |                 |              |

| Cross Reference Table |          |                |                              |
|-----------------------|----------|----------------|------------------------------|
| Material              | Standard | Country        | Grade Belong to the Industry |
| 1.447                 | DIN      | Germany        | Casting                      |
| 1.447                 | BS       | British        | Casting                      |
| GX2NiCrMo28-20-2      | UNI      | Italy          | Casting                      |
| GX2NiCrMo28-20-2      | EN       | European Union | Casting                      |
| GX2NiCrMo28-20-2      | DIN      | Germany        | Casting                      |
| GX2NiCrMo28-20-2      | BS       | British        | Casting                      |
| GX2NiCrMo28-20-2      | AFNOR NF | France         | Casting                      |

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