

## Material: ASTM A276 XM-27

### Standard Specification for Stainless Steel Bars and Shapes

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** ASTM A276 XM-27 Stainless Steel Bars and Shapes

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

**Grade Belongs to the Industry:** Bar and Shapes

| Chemical Composition |           |                 | Heat Treatment                                    |          |
|----------------------|-----------|-----------------|---------------------------------------------------|----------|
| Carbon               | C %       | 0.010 max.      | Normalizing or Annealing or Hardening + Tempering |          |
| Silicon              | Si %      | 0.400 max.      |                                                   |          |
| Manganese            | Mn %      | 0.400 max.      |                                                   |          |
| Phosphorus           | P %       | 0.020 max.      |                                                   |          |
| Sulphur              | S %       | 0.020 max.      |                                                   |          |
| Chromium             | Cr %      | 25.000 - 27.500 |                                                   |          |
| Molybdenum           | Mo %      | 0.750 - 1.500   |                                                   |          |
| Nickel               | Ni %      | 0.500 max.      |                                                   |          |
| Niobium              | Nb %      | 0.050 - 0.200   |                                                   |          |
| Nitrogen             | N %       | 0.150 max.      |                                                   |          |
| Ni+Cu                | Ni% + Cu% | 0.500 max.      | Mechanical Properties                             |          |
| Copper               | Cu %      | 0.200 max.      | Tensile Strength in Mpa                           | 450 min. |
| Iron                 | Fe %      | Balance         | Yield Strength in Mpa                             | 275 min. |
| -                    | -         | -               | Elongation in %                                   | 16 min.  |
| -                    | -         | -               | Reduction of Area in %                            | 45 min.  |
|                      |           |                 | Hardness in HB                                    | 219 max. |
|                      |           |                 | Impact in Joule                                   | -        |

| Cross Reference Table |          |         |                              |
|-----------------------|----------|---------|------------------------------|
| Material              | Standard | Country | Grade Belong to the Industry |
| A176 Type XM-27       | ASTM     | USA     | Plate, Sheet and Strip       |
| A240 Type XM-27       | ASTM     | USA     | Plate, Sheet and Strip       |
| SA-731 TPXM-27        | ASME     | USA     | Casting                      |
| S44627                | UNS      | USA     | Plate, Sheet and Strip       |
| SM-27                 | SAE      | USA     | Plate, Sheet and Strip       |
| SA-276 XM-27          | ASME     | USA     | Bar and Shapes               |
| A731 TP XM-27         | ASTM     | USA     | Casting                      |

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