

## 6.5 Mechanical properties

**6.5.1** The mechanical properties at room temperature as specified in Tables 8 to 12 apply for hot worked products of every condition, condition 1U and semi-finished products excluded, for cold processed products in condition 2D (excluding wire), and for each specified heat treatment condition.

For cold processed products of every specified condition, condition 2D and wire excluded, and each specified heat treatment condition, the mechanical properties at room temperature as specified in Tables 13 to 17 apply. For these products, the condition is the prime property with the mechanical properties secondary.

If by agreement at the time of ordering the products shall be supplied in a non-heat-treated condition, the mechanical properties specified in Tables 8 to 17 shall be obtained from reference test pieces which have received the appropriate heat treatment (simulated heat treatment).

For wire, the properties as specified in Tables 18 and 19 apply.

For bars which are intentionally cold work hardened in order to increase their tensile strength to a specified level, the mechanical properties at room temperature as specified in Table 25 apply. For these products, the mechanical properties are prime, with the condition a secondary property.

**NOTE** Austenitic steels are insensitive to brittle fracture in the solution annealed condition. Because they do not have a pronounced transition temperature, which is characteristic of other steels, they are also useful for application at cryogenic temperatures.

**6.5.2** The values in Tables 20 to 24 apply for the 0,2 %- and 1,0 %-proof strength at elevated temperatures.

**6.5.3** A number of grades in Tables 2 to 5 are not listed or have limited information included in Tables 13 to 25. In this case, grade dimensions and corresponding mechanical properties shall be agreed upon at the time of enquiry and order.

In case of demand for larger diameters than stated in Tables 13 to 19, appropriate mechanical property values shall be agreed at the time of enquiry and order.

## 6.6 Surface quality

The available surface finishes are given in Table 7. Slight surface imperfections, inherent to the production process, are permitted. Exact requirements concerning maximum depth of acceptable discontinuities for bars, rods and sections in the relevant conditions are given in Table 1.