

Quality X46Cr13

According to Standard EN 10088-3:2005 (E)

Number 1.4034



| Comparable Standards | EN      | W.N.   | AISI |
|----------------------|---------|--------|------|
|                      | X46Cr13 | 1.4034 | 420  |

| Chemical Analysis | C %          | Si % max | Mn %   | P% max | S%                   | Cr %         |
|-------------------|--------------|----------|--------|--------|----------------------|--------------|
|                   | 0,43 to 0,50 | 1,00     | ≤ 1,00 | 0,040  | ≤ 0,030 <sup>b</sup> | 12,5 to 14,5 |
|                   | Cu           | Mo %     | Nb     | Ni %   | Others               |              |
|                   | —            | —        | —      | —      | —                    |              |

### Hot Work and Heat Treatment Temperatures

| Heat Treatment Symbol | Hot Forming    |                 | Annealing      |                 | Quenching      |                 | Tempering      |
|-----------------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
|                       | Temperature °C | Type of cooling | Temperature °C | Type of cooling | Temperature °C | Type of cooling | Temperature °C |
| +A                    | 1100 to 800    | slow cooling    | 750 to 850     | furn.,air       | —              | —               | —              |
| +QT 850               | 1100 to 800    | slow cooling    | —              | —               | 950 to 1050    | oil, air        | 650 to 700     |

### Mechanical Properties at Room Temperature

| Heat Treatment Condition | Ø     | Hardness            | Rp0,2 <sup>d</sup> min. | Rm <sup>d</sup>        | A <sup>d</sup> min. % | KV min. J |
|--------------------------|-------|---------------------|-------------------------|------------------------|-----------------------|-----------|
| +A                       | mm.   | HB <sup>c</sup> max | N/mm2                   | N/mm2                  | —                     | —         |
| +QT800                   | ≤ 160 | —                   | 650                     | max 800<br>850 to 1000 | 10                    | 12        |