

## Material specification sheet

### Saarstahl - 18CrNiMo7-6 (17CrNiMo6)

|               |                    |                              |
|---------------|--------------------|------------------------------|
| Material No.: | Former brand name: | International steel grades:  |
| 1.6587        | Monix F            | BS:<br>AFNOR: 18NCD6<br>SAE: |

**Material group:** Case hardening steels according to DIN EN 10084

| Chemical composition:<br>(Typical analysis in %) | C    | Si   | Mn   | Cr   | Mo   | Ni   | other |
|--|------|------|------|------|------|------|-------|
|  | 0,17 | 0,25 | 0,50 | 1,65 | 0,30 | 1,55 | (Pb)  |

**Application:** Alloyed case hardening steel for heavy and high strained gear parts with high demands on toughness at core tensile strength of 1050 - 1350 N/mm<sup>2</sup>.

|  |                         |                     |
|--|-------------------------|---------------------|
| <b>Hot forming and heat treatment:</b> | Forging or hot rolling: | 1150 - 850°C        |
|  | Normalising:            | 850 - 880°C/air     |
|  | Soft annealing:         | 650 - 700°C/furnace |
|  | Carburising:            | 880 - 980°C         |
|  | Core hardening:         | 830 - 870°C/water   |
|  | Intermediate annealing: | 630 - 650°C         |
|  | Case hardening:         | 780 - 820°C/water   |
| Tempering:                             | 150 - 200°C             |                     |

|                               |   |              |
|-------------------------------|---|--------------|
| <b>Mechanical Properties:</b> | Treated for cold shearability, +S:                                  | max. 255 HB  |
|                               | Soft annealed, +A:  | max. 229 HB  |
|                               | Treated for strength, +TH:  | 179 - 229 HB |
|                               | Treated for ferrite and pearlite structure and hardness range, +FP: | 159 - 207 HB |

after hardening and tempering at 200°C:

| Diameter d [mm]                                      | d ≤ 16    | 16 < d ≤ 40 | 40 < d ≤ 100 |
|--|-----------|-------------|--------------|
| Tensile strength R <sub>m</sub> [N/mm <sup>2</sup> ] | min. 1200 | min. 1100   | min. 900     |