

### Product range

ETG® steels are available in various categories, finishes and sizes:

| Steel category    | Processes | Size range [mm]  | Tolerance |
|-------------------|-----------|------------------|-----------|
| ETG® 88 round     | drawn     | ≥ 5,0 – ≤ 20,5   | h9        |
|                   |           | > 20,5 – ≤ 64,0  | h11       |
|                   |           | > 64,0 – ≤ 114,3 | h12       |
|                   | ground    | ≥ 5,0 – ≤ 100,0  | ≥ IT6     |
| ETG® 100 round    | drawn     | ≥ 6,0 – ≤ 64,0   | h11       |
|                   |           | > 64,0 – ≤ 70,8  | h12       |
|                   | ground    | ≥ 6,0 – ≤ 70,8   | ≥ IT6     |
| ETG® 88 hexagonal | drawn     | SW 13 – 27       | h11       |

- Bar lengths: 3 - 6,5 m
- Colour coding: ETG® 88 white end face, ETG® 100 gold end face
- Bright-turned and bright-turned/ground to special order
- Regular sizes are available from stock
- 100% eddy current tested acc. to surface class 3 of EN ISO 683-7 apart from hexagon material which can be tested acc. to surface class 2
- Other categories to meet special requirements (e.g. mechanical properties) are available to special order.

### Chemical composition (ETG® 88/100, analysis by mass in %)

| Element | C    | Si   | Mn   | P    | S    |
|---------|------|------|------|------|------|
| min.    | 0,42 | 0,10 | 1,35 |      | 0,24 |
| max.    | 0,48 | 0,30 | 1,65 | 0,04 | 0,33 |

The analysis corresponds to SAE1144 and 44SMn28 (1.0762).  
Piece analysis and melt analysis may vary according to EN ISO 683-4.

### Mechanical properties (Typical values)

| Static                        |                |                   | ETG® 88     | ETG® 100    |
|-------------------------------|----------------|-------------------|-------------|-------------|
| Dimensions                    | Ø              | mm                | 5,0 – 114,3 | 6,0 – 70,8  |
| Proof stress                  | drawn          | R <sub>p0,2</sub> | ≥ 685       | ≥ 865       |
|                               | ground         |                   | ≥ 685       | ≥ 800       |
| Tensile strength              | R <sub>m</sub> | N/mm <sup>2</sup> | 800 – 950   | 960 – 1100  |
| Ultimate elongation           | A <sub>5</sub> | %                 | ≥ 7         | ≥ 6         |
| Reduction of area             | Z              | %                 | ap. 30      | ap. 20      |
| Elastic modulus               |                | N/mm <sup>2</sup> | ap. 200 000 | ap. 200 000 |
| Tensile strength (transverse) | R <sub>m</sub> | N/mm <sup>2</sup> | ca. 600     | ca. 720     |

|                          |           |                   |         |         |
|--------------------------|-----------|-------------------|---------|---------|
| Hardness                 |           |                   |         |         |
| HRC                      |           |                   | ca. 28  | ca. 32  |
| HB 30                    |           |                   | ca. 280 | ca. 320 |
| Lateral shear strength   | $T_s$     | N/mm <sup>2</sup> | ca. 510 | ca. 590 |
| Torsional shear strength | $T_t$     | N/mm <sup>2</sup> | ca. 440 | ca. 540 |
| Notched impact energy    | $AV_{RT}$ | J                 | ca. 25  | ca. 10  |

### Dynamic

|                     |                |                   |         |         |
|---------------------|----------------|-------------------|---------|---------|
| Tension/compression | $\sigma_w$     | N/mm <sup>2</sup> | ca. 350 | ca. 370 |
| Pulsating           | $\sigma_{sch}$ | N/mm <sup>2</sup> | ca. 250 | ca. 270 |
| Reverse bending     | $\sigma_{bw}$  | N/mm <sup>2</sup> | ca. 390 | ca. 420 |
| Torsional reversal  | $T_{tw}$       | N/mm <sup>2</sup> | ca. 195 | ca. 225 |
| Torsional pulsating | $T_{sch}$      | N/mm <sup>2</sup> | ca. 345 | ca. 390 |

For further info on our product range of tool steel, stainless steel and Engineering steel please visit [www.swisssteelgroup.com](http://www.swisssteelgroup.com)

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