Dimensional program

Industeel produces TENASTEEL® in different shapes:

| Plates   | 2000 x 4000 mm - Thicknesses 15 to 75 mm
|          | 6.6’’ x 13.1’’ - Thicknesses .59 to 2.95’’
| Bars     | Width 500 mm x Thicknesses < 300 mm
|          | Width 19.7” x Thicknesses < 11.8”

For non-standard sizes or shapes, please consult us,
(including castings and forgings)

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www.arcelormittal.com

Cold work tool steel

www.tenasteel.com
**TENASTEEL®**

A multi-purpose cold work tool steel

Looking for a new concept

Materials are in evolution and rates of production increasing. Consequently, cutting and stamping tools need to be made from a tool steel with a reduced risk of cracking and chipping.

At present, a difficult compromise has to be made, using - Conventional steels which require a choice between wear resistance and toughness. - Powder metallurgy steels which are multi-purpose steels, but expensive.

This requires the development of a new, more universal steel concept, able to couple high tensile strength with wear resistance.

**TENASTEEL®** has been designed to answer these demands.

A new chemical balance

Low level of carbon and chromium with titanium additions produce a finer carbide structure.

Molybdenum additions maintain the wear resistance structure.

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>Mn</th>
<th>Cr</th>
<th>Mo</th>
<th>V</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>X160 Cr/MoV12 - D2</strong></td>
<td>1</td>
<td>0.35</td>
<td>7.5</td>
<td>2.6</td>
<td>0.3</td>
<td>Ti</td>
</tr>
</tbody>
</table>

Improved mechanical characteristics

**Annealing hardness**

- Elaboration in electric furnace, vacuum refining,
- Specific and innovative chemical balance,
- Capable of standard heat treatments.

**TENASTEEL®** allows an increase in tooling productivity with lower maintenance costs.

It is especially suited to surface treatments and surface coating.

**Cracking resistance**

Whatever the hardness, **TENASTEEL®** offers double the toughness of X160 Cr/MoV12 - D2.

- Less sharpening,
- Less in-service cracking.

**Versatile treatments**

Treatments at high temperature are possible with **TENASTEEL®**

- Compatible with all surface treatments or coatings (PVD type),
- Ensures better dimensional stability.

**Better tool performance**

**Improved machinability**

**Increasing tool life**

**Test on annealed sample**

**Test on hardened sample**

**TENASTEEL®** is Trademark and Patented grade