Global Steel Producer of Turkey

“Türkiye’nin Global Çelik Üreticisi”

Global Steel Producer of Turkey

DEMİR ČELİKTE
TÜRKİYE’NİN DÜNYADAKİ GURURU,
TÜRKİYE’NİN GELECEĞİ
TURKEY’S GLOBAL PRIDE AND FUTURE IN IRON AND STEEL
QUALITY OF WIRE ROD PRODUCT:

- Mesh
  - SAE1008-SAE1010
- Wire/Galvanized Wire
  - SAE1006-SAE1008
- Thin Wire
  - SAE1006
- Nail
  - SAE1010 – SAE1018
- Welding wire
  - S1-S2-SG2-SG3
- Bolt and nut productions
  - 20MnB4- 27MnB4-30MnB4
- Spring
  - SAE1045-SAE1065
- PC Strand
  - SAE 1080

GENERAL SPECIFICATIONS OF WIRE ROD AND DEBAR MILL:

- 600,000 tons/year capacity
- From 5.5 mm to 25 mm size range of wire rod.
- From 8 mm to 32 mm size range of debar.
- 8-10-12-14-16 mm size range of Debar in Coil.
- 110 m/sec rolling speed.
- 150x150 ve 160x160 billet
- Wire rod coil:
  - Weight min 2050 max 2400 kg
  - Outside dia. 1250 mm
  - Inside dia. 850 mm
- Height 1700-2200 mm (for 150x150 billet)
- Height 2000-2500 mm (for 160x160 billet)
125 TON/H WALKING BEAM TYPE REHEATING FURNACE

Decarburization control and homogeneous heating (head and bottom side temperature difference 30°C) of billet with the ability to control billet charge interval.

Thanks to automatic combustion system the yield of combustion increases.

Heating time tracking with billet monitoring program

DESCALER

Preventing surface defects by cleaning scale layer formed on the four surfaces of billet for all the quality before rolling.
18 HORIZONTAL VERTICAL ONE WAY ROLLING STANDS

- 150x150 and 160x160 size of billets can be rolled. So 2.1 tons of wire rod are produced. Wastage of customers can be decreased.
- Surface defects, internal torsion force, burr on the wire and scratch that can occur by no twisting rolled are less.
- Opportunity of rolled without tension is better because of single strand type full continuous rolling controlled by cascade and tension control system. So size and surface defects don't occur.
- Thanks to downstream system of monoblock size and surface defects don't occur.

- Consists of 6 stands Roughing mill, 6 stands intermediate mill, 6 stands finishing mill.
- Finishing mill stands are controlled by loop system. 14th, 16th and 18th stands that work horizontal and vertical have the property to increase ability of groove calibration.
- All the signals of process are followed by PDA so problems can be solved quickly.
Wire Rod And Debar

Wire Rod And Debar in Coil
Fast Finishing Monoblock 8 Stands

Mono Block (BGV)
Include of eight stands.
Quick rings changing with new design mandrel system.

There are 9 water boxes from the exit of 18 th stand to laying head.
According to qualities and rolling size cooling procedures are applied.
Water boxes can adjust set value of temperature around +/- 5 °C automatically. It provides the value of required strength.
Required dry head and dry tail spire can be adjusted.
Wire Rod and Debar

WIRE ROD IN COIL
SIZING MODULE BLOCK (TMB1+TMB2)

- Max. 0.16 mm ovality with Oval- Round+ False Round - Round groove set.
- Great physical structure with the thermomechanical rolling at 810-860°C entry temperature of sizing block.
- It is the most important thing to minimize ovality for customer requests. Only our premises has this property.
- Sizing module block (TMB) applied at the first time in Turkey.
- 110 m/sec finishing speed.
- Quick pass and changing size.
- Varieties of production.

Provide the standard strength with fix temperature exit of laying head.

Over size 9 mm spires are laid under control with the wobbling mode. In this way hot point area (touch area) is laid. It prevents strength fluctuation.

Provide the spire control with tilttable roller unit.

Scale value can be adjusted according to customer request with the ability of controlling mechanical and chemical at conveyor.

Head flow degree can be adjusted by the system.
Roller alignment allows the centering of the windings thereby obtaining uniform windings.

Air nozzles tear film air cooling allowing high power and rapid cooling is achieved.

Thanks to easy down type reform station which is gone down with material flow;

Better shape of coils

Opened easily coil for using,

Without spire defect,

Without frictional defects products are produced.
Head tail balance is done more effectively.

Wire rod and debar in coils are packed with arrangeable compactor pressure.

Wire rod and debar in coils are traced with RF_ID.

Production is traced with coil number, barcode and weighing by level 2. So, from billet to wire rod coil is followed and archived backward all the parameter and value.
DEBAR COUNTER SYSTEM AND ADJUSTABLE LENGTH

- Length range: 6 m to 12 m.
- Precision of counter:
  - 0.01 (Size > Ø14)
  - 0.02 (Size ≤ Ø14)
- Thanks to bar separator system can be separated each groups without stopping production.

DEBAR COOLING WATER

- Flow Capacity of water 650 m³/hour.
- Pressure Capacity 18 bar.
- Cooling system can adjust set value of pressure or flow. It provides the value of required strength.
Wire Rod And Debar

METALLOGRAPHY LABORATORY

Microstructures results:

With residual determination process in ASTM E45, ISO 4967, DIN 50602, JIS G 0555, EN 10247 standards, determination can be made sulfide, alumina, silicate and globular.

In ASTM A247, ASTM B46.1, ASTM B487, ASTM E1077, ASTM E112 / E1382, ASTM E1245, ASTM E1268, ASTM E45, ASTM E562, DIN 17230, ISO 945 standards determination can be made cell count, fiber length, grain size, layer thickness, nodularity, particle size, phase area, porosity, shape analysis and surface roughness.

With multiple sample holder can be calculated total residue values until 12 sample. Reports of different samples can be analyzed in different tissues.

With motorized table:

160mm² field scans in less than 2.5 minutes can be given total results. It can be scan multiple samples on the table in order. Achieved by making the surface of the auto focus images that can be overlaid on top of different levels.

All measurement results are described in accordance with ASTM E45-11, DIN 50602-10247, ISO 4967, JIS G 0555 can be administered in accordance with the standards reports.

N8,00MM - N32,00MM
DEFORMED REINFORCING STEEL BARS
# MILL'S TEST CERTIFICATE

**TOSCALIK**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Material Grade</th>
<th>Test Date</th>
<th>Test Location</th>
<th>Number of Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOSCALIK 1299</td>
<td>Wire Rod And Debar</td>
<td>01/01/2023</td>
<td>Istanbul, Turkey</td>
<td>3</td>
</tr>
</tbody>
</table>

**MILL'S TEST REPORT**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Test Value</th>
<th>Test Date</th>
<th>Test Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>562 N/mm²</td>
<td>01/01/2023</td>
<td>Istanbul, Turkey</td>
</tr>
<tr>
<td>Yield Strength</td>
<td>450 N/mm²</td>
<td>01/01/2023</td>
<td>Istanbul, Turkey</td>
</tr>
<tr>
<td>Elongation</td>
<td>2.5%</td>
<td>01/01/2023</td>
<td>Istanbul, Turkey</td>
</tr>
</tbody>
</table>

**Conclusion**

The test results meet the specified requirements for Wire Rod And Debar.
www.toscelik.com.tr
info@toscelik.com.tr

FİLMAŞİN VE İNŞAAT DEMİR ÜRETİM SAN. A.Ş.

Organize Sanayi Bölgesi P.K
80950 Toprakkale / OSMANİYE
Tel: 0 328 826 81 01