Deox Aluminum Continuous Cast Rod

Non-heat-treatable alloy.
Principal alloying elements: none (primary trace elements: magnesium, iron, and silicon)

General Information:
In the pursuit of correct steel chemistry, temperature and the maximum removal of Sulphur, phosphorus and dissolved gases, the single most important step is the deoxidation of steel.

Applications and Features:
Southwire’s Deox Aluminum Continuous Cast Rod is used for the deoxidation of steel through ladle refinement. The advantages of rod include ease of addition, rapid rate of reaction, low cost, strong affinity for oxygen, and grain refinement properties.

Packaging:
- Weight: 4,000 lbs (1,814 kg)
- ID: 30.75 inches (78.10 cm)
- OD: 56.50 inches (143.51 cm)
- Width: 34.00 inches (86.36 cm)
- Option: Palletized, eye vertical or horizontal
- Rod Surface Conditions: Very clean to oiled

TABLE 1 - WEIGHTS & MEASUREMENTS

<table>
<thead>
<tr>
<th>Diameter Size (inches)</th>
<th>Temper</th>
<th>Density (g/cm³)</th>
<th>Ultimate Tensile Strength (ksi)</th>
<th>Ultimate Tensile Strength (Mpa)</th>
<th>Percent Elongation in 10 inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.375</td>
<td>F</td>
<td>2.7</td>
<td>15-24</td>
<td>105-165</td>
<td>10 - 15</td>
</tr>
</tbody>
</table>

*Other diameters: 0.375 inches (9.5mm) - 1.0 inches (25.4mm) available upon minimum quantity requirements

**Standard diameters: 0.375 inches (9.5mm), 500 inches (12.7 mm), 0.6875 inches (17.5 mm)

***Other packaging: 4,000 lbs (1814 kg) - 7500 lbs (3402 kg) available based upon minimum quantity requirements
Deox Temper Explanation

**F (as Fabricated):**
No particular control over thermal conditions or strain-hardening has been exercised.

**O (Annealed):**
Has been processed to obtain the lowest tensile strength. For wire, this temper is achieved by fully annealing the product after the last strain-hardening process. For continuous cast rod, this temper is achieved by controlling the process parameters during the continuous casting and rolling operations.

**H (Strain Hardened):**
Tensile strength has been increased by strain-hardening, possibly followed by a thermal treatment to reduce the tensile strength to a desired level.

The first digit following the H indicates whether the material received a thermal treatment:
- H1 indicates no thermal treatment
- H2 indicates a partial-anneal
- H3 indicates a stabilizing thermal treatment for alloys that age-soften

The second digit indicates the hardening of the material measured in 1/8s. For example
- H14 indicates the material is four 1/8s or 1/2 hard
- H18 is eight 1/8s or full-hard
- H19 is nine 1/8s or extra-hard

**T (Thermally Treated):**
Has been thermally treaded to produce a stable temper other than F, O, or H

Numbers following the T indicate specific sequence of operations:
- T4 indicates solution heat-treated and naturally aged
- T6 indicates solution heat-treated and artificially aged
- T8 indicates solution heat-treated, cold worked and artificially aged

The second digit indicates a variation in treatment that significantly affects the material properties that otherwise would be obtained using the basic treatment