

## Nicro 600

| <b>CATEGORY</b>                     | GMAW-GTAW Solid wires  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|-------------------------------------|--|-------------------------------------|--------------------|-------------------------|------------|--------|-------|--------|-------|--------|------|--|----------------|--|-------------------------------------|--------------------|-------------------------|-------|-------------|-------------------|----|-------------|------------|------|--------|---------|-------|-------|---------|---------|--------|---------|--------|-------|--------|------|-------|---------|--|-------|----|
| <b>TYPE</b>                         | Solid nickel base welding wire for gas shielded arc welding.   |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>APPLICATIONS</b>                 | Nicro 600 filler metal is used for welding nickel-chromium-iron (Inconel 600, 601 and 690) alloys to themselves, and for dissimilar welding between nickel-chromium-iron (Monel, Inconel and Incoloy) alloys and steels or stainless steels. The applications include surfacing as well as clad-side welding.  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>PROPERTIES</b>                   | High manganese of this weld deposit reduces the possibility of micro fissures. High manganese reduces creep strength, which limits its usage up to 900°F.  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>CLASSIFICATION</b>               | AWS  | A 5.14: ER NiCr-3                   |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|                                     | EN ISO   | 18274: S Ni 6082 (NiCr20Mn3Nb)      |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|                                     | DIN: W.Nr.   | 2.4806                              |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|                                     | DIN  | 1736: SG NiCr20Nb                   |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>SUITABLE FOR</b>                 | inconel 600, 2.4816, 1.4876, 2.4817, 2.4851, 1.6901, NiCr15Fe, X10NiCrAlTi 32 20, LC-NiCr15Fe, NiCr23Fe, X3CrNiN 18 10, alloy 600/B168, alloy 800 / 800H, N 10665, N 06601, kiln tyre, difficult to Weld steels, cock wheels   |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>APPROVALS</b>                    | CE approved  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>WELDING POSITIONS:</b>           |  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>WELD METAL ANALYSIS %</b>        | <table border="1"> <thead> <tr> <th>C</th> <th>Mn</th> <th>Si</th> <th>Cr</th> <th>S</th> <th>Nb+Ta</th> <th>Ti</th> <th>Fe</th> <th>Co</th> <th>Cu</th> <th>P</th> <th>Ni</th> </tr> </thead> <tbody> <tr> <td>&lt; 0.10</td> <td>2.5-3.5</td> <td>&lt; 0.5</td> <td>18-22</td> <td>&lt; 0.015</td> <td>2.0-3.0</td> <td>&lt; 0.75</td> <td>&lt; 3.0</td> <td>&lt; 0.12</td> <td>&lt; 0.5</td> <td>&lt; 0.03</td> <td>&gt; 67</td> </tr> </tbody> </table>  |                                     |                    |                         |            |        |       |        |       |        |      |  | C              | Mn                                     | Si                                  | Cr                 | S                       | Nb+Ta | Ti          | Fe                | Co | Cu          | P          | Ni   | < 0.10 | 2.5-3.5 | < 0.5 | 18-22 | < 0.015 | 2.0-3.0 | < 0.75 | < 3.0   | < 0.12 | < 0.5 | < 0.03 | > 67 |       |         |  |       |    |
| C                                   | Mn   | Si                                  | Cr                 | S                       | Nb+Ta      | Ti     | Fe    | Co     | Cu    | P      | Ni   |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| < 0.10                              | 2.5-3.5  | < 0.5                               | 18-22              | < 0.015                 | 2.0-3.0    | < 0.75 | < 3.0 | < 0.12 | < 0.5 | < 0.03 | > 67 |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>MECHANICAL PROPERTIES</b>        | <table border="1"> <thead> <tr> <th rowspan="2">Heat Treatment</th> <th rowspan="2">R<sub>p0,2</sub> (N/mm<sup>2</sup>)</th> <th rowspan="2">R<sub>m</sub> (N/mm<sup>2</sup>)</th> <th rowspan="2">A<sub>5</sub> (%)</th> <th colspan="2">Impact Energy (J) ISO-V</th> </tr> <tr> <th>+20°C</th> <th>-196°C</th> </tr> </thead> <tbody> <tr> <td>AW</td> <td>&gt; 420</td> <td>&gt; 640</td> <td>&gt; 35</td> <td>&gt; 200</td> <td>&gt; 100</td> </tr> </tbody> </table>  |                                     |                    |                         |            |        |       |        |       |        |      |  | Heat Treatment | R <sub>p0,2</sub> (N/mm <sup>2</sup> ) | R <sub>m</sub> (N/mm <sup>2</sup> ) | A <sub>5</sub> (%) | Impact Energy (J) ISO-V |       | +20°C       | -196°C            | AW | > 420       | > 640      | > 35 | > 200  | > 100   |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| Heat Treatment                      | R <sub>p0,2</sub> (N/mm <sup>2</sup> )   | R <sub>m</sub> (N/mm <sup>2</sup> ) | A <sub>5</sub> (%) | Impact Energy (J) ISO-V |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|                                     |  |                                     |                    | +20°C                   | -196°C     |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| AW                                  | > 420  | > 640                               | > 35               | > 200                   | > 100      |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| AW: as welded                       |  |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>WELDING PARAMETERS / PACKING</b> | <table border="1"> <thead> <tr> <th rowspan="2">D (mm)</th> <th colspan="3">Welding Parameters</th> <th colspan="2">Packing</th> </tr> <tr> <th>Voltage (V)</th> <th>Current (A) (DC+)</th> <th></th> <th>spools type</th> <th>kg / spool</th> </tr> </thead> <tbody> <tr> <td>1.0</td> <td>16-29</td> <td>100-250</td> <td></td> <td>S-300</td> <td>15</td> </tr> <tr> <td>1.2</td> <td>18-29</td> <td>125-290</td> <td></td> <td>S-300</td> <td>15</td> </tr> <tr> <td>1.6</td> <td>22-32</td> <td>170-320</td> <td></td> <td>S-300</td> <td>15</td> </tr> </tbody> </table> |                                     |                    |                         |            |        |       |        |       |        |      |  | D (mm)         | Welding Parameters                     |                                     |                    | Packing                 |       | Voltage (V) | Current (A) (DC+) |    | spools type | kg / spool | 1.0  | 16-29  | 100-250 |       | S-300 | 15      | 1.2     | 18-29  | 125-290 |        | S-300 | 15     | 1.6  | 22-32 | 170-320 |  | S-300 | 15 |
| D (mm)                              | Welding Parameters   |                                     |                    | Packing                 |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
|                                     | Voltage (V)  | Current (A) (DC+)                   |                    | spools type             | kg / spool |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| 1.0                                 | 16-29  | 100-250                             |                    | S-300                   | 15         |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| 1.2                                 | 18-29  | 125-290                             |                    | S-300                   | 15         |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| 1.6                                 | 22-32  | 170-320                             |                    | S-300                   | 15         |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>REDRYING TEMPERATURE</b>         | not required   |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |
| <b>GAS ACC. EN ISO 14175:</b>       | I1, Argon+He (70-30)   |                                     |                    |                         |            |        |       |        |       |        |      |  |                |  |                                     |                    |                         |       |             |                   |    |             |            |      |        |         |       |       |         |         |        |         |        |       |        |      |       |         |  |       |    |