1. DESCRIPTION.
High ductility lattice girder type DOPPIA LASTRA HD made from hot rolled steel wire according to D.M. 17.01.2018 steel grade B450C for Italian market.

2. CHEMICAL COMPOSITION ON PRODUCT (%).

<table>
<thead>
<tr>
<th></th>
<th>Limits</th>
<th>C %</th>
<th>P %</th>
<th>S %</th>
<th>Cu %</th>
<th>N %</th>
<th>C_eq %</th>
</tr>
</thead>
<tbody>
<tr>
<td>PITTINI</td>
<td>max</td>
<td>0.24</td>
<td>0.055</td>
<td>0.055</td>
<td>0.85</td>
<td>0.014</td>
<td>0.52</td>
</tr>
<tr>
<td>DM 17/01/18</td>
<td>max</td>
<td>0.24</td>
<td>0.055</td>
<td>0.055</td>
<td>0.85</td>
<td>0.014</td>
<td>0.52</td>
</tr>
</tbody>
</table>

3. MECHANICAL PROPERTIES.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Steel grade</th>
<th>Ø (mm)</th>
<th>Weight Tol.</th>
<th>f_y min MPa</th>
<th>f_y max MPa</th>
<th>f_t min MPa</th>
<th>f_t / f_y min</th>
<th>f_t / f_y max</th>
<th>Agt min %</th>
<th>Rt min %</th>
</tr>
</thead>
<tbody>
<tr>
<td>PITTINI</td>
<td>B450C</td>
<td>6 ÷ 8</td>
<td>Note</td>
<td>450c</td>
<td>563c</td>
<td>540c</td>
<td>1.15c</td>
<td>1.35c</td>
<td>7,5c</td>
<td>25</td>
</tr>
<tr>
<td>DM 17/01/18</td>
<td>B450C</td>
<td>6 ÷ 16</td>
<td>Note</td>
<td>450c</td>
<td>563c</td>
<td>540c</td>
<td>1.15c</td>
<td>1.35c</td>
<td>7,5c</td>
<td>25</td>
</tr>
</tbody>
</table>

NOTE: C - characteristic values; test after artificial ageing to 100°C for 1h.
for Ø ≤ 8 mm the permissible deviation is ± 6 %,
for Ø > 8 mm the permissible deviation is ± 4,5 %.

Diameter ratio Ø_min/Ø_max ≥ 0.60

4. STANDARD PACKAGING.
Length: 12 m
Number of pieces for bundle: 18 – 30; number of stirrups for bundle: 2

5. STANDARD IDENTIFICATION.
Each bundle with label reporting:

FERRIERE NORD S.p.A.
I - 33010 OSOPPO (UD) ITALIA
Production plant
D.M. 17/01/18 B450C
TRALICCIO PITTINI HD
Type/length
Lot number

6. STANDARD CERTIFICATION.
Document according to EN 10204 3.1.
Product qualified by Ministero Infrastrutture e Trasporti.

7. IDENTIFICATION MARK.
Mark 4-7
8. GIRDER DIMENSIONS

List of DOPPIA LASTRA HD standard Lattice Girders

<table>
<thead>
<tr>
<th>DOPPIA LASTRA</th>
<th>L (m)</th>
<th>Øi (mm)</th>
<th>Øs (mm)</th>
<th>ds (mm)</th>
<th>ht (cm)</th>
<th>b (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/8/6 h=22.5 mm</td>
<td>12</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>22.5</td>
<td>108</td>
</tr>
<tr>
<td>6/8/6 h=25 mm</td>
<td>12</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>25</td>
<td>108</td>
</tr>
<tr>
<td>6/8/6 h=27 mm</td>
<td>12</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>27</td>
<td>108</td>
</tr>
<tr>
<td>8/8/7 h=32 mm</td>
<td>12</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>32</td>
<td>110</td>
</tr>
<tr>
<td>8/8/7 h=35 mm</td>
<td>12</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>35</td>
<td>110</td>
</tr>
</tbody>
</table>

9. NON STANDARD LATTICE GIRDERS

Non standard lattice girders can be provided on demand and after feasibility evaluation in accordance with the following configurations:
- Length L: from 3m up to 12m in multiple length of 0.2m (for lattice girders with h ≤ 27cm).
- Multiple lengths of 0.10m (cut on the upper welded joint).
- Height between 165 and 360mm, with upper chord diameter 8 mm, lower chord diameter between 6 and 8 mm, stirrup diameter between 6 and 7 mm
- Base b as a function of the height of the lattice girder: for h 165÷285mm b = 108 mm, for h 300÷350mm b = 110 mm

10. DIMENSIONAL TOLERANCES

The following tolerances are valid for both standard and non standard lattice girders:

- Height: +1/-3 mm;
- Width b: ±5mm;
- Length L: +5/-40 mm.
- Stirrup pitch: ± 2.5 mm
- Upper overhang: max 4 mm
- Lower overhang: max 4 mm
- Maximum rising from the flat of lower chords (stirrups excluded):
  - 10mm if L ≤ 8m
  - 15mm if L > 8m
- Sabre: max 15mm