**Qualification Test Record (QTR)**

**NORSOK M-650**

<table>
<thead>
<tr>
<th>QTR. No.:</th>
<th>2205 - 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rev. No.:</td>
<td>5</td>
</tr>
</tbody>
</table>

**Manufacturer**
- **name/address/Web page:** Outokumpu Stainless AB, Avesta Works, P.O. Box 74, SE 77422 Avesta, Sweden www.outokumpu.com

**Reference standard**
- NORSOK M-650, Edition 4

**Material designation and MDS No.:**
- ASTM A240: UNS S32205, UNS S31803; EN 10088-2 & 10028-7: 1.4462
- MDS D45, rev 5 or Outokumpu MDS D45 rev3 (see Other information)

**Manufacturing Summary doc. No.:**
- MS NORSOK 18 - 2205

**Revis. No.:** 3

**Products and manufacturing process(es):**
- Hot and cold rolled stainless steel plate, sheet and strip
  - Hot rolled: Melting – Casting – Hot Rolling – Annealing and pickling – Finishing and testing
  - Cold rolled: Melting – Casting – Hot Rolling – Annealing and pickling – Cold Rolling - Annealing and pickling – Finishing and testing

**Mandatory conditions and sub-contractors:**

**Other information:**
1. Verification of heat treatment procedure has been carried out. Ref report no 2012-009-v3.
2. The material may also be delivered according to Outokumpu MDS D45 rev 3, with enhanced tensile properties at room temperature: Rp02 min 560 MPa, Rm min 750 MPa, A50 and A min 25%.
3. Temperature of quenching medium in AP-line is 50-55 C.
4. Slab supplier may also be Outokumpu Tornio Works.

**Qualification expires:** September 2023

## Tested and qualified thickness and weight

<table>
<thead>
<tr>
<th>Process(es)</th>
<th>Test record No.</th>
<th>Tested thickness mm</th>
<th>Qualified thickness mm</th>
<th>Test piece weight kg</th>
<th>Qualified weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Rolled plate and strip</td>
<td>2205 HR</td>
<td>8</td>
<td>Max 10</td>
<td>N/A</td>
<td>N/A</td>
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<td></td>
<td>Qualification test report</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cold Rolled plate, sheet and strip</td>
<td>2205 CR</td>
<td>6</td>
<td>Max 7,5</td>
<td>N/A</td>
<td>N/A</td>
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<td>Qualification test report</td>
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</table>

## Qualification/acceptance signatures

- **Manufacturer:** Outokumpu Stainless AB, Avesta Works
- **Prepared by/Date:** Kristina Wretstam 2020-10-08
- **Checked by/Date:** Johan Nordström 2020-10-08
- **Qualification/Approved by:** Aker Solutions
  - **Signature/Date:** 15/04/2020

The manufacturer and this QTR are evaluated and found to be in compliance with the requirements of NORSOK M-650 for supply of the above listed products and materials.

This acceptance does not exempt any purchaser from his responsibility to ensure that this qualification is valid for his products within the essential variables of NORSOK M-650.