CUSTOMER: BP NORWAY UA
ORDER NO.: BPN-048-AUG06
ITEM NO.: 1
SHIPPER: SUMITOMO CORPORATION 057 KEB 6026/1 6P19S103901
COMMODITY: SEAMLESS STAINLESS STEEL TUBING VAM TOP HC WITH REGULAR COUPLING
STANDARD: API 5CT GROUP2 GR.L80-TYPE 13CR
SPECIFICATION: TSP-1112RD

MILL WORK NO.: BYYF1353
O.D.: 7 inch
W.T.: 29.00 lb/ft
LENGTH: MIN. 38 feet MAX. 42.5 feet
QUANTITY: 157 pcs.
TOTAL LENGTH: 1999.35 m
MASS: 86372 kg

HEAT NO. PRODUCTS PCS. HEAT NO. PRODUCTS PCS. HEAT NO. PRODUCTS PCS.
F61B088 119  F61B089 28  F711075 10
HEAT TREATMENT: QUENCHED & TEMPERED

CHEMICAL COMPOSITION (%)

| SPEC. MIN. | *1 R: LADLE & PRODUCT ANALYSIS |
| MAX. R | L: LADLE ANALYSIS |
| P | PRODUCT ANALYSIS |

HEAT NO.
F61B088
L 18 23 48 15 1 11248 15 1
P 19 23 48 15 2 11262 14 3
P 19 23 48 15 2 11261 14 3
F61B089
L 19 23 48 12 0 11251 13 1
P 19 23 48 14 2 11262 13 3
P 19 23 48 13 2 11257 13 3
F711075
L 19 24 48 14 0 11247 10 4
P 20 24 49 14 1 11262 10 5
P 20 24 49 15 1 11256 10 6

TENSILE TEST

| SPEC. MIN. | H/T LOT | L B | P 80.0 | 95.0 |
| MAX. NO. | L B | P 95.0 | EL % |
| TYPE OF SPECIMEN | STRIP 1" WIDTH |
| KIND OF YS | 0.5% EXTENSION |
| UNDER LOAD |
| *1 DIRECTION |
| L: LONGITUDINAL |
| *2 SAMPLING POSITION |
| B: BASE METAL |
| BT: BASE METAL (TOP) |
| BB: BASE METAL (BOTTOM) |
| *3 UNIT |

SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.
### Impact Test

<table>
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<th>SPEC. MAX.</th>
<th>MIN. H/T LOT</th>
<th>MAX. NO.</th>
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<td>L B E F</td>
<td>L B E F</td>
<td>L B S %</td>
<td>L B S %</td>
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<tr>
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**14.0˚F 2V 10x7.50**

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<tr>
<th>*1 DIRECTION</th>
<th>*2 SAMPLING POSITION</th>
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<td>B:BASE METAL</td>
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<td>BT:BASE METAL(TOP)</td>
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<td>BB:BASE METAL(BOTTOM)</td>
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**HEAT NO.**

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</table>

**1) VISUAL AND DIMENSIONAL INSPECTION**

**2) HYDROSTATIC TEST 7500psi*5s**

**THE FOLLOWING OPERATIONS HAVE BEEN CARRIED OUT ON THIS MATERIAL AND WHERE FOUND TO COMPLY WITH THE CALL OFF AND CONTRACT REQUIREMENTS.**

**THE SPECIFIC REQUIREMENTS ARE DETAILED IN THE SPECIFICATION REFERRED TO ON PAGE 1 OF THIS MILL CERTIFICATE.**

**2) THIS CERTIFICATION IS IN ACCORDANCE EN10204-3.1**

SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.
## HARDNESS TEST (HRC)

<table>
<thead>
<tr>
<th>SPEC. MIN. MAX.</th>
<th>-</th>
<th>-</th>
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<tr>
<td>H/T LOT NO.</td>
<td>SAMPLING POSITION</td>
<td>IMPRESSION NO.</td>
<td>IMPRESSION NO.</td>
<td>IMPRESSION NO.</td>
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<td>HEAT NO.</td>
<td>AVG. QUAD</td>
<td>OUTER WALL</td>
<td>MID WALL</td>
<td>INNER WALL</td>
<td>(1)</td>
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<tr>
<td>F61B088 001</td>
<td>TOP 22.2</td>
<td>A 22.1 21.6 21.8 21.8 22.5 22.4 22.1 22.3 22.3 22.5 22.7 22.5 0.7</td>
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<tr>
<td></td>
<td>BOTTOM 21.8</td>
<td>A 21.4 21.7 22.1 21.7 22.2 22.3 22.3 22.3 21.3 21.4 21.6 21.4 0.9</td>
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<td>A 20.0 20.3 19.7 20.0 20.9 20.4 21.0 20.8 20.0 19.8 20.0 19.9 0.9</td>
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</table>

V.A.: VARIATION AVERAGE MAX. - MIN.

SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.
## TEMPERING TEMPERATURE

<table>
<thead>
<tr>
<th>HEAT NO.</th>
<th>PRODUCTS PCS. (PCS.)</th>
<th>HEAT LOT/NO.</th>
<th>SETTING TEMPERING TEMPERATURE (DEG.C)</th>
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<td>93</td>
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<td>710</td>
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<tr>
<td>F61B088</td>
<td>26</td>
<td>002</td>
<td>710</td>
</tr>
<tr>
<td>F61B089</td>
<td>28</td>
<td>003</td>
<td>710</td>
</tr>
<tr>
<td>F711075</td>
<td>10</td>
<td>004</td>
<td>710</td>
</tr>
<tr>
<td>TOTAL</td>
<td>157</td>
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</tr>
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</table>

**REMARKS**: TEMPERING TEMPERATURE CONTROL RANGE: SETTING TEMPERATURE + , - 10 DEG.C
MOTHER PIPE WORK NO.: WCFK3306

HEAT TREATMENT: QUENCHED & TEMPERED

CHEMICAL COMPOSITION (%)

<table>
<thead>
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<th>SPEC. MIN.</th>
<th>SPEC. MAX.</th>
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<td>Si: 25</td>
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<tr>
<td>Mn: 100</td>
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<td>P: 20</td>
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<td>Cu: 1000</td>
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<tr>
<td>Cr: 50</td>
<td>Cr: 50</td>
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<tr>
<td>Ni: 50</td>
<td>Ni: 50</td>
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<tr>
<td>Al: 1200</td>
<td>Al: 1200</td>
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</table>

*1: R: LADLE & PRODUCT ANALYSIS
*2: L: LADLE ANALYSIS
*3: P: PRODUCT ANALYSIS

HEAT NO.

<table>
<thead>
<tr>
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TENSILE TEST

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IMPACT TEST

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<td>(1)</td>
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<tr>
<td>(3)</td>
<td>AVG.</td>
</tr>
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SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.
THE FOLLOWING OPERATIONS HAVE BEEN CARRIED OUT ON THIS MATERIAL AND WHERE FOUND TO COMPLY WITH THE CALL OFF AND CONTRACT REQUIREMENTS.

THE SPECIFIC REQUIREMENTS ARE DETAILED IN THE SPECIFICATION REFERRED TO ON PAGE 1 OF THIS MILL CERTIFICATE.

1)  
A) VISUAL AND DIMENSIONAL INSPECTION  
B) VOLUMETRIC ULTRASONIC EXAMINATION FOR LONGITUDINAL AND TRANSVERSE INDICATIONS IF REQUIRED BY SPECIFICATION  
C) MAGNETIC PARTICLE EXAMINATION OF COMPLETED COUPLING  
D) RESIDUAL MAGNETISM  
E) HARDNESS IF REQUIRED BY SPECIFICATION  

2)  THIS CERTIFICATION IS IN ACCORDANCE EN10204-3.1

SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.

IN-SPEC

MANAGER, QUALITY ASSURANCE SECTION
## HARDNESS TEST (HRC)

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<th>SPEC. MIN.</th>
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<th>SAMPLING POSITION</th>
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<th>MID WALL IMPRESSION NO.</th>
<th>INNER WALL IMPRESSION NO.</th>
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<td>NAME</td>
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V.A.: VARIATION AVERAGE MAX.-MIN.

SMI CERTIFY THAT THE MATERIAL HEREIN DESCRIBED HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND IS FULLY IN COMPLIANCE.