

MILL TEST CERTIFICATE



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|---------------|---------------------------------|
| Contract No. | |
| Customer | DUFERCO |
| L/C No. | |
| P/O No. | 32201411C321 |
| Commodity | H-BEAM |
| Specification | ASTM A572 G50/A992/ CSA 350W |

| | |
|-----------------|--|
| Head Office | 63, Jungbong-daero, Dong-gu, Incheon, 401-712, S. Korea |
| Certificate No. | IH20141103208 - 5 |
| Class Cert. No. | |
| Date of Issue | 2014-11-17 |

| Dimensions & Length | Heat No. | Pieces Weights (kg) | Chemical Composition (%) | | | | | | | | | | | Tensile Test | | | | Impact Test (V-notch) | | | | Remarks (Impact Specimen Size) | | | |
|---------------------------|----------|------------------------|--------------------------|----|-----|-------|-----|----------|----------|---------|----|----|-------------------|---------------------|-------------------|---------------------------|----------------|-----------------------|------|------|---|-----------------------------------|--|--|--|
| | | | C | Si | Mn | P | S | Cu Ni | Mo Cr | Al V | Nb | Sn | CE ⁽¹⁾ | Tensile Strength | Yield point | Elongation ⁽²⁾ | Yield Ratio | AVG | 1 | 2 | 3 | | | | |
| | | | ×100 | | | ×1000 | | ×100 | | ×1000 | | | ×100 | | N/mm ² | | % | | () | C | | | | | |
| 14X14-1/2X132 40.00 FT | N 026066 | 4 9,576 | 18 | 17 | 101 | 21 | 1.1 | 21 | 1 | 6 | 7 | 9 | 26 | 6 | 10 | 39 | 562 | 396 | 26.0 | 0.70 | | | | | |
| 14X14-1/2X132 40.00 FT | N 026067 | 2 4,788 | 18 | 14 | 99 | 22 | 1.2 | 20 | 2 | 6 | 9 | 9 | 26 | 6 | 10 | 39 | 579 | 416 | 24.0 | 0.72 | | | | | |
| 16X7X40 40.00 FT | D 122862 | 16 11,616 | 16 | 14 | 60 | 28 | 6 | 24 | 3 | 7 | 9 | 12 | 1 | 20 | 15 | 31 | 504 | 374 | 26.5 | 0.74 | | | | | |
| 16X7X40 40.00 FT | D 122863 | 28 20,328 | 16 | 14 | 61 | 23 | 7 | 26 | 3 | 6 | 11 | 14 | 1 | 19 | 14 | 32 | 512 | 381 | 25.5 | 0.74 | | | | | |
| 18X6X35 40.00 FT | E 178161 | 25 15,875 | 17 | 14 | 52 | 24 | 9 | 27 | 2 | 5 | 9 | 10 | 16 | 4 | 11 | 31 | 556 | 446 | 22.5 | 0.80 | | | | | |
| 18X6X35 40.00 FT | E 178163 | 9 5,715 | 17 | 14 | 52 | 24 | 6 | 24 | 3 | 5 | 9 | 12 | 13 | 4 | 10 | 31 | 550 | 432 | 22.0 | 0.78 | | | | | |
| 18X6X35 40.00 FT | E 178164 | 1 635 | 17 | 14 | 50 | 24 | 7 | 26 | 2 | 6 | 9 | 11 | 15 | 4 | 13 | 31 | 546 | 427 | 23.0 | 0.78 | | | | | |
| 18X6X35 40.00 FT | E 178165 | 15 9,525 | 17 | 14 | 56 | 27 | 7 | 27 | 3 | 4 | 9 | 11 | 13 | 4 | 13 | 32 | 524 | 408 | 24.5 | 0.78 | | | | | |
| 18X6X35 40.00 FT | E 178166 | 35 22,225 | 16 | 14 | 55 | 27 | 8 | 29 | 2 | 5 | 9 | 12 | 13 | 4 | 13 | 31 | 545 | 435 | 22.5 | 0.80 | | | | | |
| SUB TOTAL | | 135 100,283 | | | | | | | | | | | | | | | | | | | | | | | |

(Note) (1) Ceq: (CE=C+Mn/6+Cr/5+V/5+Mo/5+Ni/15+Cu/15) (2) Gauge length: 200 mm (3) Yield Ratio = YP/TS

J. C. Ahn
General Manager of Q.A Team

WE HEREBY CERTIFY THAT THE MATERIAL HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ABOVE ORDER

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