



| | |
|---------------|---------------------------------|
| Contract No. | |
| Customer | DUFERCO |
| L/C No. | |
| P/O No. | 32201506C111 |
| Commodity | H-BEAM |
| Specification | ASTM A572 G50/A992/ CSA 350W |

MILL TEST CERTIFICATE

EN 10204(2004) TYPE 3.1

| | | |
|---|---|---|
|  | |  |
| Head Office | 63, Jungbong-daero, Dong-gu, Incheon, 401-712, S. Korea | |
| Certificate No. | IH20150700674 - 2 | |
| Class Cert. No. | | |
| Date of Issue | 2015-07-03 | |

| 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 | | | | |
| 21X8-1/4X62 40.00 FT | E 183275 | 16 18,000 | 18 | 16 | 96 | 21 | 13 | 29 11 | 3 15 | 4 14 | 4 | 21 | 41 | 557 551 | 412 405 | 25.5 26.0 | 0.74 0.74 | | | | | |
| 21X8-1/4X62 40.00 FT | E 183276 | 2 2,250 | 18 | 20 | 99 | 31 | 5 | 25 9 | 2 20 | 5 14 | 5 | 13 | 41 | 559 555 | 412 405 | 24.0 25.0 | 0.74 0.73 | | | | | |
| 21X12-1/4X101 40.00 FT | N 028973 | 3 5,496 | 18 | 14 | 96 | 31 | 9 | 25 9 | 2 18 | 3 15 | 4 | 15 | 41 | 543 539 | 385 383 | 25.5 27.0 | 0.71 0.71 | | | | | |
| 21X12-1/4X101 40.00 FT | N 028974 | 3 5,496 | 18 | 16 | 99 | 27 | 8 | 26 9 | 2 15 | 4 17 | 6 | 14 | 41 | 540 537 | 389 388 | 26.5 27.0 | 0.72 0.72 | | | | | |
| 21X12-1/4X101 40.00 FT | N 028976 | 12 21,984 | 18 | 15 | 99 | 30 | 8 | 24 9 | 2 13 | 3 16 | 5 | 16 | 40 | 540 538 | 390 392 | 26.0 27.5 | 0.72 0.73 | | | | | |
| 24X9X94 40.00 FT | N 028947 | 5 8,530 | 18 | 16 | 97 | 31 | 12 | 22 10 | 2 13 | 3 15 | 4 | 10 | 40 | 532 529 | 377 375 | 25.5 26.0 | 0.71 0.71 | | | | | |
| 24X9X94 40.00 FT | N 028948 | 6 10,236 | 18 | 16 | 99 | 25 | 11 | 19 9 | 2 15 | 3 15 | 4 | 17 | 40 | 538 535 | 381 379 | 25.5 26.0 | 0.71 0.71 | | | | | |
| 24X9X94 40.00 FT | N 028950 | 1 1,706 | 18 | 14 | 98 | 22 | 12 | 23 10 | 2 14 | 3 16 | 5 | 11 | 40 | 550 546 | 392 390 | 26.0 26.5 | 0.71 0.71 | | | | | |
| TOTAL | | 262 150,624 | ===== E N D ===== | | | | | | | | | | | | | | | | | | | |

(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