

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

## MILL TEST CERTIFICATE



|                 |  |
|-----------------|--|
| Head Office     | 63, Jungbong-daero, Dong-gu,<br>Incheon, 401-712, S. Korea |
| Certificate No. | IH20141103208 - 16   |
| Class Cert. No. |  |
| Date of Issue   | 2014-11-17   |

| Dimensions & Length   | Heat No. | Pieces<br>Weights (kg) | Chemical Composition (%) |    |    |       |    |    |      |    |    |       |                   | Tensile Test     |             |                           | Impact Test (V-notch) |                   |      |      | Remarks<br>(Impact Specimen Size) |   |     |   |  |  |
|-----------------------|----------|------------------------|--------------------------|----|----|-------|----|----|------|----|----|-------|-------------------|------------------|-------------|---------------------------|-----------------------|-------------------|------|------|-----------------------------------|---|-----|---|--|--|
|                       |          |                        | C                        | Si | Mn | P     | S  | Cu | Mo   | Al | Nb | Sn    | CE <sup>(1)</sup> | Tensile Strength | Yield point | Elongation <sup>(2)</sup> | Yield Ratio           | AVG               | 1    | 2    |                                   | 3 |     |   |  |  |
|                       |          |                        | ×100                     |    |    | ×1000 |    |    | ×100 |    |    | ×1000 |                   |                  | ×100        |                           |                       | N/mm <sup>2</sup> |      | %    |                                   |   | (°) | C |  |  |
| 27X10X84<br>40.00 FT  | N 025962 | 3<br>4,572             | 19                       | 16 | 67 | 28    | 10 | 22 | 3    | 6  | 12 | 14    | 5                 | 9                | 36          | 552                       | 427                   | 22.5              | 0.77 |      |                                   |   |     |   |  |  |
| 27X10X84<br>40.00 FT  | N 025963 | 5<br>7,620             | 21                       | 19 | 66 | 22    | 7  | 22 | 2    | 6  | 8  | 11    | 13                | 5                | 9           | 37                        | 546                   | 421               | 23.0 | 0.77 |                                   |   |     |   |  |  |
| 27X10X84<br>40.00 FT  | N 025969 | 4<br>6,096             | 18                       | 17 | 65 | 26    | 12 | 24 | 2    | 5  | 9  | 11    | 13                | 5                | 10          | 34                        | 538                   | 404               | 25.0 | 0.76 |                                   |   |     |   |  |  |
| 27X10X94<br>40.00 FT  | N 025768 | 6<br>10,236            | 18                       | 16 | 66 | 21    | 10 | 20 | 2    | 6  | 7  | 10    | 25                | 5                | 13          | 34                        | 525                   | 414               | 27.0 | 0.79 |                                   |   |     |   |  |  |
| 27X10X94<br>40.00 FT  | N 025769 | 12<br>20,472           | 18                       | 15 | 64 | 19    | 8  | 21 | 2    | 6  | 7  | 11    | 22                | 4                | 10          | 34                        | 527                   | 411               | 26.0 | 0.78 |                                   |   |     |   |  |  |
| 27X10X102<br>40.00 FT | N 025958 | 9<br>16,659            | 18                       | 17 | 66 | 29    | 9  | 26 | 3    | 6  | 9  | 14    | 16                | 5                | 11          | 35                        | 527                   | 384               | 26.0 | 0.73 |                                   |   |     |   |  |  |
| 27X10X102<br>40.00 FT | N 025959 | 6<br>11,106            | 19                       | 21 | 65 | 28    | 7  | 21 | 3    | 8  | 7  | 13    | 15                | 8                | 9           | 35                        | 533                   | 394               | 26.0 | 0.74 |                                   |   |     |   |  |  |
| 27X10X114<br>40.00 FT | N 025750 | 2<br>4,136             | 19                       | 13 | 65 | 18    | 8  | 17 | 1    | 6  | 7  | 9     | 23                | 3                | 34          | 34                        | 537                   | 420               | 26.5 | 0.74 |                                   |   |     |   |  |  |
| 27X10X114<br>40.00 FT | N 025957 | 9<br>18,612            | 18                       | 17 | 66 | 22    | 10 | 26 | 3    | 6  | 10 | 13    | 13                | 5                | 10          | 35                        | 540                   | 387               | 26.5 | 0.72 |                                   |   |     |   |  |  |
| SUB TOTAL             |          | 56<br>99,509           |                          |    |    |       |    |    |      |    |    |       |                   |                  |             |                           |                       |                   |      |      |                                   |   |     |   |  |  |

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