# MILL'S QUALITY CERTIFICATES

HISTEEL CO. , LTD.

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CERTIFICATE NO : HIE2007-0014 PAGE : 2

DATE OF ISSUE : Jan. 25, 2007

L/C NO (P/O NO) : 1103044854

COMMODITY : 1,395.71MT OF WELDED STEEL PIPE, ASTM 500GR-B AS PER FOLLOWING B/ DOWN

SPECIFICATION : ASTM 500 GR-B

CUSTOMER : DUFERCO SA

| TYPE OF PIPE END | | DIMENSION (OUTDIA. × THICK. × LENGTH) | QUAN-TITY (PCS) | WEIGHT (KG) | HYDRO-STATIC TEST Kg/㎠ PSI | ※5 | HEAT-NO. | PHYSICAL PROPERTIES YIELD STREN-GTH | TENSILE STRENGTH B ※6 | W ※7 | (EL) | | CHEMICAL COMPOSITION C | Si | Mn | P | S | Cu | Ni | Cr | Mo | Nb | V | Ti | B | HARDNESS | Ceq | IMPACT TEST (0 ℃) ENERGY | SHEAR-VALUE | REMARK (HARDNESS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ※1 | ※2 | ※3 ※4 | | | | | | PSI | | | % | ※8 | ×100 | | | ×1000 | | ×100 | | | | ×1000 | | | | HV | ×1000 | JOULE | % | |
| BPE | NB | 8"X4" X 0.500" X 40' | 5 | 3,200 | | | H060901 | 53,936 | 67,421 | | 23 | H | 17 | 9 | 46 | 16 | 4 | | | | | | | | | | | | | |
| BPE | NB | 8"X4" X 0.500" X 40' | 16 | 10,241 | | | SB52702 | 46,542 | 64,086 | | 29 | H | 19 | 1 | 77 | 14 | 5 | | | | | | | | | | | | | |
| BPE | NB | 8"X6" X 0.375" X 40' | 68 | 40,209 | | | R061011 | 47,122 | 69,595 | | 25 | H | 17 | 8 | 98 | 17 | 14 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.250" X 40' | 72 | 33,708 | | | C070104 | 46,252 | 62,346 | | 31 | H | 12 | 1 | 63 | 15 | 7 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.313" X 40' | 3 | 1,734 | | | SP41557 | 47,412 | 70,465 | | 25 | H | 18 | 1 | 78 | 13 | 8 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.313" X 40' | 44 | 25,428 | | | H060904 | 49,152 | 69,161 | | 25 | H | 17 | 9 | 44 | 6 | 9 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.313" X 40' | 32 | 18,493 | | | H061126 | 54,806 | 67,566 | | 26 | H | 18 | 7 | 44 | 9 | 6 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.375" X 40' | 46 | 31,463 | | | H060903 | 54,661 | 68,291 | | 26 | H | 18 | 8 | 47 | 15 | 6 | | | | | | | | | | | | | |
| BPE | NB | 8"X8" X 0.500" X 40' | 56 | 49,636 | | | H060902 | 53,502 | 66,696 | | 26 | H | 18 | 8 | 47 | 16 | 10 | | | | | | | | | | | | | |
| | | TOTAL | 1,406 | 562,026 | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ※9 P. S. A | ※10 VISUAL & DIMENSION TEST | ※11 FLATTENING (B) TEST | ※12 WELD DUCTILITY TEST | ※13 NONDESTRUCTIVE TEST ( U.T ) | ※14 DRIFT TEST | ※15 FLARING TEST | ※16 CRUSH TEST | ※17 REVERSE FLATTENING TEST |
|---|---|---|---|---|---|---|---|---|
| | GOOD | | | | | | | |

NOTE 1 ※1 Type of pipe End

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|---|---|
| BPE :Black Plain End Square-cut | GPE :Galvanized Plain End Square-cut |
| BPEB :Black Plain End Beveled | GPEB :Galvanized Plain End Beveled |
| BTC :Black Threaded & Coupled | GTC :Galvanized Threaded & Coupled |
| BVJ :Black Victaulic Joint | GVJ :Galvanized Victaulic Joint |
| ETC :Enameled Threaded & Coupled | |

※ 2 NB:Norminal Bore, OD:Outside Diameter
※ 3 Unit (M:mm, I:Inch)
※ 4 Unit (M:Meter, F:Feet, I:Inch)
※ 5 G:Good
※ 6 Base Metal
※ 7 W : Weld Part
※ 8 H:Heat (Ladle) Analysis, P:Product Analysis
※ 9 POST SEAM ANNEALING
※10 Visual & Dimension Test
※11 Flattening or Bending Test
※12 Weld Ductility Test
※13 Nondestructive Test
※14 Drift Test
※15 Flaring Test
※16 Crush Test
※17 Reverse Flattening Test

ORIGINAL

SUPERVISOR

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER

INSPECTION MANAGER