CERTIFICATE NO(성적서 번호) : C501457 Page 1 of 1
DATE OF ISSUE(발행일자) : 2018-05-10
CONTRACT(P/O) NO.(계약번호) : 26550
PR NO.(주문서번호) : F180200166
COMMODITY(제품명) : E.R.W. CARBON STEEL PIPE
SPECIFICATION(제품규격) : ASTM A53 B

# 검사증명서
# MILL TEST CERTIFICATE
## EN 10204 TYPE 3.1 - 2004

CUSTOMER(고객사): 현대종합상사(주)

HYUNDAI STEEL

울산공장 : 울산광역시 북구 염포로 706
706, Yeompo-ro, Buk-gu, Ulsan, Korea

| No. | TYPE OF PIPE END ※1 | SIZE OUT-DIA×THICK×LENGTH (외경×두께×길이) | PCS (본) | WEIGHT (KG) | TOTAL LENGTH (M) | HEAT No. | Hydrostatic Test Pressure (PSI) | Hydrostatic Test Time (SEC) | Spec. | ※2 | Tensile Properties(Gage Length : 2 inch) Tensile Strength Base (MPa) | Tensile Strength Weld (MPa) | Yield Strength (MPa) | Y/R Rate (%) | E.L (%) | Hardness Test ※3 Max. Value | ※2 ※3 | Hardness Test & CVN Impact Test CVN Impact Test('C) Absorbed Energy(Joule) | Shear Area (%) | D.W.T Test( 'C) Shear Area(%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Min. | | 415 | 415 | 240 | | 29 | | | Specimen size: 1 2 3 avg | | 1 2 avg |
| | | | | | | | | | Max. | | | | | | | | | Criteria : In the case of 10×10) | | |
| 1 | EB BE | 14" X 0.500 " X 6.150 M | 32 | 21,134 | 196.8 | SQ52741 | 1500 | 5 | | T | 481 | 510 | 324 | | 41 | | | | | |
| | | TOTAL | 32 | 21,134 | 196.8 | | | | | | | | | | | | | | | |

| No. | Heat No. | Spec. | ※4 | Chemical Composition(%) C | Si | Mn ※7 | P | S | Cu | Ni | Cr | Mo | V | CM3 ※10 | 2:×100 3:×1000 4:×10000 | Zn-Coating Test Zn Coating | Copper Sulfate Test Time | Copper Sulfate Test Result | HC-Test Collapse Pressure | H.I.C Test CLR | CTR | CSR | S.S.C.C Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ※4 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | | | | | | | | | |
| | | Min. | | | | | | | | | | | | | | | | | psi | % | % | % | |
| | | Max. | | 30 | | 120 | 50 | 45 | 40 | 40 | 40 | 150 | 80 | 1000 | | | | | | | | | |
| 1 | SQ52741 | | H | 19 | 1 | 85 | 11 | 2 | | | | | | | | | | | | | | | |
| | | | P | 20 | 1 | 82 | 11 | 2 | 3 | 1 | 2 | 2 | 2 | 88 | | | | | | | | | |
| | | | P | 20 | 1 | 81 | 11 | 2 | 3 | 1 | 2 | 2 | 2 | 69 | | | | | | | | | |

Remark

※1) Type of pipe end(관종)
EB:ERW Black BE:Bevel End
※2) L: Longitudinal, T: Transverse
※3) B: Base, W: Weld Line, H: Heat Affected Zone
※4) H: Heat(Ladle) Analysis, P: Product Analysis
※7) For each reduction of 0.01% below the specified C max.
an increase of 0.06% Mn above the specified max.
will be permitted up to a max. of 1.65%
※10) CM3=Cu+Ni+Cr+Mo+V
※ SPEC YEAR - ASTM A53(2012ED)

| Heat Treatment | Non-Destructive Test (U.T) | Flattening / Bending Test | Visual & Dimension |
|---|---|---|---|
| GOOD | GOOD | GOOD | GOOD |

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SURVEYOR

T. h. Lim
QA Manager

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