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CONTRACT(P/O) NO.(계약번호) : 27377
PR NO.(주문서번호) : F180900121
COMMODITY(제품명) : E.R.W. CARBON STEEL PIPE
SPECIFICATION(제품규격) : ASTM A53 B



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

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

CUSTOMER(고객사): 현대종합상사(주)

| 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. Min. / Max. | ※2 | Tensile Strength Base MPa | Tensile Strength Weld MPa | Yield Strength MPa | Y/R Rate % | E.L % | Hardness Test ※3 | Max. Value | Hardness Test & CVN Impact Test ※2 ※3 | Specimen size | CVN Impact Test(℃) Absorbed Energy(Joule) 1 | 2 | 3 | avg | Shear Area (%) | D.W.T Test(℃) Shear Area(%) 1 | 2 | avg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Min. | | 415 | 415 | 240 | | | | | | | | | | | | | | |
| | | | | | | | | | Max. | | | | | | | | | | | Criteria : In the case of 10×10) | | | | | | | |
| 1 | EB BE | 24" X 0.375 " X 6.150 M | 21 | 18,195 | 129.15 | G81882 | 660 | 5 | | T | 476 | 485 | 304 | | 43 | | | | | | | | | | | | |
| 2 | EB BE | 24" X 0.375 " X 6.150 M | 35 | 30,324 | 215.25 | SU20216 | 660 | 5 | | T | 463 | 456 | 283 | | 44 | | | | | | | | | | | | |
| | | TOTAL | 56 | 48,519 | 344.4 | | | | | | | | | | | | | | | | | | | | | | |

| No. | Heat No. | Spec. | ※4 | C | Si | Mn ※7 | P | S | Cu | Ni | Cr | Mo | V | CM3 ※10 | Zn Coating | Copper Sulfate Test Time | Copper Sulfate Test Result | HC-Test Collapse Pressure | CLR | CTR | CSR | S.S.C.C Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Chemical Composition(%) 2:×100 3:×1000 4:×10000 | | | | | | | | | | | Zn-Coating Test | | | HC-Test | H.I.C Test | | | |
| | | | | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | | Time | Result | psi | % | % | % | |
| | | Min. | | | | | | | | | | | | | | | | | | | | |
| | | Max. | | 30 | | 120 | 50 | 45 | 40 | 40 | 40 | 150 | 80 | 1000 | | | | | | | | |
| 1 | G81882 | | H | 16 | 1 | 67 | 15 | 5 | | | | | | | | | | | | | | |
| | | | P | 15 | 1 | 68 | 16 | 5 | 5 | 1 | 4 | 2 | 1 | 109 | | | | | | | | |
| | | | P | 15 | 1 | 69 | 16 | 5 | 5 | 2 | 4 | 2 | 1 | 112 | | | | | | | | |
| 2 | SU20216 | | H | 18 | 1 | 52 | 12 | 5 | | | | | | | | | | | | | | |
| | | | P | 18 | 1 | 52 | 11 | 4 | 1 | 1 | 2 | 1 | 1 | 39 | | | | | | | | |
| | | | P | 18 | 1 | 51 | 11 | 4 | 1 | 1 | 2 | 1 | 1 | 39 | | | | | | | | |

**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)

COPY

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

SURVEYOR

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T. h. lim
QA Manager

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