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 COMMODITY(재품명) : E.R.W. CARBON STEEL PIPE
 SPECIFICATION(제품규격) : ASTM A53 B

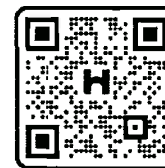
검사증명서

MILL TEST CERTIFICATE

EN 10204 TYPE 3.1 - 2004



출산공장 : 울산광역시 북구 영포로 706
 706, Yeompo-ro, Buk-gu, Ulsan, Korea



CUSTOMER(고객사): 현대중합상사(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 | | Spec. | Tensile Properties(Gage Length : 2 inch) | | | | Hardness Test | | Hardness Test & CVN Impact Test | | | | D.W.T Test(°C) | | | | | |
|-------|------------------------|--|------------|----------------|---------------------|----------|------------------|------|-------|--|------|----------------|----------|---------------|------------|---------------------------------|--|--|---------------|-----------------|--|--|--|--|--|
| | | | | | | | Pressure | Time | | Tensile Strength | | Yield Strength | Y/R Rate | EL | Max. Value | CVN Impact Test(°C) | | | Shear Area(%) | | | | | | |
| | | | | | | | | | | Base | Weld | | | | | Absorbed Energy(Joule) | | | Shear Area(%) | | | | | | |
| | | | | | | | PSI | SEC | | MPa | MPa | MPa | % | % | *2 | 1 2 3 avg | | | 1 2 avg | | | | | | |
| 1 | EB BE | 12" X 0.225" X 6.150 M | 84 | 23,159 | 516.6 | SP09229 | 742 | 5 | T | 489 | 474 | 346 | | 40 | | | | | | | | | | | |
| 2 | EB BE | 12" X 0.225" X 6.150 M | 481 | 132,614 | 2,968.15 | SQ65081 | 742 | 5 | T | 471 | 464 | 287 | | 40 | | | | | | | | | | | |
| TOTAL | | | 565 | 155,773 | 3,474.75 | | | | | | | | | | | | | | | | | | | | |

| No. | Heat No. | Spec. | Chemical Composition(%) 2:×100 3:×1000 4:×10000 | | | | | | | | | | | Zn-Coating Test | | HC-Test | H.I.C Test | | | S.S.C.C Test | Remark | | | |
|-----|----------|-------|--|------|-------|------|------|------|------|------|------|------|---------|-----------------|---------------------|-------------------|------------|-----|-----|--------------|--------|---|--|--|
| | | | C | Si | Mn *7 | P | S | Cu | Ni | Cr | Mo | V | CMn *10 | Zn Coating | Copper Sulfate Test | Collapse Pressure | CLR | CTR | CSR | | | | | |
| | | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Time | Result | psi | % | % | | | % | | |
| | | | 30 | 120 | 50 | 45 | 40 | 40 | 40 | 150 | 80 | 1000 | | | | | | | | | | | | |
| 1 | SP09229 | H | 17 | 1 | 50 | 12 | 3 | | | | | | | | | | | | | | | | | *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) CMn=Cu+Ni+Cr+Mo+V * SPEC YEAR - ASTM A53(2012ED) |
| | | P | 17 | 1 | 50 | 13 | 3 | 2 | 1 | 2 | 2 | 63 | | | | | | | | | | | | |
| 2 | SQ65081 | H | 18 | 1 | 48 | 13 | 4 | | | | | | | | | | | | | | | | | |
| | | P | 18 | 1 | 50 | 13 | 3 | 2 | 1 | 3 | 2 | 64 | | | | | | | | | | | | |
| | | H | 18 | 1 | 48 | 13 | 4 | | | | | | | | | | | | | | | | | |
| | | P | 18 | 1 | 48 | 13 | 4 | 2 | 1 | 2 | 1 | 55 | | | | | | | | | | | | |

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

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J. h. Lim
 QA Manager

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