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 CONTRACT(P/O) NO.(계약번호) : 25598
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 COMMODITY(제품명) : E.R.W. CARBON STEEL PIPE
 SPECIFICATION(제품규격) : ASTM A53 B

검사증명서

MILL TEST CERTIFICATE

EN 10204 TYPE 3.1 - 2004



출산공장 : 울산광역시 북구 염포로 706
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CUSTOMER(고객사): 현대중합상사(주)

| No. | TYPE OF PIPE END ※1 | SIZE OUT-DIA×THICK×LENGTH (외경×두께×길이) | PCS (본) | WEIGHT (KG) | TOTAL LENGTH (F) | HEAT No. | Hydrostatic Test | | Spec. ※2 Min. Max. | Tensile Properties(Gage Length : 2 inch) | | | | Hardness Test ※3 | Hardness Test & CVN Impact Test | | | | D.W.T Test(°C) | | | | | | |
|-----|------------------------|--|------------|----------------|---------------------|----------|------------------|------|-----------------------------|--|------|----------------|----------|---------------------|---------------------------------|------------|------------------------|---|----------------|---------------|-----|---|---|-----|--|
| | | | | | | | Pressure | Time | | Tensile Strength | | Yield Strength | Y/R Rate | | E.L | Max. Value | CVN Impact Test(°C) | | | Shear Area(%) | | | | | |
| | | | | | | | | | | Base | Weld | | | | | | Absorbed Energy(Joule) | | | Shear Area(%) | | | | | |
| | | | | | | | PSI | SEC | | MPa | MPa | MPa | % | | % | ※3 | Specimen size | 1 | 2 | 3 | avg | 1 | 2 | avg | |
| 1 | EB BE | 24" X 0.250 " X 20.177 F | 3 | 1,743 | 60.531 | P36133 | 440 | 5 | T | 443 | 478 | 360 | | | | | | | | | | | | | |
| 2 | EB BE | 24" X 0.250 " X 20.177 F | 4 | 2,324 | 80.708 | SQ40641 | 440 | 5 | T | 473 | 477 | 294 | | | | | | | | | | | | | |
| 3 | EB BE | 24" X 0.250 " X 20.177 F | 22 | 12,779 | 443.894 | SU96641 | 440 | 5 | T | 484 | 463 | 299 | | | | | | | | | | | | | |
| | | TOTAL | 29 | 16,846 | 585.133 | | | | | | | | | | | | | | | | | | | | |

| No. | Heat No. | Spec. ※4 | Chemical Composition(%) 2 :×100 3 :×1000 4 :×10000 | | | | | | | | | | | | | Zn-Coating Test | | HC-Test Collapse Pressure | H.I.C Test | | | S.S.C Test | Remark | |
|-----|----------|-------------|---|----|----------|----|---|----|----|----|----|----|------------|------------|---------------------|-----------------|-----|------------------------------|------------|--|--|------------|--------|--|
| | | | C | Si | Mn ※7 | P | S | Cu | Ni | Cr | Mo | V | CM3 ※10 | Zn Coating | Copper Sulfate Test | psi | CLR | CTR | CSR | | | | | |
| | | | Min. | | | | | | | | | | | Time | Result | | % | % | % | | | | | |
| | | | Max. | | | | | | | | | | | | | | | | | | | | | |
| 1 | P36133 | H | 6 | 1 | 73 | 11 | 5 | | | | | | | | | | | | | | | | | ※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) |
| | | P | 8 | 1 | 74 | 11 | 6 | 2 | 1 | 3 | 4 | TR | 70 | | | | | | | | | | | |
| | | P | 8 | 1 | 74 | 10 | 6 | 2 | 1 | 3 | 4 | TR | 70 | | | | | | | | | | | |
| 2 | SQ40641 | H | 17 | 1 | 47 | 9 | 3 | | | | | | | | | | | | | | | | | |
| | | P | 17 | 1 | 45 | 7 | 4 | 1 | 1 | 2 | 2 | TR | 47 | | | | | | | | | | | |
| | | P | 17 | 1 | 46 | 8 | 4 | 1 | 1 | 2 | 2 | TR | 48 | | | | | | | | | | | |
| 3 | SU96641 | H | 17 | 1 | 50 | 9 | 3 | | | | | | | | | | | | | | | | | |
| | | P | 17 | 1 | 48 | 7 | 5 | 1 | 1 | 2 | 2 | 1 | 49 | | | | | | | | | | | |
| | | P | 17 | 1 | 48 | 7 | 5 | 1 | 1 | 2 | 2 | 1 | 50 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|----------------------|---------------------------|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Heat Treatment | Non-Destructive Test | Flattening / Bending Test | Visual & Dimension | | | | | | | | | | | | | | | | | | | | | |
| GOOD | GOOD | GOOD | GOOD | | | | | | | | | | | | | | | | | | | | | |

본 제품은 관련 규격에 합격되었음을 보증합니다.
 WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.
 * 본 검사증명서에 명기된 규격용도의 사용시 안전상 문제가 발생할 수 있으며, 검사증명서 위.변조시 사문서 위조로 불이익을 당하실 수 있습니다.

H.K. CHOI

QA Manager

SURVEYOR