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| CERTIFICATE NO. | : | IJQ20240905631 |
| DATE OF ISSUE | : | 05.SEP.2024 |
| CUSTOMER | : | |
| CONTRACT(P/O) NO. | : | 26.144 |
| COMMODITY | : | SEAMLESS CARBON STEEL HOT FINISHED PIPE |
| STANDARD | : | ASTM A53 2022 Edition / A106 2019 Edition<br>ASME SA53 / SA106 2023 Edition |

# INSPECTION CERTIFICATE

EN10204-3.1 ■ / EN10204-3.2 □

ILJIN Steel Corporation

Imsil Plant Address

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SUPPLIER: ILJIN STEEL Corporation

| NO. | W/O (HEAT NO.) | ORDER SIZE ID | OD | WT | LENGTH | QUANTITY PCS | MASS lbs / ft | TOTAL ( lbs/ft ) | TOTAL LENGTH | Manufacturing Process *1 | Pipe End (Type) *2 | HEAT TREATMENT *3 | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ST24070071 (B82956) | 0.957 " | 1.315" | 0.179 " | 21.0 ' | 2229 | 2.17 | 101,575.53 | 46809.00 ' | HF | PEP | N/A | ASTM A53 B<br>ASTM A106 B<br>ASME SA53 B<br>ASME SA106 B |
| | | TOTAL | | | | 2229 | 2.17 | 101575.53 | 46,809.00 | | | | |

**REMARK**

1. THE HARDNESS DESCRIBED HEREIN COMPLIANCE WITH NACE MR-0175/MR-0103(MAX.22HRC), 2015 EDITION.
2. *R - CHEMICAL COMPOSITION REQUIREMENT FOLLOWS NEXT
   - ASTM A53B : TABLE 1. (REMARK C)
   - ASTM A106B : TABLE 1 (REMARK B)
3. NO WELD REPAIR WAS PERFORMED
4. NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT HAVE BEEN USED IN ANY MANNER WHICH MIGHT CAUSE CONTAMINATION IN MANUFACTURE, ASSEMBLY, OR TEST OF MATERIAL.
5. STEEL MELTED AND MANUFACTURED IN KOREA

| NO. | W/O (HEAT NO.) | STATUS | C | Si | Mn | P | S | Cr | Ni | Mo | Cu | Al | Ti | V | Nb | B | U4 | VN | V1 | V2 | CEQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CHEMICAL COMPOSITION(%) | | | | | | | | | | | | | | | | | | |
| | | *4 | X100 | | *R | X1000 | | X100 | | | | X1000 | | | | | *5 | *6 | *7 | *8 | *9 |
| Spec. | | MAX | 27 | | 120 | 35 | 35 | 40 | 40 | 15 | 40 | | | 80 | | | 1.0 | | 0.15 | | 0.45 |
| | | MIN | | 10 | 29 | | | | | | | | | | | | | | | | |
| 1 | ST24070071 (B82956) | LA | 17 | 23 | 111 | 6 | 5 | 10 | 3 | 2 | 6 | 22 | 25 | 34 | 1 | 0.3 | 0.2 | | 0.06 | | 0.39 |
| | | BA | 17 | 25 | 113 | 6 | 4 | 11 | 4 | 1 | 7 | 22 | 26 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.40 |
| | | PA | 17 | 25 | 112 | 5 | 4 | 11 | 4 | 1 | 7 | 20 | 24 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.39 |
| | | | 16 | 25 | 113 | 5 | 4 | 11 | 4 | 1 | 7 | 20 | 24 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.39 |
| | | | 17 | 24 | 112 | 6 | 4 | 11 | 4 | 2 | 7 | 21 | 23 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.40 |
| | | | 18 | 24 | 111 | 7 | 5 | 12 | 4 | 2 | 6 | 20 | 23 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.40 |
| | | | 18 | 24 | 111 | 7 | 5 | 12 | 4 | 2 | 6 | 20 | 23 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.40 |
| | | | 17 | 25 | 112 | 5 | 4 | 11 | 4 | 1 | 7 | 20 | 24 | 33 | 1 | 0.1 | 0.3 | | 0.06 | | 0.39 |

| NO. | W/O (HEAT NO.) | NDT (1) Notch Type: N10 | | HYDRO-STATIC TEST Sec. | PRE-SSURE psi | TENSILE TEST (GAGE LENGTH : 2±0.004) Width *L *F | Y.S 0.5% EUL psi | T.S psi | E.L % | IMPACT TEST (ASTM E23) Energy (1) Temp °F (2) Unit ft lb *T | *L | HARDNESS (ASTM E18) ■ HRB □ HRC □ HB □ HV | BENDING TEST | FLATT-ENING TEST H=(1+e)t/(e+t/O.D.) | FLARING TEST | DWT 5kg X 2m Temp : ℃ | HYDRO-BURST MPa Temp : ℃ | VISUAL | DIMENSION | DRIFT TEST | STRAIGHTNESS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *10 | | | | | | | | | | | | | | | | | | | |
| Spec. | | EC | UT | 5 | 2500 | | 34809 | 60191 | 30.0 | | | | 180°<br>90° | 0.93 | | | | | | | |
| 1 | ST24070071 (B82956) | | *G | *G | | | 63684 | 81726 | 51.1 | | | 87.5 | | *G | | | | *G | *G | | *G |
| | | | | | | | 65453 | 81682 | 51.1 | | | 86.6 | | | | | | | | | |
| | | | | | | | 64960 | 81697 | 51.0 | | | 86.7 | | | | | | | | | |
| | | | | | | | 66323 | 81218 | 51.2 | | | 86.8 | | | | | | | | | |
| | | | | | | | 64307 | 81726 | 51.3 | | | 87.4 | | | | | | | | | |
| | | | | | | | 64815 | 81624 | 51.2 | | | 86.8 | | | | | | | | | |

**NOTE**

*1 - NF : Normalizing Forming / HF : Hot Finished / CF : Cold Finished
*2 - BEP : Bevelled End / PEP : Plain End
*3 - A : As Rolled / SRA : Stress Relieved Annealing
Q+T : Quenched & Tempered / N+T : Normalized & Tempered
N : Normalized / Iso : Isothermal Annealing

*4 - LA : Ladle Analysis / BA : Billet Analysis / PA : Product Analysis
*5 - Cu+Ni+Cr+Mo+V
*6 - Nb+V
*7 - Nb+V+Ti
*8 - Cr+Ni
*9 - C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15

*10 - UT : Ultrasonic Test / EC : Eddy Current Test / MT : Magnetic Particle Test/ EM : Electro Magnetic Inspection
*P - Tubular or Plate Type of ASTM E8 Fig.12
*F - Full Section Type of ASTM E8 Fig.11
*G - Good / *L - Longitudinal / *T - Transverse

Third party Section

◆ WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH ABOVE SPECIFICATION AND THE RESULTS OF ALL TEST ARE ACCEPTABLE
◆ THE QUALITY SYSTEM OF OUR WORKS HAS BEEN ASSESSED AND REGISTERED AS MEETING THE REQUIREMENTS OF ISO 9001, ANY WELDING HAS NOT BEEN PERFORMED ON THE MATERIAL
◆ THIS CERTIFICATION IS INTENDED ONLY FOR PRODUCTS LISTED. MODIFICATION TO OR UNAUTHORIZED USE OF THIS CERTIFICATION IS STRICTLY PROHIBITED. OFFENSES MAY BE REGARDED AS FORGERY OF DOCUMENTS AND BE SUBJECT TO CRIMINAL PROSECUTION.

***BYUNG RUL LEE***

Manager of Q.M Dept.: