

## MATERIAL CERTIFICATE

PS0/F2 REV.1

SUPPLIER: DALE PAUL

ISO 9001: APPROVED

2014/68/EU: APPROVED

P.0 NO: 346932

DATE: 2021-10-28

REVISION: 1

MATERIAL CERT NO: MTC1411

DATE: 2022-02-09

REVISION: 0

ITEM CODE: LCV-150-020-03

DRAWING NO: 0800-20-01

COMPONENT: CONNECTOR

SIZE: 3/4"

CLASS: 800

MATERIAL SPECIFICATION: A351 GR. CF8M

HEAT TREATMENT: -

HEAT NO: 141122

QTY: 100

| CHEMICAL ANALYSIS              |      |         |      |  |  |  |  |
|--------------------------------|------|---------|------|--|--|--|--|
| PARAMETERS                     | MIN  | MIN MAX |      |  |  |  |  |
| CARBON (C)                     | -    | 0.3     | 18.1 |  |  |  |  |
| MANGANESS (MN)                 | -    | 1.5     | 1.02 |  |  |  |  |
| SILICON                        | -    | 1.5     | 1.5  |  |  |  |  |
| SULPHUR(S)                     | -    | -       | -    |  |  |  |  |
| PHOSPHOROUS (P)                | -    | -       | -    |  |  |  |  |
| CHROMIUM (CR)                  | 18.0 | 21.0    | -    |  |  |  |  |
| MOLYBDEMUM (MO)                | 2.0  | 3.0     | 2.01 |  |  |  |  |
| NICKEL (NI)                    | 9.0  | -       | -    |  |  |  |  |
| TITANIUM (TI)                  | -    | -       | -    |  |  |  |  |
| COBALT (CO)                    | -    | -       | -    |  |  |  |  |
| VANADIUM (V)                   | -    | -       | -    |  |  |  |  |
| CARBON EQUIVALENT (CE)         | -    | -       | -    |  |  |  |  |
| NITROGEN (N)                   | -    | -       | 9.1  |  |  |  |  |
| COPPER (CU)                    | -    | -       | -    |  |  |  |  |
| IRON (FE)                      | -    | -       | -    |  |  |  |  |
| TUNGSTEN (W)                   | -    | -       | -    |  |  |  |  |
| PREN                           | -    | -       | -    |  |  |  |  |
| COLUMBIUM + TANTALUM (CB + TA) | -    | -       | -    |  |  |  |  |

| MECHANICAL PROPERTIES |        |     |     |        |     |  |  |  |
|-----------------------|--------|-----|-----|--------|-----|--|--|--|
| PARAMETERS            | UNITS  | MIN | MAX | ACT.   | AVJ |  |  |  |
| TENSILE (UTS)         | MPA    | 485 | -   | 550    | -   |  |  |  |
| YIELD (YS)            | MPA    | 205 | -   | 550    | -   |  |  |  |
| ELONGATION (E)        | %      | 30  | -   | 32     | -   |  |  |  |
| REDUCTION AREA (RA)   | %      | -   | -   | 10     | -   |  |  |  |
| HARDNESS              | НВ     | -   | -   | 156.67 | -   |  |  |  |
| IMPACT TEST @ - 190C  | JOULES | -   | -   | 33.33  | -   |  |  |  |

## **REMARKS**

- 1. Visual inspection: accepted according PS04/11 JC IT. Other information: no major repairs carried out.
- 2. We certify that the above material has been manufactured and processed according to requirement of the above P.O.
- 3. The results above indicated are exact transcription from the correspoding certificates, which are filed in our factory, issued by our homologated suppliers
- 4. In accordance with NACE MR0175/ISO15156 & NACE MR0103/ISO17945

(x)Visual Inspection:

Casting: MSS-SP55 and PS04/11 JC IT

Forging: Material Standard applicable and PS04/11 JC IT

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