

# MATERIAL MANUFACTURE CERTIFICATE

Certificate No.:  
22-UK-MMC-010-001

Initial date:  
11 October, 2022

Validity:  
11 October, 2022 – 16 April, 2024

This certificate consists of 6 pages

This is to verify that:

## WESTERN FORGE AND FLANGE COMPANY

687 County Rd. 2201, Cleveland, TX 77327 USA

for

### FORGED FLANGES AND RING FORGINGS

has implemented and is maintaining a certified quality assurance system which has undergone a specific assessment for materials for applications covered by Schedule 1A of the Pressure Equipment (Safety) Regulations (as amended) on pressure equipment, and is found to comply with Schedule 2 Part 4 – 31 (6) (7) (8), for acceptance of type 3.1 material certificates according to EN 10204:2004

Further details are given in the following pages

Place and date:  
**Aberdeen, 11 October, 2022**

**Check Validity**

For the issuing office:  
**DNV UK Limited**



for DNV

This document has been digitally signed and will therefore not have handwritten signatures

Wann, Alan  
Surveyor

**Name**  
UK Offshore Infrastructure Representative



Certificate No.: 22-UK-MMC-010-001  
Place and date: Aberdeen 11 October, 2022  
Revision No.: 0

### Certificate history:

Revision	Description	Issue Date
Rev. 0	Original Certificate	11 October, 2022

### Products covered by this Certificate:

Product Name	<b>FORGED FLANGES AND RING FORGINGS</b>
Material Types	See Materials / Applicable Specifications listed below

Legend:

A – ASTM SPECIFICATION

SA – ASME SPECIFICATION

AMS – Aerospace Material Specification

QQ – Federal Specification

GRADE	UNS NO.	FORGING SPECIFICATIONS
F304	S30400	A/SA182, A/SA403, QQ-S-763
F304H	S30409	A/SA182, A/SA403, QQ-S-763
F304L	S30403	ALL ABOVE + AMS 5647
F304LN	S30453	A182
F304N	S30451	A/SA182, A/SA403
F309	S30900	A/SA403, QQ-S-763
F310	S31000	A/SA182, A/SA403, QQ-S-763
F310S	S31008	QQ-S-763
F316	S31600	A/SA182, A/SA403, QQ-S-763
F316H	S31609	A/SA182, A/SA403, QQ-S-763
F316L	S31603	ALL ABOVE + AMS 5653
F316LN	S31653	A/SA182
F316N	S31651	A/SA182, A/SA403
F317	S31700	A/SA182, A/SA403, QQ-S-763
F317L	S31703	A/SA182
F321	S32100	A/SA182, A/SA403, AMS 5645
F321H	S32109	A/SA182, A/SA403
F347	S34700	A/SA182, A/SA403, AMS 5646/5654
F347H	S34709	A/SA182, A/SA403
F44 (254 SMO)	S31254	A/SA182

F45 (253 MA)	S30815	A/SA182
F47 (317LM)	S31725	A/SA182
F48 (317LMN)	S31726	A/SA182
F430	S43000	A/SA182
F6a (410)	S41000	A/SA182, AMS 5613
F6NM	S41500	A/SA182
F410S	S41008	A/SA182 (F6A), AMS 5613
NITRONIC 50	S20910	A/SA182, A/SA403 (XM-19)
NITRONIC 60	S21800	NONE
15-5 PH	S15500	A564, AMS 5659
17-4 PH	S17400	A/SA564 (630), AMS 5643
F51 (DUPLEX)	S31803	A/SA182
F60 (2205)	S32205	A/SA182
F53 (2507)	S32750	A/SA182
FERR 255	S39253*	A/SA182 (*F61/S32550 New UNS No.)
A105 CS	K03504	A/SA105
A350 LF-1	K03009	A/SA350
A350 LF-2	K03011	A/SA350
A350 LF-3	K32025	A/SA350
F1	K12822	A/SA182
F5 (501SS)	K41545	A/SA182
F5a	K42544	A/SA182
F9	K90941	A/SA182
F11 CL-1	K11597	A/SA182
F11 CL-2	K11572	A/SA182
F11 CL-3	K11572	A/SA182
F12 CL-1	K11562	A/SA182
F12 CL-2	K11564	A/SA182
F22 CL-1	K21590	A/SA182
F22 CL-3	K21590	A/SA182
ALUM 1100	A91100	B/SB247, B/SB361
ALUM 2014	A92014	B/SB247, AMS 4133/4134
ALUM 3003	A93003	B/SB247, B/SB361
ALUM 5083	A95083	B/SB247, B/SB361
ALUM 5086	A95086	NONE

ALUM 6061	A96061	B/SB247, B/SB361, QQ-A-367, AMS4127/4146
ALUM 7075	A97075	B/SB247, QQ-A-367, AMS4141/4311
70/30 CU-NI	C71500	MIL-C-15726, MIL-C-24679
90/10 CU-NI	C70600	MIL-C-15726, MIL-C-24679
EVER 655	C65500	B/SB283 (HOT PRESSED)
NAVAL BRASS	C46400	B/SB283 (HOT PRESSED)
TITANIUM GR2	R50400	B/SB363, B/SB381
TITANIUM GR4	R50700	B/SB381
TITANIUM GR7	R52400	B/SB363, B/SB381
TITANIUM GR12	R53400	B/SB363, B/SB381
HAYNES HR160		HAYNES PS-6039-2
HAYNES 230	N06230	B/SB564, AMS 5891
HAYNES 242		HAYNES PS-6096-0
HAYNES 556	R30556	HAYNES PS-6042-2
7-MO PLUS (F52)	S32950	A/SA182
HASTELLOY-B	N10001	B366 (REFERENCE)
HASTELLOY-B2	N10665	B462, B366, B/SB564
HASTELLOY-B3	N10675	B462, B366, B/SB564
HASTELLOY-C4	N06455	B366 (REFERENCE)
HASTELLOY-C22	N06022	B462, B366, B/SB564
HASTELLOY-C276	N10276	B462, B366, B/SB564, AMS 5750
HAST C-2000	N06200	B462, B564
HASTELLOY-G	N06007	B366 (REFERENCE)
HASTELLOY-G3	N06985	B366 (REFERENCE)
HASTELLOY-G30	N06030	B462, B366 (REFERENCE)
HASTELLOY-N	N10003	B366 (REFERENCE)
HASTELLOY-X	N06002	B366 (REF), AMS 5754
NICKEL 200	N02200	B366, B/SB564
NICKEL 201	N02201	B366 (REF)
ALLOY 400	N04400	B366, B/SB564, QQ-N-281, MIL-F-23509
ALLOY K500	N05500	QQ-N-286
ALLOY 600	N06600	B366, B/SB564, AMS 5665
ALLOY 601	N06601	AMS 5715
INCONEL 617	N06617	B564

ALLOY 625	N06625	B366, B/SB564, AMS 5666
INCONEL 686	N06686	B564
INCONEL 690	N06690	B564
INCONEL 718	N07718	B/SB637, AMS 5662/5663/5664
INCONEL X750	N07750	B/SB637 (GR688), AMS 5542/5668
ALLOY 800	N08800	B366, B/SB564, AMS 5766
ALLOY 800H	N08810	B366, B/SB564
ALLOY 800HT	N08811	B366, B/SB564
ALLOY 825	N08825	B366, B/SB564
ALLOY 904L	N08904	NONE
ALLOY C20 (F20)	N08020	A182, B366, B/SB462
AL6XN (F58)	N08367	A182, B366, B/SB462, B/SB564
RA330	N08330	B366 (REF), AMS 5716
RA330 (W/ G.S.)	N08332	NONE
RA333	N06333	AMS 5717
25-6 MO	N08925	NONE
ULTIMET	R31233	NONE (REF: HAYNES MATERIAL)

## Limitations (as applicable):

- a) Welders and welding procedure specifications for pressure equipment category II and above shall be qualified and approved according to Pressure Equipment (Safety) Regulation requirements.
- b) NDT operators for pressure equipment category III and IV shall be approved according to Pressure Equipment (Safety) Regulation requirements.

Initial inspection on the production site has been carried out by DNV Supply Chain and Product Assurance, Houston, TX USA ref. Assessment Report dated 2022-10-02.

## Terms and conditions for the certificate

- In case of damages caused by defective products, The Consumer Protection Act 1987, will apply;
- the system approval is valid only for the material types listed above. For other material types, an application for extension of the certificate must be sent to DNV Supply Chain and Product Assurance, Houston, TX USA;
- periodical audits and unexpected visits will be held, in order to verify that the manufacturer duly fulfils the obligations arising out of the approved quality system;
- the manufacturer shall fulfil the obligations arising out of the quality system as approved and uphold it so that it remains adequate and efficient;
- the manufacturer must give information of any intended adjustments of the Quality System to DNV Supply Chain and Product Assurance, Houston, TX USA who will assess the changes and decide if the Statement remains valid;



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- the manufacturer shall inform DNV Supply Chain and Product Assurance, Houston, TX USA of the intended schedule of production for materials.

**The following may render this certificate invalid:**

- changes in the quality system affecting production;
- periodical audits not held within the allowed time window.

End of Certificate

