



MILL TEST CERTIFICATE
(EN 10204-3.1)

Product: Hot Forging Flange
 Specification: ASTM SA-105/SA-105M, ANSI B16.5
 Material: A105

PO No: REFL-210613
 Certificate No: 2013TW2708-7
 Date of Report: 08/27/2013
 Stamp of Manufacturer: **P**

Item No.	Quantity	Description/Product	Heat No.	Visual Insp.
62	125	150LB SORF 1"	130725	GOOD
63	100	150LB SORF 1-1/4"	130725	GOOD
64	950	150LB SORF 2"	130725	GOOD
65	2350	150LB SORF 3"	130725	GOOD
66	2350	150LB SORF 4"	130725	GOOD
67	50	150LB SORF 5"	130725	GOOD
68	320	150LB SORF 6"	130725	GOOD
69	50	150LB SORF 12"	130725	GOOD
70	20	150LB SORF 14"	130725	GOOD
71	20	150LB SORF 16"	130725	GOOD

Chemical Analysis:

Heat No.	C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%	Cu%	V%	N%	Ti%	Al%	Nb%	CE%
Min		0.10	0.60												
Max	0.35	0.35	1.05	0.035	0.040	0.30	0.12	0.40	0.40	0.08					0.47
130725	0.20	0.20	0.90	0.020	0.030	0.20	0.10	0.30	0.30	0.05					0.46

Mechanical Properties:

Heat No.	Dimension of Specimen		Sampling of specimen			Test temp	Yield strength	Yield strength	Tensile strength	Elongation	Reduction of area	Hardness	HEAT TREATMENT
	Thickness	Width	Location	Direction	Position		R _{eH}	N/mm ²	N/mm ²	A	Z	HB	
	mm	mm					°C	≥250	≥485	≥22	≥30	Max 187	
130725	Φ12.5			Tr		RT	250	490	25	35	160	Normalized at 900°C, maintaining of time 3hrs cooled in still air	

T : top, B : bottom, L : longitudinal, Tr : transverse, RT : room temperature
 Dimensional Check:
 Surface crack inspection:

CEV=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15
 Without Complaint
 Without Complaint

THIS REPORT IS ISSUED IN COMPLIANCE WITH THE REQUIREMENTS OF EN10204 3.1 B/ISO 10474 3.1 B

COMMENTS: NO WELD REPAIR PERFORMED / MERCURY FREE.
FORGED ROLLED 1150°C - 1200°C
MATERIAL MEETS NACE MR-01-75 CHEMICAL COMPOSITION REQUIREMENTS.

We hereby certify that the materials described herein have been manufactured, inspected and tested in accordance with Petroforja's specification(s), and that they satisfy the requirements.