TÜV CERT EN ISO 9001 : 2000 Certificate 04K30011(1) RWTÜV

APPROVED AD 2000 WO PED 97/23/EC MANUFACTURER

VIRAJ Forgings [redacted]

(A Division of Viraj Profiles Ltd.)

CERTIFICATE - EN 10204 3.1

CUSTOMER :

MS. VAN LEEUWEN STAINLESS B.V.
INDUSTRIESWEG 26
4153 BW BEESD
THE NETHERLANDS

MANUFACTURER'S SYMBOL

MTR NO.	FRG/24754 - D
DATE	09.01.2007
MATERIAL SPECIFICATION	ASTM A182/A182M - 05
	ASME SA 182 /SA 182M - 04
GRADE	F316/316L
DIMENSIONAL SPECIFICATION	ASME B16.5 2003
MATERIAL CONFORMS TO NACE MR0 175 - 2002	
STAINLESS STEEL FLANGES	

ORDER NO.: 610173 , 611033

L/C NO.: NLNL1NL06M322661 DT.2006-11-27

CHEMICAL ANALYSIS

SL NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM		
1	10"	BLRF	300#	72771	2	0.022	1.70	0.42	0.011	0.037	16.66	10.06	2.05	710		
2	2"	BLRF	600#	73233	20	0.022	1.66	0.43	0.006	0.038	16.85	10.02	2.01	650		
3	2"	BLRF	1500#	71047	3	0.020	1.83	0.41	0.010	0.034	16.74	10.50	2.04	550		
4	2"	BLRF	150#	71706	200	0.028	1.78	0.49	0.010	0.034	16.85	10.02	2.03	720		
5	2"	BLRF	300#	72689	50	0.018	1.70	0.44	0.014	0.037	16.80	10.10	2.03	580		
6	3"	BLRF	150#	73496	100	0.024	1.74	0.41	0.014	0.038	16.86	10.01	2.03	700		
7	3/4"	BLRF	1500#	70729	10	0.025	1.71	0.41	0.014	0.039	16.59	10.07	2.01	706		
8	4"	BLRF	150#	73356	15	0.018	1.85	0.47	0.017	0.040	16.70	10.08	2.02	700		

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH 10x10mm (JOULES) 1	2	3	AVG	HARDNESS (BHN)
72771	10"	BLRF	300#	571.69	267.30	60.24	68.71	-	-	-	-	163
73233	2"	BLRF	600#	611.25	298.59	55.08	69.33	-	-	-	-	164
71047	2"	BLRF	1500#	561.36	291.59	57.00	73.18	-	-	-	-	158
71706	2"	BLRF	150#	559.17	292.52	57.20	72.25	-	-	-	-	156
72689	2"	BLRF	300#	557.86	274.28	58.52	69.89	-	-	-	-	160
73496	3"	BLRF	150#	640.86	303.87	55.60	67.20	-	-	-	-	169
70729	3/4"	BLRF	1500#	547.47	291.59	57.20	73.18	-	-	-	-	156
73356	4"	BLRF	150#	593.78	289.68	54.78	69.67	-	-	-	-	152

MELTING PROCESS	: INDUCTION / ACD (PSB) / CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1040°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
PMI	: NO REJECTION(100% TESTED WITH MOBILE SPECTRO)
INTER GRANULAR CORROSION TEST	: PASSED IGC TEST IN ACCORDANCE WITH ASTM A 262 PRATICE E
MICRO OBSERVATION	: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST	: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

" CARACTERISTIQUES GARANTIES "

La Societe Viraj Forgings Ltd. garantit que les produits objet du present certificat respectent en leur totalite les prescriptions de l'Article 15 de l'Arrete Ministeriel du 24 mars 1978 modifie.

C=<0,25%, P=<0,05%, S=<0,05%

Rm=<800 N/mm2, E<=0,9xR%, A%(Lo=5,65VSo)min.16% en long. R(A-2)>=16500

WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.

ORIENTAL BANK OF COMMERCE INDIA

VIRAJ FORGINGS DEPT

VIJAY KUMAR PILLAI
MANAGER-QA

180358

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Omschrijving L.1838.AH

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