


ANUGRAHA VALVE CASTINGS LIMITED														
391/2, S.G.PUDUR, ARASUR VILLAGE, COIMBATORE – 641 407, INDIA PH : 91-422-2360124, 2360910, FAX : 91-422-2360026, E-Mail – anugraha@anugrahavalvecastings.com														
THE QUALITY MANAGEMENT SYSTEM ISO 9001:2015 IS CERTIFIED BY :						LLOYD'S, U.K., CERTIFICATE No:MUM6017688 & TUV NORD, GERMANY,CERTIFICATE NO.44 100 084158								
Approved acc.to AD2000 Merkblatt W0 & Certified acc.to PED (2014/68/EU) by certification body for Pressure Equipment of TUV Nord systems(notified body, reg. no.:0045)														
INSPECTION CERTIFICATE/DOCUMENT (EN 764-5) AS PER EN10204.3.1														
Foundry		Name				Address				Trade Mark				
		Anugraha Valve Castings Limited				Coimbatore, India				A				
Inspection certificate		Certificate No: LE/9849				Date of delivery: 27.03.2019								
		With consent of: TUV NORD								Qualification No: 07 203 1409 WP 1091/17				
		for : 1.0619/WCB/WCC												
Purchaser		LESER GmbH & Co. K.G, Hamburg												
		Purchase order No: 4500237993				Date of issue: 13.12.2018								
Article		Pos.No	Item											
		80	ELBOW 4"/D=130/PN40/#300 - (116.A000.0034) - 10000167343-02 & 10000176029-02 - (167343)											
Material designation		WCC ASME Section II A, SA-216				Edition/Addenda:								
		WCB ASME Section II A, SA-216				ref.to								
		1.0619 DIN EN 10213				LESER Work Standard (LDeS) 3289.07								
Requirements		LDeS_3289.07-EN, LDeS_3290.04-EN												
		These LESER Work Standards cover all requirements for above mentioned materials and additional requirements given in PED (Pressure Equipment Directive 2014/68/EU): ASME Code:Section VIII + Section IIA SA216: AD-2000-Merkblatt:A4, W5,W10,HP2/1; DIN EN 10213,1559-1, 1559-2, DIN 1690 Part 10; BNIF359-01; MSS SP 55; NACE MR0175/ISO15156, MR0103; SEW110;TRD: 103,110												
List of Delivery		Pos.No	Number of Pieces	LESER Article number				Unit Weight	Heat No.	Test No				
			See Annexure											
Chemical composition Required		Pos.No	C	Si	Mn	S	P	Cr *	Ni *	Mo *	V *	Cu *	CE	Total *
Min.			0.18	0.30	0.50	-	-	-	-	-	-	-	-	-
Max.			0.23	0.60	1.20	0.020	0.030	0.30	0.40	0.12	0.03	0.30	0.43	1.00
Actual value			See Annexure											
Mechanical properties		Pos.No	Rp Yield Strength 0.2% (N/mm²)	Rm Tensile Strength (N/mm²)	A5 Elongation After fracture(%)	Z Reduction of area (%)	Hardness (HBW) (ASTM A370)	KV (J) Impact value Charpy-V, (J) ISO-148-1/SA370						
Required			275	485	22	35	-	min,avg,27J at 20°C						
Min.			-	600	-	-	237	1	2	3	Avg			
Max.			See Annexure											
Actual value														
Heat treatment		Pos.No	Normalized				Temperature				Hold Time		Cooling media	
			Normalising Heated to 900°C To 940°C Soaked and Cooled in Air Soaking Time See Annexure											
Supplementary information		CEV: %C+%Mn/6+(%Cr+%Mo+%V)/5+(%Ni+%Cu)/15, Declared that the castings are free from radioactive contamination.												
Quality Level		The casting conforms to requirements of EN10213/ASME SA216, quality level "D" according to DIN 1690 Part-10										<input checked="" type="checkbox"/>	fulfilled	
		BN IF 359-01 (as specified in LDeS_3290.04-EN)										<input checked="" type="checkbox"/>	fulfilled	
		The castings conforms to NACE STANDARD MR0103-2015.										<input checked="" type="checkbox"/>	fulfilled	
		MSS-SP-55.												
		Tensile test carried out at Room Temperature, Mechanical properties are represented from separately casted test bar (Keel Block) as per Fig.1 of ASTM A1067.										<input checked="" type="checkbox"/>	fulfilled	
Visual inspection and dimension check		Without objections										<input checked="" type="checkbox"/>	fulfilled	
Assessment		Castings fulfil the requirements of LDeS_3289.07-EN, LDeS_3290.04-EN										<input checked="" type="checkbox"/>	fulfilled	
Inspection representative		Stamp  27.03.2019 Name : S.PADMAVATHY Date of validation Official position : MANAGER-QA												
LESER internal entries		Check of this certificate by LESER QM		Cert. No:		Code-No:		Approved:		Date:		The entries of this certification are complete. <input type="checkbox"/> fulfilled		
		Ordering by LESER customer		LESER-Order-No		Cust. TAG - No:						The requirements of LDeS_3289.07-EN, LDeS_3290.04-EN as well as AD-2000 W5 and ASME Code VIII are fulfilled. <input type="checkbox"/> fulfilled		

ANUGRAHA VALVE CASTINGS LIMITED  
391/2, S.G.PUDUR, ARASUR VILLAGE, COIMBATORE - 641 407, INDIA.  
**ANNEXURE to Inspection Certificate No: LE/9849 DT : 27.03.2019**

Heat No	QTY	Delivery No	Weight (kgs)	C	Si	Mn	S	P	Cr	Ni	Mo	V	Cu	CE	TOTAL	SOAK ING TIME1	Y.S(MPa) 0.2% RP	T.S(MPa) RT	%E (60MM)	RIA	Hardness (HBW)	SIZE : 10X10X55mm, Test Temperature & Specification	1	2	3	Avg
BD4647	4	818011794	200.00	0.206	0.46	0.92	0.011	0.019	0.066	0.132	0.007	0.001	0.014	0.384	0.220	4.30	365.97	543.62	29.33	60.11	153	AT 20°C Min.Avg 27J	72	84	90	82.0

S.PADMAVATHY  
MANAGER-QA  
WORKS INSPECTOR

This Certificate was issued by DP-equipment and is valid without signature

# ANUGRAHA VALVE CASTINGS LIMITED

WORKS : 391/2 S.G.PUDUR, ARASUR VILLAGE PALLADAM TALUK COIMBATORE - 641 407.  
PH:2360124,2360910, FAX:91-0422-2360026,E-mail:anugraha@anugrahaavalvecastings.com

## MAGNETIC PARTICLE INSPECTION REPORT ACC.TO EN10204;3.1


Customer : LESER Gmbh & CO.KG  
Report No. : LES/MPI/818011794  
Date : 27-03-2019


Item : ELBOW 4"/D=130/PN40/#300 (116.A000.0034)  
Drawing No. : 10000167343-02 AND 10000176029-02  
PO. No. : 4500237993 DT;13.12.2018  
Specification : EN10213 GP240GH 1.0619-07+A1:2016/ASME SA216M Gr.WCB/WCC-17  
Procedure Ref : DIN EN ISO 9934-1  
Stage of Test : AFTER HEAT TREATMENT  
Type of Equipment : ELECTROMAGNETIC CRACK DETECTOR  
Equipment Manufacturer : K.ELECTRONICS MUMBAI  
Test Method : WET FLUORESCENT  
Magnetic Powder Colour : FLUORESCENT YELLOW GREEN  
Trade Name : SUPER MAGNA LY 2500  
Batch No. & Date : 183512-31.08.2018  
Wet Particle Conditioning Agent : SUPER MAGNA LY 2500  
Conditioning Agent Batch No : 183512-31.08.2018  
Bath Concentration : BEFORE TESTING CHECKED  
Settling Volume(0.10 to 0.40 ml) : 0.15ml  
Accepted Standard : DIN 1690 PART-2  
Surface Condition : UNMACHINED  
Current : HWDC  
Magnetization : CIRCULAR  
Magnetization Type : CABLE WRAP  
Number of Turns : 2 TURNS  
Lighting Equipment : BLACK LIGHT SYSTEM ZB-100F  
Exposure (UV-Meter / Exposure Intensity) : 1030 µW/CM²  
Identification No : AS/QA/022  
Calibration (Due on) : 13.05.2019  
Lighting Equipment : MAGNAFLUX (VISIBLE WHITE LIGHT METER)  
Model No : 622338  
Serial No. : 207021  
Ambient Visible White Light Intensity (20 Lux max) : 16 Lux  
Identification No : AS/QA/023  
Calibration (Due on) : 26.05.2019

Sl.No.	Heat No.	Quantity	Marking	Remarks
1	BD4647	4	MT	-

Prod Spacing : --  
Magnetizing Current : 4300 AMPS  
Area Coverage : ALL ACCESSIBLE AREA  
Description on Indication : NO SIGNIFICANT INDICATION  
Demagnetization : NOT DONE  
Result : ACCEPTABLE TO DIN 1690 PART-2 QUALITY LEVEL MS3.

Customer/External  
Inspection Agency

  
G.NAVALADIYAN  
MT LEVEL-II  
Operator

  
R.RAMESH KUMAR  
LPT & MT LEVEL-II  
NDT Incharge