

# Material Test Certificate

In Accordance with BS EN10204 / DIN50049 3.1

Certificate No. 78229

15/09/2017

Customer	BANDAK AS		
Customer Ref	408420		
Item No.	001	Qty	76.00
Order No.	S/11775/AMB		
Item Desc	2 1/2" X 1 " STD ECCENTRIC REDUCER WPHY52 B16.9 WT 5.2 X 3.4		
Specification	ASTM A860 WPHY 52		

**Cast 44954**

## Extra Information

Raw Material	ASTM A333 GR 6 / X52
Visual/NDT Inspection	PASS
Dim. Inspection:	ANSI B.16.9
Nace:	NACE MR-01-75 REV 2009

## Chemical Analysis

(%)

Type	C	Mn	Si	P	S	Cr	Mo	V	Ni	Cu
SPEC MIN..	-	1.000	0.150	-	-	-	-	-	-	-
SPEC MAX..	0.200	1.450	0.400	0.030	0.010	0.300	0.250	0.100	0.500	0.350
BASE	0.180	1.132	0.220	0.012	0.002	0.040	0.010	0.004	0.060	0.230

## Chemical Analysis

(cont)

Type	Al	Nb	Ti	Sn	N2	B	CEQ	PCM	PREN
SPEC MIN..	-	-	-	-	-	-	-	-	-
SPEC MAX..	0.060	0.040	0.050	-	-	0.003	-	-	-
BASE	0.023	0.001	0.002	-	-	0.000	0.399[1]	0.261	0.073

## Tensile Test

ASTM A370

LOCATION	Y.S.	U.T.S.	%EI	%RA
L/T Parent	389.00[N/mm2]	546.00[N/mm2]	33.00	0.00

## Charpy Test

ASTM A370

LOCATION	Dimensions	Test Temp (deg C)	Energy (J)	Average (J)
L/T Parent	10 X3.30XV	-54.0	70 , 61 , 72	68

## Heat Treatment

Manufacturing Specif

Normalise	NORMALIZED > 850°C STILL AIR COOL
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**Despatch Statement**

Date 15/09/2017

Name Adam Burns