

### TEST CERTIFICATE

<b>Report No.</b>	LMMET-2202858 Rev 0	<b>Date Reported</b>	
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<b>Nature of Test :</b> Macro Examination	<b>Test Method :</b> ASTM E340 -15
<b>Date Tested :</b> 07 Jul 2022 - 07 Jul 2022	<b>Test References :</b> ASME SEC IX-2021

ID	Location	Observation	Remarks
MH-1	0 Deg	Weld is free from cracks and other defects with full penetration and fusion between weld passes and parent metal. Macro examined at 10x Magnification.	Acceptable
MH-2	180 Deg	Weld is free from cracks and other defects with full penetration and fusion between weld passes and parent metal. Macro examined at 10x Magnification.	Acceptable

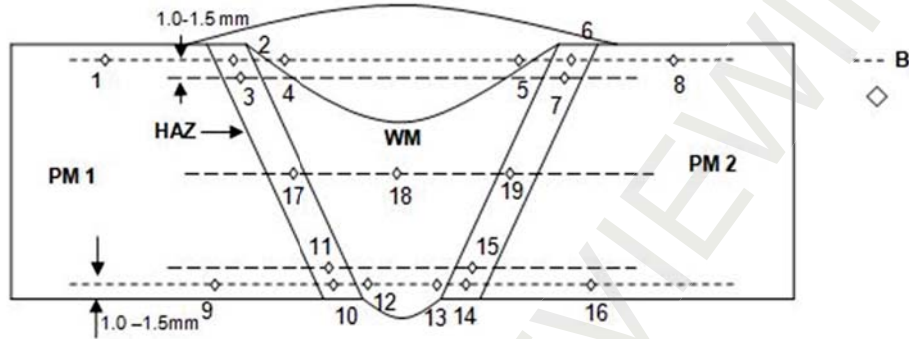
Abbreviations : MH - Macro Examination

<b>Nature of Test :</b> Vickers Hardness Test (HV10)	<b>Test Method :</b> BS EN ISO 6507-1 :2018
<b>Date Tested :</b> 07 Jul 2022 - 07 Jul 2022	<b>Test References :</b> ISO 15156-2

ID	Location	PM	HAZ	HAZ	WELD	WELD	HAZ	HAZ	PM
MH-1	1-8	227	233	237	274	266	247	247	227
	17-19	-	-	227	-	237	237	-	-
	9-16	227	218	206	203	198	206	203	237
MH-2	1-8	237	237	251	283	262	254	254	221
	17-19	-	-	243	-	254	254	-	-
	9-16	237	198	215	221	215	201	206	227

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Vickers Hardness Test - HV10 - Schematic diagram of Hardness Survey

Abbreviations : MH - Macro Examination

Maximum Hardness MH1:274 HV10 on Weld.  
 Maximum Hardness MH1:283 HV10 on Weld.

-----END OF THE REPORT-----

Witnessed By  
TPI

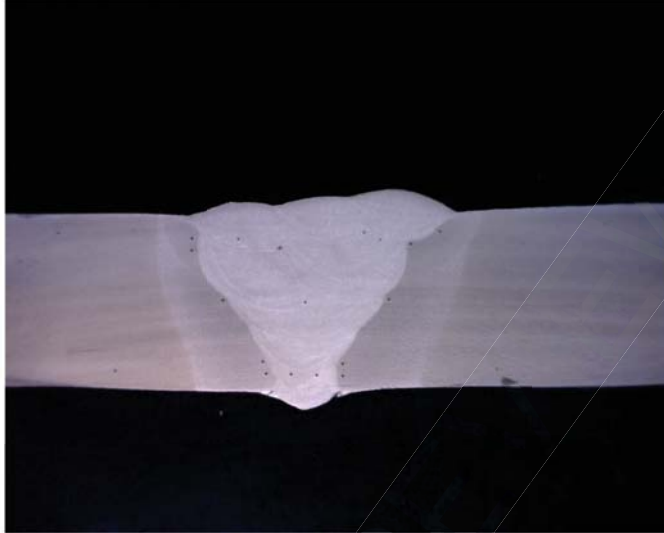
Witnessed By  
Customer

For and On behalf of Lonestar Alpha Laboratories

Unless otherwise indicated, latest editions of Standards/Specifications have been used for the Testing.  
 This Test Report shall not be reproduced either in part or fully, without approval of the Laboratory.

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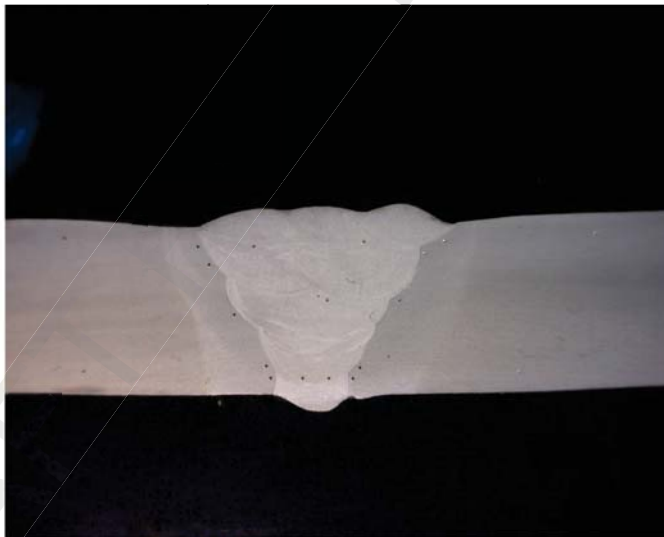
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Macro Examination - Photographs / Macrographs

MH-1

Etchant : Nital 10%



Macro Examination - Photographs / Macrographs

MH-2

Etchant : Nital 10%

Witnessed By  
TPI

Witnessed By  
Customer

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