

Certificate Ref: 3000424646

Order Ref: PO-04232

Received: 25/05/2021

Issue Date: 09/06/2021

For the attention of: Leah Hatch  
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KEIGHLEY LABORATORIES LIMITED

Ashley Payne  
Metallurgical Technician

**BUTT WELDED HASTELLOY SHEET**  
**Material Specification - MSRR 7180 (Hastelloy X)**

Welded By : K Hatch

Welder ID : KS01

Welding Process : TIG - ISO 24394-141-S-PA1-B-T1.2

Filler Rod : 9500/215

DPI Examination Certificate: : N149099LIQ1

Carried out by another UKAS laboratory prior to arrival at Keighley Laboratories.

Radiographic Examination Certificate: : N149099RAD1

Carried out by another UKAS laboratory prior to arrival at Keighley Laboratories.

Visual Examination Certificate: : N149099VIS1

Carried out by another UKAS laboratory prior to arrival at Keighley Laboratories.

**Weld Test**

Overall Result Acceptable

**Visual Examination**

Condition As Welded  
Magnification Up to x25  
Result Acceptable

**Tensile Test**

Laboratory Temperature		19 °C
Dimensions	a x b	25.0 x 1.24 mm
Area	So	31.0 mm <sup>2</sup>
Maximum Force	Fm	22.24 kN
Tensile Strength	Rm	717 N/mm <sup>2</sup>
Tensile Strength	Rm	104.0 ksi
Broke		Clear of weld
Result		Acceptable - providing tensile strength meets the design requirements

When a certificate of conformity is required, and where guidance from the material/testing specification is not available, the Simple Acceptance Rule (ILAC - G8:09/2019) will be applied for borderline results that are within the uncertainty budgets for the test carried out as detailed within KLL procedure QP006 Appendix 1 (Guard band zero: Risk less than 50 % Probability of False Accept).

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Results relate only to the item(s) tested.

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### **Bend Test**

Laboratory Temperature	19 °C
Bend Radius	2 x thickness
Face Bend	Bent 180° without cracking.
Result	Acceptable

### **Metallographic Examination**

Magnification	x7 - x500
Etchant	Super Kallings Reagent
Section(s) assessed	1
Result	Acceptable

### **Note**

Test Schedule: C.A.A. - British Civil Airworthiness Requirements Chapter A8-10 as applicable.

Test Schedule: British Standard BS ISO 24394:2018 as applicable.

Test Schedule: Rolls Royce plc. - RPS 912 Issue 18 as applicable.

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When a certificate of conformity is required, and where guidance from the material/testing specification is not available, the Simple Acceptance Rule (ILAC - G8:09/2019) will be applied for borderline results that are within the uncertainty budgets for the test carried out as detailed within KLL procedure QP006 Appendix 1 (Guard band zero: Risk less than 50 % Probability of False Accept).

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