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Element Materials Technology Lancaster – List of Uncertainty budgets for accredited methods

This document is supplemental to Element's Statement of Conformity Policy. The table below contains indicative uncertainty values for the test types included in Element Lancaster schedule of accreditation.
Uncertainty budgets made at any time may differ from the values reported in this document due to changes in calibration, qualified staff and other contributing factors. These changes will normally be minimal and will have a negligible effect on the uncertainty budget. For this reason, the values shown below should be seen as indicative rather than precise. Budgets for specific test results can be made available upon request if these are required to understand the actual risk when the statement of conformity is made.

Mechanical Tests:

Type of test	Test methods	Uncertainty value
Fatigue testing: force control	BS 3518-1 BS 3518-3 (withdrawn) BS EN 6072 BS EN 3987 prEN 3874 (April 1988) BS ISO 1099 ASTM D3479/3479M ASTM E466	±13.7% of fatigue life
Fatigue testing: strain control	BS 7270 ASTM E606/E606M prEN 3988 P1 (April 1998)	±13.3% of fatigue life
Rotating Bending	BS ISO 1143	±15.1% on the applied stress
Fatigue Crack Growth Rate and threshold determination	BS EN 3873 BS ISO 12108 ASTM E647	±0.09 mm of crack measurement (CT geometry) ±0.06 mm of crack measurement (CC, Kbr geometry)
Fracture Toughness	BS 7448-1 BS 7448-2 (Withdrawn) BS EN ISO 12135 ASTM B645 ASTM E399 ASTM E740M	±2.0% of K value
R Curve	ASTM E561	±2.0% of K value
Proof Load	In House method EX-E-OP-FE-LA-MD26980	±2.9% of load

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Mechanical Tests (cont.):

Type of test	Test methods	Uncertainty value
Room temperature tensile	ASTM E8/E8M BS EN ISO 6892-1 BS EN 2002-1 ASTM B557 ASTM B557M	UTS: ±2.7%
		Lower Yield: ±2.7%
		Proof Stress: ±3.2%
		Elongation: ±0.1%
		Reduction of Area: ±2.2%
Non Ambient temperature tensile	ASTM E21 BS EN ISO 6892-2 BS EN 2002-2 BS EN ISO 6892-3	Contact laboratory for details

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