



General Risk Assessment Form RA1

(Refer to Notes for Guidance before completing this form)

School Assessment No:	STR0004
Title of Activity:	Adhesive Shear Strength at Elevated Temperature
Location(s) of Work:	Fire Lab 2
Brief Description of Work:	
<p>Mechanical tests in the Instron 600LX test machine, to determine the load capacity and load-deflection response of epoxy adhesives at elevated temperatures. To develop uniform shear stress along the adhesive joint, the tests are carried out in torsion, using a test frame that fits inside the Instron oven. Rotation of the tubes across the adhesive joint will be measured using digital image correlation.</p> <p>This Risk Assessment should be read in conjunction with the Safe System of Work (SSW).</p>	

Hazard Identification: Identify all the hazards; evaluate the risks (low / medium / high); describe all existing control measures and identify any further measures required. Specific hazards should be assessed on a separate risk assessment form and cross-referenced with this document. Specific assessments are available for hazardous substances, biological agents, display screen equipment, manual handling operations and fieldwork. See <http://www.ed.ac.uk/schools-departments/health-safety/risk-assessments-checklists/risk-assessments> for details.

Hazard(s)	Present Risk Evaluation L/M/H	Control Measures (i.e., alternative work methods / mechanical aids / engineering controls, etc.)	Risk Evaluation after control L/M/H
General hazards in lab environment			
Trips, falls, and dropped items	H	Ensure lab area is clear of clutter. Ensure there are no trailing cables and similar trip hazards. Wear safety boots at all times.	L
Before Testing			
Falls and other	M	Work off step ladder or steps. Do not	L

damage when fitting test frame to machine		work by standing on lab chair, stool or other unstable platform.	
Trips due to trailing cables, specimens, or tools.	M	Keep all cable runs neat and inside cable protectors where they cross the lab. (e.g. for the digital image correlation camera). Ensure lab area is clear of obstructions, and tools have been cleared from the test machine.	L
Lacerations or other injury during use of hand tools.	L	Only use the correct tools (e.g. the correct spanners, not adjustable spanners), and observe normal good working practices.	L
During test			
Test shrapnel or other unexpected failure.	L	Unlikely for this test due to low loads and ductile failure. Wear safety glasses at all times.	L
Incorrect behaviour of test machine resulting in damage to machine or person.	H	Machine must only be operated by trained and competent user. User should be accompanied by second experienced machine user to check the test programme and check for errors in technique during early tests. Emergency stop can be used to halt tests.	L
Burns from oven.	M	Wear gloves when handling heated specimens and oven.	L
Vapours given off by epoxy during test	L	Use lab extraction.	L
After Testing			
Damage to machine or user due to residual load or test residue.	M	Ensure load is zero before removing specimen. Thoroughly clean test machine after every test, especially around the seal at the top of the ram.	L

Engineering Controls: *Tick relevant boxes*

Guarding		Extraction (LEV)	X	Interlocks		Enclosure	
Other relevant information (incl. testing frequency if appropriate):							

Personal Protective Equipment (PPE): Identify all necessary PPE.

Eye / Face	X	Hand /Arm	X	Feet / Legs	X	Respiratory	
Body (clothing)	X	Hearing		Other (Specify)			
Specify the grade(s) of PPE to be worn:							
<ul style="list-style-type: none"> • Safety boots with protective toe cap and sole. • Safety glasses with side shields • Riggers or similar heavy gloves for handling steel and hot specimens. • Old clothing or lab coats. 							
Specify when during the activity the item(s) of PPE must be worn: At all times							

Non-disposable items of PPE must be inspected regularly and records retained for inspection

Persons at Risk: Identify all those who may be at risk.

Academic staff	X	Technical staff	X	P'Grad students	X	U'Grad students	X
Maintenance staff		Office staff		Cleaning staff		Emergency personnel	
Contractors		Visitors		Others			

Additional Information: Identify any additional information relevant to the activity, including supervision, training requirements, special emergency procedures, requirement for health surveillance etc.

No other special procedures.

Prepared by

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Signature:	Date:

Approved by

PhD Supervisor: Tim Stratford	
Signature:	Date:

Lab Manager: Tim Stratford	
Signature:	Date:

Review Date: 8/8/13