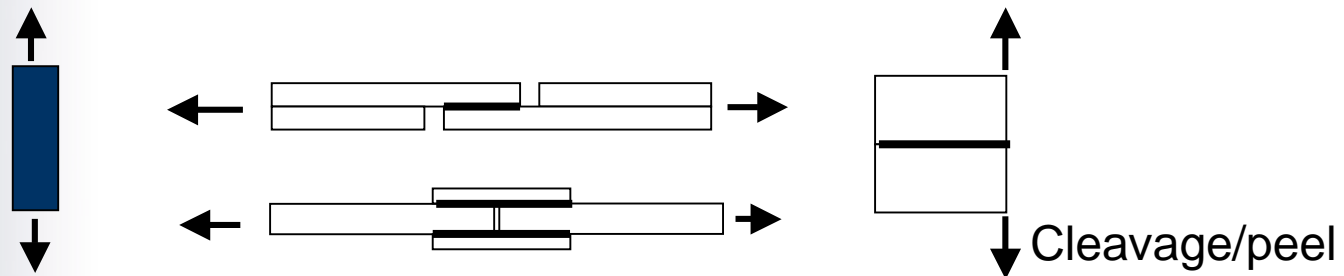


"Composite Materials"
for Aerospace, Defence and Security Applications

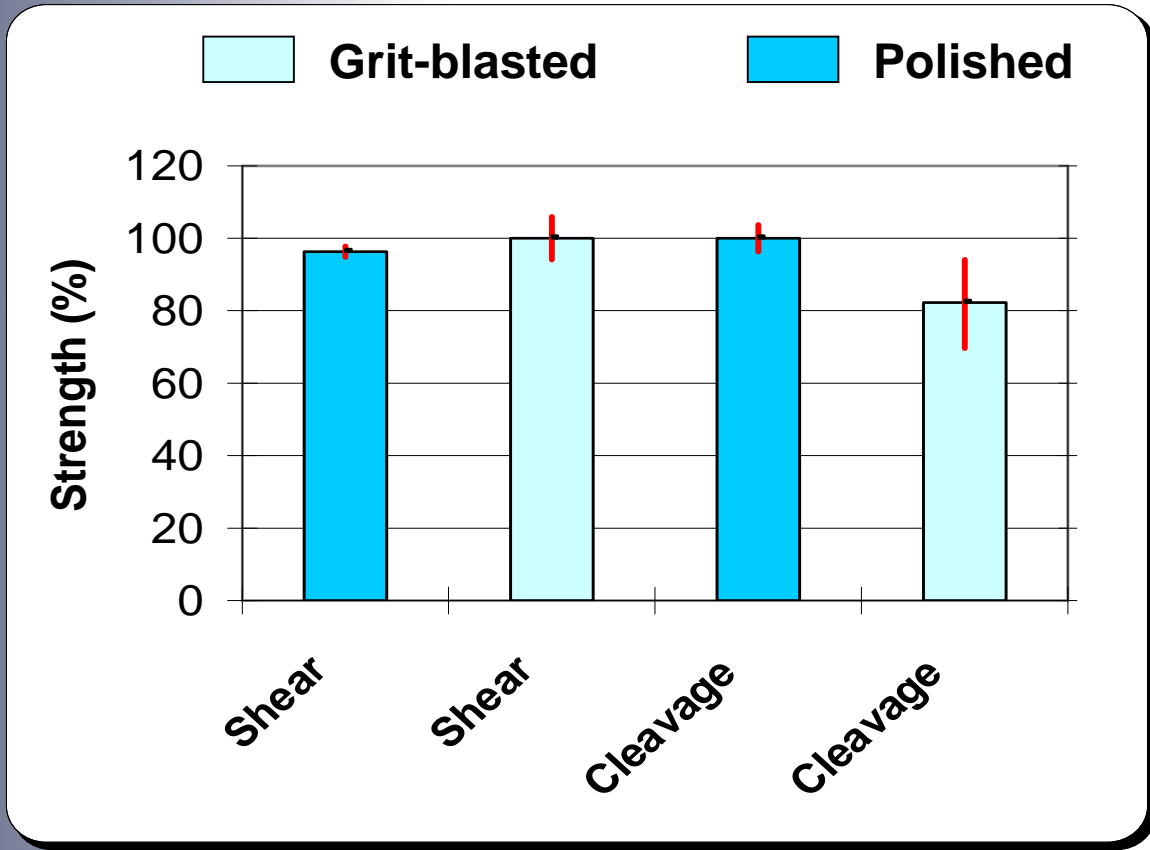
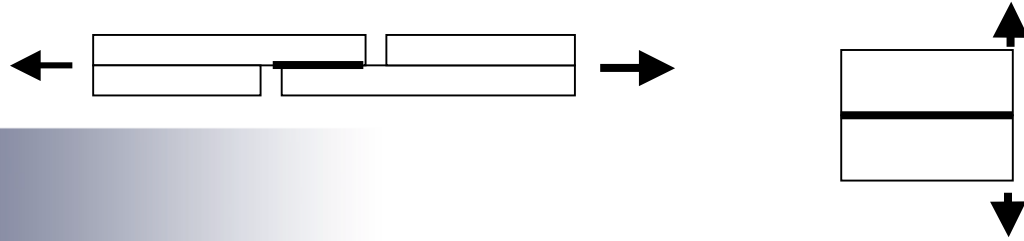
Kelvin Gallery, Hunterian Museum, University of Glasgow
Wednesday 5th December 2007

ADHESIVE

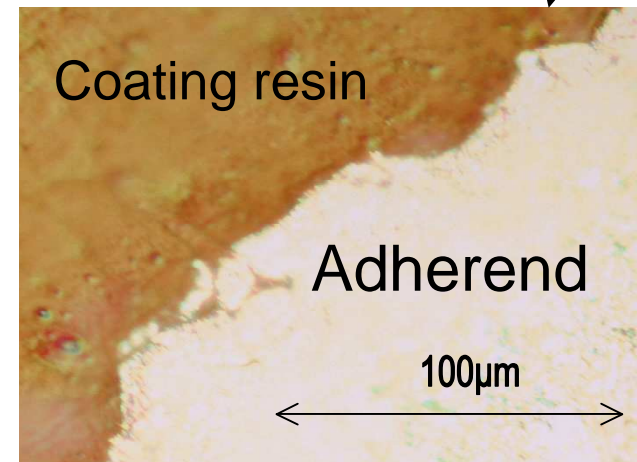
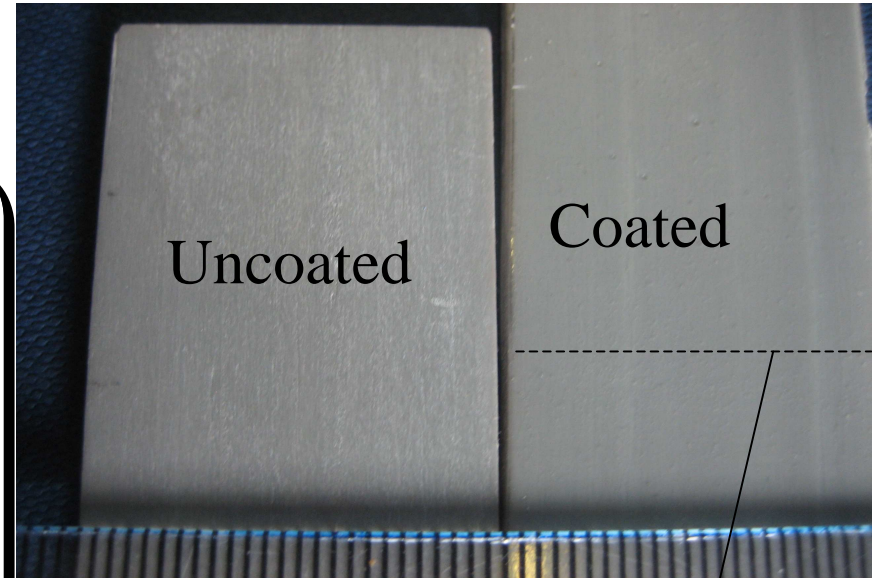
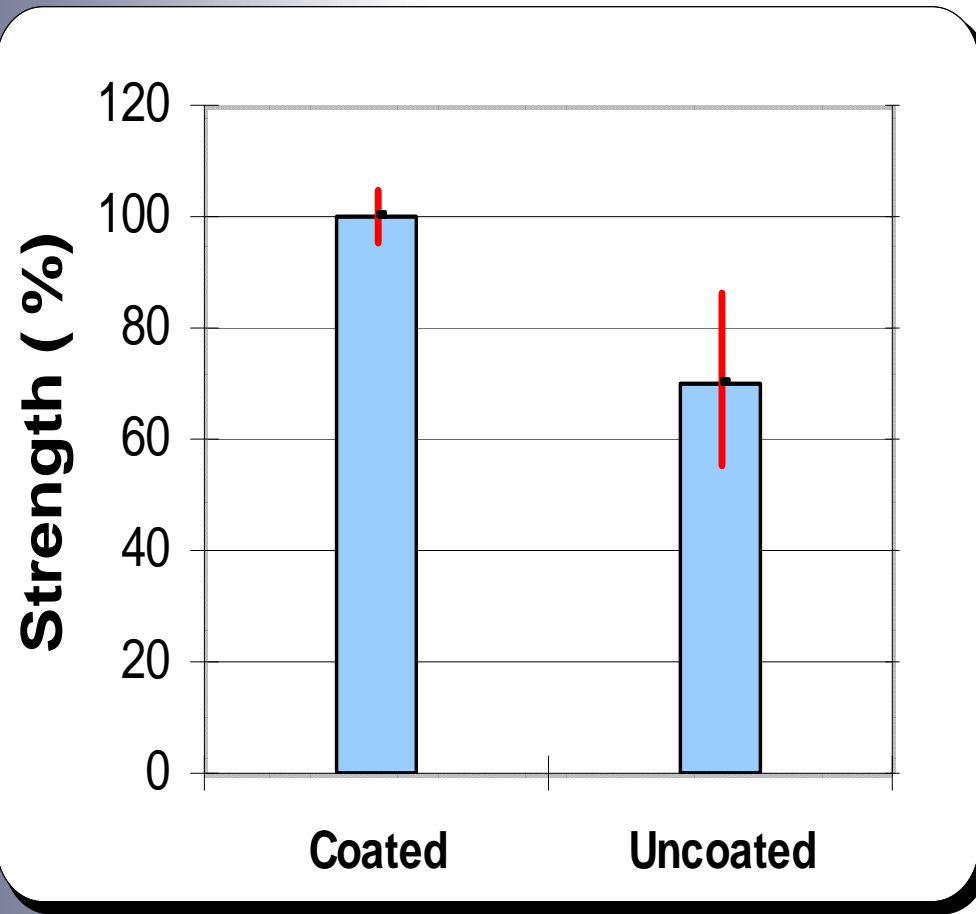
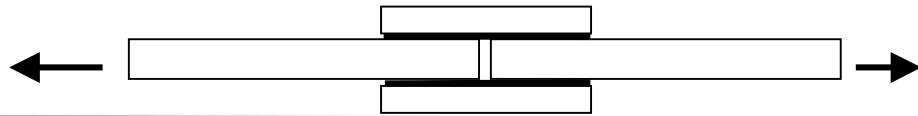
ADHESIVE	No. 1	No. 2	No. 3
Number of parts	One	Two	Two
Cure temp. (°C)	150	70	23
Cure time	1 hr	2 hr	40 min
Maximum gap filling (mm)	1.5	0.5	5
Max. service temp. (°C)	120	80	90
Young's modulus (GPa)	3.5	2.5	0.5
Bulk tensile strength (MPa)	65	35	15
Av. shear strength (MPa)	10 - 48	10-25	10!
Av. cleavage strength (MPa)	5- 19	5-17	5-10



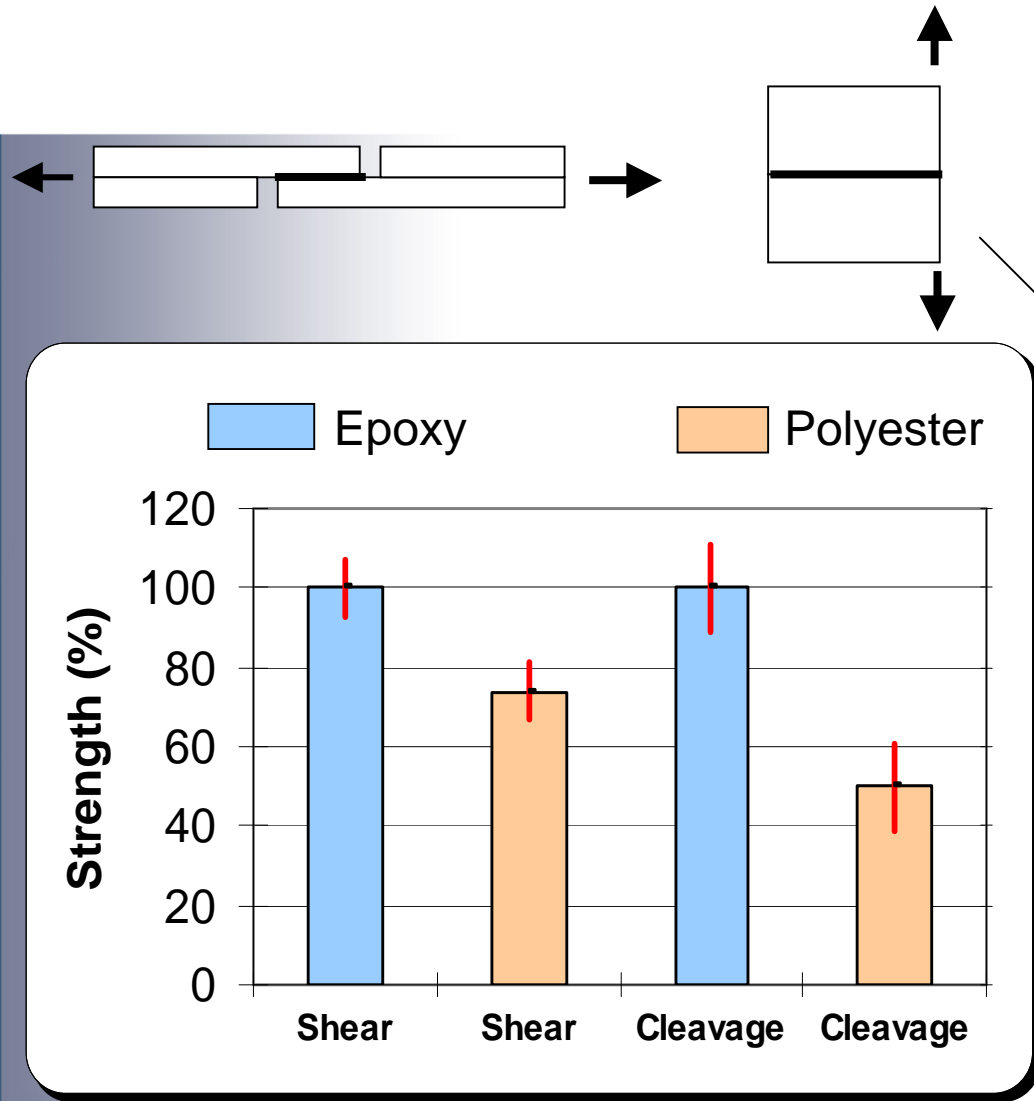
SURFACE



COATING



RESIN

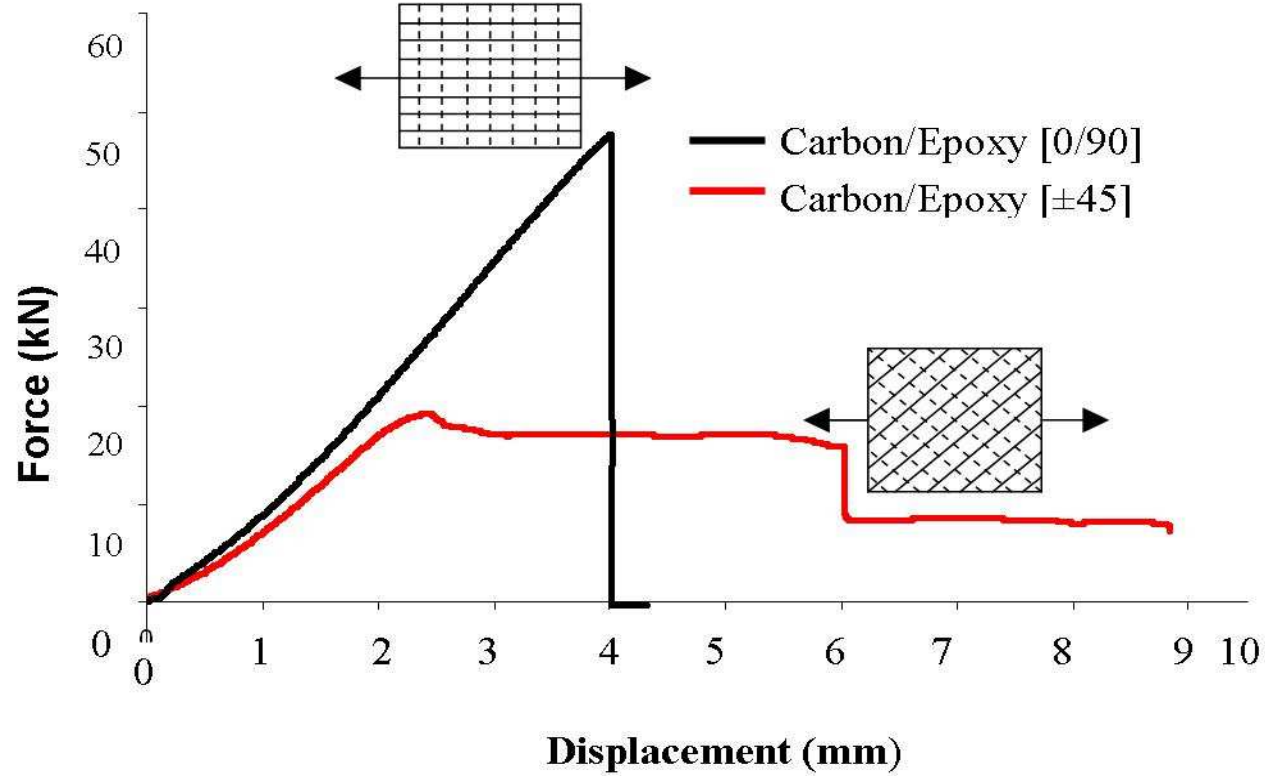
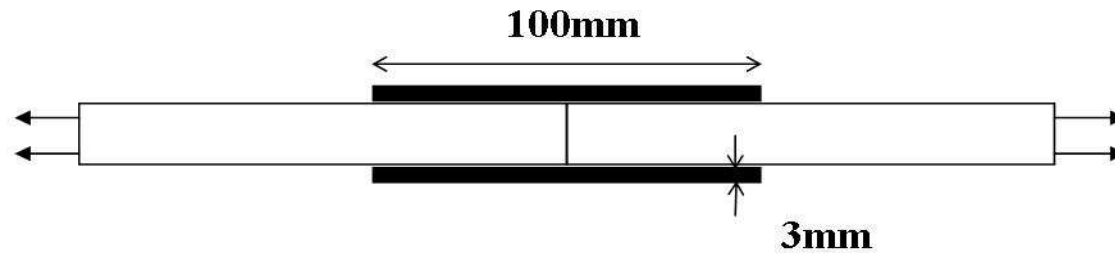


Surface failure (epoxy)

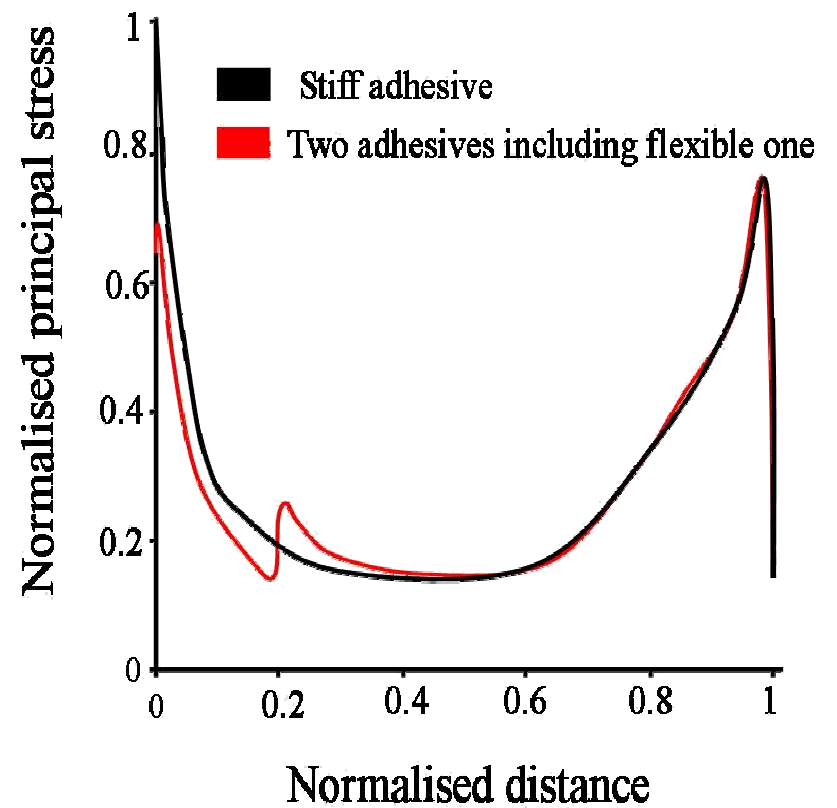
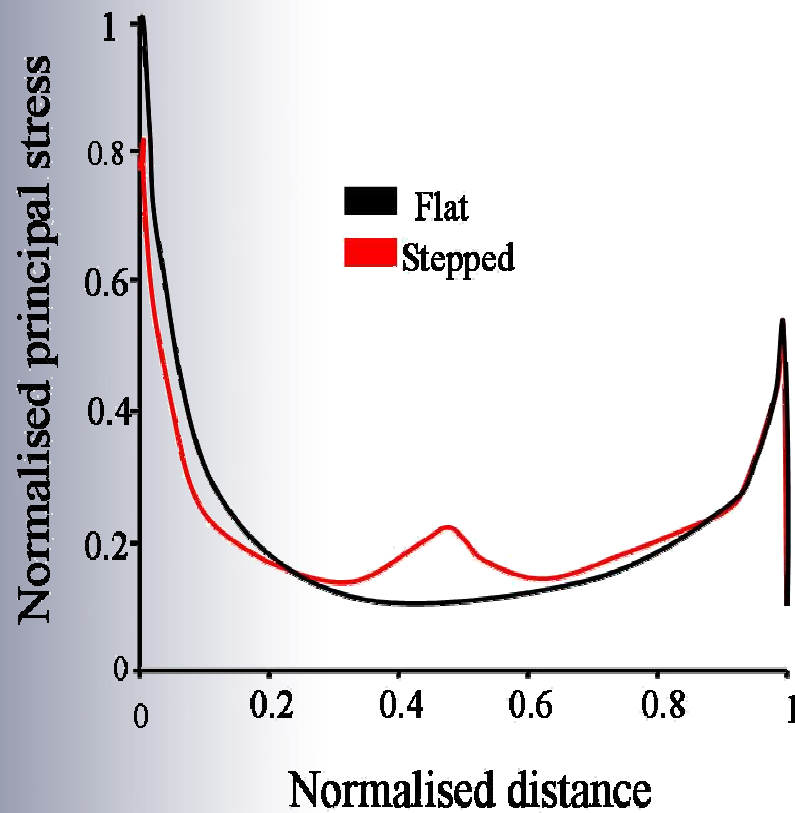
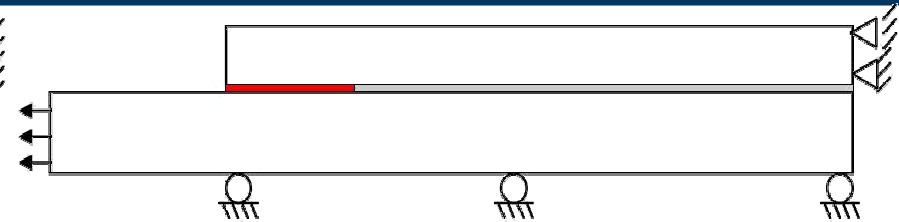
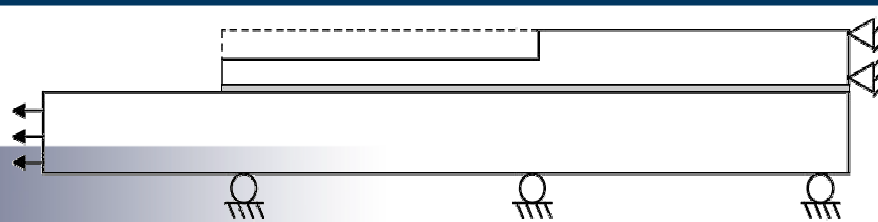


Interlaminar failure (polyester)

FABRIC

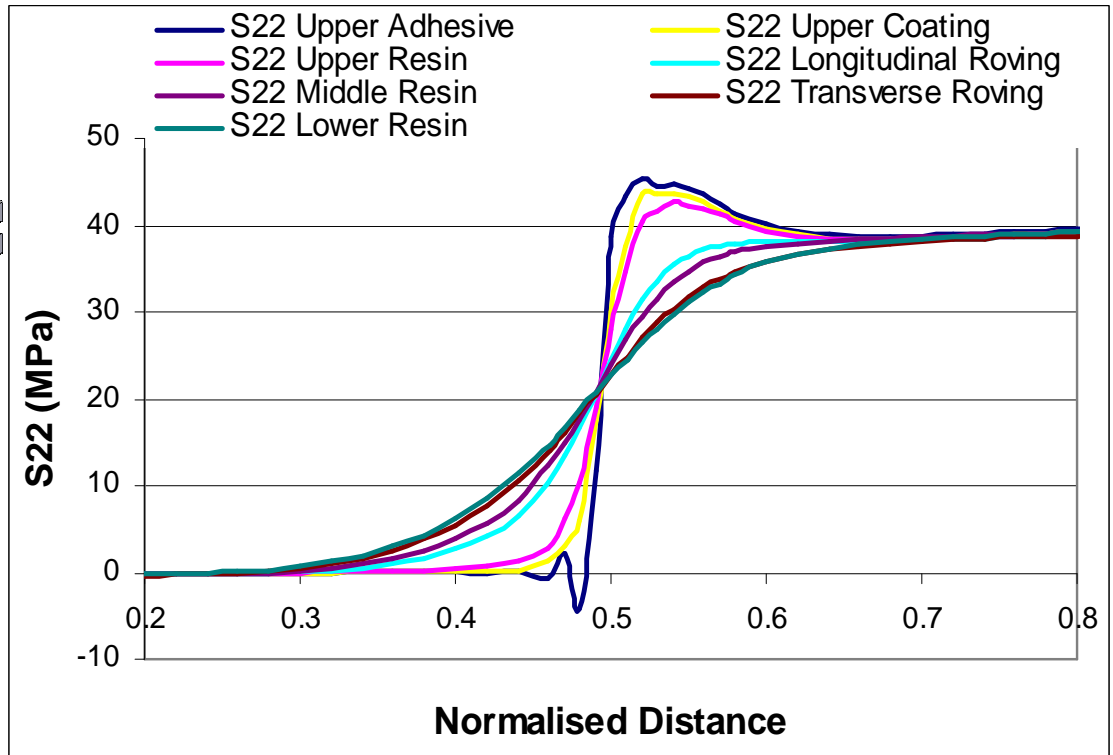
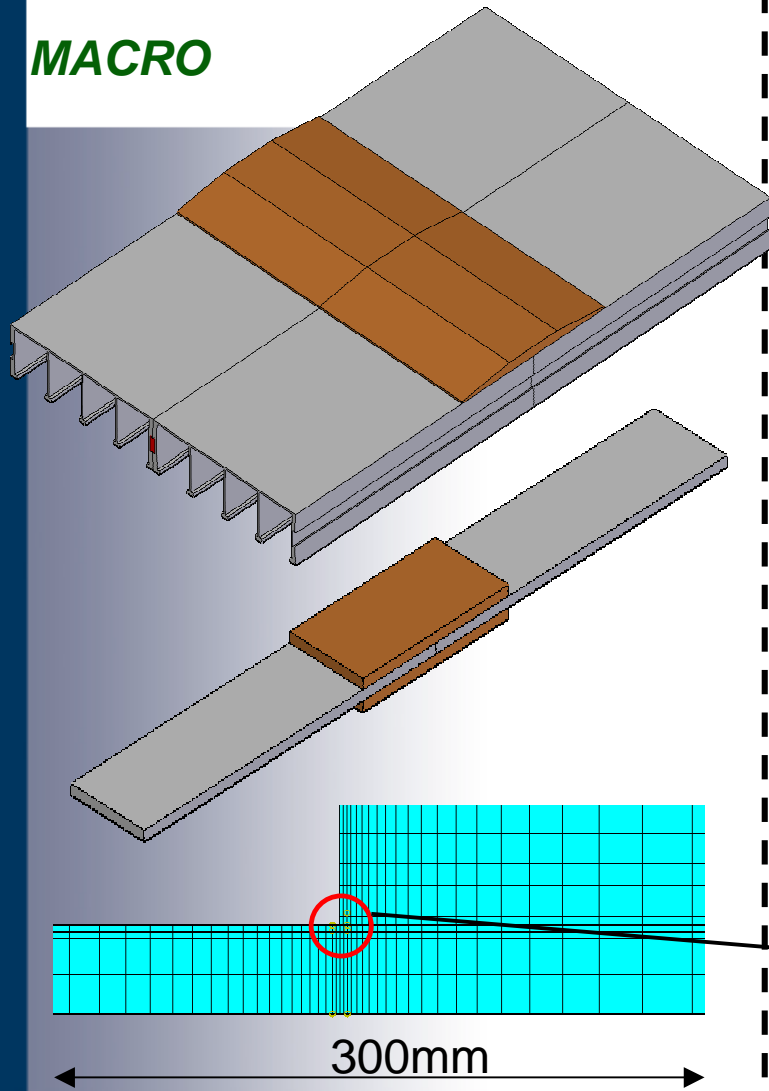


DESIGN

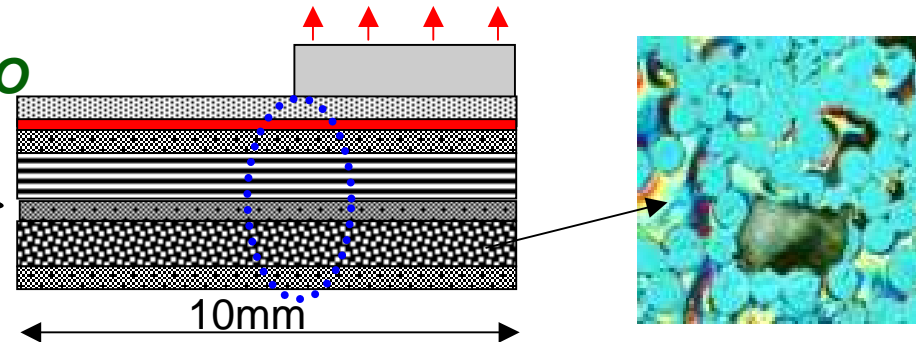


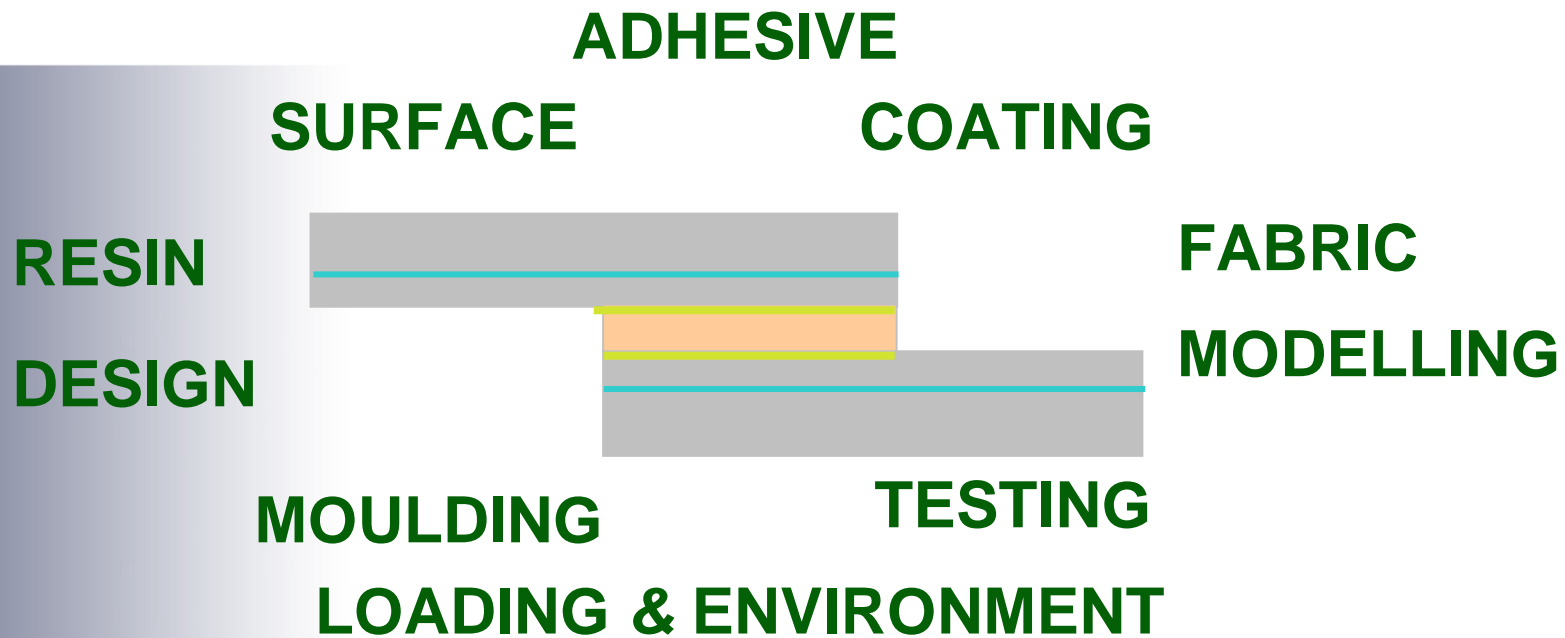
MODELLING

MACRO



MESO





s.hashim@mech.gla.ac.uk