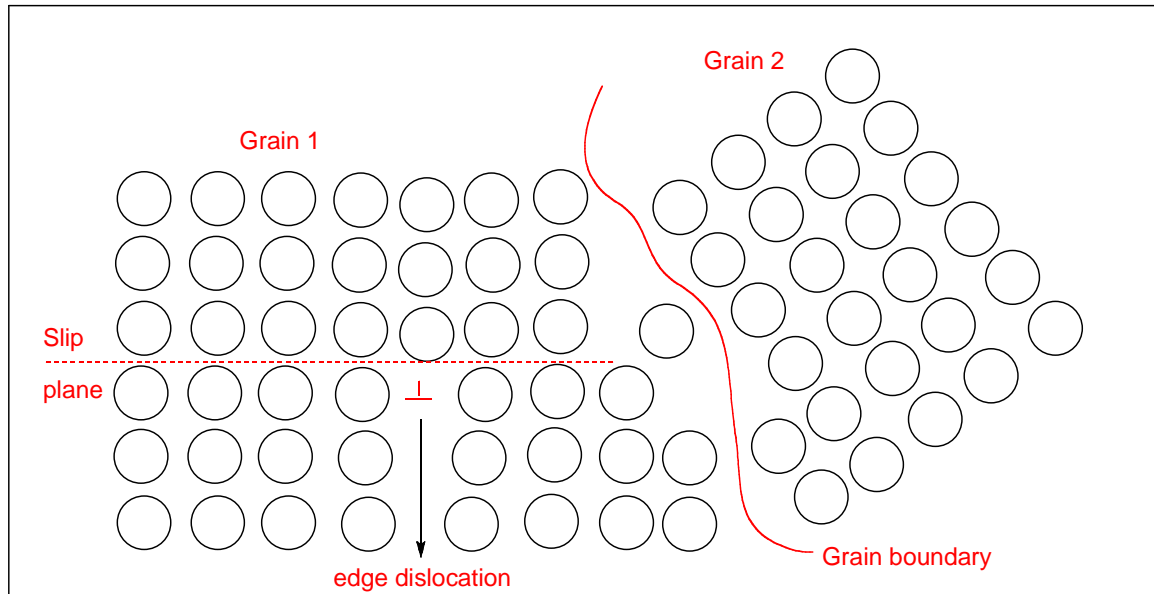
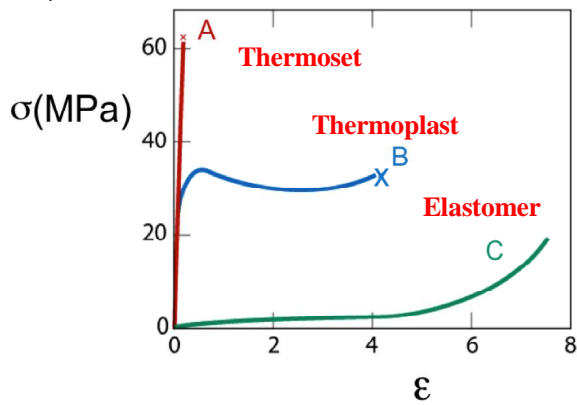


AE4ASM001: Design of Light weight structures 1: Composites & Metals
Answers

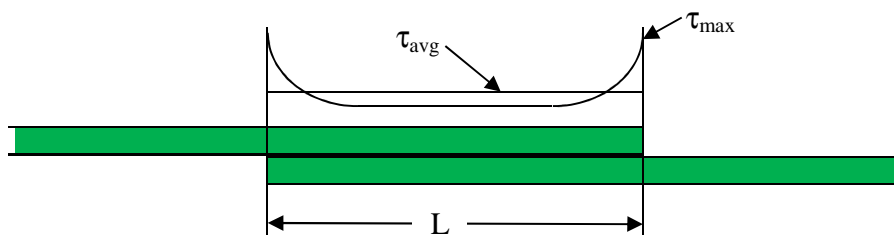
1. a)



1. b)



2. a)



2. b)

Stress peaks at the end due to high shear strains; mismatch in elongation of the two adherents.

3. a) Pressure / Void or porosity / permeability / flow length

3. b) RTM uses pressure so a closing force is needed, for large objects this is a large apparatus, making it expensive and thus not suitable.

4. a) Glass reinforced thermoplastic composites do not conduct electricity. So no sparks will be formed, and nothing will be removed.

4. b) During the processing of thermoset composites chemical reactions occur (polymerization) and these should be controlled properly. During the processing of thermoplastic composites only a phase change (solid-liquid-solid) is used. No chemical reactions.