

Question 3 continued.

c) Steel space frames are cheaper, and work well with the carbon fibre tubes as the weight is balanced out between the two materials. It is heavy (high density), but if used with carbon fibre, then this property is acceptable.

d) When we weld together steel components, we are subjecting the base and parent metal to extreme heat. The heat zone will go expansion - contraction during the weld + cooling process. It can cause embrittlement, cracking, etc. which affects the fatigue strength, and ductility.

Brazing is a better quality because it is using a lower melting point metal to 'bond' the base and parent metal together, thus reducing chances of embrittlement and cracking.

e) Two other alternatives to join a space frame chassis to each other would be bonding using adhesive or glue, or using fasteners, such as rivets or bolts.

Adhesives have improved a lot over the years, it is a lightweight alternative.

Rivets are stronger but they have a greater density.