

Stuart Jones (1909136)

ACMA4000

Question 3.

a) For the racing car chassis, I would select Aluminium Alloy. reasons being: -

1. Lightweight, for racing car speeds.
2. Corrosion resistant, in case it is raining.
3. Strong; to sustain huge stresses acting on it.
4. Ductile, can be formed without losing strength.
5. Not brittle, so won't shatter on impact.
6. High strength-to-weight ratio, ideal for such a purpose as a racing car.

b) I wouldn't choose any wood, in case a crash causes a fire. I wouldn't choose any ceramics as they are too brittle and would shatter on impact. B4C looked an obvious choice at first, but it is very expensive and difficult to machine and form.

c) Carbon fibre, as a property to use in a racing car, is low in weight, has a high tensile strength, is very stiff and also has a high temperature tolerance, ideal to complement a steel chassis. But very expensive.