CS 31GB.25 Factors of safety

ED Decision 2011/012/R

- (a) A factor of safety must be used in the balloon design as provided in the table.

	Safety factor
Envelope	5.00
Suspension components (fibrous or non-metallic)	2.25
Suspension components (metallic)	1.50
Other	1.50

- (b) The primary attachments of the envelope to the basket must be designed so that any single failure will not jeopardise safety of flight.
- (c) For design purposes, an occupant mass of at least 77 kg must be assumed.

AMC 31GB.25 Factors of safety

ED Decision 2011/012/R

The term ‘envelope’ here includes the integral vertical and horizontal load tapes as well as the envelope fabric(s). It should be noted that the suspension system pick-up points (sometimes known as ‘turnbacks’) at the envelope should be regarded as part of the suspension system, rather than the envelope, as far as 31GB.25 is concerned.

‘Suspension components’ here are those parts of the balloon that carry the load between the lift force of the envelope and the weight force of the basket.

A net around the envelope taking these loads or suspension system pick-up points should be considered as part of the suspension system.

The individual structural elements in the suspension system should be dimensioned and configured or duplicated so that failure or absence of one structural element does not cause any uncontrollable operating condition. The factors of safety apply to all parts of the load bearing path (e.g. joints, splices, knots, terminals, etc.).

The post-single failure case only needs to be justified with the application of limit loads.

→ CS 31GB.27