

Lap belt Anchorages and Webbing Routing

FIA recommends a lap belt routing $60^\circ \pm 10^\circ$ down from an horizontal. This refers to an “upright” seating position which includes a backrest declination of approx. 20° to 25° .

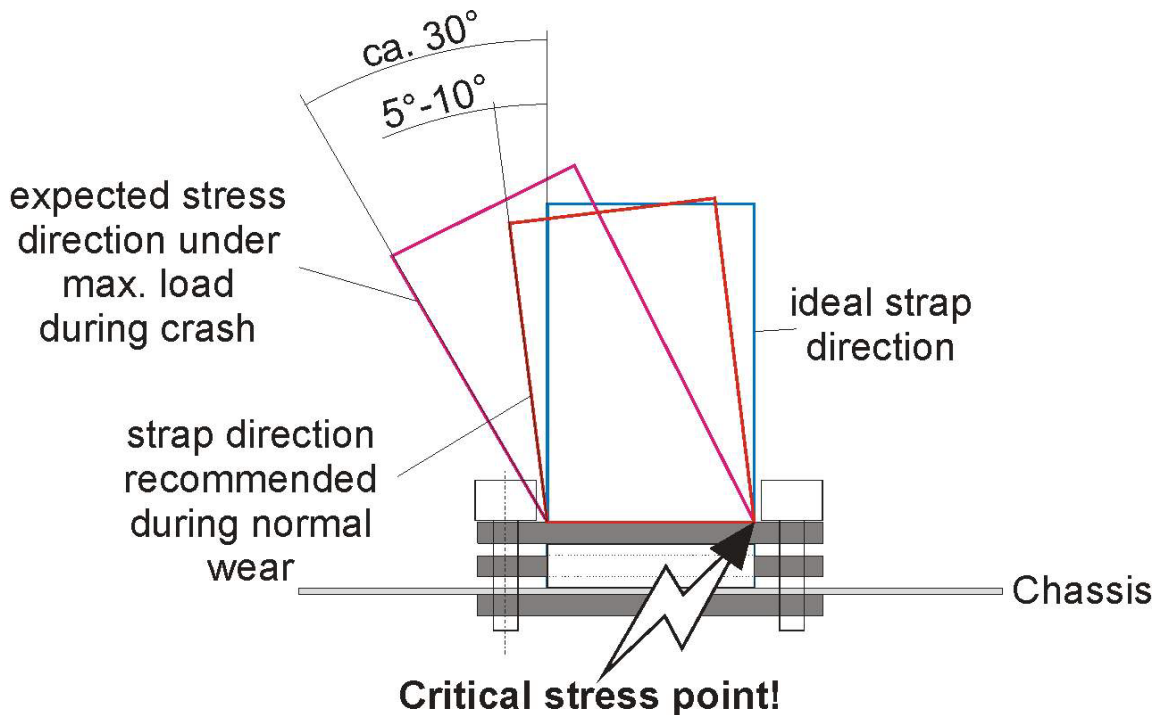


Since seats in open wheel race cars are more declined and also the seat ramp provides body support, the lap belt angle should increase as the back rest further declines. E.g. at an declined backrest of 40° , the lap belt angle should increase to 75° to 80° .



To achieve best performance of anchorage strength, all straps must be aligned during an impact. This is not guaranteed with typical anchorage points commonly used in open wheel race cars.

- A) these systems do not allow belt alignment during normal seating
- B) webbing cannot further align during an impact, when the occupant moves relative to the initial seating position and anchorages
- C) webbing will/can be unevenly loaded
- D) any sharp edge of the anchorage brackets will cut the webbing to failure
- E) bending of the anchorage brackets will result in further uneven loading of the straps.



Make sure, the seat ramp does not bend or collapse during a crash. A weak seat ramp would result in further forward movement of the occupant and thereby further stress the lap straps.

As long as no other solution is available, the following recommendation should be followed.

Bars must not bend under strap load of 14.7 kN.

All edges must be appropriately rounded (>1,5mm radius)

Belt routing in accordance to FIA recommendation

