Transmitted by Spain

A. PROPOSAL

Paragraphs 2.1.5. to 2.1.5.2., amend to read:

2.1.5. In the case where occupant restraint devices are part of the vehicle type, a mass shall be attached to each seat fitted with an occupant restraint following one of these two methods:

2.1.5.1. First method: That mass shall be:

2.1.5.1.1 50 per cent of the individual occupant mass (M_{mi}) of 68 kg.

2.1.5.1.2 Placed to have its centre of gravity 100 mm above and 100 mm forward of the R point of the seat as defined in Regulation No. 21, annex 5.

2.1.5.1.3 Fixed rigidly and securely so that it does not break away during the test.

2.1.5.2 Second method: That mass shall be:

2.1.5.2.1. An anthropomorphic ballast with a mass of 68 kg, restrained with a 2 point seat-belt. The ballast must allow guiding and positioning for safety belts.

2.1.5.2.2. Placed to have its centre of gravity and dimensions according Figure A5.??

2.1.5.2.3. This ballast can be replaced by a 50th percentile man dummy.

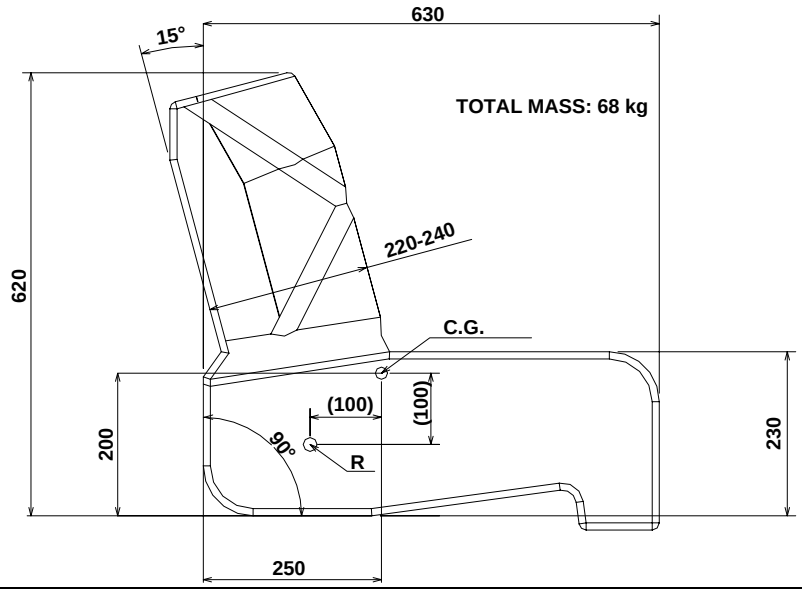
chest breadth ≈ 315-322 mm waist breadth ≈ 290-310 mm hip breadth ≈ 325-342 mm	

Figure A5.??. Dimensions for the anthropomorphic ballast

B. JUSTIFICATION AND COMENTS TO DOCUMENT TRANS/WP.29/GRSG/65.

Paragraphs 2.16 and 3.2.2.1, Annex 5 Paragraphs 2.1.5.1.1 and 2.1.5.2,

There must be correlation between all paragraphs related to the total effective vehicle mass for calculation and tests to obtain equivalent results:

If k = 0.50 then:

- In the first method for test defined in Annex 5, Paragraph 2.1.5.1 the fixed mass shall be 50 per cent of the individual occupant mass.
- In the second method for test defined in Annex 5, Paragraph 2.1.5.2 the anthropomorphic ballast must be restrained with a 2 point seat-belt (and the brackets [or 3] should be deleted).

If k = 0.90 then:

- In the first method for test defined in Annex 5, Paragraph 2.1.5.1 the fixed mass shall be 90 per cent of the individual occupant mass
- In the second method for test defined in Annex 5, Paragraph 2.1.5.2 the ballast must be restrained with a 3 point seat-belt.

Paragraph 2.1.5.2. Reference for the anthropometric ballast

- The idea is to have economic and easy to use ballasts. Each Laboratory can design its own ones based in the dimensions from a 50^{th} percentile male (Fig 1).
- The ballast must allow guiding and positioning for safety belts.
- Total ballast mass = 68 kg.
- The bench marks related to the centre of gravity (C.G.) and reference point (R) have been obtained from a Hybrid III dummy (seated position, back reclined 15º).
- The width can vary according to next dimensions (obtained from an European and American 50^{th} percentile male):
  - chest breadth ≈ 315-322 mm
  - waist breadth ≈ 290-310 mm
  - hip breadth ≈ 325-342 mm
- The use of dummies (50^{th} percentile man) always represents a worst situation because of the different mass involved. If a test is overcome with dummies instead of rigid or anthropomorphic ballasts, the results must be accepted.

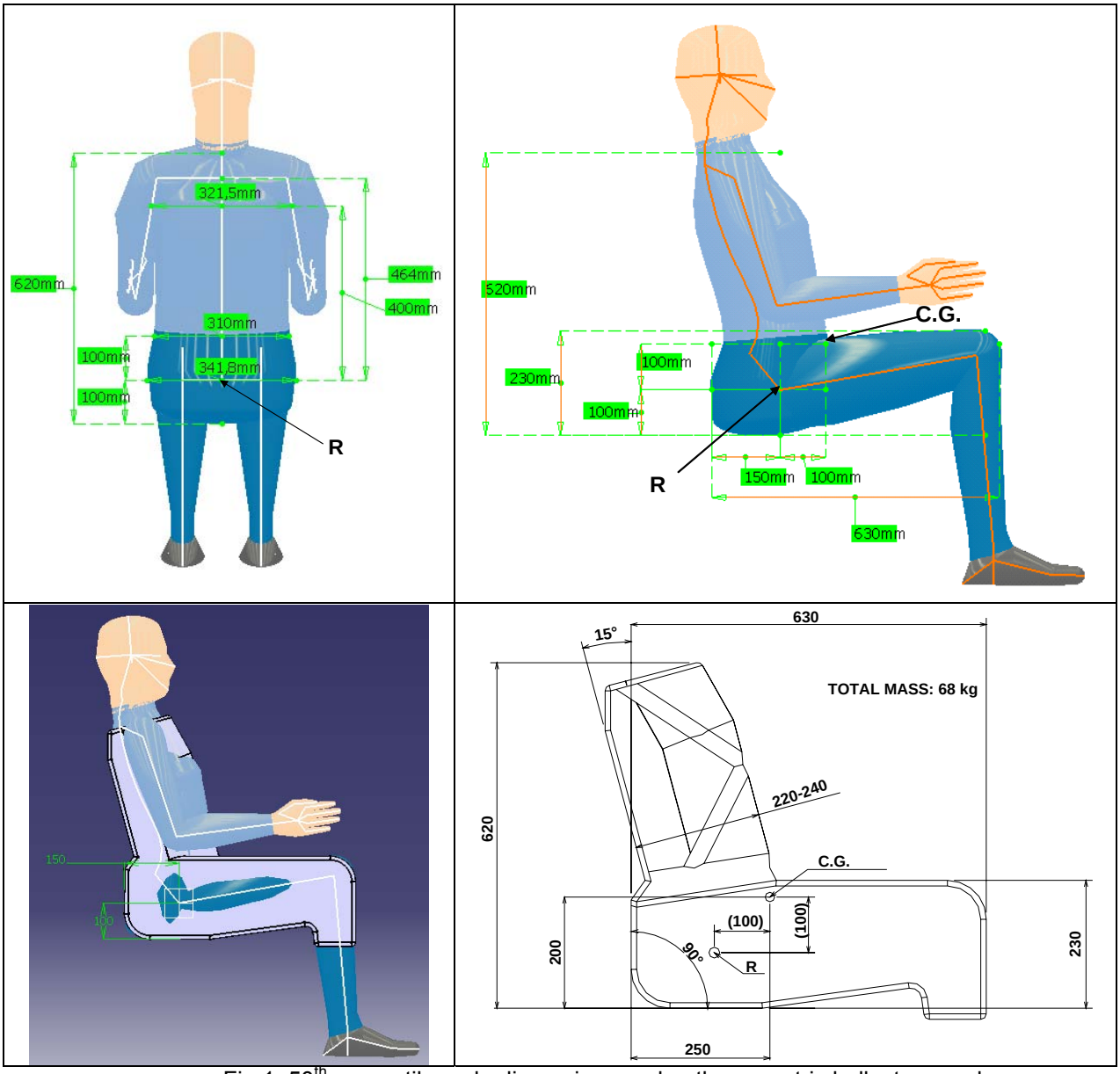


Fig 1. 50th percentile male dimensions and anthropometric ballast example.