CIRCULAR NO. 4C-3 -1

INTERPRETATIONS

Attached are interpretations issued by the Board in respect of Australian Design Rule No.4C - Seat Belts (February 1978). They should be read in conjunction with Circular No. 0-11-1.

CIRCULAR NO. 4C-3 -1

Australian Design Rule No. 4C - Seat Belts

As endorsed by the Australian Transport Advisory Council - July 1978.

INTERPRETATION NO.1 (CLAUSE 4C.4.6)

Question: In the case of a seat cushion designed to fold or hinge, must the design feature specified in Clause 4C.4.6 function so as to meet automatically the requirements when the seat is restored to its normal position?

Answer: The requirements of Clause 4C.4.6 must be met while the seat is in its normal position. The operation of re-establishing the seat after folding may include a manual operation to re-establish part of the belt assembly to meet the requirements of Clause 4C.4.6.

INTERPRETATION NO. 2 (CLAUSE 4C.4.7)

Question: Does the vehicle floor referred to in Clause 4C.4.7 includes parts of the floor not accessible to the feet of the vehicle occupants?

Answer: No. Parts of the vehicle floor structure which are inaccessible to the occupant's feet during travel or during entry and exit are not included.

INTERPRETATION NO. 3 (CLAUSE 4C.2.6)

Question: For the purposes of Clause 4C.2.6 is a printed linen label acceptable as a permanent marking?

Answer: Yes. Provided that the marking on the label is resistant to fading and is securely attached.

INTERPRETATION NO. 4 (CLAUSE 4C.2.6)

Question: How must the label be attached? Is it sufficient to attach one end or the label by the stitch pattern used at an end fitting or the belt?

Answer: Yes. Provided that the location of the label protects it from handling or abrasion during wearing, e.g. adjacent to an anchor fitting at upper anchorage or inner floor anchorage. If the label is in a position subject to handling or wear and tear it should be stitched down all around.

INTERPRETATION NO. 5 (CLAUSE 4C.5.1(I))

Question: Clause 4C.5.1(i) refers to 'the working stroke of the two strokes of each cycle'. 'What is meant by the 'working stroke''?

Answer: The 'working stroke' is that part of the stroke of the strap during which the load of at least 13N is applied. There are two strokes to each cycle, and therefore two working strokes to each cycle. The total movement during one stroke may exceed 200mm, but the 'working stroke' is limited to between 150 and 200mm.

INTERPRETATION NO. 6 (CLAUSE 4C.1.6)

Question: Clause 4C.1.6 in defining 'Correctly Fitted' refers to the belt being 'adjusted around the occupant of the seating position to eliminate slack'. In the case of a belt fitted with a retractor is the removal of slack achieved by the retractor considered as sufficient to achieve correct fitting, even though some parts of the belt assembly may not be in contact with the occupant or dummy?

Answer: A retractor belt is regarded as correctly fitted when the retraction force has removed slack from the belt straps and both the lap strap and the torso strap have at least one point of contact with the dummy.

INTERPRETATION NO. 7 (CLAUSE 4C.2.6)

Question: In the case where the webbing colour constitutes the only variable characteristic within a group of seat belt assemblies:

(a) is it necessary to use separate identification code for assemblies with different colours of webbing?

(b) are separate test reports required for all such assemblies?

Answer:

(a) each webbing colour used will need to be stated in the relevant CB forms and shown on the appropriate belt identification labels, or a separate identification code is to be used for each assembly incorporating a different colour of webbing;

(b) to claim compliance with the ADR of all assemblies, it would be necessary to demonstrate that all requirements of the Rule have been met in respect of one assembly in the group, and to submit sufficient data to show that, for all other variants of the assembly, properties which are likely to be colour- related satisfy relevant requirements of the Rule. The properties to be investigated are to include:

Tensile strength, dry and wet: (AS E47-1971, Clauses 6 & 10)

Colour fastness: (AS E47-1971, Clause 9)

Degradation: (AS E47-1971, Clause 11)

Abrasion resistance: (ADR 4C, Clauses 4C.5.1 and 4C.5.2)

(Tests of the above properties are covered by CB4B/4C forms: Annex B, Parts I and II).

Notwithstanding the above, it is the responsibility of the manufacturer to ensure ·that seat belt assembly properties which might be affected by the webbing colour are assessed so as to demonstrate compliance with all requirements of the Rule.

INTERPRETATION NO. 8 (CLAUSE 4C.2.6)

Question: In the case where the weave pattern of the webbing constitutes the only variable characteristic within a group of seat belt assemblies,

(a) is it necessary to use separate identification for assemblies with different weave patterns?

(b) are separate test reports required for all such assemblies?

Answer: (a) Belt assemblies incorporating different webbing weave patterns will need to be given separate identification codes, or be otherwise clearly identifiable through both labelling and CB forms entries;

(b) to claim compliance of all assemblies with the ADR it is necessary to demonstrate that all requirements of the Rule have been met in respect of one assembly in the group, and to submit sufficient data to show that, for all other assembly variants, properties which are likely to be affected by the weave pattern satisfy relevant requirements of the Rule. The properties to be investigated are to include:

Tensile strength, dry and wet:	(AS E47-1971, Clauses 6 & 10).
Elongation:	(As E47-1971, Clause 7).
Abrasion resistance:	(ADR 4C, Clauses 4C.5.1 at 4C.5.2).
Test of assemblies:	(AS E35, Part I-1970, clause II).
Dynamic Tests:	(ADR 4C, clause 4C.7.1 at 4C.9).

(Tests of the above properties are covered by CB4B/4C forms: Annex B, Parts I and II; Annex D, Part I; and Annex F, Part I).

Notwithstanding the above, it is the responsibility of the manufacturer to ensure that seat belt assembly properties which might be affected by the webbing weave pattern are assessed so as to demonstrate compliance with all requirements of the Rule.

INTERPRETATION NO. 9 (CLAUSE 4C.2.6)

Question: Clause 4C.2. 6 require, amongst other things, that seat belts be marked with the date of manufacture of the assembly by month and year. Is it acceptable for a coding system to be used to represent the date of manufacture?

Answer: No. The date of manufacture marked on seat belts under the requirements of Clause 4C.2.6 must include at least the month by name, recognised abbreviation or number, and the year by full number or at least the last two digits, e.g., August 1976; or Aug 76; of 8/76; or 8-1976.

INTERPRETATION N0. 10 (CLAUSE 4C.2.7)

Question: SAA has issued AS 1753-1975: Webbing for Restraining Devices for Occupants of Motor Vehicles, which supersedes AS E47-1971 of the same title and is a revision and metrication of that standard. Clause 4.2.7 of this Design Rule requires belt assemblies to comply with AS E35, Part I - 1970, which in turn calls up AS E47 - 1971 for webbing details. Is the webbing made to the new standard acceptable to the Board for the purposes of demonstrating compliance with ADR 4C?

Answer: Yes, provided that it is clearly marked AS-1753.

INTERPRETATION N0. 11 (CLAUSE 4C.7.3 (IV))

Question: Is it necessary to conform precisely to the stated periods of 6 hours for the modes of conditioning set down in Clauses 4C.7.3(iv)(a) and 4C.7.3(iv) (b)?

Answer: No. The periods of conditioning for these two modes shall not be less than 6 hours.

INTERPRETATION NO. 12 (CLAUSE 4C.4.6)

Question: What is the line of contact of the seat cushion with the seat back?

Answer: The front boundary of the area of contact across the seat width of the seat cushion with the seat back when the seat cushion is in an unloaded condition.

INTERPRETATION NO. 13 (CLAUSE 4C.4.6)

Question: What is a positive design feature?

Answer: A feature provided by the manufacturer of a vehicle which, under all conditions of service and use will restrain positively that part of the seat belt assembly which does not include the strap designed to pass over the torso the occupant from passing completely rearward of the line of contact of the seat cushion with the seat back.

INTERPRETATION NO. 14 (CLAUSE 4C.4.6)

Question: May the contact pressure between the seat cushion and the seat back be considered as a positive design feature?

Answer: Only when it can be demonstrated that under all conditions of service and use it is not possible for that part of the seat belt assembly which does not include the strap designed to pass over the torso of the occupant to pass completely rear-ward of the line of contact of the seat cushion with the seat back.

INTERPRETATION NO. 15 (CLAUSE 4C.2.7)

Question: Clause 4C.2.7 states, inter alia, that seat belt assemblies shall comply with Clause 7(i) of the Australian Standard E35, Pt.1-1970, which requires that:

'The buckle shall be of a quick-release type and shall not be capable of partial engagement or inadvertent release'.

What is the definition of 'partial engagement'?

Answer: 'Partial engagement' should be interpreted to mean any stable condition, other than complete engagement, in which the buckle components will withstand a separating force of not less than 1 N applied by tensile loads in the strap components, without disengaging. ('Complete engagement' is any condition under which the buckle meets the requirements of AS E35, Part I-1970, Section 11: 'Tests of Assemblies').

INTERPRETATION NO. 16 (CLAUSE 4C.2.7)

Question: Clause 4C.2.7 calls up Clause 11.3 of Australian Standard E35, Part 1-1970 which limits the allowable amount of seat belt webbing slip at manual adjusting devices. Is the creep of seat belt webbing from a retractor during the loading procedure of the strength of assembly test, considered to be subject to the requirements of Clause 11.3?

Answer: No. Requirements of Clause 11.3 are considered to apply only to seat belt assemblies employing adjusting devices of the manually manipulated type.

INTERPRETATION NO. 17 (CLAUSE 4C.2.7)

Question: What is the configuration of anchorage points required for a seat belt assembly which is designed for a specific vehicle position, in order that the strength of assembly test may be performed to comply with the requirements of Australian Standard E35, Part 1-1970, Appendix E.

Answer: The anchorage points shall be positioned in relation to the dummy such that, when the seat belt assembly is correctly fitted, the securing buckle shall be positioned on the hip of the dummy as shown in Figures E1 and E3 or AS E35, Part 1-1970. Therefore, it is acceptable to use:

(a) the standard anchorage configuration provided the above requirement is met, or alternatively;

(b) a configuration that satisfies the requirements of Clause 4C.9.1(i).

INTERPRETATION NO. 18 (CLAUSE 4C.3.3 (II))

Question:	What is a positive design feature in this context?
Answer:	A positive design feature may be a clip, moulding or loop of plastic, metal or webbing permanently attached at or near the free end of the strap so that the free end is always held in close contact with another strap of the seat belt assembly without the need for any manual adjustment.