



CD/K/019:2008
ICS 43.040.60

EAST AFRICAN STANDARD

Motor vehicle safety — Strength of seats and their anchorages

EAST AFRICAN COMMUNITY

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

© East African Community 2010 — All rights reserved*

East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

Contents

1 ScopeError! Bookmark not defined.

2 RequirementsError! Bookmark not defined.

3 Packing and markingError! Bookmark not defined.

4 Inspection and measurementError! Bookmark not defined.

Appendix A (informative) Applicable standardsError! Bookmark not defined.

Appendix B (informative) Notes to purchasersError! Bookmark not defined.

Appendix C (informative) Quality evaluation of contact type couplings.....Error! Bookmark not defined.

Draft for comments only — Not to be cited as East African Standard

Draft for comments only — Not to be cited as East African Standard

Motor vehicle safety — Strength of seats and their anchorages

1 Scope

This specification covers the strength of seats and of their anchorages for motor vehicles of Categories M and N as defined in CD/K/045:2008.

This specification does not apply to the following seat types;

- Folding (tip-up);
- Side-facing;
- Rearward-facing

2 Normative references

The following referenced documents are indispensable for the application of this East African Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

UNECE R 21, *Uniform provisions concerning the approval of vehicles with regard to their interior fittings*

CD/K/045:2008, *Road vehicles — Types — Terms and definitions*

CD/K/046:2008, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions*

3 Definitions

For the purposes of this specification:

3.1

'vehicle type'

with regard to the strength of the seats and their anchorages, means motor vehicles which do not differ in such essential respects as:

3.1.1

the structure, shape, dimensions and materials of the seats,

3.1.2

the types and dimensions of the seat-back adjustment and locking systems,

3.1.3

the types and dimensions of the seat anchorage and of the affected parts of the vehicle body-shell;

3.2

'anchorage'

means the system by which the seat assembly is secured to the vehicle body, including the affected parts of the vehicle body-shell;

3.3

'adjustment system'

means the device by which the seat or its parts can be adjusted to a position suited to the morphology of the seated occupant; this device may, in particular, permit of:

3.3.1
longitudinal displacement.

3.3.2
vertical displacement,

3.3.3
angular displacement;

3.4
'displacement system'
means a device enabling the seat or one of its parts to be displaced angularly or longitudinally, without a fixed intermediate position, to facilitate access by passengers;

3.5
'locking system'
means a device ensuring that the seat and its parts are maintained in the position of use;

3.6
'folding (tip-up) seat'
means an auxiliary seat intended for occasional use and which is normally folded out of the way.

4 General requirements



4.1 Every adjustment and displacement system provided shall incorporate a locking system, which shall operate automatically.

4.2 The unlocking control for a device as referred to in 3.5 shall be placed on the outside of the seat close to the door. It shall be easily accessible, even to the occupant of the seat immediately behind the seat concerned.

5 Tests



5.1 Test of strength of seat back and of its locking systems

5.1.1 For this test, the seat back, if adjustable, shall be locked in a position corresponding to a rearward inclination as near as possible to 25° from the vertical of the reference line of the torso of the manikin described in UNECE R 21, unless otherwise specified by the manufacturer.

5.1.2 A force producing a moment of 530 N·m in relation to the H point shall be applied longitudinally and rearwards to the upper part of the seat back by a component simulating the back of the manikin described in UNECE R 21.

5.2 Test of strength of seat anchorage and of seat locking systems

5.2.1 The systems shall, in all seated positions, withstand the forces prescribed in item 5.2.2. Nevertheless, this requirement shall be deemed to be met if the test carried out in the positions specified in item 5.2.5 and, where appropriate, in item 5.2.6 is satisfactory.

5.2.2 A horizontal longitudinal force passing through the centre of gravity of the complete seat and equal to 20 times the weight of the complete seat shall be applied to the seat frame. Two tests shall be performed on the same seat, the force being applied once in the forward and once in the rearward direction. If the seat comprises separate parts each of which is secured to the frame, the tests shall be performed on each part in the manner described above. If the seat comprises components secured in part to the vehicle body-shell and supporting one another by some of their pans, the tests shall be performed simultaneously by applying to the centre of gravity of each part the forces corresponding to each component considered separately.

5.2.3 For the test prescribed in item 5.2.1, the link between the seat back and the cushion may be reinforced, on condition that the reinforcing components are secured to the frame of the seat back, level with the point of application of the force and at the most forward point of the frame of the cushion.

5.2.4 The conditions laid down in item 5.2.2 may be regarded as met if two forces, each equal to one-half of the prescribed force, are applied level with the centre of gravity to the lateral load-bearing components of the seat frame.

5.2.5 The seat shall be tested:

5.2.5.1 In the position in which the occupant is seated furthest forward, the cushion being placed in the highest forward position when the force is applied in a forward direction, and

5.2.5.2 In the position in which the occupant is seated furthest rearward, the cushion being placed in the lowest rearward position when the force is applied in a rearward direction.

5.2.6 In cases where the arrangement of the locking system is manifestly such that in a seat position other than those defined in items 5.2.5.1 and 5.2.5.2 a distribution of the forces on the locking systems and seat anchorage would be less favourable than with the configurations defined in those items, the tests shall be repeated in that seat position.

5.3 Tests of resistance of locking systems to inertia effects

5.3.1 If a horizontal longitudinal acceleration of 196 m/s^2 is applied in the forward and in the rearward direction to the seat assembly, no release of the locking systems shall be determinable.

5.3.2 A calculation of inertia effects on all components of the locking systems may be accepted in place of the dynamic test prescribed in item 5.3.1. Frictional forces shall be disregarded in such a calculation.

5.4 Equivalent methods of testing shall be permitted provided that the results specified in items 5.1, 5.2 and 5.3 can be obtained either entirely by means of the substitute test or by calculation from the results of the substitute test. If any method other than that described in items 5.1, 6.2 and 5.3 is used, proof of its equivalence shall be required.

6 Inspection

6.1 No failure shall be determinable in the seat frame or in the seat anchorage, adjustment and displacement systems or their locking devices during the tests prescribed in items 5.1 and 5.2. The adjustment and displacement systems and their locking devices shall not, however, be required to be in working order after these tests. The displacement system referred to in item 3.4 shall, however, be capable of being unlocked after testing.

Annex A

General requirements

Standard

A.1 General

A.1.1 The requirements set out in this Annex apply to vehicles in Categories M₂, M₃, N₁, N₂ or N, (as defined in CD/K/046:2008),

A.2 General requirements

A.2.1 Seats and bench seats shall be firmly attached to the vehicle.

A.2.2 Sliding seats and bench seats shall be automatically lockable in all the positions provided.

A.2.3 Adjustable seat backs shall be lockable in all the positions provided.

A.2.4 All seats which can be tipped forward or have fold-down backs shall lock automatically in the normal position.

Draft for comments only — Not to be cited as a

Draft for comments only — Not to be cited as East African Standard