

SPECIFICATION FOR SEAT BELT ASSEMBLIES FOR MOTOR VEHICLES

B.S. 3254 : 1960

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THIS BRITISH STANDARD, having been approved by the Personal Safety Equipment Standards Committee and endorsed by the Chairman of the General Council, was published under the authority of the General Council on 21st July, 1960.

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, indexed and cross-indexed for reference, together with an abstract of each standard, will be found in the Institution's Yearbook, price £1.

This standard makes reference to the following British Standards:

B.S. 1224. Electroplated coatings of nickel and chromium.

B.S. 1610. Verification of testing machines.

Part 1. Methods of load verification, requirements for elastic proving devices, and verification of machines for tension and compression rating.

B.S. 2958. Flax, jute and hemp webbings.

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following B.S.I. references relate to the work on this standard:
Committee reference PSM/16. Draft for comment A(PSM) 6810.

CO-OPERATING ORGANIZATIONS

The Personal Safety Equipment Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

British Chemical Plant Manufacturers' Association
 British Leather Manufacturers' Research Association
 British Iron and Steel Federation
 British Ironfounders' Association
 British Red Cross Society
 Cotton Board
 Electricity Council, the Generating Board and the Area Boards
 in England and Wales
 Federation of British Rubber and Allied Manufacturers
 Federation of Civil Engineering Contractors
 Glass Manufacturers' Federation
 *Industrial Safety (Personal Equipment) Manufacturers' Association
 Industrial Welfare Society
 Institute of British Foundrymen
 Institute of Welding
 Institution of Civil Engineers
 Institution of Engineering Inspection
 Institution of Mechanical Engineers
 Institution of Production Engineers
 Institution of Structural Engineers
 Iron and Steel Trades Confederation
 *Medical Research Council
 Ministry of Labour
 National Federation of Building Trades Employers
 National Paint Federation
 *Royal Society for the Prevention of Accidents
 Shipbuilding Employers' Federation
 Trades Union Congress

The scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Association of Solid Woven Belting Manufacturers
 Automobile Association
 British Cotton Industry Research Association
 British Racing Drivers' Club
 British Rayon Research Association
 British Safety Council
 D.S.I.R.—Road Research Laboratory
 Ellis Research and Testing Laboratories
 Ministry of Transport
 R.A.F. Institute of Aviation Medicine
 Royal Automobile Club
 Society of Motor Manufacturers and Traders Ltd.
 Webbing Manufacturers' Association
 Manufacturers and users of protective equipment

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BRITISH STANDARD SPECIFICATION FOR SEAT BELT ASSEMBLIES FOR MOTOR VEHICLES

FOREWORD

In view of the urgent need to provide increased safety for motorists, it has been decided to issue a standard as early as possible for seat belt assemblies designed to reduce the risk of severe injury to drivers and passengers involved in motoring accidents. Apparatus is being developed on the lines given in Appendix C and modifications may be introduced as a result of further experiment, particularly in regard to dynamic loading, and of experience with the test apparatus. These modifications may also lead to the introduction of other forms of test but assurance is given that they will not become part of the standard without prior notice having been given. The standard is published in response to requests by the Ministry of Transport, safety organizations, motoring organizations, manufacturers, and individuals.

The provisions of the standard are based on the S.A.E. 'Recommended Practice for Motor Vehicle Seat Belts' and data made available from Sweden, the United Kingdom, and U.S.A.

Although the wearing of a seat belt or harness is known to give valuable protection in certain types of motoring accident, such equipment cannot be expected to prevent injury or even death in severe accidents. It is felt that, under certain accident conditions, assemblies which also provide restraint for the upper part of the body will give increased protection for front seat passengers.

The attention of users is drawn to the necessity of discarding any seat belt or harness which has been subjected to stresses arising from a severe accident, and to the need for inspection of the complete installation after any accident.

Each unit is intended for use by not more than one person at a time.

As added Aug. 1963 **Dynamic Testing** 1963. In designing the dynamic test now added to the standard the object has been to simulate the effects of an accident at 20 g on a seat belt in order to compare one design with another at a controlled level of protection.

In actual use the protection offered by the belt will depend partly on its correct installation and also on the type of car seat used by the wearer.

If the seat is of the tip-up type a belt passing over the shoulder and anchored as near as possible at shoulder level will be more effective than one passing over the shoulder to the floor. In general the more rigid the seat the greater the safety with most types of belt.

Locking and retracting devices. A new section has been added giving performance requirements and tests for both locking and also retracting devices when these are incorporated in a seat belt assembly.

Restraining devices for children. The success of the seat belt as a restraining device for adults in car accidents has led to devising similar protection for young children when travelling as passengers in motor cars. ^{As added Oct., 1964}

The problem is not the same as for adults since many of the factors governing design vary from those for seat belts for adult use.

It was established at first that children could, for convenience, be divided into two groups; the very young up to about five years old and those between that age and about ten years old. Thereafter an adult belt can usually be used satisfactorily.

Since, however, age is not necessarily a good criterion as to the physical development of a child, it was considered more realistic to base the work on the weights of children and on published results of investigations into the age-weight relationship of children. The range 20 lb to 40 lb was chosen for the first group and 40 lb to 80 lb for the second group. The maximum deceleration of the child was taken as 20 *g* and suitable anchorage forces of about 800 lbf and 1600 lbf respectively were chosen to cover the overall strength of the equipment. It must be remembered, however, that neither age nor weight can always be taken as criteria.

Attention is drawn to the fact that there is less risk of injury to children when travelling in the back seats of a car.

For the safe use of a child restraining device it is essential that the car seat itself should be restrained from forward movement in the event of an accident and provision to overcome such movement is required with each of the types of restraining device covered by this standard.

NOTE 1. Where metric equivalents are stated the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in B.S. 350, 'Conversion factors and tables'.

NOTE 2. In place of the customary, but incorrect, use of the pound and kilogramme as units of force, the units called pound-force (abbreviation lbf) and kilogramme-force (abbreviation kgf) have been used in this standard. These are forces which when acting on a body of mass one pound and one kilogramme respectively give it an acceleration equal to that of standard gravity. ^{As added Oct., 1964}

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SPECIFICATION

SECTION ONE: GENERAL

SCOPE

1. This British Standard applies to seat belts and harnesses, made of webbing, for separate use, i.e., as individual equipment, by occupants of motor vehicles.

Manufacturing requirements are specified for the materials used and for the finish of buckles and metal parts.

The standard does not specify requirements for the parts of the vehicle to which the seat belt assemblies are to be anchored.

The tests specified are restricted to the determination of the strength and durability characteristics of a belt or harness assembly and of its components.

Strength tests are required to ascertain compliance with the specifications for the following:

- a. Tensile strength and elongation of the webbing.
- b. Buckle slip under load.
- c. Buckle release load.
- d. The load carrying capacity of the entire belt or harness assembly under static loading conditions.
- e. The reaction of the complete belt or harness assembly to dynamic testing.

*As
added
Aug.,
1963*

*As
added
Oct.,
1964*

This standard also gives performance requirements for seat belt assemblies designed to restrain children riding in motor cars from the effects of accidents.

Two groups of assembly are dealt with:

Group A. For children weighing from 20 lb up to 40 lb.
Lap belts used alone are excluded from this group.

Group B. For children weighing between 40 lb and 80 lb.
Some devices may be usable in both or part of both groups.

Restraining devices in each group may be one of three types:

Type 1. A combined car seat restraining device and child restraining device.

Type 2. A car seat restraining device and separate child restraining device supplied together.

This could have (i) common anchorage points for both devices

(ii) separate anchorage points for both devices

(iii) the child restraining device attached to the separately restrained car seat.

Type 3. A child restraining device when an adult seat belt is to be used for restraining the car seat.

DEFINITIONS

2. For the purposes of this British Standard, the following definitions apply:

a. Seat belt or harness. An arrangement of webbing straps and a buckle, or buckles, firmly secured to the structure of a motor vehicle and designed to prevent or lessen injury to the wearer in the event of certain types of accident. Referred to in the general sense as an 'assembly'.

b. Waist, lap or body strap. A seat belt or part of an assembly which passes across the waist, lap or body of the wearer.

c. Shoulder harness. That part of an assembly which restrains the upper portion of the body of the wearer.

d. Adjusting device. A device to permit the assembly to be adjusted to the requirements of the individual wearer. It may be part of the securing buckle. As altered Feb., 1967

e. Securing buckle. A buckle of quick-release pattern, not likely to be opened unintentionally, that secures the wearer within the assembly.

DESIGN REQUIREMENTS

3. Design requirements of this standard are based on the following assumptions:

a. The wearer weighs 200 lb (90 kg).

b. The accident conditions are such as to impose a maximum loading on the assembly equivalent to twenty times the weight of the wearer along the longitudinal axis of the vehicle when travelling horizontally in a forward direction.

c. The design of any separable parts shall be such that either the separate parts of the assembly cannot be put together incorrectly, or that their connection other than as intended will permit the components to separate again under a load of not more than 5 lbf (2.3 kgf) or will not adversely affect their function.

If the design or materials of a complete assembly are such that it will not fulfil the intentions of this specification it is to be deemed not to comply with this British Standard. As added Jan., 1963

CAUTIONARY NOTE. When the assembly is installed, the vehicle structure* together with any reinforcing plates supplied with the assembly must be strong enough to sustain the test load specified in Clause 7. Data on tested anchorage installations should be sought from the vehicle manufacturer.

When an anchoring cross bar is provided for the attachment of more than one seat belt or harness, its strength and the strength of its attachments to the vehicle structure, must be sufficient to sustain the sum of the effects of loads from all the individual belts or harnesses.

CONSTRUCTION

4. The assembly shall be composed of the following:

a. Body-restraining components.

b. Load-carrying components which may be continuous with the body-restraining components.

* The structure of a vehicle is not normally considered to include the car seat.



Documents

Document Supply Hub
As added Jan., 1963

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As
altered
June,
1965
and
Oct.,
1968

c. Anchoring attachments, to secure the body-restraining or load-carrying components to the vehicle. At least two shall be provided.

d. Means of adjusting the body-restraining components to suit the individual wearer. Where manual adjustment is required, at least one adjusting device shall comply with the requirements specified in Subclause 6e.

e. Means of securing the wearer within the body-restraining components.

As
added
June,
1965

f. A lap belt or a lap strap component of an assembly shall have two anchoring attachments intended to be fixed to the floor of the vehicle in such a manner as to eliminate undue lateral compression of the seat or the wearer.

As
added
Feb.,
1967

g. Means for stowing the belt or harness clear of the floor and seat shall be provided where this is practicable.

WEBBING

5. a. *Width.* Webbing which may come into contact with the body of the wearer shall comply with the following minimum dimensions

Lap or body strap webbing—not less than $1\frac{3}{16}$ in (46 mm) wide.

Shoulder harness webbing—not less than $1\frac{3}{8}$ in (35 mm) wide.

These dimensions shall be verified by using the method described in Appendix A.

b. *Breaking load.* The webbing shall not break at a load of less than:

(i) 3000 lb (1350 kg) for lap or body strap webbing.

(ii) 2250 lb (1013 kg) for shoulder harness webbing.

Specimens shall be selected in accordance with the procedure described in Appendix B and tested by the method described in Appendix E (para. E2.) of this standard.

As
altered
Aug.,
1963

c. *Reduction of width under load.* Webbing which may come into contact with the body of the wearer shall not be reduced in width to less than $1\frac{3}{16}$ in (46 mm) and $1\frac{5}{16}$ in (33 mm) respectively under the following loads:

When used for waist, lap or body straps 2250 lb (1013 kg).

When used for shoulder harness straps 1375 lb (621 kg).

This shall be ascertained during the breaking load test Appendix E.

d. When shuttleless loom webbing is used the web shall be locked by an adequate locking thread.

Buckles and component parts other than webbing

As
altered
Oct.,
1968

6. a. *General.* The manufacturer shall provide written instructions to make clear the method of operating the securing buckle. This buckle shall not allow partial engagement and shall be of the 'quick-release' type. The method of buckle release shall be indicated on or adjacent to the release mechanism so that it may be seen when the belt is worn. The buckle shall be so positioned that it can

be released with one hand by the wearer when seated and also by any person when necessary in cases of emergency.

The design of any separable parts shall be such either that the separate parts of the assembly cannot be put together incorrectly, or that their connection other than as intended will permit the components to separate under a load of not more than 5 lbf (2.3 kgf) or will not adversely affect their function.

The buckle shall be designed so that it is unlikely to be opened unintentionally.

As
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Oct.,
1968

The design of quick-release anchoring attachments shall be such as to resist unintentional release.

b. Buckle width. The maximum overall width of any strap securing buckle shall not exceed 4 in (102 mm), when measured at right angles to the strap.

c. Finish. All external parts shall be free from burrs and sharp edges and shall be corrosion resistant.

As
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Aug.,
1962

The assembly shall be tested for resistance to corrosion by the method given in Appendix P. After the test, neither signs of deterioration likely to impair the proper functioning of the assembly nor any significant corrosion shall be visible to the unaided eye of a qualified observer.

Any surface against which webbing moves in normal use, other than for the purposes of manual adjustment and with the exception of anchorage plates, shall have a radius of not less than $\frac{1}{16}$ in (1.5 mm) on edges coming in contact with webbing.

Class of fitting	B.S. 1224 Classification	Duration of test
Metal parts fitted wholly in the interior of a vehicle	Ni 4S	16 hours
All other metal parts	Ni 12S	96 hours

d. Securing buckle test. The buckle shall be assembled with two lengths of webbing and tested in the same manner as the webbing test specimen (see Clause 5b).

... except that the test is carried out using bollard grips, a suitable type of which is shown at Fig. 6; the length between grips is 8 in (216 mm) plus the overall length of the assembled buckle and tongue, and with the webbing aligned to within $\frac{1}{8}$ in (4.8 mm) of the vertical centre line on each grip.

- Buckle operating with all-metal surfaces.* Under a load of 1500 lb (678 kg), the buckle shall not show appreciable deformation.
- Buckle operating on webbing strap surface.* Under a load of 1500 lb (678 kg) for lap or body strap webbing, the slip of the webbing through the buckle shall not exceed 1 in (25 mm).

Where desired, a special fitment may be added to the test rig to ensure that a pull will be exerted in line with each component of the buckle.

After being subjected to the test, the buckle shall be capable of functioning satisfactorily and the webbing shall not show signs of damage arising from the design of the buckle.

* B.S. 1224, 'Electroplated coatings of nickel and chromium'.

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As
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Feb.,
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and
Oct.,
1968

e. Ease of adjustment. The adjusting device shall be quick and convenient to use, and capable of being operated with one hand without appreciable interference with the driving process. When tested in accordance with the procedure described in Appendix M, the force required to operate the device shall not exceed 20 lbf (9 kgf).

f. Resistance of buckles to crushing. Securing buckles, except those forming an integral part of a fixed anchorage, shall be subjected to the crushing test specified in Appendix N. After crushing they shall be assembled with their mating components to form complete assemblies which shall then be assessed against the complete static test requirements given in Clauses 7a, 8 and 9, and shall be satisfactory.

STRENGTH OF ASSEMBLY

As
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Aug.,
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June,
1965
and
Feb.,
1967

7. *a. Static test.* The assembly shall be tested by the method described in Appendix C with a test load of 4000 lbf (1800 kgf).

b. Dynamic test. The assembly shall be tested by the method described in Appendix F using a dummy weighing 165 lb (75 kg) and a change in velocity of 30 ± 0.2 miles per hour (48 km/h) and with a mean acceleration of $14 \pm 1.5 g_{11}$ (averaged over time). The forward horizontal movement of the dummy shall not exceed the distances given in Clause 11.

As
altered
Oct.,
1968

c. On completion of each of the tests described in Subclauses *a* and *b* above, no total failure of any component shall have occurred, no load-bearing component shall have become separated from its mating part, the securing buckle shall be capable of normal release, and there shall have been no significant failure of stitching.

If significant failure of stitching has occurred, the assembly shall be subjected to a second test and if, in this test, the stitching does not fail completely, the assembly should be accepted.

SLIPPING OF WEBBING

As
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Aug.,
1963

8. On completion of the test described in Appendix C and that described in Appendix F, the total amount of slipping of the webbing through the load-carrying buckles shall not exceed 1 in (25 mm) for each buckle nor shall the total amount of slipping exceed 2 in (51 mm).

SECURING BUCKLE RELEASE TEST

As
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Feb.,
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and
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1968

9. After completion of the test described in Appendix C, the load shall be stabilized at 150 lbf (68 kgf) and the buckle tested for the force required to release it, as described in Appendix D.

The force required to release the buckle shall not exceed 27 lbf (12 kgf). The operating face of the release lever or tab shall not be less than $\frac{5}{8}$ in (16 mm)

in width and the lever shall be capable of withstanding this force without distortion.

Releasing the buckle shall enable the assembly to be separated into its several parts without further manipulation.

SECTION TWO : TESTING REQUIREMENTS

GENERAL

10. An assembly or component part subjected to any specified performance test shall not, under any circumstances, be put into service.

TYPE TESTING

11. New and unused sample assemblies representative of each design and samples of component parts and attachment fittings shall be submitted for examination and testing for compliance with this standard. Each assembly shall be tested without alteration, and samples of component parts and attachment parts shall provide the specimens where required by the individual tests. *As altered May, 1968*

When tested in accordance with Subclause 7b the forward movement of the trunk of the dummy shall be recorded and shall not exceed 12 in (300 mm) and the assembly shall be undamaged.

For lap belts the forward movement shall not exceed 8 in (200 mm) at the point of restraint.

ROUTINE TESTING

12. Sample assemblies shall be selected at intervals or from a batch of fixed size for testing and examination for compliance with this standard. Arrangements regarding intervals and size of batch represented by the samples shall be determined by the British Standards Institution. *As altered Oct., 1968*

When testing for compliance with Subclause 7b the actual forward movement of the trunk of the dummy need not be recorded and the requirement may be checked by automatic indication at the limit of movement.

PRODUCTION TESTING OF COMPONENT PARTS

13. When required to do so the manufacturer shall prove to the satisfaction of the British Standards Institution that the testing of webbing and buckles and other components in accordance with the relevant clauses of this specification is carried out at an acceptable rate relative to his production. *As altered Oct., 1968*

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SECTION THREE : MARKING

LABEL

- As altered May, 1968* 14. There shall be securely affixed to each assembly a label supplied by the British Standards Institution bearing the certification mark of the BSI and the inscription ' B.S. 3254 '.

INSTRUCTIONS FOR USE

- As altered Oct., 1968* 15. Instructions, illustrated when necessary, to show correct methods of use shall be supplied with each assembly to ensure that the purchaser knows the method of attachment and how to obtain the greatest benefit from the particular assembly.

The method of threading the webbing through each type of buckle in the assembly and the method of releasing the securing buckle shall be explained in simplified detail.

The instructions shall draw attention to the great importance, in the case of assemblies incorporating a lap component, of ensuring that the lap belt is worn low down so that it rests on the bony part of the hip and also to the desirability of wearing all belts tightly.

The instructions shall also include recommended methods of cleaning and shall advise the replacement of belts that have been used in a severe accident or that show signs of severe fraying or having been cut.

A warning of a general nature shall be given urging the user to consult the manufacturer in case of doubt, and not to make any alterations and additions.

Where seat belt assemblies are supplied direct to motor car manufacturers for fitting into new production, the instructions relating to the method of attachment are not required, and the other instructions described above need not be supplied with each assembly by the seat belt manufacturers provided that they are included in the vehicle handbook.

NOTE. The word 'Manufacturer' in the penultimate paragraph is interpreted as meaning the manufacturer of the seat belt or his agent, or the motor manufacturer as appropriate, provided that the BSI is satisfied that the user is informed of a responsible source of information to approach for expert advice if in doubt.

MARKING

16. Each assembly shall be clearly and indelibly marked with the following:

- a. Either (1) the name or trade mark of the belt manufacturer or (2) the name or trade mark of the manufacturer's* agent and the British Standard licence number.
- b. The number of this British Standard, i.e. B.S. 3254, and the Certification Mark of the British Standards Institution.

*As defined in the Note to Clause 15.

SECTION FOUR: LOCKING AND RETRACTING DEVICES

As
added
Aug.,
1963

DEFINITIONS

17. *a. Automatic locking belts* are similar in design to those described in Clauses 1 and 2 with, in addition, a mechanism attached to a part of the harness strap which retracts this portion of the strap when not in use and also allows withdrawal and retraction of the strap whilst being worn, but is so designed that in the event of an emergency it locks against further withdrawal.

b. Retractable belts are those in which one portion of the harness is retracted by a mechanism when not in use and must be fully drawn out when in use or alternatively can only be withdrawn whilst a manual control is being operated.

CONSTRUCTION OF AUTOMATIC LOCKING BELTS

18. Automatic locking belts shall be constructed to pass the test and other requirements given in Sections One, Two and Three of this standard and in addition the automatic locking device shall be capable of passing the tests given in Clause 19. It shall not be possible under normal circumstances for foreign matter to lock the belt in an unsafe position.

For the purposes of clauses 7a, 8 and 9 the automatic locking device shall be operated prior to the application of the test. For the purposes of clause 7b it shall be ensured by calibration of the test equipment that the sensing mechanisms of automatic locking retractors will be in a condition of normal undisturbed static equilibrium immediately prior to the velocity change.

ADDITIONAL TESTS FOR AUTOMATIC LOCKING BELTS

19.a. *Test for locking.* Automatic locking devices shall comply with the following requirements both before and after the tests specified in subclauses 19b, 19c and 19d.

(i) *Deceleration sensitivity.* An automatic locking device, when tested in accordance with Appendix G, shall lock at a locking device deceleration or acceleration not exceeding $0.45 g_n$. It shall lock at the specified extraction within 50 mm.

(ii) *Operation when tilted.* When tested in accordance with Appendix G, the retractor shall not lock when it is tilted to angles of 12° or less in any direction from the installation position specified by the manufacturer.

It shall lock when it is tilted to angles of 27° or more in any direction from the installation position specified by the manufacturer.

b. Endurance test. An endurance test shall be applied in the manner described in Appendix H and the whole assembly tested to 50 000 operations during which time 10 000 snatches at irregular intervals between a ratio of 1 in 3 and 1 in 9 shall be applied with the strap extended at varying positions. The requirements of Subclauses *c* and *d* shall be carried out at 40 000 and 45 000 operations respectively. The webbing shall be reeled out to either its full length or 36 inches, whichever is the lesser length.

c. Corrosion test. After 40 000 operations in the endurance test 19*b*, the mechanism shall be subjected to the corrosion test as required by Clause 6*c* and the corrosion resistance requirements shall be satisfied.

The endurance test shall then be continued for a further 5000 operations, after which the test for dust clogging shall be applied.

d. Dust clogging. When tested in accordance with Appendix J the mechanism shall continue to operate satisfactorily and shall then satisfactorily complete the final 5000 operations of the endurance test, making a total of 50 000 satisfactory operations.

e. Tension test. After complete application of the endurance test and with the device locked in position *b* a steady load of 1500 lbf shall be applied and the reel shall remain locked. Components subjected to this load test shall not be used for further testing after application of the test.

CONSTRUCTION OF RETRACTING BELTS

20. *a.* Retracting belts shall be constructed to pass all the requirements given in Sections One, Two, Three and Four of this standard, and the tests specified in Clause 21.

b. It shall not be possible for foreign matter to lock the mechanism in an unsafe position.

c. Unless a lock is provided in the fully extended position the direct pull required to withdraw the retractable webbing fully from its container shall not exceed 5 lbf.

Suitable instructions indicating how to adjust the webbing shall appear on the belt adjacent to or on the buckle, amplified if necessary by leaflet or label.

d. When a lock is provided the manufacturer shall make it clear in his instructions that the belt is unsafe to use in any unlocked position.

e. For manually controlled (press button) locking types, correct adjustment shall form part of the normal act of using the belt, and any necessary instructions regarding correct use of the manual control shall be provided by the manufacturer.

f. The manufacturer's instructions regarding fastening as detailed above shall appear on the belt adjacent to or on the buckle and if necessary shall be amplified on an instruction leaflet or label (see also Clauses 14 and 15).

TESTS FOR RETRACTING BELTS

21. All belts shall pass the tests in Sections One, Two, Three and Four of this standard when in a fully extended position or, if a lock is provided, in the locked position, except test 19a and the irregular snatch test part of test 19b. The number of operations in test 19b shall be reduced to 2500, with tests 19c and 19d applied at 2000 and 2250 operations respectively.

DYNAMIC TESTING

22. Every device, whether of the automatic locking or retracting type, shall be capable of passing the dynamic test when it is applied to the seat belt assembly in which the device is incorporated and it shall operate effectively.

SECTION FIVE: RESTRAINING DEVICES FOR CHILDREN

As
added
Oct.,
1964

DEFINITIONS

23. For the purposes of this section the following definitions apply:

a. Chair assembly. An assembly intended primarily for children of Group A, consisting of a shaped seat in which the child is restrained and which itself rests on the car seat and is anchored back to the car structure by restraining straps, which also retain it in place should the car overturn.

b. Harness assembly. An assembly of straps and buckles which is intended to restrain the movement of a child in the event of an accident and prevent harmful contact with any part of the car structure as a result of deceleration up to the equivalent of the dynamic test.

c. Buckle or closure. A quick release device which can be readily operated by an adult to release the child from attachment to the car.

d. Webbing or straps. Those parts of an assembly which are of fabric and form the actual restraining components of the device as distinct from buckles, clips and anchorages.

e. Clips or slides. Devices through which the webbing passes and by moving which the effective length of the straps can be controlled to suit the circumstances.

f. Body restraining components. Those components of an assembly that directly restrain the movement of the body and are in contact with it.

g. Load carrying components. Those components of an assembly that link the body restraining components to the car structure.

NOTE. It is possible for some components to perform both functions.

h. Anchoring attachments. Devices at the end of the webbing straps used to attach straps to the car structure.

j. Car seat restraining device. A device to anchor a car seat to the car structure to prevent it moving forward in the event of excessive deceleration. It may be separate from or part of a child restraining device and be suitable for

either a back or a front seat, or both. It shall securely anchor the back portion of a back seat or the whole of a front seat.

k. Anchorage points. Any provision on the car structure for securing the attachments.