INTERNATIONAL STANDARD ISO 2890

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Road vehicles — Vacuum braking for caravans and light trailers

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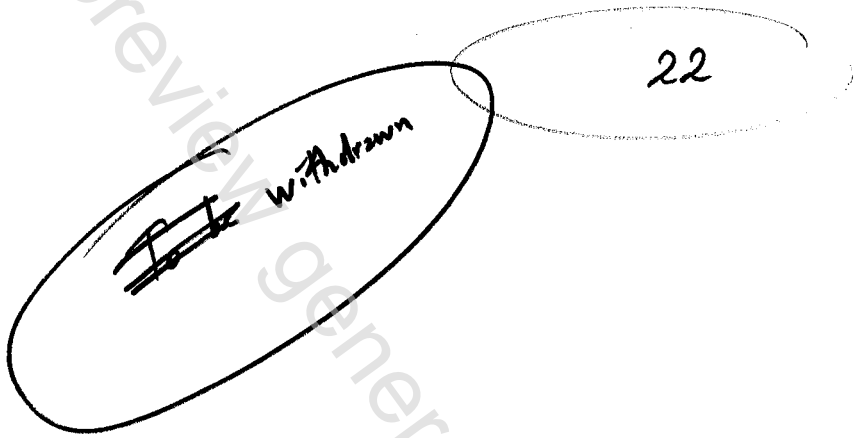

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2890 was drawn up by Technical Committee ISO/TC 22, *Road vehicles,* and circulated to the Member Bodies in May 1972.

It has been approved by the Member Bodies of the following countries :

Belgium	Italy	Switzerland
Canada	Japan	Thailand
Czechoslovakia	New Zealand	Turkey
Egypt, Arab Rep. of	Romania	United Kingdom
France	South Africa, Rep. of	U.S.A.
Hungary	Spain	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Australia
Germany
Netherlands
Sweden

Printed in Switzerland

Road vehicles — Vacuum braking for caravans and light trailers

1 SCOPE

This International Standard specifies the characteristics of vacuum braking systems for caravans and light trailers.

2 FIELD OF APPLICATION

This International Standard applies to caravans and light trailers with a maximum total weight set by the manufacturer[1] not exceeding 3,5 tonnes.[2]

3 REFERENCE

ISO 3162, *Caravans and light trailers — Couplings for vacuum braking systems — Dimensional characteristics.*[3]

4 SERVICE BRAKING SYSTEM

4.1 The brake control of the trailer shall be achieved in accordance with one of the two arrangements described in 4.1.1 and 4.1.2.

4.1.1 *Connection by one vacuum line*

This line, normally under a vacuum, shall ensure service braking and automatic braking in the case of breakaway of the coupling.

4.1.2 *Connection by two vacuum lines*

4.1.2.1 One control line, normally under a vacuum, shall ensure service braking and automatic braking in the case of breakaway of the coupling.

4.1.2.2 The second line shall ensure only the replenishing of the vacuum reservoir on the trailer.

4.2 It is recommended that the towing vehicle be equipped according to the arrangement described in 4.1.2, so that trailers equipped according to either arrangement 4.1.1 or 4.1.2 may equally be coupled.

4.3 All the wheels of the trailer must be braked.

4.4 The depression measured at the coupling head in the control line (and second line, if fitted), in the absence of braking and with the engine warm and idling, shall be at least 50 kPa (0,5 bar).[4]

4.5 The total tyre drag of the trailer shall be between 0,45 and 0,55 G_A (G_A being the maximum total weight set by the manufacturer) for a pressure increase of 50 kPa (0,5 bar) measured at the coupling head in the control line.

4.6 A deceleration of 5 m/s^2 of the towing vehicle alone at its maximum total weight set by the manufacturer, shall correspond to an increase in pressure in the coupling head of between 50 kPa (0,5 bar) and 60 kPa (0,6 bar).

4.7 During braking, the actions described in 4.5 and 4.6 shall be progressive on application and release.

4.8 The vacuum reserve for the trailer shall be sufficient to ensure four full brake applications of the trailer without replenishment (the brakes being fully adjusted). The fourth application shall ensure a tyre drag at least equal to 0,20 G_A.

4.9 In the event of the trailer breaking away, the trailer brakes shall be self-applying.

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1) This term corresponds to that defined in 4.7.1 of ISO 1176 (at present ISO/R 1176).

2) This value is chosen to include categories 01 and 02 of trailers according to the classification of vehicles given in document E/ECE/324/Rev. 1/Add. 12 of the Economic Commission for Europe of the United Nations.

This document is entitled : Agreement concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipment and parts — done at Geneva on 20 March 1958 — Addendum 12 : Regulation No. 13 to be annexed to the Agreement : Uniform provisions concerning the approval of vehicles with regard to braking.

3) At present at the stage of draft.

4) 1 bar = 10^5 Pa.