
**Passenger cars — Test track for a severe
lane-change manoeuvre —**

Part 2:
Obstacle avoidance

Voitures particulières — Piste d'essai de déboîtement latéral brusque —

Partie 2: Évitement d'obstacle



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 3888 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3888-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 9, *Vehicle dynamics and road-holding ability*.

ISO 3888 consists of the following parts, under the general title *Passenger cars — Test track for a severe lane-change manoeuvre*:

- *Part 1: Double lane-change*
- *Part 2: Obstacle avoidance*

Annex A of this part of ISO 3888 is for information only.

Introduction

The obstacle-avoidance manoeuvre is among several used for the subjective evaluation of vehicle dynamics.

In the past, only the test track for the double lane-change manoeuvre was covered, and this only by a technical report, ISO/TR 3888:1975, cancelled and replaced by ISO 3888-1:1999. This part of ISO 3888, which gives the dimensions of the obstacle avoidance track, will improve comparability in the subjective evaluation of vehicle dynamics, while the addition of the obstacle-avoidance test track represented by this part of ISO 3888 could also be helpful for the purpose of subjective evaluation lateral stability.

Since tests performed on the obstacle avoidance track quantify only one small part of a vehicle's complete handling characteristics, the results obtained on this test track can only be considered significant for a correspondingly small part of the overall dynamic behaviour. Therefore, it is not possible to use this part of ISO 3888 for regulation purposes.

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Passenger cars — Test track for a severe lane-change manoeuvre —

Part 2:

Obstacle avoidance

1 Scope

This part of ISO 3888 defines the dimensions of the test track for a closed-loop, severe lane-change manoeuvre test for subjectively determining the obstacle avoidance performance of a vehicle — one specific part of vehicle dynamics and road-holding ability. It is applicable to passenger cars as defined in ISO 3833 and light commercial vehicles up to a gross vehicle mass of 3,5 t.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 3888. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this part of ISO 3888 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3833:1977, *Road vehicles — Types — Terms and definitions*

3 Term and definition

For the purposes of this part of ISO 3888, the following term and definition apply.

3.1

vehicle width

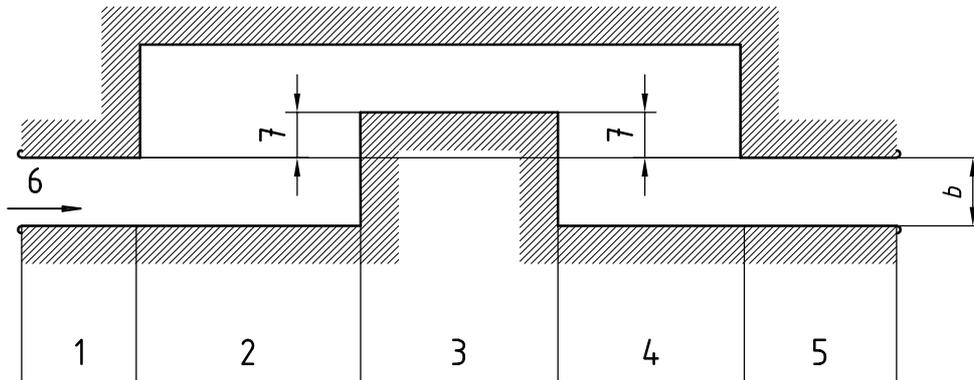
overall width of the vehicle without rear-view mirrors

4 Specifications

4.1 Dimensions of the obstacle avoidance track

The track for the severe lane-change obstacle avoidance manoeuvre shall be as shown in Figure 1 and the dimensions shall be as given in Table 1. The test vehicle shall be driven through this track.

The lengths of track sections are fixed, while the track width, b , is a function of vehicle width. The total length of the track shall be 61 m.



- Key**
- 1 Section 1
 - 2 Section 2
 - 3 Section 3
 - 4 Section 4
 - 5 Section 5
 - 6 Driving direction
 - 7 Lane offset

Figure 1 — Obstacle avoidance track with designation of sections

Table 1 — Obstacle avoidance track dimensions

Dimensions in metres

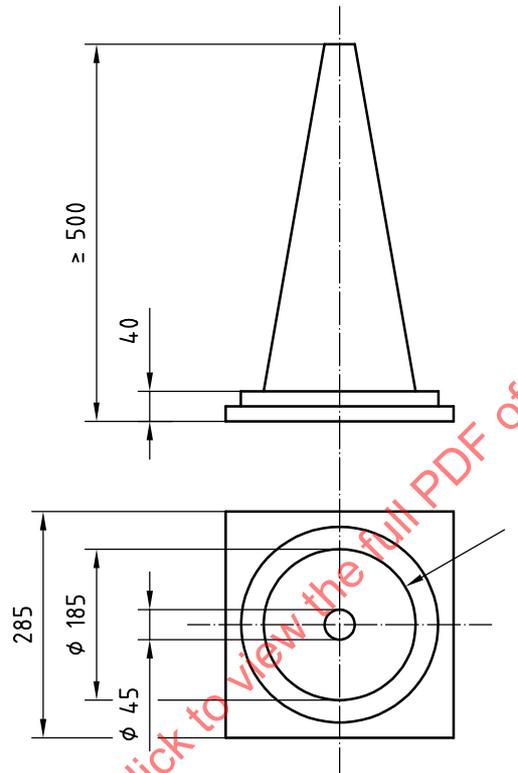
Section	Length	Lane offset	Width <i>b</i>
1	12	—	$1,1 \times \text{vehicle width} + 0,25$
2	13,5	—	—
3	11	1	vehicle width + 1
4 ^a	12,5	—	—
5	12	—	$1,3 \times \text{vehicle width} + 0,25$, but not less than 3 m

^a To ensure high lateral accelerations at the end of the track, section 4 is 1 m shorter than section 2.

4.2 Marking of the obstacle avoidance track

The obstacle avoidance track shall be marked with cones of a minimum height of 500 mm (see Figure 2). The cones shall be placed at the points shown in Figure 3, and the track limits shall be tangential to the base circles of the cones.

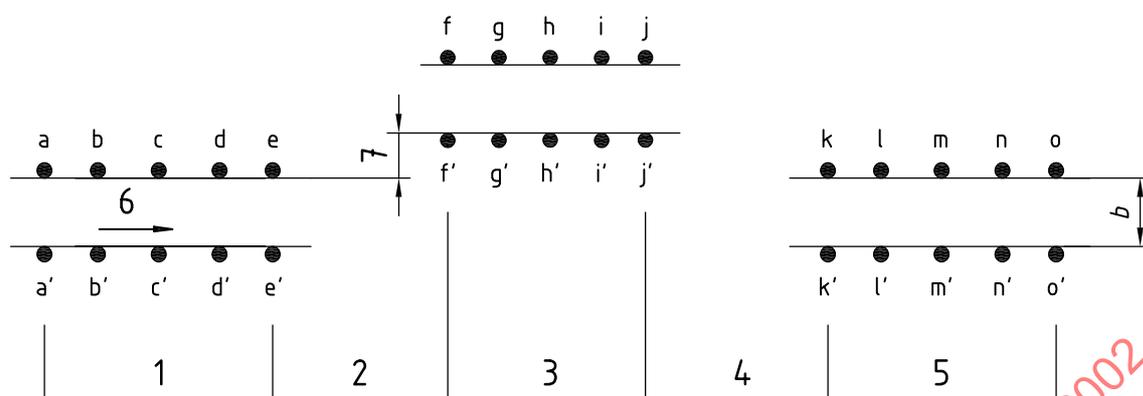
Dimensions in millimetres



Key

- 1 Base circle of cone

Figure 2 — Cone used for obstacle avoidance track delimitation



Key

- 1 Section 1
- 2 Section 2
- 3 Section 3
- 4 Section 4
- 5 Section 5
- 6 Driving direction
- 7 Lane offset

NOTE Letters indicate placement of individual cones.

Figure 3 — Placing of cones for marking obstacle avoidance track

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Annex A (informative)

Test method

A.1 Principle of the obstacle avoidance manoeuvre

The obstacle avoidance manoeuvre is a dynamic process which involves rapidly driving a vehicle from its initial lane to another lane parallel to the first, and returning to the initial lane, without exceeding lane boundaries. The objective is to have the vehicle reach a certain sequence of alternate high, lateral accelerations such that the vehicle's lateral dynamics can be evaluated.

A.2 Example test procedure

A.2.1 Typical use

The obstacle avoidance track test shall be undertaken by skilled drivers. A passage is considered faultless when none of the cones positioned in accordance with 4.2 has been displaced. A typical use of this test is the subjective evaluation of vehicles.

A.2.2 Procedure

- a) Enter section 1 with the highest gear position that guarantees a minimum engine speed of 2 000 r/min (for vehicles with automatic transmission, place selector lever in the drive position, D).
- b) At 2 m after entering section 1 (see Figure A.1), release the throttle and drive the remaining distance in the throttle-released position.

In order to keep the test procedure as reproducible as possible, the initial longitudinal velocity of the vehicle is to be measured at the end of section 1 and mentioned in the test report.

A.2.3 Limitations

Owing to driver influence (driving strategy) in this closed loop test, there is no possibility of an objective measurement of vehicle dynamics data; only subjective evaluation is recommended.

The different paths followed in different tests bring about a considerable scatter in measured velocities. Although longitudinal dynamics are restricted (throttle-off 2 m after entering section 1), this does not lead to the desired minimization of the measured velocities. Therefore, no ranking on the basis of the vehicle velocity and no minimum velocity limit for vehicles is permitted.

NOTE Because of these limitations, this part of ISO 3888 defines only the dimensions of the test track for the subjective evaluation of vehicle dynamics.