
**Passenger cars — Power-off reaction
of a vehicle in a turn — Open-loop
test method**

*Voitures particulières — Réponse d'un véhicule à un lever de pied en
virage — Méthode d'essai en boucle ouverte*



This document is a preview generated by EMS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Variables	2
5.1 Reference system.....	2
5.2 Variables to be measured.....	2
6 Measuring equipment	3
6.1 Description.....	3
6.2 Transducers installations.....	3
6.3 Data processing.....	3
7 Test conditions	3
8 Test method	3
8.1 Warm-up.....	3
8.2 Initial driving condition.....	4
8.2.1 General.....	4
8.2.2 Initial driving condition — Constant-radius method.....	4
8.2.3 Initial driving condition — Constant-speed method.....	4
8.3 Power-off procedure.....	5
9 Data evaluation and presentation of results	5
9.1 General.....	5
9.2 Time histories.....	5
9.3 Initial point in time t_0	5
9.4 Characteristic values.....	6
Annex A (normative) Test report — General data	9
Annex B (normative) Presentation of results	10
Bibliography	23

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 33, *Vehicle dynamics and chassis components*.

This third edition of ISO 9816 cancels and replaces the second edition (ISO 9816:2006) which has been technically revised. The main changes compared to the previous edition are as follows:

- an update was made regarding alternative powertrain systems.

Introduction

The main purpose of this document is to provide repeatable and discriminatory test results.

The dynamic behaviour of a road vehicle is a very important aspect of active vehicle safety. Any given vehicle, together with its driver and the prevailing environment, constitutes a closed-loop system that is unique. The task of evaluating the dynamic behaviour is therefore very difficult since the significant interaction of these driver-vehicle-environment elements are each complex in themselves. A complete and accurate description of the behaviour of the road vehicle must necessarily involve information obtained from a number of different tests.

Since this test method quantifies only one small part of the complete vehicle handling characteristics, the results of these tests can only be considered significant for a correspondingly small part of the overall dynamic behaviour.

Moreover, insufficient knowledge is available concerning the relationship between overall vehicle dynamic properties and accident avoidance. A substantial amount of work is necessary to acquire sufficient and reliable data on the correlation between accident avoidance and vehicle dynamic properties in general and the results of these tests in particular. If this test method is used for regulation purposes, the correlation between test results and accident statistics should be checked.

Passenger cars — Power-off reaction of a vehicle in a turn — Open-loop test method

1 Scope

This document specifies open-loop test methods to determine the reactions of a vehicle in a turn to a sudden drop in motive power resulting from release of the accelerator pedal. It applies to passenger cars as defined in ISO 3833.

The open-loop manoeuvre specified in this test method is not representative of real driving conditions, but is useful to obtain measures of a vehicle's power-off behaviour resulting from specific types of control inputs under closely controlled test conditions.

2 Normative references

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

ISO 8855, *Road vehicles — Vehicle dynamics and road-holding ability — Vocabulary*

ISO 15037-1:2018¹⁾, *Road vehicles — Vehicle dynamics test methods — Part 1: General conditions for passenger cars*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8855, ISO 15037-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

For the purposes of this document, the terms and definitions given in the general conditions given in, and the following terms and definitions shall apply.

3.1

power-off

vehicle operating condition where the vehicle is in gear and the accelerator pedal is fully released, especially when initiated by a sudden release of the accelerator pedal

3.2

instant of power-off initiation

t_0

moment in time when a rapid release of the accelerator pedal is initiated

1) Under preparation. Stage at time of publication: ISO/DIS.