



FINAL DRAFT International Standard

ISO/FDIS 22638

Rubber — Generation and collection of tyre and road wear particles (TRWP) — Road simulator laboratory method

Caoutchouc — Génération et collecte des particules émises par l'usure des pneumatiques et de la route (TRWP) — Méthode de simulation routière en laboratoire

ISO/TC 45

Secretariat: **DSM**

Voting begins on:
2024-05-14

Voting terminates on:
2024-07-09

iTeh Standards
Standards.itteh.ai
Document Preview

[ISO/FDIS 22638](https://standards.itteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638)

<https://standards.itteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638>

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO/FDIS 22638](https://standards.iteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638)

<https://standards.iteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2024

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
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 Apparatus and equipment	1
4.1 General.....	1
4.2 Generation system.....	2
4.2.1 Characteristics.....	2
4.2.2 Monitoring, during operation.....	3
4.3 Test pavement.....	3
4.4 Test tyres.....	3
4.5 Collection system.....	3
5 Procedures	3
5.1 General.....	3
5.2 Simulated driving parameters.....	3
5.3 Particle collection.....	3
6 Test report	4
Annex A (informative) Case study	5
Bibliography	7

iTech Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO/FDIS 22638](https://standards.iteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638)

<https://standards.iteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638>

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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of 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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This first edition cancels and replaces the first edition (ISO/TS 22638:2018), which has been technically revised.

The main changes are as follows:

- an error in definition [3.3](#) has been corrected;
- the description in [4.1](#) has been corrected;
- a reference has been added to [4.2.1](#);
- a clarification about the collection system has been added to [4.5](#) and [5.3](#);

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Tyre and road wear particles (TRWP) are formed from the friction between a tyre and roadway surface. The particles are subsequently released into nearby soil and sediment ecosystems. As such, there is interest in studying the composition and effects of TRWP on the environment (see References [6] and [7]). This document provides guidelines for the generation of TRWP using a road simulator in a laboratory setting. The guidelines describe the method, apparatus and equipment, TRWP collection procedures, monitoring measures and test report. An informative case study is also provided.

Generation of TRWP with a road simulator eliminates interferences from other roadway surface contaminants such as brake dust, oil and grease, soil, and vegetation (see Reference [6]). This method allows for a more accurate characterization of the physical and chemical properties of TRWP than other generation methods including on-road collection and cryogenic breaking of rubber tread. In addition, a greater mass of TRWP can be collected using the road simulator laboratory method. Other laboratory generation methods (e.g. steel brush and grit paper) are not representative of actual driving conditions and may introduce additional interferences to the generated TRWP. Furthermore, previous analysis has shown that the particle morphology and size distribution of TRWP generated using on-road and road simulator methods are similar, with the on-road TRWP slightly smaller in size (see Reference [6]).

[Annex A](#) gives information on a case study of TRWP generation.

iTeh Standards (<https://standards.iteh.ai>) Document Preview

[ISO/FDIS 22638](#)

<https://standards.iteh.ai/catalog/standards/iso/947fde1a-4644-4043-9bb2-9e83f140a5d8/iso-fdis-22638>

