



International
Standard

ISO 813-2

**Rubber, vulcanized or
thermoplastic — Determination of
adhesion to a rigid substrate —**

**Part 2:
Adhesion of a soft thermoplastic
elastomer layer**

*Caoutchouc vulcanisé ou thermoplastique — Détermination de
l'adhérence à un substrat rigide —*

*Partie 2: Adhérence d'une couche d'élastomère thermoplastique
souple*

**First edition
2024-02**



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 Principle	2
5 Apparatus	2
5.1 Tensile testing machine.....	2
5.2 Test trolley.....	2
6 Calibration	3
7 Test pieces	3
7.1 Form and dimensions.....	3
7.2 Test piece fabrication using the injection moulding method.....	4
7.3 Test piece with inserted rigid substrate.....	5
7.4 Number of test pieces.....	5
8 Conditioning	5
9 Test conditions	6
10 Procedure	6
11 Expression of results	6
11.1 Peel strength.....	6
11.2 Fracture pattern.....	7
12 Test report	8
Annex A (informative) Example of listing the test results	10
Annex B (normative) Calibration schedule	12
Annex C (informative) Glossary	14
Bibliography	15

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*, Subcommittee SC 2, *Testing and analysis*.

A list of all parts in the ISO 813 series can be found on the ISO website.

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

Nowadays it is common to use combinations of materials aimed at achieving special properties for parts of a product. Thermoplastic elastomers (TPEs) are used in a large percentage of these applications for functional, visual, acoustic, haptic and tactile reasons, with injection moulding used as the joining method in the majority of cases.^[3,4] Due to their thermoplastic nature, TPE materials are gaining importance steadily in this area relative to vulcanized rubber.

Due to the wide variety of TPE types encountered nowadays and the large number of manufacturers, it is difficult to reach comparative conclusions regarding the bond strength between two materials. Accordingly, the purpose of this document is to specify a peel test procedure specifically for measuring the adhesion of a TPE to a rigid substrate.