TECHNICAL REPORT

ISO/IEC TR 18781

First edition
2015-10-15

Identification cards — Laundry testing of ID Cards

Cartes d'identification — Essai en blanchisserie des cartes d'identification

Reference number
ISO/IEC TR 18781:2015(E)

© ISO/IEC 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, 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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Terms and definitions **1**
3 Apparatus and reagents **1**
4 Test procedure **2**
Bibliography **4**

© ISO/IEC 2015 – All rights reserved

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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 (see 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 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

The committee responsible for this document is ISO/IEC JTC 1, *Information Technology*, Subcommittee SC 17, *Cards and personal identification*.

© ISO/IEC 2015 – All rights reserved

Introduction

Test methods developed in ISO/IEC 24789 are intended to reflect the factors affecting the life of a card in normal use. Accidental exposure such as laundering is not considered to be normal use. Nevertheless, many card specifiers and users are concerned that a test procedure should be drawn up and published as a recognised method. SC 17 agreed at meeting No 62 that this Technical Report was the most appropriate format for such a test. It can be used in conjunction with tests described in the base standard.

The risk of cards being laundered varies according to geographical region and national norms. In the US, for example, it is thought that most people carry their cards in a trouser pocket giving the possibility that cards are laundered with clothing. In Japan and northern Europe, cards are mainly carried in wallets with a lower risk of laundering damage.

There are a number of factors that can potentially affect cards during laundering:

— exposure to water plus detergent solution for a period of up to 2,5 hours;

— exposure to washing cycle temperatures of up to 90 °C for part of that time;

— exposure to dryer temperatures of up to 80 °C.

During the process, most cards will remain within the pocket of the garment so there is likely to be some minor physical stress due to tumbling or spinning.

In seeking to propose a test that may be considered representative of the range of conditions a card may encounter, some statistics were obtained on the current trends in laundering.

Globally, 38% of laundry loads are done with cold water (source: P&G). This proportion has not increased in spite of the introduction of new cold water detergents, although there is a trend towards the use of lower temperatures for environmental reasons.

In the USA, most users still use hot washes. Cold water detergent represents less than 15 % of US detergent sales.

Washing machines are commonly programmed to work at 30 °C, 40 °C, 60 °C, and 90 °C

The most common washing temperature used in the UK is 40 °C. 60 °C is used for heavily soiled items and 90 °C is used only rarely (source: Which magazine).

© ISO/IEC 2015 – All rights reserved

Identification cards — Laundry testing of ID Cards

1 Scope

This Technical Report gives guidance on the principles and methods of testing ID cards to simulate accidental exposure to conditions encountered during the washing and drying of clothing. The physical properties of a card may degrade after exposure and the test methods described may be useful for comparing different card materials or types.

Although there are many variations in the design and operation of washing machines, the operation of washing, rinsing, and water removal is common to all types of machine. For simplicity, one washing and drying cycle is specified, which is thought to be typical, according to industry sources. Additional wash cycles and/or different temperature conditions can be used for comparative purposes if desired.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
ballast
quantity of textile material (cotton towels or denim jeans) used to fill the space left in the automatic washing machine after the test material has been added

2.2
water softener
chemical solution based on polycarboxylates for the purpose of binding calcium ions, preventing hard water scale from forming, and allowing detergents to act as if the water were ‘soft’

3 Apparatus and reagents

3.1 Washing machine

An automatic domestic washing machine. This may be a front loading, horizontal drum type, or a top-loading, agitator type.

NOTE Reference [2] describes the characteristics of some machines specifically used for the testing of textiles.

These characteristics may be useful for guidance in selecting a machine for test purposes.

3.2 Detergents

A commercial, non-biological detergent in common use in the test location or a reference detergent in the test location may be used.

Examples of reference detergent are as follows.

— ATCC 1993 reference detergent WOB (without optical brightener) as defined in Reference [8]. This is obtainable from the American Association of Textile Chemists and Colorists. This detergent can only be used in top-loading washers.

— Non phosphate ECE reference detergent A (without optical brightener) as defined in Reference [2]. This detergent is obtainable from SDC Enterprises Limited, Unit 29 Pitcliffe Way, Upper Castle Street, Bradford, BD5 7SG, UK. This detergent can be used in all machines.

© ISO/IEC 2015 – All rights reserved