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BSI Standards Publication

Identification cards — Laundry testing of ID cards

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Identification cards — Laundry testing of ID Cards

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

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Foreword

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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).

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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*.

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).

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 [7] 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.