International Standard

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Textiles — Smart textiles — Test method for determining the screen-touch properties of fabrics

Textiles — Textiles intelligents — Méthode d'essai pour la détermination des propriétés d'étoffes pour une utilisation sur écrans tactiles

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Foreword

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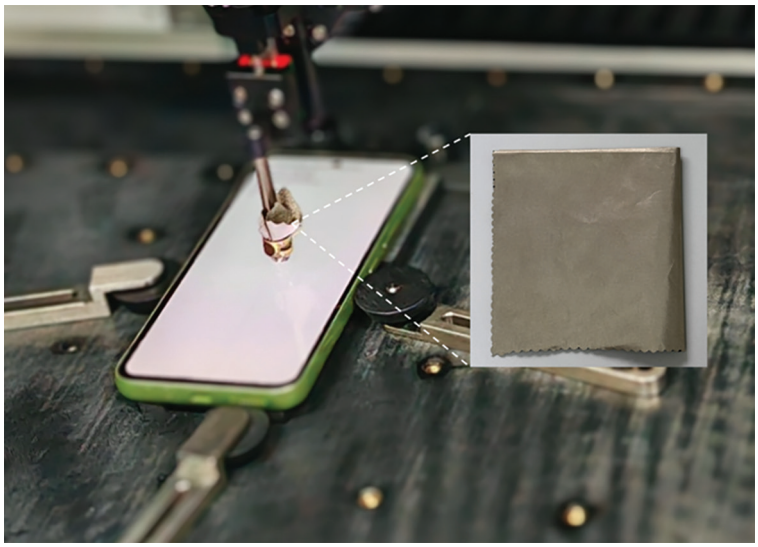
Introduction

With the improvement of consumers' living conditions, wearable smart textiles have emerged and developed fast, leading to various product types. There is an increasing interaction between textiles and touchscreen electronic devices.

Fabrics with screen-touch properties incorporate conductive materials, such as conductive fibres, that transmit the human body's current to a capacitive screen, enabling touch operation. For example, fabrics for interface may be used in gloves or other products, as shown in Figure 1. As an emerging commodity, the market demand for these products becomes strong, and their market prospects are viewed positively by investors. However, the absence of standardized test methods or relevant requirements in global standards has led to variations in the quality of this group of textile products with screen-touch properties.



a) Gloves with a screen-touch property



b) Screen-touch property testing of the fabrics

Figure 1 — Example of fabrics with screen-touch properties

The development of test methods for measuring the screen-touch properties of fabrics designed to interact with capacitive touchscreens. This effort aims to address current market demands while aligning with scientific and technological development. This document introduces a standard test method, evidence for the test, and an evaluation of the interaction between this type of textiles and touchscreens, which has not been addressed in other literature.

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Textiles — Smart textiles — Test method for determining the screen-touch properties of fabrics

1 Scope

This document specifies a test method for determining the screen-touch properties of fabrics. The method is applicable to all types of fabrics intended for use in products that serve as an interface when handling touchscreens.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 139, *Textiles — Standard atmospheres for conditioning and testing*

IEC 62908-12-10, *Touch and interactive displays — Part 12-10: Measurement methods of touch displays — Touch and electrical performance*

IEC 62908-12-20, *Touch and interactive displays — Part 12-20: Measurement methods of touch displays — Multi-touch performance*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
screen-touch property
characteristic which is able to control the capacitive display through touchscreen induction

4 Principle

A test specimen is subjected to a testing head, and then tests are carried out by touching the capacitive touchscreen through single-point touch, multi-points and sliding touch under standard conditions. Deviation of precision and response ratio for single-point touch, adjacent touch distance for multi-point touch, linearity for sliding touch will be stated.

5 Apparatus

5.1 Test equipment

The testing equipment includes mobile arm, reference screen (5.1.1), test bar (5.1.2) and stage, as shown in Figure 2. Test equipment for touch performance measurement of touchscreens shall be in accordance with IEC 62908-12-10 and IEC 62908-12-20. The position resolution of the testing equipment shall be

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