PD ISO/TS 7352



BSI Standards Publication

Freight containers — NFC or/and QR code seals

bsi.

National foreword

This Published Document is the UK implementation of ISO/TS 7352:2023.

The UK participation in its preparation was entrusted to Technical Committee TW/1, Freight containers and swap bodies.

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

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

This publication is not to be regarded as a British Standard.

© The British Standards Institution 2023
Published by BSI Standards Limited 2023

ISBN 978 0 539 18605 5

ICS 55.180.10

Compliance with a Published Document cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 March 2023.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/TS 7352:2023

TECHNICAL SPECIFICATION

ISO/TS 7352

First edition
2023-03-13

Freight containers — NFC or/and QR code seals

Reference number
ISO/TS 7352:2023(E)

© ISO 2023



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023, 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 Normative references **1**
3 Terms and definitions **1**
4 Freight container — NFC or/and QR code seals **2**
4.1 General requirements 2
4.2 Data format and content of NFC seal 2
4.3 Data format and content of QR code seal 3
4.4 Data format and content of NFC and QR code seal 3
4.5 Requirements for the communication interface between NFC seal and NFC read/write device 3
4.6 Requirements of QR code printing and reading 4
5 NFC or/and QR code seal system for freight containers **4**
5.1 System components 4
5.2 General requirements 4
6 NFC read/write device and QR code read device **5**
6.1 General requirements 5
6.2 Content and format of data interaction 5
7 Information management platform **6**
7.1 General requirements 6
7.2 Content and format of the data interaction interface 6
7.3 Extensions 7
8 Operation requirements **7**
8.1 Operation at sealing point 7
8.2 Operation at unsealing point 7
8.3 Operation during transportation 8
8.4 Abnormality reporting 8
8.5 Authenticity verification of NFC and QR code seal 8
Bibliography **9**

© ISO 2023 – All rights reserved

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 documents 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 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 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 104, *Freight containers*, Subcommittee SC 4, *Identification and communication*.

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.

© ISO 2023 – All rights reserved

Introduction

This document proposes a specification for freight container NFC or/and QR code seals, including clear and unique identification and status of NFC or/and QR code seals. It is intended to greatly improve container transportation security and transparency with the advantages of low cost, easy to promote and apply.

The main body of implementation of this document is users, producers and information platform operators of container NFC or/and QR code seals, including cargo owners, shipping companies, logistics companies, agents, customs, inspection and quarantine, port tally, NFC or/and QR code seal manufacturers and information management platform operators.

The anticipated effects and benefits are as follows.

— To facilitate quick access to the Internet for container sealing information.

— To improve the safety of freight container transportation and reduce theft, smuggling and illegal immigration.

— To improve the transparency of freight container transportation and facilitate the accountabilities partition in multimodal transport of containers.

— To facilitate the supervision by such national institutions as customs, and inspection and quarantine bureaus.

— To facilitate the manufacturers' upgrading of products and expanding of the NFC or/and QR code seal market.

© ISO 2023 – All rights reserved

TECHNICAL SPECIFICATION **ISO/TS 7352:2023**

Freight containers — NFC or/and QR code seals

1 Scope

This document specifies the system composition, data format (storage data of the seal, interaction data and format between seal and APP, interaction data and format between smartphone APP and information platform, data exchanged between platforms), technical requirements, data communication requirements and operational requirements for freight container NFC seals, QR code seals, NFC and QR code seals.

This document applies to the design, manufacture and application of freight container NFC seals, QR code seals, NFC and QR code seals.

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 6709, *Standard representation of geographic point location by coordinates*

ISO 17712, *Freight containers — Mechanical seals*

ISO 18185-3, *Freight containers — Electronic seals — Part 3: Environmental characteristics*

ISO/IEC 7816-6, *Identification cards -Integrated circuit cards-Part 6: Interindustry data elements for interchange*

ISO/IEC 14443-2:2020, *Cards and security devices for personal identification — Contactless proximity objects — Part 2: Radio frequency power and signal interface*

ISO/IEC 14443-3, *Cards and security devices for personal identification — Contactless proximity objects — Part 3: Initialization and anticollision*

ISO/IEC 18004:2015, *Information technology — Automatic identification and data capture techniques — QR Code bar code symbology specification*

ISO/IEC 18092, *Information technology — Telecommunications and information exchange between systems - Near Field Communication - Interface and Protocol (NFCIP-1)*

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/

© ISO 2023 – All rights reserved