

# SVENSK STANDARD

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### **Förpackningar – Streckkoder och tvådimensionella symboler för skeppning, transport och godsmottagning (ISO 15394:2009, IDT)**

### **Packaging – Bar code and two-dimensional symbols for shipping, transport and receiving labels (ISO 15394:2009, IDT)**

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Denna standard ersätter SS-ISO 15394, utgåva 1.

The International Standard ISO 15394:2009 has the status of a Swedish Standard. This document contains the official English version of ISO 15394:2009.

This standard supersedes the Swedish Standard SS-ISO 15394, edition 1.

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Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.

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<b>Contents</b>		Page
<b>Foreword</b> .....		iv
<b>Introduction</b> .....		v
<b>1 Scope</b> .....		1
<b>2 Normative references</b> .....		1
<b>3 Terms and definitions</b> .....		2
<b>4 Concepts</b> .....		2
<b>5 Data content</b> .....		4
<b>6 Data carriers</b> .....		6
<b>7 Label design</b> .....		9
<b>8 Label placement</b> .....		13
<b>Annex A (normative) Procedures for using MaxiCode</b> .....		15
<b>Annex B (normative) Procedures for using PDF417</b> .....		18
<b>Annex C (informative) Issues to consider in the drafting of application guidelines or standards conforming to this International Standard</b> .....		28
<b>Annex D (informative) The impact of systems being confronted with multiple symbologies and formats</b> .....		30
<b>Annex E (informative) Label examples</b> .....		34
<b>Annex F (informative) Label locations</b> .....		45
<b>Annex G (normative) Procedures for using QR Code in carrier sortation and tracking applications</b> ....		47
<b>Annex H (normative) Procedures for using QR Code in shipping and receiving applications</b> .....		49
<b>Bibliography</b> .....		55

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 15394 was prepared by Technical Committee ISO/TC 122, *Packaging*.

This second edition cancels and replaces the first edition (ISO 15394:2000), which has been technically revised.

## Introduction

The use of electronic data interchange (EDI) in association with the physical transport and handling of packages and when traceability is appropriate, such as that described in ISO 9000, requires a clear and unique identifier linking the electronic data and the transport unit.

Bar code marked transport labels are in widespread use in the global industries. A number of different standards exist, each designed to meet the requirements of the specific industry sector. For effective and economic use within and between industry sectors, one common multi-industry standard is a necessity.

A bar code marked transport label is designed to facilitate the automation of shipping and handling administrative operations. The bar code information on the transport label may be used as a key to access the appropriate database that contains detailed information about the transport unit, including information transmitted via EDI. In addition, a transport label may contain other information as agreed between the trading partners.

Two-dimensional symbols may be included to assist moving large amounts of shipping label or EDI data from sender to recipient and to assist the transportation carrier automated sortation and tracking systems.

This International Standard incorporates the technology, data structure and conformance standards of ISO/IEC JTC 1/SC 31, *Automatic identification and data capture techniques*, with the user requirements for shipping labels, into a single application standard.

While this International Standard provides an international shipping label standard, ISO 22742 provides an International Standard for product packaging. These two standards are complementary. ISO 17365 is an International Standard on the use of RF tags on shipping/transport units and was prepared by the ISO/TC 122/104 Joint Working Group (JWG), *Supply Chain Applications of RFID*.



# Packaging — Bar code and two-dimensional symbols for shipping, transport and receiving labels

## 1 Scope

This International Standard:

- specifies the minimum requirements for the design of labels containing linear bar code and two-dimensional symbols on transport units to convey data between trading partners;
- provides for traceability of transported units via a unique transport unit identifier (licence plate);
- provides guidance on the formatting on the label of data presented in linear bar code, two-dimensional symbol or human readable form;
- provides specific recommendations regarding the choice of bar code symbologies, and specifies quality requirements and classes of bar code density;
- makes recommendations as to label placement, size and the inclusion of free text and any appropriate graphics;
- provides guidance on the selection of label material.

This International Standard is not applicable to the direct printing on to kraft coloured corrugated surfaces.

NOTE Guidance on the direct printing of bar code symbols on to kraft coloured corrugated surfaces can be found in texts such as *The Fibre Box Handbook* [7].

## 2 Normative references

The following referenced documents are indispensable for the application 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 17365, *Supply chain applications of RFID — Transport units*

ISO 21067, *Packaging — Vocabulary*

ISO/IEC 15415, *Information technology — Automatic identification and data capture techniques — Bar code print quality test specification — Two-dimensional symbols*

ISO/IEC 15416, *Information technology — Automatic identification and data capture techniques — Bar code print quality test specification — Linear symbols*

ISO/IEC 15417, *Information technology — Automatic identification and data capture techniques — Code 128 bar code symbology specification*

ISO/IEC 15418, *Information technology, Automatic identification and data capture techniques — GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance*

ISO/IEC 15434, *Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media*

ISO/IEC 15438:2006, *Information technology — Automatic identification and data capture techniques — PDF417 bar code symbology specification*

ISO/IEC 15459-1, *Information technology — Unique identifiers — Part 1: Unique identifiers of transport units*

ISO/IEC 16023:2000, *Information technology — International symbology specification — MaxiCode*

ISO/IEC 16388, *Information technology — Automatic identification and data capture techniques — Code 39 bar code symbology specification*

ISO/IEC 18004, *Information technology — Automatic identification and data capture techniques — QR Code 2005 bar code symbology specification*

ISO/IEC 19762 (all parts), *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762, ISO 21067 and the following apply.

#### 3.1

##### **sortation**

process by which an automated material-handling system routes packages and freight in a distribution environment

### 4 Concepts

#### 4.1 Principles

The purpose of a bar code label is to facilitate the automatic exchange of data among all members within a channel of distribution, for instance supplier, carrier, purchaser, other intermediaries. The amount of data, in linear bar code, two-dimensional symbols and in human readable form, is dependent on the requirements of the trading partners. Where a bar code label is used in conjunction with electronic databases and/or electronic data interchange (EDI) systems, the amount of data may be significantly reduced and may consist of only one piece of data, the unique identifier for the transport unit. If radio frequency identification (RFID) enabled labels or tags are used in conjunction with labels in conformance with this International Standard, ISO 17365 shall be used for RFID usage with transport units. Human and optically readable data for the representation of RFID applications should be in accordance with ISO/IEC TR 24729-1.

Trading partners have different information requirements. Some information may be common to two or more trading partners while other information may be specific to a single trading partner. Information for various trading partners becomes available at different times, for instance:

- product specific information at the point of manufacture or packaging;
- order processing information at the time of processing the order;
- transport information at the time of shipment.

Trading partners may find it necessary to include significant data elements dealing with the above that may be presented both in bar code/two-dimensional symbols (see Annexes A and B) and human readable form.

This International Standard shall be used in conjunction with application guidelines defining the parameters chosen by the trading partners concerned. Annex C gives guidance in the definition of these parameters.

## 4.2 Unit load and transport package

For the purposes of this International Standard, a unit load is considered to be one or more transport packages or other items held together by means such as a pallet, a slip sheet, strapping, interlocking, glue, shrink wrap or net wrap, making them suitable for transport, stacking and storage as a unit. For the purposes of this International Standard, a transport package is considered to be a package intended for the transportation and handling of one or more articles, smaller packages or bulk material. Both unit loads and transport packages are referred to as transport units in this document.

## 4.3 Unique transport unit identifier

A unique transport unit identifier is assigned to each individual transport unit. This is a common requirement for all label formats specified by this International Standard. The identifier or "licence plate" is the key providing access to information stored in computer files and which may be transmitted by EDI. The identifier may be used by all of the trading partners to retrieve information about the transport unit itself or about the status of the physical movement of the transport unit along the supply chain. It enables systems to track and trace individual transport units.

## 4.4 Label formats

### 4.4.1 Base shipping/transport/receiving label

The base label defined by this International Standard includes the minimum set of data that fulfils the requirements of all trading partners in a supply chain when data is exchanged electronically between the parties involved.

A unique transport unit identifier shall be, and a "Ship to" name and address should be, included on the base label.

In addition to the unique transport unit identifier ("licence plate") and the "Ship to" name and address (for shipment delivery), the following information should be included on a base label:

- "Ship from" name and address (to be able to return the shipment in the event that delivery is not possible);
- key to carrier's database (if the licence plate is not this data element);
- key to customer's database (if the licence plate is not this data element).

### 4.4.2 Extended shipping/transport/receiving label

In practice, fully automated communication channels which make it possible to rely exclusively on electronic files for retrieving information on the movements of the transport units are not always available. For this reason, there is a need to indicate relevant information on the transport units themselves, in addition to their identification. The various fields of information shall be organized in a standard way in order to facilitate their interpretation and processing by the trading partners involved.

The extended label is used when the data available from the base label is not sufficient to satisfy the requirements of all trading partners. The information provided in the extended label is organized in three segments:

- carrier segment: in addition to the key to the carrier's database, this segment may contain additional data, such as shipment identification and delivery instructions;