

# Bar coding — Symbology specifications — Format description

The European Standard EN 841 : 1995 has the status of a  
British Standard

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee IST/34, Bar coding, upon which the following bodies were represented:

Article Number Association (UK) Ltd.  
Association of British Health-care Industries  
Association of the British Pharmaceutical Industry  
Auto ID User Association  
Automatic Identification Manufacturers' Association (Aim UK)  
Brewers' Society  
British Iron and Steel Producers' Association  
British Office Systems and Stationery Federation  
CCTA (the Government Centre for Information Systems)  
Engineering Employers' Federation  
Flexible Packaging Association  
Food and Drink Federation  
Kings Town Photocodes Ltd.  
Kodak Limited  
Ministry of Defence  
National Association of Paper Merchants  
Process and Packaging Machinery Association  
Society of Motor Manufacturers and Traders Limited

This British Standard, having been prepared under the direction of the Information Systems Technology Assembly, was published under the authority of the Standards Board and comes into effect on 15 May 1996

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## Amendments issued since publication

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The following BSI references relate to the work on this standard:  
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## National foreword

This British Standard has been prepared by Technical Committee IST/34 and is the English language version of EN 841 : 1995, *Bar coding — Symbology specifications — Format description*, published by the European Committee for Standardization.

This British Standard is published under the direction of the Information Systems Technology Assembly whose Technical Committee IST/34 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on interpretation, or proposals for change, and keep UK interest informed;
- monitor related international and European developments and promulgate them in the UK.

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**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

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ICS 35.040

Descriptors: data processing, character recognition, optical recognition, graphic characters, alphanumeric character sets, bar codes, symbols, characteristics, dimensions

English version

## Bar coding — Symbology specifications — Format description

Code à barres — Spécifications des  
symbologies — Description des formats

Strichcodierung — Symbologiespezifikationen —  
Beschreibung von Formaten

This European Standard was approved by CEN on 1995-06-22. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## **Foreword**

This European Standard has been prepared by the Technical Committee CEN/TC 225, Bar coding, of which the secretariat is held by NNI.

Organizations contributing to the development of the standard include:

- AIM Europe (Automatic Identification Manufacturers);

NOTE. Not all of the symbologies which appear in this document are defined in European Standards; for information on current European Standards contact the CEN Central Secretariat or national standards organizations.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## Introduction

The technology of bar coding is based on the recognition of patterns encoded in bars and spaces of defined dimensions. There is a number of methods of encoding information in bar code form, known as symbologies, and the rules defining the translation of characters into bar and space patterns and other essential features are known as the symbology specification.

Previously symbology specifications have been developed and published by a number of organizations resulting in certain instances in conflicting requirements for certain symbologies.

Manufacturers of bar code equipment and users of bar code technology require standard symbology specifications to which they can refer when developing equipment and application standards.

In order to provide a common framework for symbology specifications and to allow for future development it is therefore desirable to standardize the format for these.

## 1 Scope

This standard

- specifies the format for bar code symbology specifications;
- specifies the characteristics of the symbology which need to be defined.

The standard is applicable as the basis for European Standards for bar code symbologies.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 1556 Bar coding — Terminology

EN 796 Bar coding — Symbology identifiers

## 3 Definitions

For the purposes of this standard the definitions in prEN 1556 apply.

## 4 Requirements

A European Standard specification for a bar code symbology shall define the following details:

### 4.1 Symbology characteristics

A description of the general characteristics of the symbology, which shall include:

- a) the encodable character set;
  - b) the classes into which the symbology falls, including an indication of whether it is a single row or multi-row symbology, discrete or continuous, fixed or variable length;
  - c) whether a symbol check character is mandatory or optional;
  - d) whether character self checking is inherent.
- The description may also include:
- e) minimum nominal element dimension;
  - f) range of permissible data character densities;
  - g) summary of optional additional features;
  - h) expression of non-data overhead;
  - i) other characteristics which need to be identified in order to describe the symbology adequately;
  - j) details of any restrictions as to the use of the symbology for specified applications.

### 4.2 Symbol structure

In this clause the overall structure of a symbol shall be described.

### 4.3 Character encodation

The principles of the encodation of characters shall be set out together with a table showing the bar and space pattern for each character in the encodable character set.

This description shall also cover any specially coded characters such as start and stop characters, check characters (optional or mandatory) including the formula or algorithm for their calculation and verification, quiet zones and the data to be transmitted by a decoder.

### 4.4 Dimensions and tolerances

In this clause the dimensions of elements and other features of symbols shall be defined. A formula which can be used to calculate the overall symbol length shall be given. The dimensional tolerances, both for printed symbols and for film masters, shall be indicated, either as a function of a specific dimension of the symbol or as an absolute measurement.

### 4.5 Reference decode algorithm

The specified printing tolerances for any symbology are based on a defined decode algorithm. The standard shall define the algorithm used for the derivation of the tolerances. The algorithm shall not be mandatory for use in decoding equipment.

### 4.6 Application-defined parameters

The standard shall specify which of the symbology characteristics (see 4.1) shall have parameters defined by the application standard.

NOTE. To facilitate comprehension of the standard, informative and normative annexes may be incorporated covering additional aspects of the symbology such as, for example, human readable interpretations of the encoded information, optional features, rules for optimization of overall symbol size, and the symbology identifier (see EN 796).

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