
**Road vehicles — Product data
exchange between chassis and
bodywork manufacturers (BEP) —**

**Part 1:
General principles**

iTeh STANDARD PREVIEW
*Véhicules routiers — Échange de données de produit entre les
fabricants de châssis et de carrosseries (BEP) —
Partie 1: Principes généraux*
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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 40, *Specific aspects for light and heavy commercial vehicles, busses and trailers*.

This first edition of ISO 21308-1 cancels and replaces ISO/PAS 21308-1:2007, which has been technically revised. The main changes compared to the previous edition are:

- an update of the BEP coding principles in [Table 1](#); and
- the addition of new [Annexes A](#) and [B](#).

A list of all parts in the ISO 21308 series can be found on the ISO website.

Introduction

Truck chassis manufacturers deal with configuration of chassis in infinite numbers of possible combinations, and bodywork manufacturers produce highly customised superstructures on these chassis. Bodywork manufacturers build their superstructures on chassis of several different truck brands.

The production efficiency of a specific truck chassis and its body combinations can be greatly improved by achieving the correct technical and commercial information about the specific chassis communicated with the bodywork manufacturer in advance. The information has to be reliable and give the bodywork manufacturer confidence to prefabricate the body or the superstructure before the chassis is delivered. With uniform conditions, unambiguous dimensions and supplementary information can be established, transferred and correctly interpreted by the receiver. Increased information efficiency will improve the quality and reduce the lead times.

ISO 21308 specifies a system of codes to exchange specific data between chassis and bodywork manufacturers, providing a platform for efficient communication between the parties. The process of exchanging data according to this document is irrelevant of IT sophistication degree.

Exchanging codes according to ISO 21308 is useful in various situations, e.g. for the design and manufacturing, technical specifications, technical drawings and leaflets.

ISO 21308 uses the applicable definitions from the related ISO 612 and ISO 7656 and adds a number of dimensional codes, together with general, mass and administrative codes.

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Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) —

Part 1: General principles

1 Scope

This document series describes a generic system for the exchange of data between truck chassis manufacturers and bodywork manufacturers. It applies to commercial vehicles as defined in ISO 3833, having a maximum gross vehicle mass above 3 500 kg.

The process of exchanging product data can involve:

- chassis manufacturer;
- chassis importer;
- chassis dealer;
- one or more bodywork manufacturers; and
- bodywork component suppliers, e.g. manufacturers of demountable bodies, cranes and loading equipment, tipping equipment.

This document describes the general principles and provides an overview and recommendations to assist the parties implementing BEP codes for their communication process. The recommendations cover different ways to communicate and present the BEP codes. In particular, the application of XML for communication of BEP codes in an unambiguous way is described.

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 21308-2, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 2: Dimensional exchange parameters*

ISO 21308-3, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 3: General, mass and administrative exchange parameters*

ISO/TS 21308-4, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 4: Mapping to STEP application protocol 239*

ISO 21308-5, *Road vehicles — Product data exchange between chassis and body work manufacturers (BEP) — Part 5: Coding of loader crane bodywork*

ISO 21308-6, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 6: Coding of hook loader bodywork*

ISO 21308-7, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 7: Coding of skip loader bodywork*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 612, ISO 7656 and ISO 21308-2 apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Benefits of using BEP codes for the involved parties

4.1 Bodywork manufacturer

The bodywork manufacturer's use of the BEP system will provide the following benefits:

- clear understanding;
- prefabrication;
- internal time reduction;
- reliable documentation and information;
- less conflicts between chassis and body parts;
- detailed information for re-production (additional copies of the bodywork);
- simplified feedback process;
- less late changes and order modifications;
- easier to work with several different chassis manufacturers; and
- possibilities for outsourcing parts of the job.

4.2 Chassis manufacturer

The chassis manufacturer's use of the BEP system will provide the following benefits:

- clear understanding;
- cut in lead time, better cash flow;
- communication of chassis features and interfaces;
- bi-directional communication;
- less late changes and order modifications;
- internal communication between the departments involved;
- higher quality of the complete work;
- cost reductions;
- documentation of the complete vehicle; and
- data for homologation type approval.

4.3 Chassis dealer

For the chassis dealer, use of the BEP system will provide the following benefits:

- clear understanding;
- cut in lead time;
- cost savings as a result of cut in turnaround time;
- clear specifications and information to/from the customer;
- less late changes and order modifications; and
- improved quality of the complete vehicle.

4.4 End customer

The end customer will benefit from:

- improved quality;
- clear specifications and information;
- shorter delivery time; and
- cost savings.

4.5 Homologation bodies and inspection

For homologation parties, the following benefits can be obtained:

- BEP data related to the legal requirements could be extracted; and
- periodical technical inspection would be facilitated.

5 Coding principles

5.1 BEP codes of truck chassis and bodywork

Each characteristic, related to truck chassis and bodywork, is assigned a code composed of the items given below. A prefix “BEP”, followed by a dash (-), shall be used to avoid confusion with other coding systems.

BEP codes are formatted according to the principles in [Table 1](#).

Table 1 — BEP coding principles

BEP-ppMccc.n.p.q.s.t		
Item	Assignment	Description
pp	Bodywork category	pp = None or 00 for codes related to vehicle chassis (ISO 21308-2 and ISO 21308-3) pp = 01 for codes related to loader cranes (ISO 21308-5) pp = 02 for codes related to hook loaders (ISO 21308-6) pp = 03 for codes related to skip loaders (ISO 21308-7) Future parts of the ISO 21308 series may introduce new pp numbers.
M	Measure type	A capital letter, which denotes the type of code: H = Z direction, coordinate system in accordance with ISO 4130 L = X direction, coordinate system in accordance with ISO 4130 W = Y direction, coordinate system in accordance with ISO 4130 C = Coordinate (x,y) or (x,y,z) in the Cartesian coordinate system M = Mass (m), or mass point (m,x,y,z) F = Force (static or dynamic) T = Moment (static or dynamic) R = Radius V = Angle G = General A = Administrative
ccc	BEP code number	Code number given by the standard
.n	Index number	.n is used to designate object number n
.p	Entity number	.p is used to designate a certain set of object characteristics or entities (e.g. dimensions, coordinates, address information) Where both .n and .p are specified, they are given in the .n .p order.
.q	Corner number	.q is used to designate contour corner index number
.s	Side designator	L or R
.t	Type designator	Optional coding to describe the object type (e.g. fuel tank)

5.2 Units of BEP code values

The following units are preferred when reporting values related to BEP codes:

- dimensions (L, W, H, R) and coordinates (x,y,z) in millimetres (mm);
- masses in kilograms (kg);
- forces in Newtons (N), or kN;
- moments in Newtonmetres (Nm), or kNm; and
- angles in degrees (°).

Guidance on units is shown in the unit column of the respective BEP code. BEP codes are not restricted to the use of SI units, however if non-recommended units are used, this should be clearly defined in the representation format used.

6 Communication of the BEP codes

6.1 Communication methods

Examples are given below:

- e-mail;
- website (which could include e.g. a STEP browser, and drawing information);
- online databases, IT networks; and
- internal PDM systems.

6.2 Formats of BEP representation

- plain text;
- comma-separated text (simplest form of structured information);
- spreadsheets (Excel¹⁾™ forms for parts 2 and 3 are available at the ISO Standards Maintenance website: <http://standards.iso.org/iso/21308>); and
- XML, which shall be written according to the indication in Annexes A and B (xsd schema files are available at the ISO Standards Maintenance website: <http://standards.iso.org/iso/21308>);
- STEP file (or information derived from a STEP file), shall be prepared according to ISO/TS 21308-4.

6.3 Communication of BEP codes and values

It is recommended to use the following simple rules:

- BEP code to the left; value to the right (see [Table 1](#)); and
- Unit should be specified (see [Table 1](#));

Table 2 — Example of communication of a BEP code

BEP code	Description	Value	Unit
BEP-H079	Fifth-wheel coupling above ground, laden, lowest position	1 230	mm

- In drawings, the BEP code relation to the measurement value should be clearly indicated.

7 Advanced communication of BEP data

Advanced communication of BEP data according to [Figure 1](#), with the use of STEP, shall be handled as stated in in ISO/TS 21308-4.

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