3.3 Identification system

The current standard which deals with the coding, identification and marking of containers is DIN EN ISO 6346, dated January 1996. Among other things, this standard specifies that the previous standards with similar content have equal validity, since a number of older versions of containers with different markings naturally remain in service alongside the brand new ones. This Section will provide only certain essential explanations with regard to the systems used - for more detailed information, the reader should refer to the corresponding standards and more extensive specialist literature.

The foreword to the standard states, among other things, that it includes not only the statutory units but also corresponding sizes stated in Anglo-American units. Under the German Units of Measurement Act, 22nd February 1985, the use of such units nationally and commercially in Germany is proscribed. Such units may only be quoted to aid business relationships with countries which still use these units.

Marking on the door of a container

A distinction is drawn between compulsory and optional marking. Compulsory ISO marking must be used on all containers, while optional marking does not have to be: they are included in the standard to improve understanding and to promote uniform application of marking. However, if a particular style of representation is specified for an optional mark, it must be complied with. The terms "compulsory" and "optional" used in the standard do not apply to the requirements of any legislative bodies, however.

The following is a basic version of horizontal container marking.

Container identification marking

This Figure shows a version of vertical container marking.

**Marking on the front
end of a container**

The container identification system specified in DIN EN ISO 6346 consists solely of the elements shown, which can only be used together:

- owner code, consisting of three capital letters

- product group code, consisting of one of capital letters U, J or Z

- six-digit registration number

- check digit

The owner code must be unique and registered with the International Container Bureau (BIC - Bureau International des Containers - 14, Rue Jean Rey, 75015 Paris), either directly or through a national registration organization. The German BIC representative is the Studiengesellschaft für den kombinierten Verkehr e.V., Börsenplatz 1, 60313 Frankfurt am Main (tel. +49 69 283571 or +49 172 6700597). The SGKV can provide information and handle applications for registration of an owner code. In the Figures shown, the owner code consists respectively of the letter combinations SUD and TEX.

The product group code consists of one of the following three capital letters:
U - for all freight containers
J - for detachable freight container-related equipment
Z - for trailers and chassis
The term owner code may also apply to the combination of owner code and product group code, which is also known as an alpha prefix.
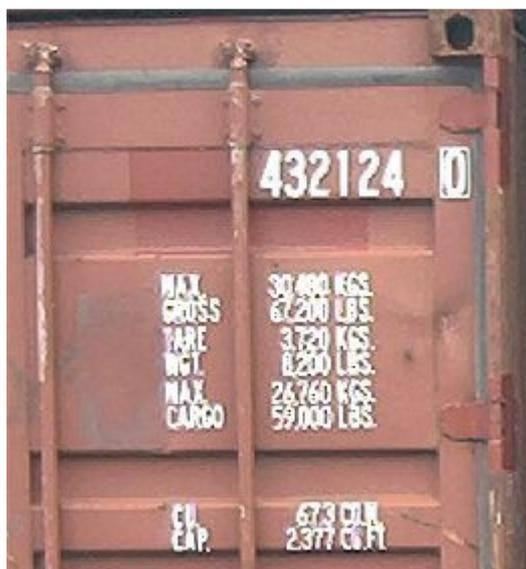
Alpha prefix absent

If the owner code is absent, the container cannot be identified.

The registration or serial number consists of six digits. In the examples shown, these numbers are 307007 and 452149. If the container number consists of fewer than six digits, it is preceded by enough zeros to make a six-digit number sequence.

The check digit, 9 and 6 respectively in the two examples shown, is always a single-digit number. It is usually in a box, to make it stand out from the registration number.

The check digit can be used to validate whether the owner code, product group code and registration number have been accurately transmitted. No freight information system (FIS), transport information system (TIS) or similar data processing system will accept a container number, if the result of the automatic checking procedure does not show agreement with the check digit. The procedure is deliberately designed to ensure that a number of transmission errors cannot cancel one another out, resulting in the acceptance of incorrect data. The checking procedure is as follows:

An equivalent numerical value is assigned to each letter of the alphabet, beginning with 10 for the letter A (11 and multiples thereof are omitted):

A	B	C	D	E	F	G	H	I	J	K	L	M
10	12	13	14	15	16	17	18	19	20	21	23	24

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
25	26	27	28	29	30	31	32	34	35	36	37	38

The individual digits of the registration number keep their everyday value, i.e. 1 = 1, 2 = 2 etc.

The following numerical values are accordingly obtained for the two examples with the alpha prefixes "SUDU" and "TEXU":

S	U	D	U	3	0	7	0	0	7
30	32	14	32	3	0	7	0	0	7

T	E	X	U	4	5	2	1	4	9
31	15	36	32	4	5	2	1	4	9

Each of these numbers is multiplied computationally, as a function of its position, by numerical values of 2^0 to 2^9: the first number by 1, the second by 2, the third by 3 and the 10th by 512.

1st number/ digit	2nd number/ digit	3rd number/ digit	4th number/ digit	5th number/ digit	6th number/ digit	7th number/ digit	8th number/ digit	9th number/ digit	10th number/ digit
2^0	2^1	2^2	2^3	2^4	2^5	2^6	2^7	2^8	2^9
1	2	4	8	16	32	64	128	256	512

The following calculations are performed for the two examples:

S	U	D	U	3	0	7	0	0	7
30	32	14	32	3	0	7	0	0	7
×	×	×	×	×	×	×	×	×	×
1	2	4	8	16	32	64	128	256	512
=	=	=	=	=	=	=	=	=	=
30	64	56	256	48	0	448	0	0	3,584

The sum of these numbers equals	4,486	and is divided by 11, giving	407.8
The integer multiplied by 11 equals	4,477	The difference between the resultant values is the check digit	

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T	E	X	U	4	5	2	1	4	9
31	15	36	32	4	5	2	1	4	9
×	×	×	×	×	×	×	×	×	×
1	2	4	8	16	32	64	128	256	512
=	=	=	=	=	=	=	=	=	=
31	30	144	256	64	160	128	128	1,024	4,608

The sum of these numbers equals	6,573	and is divided by 11, giving	
The integer multiplied by 11 equals	6,567	The difference between the resultant values is the check digit	

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If the check digits 9 and 6 respectively are correctly input in each case during data entry, the system accepts the data.

If someone makes a mistake when transmitting a container number and inputs the alphanumeric sequence TEXU 45214**9** into a corresponding system instead of TEXU 45215**9**, the program would perform the following calculation:

T	E	X	U	4	5	2	1	5	9
31	15	36	32	4	5	2	1	5	9
×	×	×	×	×	×	×	×	×	×
1	2	4	8	16	32	64	128	256	512
=	=	=	=	=	=	=	=	=	=
31	30	144	256	64	160	128	128	1280	4608

The sum of these numbers equals				6,829	and is divided by 11, giving				620.8
The integer multiplied by 11 equals				6,820	The difference between the resultant values is the check digit				
				9					

Since the correct check digit for this container is 6, the system would indicate an error.

Disadvantage of check digit 0

The check digit 0 may occur twice, since it arises where the final difference is 0 and where it is 10. To ensure that this does not happen, the standard recommends that registration numbers should not be used which produce a final difference of 10. This is the case, however, with the registration number shown.

T	R	L	U		5	4	3	8	6	2	0
31	29	23	32		5	4	3	8	6	2	
1	2	4	8		16	32	64	128	256	512	
31	58	92	256		80	128	192	1,024	1,536	1,024	4,421
4,421	11	401.9	401	11	4,411	10					

Correct identification using check digit 0

H	L	X	U		4	6	9	1	9	2	0
18	23	36	32		4	6	9	1	9	2	
1	2	4	8		16	32	64	128	256	512	
18	46	144	256		64	192	576	128	2,304	1,024	4,752
4,752	11	432.0	432	11	4,752	0					