

Wagon Markings – Guidelines

1. Introduction

Article 4, para 4 of the Safety Directive (2004/49/EG amended by 2008/110/EC) stipulates the **“responsibility of each manufacturer, maintenance supplier, wagon keeper, service provider and procurement entity to ensure that rolling stock, installations, accessories and equipment and services supplied by them comply with the requirements and the conditions for use specified, so that they can be safely put into operation by the railway undertaking and/or infrastructure manager”**.

“Real life wagon markings” often do not correspond with the relevant provisions in place and wagons are subsequently marked incorrectly¹.

To mitigate this issue the updated TSI WAG Application Guide will contain clear descriptions on how vehicles should be marked correctly. The Application Guide will be further developed in the ERA Working Group “TSI WAG limited revision 2015” and released in the second half of 2016.

Because of the importance and urgency of this issue ERFA, UIC and UIP decided to already draft guidelines on correct wagon markings. These Guidelines are addressed to Wagon Keepers and ECMs and should facilitate the correct application of wagon marking provisions in force.

These guidelines are solely applicable to wagons which were authorised for placing into service according to the provisions laid down in the TSI WAG (“old” or “new”).

2. Recommendation

The three associations recommend that each Wagon Keeper / ECM based on these guidelines and the relevant provisions in place assesses the markings of each of its wagon and

- a) as soon as possible correct wagon markings which are contradictory and/or may result in safety critical situations during operation;
- b) until the end of 2020 correct those markings not in line with the valid provisions but **not resulting** in potential misinterpretation by the operating Railway Undertaking and/or not resulting in potential safety critical situations; namely the marking “TEN-RIV” should be replaced.

¹ Chapter 4 contains some examples

3. “Old” and “new” TSI WAG

In order to correctly assess the wagon markings it is crucial to know according which TSI WAG the APIS (Authorisation for Placing Into Service) for the individual wagon was granted.

3.1. APIS according “Old TSI WAG”

The following decisions apply for wagons authorised for putting into service according the “old TSI WAG”:

- **COMMISSION DECISION 2006/861/EC** of 28 July 2006 concerning the technical specification of interoperability relating to the subsystem ‘rolling stock — freight wagons’ of the trans-European conventional rail system
- **COMMISSION DECISION 2009/107/EC** of 23 January 2009 amending Decisions 2006/861/EC and 2006/920/EC concerning technical specifications of interoperability relating to subsystems of the trans-European conventional rail system
- **COMMISSION DECISION 2012/464/EC** of 23 July 2012 amending Decisions 2006/861/EC, 2008/163/EC, 2008/164/EC, 2008/217/EC, 2008/231/EC, 2008/232/EC, 2008/284/EC, 2011/229/EU, 2011/274/EU, 2011/275/EU, 2011/291/EU and 2011/314/EU concerning technical specifications for interoperability
- **Article 3c of COMMISSION REGULATION (EU) 2015/924** of 8 June 2015 amending Regulation (EU) No 321/2013 concerning the technical specification for interoperability relating to the ‘rolling stock — freight wagons’ subsystem of the rail system in the European Union

The following table 1 provides an overview on correct wagon markings taking into account the provisions laid down in the “old TSI WAG” including Article 3c of the Commission Regulation (EU) 2015/924 which entered into force on July 1st 2015:

| Wagon is authorised according “OLD TSI WAG” - (Commission Decision 2006/861/EC and amendments) | | | |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Column: | A | B | C |
| Requirement: | Fulfils Article 4.2 of Annex “old TSI WAG” (Functional and technical specifications of the subsystem) | and fulfils partly Article 7.6.4 of annex 1 of amended “old TSI WAG” | or fulfils completely Article 7.6.4 of annex 1 of amended “old TSI WAG” |
| Interoperability Marking: | Authorisation Plate (if the wagon is intended to be operated also in other Member States than the one which granted the APIS) | | TEN GE GE = <u>G</u> O <u>E</u> VERYWHERE |
| Additional marking(s): | According applied kinematic gauge in application of Annex C (see C3 - C4 - C5) | | G1 |
| 1st Digit European Vehicle Number (EVN) | 4 or 8 | 4 or 8 | 0 or 1 or 2 or 3 |

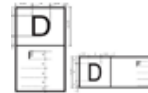
Table 1

To summarize:

- ✓ The wagon complies with the requirement in **Column A of Table 1**, i.e. the provisions set out in Article 4.2 of Commission Decision 2006/861/EC are completely fulfilled:

In this case:

- The wagon will need an authorisation plate
- The first digit of its EVN is 4 or 8.



| | |
|---------------------------|---------|
| Example: | |
| APIS: | Germany |
| Additional authorisation: | France |

- ✓ The wagon complies with the requirements in **Column B of Table 1**, i.e. the provisions of Article 7.6.4 of the Commission Decision 2009/107/EC are only **partly** fulfilled:

“An authorisation of placing in service granted by one Member State shall be valid in all other Member States under the following conditions:

- (a) the wagon has been authorised in accordance with Article 22 of Directive 2008/57/EC, on the basis of this TSI, including the verifications related to the open points identified in Annex JJ part 1;
- (b) the wagon is compatible with the 1435 mm track gauge;
- (c) the wagon has a G1 loading gauge, as specified in Annex C3;
- (d) the wagon is equipped with an axle distance that does not exceed 17 500 mm between two adjacent axles;
- (e) the wagon complies with the requirements of Annex JJ part 2.”

In this case

- The wagon will need an authorisation plate
- The first digit of its EVN is 4 or 8.

- ✓ The wagon complies with the requirements in **Column C of Table 1**, i.e. **ALL** criteria of Article 7.6.4 of the Commission Decision 2009/107/EC are fulfilled.

In this case

- The wagon should be marked as “TEN GE” [GE = Go Everywhere]

The possibility to use the “TEN GE” marking since July 1st 2015 for such wagons is based on Article 3c) of the Commission Regulation (EU) 2015/924:

“(...) wagons of the existing fleet which have been authorised in accordance with Commission Decision 2006/861/EC as amended by Decision 2009/107/EC or with Decision 2006/861/EC as amended by Decisions 2009/107/EC and 2012/464/EU and meeting the conditions set out in point 7.6.4 of Decision 2009/107/EC may receive the marking “GE” without any additional third party assessment or new authorisation for placing in service. The use of this marking in wagons in operation remains under the responsibility of the railway undertakings.”

- In addition the marking “G1” should be affixed to the wagon.



- The first² digit of its EVN is 0 or 1 or 2 or 3.

² “0” and “1” should be avoided because these numbers were used in the past for the “EUROP fleet”

3.2. APIS according “New TSI WAG”

The following regulations apply for wagons authorised for putting into service according the “new TSI WAG”:

- **COMMISSION REGULATION (EU) No 321/2013** of 13 March 2013 concerning the technical specification for interoperability relating to the subsystem ‘rolling stock — freight wagons’ of the rail system in the European Union and **repealing Decision 2006/861/EC**
- **Commission Regulation (EU) No 1236/2013** of 2 December 2013 concerning the technical specification for interoperability relating to the subsystem ‘rolling stock — freight wagons’ of the rail system in the European Union and **amending Regulation (EU) No 321/2013**
- **COMMISSION REGULATION (EU) 2015/924** of 8 June 2015 **amending Regulation (EU) No 321/2013** concerning the technical specification for interoperability relating to the ‘rolling stock — freight wagons’ subsystem of the rail system in the European Union

Table 2 on the next page provides an overview on correct wagon markings taking into account the provisions laid down in the “new TSI WAG”, in particular with the view on the new markings “GE”, “CW” and the gauge marking according to EN 15877-1, clause 4.5.2.

| Wagon is authorised according “New TSI WAG” (Regulation 321/2013 and all amendments) | | | | |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Column: | A | B | C 1 | C 2 |
| Requirement: | Fulfils Article 4.2 of the Annex of new TSI WAG | Fulfils column A and Article 7.1.2 of the Annex of new TSI WAG | Fulfils columns A and B and complete App. C of the Annex of new TSI WAG | Fulfils columns A and B and partly App. C of the Annex of new TSI WAG (see Appendix C, C.5) |
| Interoperability Marking | Authorisation Plate | TEN | TEN GE | TEN CW <small>CW = COMPATIBLE WITH</small> |
| Additional gauge marking(s): | Article 4.2 does not require a specific gauge marking. | <p>TSI WAG Article 7.1.2 (g): “The reference profile must be allocated to one of the target reference profile(s) G1, GA, GB and GC including those used for the lower part GIC1 and GIC2.”</p> <p>Article 7.1.2 (k): “The unit must be marked with all applicable markings in accordance with EN 15877-1:2012, in particular with the marking on:</p> <p style="padding-left: 20px;">(i) the allocated interoperable gauge...”</p> <p>EN 15877-1, clause 4.5.2 requires the new gauge marking with 3 gauges defined in the keys. Key 1 is one of those required in the TSI 7.1.2. Key 2 could be the same as key 1 or a smaller national or multinational gauge (e.g.G2). Key 3 is always the lower gauge.</p> <p>Note: EN 15273-2:2014 and EN 15877-2:2012 call the lower gauges GI1 or GI2 instead of GIC1 and GIC2 as in TSI WAG.</p> | <p>According to EN 15877-1, clause 4.5.2 key 1 = G1 key 2 = G1 or smaller national or multinational gauge abbreviation acc. to EN 15273-2 key 3 = GI1</p> <p>Note: EN 15273-2:2014 and EN 15877-2:2012 call the lower gauge GI1 instead of GIC1 as in TSI WAG.</p> | <p>Alternative 1: Criteria C6 fulfilled</p> <p>According to EN 15877-1, clause 4.5.2 key 1 = G1 key 2 = key 1 or smaller national or multinational gauge abbreviation acc. EN 15273-2 key 3 = GI1</p> <p>Alternative 2: Criteria C6 not fulfilled: EN 15877-1, clause 4.5.2 key 1 = GA or GB or GC key 2 = key 1 or smaller national or multinational gauge abbreviation acc. EN 15273-2 key 3 = GI1 or GI2</p> <p>Note: EN 15273-2:2014 and EN 15877-2:2012 call the lower gauges GI1 or GI2 instead of GIC1 and GIC2 as in TSI WAG.</p> |
| First Digit EVN | 4 or 8 | 4 or 8 | 0 or 1 or 2 or 3 | 4 or 8 |

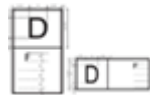
Table 2

To summarize:

- ✓ The wagon complies with the requirements in **Column A of Table 2**, i.e. the provisions set out in Article 4.2 of the Annex of Regulation 321/2013 are completely fulfilled.

In this case:

- The wagon will need an authorisation plate
- The first digit of its EVN is 4 or 8.



- ✓ The wagon complies both with the requirements in **columns A and B of Table 2**, i.e. in addition to the “core TSI” criteria set out in above mentioned Article 4.2 the wagon shall comply **entirely** with the conditions set out in Article 7.1.2 of Regulation 321/2013 (*Mutual recognition of the first authorisation of placing in service*).

In this case:

- The wagon shall be marked with “**TEN**” and the first digit of its EVN shall be 4 or 8.
- Marking acc. to EN 15877-1, clause 4.5.2. for Key 1 to 3 based on wagon condition shall be applied according the individual assessment for column B of Table 2 above.

Preliminary remark with regard to Columns C 1 and C 2 of Table 2:

In order to mark a wagon authorised according the “new TSI WAG” with “**TEN GE**” or “**TEN CW**” the applicant must have opted on a voluntary basis for the application of Appendix C of Regulation 321/2013 (“additional optional conditions”) during the authorisation process.

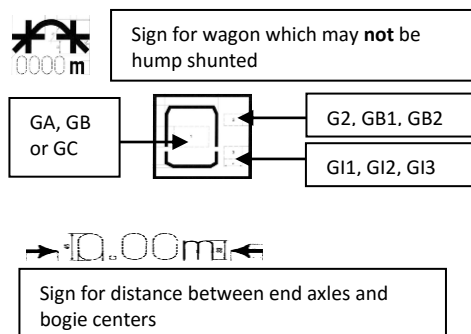
- ✓ The wagon complies with the requirements in **columns A and B and C 1 of Table 2**, i.e. **ALL criteria of Appendix C are fulfilled**.

In this case

- The wagon shall be marked with “**TEN GE**” and the first³ digit of the EVN is 0 or 1 or 2 or 3
- Marking acc. to EN 15877-1, clause 4.5.2. for Key 1 to 3 based on wagon condition (usually 1= G1, 2= G1, 3= G1)

- ✓ The wagon complies with the requirements in **columns A and B and C 2 of Table 2**, i.e. Appendix C is fulfilled with the exception that **at least one of the following criteria of Appendix C is NOT fulfilled**:

- Criteria C3: full ability to be hump-shunted and/or
- Criteria C6: reference contour is G1 and G1 and/or
- Criteria C7b: The distance between two adjacent axles **shall not exceed 17'500mm**



In this case

- The wagon shall be marked with “**TEN CW**”⁴
- Marking acc. to EN 15877-1, clause 4.5.2. for Key 1 to 3 shall be applied according the individual assessment for column **C 2** of Table 2 above.

³ “0” and “1” should be avoided because these numbers were used in the past for the “EUROP fleet”

⁴ **Important:** all other criteria of Appendix C must be met in order to apply this marking and the first digit of the EVN will be 4 or 8.

4. Examples of incorrect wagon markings

The following examples show incorrect wagon markings and explanations how to correct them:

1. 33 TEN xx 6985 000 – 0 with additional marking “G2”

The combination of the markings “TEN” with “3” as 1st digit and G2 gauge is wrong, because “3” as 1st digit indicates that the complete Appendix C of the “new” TSI WAG is fulfilled. However, G2 gauge is not in line with Appendix C because its point C.6 requires G1 gauge.

Therefore

- The first digit of the EVN should be “8”
- The TEN marking could be right, but according to EN 15877-1, clause 4.5.2 instead of “G2” the wagon should be marked with “GC” on the left side (key 1 in the EN) and “G2” on the right side (key 2 in the EN)

2. 37 TEN-RIV xx 7830 000 – 0 with additional “G1” marking

Depending whether the authorisation for putting into service this car was granted according the “old” or “new” TSI WAG the correct marking should be either

- “TEN” and “G1” (“old” TSI WAG) or
- “TEN GE” and “G1” if authorised according “new” TSI WAG and if appendix C of this TSI WAG is completely fulfilled.

The marking “TEN-RIV” is not allowed since 1st of January 2011 - see TSI OPE decision 2012/757/EU, Annex I, Appendix P , clause 2:

“The keeper can add, in letters of larger size than the European Vehicle Number, an own number marking (consisting generally of digits of the serial number supplemented by alphabetical coding) useful in operations. The place where the own number is marked is left to the choice of the keeper; however it must always be possible to distinguish easily the European Vehicle Number from the keeper’s own number marking.”.

It is strongly recommended to replace “TEN- RIV” by “TEN” and the marking “GE”, as provided for by article 3 of decision 2015/924 (TSI WAG amendment).

3. 09 xx 7833 001-0 with the “GE” marking but without “TEN”

The first digit “0” is only allowed for 2-axles wagons which fulfil the TSI clauses 4, 5 and 6, the clause 7.1.2 and Appendix C.

Therefore

- “3” as first digit of the EVN and
- “TEN”

is the correct marking.