



TSI WAGONS (321/2013) **modifications**
BEWAG 27/04/2015

TSI Wagons – actual situation – amendement – 2015 Revision

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1. Actual situation;
2. Structure of the TSI Wagons;
3. Marking of the Wagons;
4. Amdendement 1236/2013;
5. Further Updates;
6. WG 2015 Revision;
7. Modification tresholds

1. Actual situation

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TSI Wagons (Commission Regulation 321/2013 - amended by Commission Regulation 1236/2013)

- § 4.2: basic requirements;
- § 7.1.2: supplementary requirements; if these requirements are fulfilled together with these of § 4.2 → authorisation in other member states without further checks;
- Annex C: contains voluntary technical specifications that facilitate the exchange of vehicles between keepers and RU

2. Structure of the TSI Wagons

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- §4.2: Basic requirements
 1. General;
 2. Structure – mechanical parts;
 3. Gauge – interaction with the tracks;
 4. Brakes;
 5. Environmental conditions;
 6. Fire – electrical hazard

2. Structure of the TSI Wagons

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- §7.1.2: requirements for authorisation in other member states without further checks (1)
 1. Dynamical behaviour assessed to full range of speed and full range of track geometry ...according to EN 14363 or full assessed running gear ;
 2. Axle bearing conditions must be possible to be monitored according to EN 15437-1;
 3. Non variable gauge wheelsets;
 4. Forged or rolled wheels according to EN 13979-1:2003+A1:2009+A2:2011;

2. Structure of the TSI Wagons

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- §7.1.2: requirements for authorisation in other member states without further checks (2)
- 5. The compliance/non-compliance with requirements regarding the axle bearing monitoring (§ 7.3.2.2a - spec. cases) must be set out in the technical documentation;
- 6. Units used on the 1668 mm track gauge network must satisfy the conditions as set out in § 7.3.2.2a - spec. cases;
- 7. Gauges: G1, GA, GB and GC including GIC1 and GIC2 for the lower parts;
- 8. Compatibility to train detection systems as defined in § 4.2;



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2. Structure of the TSI Wagons

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- §7.1.2: requirements for authorisation in other member states without further checks (3)
- 9. Manual coupling (UIC) or automatic /semi-automatic standardised coupling;
- 10. Brake equipment: braking performances as defined in annex C, thermal capacity (wheels and brake blocks), wheel specifications (EN 13262:2004+A1:2008+A2:2011 and EN13979-1:2003+A1:2009+A2:2011);
- 11. Marking according to EN 15877

2. Structure of the TSI Wagons

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TSI Wagons

- Annex C (1):
 - Draw hook + buffers according to EN 15551 and EN 15566 + Bern Rectangle;
 - UIC footsteps and handrails;
 - Ability to be hump shunted;
 - Free space under lifting points;
 - Marking of units;
 - G1 – Gauge;

2. Structure of the TSI Wagons

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- Annex C (2):
 - Compatibility with train detection systems + distance between 2 adjacent axles shall not exceed 17500 mm;
 - Safe running under longitudinal compressive forces according to EN 15839;
 - UIC Brake;
 - Temperature ranges – T1;
 - Welding according to EN 15085 - 1 à 5;

2. Structure of the TSI Wagons

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- Annex C (3):
 - Track gauge = 1435 mm
 - Thermal capacity brakes: blocks according to appendix G (ERA-TD) – Wheels according to C. 15;
 - Tow hooks;
 - Protection of staff towards protruding parts – UIC 535-2
 - Label holders – UIC 575

3. Marking of wagons according to the TSI

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- §4.2+§7.1.2+annex C → marking “TEN” + “GE” + EVN starting with 2 or 3
- §4.2+§7.1.2+annex C – C3 an/or C6 and or C7 → marking “TEN” + “CW” + EVN starting with 4 or 8
- §4.2+§7.1.2 → marking “TEN” + EVN starting with 4 or 8
- §4.2 → marking + EVN starting with 4 or 8 + marking of MS authorising the wagon

4. Amendement of TSI Wag (Commission Regulation 1236/2013)

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- **Slight modifications of the annex**
 - Géographical scope;
 - Dynamic behavior;
 - Structure;
 - Brakes (service brake, parking brake, thermal capacity, WSP);
 - End signal;
 - ...

5. Further updates

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- **Update of annex G (Composite Brake Blocks)**
- **Update of technical documents**
 - ERA/TD/2012-04/INT version 1.3 of 02/12/2014 (Attachment devices for rear-end signals, clearance for draw hooks, space for shunting staff operation, footsteps and handrails)
 - ERA/TD/2012-02/INT version 2.0 of 15/12/2014 (friction elements for wheel tread brakes)

6. WG on 2015 revision

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- **Closure of open points;**
- **Review of technical scope;**
- **Review of specific cases;**
- **Consider experience of application of the TSI and feedback from incidents/accidents;**
- **Possible integration of RID technical requirements falling in the scope of the TSI;**
- **Review of Standards;**

6. WG on 2015 revision

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- **Mistake correction and integration of amendments, ERA technical opinions/advices and RFUs;**
- **Review of conditions in clause 7.1.2;**
- **Review of the Application Guide;**
- **Define limits for the validity of type/design examination certificate and transition periods;**
- **Modification thresholds !! (see 7);**
- **Interoperability constituents subject to specific case;**
- **Guideline for technical compatibility with a given route;**

7. Modification thresholds

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Changed introduced in design of new vehicles	Changed introduced in a vehicle already in service	Additional certificates and declaration	New type authorisation and authorisation for placing into service	Actions for revision in TSI
Scenario 1: No impact on the original verification	Substitution in the framework maintenance (similar to scenario 1)	Not necessary	NO (Self-assessment by the applicant)	No need for guideline
Scenario 2: Impact on the original verification, but its results remain valid	Changes that introduce a deviation from the technical file without impact on the basic design characteristics (similar to scenario 2)	Addition to the original EC-type [or design] examination certificate	NO (Self-assessment by the applicant + assessment by NoBo)	The TSI may specify the modifications that do not require a new verification and therefore falls in this group; in such case the NoBo will only check the right application of the TSI regarding the change COMPLEMENT SECTIONS: 7.1.3 "Renewal and upgrade" 7.1.4 "Modifications to a type of vehicle" This may also need some complements in the section 4.2 of the TSI
	Renewal or upgrading (similar to scenario 2 or 3)	Update of EC Declaration of verification		
Scenario 3: Impact on the results of verification of conformity (the "basic design characteristics" change)	Renewal or upgrading which requires a new authorisation for the placing in service (similar to scenario 3)	The NoBo issues complementary certificate/s	UP TO THE DECISION OF NSA Inform the authorities about the upgrading projects (Article 20 (4) of the Interoperability Directive) and send them the "file describing the project. MS decides if new authorisation is needed if: * TSI so requires in its implementation strategy or * if the "overall level of safety of the subsystem concerned may be adversely affected by the works envisaged".	The TSI may include rules/criteria for a NSA to consider the existing type authorization still valid after a modification. New section (cases requiring a new authorization
		Complementary EC declaration of verification		

THANKS FOR THE ATTENTION

ANY QUESTIONS ?