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NB-Rail Association

RECOMMENDATION FOR USE

NB-RAIL COORDINATION GROUP

Administrative Decision according to Interoperability Directive
(EU) 2016/797 art. 30.6



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RFU-RST-321

Issue 01

Date 05/07/2022

TITLE

EVIDENCE FOR FIXING OF DEVICES TO CARBODY STRUCTURE WITH DYNAMIC LOADING

ORIGINATOR

TÜV NORD Luxembourg S.à r.l.

SUBJECT RELATED TO

Commission Regulation (EU) No 1302/2014 (LOC&PAS TSI), amended by Reg. (EU) 2016/919, Reg. (EU) 2018/868, Reg. (EU) 2019/776 & Reg. (EU) 2020/387

AMENDMENT RECORD:

DESCRIPTION AND BACKGROUND EXPLANATION

The aim of this question is to clarify if dynamic load shall be considered to show the evidence for fixing of devices to carbody structure.

Background:

TSI LOC&PAS Chapter 4.2.2.7 “Fixing of devices to carbody structure”

(3) Fixed devices including those inside the passenger areas, shall be attached to the car body structure in a way that prevents these fixed devices becoming loose and presenting a risk of passenger injuries or lead to a derailment. To this aim, attachments of these devices shall be designed according to the specification referenced in Appendix J-1, index 12, considering category L for locomotives and category P-I or P-II for passenger rolling stock.

Note: Appendix J-1, index 12 references EN 12663-1:2010+A1:2014 Section 6.5.2. Section 6.5 describes static load cases, section 6.5.2 particularly for equipment attachments. According to the terms and definitions, “equipment attachment” includes fasteners and any associated local load carrying substructure or frame which connect equipment to the vehicle body.

Description of the situation:

As elaborated above, the TSI LOC&PAS requires proof of fixing of devices to carbody structure for static load cases. However, the word “static” is not explicitly mentioned in the description of the TSI LOC&PAS clause and “dynamic” not explicitly excluded. The argumentation “prevents ... becoming loose and presenting a risk of passenger injuries or lead to a derailment” would accordingly apply for dynamic load cases. The referenced standard EN 12663-1:2010+A1:2014 contains such load cases in Section 6.7 “Fatigue loads at interfaces” in Subsection 6.7.3 “Equipment attachments”.

As an example, a frame carrying heavy components on or under the carbody might not be required to be evaluated for fatigue life if dynamic load cases do not need to be considered.



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Question: Shall dynamic loading be considered, and fatigue strength taken into account, for fixed devices including those inside the passenger areas, attached to the car body structure?

RFU PROPOSAL

Beside static exceptional loading there is also fatigue or cycling loading to fixed devices. Since the TSI clause 4.2.2.7 doesn't explicitly define a certain standard to be used for such loading, the safety against damage by dynamic loading is to be handled according to RFU-STR-088 scope 3 ("not formulated as directly assessable conformity assessment requirement"). The NoBo shall receive a written statement by the Applicant if this latter does not want to evaluate the clause 4.2.2.7 according to RFU-RST-088 scope 3.

Otherwise, section 6.7 of the EN12663-1 is deemed to be applicable to cover also fatigue or cycling loading to the components and their supporting structure that are fixed to the vehicle frame. This is also supported by the TSI statement "Alternative normative documents may be used under the same conditions as defined in clause 4.2.2.4 above." Further standards might become applicable, but it must be explained why those "alternative normative documents" also cover (fatigue) strength to prevent "fixed devices from becoming loose".

THIS RFU WAS AGREED ON

PLENARY MEETING 065 – 23/06/2022

THIS RFU ENTERS INTO FORCE ON

05/07/2022 (DATE OF PUBLICATION)

FROM THIS DATE ON THIS RFU CAN BE APPLIED INSTEAD OF THE PREVIOUS MANDATORY VERSION.

RFU APPLICATION IS MANDATORY STARTING FROM

04/10/2022

AT THIS DATE ANY PREVIOUS VERSIONS OF THIS RFU WILL BE WITHDRAWN.

RFUS SHALL BE APPLIED BY ALL NOBOS. PLEASE REFER TO RFU-STR-702, CHAPTER 3 OF THE SECTION "DESCRIPTION AND BACKGROUND EXPLANATION", FOR THE LEGAL BASIS SUPPORTING THIS OBLIGATION.

ERA COMMENTS

PLE 065 – 23/06/2022: NO COMMENTS PROVIDED