

RAILTRACK

Safety & Standards

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| Briefing Notes for: | Structural Requirements for Doors and Gangways on Railway Vehicles | |
| Document No: | GM/RT2457 | Issue: One |
| Subject Committee(s): | Traction & Rolling Stock | |
| Issue Date: | 01/04/2000 | |
| Initial Compliance Date: | 03/06/2000 | |

BACKGROUND

GM/RT2457 is a new document, which amends and supersedes GM/TT0123. The changes to the current requirements in GM/TT0123 are related to the increased aerodynamic effects that are created with the introduction of higher speed trains onto Railtrack controlled infrastructure. The changes have been limited in scope to those risks that these higher speeds introduce.

GM/TT0123 currently specifies that external doors and gangways must withstand an aerodynamic pressure loading of 2.5 kPa. It currently makes no mention of pressure-sealed trains.

With the introduction of operations at speeds in excess of 125 mile/h, the sustained pressure loading experienced by a forward-facing external door in the open air will be increased. In addition, the introduction of higher speeds is likely to be accompanied by the introduction of vehicles sealed against external pressures. On unsealed vehicles there is a tendency for internal and external pressures to equalise. This is not the case on sealed vehicles. Therefore appropriate account must be taken of the more severe aerodynamic loadings on the external doors and gangways of sealed vehicles.

KEY CHANGES INTRODUCED BY THIS STANDARD

- Withdrawal of GM/TT0123 Issue One – Structural Requirements for Doors and Gangways on Railway Vehicles
- Introduction of GM/RT2457 Issue One – Structural Requirements for Doors and Gangways on Railway Vehicles

The document has been re-categorised in accordance with the current document referencing system in use within the Safety and Standards Directorate

The new document:

- requires that for train speeds in excess of 125 mile/h the magnitude of the external pressure loading to be withstood by all forward-facing external doors be determined and that the capability of the doors to withstand this loading be demonstrated by tests, calculation or other appropriate means;

- requires that external doors withstand the transient pressure loadings caused by wave actions in tunnels, and that the loadings be determined and that the capability of the doors to withstand this loading be demonstrated by tests, calculation or other appropriate means;
- excludes in the current clause the requirement for crew only direct access external doors to withstand a sustained pressure of 6 kPa over its internal surface;
- adds a clause for where it can be demonstrated that for crew only direct access external doors the loading of 6 kPa is inappropriate, then it is permissible to reduce this loading down to a minimum of 3 kPa over its internal surface;
- requires that gangways withstand the transient pressure loadings caused by wave actions in tunnels, and that the loadings be determined and that the capability of the gangways to withstand this loading be demonstrated by tests, calculation or other appropriate means.

These changes accommodate the greater pressure loading on external doors in the open air at train speeds in excess of 125 mile/h and will ensure that external doors and gangways are designed to withstand the pressure differentials which exist across them during transit through tunnels.

Additionally the requirements for crew only direct access external doors have been clarified and address previously accepted non-compliances.

COMPLIANCE

The provisions of this document, GM/RT2457, are to be complied with for all new procurement contracts for new vehicles and for all new contracts for vehicle refurbishment where the contract between the Railway Group Member and their supplier is after 3 June 2000. The provisions of this document are also to be complied with by all trains which operate at speeds in excess of 125 mile/h.

Railway Group standard GM/TT0123 will be withdrawn with effect from 3 June 2000.