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ATP Handbook

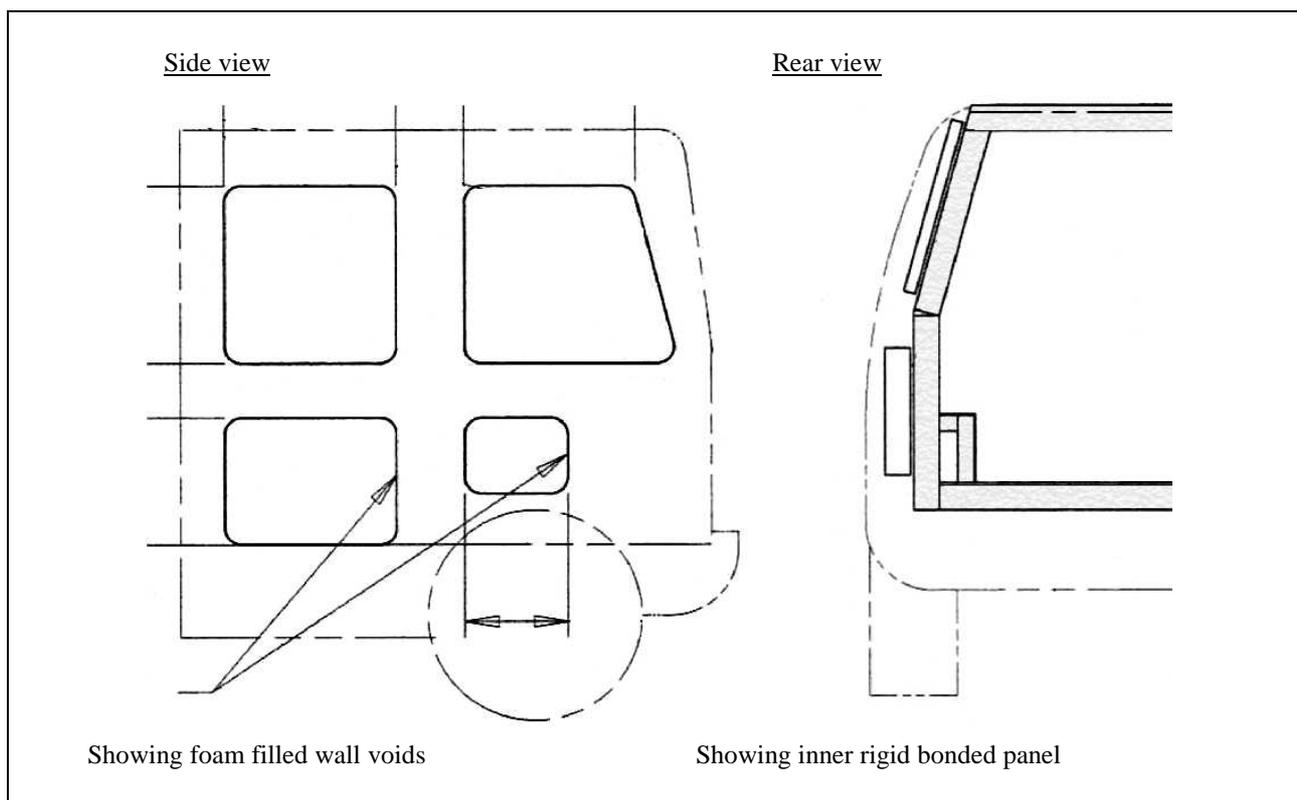
Interpretation of external surface area measurement for panel vans¹

Transmitted by the United Kingdom

Background

1. The thermal measurement (Model 1A of the ATP) for panel vans can provide results that are open to interpretation, the reason being that the K value is dependent on the summation of the wall surface areas.
2. The sidewall structure of a panel van incorporates steel cross members to give it strength. The voids in the side panels are often filled with a foam insulation that varies in thickness. The problem for the design is that the steel cross members thermally bridge the voids, so the main thermal break begins at the edges of the inner rigid bonded insulated panel.

¹ Submitted in accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106; ECE/TRANS/2010/8, programme activity 02.11).



Justification

3. The measurement of wall surface area is described in Annex 1, Appendix 2, paragraph 1.2 of the ATP Agreement. It states, ".....if the body is covered with corrugated sheet metal the area considered shall be that of the plane surface occupied, not that of the developed corrugated surface".
4. If the statement above is to be considered for the construction of a panel van with voids in the walls, then the surface referenced a "plane surface" should be considered as the inner-most structural steel cross members, and the "developed corrugated surface" should be considered as the external skin.
5. Then the external surface could be imagined as the inside surface area of a van with all insulation removed and lined out with infinitesimally panels.

Proposal

6. To provide guidance for the measurement of panel vans in the ATP Handbook, add the following comment under Annex 1, Appendix 2, paragraph 1.2:

"Comment:

For the purpose of determining the thermal K value result; the external surface should be the same as the internal surface of the van when the insulation is removed and replaced with infinitesimally thin panels."