

# Withdrawal of old APA Construction Details



## New Constructive Details handbook for solid external walls

The publication of the latest Constructive Details handbook for solid external walls completes the set for aircrete blocks, with the common constructions of partial fill, full fill and externally insulated solid walls all now being covered. Consequently, the Aircrete Products Association considers the old APA Construction Details (first published in 2008 and last issued as Version 2.2 August 2010) as being obsolete and superseded by the new Constructive Details and the Association can no longer support the use of the APA Construction Details for SAP2009 and SAP2012 calculations for the following reasons.



The APA Construction Details were originally developed and published by the Aircrete Products Association to show that the overall “y-value = 0.04” approach was valid with aircrete blocks when using SAP2005 without having to adopt the EST Enhanced Construction Details. The modelling was based on specific details meaning that, strictly speaking, the associated psi-value was only applicable to that actual construction (which were wall U-values of around 0.27/28). However, in order to maintain some level of flexibility, the EST approach of allowing a variation in U-values of  $\pm 20\%$  was adopted.

Although serving its purpose at the time, this is a somewhat simplistic approach as it is not only the U-values that are relevant but thickness and conductivities of insulation used. This approach was not so critical when generic “y-values” were applied, however, sensitivities of the individual psi-values approach required by later versions of SAP made it more critical. It should also be noted that the APA Construction Details do not contain checklists as now required to be completed for documentary evidence by the latest SAP Conventions (v5.0, Sept 2013).

The approach and protocols adopted by Constructive Details Limited have been different in that all the junctions were modelled both for the range of U-values quoted and also for variations in the critical elements of the junctions. This ensures that the critical elements for each thermal bridge,

such as the floor insulation in ground floor details or the insulation in a gable detail, are correctly identified and reflected in the tolerances for each psi-value given in the handbook. Moreover, the factors critical to the psi-value are also included in the checklists to each detail.

These new versions are more accurate and cover junctions previously excluded (eg corners, full fill party walls and additional party wall junctions). They are also more robust and flexible as they give a bigger range of applicable U-values whilst also giving limiting insulation thicknesses/ conductivities for each junction. As a consequence of basic variations in insulation levels and worse case scenarios considered for the sensitivity analysis of the new Constructive Details, some psi-values are slightly worse than the previous APA Construction Detail equivalents, although this should be more than compensated for in SAP by the fact that missing junctions are now included (meaning that onerous SAP Default figures can be avoided).

Where APA Construction Details have already been adopted and Design Stage calculations submitted, then guidance should be sought from SAP Accreditation Scheme providers regarding allowable transition arrangements before issuing Final SAP calculations.

**Aircrete Products Association, Technical Committee, October 2013.**



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