

PATH TO COMPLIANCE FOR STRUCTURAL DESIGN SOFTWARE

In 2012, the [ABCB Software Protocol for Structural Software](#) was introduced and sets the minimum requirements for structural design software to meet that enables non-engineers to produce designs for building approvals, using deemed-to-satisfy (DTS) provisions within the Building Code.

One criteria is that the software is independently checked and certified by an external body – a Statement of Compliance will exist for any such certified software. This can be provided on request, and is specific to the major Version number of the software in question.

Another criteria for DTS compliance is use of the software for designs within specific limits of use. These are the same for both Software Protocol and Australian Standards used for Residential Construction (eg AS1684 – Residential Timber-framed Construction, AS4055 – Wind Loads for Houses), with the key elements being:

- (a) The distance from ground level to the underside of eaves must not exceed 6.0m.
 - Generally 2 Storeys, with a maximum common wall heights of 3000mm
- (b) The distance from ground level to the highest point of the roof, neglecting chimneys must not exceed 8.5 m.
- (c) The building width including roofed verandas, excluding eaves, must not exceed 16.0 m.
- (d) The building length must not exceed five times the building width.
- (e) The roof pitch must not exceed 35°.

In addition to the above, individual software providers may also include additional limitations in their design criteria, which satisfies their compliance with the software protocol and DTS requirements to the BCA. Under the protocol requirements, users must be trained, maintain knowledge of current versions and updates, to be classified as a “competent person”.

When designing the elements for a project, all of these criteria need to be checked to see if they fall inside of the scope of the BCA/Australian Standards requirements, and that of the software being used.

There has been a noticeable increase in recent times of Class 1 Single Dwelling buildings exceeding these Design Criteria Limits. Generally the one exceed is the building height, often due to building on sloping blocks, or for architectural reasons.

It is not the case though that projects *cannot* be designed with parameters outside the scope of the software protocol and relevant Australian Standards. These projects must however be checked by a professional engineer. Most design software will allow users to input and produce results for elements that exceed these limits. Good software will produce a list of warnings (or errors if applicable) for designs outside the scope.

At this point in time, all states in Australia have different requirements for providing certification of the designs, so it is important for fabricators understand their local requirements, and if projects are supplied across borders, that full compliance with the individual state requirements.

When a competent person signs the certificate on the designs produced, they are acknowledging that they are trained in the software being used for the design of the components, and are complying with all the limitations of the certification elements (being software or relevant Standards). That design certificate will show the design assumption/parameters the user has used in obtaining the designs being certified.

As always, anything outside the limitations of the software or standards should be referred to the engineers from your nail plate supplier or software provider.

MiTek regularly produce GN Guideline, and further information can be found within Guideline numbers 118, 161, 177 and 181 via the link <http://www.mitek.com.au/Publications/GN-Guidelines/>.