

10 March 2010

SEKURE LOK PTY LTD  
**Attention: Mr Malcolm Davis**  
PO Box 113  
REVESBY NORTH NSW 2212

Dear Malcolm,

**Re: Use of the SEKURE LOK™ Panel Clip System**

You have been asked by Aaron Hadfield of Sasso Precast Concrete to obtain our approval for the use of the SEKURE LOK™ panel clip connection in connecting precast panels to a steel frame structure.

We have reviewed the SEKURE LOK™ panel clip components that you have supplied to us and report as follows..

The system is proposed for use in buildings with external concrete wall panels attached by steel connections to lateral supporting members. The panels may or may not be fire rated and may be horizontally or vertically spanning precast or tilt-up elements.

The system has been developed to meet the requirements for fixing panels without the use of welding. The requirements for fire rated panels are set out in Section 1 of the Building Code of Australia (BCA) Clause 1.11 "Performance of External Walls in Fire", and detailed in Specification C1.11 of that document. The purpose of Specification C1.11 is to minimize the possibility that the wall panels will collapse outwards in the event of fire and will remain attached to the supporting members, and design criteria are specified to that end.

Previous issues of Specification C1.11 had specified that the restraining clips were welded to the supporting steelwork. This requirement prevented rotation of the clips which has been shown to loosen the fixing bolt. It also enabled the use of a smaller clip as the welding secured the panel directly to the support structure allowing tension action instead of relying on prying action bending the clip.

However welding creates problems by restraining free shrinkage movement in the concrete panel increasing the potential for cracking around the fixing. It also requires additional trades on site, e.g. welding and repair to finishes and is difficult to inspect on site, requiring close inspection, e.g., from a cherry picker at the critical high level fixings.

The requirement for welding has been deleted from Specification C1.11 in the latest issues of the BCA.

The components of the SEKURE LOK™ system are as follows:-

- The galvanized LOK clip with a welded lug on the concrete face;
- The LOK void former which fits over the cast –in bolt ferrule fixing and creates an easily aligned and highly visible cross shaped retaining groove for the clip lug in the face of the panel;
- The LOK swaged washer which fits over the clip and is forced fitted to the bolt head preventing rotation and hence loosening of the bolt.

As noted above, Specification C1.11 contains design criteria that the assembly must meet to comply. The determining factors for the dimensions of the bolt and panel clip are the mass of the panel and the ratio of the height of the top clip above the panel base to the overall height of the panel.

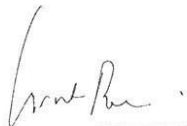
In our opinion the components of the SEKURE LOK™ system provide a simple, fool proof method of preventing rotation of the clip as the fixing lug must be located in the retaining groove in the precast panel for the clip to be seated directly on the supporting steel work which will be easily visible from ground level to confirm that the clip has been correctly installed.

We conclude that the use of the SEKURE LOK™ system permits compliance, subject to design, with the deemed to satisfy condition Clause C1.11 “Performance of External Walls in Fire” of the Building Code of Australia (BCA) in a simple to install and positive manner, and eliminates any requirement for welding. We therefore consider it suitable for connecting precast panels to a steel frame structure.

If you have any further questions, please contact the undersigned.

Yours faithfully,

**COSTIN ROE CONSULTING PTY LTD**



**GRANT E. ROE**  
Director