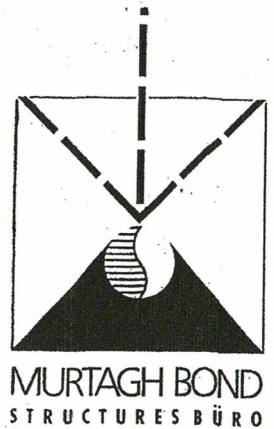


8th July 2018

Permaform Australia Pty Ltd



**Permaform Permanent Formwork System
Engineering Certification BCA Conformity**

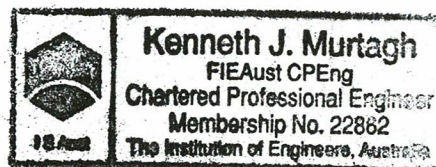
This certificate is to satisfy the suitability requirements of the Building Code of Australia (BCA) (Part A.2.2 (a) (iii)) for the inclusion of the Permaform System to generate Reinforced Concrete Wall and Blade Column elements which can form parts of compliant structures.

The system utilises extruded polymer formwork which remains as a permanent part of a "composite" Reinforced Structural section generated when filled with Structural Concrete and Steel Reinforcement, which complies with the Australian Standard AS 3600.

The system has been assessed and tested to demonstrate that it complies with the heat and smoke release requirements of the BCA.

Compliant reinforced Concrete Structures to satisfy the BCA may be designed therefore using the relevant "deemed to comply" clauses of the Australian Concrete Structures Code AS 3600, together with guidance from relevant European, British, and American Codes as necessary to support Loads prescribed by the Australian Loading Codes AS 1170.

Ken Murtagh BE, MEngSc, FIEAust, RPEQ
Director
Bond James x Murtagh P/L



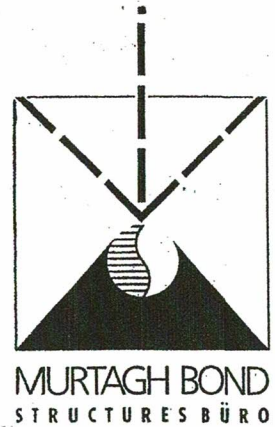
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8th July 2018

Permaform Australia Pty Ltd

**Permaform Permanent Formwork System
Engineering Certification of Application**



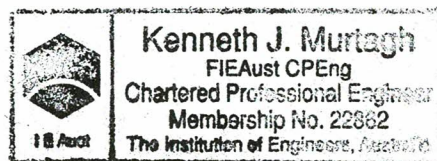
The Permaform extruded polymer shuttering system for forming reinforced concrete Walls and Blade Columns, is primarily a formwork system, suitable to construct these elements and should be regarded as such.

These Permaformed Reinforced Concrete elements incorporated as structural members in vertically loaded and sway restricted structures are similar in performance to those constructed by conventional forming methods, provided that steel reinforcement, if necessary, is designed and detailed to replicate the intent of the relevant clauses of Australian Standard AS 3600.

Testing of elements under load and fire situations has demonstrated that the inclusion of the polymer ribs internally has no significant effects on the performance of Elements, provided that Reinforcement Details which comply with AS 3600 are adopted. This therefore generates positive advantages over conventional formwork which is non-permanent.

I am satisfied and certify that the use of the Permaform product for reinforced Concrete Walls and Blade Columns is suitable for the realisation of fully compliant Structures to the requirements of the Building Code of Australia, provided that the structural designer replicates the Steel Reinforcement and Concrete Strength rules of AS 3600, which would be appropriate for conventional elements.

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