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06 July 2017
Date of Issue

IGNIS ENGINEERING CERTIFICATE
Evaluation No.5137 [2017]

Technical Assessment of product for compliance under the National Construction Code of Australia

This engineering certificate serves as a certificate from professional engineer in accordance with Clause A2.2 and 1.2.2 (a)(iii) of the National Construction Code Volume One and Two Building Code of Australia

IGNIS ENGINEERING CERTIFICATE
No. 5137 I01R02

Studworks wall profile

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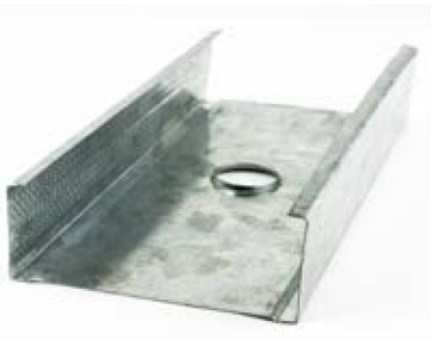
Ignis Solutions reserves the right to amend or withdraw this assessment if information becomes available which indicates the stated fire performance may not be achieved

1 Executive Summary



Ignis Solutions has been engaged to evaluate the use of the Studworks lightweight steel wall frame inline with BCA fire safety compliance where the studs are proposed to be used within wall systems achieving a Fire Resistance Level.

In accordance with Specification A2.3 Clause 2(c) of the BCA a building element meets the requirements of the BCA if it differs in only a minor degree from a prototype tested under the Standard Fire Test.

The Studworks wall profile studs are available in a stud depth of 51mm, 64mm, 76mm and 92mm. An example of the stud is detailed below.

It is proposed to evaluate the use of the Studworks wall profile within a CSR tested wall system in its capacity to maintain the required FRL. The CSR RedBook 2017 details that 'other steel components of equivalent performance may be used, however it is the responsibility of the manufacturer of the steel component to substantiate equivalent performance to the recommended component'.

2 Product Equivalence

The Studworks wall profile studs have been tested in accordance with AS 1391-2007 by Melbourne Testing Services in their test report MT-17/433 dated 07 June 2017. The test demonstrated a suitable structural ability for the studs to be used within a wall system. The tested wall systems included a 51mm, 64mm, 76mm and 92mm stud width. The Base Material Thickness (BMT) included 0.50mm and the deflection head is 0.71mm BMT. The BMT and stud thickness does not vary the FRL achieved, this is established by the bounding thickness and layers of the fire rated Gyprock plasterboard.

3 National Construction Code Compliance

The National Construction Code (NCC) establishes the design and installation requirements for buildings within Australia. Class 2 to 9 buildings (being commercial based buildings) are addressed within Volume One and Class 1 and 10 in Volume Two.

For the purpose of compliance with the NCC Volume One, the Studworks wall profile is considered to differ in only a minor degree. The following clauses are considered applicable to the compliance:

Volume One and Two – Building Code of Australia

- **Clause A0.5 (a) and 1.0.5(a)** complying with the Deemed-to-Satisfy Provisions
- **Clause A2.2 and 1.2.2 sub-clause (a)(iii)** as evidence to support that the Studworks wall profile studs meet the nominated Performance Requirements through the Deemed-to-Satisfy Solution under an Engineering Evaluation Certificate by a Professional Engineer.
- **Specification A2.3 Fire Resistance of Building elements** - The Studworks wall profile studs has been proven to differ in only a minor degree from a prototype tested under the standard fire test and the FRL attributed to the building element is confirmed as follows for the various wall systems.

The following single stud frames have been evaluated. Based on the CSR tested wall systems, the thickness of the single studs does not vary the FRL achieved. The thickness of the studs does however vary the thermal and acoustic results. The following table details the thickness and location of fire rated Gyprock on either side of the studs.

FRL (-/x/x) 10mm both sides	FRL (-/x/x) 13mm both sides	FRL (-/x/x) 16mm both sides	FRL (-/x/x) 2 x 16mm both sides
-/-/-	-/60/60	-/90/90	-/120/120

4 Summary

The testing and dimensions of the Studworks wall profile studs, as detailed above, is considered to be a suitable substitute within a CSR wall system where it is only a minor degree in variation from the tested prototype and that the above wall FRLs are likely to be achieved.