

Project No: 230541
Date: December 15th, 2023

OMC Panels
285050 Wrangler Way – Unit A
Rocky View County, AB
T1X 0K3

Attention: Patrick McCallion, President

Re: COMPLIANCE OF OMC PANELS TO THE NATIONAL BUILDING CODE - 2019 ALBERTA EDITION

A. BACKGROUND:

Steenhof Building Services Group (SBSG) was requested to review the OMC panel's conformance to the National Building Code – 2019 Alberta Edition. Outlined below are the findings of the undersigned.

B. OMC PANEL – CONSTRUCTION DESCRIPTION:

The OMC Panel is a composite building panel that provides thermal insulation, an air and vapour system, and a structural system that can resist both vertical and shear loads. Figure 1 below shows a typical vertical section through the OMC panel and Figure 2 provides a typical horizontal section.

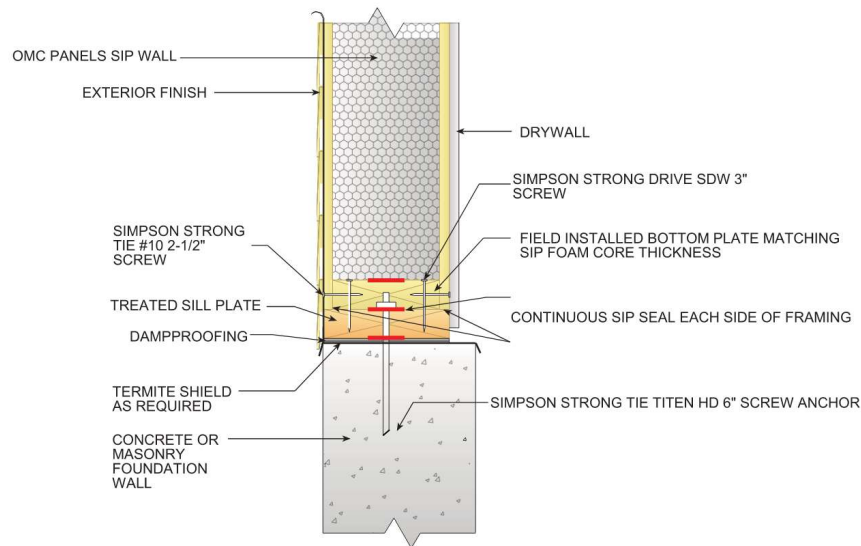
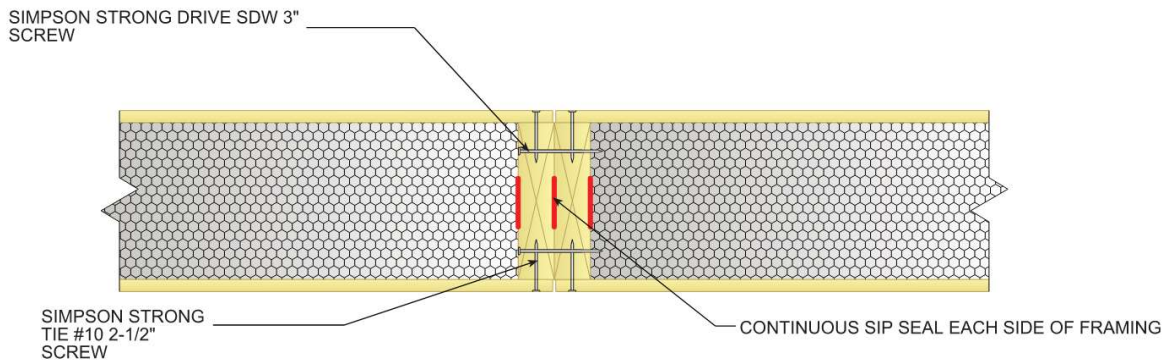


Figure 1: Vertical Section Through the OMC Panel w/Drywall and Ext. Finish



ALL SIP JOINTS SHALL BE AIR SEALED WITH SIP SEAL AND/OR SIP SEAL VAPOR TAPE. FOLLOW SIP MANUFACTURER'S RECOMMENDATIONS FOR SIP TAPE WIDTHS AND SEALANT PATTERN AND THICKNESSES.

VERIFY SCREW SPACING PER MANUFACTURER SPECS/CODE LISTINGS

Figure 2: Horizontal Section Through the OMC Panel

The core OMC Panel is assembled and manufactured with the following components:

1. **Outside & Interior Plywood Sheathing** – ½" Plywood Conforming CSA 0121:17 (R2022) Douglas Fir Plywood (Outside) and ½" softwood plywood sheathing conforming to CSA 0151-17. The sheathing material meets the requirements of section 9.23.17 of the National Building Code – 2019 Alberta Edition.
2. **Insulation** – Moulded Expanded Polystyrene (EPS) insulation product manufactured by Pasti-Fab. This is a closed cell insulation structure which does not contain any HCFC or HFC blowing agent. This insulation complies with CAN/ULC-S701-01 as required by the National Building Code – 2019 Alberta Edition sub section 9.25.2.
3. **Adhesive Sealant** – SIP-SEAL Adhesive Sealant is used at all vertical and horizontal connection joints at OMC Panel Connections – See Figure 2 for typical application. Meets or exceeds ASTM C920, Type S, Grade NS, Class 25. Complies with ASTM G26 UV stability.
4. **Laminating Adhesive** – Lamination of ½" plywood to EPS Insulation – Stobicoll B 328 – One-Component, Polyurethane, Laminating Adhesive. This adhesive is designed for use as a structural assembly system between wood and EPS.
5. **Fastener Screws - Simpson Strong Tie #10 DSV Wood Screw:** For general framing and construction. This screw has a Quik Guard coating and provides corrosion resistance. These screws are rated, tested and evaluated to ICC-ES Acceptance Criteria AC233. The screws are also load rated for shear, pull-through and withdrawal resistance.

RSS JTS Screws GRK – For structural connection of OMC Panels to floor and wall systems.

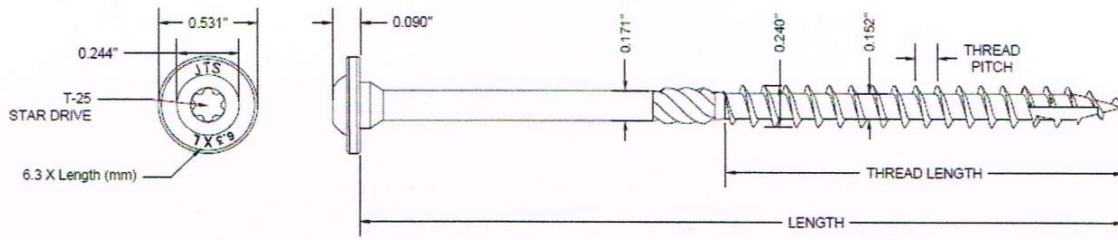


Figure 3: RSS JTS Screws

- 6. **Dimensional Lumber** – OMC Splines/Studs and Plates - #2 SPF or Better – Graded to NLGA 2014 and in conformance with – Section 9.3.2 – National Building Code - Alberta Building Code 2019

C. DISCUSSIONS & CONCLUSION:

Structural:

The OMC panel is a Structural Insulated Panel (SIP) that is unique. The construction is similar to stick frame construction in that a single and double top plate are incorporated with a system of vertical studs. The OMC Panel incorporates double studs or splines spaced at 4’ o.c. This increased spacing falls outside the prescriptive requirement of Part 9 of the NBC – 2019 Alberta Edition, and therefore requires to be designed to Part 4 of the code.

Structurally the wall can be analyzed similarly to a stick frame constructed building (Under Part 4 of the NBC – 2019 Alberta Edition) without regard to the improved structural performance of the bonded sheathing to the EPS and it will perform similarly to a stick frame style constructed building. Considering the bonding of the sheathing to the EPS insulation there are greatly improved structural qualities. Structural performance resistance improvements apply to shear walls, vertical load resistances as well as perpendicular loading to the wall panel such as wind loads. The OMC Panels not only comply with the National Building Code – 2019 Alberta Edition but exceed the requirements. A collateral benefit of the interior ½ inch sheathing is that it provides superior resistance to interior damage and impact as it provides a backing for the drywall.

Thermal:

The OMC Panel’s thermal resistance of the EPS insulation increased or decreased by adjusting the thickness of the EPS foam. The EPS insulation complies with the material requirements set out in the National Building Code – 2019 Alberta Edition. For compliance with the Code exterior insulation can be added where required as dictated by the geographic location.

Vapour and Air Barrier:

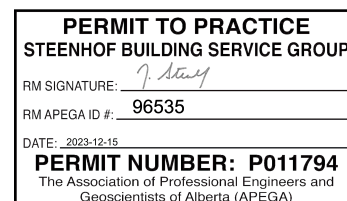
As all OMC panel seams are sealed with SIP Seal and the EPS insulation is closed cell the OMC panel meets all requirements of the National Building Code – Alberta Edition 2019 when installed to OMC Panel installation requirements.

Concluding Remarks

The OMC Panel is a robust insulated panel that meets the requirement of the National Building Code – 2019 Alberta Edition. Additionally, it exceeds the requirements set out in Part 9 of the building code.

Sincerely,

Jack Steenhof, M.A.Sc., P. Eng, IntP.E.,
Steenhof Building Services Group



2023-12-15