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RESEARCH REPORT: RR 25703  
(CSI # 06 12 00)

Expires: August 1, 2022  
Issued Date: February 1, 2021  
Code: 2020 LABC

**GENERAL APPROVAL** – Technical Modification – MHS Structural Insulated Panel Frame Assembly for Wall, Roof and Floor Panels

## DETAILS

MHS Structural Insulated Panel Frame Assembly consists of prefabricated MHS Modular aluminum frame extrusions in conjunction with structural insulated panels (SIP) with EPS foam plastic core material.

All structural insulated panel (SIP) with EPS foam cores to be used with the MHS aluminum frames shall have a valid LARR, ICC or IAPMO listing number.

The aluminum frame is made of MHS aluminum extrusion 170-4W with a base material of 6061-T6 per ASTM B-221. The structural insulated panels consist of oriented strand board (OSB) laminated with structural adhesives. The adhesive shall be a Type II, Class 2, laminating adhesive complying with the ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05).

The EPS foam core shall have a flame spread index not exceeding 25 and a smoke density index not exceeding 450.

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**This approval is subject to the following conditions:**

1. Complete plans and calculations bearing the signature of a licensed civil or structural engineer, registered in the State of California and shall be submitted to the Structural Plan Check Section for review and approval.
2. The panel and frame assembly shall be installed in buildings of Type V construction only.
3. For exterior and applications, panels shall be separated from the building interior with ½” gypsum board or a thermal barrier complying with Section 2603.4 of the 2020 Los Angeles Building Code.
4. Exterior walls must be protected by a water-resistive barrier complying with Section 1404.2 of the 2020 Los Angeles Building Code and by wall coverings that provide the necessary structural resistance to wind and seismic forces in spanning between wall framing members.
5. The fire-resistive rating of the panels as building elements has not been reviewed and is outside the scope of this general approval.
6. The allowable loads are noted in attached tables. The allowable panel capacities shall not be increased for wind and seismic loads.
7. The fabrication of the panels shall be in a shop of a fabricator licensed by the City of Los Angeles Department of Building and Safety in accordance with the manufacturing standards submitted to the Department.
8. Connections of the panel to the building substrate shall be per the attached connection details. The location of the panel connections must be shown and detailed on construction plans reviewed and approved by the Department.
9. The panels shall be installed per the manufacturer published installation instructions. A copy of these instructions shall be available at the construction site.
10. The MHS framing member and connectors shall be labeled with the manufacturer name (MHS Building Systems Co.) and the Los Angeles Research Report number (LARR-25703)

11. MHS Structural Insulated Panel Frame Assembly may be used in Seismic Design Categories A through F with the following seismic values:

Response Modification Coefficient:	$R = 6.5$
System Overstrength Factor:	$\Omega_o = 3$
Deflection Amplification Factor:	$C_d = 4$

## DISCUSSION

The Technical Modification is to add the response modification coefficient or “R” factor, system overstrength factor,  $\Omega_o$ , and deflection amplification factor,  $C_d$ , for the MHS Structural Insulated Panel Frame Assembly based on testing reports in accordance with ICC Acceptance Criteria 130 and 154.

The report is in compliance with 2020 Los Angeles Building Code.

The approval is based on tests on file with the Building Research Section.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

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Attachment: Allowable Load Tables (19 pages)  
Connection Details (8 pages)