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RESEARCH REPORT: RR 25521  
(CSI #13030)

Expires: October 1, 2021  
Issued Date: October 1, 2019  
Code: 2017 LABC

**GENERAL APPROVAL** – Clerical Modification and Renewal - Insul Panel Fanosa steel faced, expanded polystyrene (EPS) refrigeration panels for walk-in coolers and freezers.

## DETAILS

The insulated panels consist of a 1.0 pcf density expanded polystyrene (EPS) foam core bonded to 26 gauge (.019 in.) galvanized steel skins on both sides. The panels are fabricated at the FANOSA manufacturing facility in Mexicali, Mexico. Panels are fabricated in thicknesses of 2, 4, 6, 8, 10, and 12 inches. The steel facings conform to ASTM A-446 and are bonded to the core with a two-part adhesive. The panels are connected to each other with #12 x 3/4" screws on maximum 24-inch centers on both facings of the panel.

The panels are approved as structural wall and ceiling panels for use in interior, non-fire rated walk-in coolers and freezers.

Ceiling panels are connected to wall panels with 26 gauge interior and exterior trim angles fastened to the panels with self-drilling metal screws. See attached Figure 1-Ceiling-Wall Connection Details.

Wall panels are attached to the floor through 18 gauge angels or 26 gauge channels fastened with self-drilling metal screws to the panels and concrete anchors to the floor. See attached Figure 2-Wall Base Details.

The metal fasteners used for these connections shall be City of Los Angeles approved fasteners. The spacing of the screws and anchors is dependent on the loading and fastener capacities, but does not exceed 24 inches.

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

1. The panels are approved for use in accordance with Section 2603 of the 2017 Los Angeles City Building Code and shall comply with all requirements therein.
2. The panels shall be manufactured in the shop of a City of Los Angeles licensed fabricator. Fabrication in unlicensed shops will invalidate the approval.
3. The panels shall be used only in areas where combustible materials are permitted by code.
4. Daily tests of the physical properties of the core material shall be performed and records of such tests shall be maintained and provided to the department upon request. Materials for the panel shall be specified in the DETAILS section of this report.
5. Complete design calculations shall be submitted to the structural plan check division for each job. Plans and calculations shall bear the stamp and signature of a California registered civil or structural engineer or architect.

**EXCEPTION:** Where the height of the unit does not exceed 10 feet and the aggregate floor area does not exceed 400 square feet, see attached typical drawings.

6. The foam plastic shall be separated from the interior of the room in which it is placed by use of ½-inch gypsum wall board, ½-inch plaster or other approved thermal barrier meeting the requirements specified in section 2603.4 of the 2017 Los Angeles City Building Code.

**EXCEPTION:** The thermal barrier is not required if the cooler or freezer floor area does not exceed 400-square feet and the foam plastic insulation does not exceed a thickness of 4-inches.

7. The maximum allowable shear wall values are as follows:

| h/w     | v (ppf) |
|---------|---------|
| 1/2:1   | 134 MAX |
| 1:1     | 67      |
| 2:1 MAX | 34      |

The panels shall be continuous between exterior walls.

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8. The allowable wall axial loads shall be as follows:

**ALLOWABLE WALL AXIAL LOADS\***  
**(lbs/ft)**

| L<br>(ft) | 4-in. Panel |          | 6-in. Panel |          | 8-in. Panel |          | 10-in Panel |          | 12-in. Panel |          |
|-----------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|--------------|----------|
|           | 5 psf       | 19.2 psf | 5 psf       | 19.2 psf | 5 psf       | 19.2 psf | 5 psf       | 19.2 psf | 5 psf        | 19.2 psf |
| 8         | 382         | 325      | 389         | 351      | 392         | 364      | 394         | 371      | 395          | 376      |
| 10        | 371         | 282      | 381         | 322      | 386         | 342      | 390         | 354      | 392          | 362      |
| 12        | 357         | 229      | 372         | 287      | 380         | 316      | 384         | 333      | 387          | 344      |
| 14        | 341         | 167      | 361         | 245      | 371         | 284      | 377         | 308      | 382          | 324      |
| 16        | 322         | 95       | 349         | 197      | 362         | 248      | 370         | 279      | 375          | 300      |
| 18        | 301         | -        | 335         | 143      | 351         | 208      | 362         | 246      | 368          | 272      |
| 20        | 265         | -        | 319         | 82       | 340         | 162      | 352         | 210      | 361          | 242      |
| 22        | 216         | -        | 301         | -        | 326         | 56       | 341         | 170      | 352          | 208      |
| 24        | 172         | -        | 282         | -        | 312         | -        | 330         | 126      | 342          | 172      |
| 26        | 133         | -        | 261         | -        | 296         | -        | 318         | 78       | 332          | 132      |
| 28        | 99          | -        | 239         | -        | 279         | -        | 304         | -        | 320          | 88       |
| 30        | 69          | -        | 215         | -        | 261         | -        | 290         | -        | 308          | -        |
| 32        | -           | -        | 189         | -        | 242         | -        | 274         | -        | 295          | -        |
| 34        | -           | -        | 154         | -        | 222         | -        | 258         | -        | 282          | -        |
| 36        | -           | -        | 129         | -        | 200         | -        | 240         | -        | 274          | -        |
| 38        | -           | -        | 55          | -        | 176         | -        | 222         | -        | 260          | -        |
| 40        | -           | -        | -           | -        | 152         | -        | 202         | -        | 244          | -        |

\*70 mph wind zones only

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9. The allowable ceiling panel loads shall be as follows:

**ALLOWABLE CEILING PANEL LOADS (psf)**

| Panel Length (ft) | Panel Thickness, (h) (in.) |                 |                 |                  |                  |                  |
|-------------------|----------------------------|-----------------|-----------------|------------------|------------------|------------------|
|                   | 2                          | 4               | 6               | 8                | 10               | 12               |
| 8                 | 28 <sup>2</sup>            | 56 <sup>2</sup> | 84 <sup>2</sup> | 113 <sup>2</sup> | 141 <sup>2</sup> | 169 <sup>2</sup> |
| 10                | 19                         | 45 <sup>2</sup> | 68 <sup>2</sup> | 90 <sup>2</sup>  | 113 <sup>2</sup> | 135 <sup>2</sup> |
| 12                | 13                         | 35              | 56 <sup>2</sup> | 75 <sup>2</sup>  | 94 <sup>2</sup>  | 113 <sup>2</sup> |
| 14                | 9                          | 26              | 47              | 64 <sup>2</sup>  | 81 <sup>2</sup>  | 97 <sup>2</sup>  |
| 16                | 7                          | 20              | 37              | 50 <sup>3</sup>  | 62 <sup>3</sup>  | 75 <sup>3</sup>  |
| 18                | 5                          | 15              | 29              | 40 <sup>3</sup>  | 50 <sup>3</sup>  | 60 <sup>3</sup>  |
| 20                | 4                          | 12              | 23              | 32 <sup>3</sup>  | 40 <sup>3</sup>  | 48 <sup>3</sup>  |
| 22                | -                          | 10              | 19              | 26 <sup>3</sup>  | 33 <sup>3</sup>  | 40 <sup>3</sup>  |
| 24                | -                          | 8               | 16              | 25 <sup>3</sup>  | 28 <sup>3</sup>  | 33 <sup>3</sup>  |
| 26                | -                          | 6               | 13              | 19 <sup>3</sup>  | 24 <sup>3</sup>  | 28 <sup>3</sup>  |
| 28                | -                          | 5               | 11              | 16 <sup>3</sup>  | 20 <sup>3</sup>  | 25 <sup>3</sup>  |
| 30                | -                          | 4               | 9               | 14 <sup>3</sup>  | 18 <sup>3</sup>  | 21 <sup>3</sup>  |
| 32                | -                          | -               | 8               | 13 <sup>3</sup>  | 16 <sup>3</sup>  | 19 <sup>3</sup>  |
| 34                | -                          | -               | 7               | 11 <sup>3</sup>  | 14 <sup>3</sup>  | 17 <sup>3</sup>  |
| 36                | -                          | -               | 6               | 10 <sup>3</sup>  | 12 <sup>3</sup>  | 15 <sup>3</sup>  |
| 38                | -                          | -               | 5               | 8                | 11 <sup>3</sup>  | 13 <sup>3</sup>  |
| 40                | -                          | -               | 4               | 7                | 10 <sup>3</sup>  | 12 <sup>3</sup>  |

(1) Include live and dead loads

(2) Shear limits load

(3) Bending stress limits load

10. No stress increase is permitted for duration of load.

11. The panels shall be identified with a permanent label specifying the manufacturer and flame spread and smoke density of the core material.

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12. The panels and core materials, when tested separately, have flame spread and smoke density ratings less than 25 and 450, respectively.

## **DISCUSSION**

The clerical modification is to capture a change in address for the petitioner.

The report is in compliance with the 2017 City of Los Angeles Building Code.

The approval is based on tests in accordance with ASTM Standard E-84, ASTM Standard E-72 and various other load tests and engineering analysis.

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: Figures 1 and 2 (2 pages)