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RESEARCH REPORT: RR 25314
(CSI# 13030)

Expires: October 1, 2022
Issued Date: October 15, 2020
Code: 2020 LABC

GENERAL APPROVAL – Renewal and Clerical Modification - Commercial Cooling Par Engineering, Inc. - Metal faced polyurethane refrigeration panels for walk-in coolers and freezers.

DETAILS

Commercial Cooling Par Engineering, Inc. panels consist of 26 gage galvanized steel skins, meeting ASTM A525, 3.5 inch to 5 inch thick wood frame, and a core of polyurethane foam, identified as Autofroth® 9142 Non-CFC Class I Rigid Foam. Flame spread and Smoke Density rating per ASTM E84 are 20 and 250, respectively. The panels are joined together utilizing Kason-Type 1168 cam-lock fasteners.

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

The approval is subject to the following conditions:

1. The panels are approved for use in accordance with Section 2603 of the 2020 City of Los Angeles 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 panel core material shall have a density of 2.32 pcf and water absorption of 0.44 pcf.
4. The panels shall be used only in areas where combustible materials are permitted by code.

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Re: Metal faced polyurethane refrigeration panels for walk-in coolers and freezers.

5. 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.
6. Complete design calculations shall be submitted to Structural Plan Check for each job. Plans and calculations shall bear the stamp and signature of a California registered civil engineer, structural engineer, or architect.
7. In outdoor applications, an approved fire retardant roof covering (class "A" or "B") shall be placed over ceiling panels.
8. Panel height shall be limited as follows with corresponding axial load (analysis considers 5 psf lateral force):

Axial Load (lb./ft.)	Panel Height (ft.)		
	5 psf Lateral Force		
	3.5-inch Panel	4-inch Panel	5-inch Panel
100	21	22.5	25
200	19	20.5	22.5
300	16.5	18	20
400	13.5	15	17
500	-	11.5	13

9. Shear wall values shall be limited as follows:

Maximum Height to Width Ratio	Allowable Shear (plf)
0.5:1	400
1.0:1	217
2.0:1	108
3.0:1	54

10. The maximum allowable roof and ceiling spans shall be as follows:

Applied Load (psf)	Maximum Spans with L/180 Deflection		
	3.5-inch Panel	4-inch Panel	5-inch Panel
5	18.6	24.5	27.5
10	14.7	17.5	19.5
15	12.9	14.3	15.8
20	11.3	12.3	13.8
25	9.3	11	12.3
30	7.9	10	11.3
35	6.8	9.3	10.3
40	6.0	8.6	9.6

11. The shear and tension strength of the cam-lock panel fasteners shall not exceed 750 pounds and 550 pounds respectively. Cam-Lock fastener spacing shall not exceed four feet.
12. The maximum allowable horizontal diaphragm shear shall be limited to 195 plf. The panels shall be continuous between walls.
13. The attachment for the wall panels to the floor assembly and the attachment for wall panels to ceiling panels shall be by an approved method.
14. Panels shall be provided with a permanent label specifying the fabricator and surface burning characteristics of the product.
15. The foam plastic shall be separate from the interior of the freezer or cooler and from 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 Sec. 2603.4 of 2020 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.

DISCUSSION

Commercial Cooling Par Engineering, Inc.

Re: Metal faced polyurethane refrigeration panels for walk-in coolers and freezers.

The clerical modification is to update the report to the 2020 City of Los Angeles Building Code.

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

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

The panel when tested as an assembly has a flame spread index of 15 and a smoke density index of 40.

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.

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.



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