

CITY OF LOS ANGELES

CALIFORNIA



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DEPARTMENT OF BUILDING AND SAFETY

201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

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Kingspan Insulated Panels
726 Summerhill Drive
Deland, FL 32724

Attn: Oscar Lovera
(386) 626-6789

Local Representative:
Brian Glancy
brian.glancy@kingspan.com

RESEARCH REPORT: RR 26092
(CSI # 07 40 00)

REEVALUATION DUE
DATE: July 1, 2020
Issued Date: September 1, 2018
Code: 2017 LABC

GENERAL APPROVAL – Renewal - Kingspan KS and Optimo Insulated Wall Panels.

DETAILS

Kingspan KS panels for installation with hidden fasteners (KS-HF) and Optimo Wall Insulated Panels are used as exterior non-load bearing walls in a vertical or horizontal application. The KS-HF and Optimo panels shall only be installed where combustible, non-fire-resistance-rated building construction is permitted by the 2017 Los Angeles Building Code. For use as exterior wall panels where noncombustible construction is required, the panels shall conform to condition 1 under conditions of approval of this report. KS panels for installation with Through Fasteners (KS-TF) shall be limited to interior application as partition components only.

Kingspan KS and Optimo panels are factory-assembled sandwich panels with metal facings and a foamed-in-place foam core.

The Kingspan Optimo panels are available in thicknesses of 2, 2.5, 3 and 4 inches and are available in standard widths of 24, 30 and 36 inches and standard lengths up to 30 ft. long. The KS-HF panels are available in thicknesses of 2, 2.5, 3, 4, 5 and 6 inches, and are available in the standard width of 42 inches. Kingspan KS-TF panels are available in thicknesses of 2, 2.5, 3, 4, 5 and 6 inches and are available in the standard width of 45 inches. Both KS and Optimo Panels are joined by means of double tongue and groove interlocking joints.

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Kingspan Insulated Panels, Inc.
RE: Kingspan KS and Optimo Insulated Wall Panels

The core is continuous pour-in-place polyisocyanurate rigid foam at a nominal density of 2.3 pcf. The foam plastic has a maximum flame-spread index of 25 and a maximum smoke-developed index of 450 when tested in accordance with ASTM E 84.

Kingspan Optimo panels have minimum facings thicknesses of 22 gage for the exterior, and 24 gage for the interior. KS-TF and KS-HF wall panels have minimum facings thicknesses of 26 gage for the exterior and 26 gage for the interior.

Both facings of KS-TF, KS-HF and Optimo panels are fabricated from steel conforming to ASTM A 653 SS Grade 33 with a Class G90 galvanized coating or ASTM A 792 SS Grade 33 with a Class AZ-50 galvalume coating.

KS-HF and Optimo Panels are installed to each support on one side using minimum (2) #14-14 hex head screws, going through (1) 14 gage stainless steel bearing clip. On the opposite side each panel is interlocked to the fastened side of the panel previously installed. KS-TF Panels are individually installed to each support by means of (2) #14-14 hex screws, going through the face of the panel.

A non-skinning butyl sealant is used for panel joints and trim. A 1/4-inch bead of butyl sealant is factory or field applied on the interior tongue and groove interlock. Application of a bead of butyl sealant on the exterior tongue and groove interlock is optional. Sealant is applied to side joints of adjacent panels prior to the panels' being engaged. Panels are firmly interlocked to make continuous contact with the sealant. Erection proceeds along the wall elevation, with installation of successive panels being in accordance with the manufacturer's installation instructions. Sealants must conform to AAMA Voluntary Specification and Test Methods for non-drying Sealants (AAMA 809.2-92). The sealant is applied to clean and dry surfaces at temperatures ranging from 40° to 120° F.

Flashing must be placed in accordance with Sections 1405.4 of the 2017 Los Angeles Building Code on both ends of panels when installation is at the building's base, and at eaves, openings, and horizontal and vertical corners. The flashing and trim are attached to the panels using 1/4-inch 14 TEK 1 HWH (Stitch tek) or No. 10 by 3/4-inch Phillips pan-head, self-tapping, self-drilling screws, or pop rivets in accordance with the manufacturer's installation guide.

The allowable positive and negative panel out-of-plane (transverse) loads for KS-HF and Optimo panels installed over a single, double or triple span conditions are based on negative wind load connection, allowable deflection, allowable bending and allowable shear of panels as set forth in Tables 1 through 12. KS-TF panels shall only be installed as components of interior partition walls

The approval is subject to the following conditions:

1. Kingspan KS-HF and Optimo series wall panels using polyisocyanurate foam core having 6” and 4” maximum thickness respectively, are permitted to be used in exterior, nonload-bearing, noncombustible, nonfire-resistance-rated, multistory wall construction.
2. Kingspan KS-HF and Optimo panels are permitted to be used in combustible construction.
3. Kingspan KS-TF panels using polyisocyanurate foam core having 6” maximum thickness, are permitted to be used only in interior wall construction.
4. Panels must be installed in accordance with this report and the manufacturer’s published installation instructions, a copy of which must be available at the jobsite.
5. Panels installed on walls must be limited to non-load bearing wall applications
6. The fastener capacity in the applicable substrate is outside the scope of this report.
7. Design and details of panel attachment to the building structure must be approved by the Structural Plan Check Division of the City of Los Angeles, Department of Building and Safety prior to installation.
8. Construction plans and structural calculations for site specific loading conditions must be submitted to the Structural Plan Check Division for approval. Calculations must be completed by a licensed civil or structural engineer registered in the State of California.
9. The allowable panel spans shall be pursuant to the attached tables.
10. Panels are to be fabricated in the shop of a licensed fabricator approved by the Los Angeles City Department of Building and Safety.
11. The panels shall be identified with the following information:
 - a. Product name and type
 - b. Identification of foam core
 - c. Flame spread and smoke development rating
 - d. Inspection agency name
 - e. LARR # 26092

DISCUSSION

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

The approval is based on tests and analysis in accordance with the ICC-ES Acceptance Criteria for Sandwich Panels (AC04), dated February 2012 (editorially revised August 2013), the ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05) dated June 2009 (editorially revised May 2014 and the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2012 (editorially revised August 2013) and FM 4880-10, Approval Standard for Class 1 Fire Rating of Insulated Wall Panels, Interior Finish Material or Coatings and Exterior Wall Systems.

Test reports, details and other pertinent data are on file at the Engineering Research Section, Los Angeles Department of Building and Safety.

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 the Department of Building and Safety Engineers and Inspectors.

This general approval of an equivalent alternate of 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.

QUAN NGHIEM, Chief
Engineering Research Section
201 N. Figueroa Street, Room 880
Los Angeles, CA 90012
Phone – 213-202-9812
Fax – 213-202-9943

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Attachments: Allowable Load Tables for Single or Multiple Spans Condition (4 pages)