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APPROVAL REPORT

Project No: 0003056859

Class: 4880, 4881, 4471

Product Name: ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, and ISOCOP Series – ISOCOP

Product Type: Insulated Wall or Wall and Roof/Ceiling Panels for Interior and/or Exterior Use Including Class 1 Panel Roofs


Name of Listing Company: Isocindu

Address of Listing Company: Avenida Libre Comercio 137
Parque Industrial Santa Fee III
Silao Guanajuato CP 36275
Mexico

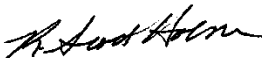
Customer ID: 154471-1

Customer website: www.isocindu.mx

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 Materials


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 VP, Manager of Materials

6/13/2017

Date of Approval

1 INTRODUCTION

1.1 Isocindu requested Approval of their ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, and ISOCOP Series – ISOCOP panels listed in Section 1.4 to determine if they meet the Approval requirements of the standards listed in Section 1.3.

1.2 This report may be freely reproduced only in its entirety and without modification.

1.3 Standards

Title	Number	Issue Date
Approval Standard For Class 1 Fire Rating of Building Panels or Interior Finish Materials	4880	October 2015
Approval Standard for Class 1 Exterior Wall Systems	4881	November 2016
Approval Standard for Class 1 Panel Roofs	4471	March, 2010

1.4 Listing

The products will appear in the Approval Guide and RoofNav, an on-line resource of FM Approvals, as follows:

1.4.1 Building Insulations - Walls and Ceilings (FM Approval Class Numbers 4411, 4651, 4880, 4881, 4882) ☑ Interior and Exterior Use (Class Number 4881)

Isocindu

Avenida Libre Comercio 137, Parque Industrial Santa Fe III, Silao Guanajuato CP 36275, México

Product	Primary Class of Work	Application	Class 1 Type/Rating	Height Restriction	Listing Country	Certification Type
ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, ISOCOP Series – ISOCOP	4881- Exterior Wall Systems	Wall and Ceiling	Inert-Faced with Combustible Core	No Height Restriction	Mexico	FM Approved

Product Specifications

Product	Panel Thickness in (mm)	Core Material	Panel Width in (mm)	Minimum Panel Length ft (m)	Minimum Interior Facer Thickness in (mm)	Minimum Exterior Facer Thickness in (mm)	Facer Material
ISOBOX Series – ISOBOX	1-5/8 – 6 (41.3 – 152.4)	PIR	24 – 45.5 (610 - 1155)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOBOX Series – ISOPIANO	1-5/8 – 6 (41.3 – 152.4)	PIR	24 – 45.5 (610 - 1155)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOBOX Series – ISOBOX PLISSE	1-5/8 – 6 (41.3 – 152.4)	PIR	24 – 45.5 (610 - 1155)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOPARETE Series – ISOPARETE BOX	1-5/8 – 6 (41.3 – 152.4)	PIR	24-39.4 (610-1000)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOPARETE Series – ISOPARETE PLISSE	1-5/8 – 6 (41.3 – 152.4)	PIR	24-39.4 (610-1000)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOPARETE Series – ISOPARETE PIANO	1-5/8 – 6 (41.3 – 152.4)	PIR	24-39.4 (610-1000)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOPARETE Series – ISOPARETE PIANO PLISSE	1-5/8 – 6 (41.3 – 152.4)	PIR	24-39.4 (610-1000)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel
ISOCOP Series – ISOCOP	1.5 – 6 (38.1 – 152.4)	PIR	39.4 (1000)	8 (2.4)	0.016 (0.4)	0.016 (0.4)	Painted (optional) galvanized steel

Interior Installation Requirements

Flashing	Minimum 2.0 in. by 2.0 in. by 0.021 in thick (51 mm by 51 mm by 0.55 mm) painted (optional) galvanized steel fastened maximum 6 in (152 mm) on center.
Sealant/Gasket/Caulking	None

Exterior Installation Requirements and Ratings

Wall Panel	Panel Thickness in (mm)	Securement	Hail Resistance Rating	Wind Pressure Rating & Zone	Max Support Steel Spacing in (mm)	Min Support Steel Thickness in (mm)	Min Support Steel Yield Stress ksi (Mpa)
ISOBOX Series – ISOBOX	1-5/8 – 6 (41.3 – 152.4)	Fastening System A	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOBOX Series – ISOPIANO	1-5/8 – 6 (41.3 – 152.4)	Fastening System A	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOBOX Series – ISOBOX PLISSE	1-5/8 – 6 (41.3 – 152.4)	Fastening System A	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)

Wall Panel	Panel Thickness in (mm)	Securement	Hail Resistance Rating	Wind Pressure Rating & Zone	Max Support Steel Spacing in (mm)	Min Support Steel Thickness in (mm)	Min Support Steel Yield Stress ksi (Mpa)
ISOPARETE Series – ISOPARETE BOX	1-5/8 – 6 (41.3 – 152.4)	Fastening System B	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOPARETE Series – ISOPARETE PLISSE	1-5/8 – 6 (41.3 – 152.4)	Fastening System B	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOPARETE Series – ISOPARETE PIANO	1-5/8 – 6 (41.3 – 152.4)	Fastening System B	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOPARETE Series – ISOPARETE PIANO PLISSE	1-5/8 – 6 (41.3 – 152.4)	Fastening System B	Severe (SH)	+70/-70 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)
ISOCOP Series – ISOCOP	1.5 – 6 (41.3 – 152.4)	Fastening System C	Severe (SH)	+105/-105 Zone TC	46.9 (1190)	0.08 (2.0)	50 (345)

Fastening System A - Panels are through-fastened with three EJOT JT3-6-5.5 fasteners at each panel/support interface, every 46.9 in. (1190 mm) on center, with one fastener placed either side of the panel joint and one fastener placed through the joint.

Fastening System B - Panels are hidden-fastened with one EJOT JT3-6-5.5 fastener and plate within the panel joint at each panel/support interface, every 46.9 in. (1190 mm) on center. Additionally, panels are back fastened using Fab-lock fasteners spaced along each panel /support interface every 9.8 in. (250 mm) on center for a total of three fasteners per panel along each support.

Fastening System C - Panels are through-fastened with one EJOT JT3-D-6H-5.5/6.3 fastener and saddle washer at each high rib along supports, every 13 in. (333 mm) on center. Laps are stitch fastened with EJOFAST JF3-2H-4.8 fasteners spaced max 24 in (610 mm) o.c. between supports.

1.4.2 RoofNav

Roof Panel:	ISOCOP SERIES - ISOCOP, 1000 mm wide, 41.3 – 152.4 mm (1.5 to 6 in.) thick
Securement:	Cover: Through fastened with one JT3-D-6H-5.5/6.3 fastener and Saddle Clip at each high rib, spaced every 13 in. (333mm) on center along each support. Lap: stitch fastened with EJOFAST JF3-2H-4.8 fasteners spaced max 24 in (610 mm) o.c. between supports.
Supports:	200 mm (7.9 in.) high by 65 mm (2.6 in.) wide by 2 mm (0.1 in.) thick, min. 50 ksi, (345 MPa) Purlins spaced every 1.83 m (72 in.)
Wind:	1-105
Hail:	SH
ASTM E 108:	Class A @ 5 in 12

2 DESCRIPTION

2.1 ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, and ISOCOP Series – ISOCOP panels are insulated metal building

panels that are used for interior and exterior Use. The panels are insulated with a Huntsman RUBITHERM polyisocyanurate foam core consisting of RUBITHERM WR 40648, RUBITHERM WR 40544 and Cyclopentane blowing agent.

2.2 All other products are Approved as described in RoofNav and the Approval Guide.

2.3 Formulations, drawings, and specifications are on file at FM Approvals.

3 EXAMINATIONS AND TESTS

3.1 Samples were submitted for examination and testing. The samples were considered to be representative of standard production and were examined or tested as indicated below. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

3.2 All testing and analysis considered appropriate was conducted and verified to be in compliance with the Standards defined in Section 1.3.

3.3 Several performance requirements and tests required by the Standard have been waived due to previous successful testing. See Table 1 below for details.

Table 1

Standard Number	Section	Test Name	Justification/Comments
4880	4.1	Room Test	Included
4880	4.2	Flammability Characterization	Included
4880	4.3	16ft High Parallel Panel Test	Included
4880	4.4	FM Approvals 25 ft (7.6 m) High Corner Test	Alternative test/ Not Conducted
4880	4.5	FM Approvals 50 ft (15.2 m) High Corner Test	Alternative test/ Not Conducted
4880	4.6	Density of Insulating Cores	Included
4880	4.7	Density of Plastic Panels or Panel Facing	Not Applicable to panel type
4880	4.8	Surface Burning Characteristics	Not Applicable ¹
4880	4.9	Ignition Properties	Included
4880	4.10	Heat Content	Included
4880	4.11	Ash Content	Included
4880	4.12	Combustion	Not Applicable to panel type
4880	4.13	Additional Tests	Not Applicable
4881	4.1	Wind Pressure Rating	Included
4881	4.2	Windborne Debris (Zone TCM Only)	Not Applicable to Zone TC
4881	4.3	Hail Resistance Rating	Tested per 4471 Requirement
4881	4.4	Small Scale Tests (Optional)	Not Applicable
4881	4.5	Additional Tests	Not Applicable

Standard Number	Section	Test Name	Justification/Comments
4471	4.1	Combustibility From Below the Roof Deck	Included
4471	4.2	Combustibility From Above the Roof Deck	Included
4471	4.3	Wind Uplift Resistance	Included
4471	4.4	Foot Traffic Resistance Test	Included
4471	4.5	Hail Damage Resistance Test	Included

1. Local building code requirements do not require ASTM E84 testing.

4 MARKING

- 4.1 The manufacturer shall mark each panel, packing container, or label with;
 - name and address of the manufacturer or marking traceable to the manufacturer,
 - date of manufacture or code traceable to date of manufacture or lot identification,
 - model number or product identification,
 - the FM Approval mark, and
 - “Must be installed in accordance with the Approved installation provided with the panels”
- 4.2 The manufacturer shall mark each component of an FM Approved exterior wall system. Such markings may be located on the backside of the component such that the markings cannot be seen after the component has been installed.
- 4.3 Labels or markings denoting Approval shall be applied by the manufacturer only within and on the premises of manufacturing locations that are under the FM Approvals Surveillance Audit Program.
- 4.4 The manufacturer agrees that use of the FM Approvals name or Approval Mark is subject to the conditions and limitations of the Approval by FM Approvals. Such conditions and limitations must be included in all references to Approval by FM Approvals.
- 4.5 Product intended for use in Canada shall be provided with caution and warning labels in both English and French.

5 REMARKS

- 5.1 Continued Approval is based upon fabrication and construction of the ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, and ISOCOP Series – ISOCOP in accordance with this Approval Report, satisfactory field experience and continued use of acceptable quality control procedures as determined by Surveillance Audits.
- 5.2 The combustible core system described in section 2.1 has not been evaluated for the toxicity of the products of combustion.

5.3 The wind and hail ratings established in Section 1.4 of this report are to be used in conjunction with FM Global Property Loss Prevention Data Sheets 1-28 Design Wind Loads, 1-34 Hail Damage and 1-57 Plastics in Construction.

5.4 The securement of the roof system must be enhanced at the building corners and perimeter as outlined in FM Global Property Loss Prevention Data Sheet 1-31.

6 SURVEILLANCE AUDIT

The manufacturing facilities at the following location(s) shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture products identical to that tested and Approved. An FM Approved Products/Specification Tested Revision Request Form shall be submitted to FM Approvals for requesting to manufacture products at any additional or alternate manufacturing facilities which are not listed below.

Audit Location(s)

Avenida Libre Comercio 137
Parque Industrial Santa Fee III
Silao Guanajuato CP 36275
Mexico

7 MANUFACTURER'S RESPONSIBILITIES

7.1 The manufacturer shall notify FM Approvals of any planned change in the Approved products, prior to general sale or distribution, using the FM Approved Products/Specification Tested Revision Request Form. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals.

7.2 To ensure compliance with his procedures in the field, the manufacturer shall supply to the installer and owner such necessary instruction or assistance required to produce the desired performance achieved in the tests.

7.3 In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

8 DOCUMENTATION

The following document describes the ISOBOX Series – ISOBOX, ISOBOX Series – ISOPIANO, ISOBOX Series – ISOBOX PLISSE, ISOPARETE Series – ISOPARETE BOX, ISOPARETE Series – ISOPARETE PLISSE, ISOPARETE Series – ISOPARETE PIANO, ISOPARETE Series – ISOPARETE PIANO PLISSE, and ISOCOP Series – ISOCOP and is on file at FM Approvals.

Document Title	Issue Date
Surveillance Audit Manual	May 2017

9 CONCLUSION

- 9.1** See www.ApprovalGuide.com and www.roofnav.com for the Approved assemblies.
- 9.2** Test results show 1) the panels in and of themselves would not create a need for automatic sprinklers and 2) the panels would be acceptable in a combustible occupancy protected by automatic sprinklers as defined by FM Global Property Loss Prevention Standards.
- 9.3** The steel facings of the panels must be positively secured to the core by 1) attachment of the entire panel assembly to supporting structural members with mechanical fasteners or 2) positive attachment of the interior panel facer to the external panel facer with mechanical fasteners.
- 9.4** Approval is effective as of the date of this report since a duly signed Master Agreement is on file for this customer.
- 9.5** Continued Approval will depend upon satisfactory field experience and periodic Surveillance Audits.

PROJECT DATA RECORD: 0003056859

ATTACHMENTS: None