

ICC-ES Evaluation Report

ESR-2676P

Reissued May 2024

This report also contains:


- LABC Supplement

Subject to renewal May 2026

- CBC Supplement

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<p>DIVISION: 10 00 00— SPECIALTIES</p> <p>Section: 10 73 00— Protective Covers</p>	<p>REPORT HOLDER:</p> <p>UNITED DURALUME PRODUCTS, INC.</p>	<p>EVALUATION SUBJECT:</p> <p>UNITED DURALUME FREESTANDING AND ATTACHED PATIO COVERS, CARPORTS AND COMMERCIAL STRUCTURES</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015 and 2012 [International Building Code® \(IBC\)](#)
- 2021, 2018, 2015 and 2012 [International Residential Code® \(IRC\)](#)

For evaluation for compliance with codes adopted by [Los Angeles Department of Building and Safety \(LADBS\)](#), see [ESR-2676 LABC and LARC Supplement](#).

Property evaluated:

Structural

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11
- 2020, 2015, 2012 and 2008 ICC 700 [National Green Building Standard™](#) (ICC 700-2020, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

The United Duralume freestanding and attached patio covers described in this report comply with Appendix I of the IBC and Appendix AH of the 2021 IRC (Appendix H of the 2018, 2015 and 2012 IRC). Freestanding and attached carports and commercial structures are used as covers where permitted by the applicable chapters of the IBC, including IBC Section 406 for carports.

3.0 DESCRIPTION

3.1 General:

The freestanding and attached patio covers, carports and commercial structures must be constructed according to the engineering plans accompanying this report and as indicated in this report. The walls must be unenclosed on three sides for attached patio covers, and on four sides for freestanding patio covers, carports and commercial structures. These products are also marketed under the trade name Duracool Patios™.

The attributes of the patio covers have been verified as conforming to the provisions of (i) CALGreen Section A4.404.3.3 for panelized framing systems (ii) ICC 700-2020, ICC 700-2015 and ICC 700-2012 and ICC 700-2008 Sections 601.5 and 11.601.5 for prefabricated components. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Materials:

3.2.1 Aluminum: The aluminum members are roll-formed and extruded shapes of various alloys and tempers, complying with Chapter 20 of the IBC and as specified in the engineering plans accompanying this report.

3.2.2 Steel: The steel members are formed from various grades of galvanized steel complying with ASTM A653, ASTM A123 or ASTM A153 and having a minimum grade or specified strengths and a minimum galvanized coating designation as specified in the engineering plans accompanying this report.

3.3 Foam Plastic Core Sandwich Panels:

Sandwich panels used with the United Duralume products to form patio covers must be recognized in ICC-ES [ESR-3779](#), and have a maximum panel thickness of 6 inches (152 mm). Installation of sandwich panels must be in accordance with ESR-3779 and as indicated in the approved engineering plans accompanying this evaluation report.

3.4 Mechanical Fasteners and Anchors:

Mechanical fasteners and anchors, used for connection amongst components of the cover structures (including patio covers, carports and commercial structures), and for connection of the attached cover structures to the supporting structures, must be in accordance with the engineering plans accompanying this report.

4.0 DESIGN AND INSTALLATION

The design and installation of the patio covers, carports and commercial structures must be in accordance with this report and the engineering plans, dated January 9, 2023 for the 2021 IBC/IRC, October 26, 2019 for the 2018 IBC/IRC, dated January 15, 2017 for the 2015 IBC/IRC, or dated December 11, 2013 for the 2012 IBC/IRC, as applicable, accompanying this report, as referenced in [Tables 1, 2, 3](#) and [4](#), respectively.

5.0 CONDITIONS OF USE:

The United Duralume Products, Inc., freestanding and attached patio covers, carports, and commercial structures described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Construction of patio covers, carports and commercial structures must comply with this report and the engineering plans, dated January 9, 2023, for the 2021 IBC/IRC, October 26, 2019 for the 2018 IBC/IRC; dated January 15, 2017 for the 2015 IBC/IRC; or December 11, 2013 for the 2012 IBC/IRC; accompanying this report, as referenced in [Tables 1, 2](#) and [3](#), respectively. Where there is a conflict between this report and the plans, the more restrictive requirement governs.
- 5.2** Patio covers are limited to use as structures regulated under Appendix I of the IBC or Appendix AH of the 2021 IRC (Appendix H of the 2018, 2015 and 2012 IRC). For columns supporting loads greater than 750 lbf (3336 N) when attached to a 3.5-inch (89 mm) concrete slab on grade without footings, a registered design professional must provide design and calculations to the satisfaction of the code official.
- 5.3** Carports and commercial structures are limited to use as structures regulated by the applicable chapters of the IBC, including IBC Section 406 for carports.
- 5.4** Any unit built in an area with a flat roof snow load greater than 30 psf (143.6 Pa) in Seismic Design Category A, B, C, D, D0, D1, D2, E or F, and not complying with Exception 1 of IBC Section 1613.1, is outside the scope of this report, except as permitted in the engineering plans corresponding to the 2021, 2018, 2015 and 2012 IBC codes. The 2021, 2018 and 2015 IBC engineering plans address seismic loads with roof snow loads over 30 psf.
- 5.5** Patio covers, carports and commercial structures installed in geographical areas cited in Section 26.8.1 of ASCE/SEI 7-16 for the 2021 and 2018 IBC/IRC and ASCE/SEI 7-10 for the 2015 and 2012 IBC/IRC are outside the scope of this report.
- 5.6** Effects of sliding snow described in Section 7.9 of ASCE/SEI 7-16 for the 2021 and 2018 IBC/IRC and ASCE/SEI 7-10 for the 2015 and 2012 IBC are outside the scope of this report.

- 5.7 The minimum live load for patio covers must be 10 psf (47.88 Pa). The minimum live load for carports and commercial structures must be 20 psf (95.76 Pa).
- 5.8 For attached patio cover structures, the mean roof height of the structure to which the patio cover is attached must not exceed 30 feet (9.1 m).
- 5.9 For attached units, the loads that are to be resisted by the structures to which the patios, carports and commercial structures are attached, as applicable, are provided in the accompanying plans. The adequacy of the structures that support the additional loading from the attached units must be justified, by a registered design professional, when required by the jurisdiction where the project is located, and the justification is subject to the approval of the code official.
- 5.10 Plans, details and specifications concerning proper installation of the patio covers, carports and commercial structures, that are applicable to the specific building under consideration, must be part of the construction documents submitted to the code official for approval.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [ICC-ES Acceptance Criteria for Patio Covers \(AC340\)](#), dated August 2018, editorially revised August 2021.

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-2676) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, each structure bears a permanent decal or identifying tag stating allowable roof live/snow load, design wind speed and exposure and name of manufacturer (United Duralume Products, Inc.).
- 7.3 The report holder's contact information is the following:

UNITED DURALUME PRODUCTS, INC.
350 SOUTH RAYMOND AVENUE
FULLERTON, CALIFORNIA 92831
(714) 773-4011
www.unitedduralume.com
www.duracoolpatios.com
udpinc@gmail.com

TABLE 1—UNITED DURALUME: ENGINEERING PLANS (DATED JANUARY 9, 2023) FOR PATIO COVERS, CARPORTS, AND COMMERCIAL STRUCTURES (FOR THE 2021 IBC/IRC)

DRAWINGS	PAGES	SECTION DESCRIPTION
	1	TABLE OF CONTENTS
	1	GENERAL NOTES
	1	PROFESSIONAL ENGINEERING STAMPS AND DEFINITION FOR TRIBUTARY WIDTH DIAGRAM
LATTICE COVER COMPONENT AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	6	COMPONENTS/CONNECTION DETAILS
	4	LATTICE 1.0 RAFTER SPANS FOR COMMERCIAL AND PATIO STRUCTURES
	44	LATTICE 2.0 POST SPACING FOR LATTICE PATIO AND COMMERCIAL COVERS
SOLID COVER COMPONENTS AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	9	COMPONENTS/CONNECTION DETAILS
	7	4.0 PANEL SPANS FOR PATIO, CARPORT AND COMMERCIAL STRUCTURES
	62	5.0 POST SPACING FOR PATIO AND COMMERCIAL COVERS
Misc1	2	7.0 MISC DETAILS
Misc2	1	7.0 FAN BEAM DETAILS
Misc3	1	7.0 POST AND FASTENER REQUIREMENTS FOR ALL STRUCTURES
Misc4a and Misc4b	2	7.0 CONCRETE FOOTING OPTIONS
Misc5	2	7.0 REQUIREMENTS FOR SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc6	1	7.0 FORCES ON EXISTING STRUCTURES
Misc7	1	7.0 STRUCTURAL PROPERTIES OF BEAMS, FASCIA, PANELS AND RAFTERS FOR USE BY DESIGN PROFESSIONALS
Misc8	1	7.0 CONCRETE SLAB REQUIREMENTS FOR CONSTRAINED FOOTINGS

TABLE 2—UNITED DURALUME: ENGINEERING PLANS (DATED OCTOBER 26, 2019) FOR PATIO COVERS, CARPORTS, AND COMMERCIAL STRUCTURES (FOR THE 2018 IBC/IRC)

DRAWINGS	PAGES	SECTION DESCRIPTION
	1	TABLE OF CONTENTS
	1	GENERAL NOTES
	1	PROFESSIONAL ENGINEERING STAMPS AND DEFINITION FOR TRIBUTARY WIDTH DIAGRAM
LATTICE COVER COMPONENT AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	6	COMPONENTS/CONNECTION DETAILS
	4	SECTION 1.0 RAFTER SPANS FOR COMMERCIAL AND PATIO STRUCTURES
	44	SECTION 2.0 POST SPACING FOR LATTICE PATIO AND COMMERCIAL COVERS IN NORMAL WIND AREAS
SOLID COVER COMPONENTS AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	9	COMPONENTS/CONNECTION DETAILS
	7	SECTION 4.0 SOLID COVER PANEL SPANS FOR PATIO, CARPORT AND COMMERCIAL STRUCTURES
	62	SECTION 5.0 POST SPACING FOR PATIO AND COMMERCIAL COVERS IN NORMAL WIND AREAS
Misc1	2	7.0 MISC DETAILS
Misc2	1	7.0 FAN BEAM DETAILS
Misc3	1	7.0 POST AND FASTENER REQUIREMENTS FOR ALL STRUCTURES
Misc4a and Misc4b	2	7.0 CONCRETE FOOTING OPTIONS
Misc5	2	7.0 REQUIREMENTS FOR SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc6	1	7.0 FORCES ON EXISTING STRUCTURES
Misc7	1	7.0 STRUCTURAL PROPERTIES OF BEAMS, FASCIA, PANELS AND RAFTERS FOR USE BY DESIGN PROFESSIONALS
Misc8	1	7.0 CONCRETE SLAB REQUIREMENTS FOR CONSTRAINED FOOTINGS

TABLE 3—UNITED DURALUME: ENGINEERING PLANS (DATED JANUARY 15, 2017) FOR PATIO COVERS, CARPORTS, AND COMMERCIAL STRUCTURES (FOR THE 2015 IBC/IRC)

DRAWINGS	PAGES	SECTION DESCRIPTION
	1	TABLE OF CONTENTS
	1	GENERAL NOTES
	1	PROFESSIONAL ENGINEERING STAMPS AND DEFINITION FOR TRIBUTARY WIDTH DIAGRAM
LATTICE COVER COMPONENT AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	6	COMPONENTS/CONNECTION DETAILS
	1	SECTION 1.0 LATTICE COVER INSTRUCTIONS AND POST TABLES
	2	SECTION 1.0 RAFTER SPANS FOR COMMERCIAL AND PATIO STRUCTURES
	20	SECTION 2.0 POST SPACING, POST TYPE AND FOOTING SIZE FOR LATTICE COVER
SOLID COVER COMPONENTS AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	9	COMPONENTS/CONNECTION DETAILS
	1	SECTION 4.0 SOLID COVER INSTRUCTIONS AND POST TABLES
	2	SECTION 4.0 SOLID COVER PANEL SPANS FOR COMMERCIAL AND PATIO STRUCTURES
	20	SECTION 5.0 POST SPACING, POST TYPE AND FOOTING SIZE FOR SOLID COVERS
Misc1a-2015 and Misc1b-2015	2	7.0 MISC DETAILS
Misc2-2015	1	7.0 FAN BEAM DETAILS
Misc3-2015	1	7.0 POST AND FASTENER REQUIREMENTS FOR ALL STRUCTURES
Misc4-2015	1	7.0 CONCRETE FOOTING OPTIONS
Misc5a-2015	1	7.0 REQUIREMENTS FOR LATTICE STRUCTURES WITH SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc5b-2015	1	7.0 REQUIREMENTS FOR LATTICE STRUCTURES WITH SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc6-2015	1	7.0 FORCES ON EXISTING STRUCTURES
Misc7-2015	1	7.0 STRUCTURAL PROPERTIES OF BEAMS, FASCIA, PANELS AND RAFTERS FOR USE BY DESIGN PROFESSIONALS
Misc8-2015	1	7.0 CONCRETE SLAB REQUIREMENTS FOR CONSTRAINED FOOTINGS

TABLE 4—UNITED DURALUME: ENGINEERING PLANS (DECEMBER 11, 2013) FOR PATIO COVERS, CARPORTS, AND COMMERCIAL STRUCTURES (2012 IBC/IRC)

DRAWINGS	PAGES	SECTION DESCRIPTION
	1	TABLE OF CONTENTS
	1	PROFESSIONAL ENGINEERING STAMPS AND DEFINITION FOR TRIBUTARY WIDTH DIAGRAM
	1	GENERAL NOTES
LATTICE COVER COMPONENT AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	6	COMPONENTS/CONNECTION DETAILS
	4	LATTICE 1.0 RAFTER SPANS FOR COMMERCIAL AND PATIO STRUCTURES
	6	LATTICE 2.0 POST SPACINGS FOR LATTICE PATIO AND COMMERCIAL COVERS USING ALUMINUM AND STEEL HEADERS IN NORMAL WIND AREAS
	6	LATTICE 3.0 POST SPACINGS FOR LATTICE PATIO AND COMMERCIAL COVERS USING ALUMINUM AND STEEL HEADERS IN HIGH WIND AREAS
SOLID COVER COMPONENTS AND CONNECTION DETAILS		
	2	STRUCTURAL CONFIGURATIONS
	9	COMPONENTS/CONNECTION DETAILS
	3	SOLID COVERS 4.0 PANEL SPANS FOR PATIO, CARPORT AND COMMERCIAL STRUCTURES
	12	5.0 POST SPACINGS FOR PATIO AND COMMERCIAL COVERS IN NORMAL WIND AREAS
	12	6.0 POST SPACINGS FOR PATIO AND COMMERCIAL COVERS IN HIGH WIND AREAS
Misc1a-2012 and Misc1b-2012	2	7.0 MISC DETAILS
Misc2-2012	1	7.0 FAN BEAM DETAILS
Misc3-2012	1	7.0 POST AND FASTENER REQUIREMENTS FOR ALL STRUCTURES
Misc4-2012	1	7.0 CONCRETE FOOTING OPTIONS
Misc5a-2012	1	7.0 REQUIREMENTS FOR LATTICE STRUCTURES WITH SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc5b-2012	1	7.0 REQUIREMENTS FOR LATTICE STRUCTURES WITH SURFACE MOUNTED POSTS ON CONCRETE SLABS OR FOOTINGS FOR SINGLE SPAN ATTACHED LATTICE STRUCTURES
Misc6-2012	1	7.0 FORCES ON EXISTING STRUCTURES
Misc7-2012	1	7.0 STRUCTURAL PROPERTIES OF BEAMS, FASCIA, PANELS AND RAFTERS FOR USE BY DESIGN PROFESSIONALS
Misc8-2012	1	7.0 CONCRETE SLAB REQUIREMENTS FOR CONSTRAINED FOOTINGS

DIVISION: 10 00 00—SPECIALTIES
Section: 10 73 00—Protective Covers

REPORT HOLDER:

UNITED DURALUME PRODUCTS, INC.

EVALUATION SUBJECT:

UNITED DURALUME FREESTANDING AND ATTACHED PATIO COVERS, CARPORTS AND COMMERCIAL STRUCTURES

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures, described in ICC-ES evaluation report [ESR-2676P](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures, described in Sections 2.0 through 7.0 of the evaluation report [ESR-2676P](#), comply with the LABC Chapters 20, 22, Section 406 and Appendix I, and the LARC Appendix AH, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-2676P](#).
- The design, installation, conditions of use and identification of the United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-2676P](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- The design shall be in accordance with the applicable requirements of the following information bulletins by the City of Los Angeles:
 - Information Bulletin P/BC 2020-005 (Attached Carport)
 - Information Bulletin P/BC 2020-006 (Attached Patio Cover)
 - Information Bulletin P/BC 2020-016 (Dwellings in High Wind Velocity Areas (HWA))
- The United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures have not been evaluated under the LABC Chapter 7A or the LARC Section R337 for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

This supplement expires concurrently with the evaluation report, reissued May 2024.

DIVISION: 10 00 00—SPECIALTIES
Section: 10 73 00—Protective Covers

REPORT HOLDER:

UNITED DURALUME PRODUCTS, INC.

EVALUATION SUBJECT:

UNITED DURALUME FREESTANDING AND ATTACHED PATIO COVERS, CARPORTS AND COMMERCIAL STRUCTURES

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures, described in ICC-ES evaluation report ESR-2676P, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The United Duralume Freestanding and Attached Patio Covers, Carports and Commercial Structures, described in Sections 2.0 through 7.0 of the evaluation report ESR-2676P, complies with CBC Chapters 20, 22, Section 406 and Appendix I, as applicable, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 16.

The products have not been evaluated under Chapter 7A for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The United Duralume Freestanding and Attached Patio Covers, Carports And Commercial Structures, described in Sections 2.0 through 7.0 of the evaluation report ESR-2676P, comply with 2022 CRC Appendix AH, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

The products have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

The products described in this supplement have not been evaluated for compliance with the *International Wildland–Urban Interface Code*®.

This supplement expires concurrently with the evaluation report, reissued May 2024