



GC1 - FORTIFIED Home™ - Gold Compliance Form for Engineer – Engineered Continuous Load Path for New Construction

The continuous load path (CLP) design is the responsibility of a professional engineer designated as the building designer or engineer of record for the home. This form is intended to document certain aspects of the professional engineer’s CLP design to indicate compliance with CLP requirements defined in sections 6.4.1 and/or 6.4.3 of the *FORTIFIED Home 2020 Standard*. All sections must be completed and signed by the professional engineer responsible for the CLP design for the home (building designer or engineer of record (EOR). **This form is not valid unless all sections are not filled out, initialed and/or signed by professional engineer.** IBHS does not take responsibility for the continuous load path design of the home.

1. General Information (complete a thru g):

- a. FORTIFIED ID: _____ (Obtain from homeowner or FORTIFIED Evaluator)
- b. Homeowner’s Name: _____
- c. Property Street Address: _____
- d. City: _____
- e. State: _____
- f. ZIP: _____
- g. County: _____

2. Site Design Information (complete a thru g):

- a. Building Code and Edition: _____
- b. Design Wind Speed: _____ per ASCE 7-05 7-10 7-16 (Check One)
- c. Exposure Category: B C D
- d. Mean Roof Height: _____
- e. Number of Stories: _____
- f. C&C Design Roof Uplift Pressures (ASD): _____
Note: C&C design roof uplift pressures used for components such as (roof covers) must correspond to a minimum of: $V_{ult} = 130$ mph and Exposure C
- g. C&C Design Wall Pressures (ASD): _____

Note: C&C design wall pressures used for components (such as doors and windows) must correspond to a minimum of: $V_{ult} = 130$ mph and Exposure C



3. Member and Framing Design Requirements:

Engineer of Record shall complete items a thru f below to confirm that the following elements of continuous load path have been designed in conformance with IRC/IBC or with sound engineering practices corresponding to the site conditions specified in section 2 and incorporate the minimum FORTIFIED requirements listed:

- a. I confirm roof framing design including layout, point loads, and roof diaphragm have been designed for the appropriate loads corresponding to site conditions.
 I confirm that I have reviewed the design of roof framing members by specialty engineer (i.e. trusses)
OR
 Check here if not applicable.
- b. I confirm floor framing design including layout, point loads and floor diaphragm have been designed for the appropriate loads corresponding to site conditions.
 I confirm that I have reviewed the design of floor framing members by specialty engineer (i.e. trusses)
OR
 Check here if not applicable.
OR
 Check here if floor framing is not applicable for home
- c. I confirm wall framing design including shear walls and opening framing have been designed for the appropriate loads corresponding to site conditions.
 I certify that I have designed the shear walls as either full height, fully sheathed shear walls or moments frames and that there is sufficient percentage of full height walls on all building sides to adequately transfer shear loads.
 I understand that FORTIFIED requires exterior walls to be fully sheathed with 7/16" structural wood panel sheathing minimum (or equivalent wall cover/type) for resistance to wind pressures and debris impact and confirm that the specified wall design meets this requirement and incorporated this requirement into the wall design.
 CMU/ concrete walls specified are 8" (nominal) width minimum
OR Check here if N/A
 At top of all CMU/concrete walls, fully grouted bond beams with continuous reinforcement including required laps at corners and intersections have been specified (**OR** Check here if N/A)
 For CMU/concrete walls, vertical reinforcement has been specified at a regular o.c. spacing and at all corners including required ties to bond beam reinforcement at top and foundation reinforcement at bottom
OR Check here if N/A
 For CMU/concrete walls, lintels and vertical cells around all wall openings (windows/doors) are fully grouted with vertical and horizontal reinforcement including ties specified
OR Check here if N/A



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d. I confirm slab on grade or stem wall foundation design (including soil retaining wall design if applicable) has been designed for the appropriate loads corresponding to site conditions.

I confirm that reinforcement specified for stem walls/retaining walls includes vertical reinforcement at corners and in grouted cells at an adequate spacing

OR

Check here if N/A

OR

Check here if home is not on slab on grade or stem wall foundation

e. I confirm that elevated foundation (such as piers/pilings) including beams spanning between pilings, embedment depth of pilings if applicable and bracing/reinforcing of foundation/piling system has been designed for the appropriate loads corresponding to site conditions.

I understand that unrestrained stacked masonry or stone (dry-stack foundations) are NOT permitted for FORTIFIED and confirm that I have specified adequate positive connections from the floor or wall structure to the supporting foundation.

OR Check here if home is not on elevated foundation

f. I confirm attached structures (*outdoor or semi-outdoor space with a solid roof that is attached to an exterior wall or the roof structure of the main building, i.e. porches, carports, walk-ways, etc.*) have been designed for the appropriate loads corresponding to site conditions.

OR Check here if there are no attached structures

4. Prescriptive Design Standards (if applicable):

If prescriptive design standards were used for any member/framing or connection designs included in the continuous load path of the building per section 6.4.3 of the 2020 FORTIFIED Home Standard, the EOR must complete the items a thru f below.

Check here if prescriptive design standards were NOT used in the continuous load path design of the home (Skip to section 5)

a. List full name (including edition) of all prescriptive design standards used in the CLP design of the home (one per line):

b. I confirm that the prescriptive design standards used are in accordance with current accepted engineering practices and in compliance with local building code.

c. I confirm that the building parameters and site conditions are within the scope of the prescriptive method limitations of use.

d. I confirm that the appropriate building parameters (such as length, width, number of stories, etc..) and site conditions (such as design wind speed, exposure, etc..) were used to derive the design information utilized from the prescriptive design standard(s).

e. I confirm that systems and connections that are part of the CLP design but fall outside the limits of the prescriptive standard(s) have been properly designed by the EOR.

f. I confirm that lateral loads have properly been accounted for.

5. Connection Design Requirements:

Engineer of Record (EOR) must complete items a thru d below to confirm that the following elements of continuous load path have been designed in conformance with IRC/IBC or with sound engineering practices corresponding to the site conditions specified in section 2:

- a. I confirm roof-to-wall connections to resist uplift and applicable shear forces have been designed for the appropriate loads corresponding to site conditions.
 - i. Describe roof-to-wall connections:
 - metal strap/tie connectors that adequately transfer vertical load from the roof members to the wall members below (i.e. straps/connectors must be connected to both plies of double top plates with additional straps to wall studs as needed on the interior, or attached to sheathing on the exterior)
 - Thru-bolt or screw connections with sufficient embedment to connect through both plies of the wall top plate, with additional straps to walls studs below as needed on the interior, or attached to sheathing on the exterior
 - I understand that toe-nailed connections are not acceptable for FORTIFIED and did not specify them.
- b. I confirm wall above-to-below connections to resist cumulative uplift and applicable shear forces have been designed for the appropriate loads corresponding to site conditions.
 - i. Describe wall above-to-below connections:
 - exterior sheathing lapped at least width of floor system
 - exterior sheathing lapped at least width of floor system and vertical metal straps
 - vertical metal straps and horizontal framing plates (exterior sheathing is not lapped)
 - OR Check here if home is 1-story (wall above-to-below not applicable for home)**
- c. I understand that adequate positive anchorage (hold-downs/tension ties) at all building corners (for all floor levels) are a FORTIFIED requirement and confirm that these connections have been specified.
- d. I confirm ground wall-to-foundation (or first floor-to-beams spanning between pilings) connections to resist cumulative uplift and applicable shear forces have been designed for the appropriate loads corresponding to site conditions.
 - I confirm that positive wall-to-foundation anchorage connections are specified and spaced no greater than 48" O.C. consisting of bolts (with washers and nuts), embedded straps, or anchors, with a minimum of 2 anchors per wall segment.

6. Attached Structures:

- Check here if there are no attached structures (Skip to section 7)**
- a. I confirm that all attached structures (porches, carports, breezeways, etc..) with solid roofs that are attached to an exterior wall or to the roof structure of the main building have been designed for all appropriate loads and load combinations including wind loads a part of the building's continuous load path.
- b. I confirm that all attached structure connections have positive uplift connectors specified. **(Gravity-only connections are NOT permitted)**

c. For **single level attached structures**:

- I understand that nail-only connections for roof, beam, and column connections are not permitted and did not specify them.
- I confirm roof framing is directly connected to roof beam with metal connectors.
- I confirm roof beam is directly connected to columns with metal connectors or a minimum of (2) bolts.
- I confirm columns are directly connected to foundation with metal connectors or a minimum of (2) bolts.
- OR Check here if there are no single level attached structures**

d. For **multi-level attached structures** (multi-level porch with middle floor level):

- I understand that nail-only connections for roof, beam, and column connections are not permitted and did not specify them.
- I confirm roof framing is directly connected to roof beams with metal connectors.
- I confirm roof beams are directly connected to upper level columns with metal connectors or a minimum of (2) bolts.
- I confirm upper level columns are connected directly to one of the following at their bottom:
 - i. Lower level columns with metal connectors or (2) bolts min.
 - ii. Middle floor structural support beams with metal connectors or (2) bolts min.
- I confirm middle floor beams are attached to lower level columns/pilings/piers with metal connectors or a minimum of (2) bolts.
- I confirm lower level columns are directly connected to foundation with metal connectors or a minimum of (2) bolts, or have proper embedment depth/footing specified.
- OR Check here if there are no multi-level attached structures**

7. Structural Drawings

- I confirm that a full set of structural drawings for the home including the building design parameters, specification of structural member materials, sizes and spacings, and detailing of all connection requirements described above have been provided to the building owner and/or installing contractor prior to construction.



8. Certification

I certify that I am a licensed professional engineer in the state of _____.

I verify that, to the best of my knowledge, all applicable engineering requirements for continuous load path listed above have been incorporated in the design details of the home located at:

Furthermore, I understand that any person who makes a false statement or misrepresentation, and any other person knowingly, with an intent to injure, defraud, or deceive, who assists, abets, solicits, or conspires with such person to make a false statement or misrepresentation may be subject to both criminal and/or civil penalties. By completion of this Affidavit, the undersigned does not make a health or safety certification.

Signature: _____

Date: _____

Printed Name: _____

Company: _____

Phone Number: _____

Address: _____

City: _____ State: _____

ZIP: _____

License or Registration Number: _____

Affix Seal: