



Technical Bulletin FH 2022-06

First Release:

September 27, 2022

Prepared by:

Mary Uher
FORTIFIED Field Services Director

Applicable Standards:

FORTIFIED Home™–Hurricane
FORTIFIED Home™–High Wind

Applicable Designation Level:



Foundation Requirements for FORTIFIED Home™ Eligibility

Introduction

Since the program’s inception, FORTIFIED Roof™ has had a basic eligibility requirement that all homes, regardless of designation level being sought, must be supported by a permanent reinforced foundation. As the program began to be more widely used in coastal areas, a requirement for positive anchorage between the foundation and the structure above was added. **IBHS has recently re-evaluated this requirement and has decided to modify when it applies.**

Effective immediately, the requirement for positive attachment to the foundation will not be required for FORTIFIED Roof™ eligibility. However, the requirement will remain in effect for FORTIFIED Silver™ and FORTIFIED Gold™ eligibility. A summary of the different foundation types and their eligibility as well as documentation requirements can be seen below.

Ineligible Foundation Types

Homes on a foundation constructed of unrestrained stacked masonry or stone (a dry-stack foundation) are NOT eligible for any FORTIFIED designation. For homes with a crawl space, all perimeter piers and supporting walls must be photo documented to confirm that they are not dry-stacked.



Figure 1. Ineligible dry-stack foundation.
No mortar is seen between the blocks.



Figure 2. Ineligible dry-stack foundation.

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Figure 3. Ineligible dry-stack foundation.



Figure 4. Ineligible dry-stack foundation.

Qualifying Foundation Types for FORTIFIED Roof Designations

Homes with the following foundation types are eligible for a FORTIFIED Roof designation:

- Slab on Grade



Figure 5. Slab on grade.

- Stem Wall



Figure 6. Stem wall/crawlspace.



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- Homes on piers or pilings (excluding manufactured/mobile homes built to the HUD Code)



Figure 7. Post and beam/piling



Figure 8. Post and beam/piling



Figure 9. Post and beam/piling.

- Manufactured homes built to the HUD Code are required to have foundations that meet the requirements of section 2.4 of the 2020 FORTIFIED Home Standard as follows:

Foundations must be capable of resisting the design wind load requirements with no more than ¼-in. lateral deflection. Requirements specified in the US Department of Housing and Urban Development



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(HUD) Permanent Foundation Guide for Manufactured Housing (HUD4930.3G) dated September 1996 or later provide useful assistance in identifying suitable foundation options.



Figure 10. Manufactured home foundations must meet Section 2.4 of the 2020 FORTIFIED Home Standard to be eligible.

Based on results of past inspections of home installations that were reported as permanent, the following requirements of the HUD Guide and FORTIFIED requirements are emphasized and are part of the Field Evaluation inspection.

- Screw-in soil anchors are not considered a permanent anchorage and cannot be used as any part of the required permanent foundation unless their heads are restrained from lateral movement by embedment in a reinforced concrete footing or concrete slab.
- All concrete masonry unit (CMU) bearing walls, piers, and columns, as well as any units used as part of systems to resist uplift, overturning, and lateral loads must be composed of reinforced concrete masonry with mortared bed and head joints. Cells with reinforcing must be fully grouted. Dry-stacking of CMU is not allowed.
- All bearing walls, piers, and columns must be installed on and connected to acceptable footings or a concrete slab. Footings and slabs must be protected from the effects of frost heave by extending below the frost line or by using a frost-protected shallow foundation design.
- Walls and piers used as part of the uplift, overturning, or lateral load-resisting system must include adequately sized connections and elements capable of resisting tension or compression loads as appropriate. Straps or cables are acceptable, provided they are connected to the home or its chassis and transfer the design loads to the slab or footings supporting the walls, piers, or columns. Use of frictional resistance between the home or its chassis and the tops of



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the walls, piers, or columns or between the bottom of the walls, piers, or columns and the footings to resist lateral loads is not allowed.

For FORTIFIED Roof designations, the evaluator must submit a photo from each elevation that clearly shows the foundation type. For homes with a crawl space, all perimeter piers and/supporting walls must be photo documented to confirm that they are not dry stacked. Any home where the foundation/supporting structure is not visible from around the perimeter of the home will require evaluators to look underneath or behind obstructions to confirm that the foundation is not a dry-stack foundation. This may include any skirting or other obstructions that limit visibility of the foundation. **IBHS may request additional photographs to clarify if the home is a HUD-Code manufactured home or to better observe the foundation.**

Additional Requirements for FORTIFIED Silver Designations

In addition to meeting FORTIFIED Roof eligibility requirements, homes seeking a FORTIFIED Silver designation also require positive anchorage of the structure to the foundation.

For FORTIFIED Silver designations, the evaluator must submit a photo from each elevation that clearly shows the foundation type. Additional information may be required depending on foundation type.

- **Slab on grade:** Homes built on a slab-on-grade foundation will be assumed to have a positive connection and will be eligible for designation.
- **Stem wall:** Homes built on stem wall foundations require photos of the positive connection of the stem wall to the home's structure from within the crawlspace (interior piers are not required to have positive anchorage).
- **Piers and pilings:** For homes built on piers or pilings, photos must be provided under the home showing positive anchorage between the structure and the foundation.

If the home's foundation/supporting structure is not visible from around the perimeter of the home, evaluators must look underneath or behind obstructions to confirm that the foundation is not a dry-stack foundation and to confirm positive anchorage.

For guidance on specific field challenges encountered collecting documentation of positive anchorage, reach out to the IBHS FORTIFIED team.



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Additional Requirements for FORTIFIED Gold Designations

In addition to meeting the FORTIFIED Roof and FORTIFIED Silver eligibility requirements, homes seeking a FORTIFIED Gold designation will continue to have all continuous load path requirements specified in section 6.4 of the 2020 FORTIFIED Home Standard, including foundation designed by a professional engineer, anchoring the lowest wall of the home to the foundation at a maximum of 48 inches on center, and providing a photo of the typical hold-downs/tension ties at building corners.

Compliance Verification Requirements

- **FORTIFIED Roof:** Provide one photo from each elevation of the home that clearly shows the foundation type. For homes with a crawl space, all perimeter piers and supporting walls must be photo documented to confirm that they are not dry stacked. Homes suspected as dry-stack or HUD foundations must have additional close-up photos from under the crawlspace, showing the piers and demonstrating whether all FORTIFIED eligibility requirements are met. IBHS will request additional photos if sufficient photos are not provided.
- **FORTIFIED Silver:** Provide one photo from each elevation of the home that clearly shows the foundation type. Additional photos that confirm positive anchorage are required for homes with stem wall foundations, piers or pilings, and HUD-Code foundations. For homes on a slab on grade, positive anchorage will be assumed to be present, and the home will be eligible.
- **FORTIFIED Gold:** Provide one photo from each elevation of the home that clearly shows the foundation type. Additional photos will be required showing the hold-downs/tension ties at the building corners as well as the anchorage of the home to the foundation, which is designed as part of the continuous load path.

Additional References

For additional guidance, refer to the following:

- [FORTIFIED Home Documentation Requirements](#)