

# **CERTAFI+**

## **Enhanced Building Standard**

*Tiny Homes on Wheels (THOW)*

Reference standards: NFPA 1192 (2015) • ANSI A119.5 • NEC Articles 551 and 552

Effective January 1, 2026

### **CERTAFI+ Enhanced Building Standard**

Version 1.0

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# 1. Introduction and Governing Standards

The CERTAFI+ Enhanced Building Standard establishes minimum construction, documentation, and inspection requirements for certification of tiny homes on wheels (THOW). It is based on established national standards and adds specific requirements for structural quality, thermal performance, documented inspection, and full inspection sequencing.

CERTAFI+ references selected principles from NFPA, ANSI, and NEC standards where applicable.

This standard does not enforce full compliance with any external codebook.

Where this standard is silent on a topic, designs should be consistent with the referenced principles.

Where CERTAFI+ is more restrictive, the CERTAFI+ requirement applies.

Standard	Primary use
NFPA 1192 (2015)	Primary structural and systems baseline for recreational vehicles.
ANSI A119.5	Park model RV reference for construction, plumbing, and life safety.
NFPA 70 NEC 551	Electrical requirements for recreational vehicles.
NFPA 70 NEC 552	Electrical requirements for park trailers.
IRC (latest edition)	Reference where the standards above are silent on a matter.
AWC / APA references	Wood framing and sheathing reference where applicable.

# 2. Certification Scope & Limitations

CERTAFI+ certification confirms that a unit has been reviewed and documented in accordance with the CERTAFI+ Enhanced Building Standard and its referenced guidelines.

CERTAFI+ certification is based on submitted documentation and visual verification. It does not replace engineering validation or site-specific inspection requirements.

CERTAFI+ certification is not a determination of compliance with any specific local, state, or federal building code, zoning requirement, or permitting authority.

Builders and owners remain responsible for ensuring compliance with all applicable laws, codes, and regulations in the jurisdiction where the unit is constructed, transported, or installed.

CERTAFI does not act as a governing body or code enforcement agency.

### 3. How CERTAFI+ Works

CERTAFI+ uses a gated, stage-based inspection workflow where a unit must pass sequential inspections before final certification. Progression to the next stage requires approval from a CERTAFI inspector.

- Submit required plans, trailer documentation, and project specifications.
- Receive plan approval before any inspection stage begins.
- Inspector reviews each stage and either approves it or returns it with specific corrections.
- After final approval, the system issues a digital certificate, serial number, and public verification page.

### 4. Pre-Step: Plans Submission Gate

No inspection stage may begin until the required plans and specifications are submitted and approved. This is a hard gate. Stage 1 remains locked until the inspector approves the pre-step submission.

#### Required document uploads

- Trailer VIN documentation.
- Floor plan and layout drawings with dimensions.
- Electrical plan showing panel location, circuits, and receptacle locations.
- Plumbing plan showing supply lines, drain lines, and fixture locations.

#### Required project specifications

- VIN number.
- Unit width and length.
- Frame type and description.
- Any other structural or systems notes needed to interpret the plans.

#### Approval outcome

- Approved: Stage 1 unlocks.
- Needs fixes: the inspector provides specific corrections and the pre-step must be resubmitted.

### 5. Stage 1: Trailer and Chassis

<b>Stage</b>	Stage 1
<b>Purpose</b>	Verify the trailer base, chassis, and attachment readiness before framing begins.
<b>Required media</b>	7 photos + live video walkaround
<b>Unlocks after</b>	Pre-step approved

## What we are checking

The inspection verifies that the trailer is properly rated, clearly identified, structurally sound, and ready to support the build before anything is framed above it.

### Required items

- VIN plate clearly visible and readable.
- Trailer appropriately rated for intended loaded weight.
- No visible structural damage to trailer frame or chassis.
- Proper wall attachment points present.
- Thermal break installed between metal frame and subfloor.
- Axle size/capacity consistent with the trailer rating.
- Where a metal pan is present, venting is in place before floor insulation is enclosed.

### Required media

A live video walkaround is required. It must show all sides of the trailer, the VIN plate, axles, and attachment points. Photos should clearly document the same areas.

## 6. Stage 2: Framing and Dry-In

<b>Stage</b>	Stage 2
<b>Purpose</b>	Verify framing, sheathing, anchoring, and weather protection before mechanical systems are covered or concealed.
<b>Required media</b>	8 photos + live video walkthrough
<b>Unlocks after</b>	Stage 1 approved

## What we are checking

The inspection verifies the structural shell of the home while framing, openings, sheathing, anchoring, and weather barrier details are still fully visible.

### Framing requirements

- Minimum 2x4 wood or metal studs in all walls; 2x3 studs are not permitted.
- Maximum 16 inches on center for wall framing.
- SIP panels are permitted where properly specified.

- Exterior king studs mechanically fastened to the bottom plate; L-brackets are not accepted as the sole method.
- Simpson H2.5 twist rafter ties or equivalent on required structural connections.
- Headers sized appropriately for each opening.

Header size	Maximum span
4x4 or double 2x4	Up to 4 ft
Single 2x6	Up to 4 ft
Double 2x6	Up to 6 ft
Single 2x10	Up to 6 ft
Double 2x8	Up to 8 ft
Double 2x10	Up to 9 ft
Double 2x12	Up to 10 ft
Greater than 10 ft	Case-by-case review

### Sheathing and weather barrier requirements

- Wall sheathing: 1/2 inch CDX or 7/16 to 9/16 inch OSB.
- Wall nailing: 4 inches on edges and 8 inches in the field.
- Roof sheathing: 1/2 inch CDX or 7/16 inch OSB for 16-inch-on-center rafters; 9/16 inch OSB for 24-inch-on-center rafters.
- Roof nailing: 3 inches on edges and 6 inches in the field.
- Weather-resistant barrier required on all walls unless an approved integrated system such as ZIP System is used.
- Ice and water shield installed per roof pitch and manufacturer requirements.
- Walls anchored to trailer with 1/2 inch anchor bolts at 4 feet on center.

### Required media

A live walkthrough is required showing all framed walls, roof framing, openings, anchoring points, sheathing, and dry-in details while they are visible.

## 7. Stage 3: Mechanical Rough-In

<b>Stage</b>	Stage 3
<b>Purpose</b>	Verify electrical and plumbing systems while fully visible, before insulation or finish materials conceal them.
<b>Required media</b>	6 photos + live video walkthrough
<b>Unlocks after</b>	Stage 2 approved

### What we are checking

The inspection verifies electrical and plumbing installation while all runs, penetrations, and support details remain visible.

### Electrical requirements

Electrical systems must follow safe installation practices consistent with NEC guidance.

- Electrical panels may not be installed in bathrooms, closets, stairways, or wet areas.
- Main panel properly sized, labeled, and accessible.
- Working clearance maintained: 24 inches wide and 30 inches deep minimum.
- All wiring secured and protected from physical damage.
- Shore power inlet rated minimum 30 amp.
- All 12V systems properly fused.
- Externally run wiring in conduit or UF cable.
- Metal roof/siding panels bonded to trailer frame with 8 AWG copper or greater where required.
- AFCI protection on all 120V 15 and 20 amp branch circuits consistent with referenced principles.
- Installation must match the approved electrical plan.

### Plumbing requirements

- Drain lines slope a minimum of 1/4 inch per foot.
- Water supply lines properly routed and supported.
- Drain lines supported with hanger straps every 3 feet unless a stricter requirement applies locally.
- Water heater overflow pipe routed to the exterior where required.
- Penetrations through top and bottom plates sealed with approved fire-rated sealant.
- Installation must match the approved plumbing plan.
- Water supply systems must demonstrate leak-free integrity under pressure testing using standard industry practices. The gauge reading must be documented.

## Required media

A live walkthrough is required showing all exposed electrical wiring, panel area, plumbing supply lines, drain lines, and pressure-test documentation while everything remains visible.

## 8. Stage 4: Insulation and Thermal Performance

<b>Stage</b>	Stage 4
<b>Purpose</b>	Verify insulation, sealing, and thermal coverage before walls, ceilings, and floors are closed.
<b>Required media</b>	4 photos
<b>Unlocks after</b>	Stage 3 approved

### What we are checking

The inspection verifies that insulation is fully installed and that cavities and penetrations are sealed before they are covered. This is the point of no return for concealed thermal work.

Location	CERTAFI+ minimum
Walls	R-13 minimum
Floor	R-13 minimum
Ceiling / roof	R-19 minimum

- Vapor barrier required between insulation and subfloor where specified by assembly.
- No gaps or voids in insulation coverage.
- Windows and doors insulated and air-sealed.
- All penetrations sealed before closure.
- If a metal pan is present, venting must be in place before insulation is enclosed.

### Required media

Photos are required. The inspector may request live video if additional verification is needed before approval.

## 9. Stage 5: Final Inspection

<b>Stage</b>	Stage 5
<b>Purpose</b>	Verification of adherence to the CERTAFI+ standard, transport-readiness, and livability features.
<b>Required media</b>	15 photos + live video walkthrough
<b>Unlocks after</b>	Stage 4 approved

### What we are checking

The inspection verifies that the completed unit is aligned with the CERTAFI+ standard and its referenced principles, transport-ready, and ready for certificate issuance.

### Electrical and plumbing final requirements

- GFCI protection at all required receptacles, including bathroom, exterior, kitchen countertop, and outlets within 6 feet of a water source.
- Panel labeled, breakers identified, and panel cover installed.
- All outlets properly installed and functional.
- Up to 5 circuits: 30A service minimum; 6 or more circuits: 50A or greater service required.
- P-traps installed at every fixture.
- No visible leaks at any connection or fixture.
- 2 inch washer drain pipe required.
- Water heater secured and strapped for road transport.
- A final pressure test is required, demonstrating leak-free integrity, with gauge reading documented.

### Fire, life-safety, loft, and transport requirements

Units must include basic life safety features such as smoke detection and fire extinguishing equipment appropriate for residential use.

- Smoke detectors hard-wired and interconnected with battery backup.

- Structures 30 feet or less: at least one smoke detector; structures over 30 feet: at least two interconnected detectors.
- Any closed loft or bedroom area requires its own smoke detector.
- CO detector required wherever any fossil-fuel appliance is present.
- Fire extinguisher minimum 2.5 lb ABC, mounted within 2 feet of the main entry.
- Bathroom fan controlled by humidistat.
- Egress window minimum 5.7 square foot opening, 24 inches high, 20 inches wide, and 44-inch maximum sill height.
- All cabinets, appliances, and overhead storage secured for road transport; refrigerator equipped with travel latch.
- CERTAFI serial number plate affixed and readable.

## Certificate issuance

Upon Stage 5 approval, the system generates a digital certificate PDF, assigns a unique serial number, and activates the permanent public verification page at [getcertafi.com/verify/\[serial\]](https://getcertafi.com/verify/[serial]).

## 10. Technical Requirements by Discipline

### Loft and interior requirements

- Lofts over 24 inches high require a guardrail.
- Lofts 35 square feet or greater require both a primary and a secondary means of egress.
- Minimum loft floor area: 35 square feet.
- Minimum horizontal dimension: 5 feet in any direction.
- Portions with sloping ceiling less than 3 feet high do not count toward minimum area.
- Tempered glass or approved protective film required in loft areas where applicable.
- All open-sided stairs require a guardrail 34 inches high with openings no greater than 4 inches.
- Habitable space and hallways: 6 feet 8 inches minimum ceiling height; kitchens and bathrooms: 6 feet 4 inches minimum.
- Loft ceiling must remain below 6 feet 8 inches to qualify as a loft.

### Wind load and anchoring

- CERTAFI+ references a 140 mph wind-load design target for structural guidance.
- Mechanical fastening required at king studs; L-brackets alone are not accepted where a mechanical fastening requirement applies.
- All-thread rod / hold-down system required where design conditions call for it.
- Roof-to-wall assemblies strapped per structural requirements.
- Wall sheathing nail pattern: 4 inches on edges and 8 inches in the field.
- Roof sheathing nail pattern: 3 inches on edges and 6 inches in the field.

## 11. Certification Process and Stage Rules

CERTAFI+ certification follows a pre-step gate plus five sequential inspection stages. Each stage must be approved before the next stage unlocks.

Stage	Name	Required media	Unlocks after
Pre-step	Plans submission	Documents + specs	Always available
Stage 1	Trailer and chassis	7 photos + live video	Pre-step approved
Stage 2	Framing and dry-in	8 photos + live video	Stage 1 approved
Stage 3	Mechanical rough-in	6 photos + live video	Stage 2 approved
Stage 4	Insulation	4 photos	Stage 3 approved
Stage 5	Final inspection	15 photos + live video	Stage 4 approved

- Sequential unlocking: Stages follow a structured progression. Certain stages may be completed concurrently where appropriate, but all required stages must be approved before final certification.
- Permanent locking: once approved, a stage record is locked and may not be edited, replaced, or resubmitted.
- Live video: stages 1, 2, 3, and 5 require live-captured video. Camera-roll uploads are flagged as manual submissions and may require additional review.
- Approval outcomes: each stage is either approved or returned with specific corrections for resubmission.

## 12. CERTAFI+ Enhanced Requirements Summary

Requirement	Description
<b>2x4 minimum wall framing</b>	Minimum 2x4 studs required in all walls. 2x3 studs are not permitted.
<b>16-inch on-center framing</b>	Wall framing maximum 16 inches on center. Roof framing maximum 16 inches on center except where approved sheathing thickness permits otherwise.
<b>R-13 floor and wall insulation</b>	Floor and wall insulation minimum R-13.
<b>R-19 ceiling / roof insulation</b>	Ceiling or roof insulation minimum R-19.
<b>Plans approval gate</b>	Construction drawings, electrical plans, plumbing plans, and VIN documentation must be approved before Stage 1 begins.

<b>Documented stage inspections</b>	Each stage requires specific media and inspector approval before the next stage unlocks.
<b>GPS-tagged photography</b>	Photos are captured within the inspection workflow and recorded as part of the inspection record.
<b>Live video at key stages</b>	Stages 1, 2, 3, and 5 require live video walkthroughs.
<b>Serial number plate</b>	A CERTAFI serial number plate must be affixed before final approval.
<b>Digital certificate and verification page</b>	Certification issues a PDF certificate and a permanent public verification page linked by QR code.

## 13. Contact and Referenced Standards

Questions about inspection requirements, submissions, or certification may be directed to the CERTAFI inspection team.

- Inspection questions: [inspectors@getcertafi.com](mailto:inspectors@getcertafi.com)
- General inquiries: [hello@getcertafi.com](mailto:hello@getcertafi.com)
- Website: [getcertafi.com](http://getcertafi.com)

### Referenced standards

- NFPA 1192 (2015) — Standard for Recreational Vehicles
- ANSI A119.5 — Park Model RV Standard
- NFPA 70 NEC Articles 551 and 552
- Applicable IRC, AWC, and APA references where relevant