

ICC-ES References in HUD's Offsite Construction Research Roadmap

Primary source: Offsite Construction for Housing: Research Roadmap. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2023.

This report gathers every passage in HUD's Offsite Construction for Housing: Research Roadmap (2023) that references **ICC-ES, the International Code Council's Evaluation Service**. Each passage below was pulled directly from and verified against the original HUD PDF at the link above, with page numbers as they appear in that document. As a work of the U.S. federal government, this report is in the public domain, so the passages are reproduced here in full, verbatim.

This set of passages was originally identified and compiled by Tiny House Alliance USA, ["HUD Funds Fast Track ICC/NIBS/MODX Monopoly"](#).

HUD Funding Overview

For context, HUD's FY23 Offsite Construction and Land Use Reform NOFO disbursed roughly \$2,998,999 across 10 recipients. The largest single award, \$499,878, went to the National Institute of Building Sciences (NIBS) — the organization that managed both HUD-funded reports discussed in this document — to design pilot programs, identify barriers to offsite construction, and develop a pilot handbook. Other notable awards included \$226,756.05 to Washington State University (home institution of MOD X co-founder Ryan E. Smith), \$263,544.87 to the Manufactured Housing Institute, and \$263,847 to Purdue University to study ICC/IBC code revisions and their impact on supply and affordability. These awards were announced in HUD press release 24-036 (Feb. 23, 2024).

[Source: HUD press release 24-036, Feb. 23, 2024, Archive](#)

Before turning to the Research Roadmap passages, it's worth explaining what an ICC-ES Evaluation Report actually contains. According to ICC Evaluation Service's own description of its reports, code officials rely on these reports as their preferred way to confirm that a new or innovative building product meets code requirements. Each report explains which code provisions or acceptance criteria were used to judge the product, how it should be installed, and how to identify it in the field.

ICC-ES organizes each report into eleven standard components:

- A CSI MasterFormat division number, which places the product within the Construction Specifications Institute's standard classification system.
- The report holder — the company or organization that applied for the report.
- The specific product or products the report covers.
- The scope of the report — which code or codes were used to evaluate the product.
- A summary of which properties were tested, such as fire or wind resistance, and whether the product is approved for structural use.
- The permitted uses, tying the evaluated product to specific code provisions.
- A general description of the product's physical characteristics (dimensions, materials, features, etc.).
- Installation guidance, so inspectors can confirm the product was installed in compliance with code or acceptance criteria.
- The conditions of use — a statement that the product complies with, or is a suitable alternative under, the applicable code, along with any conditions attached to the report.

- The evidence submitted to support the evaluation, such as test reports, calculations, and installation instructions.
- Identification information — manufacturer name, product code, report number, and other details used to confirm the product matches the report.

Source: ICC Evaluation Service, "What's in an ICC-ES Evaluation Report," <https://icc-es.org/>

In the Executive Summary, under the list of research projects HUD is "uniquely situated to address," the report includes a bullet titled "New Products" that names the **ICC-ES process directly**:

*New Products: Research the obstacles of the current **ICC-Evaluation Service (ES) process to develop mechanisms to foster new product development in offsite construction for the housing sector.***

— Research Roadmap, p. vi

2. Section 3.1, Regulatory Framework — Context Preceding the ICC-ES Discussion (p. 21)

Section 3.1 opens with a pull-quote from Cindy Davis, President of the ICC Board of Directors, endorsing adoption of ICC/MBI standards nationwide. It does not name ICC-ES specifically but sets up the standards discussion that leads into the **ICC-ES material in Section 3.2**:

With the ANSI industry consensus standard by ICC and MBI now available, it seems that HUD could streamline the manufactured home industry, remove unnecessary regulatory barriers, and increase consumer confidence by adopting these standards for all offsite construction. States could ease their workload with reliance on accredited third-party inspection and labeling organizations. Thus, you would have one simple set of construction rules (IRC and IBC) and a standard process (ICC/MBI) for offsite construction in all 50 states. This would create a level playing field and remove the patchwork of regulations that is holding the industry back from expanding.

— Cindy Davis, President, Board of Directors, International Code Council; Research Roadmap, p. 21

3. Section 3.2, Standards and System Performance — Direct ICC-ES Discussion (p. 31–35)

Section 3.2 is where the Research Roadmap discusses **ICC-ES** most directly. It opens with a second pull-quote, from Lisa Podesto of Lendlease, on the limits of the current code-compliance verification process:

The Code Compliance Research Report process wasn't intended for multifaceted components or a system of products that can be used together in a sub-assembly. Using it for this is like putting a square peg in a round hole. The industrialized off-site industry needs a code compliance verification system that is robust enough to demonstrate code equivalent performance, flexible enough to address a complete building system platform and nimble enough to adapt with each generation of product improvement.

— Lisa Podesto, Lend Lease; Research Roadmap, p. 31

3.1 Narrative Paragraph Naming the ICC Evaluation Service (ES) Process (p. 32–33)

A discussion involving the current testing process of materials and assemblies, as related to ICC compliance, was closely linked to the PTC and workshop participant discussions involving the

*permitting and inspection process of offsite construction and the impact of performance-based codes. The current **ICC Evaluation Service (ES) process** and associated cost and time were noted as significant hindrances to fostering innovation, standardization, and competitiveness within the housing industry. The current process was also described as a deterrent to developing a functional research and development (R&D) culture that has been the hallmark of other successful manufacturing industries.*

— Research Roadmap, p. 32–33

3.2 Research Subtopic Header (p. 34)

Determine the extent to which material testing and ICC compliance are inhibitors for innovation in the offsite construction industry.

— Research Roadmap, p. 34

3.3 Full ICC-ES Subtopic Narrative (p. 34) — the Report's Most Detailed ICC-ES Passage

*The **ICC-ES (2022)** provides reports that are the most preferred resource used by code officials to verify that new and innovative building products comply with code requirements. The **ICC-ES** provides information about what code requirements or acceptance criteria were used to evaluate the product, how the product should be installed to meet the requirements, how to identify the product, etc. **ICC-ES** reports also require evidence through testing from an ICC-certified standards laboratory (i.e., ANSI, ASTM, UL, etc.) and how the product complies or is a suitable alternative to the requirements of the applicable code. Obtaining an **ICC-ES Report** is a process that is both time-consuming and expensive, and participants report that it does not foster innovation or competitiveness for small businesses and inventors, and it further reinforces prescriptive specifications. **The ICC-ES process** has encountered difficulty accommodating larger subassemblies (i.e., 2D enclosed panels or 3D volumetric modular) in offsite construction that integrate various material products for performance outcomes. The extent to which the current **ICC-ES process** is an obstacle to offsite construction and small business innovation needs to be researched. Additional information related to **ICC-ES** reports is available at the following website: <https://icc-es.org/>*

— Research Roadmap, p. 34

3.4 Related Research Questions Following the ICC-ES Narrative (p. 34–35)

What are the scope, time, and cost impacts on new product development for offsite construction using the ICC-ES process? How are these impacts a barrier to innovation and new market entrants and start-ups? How can these barriers be overcome? What is a pathway for offsite manufacturers of subassemblies that aggregate existing laboratory-certified products to develop ICC-ES reports?

— Research Roadmap, p. 34–35

4. Summary Table of ICC-ES References in the Research Roadmap

- Executive Summary, p. vi — HUD research recommendation to "research the obstacles of the current ICC-Evaluation Service (ES) process."
- Section 3.1, p. 21 — Cindy Davis pull-quote on ICC/MBI standards (contextual lead-in, does not name ICC-ES directly).
- Section 3.2, p. 31 — Lisa Podesto pull-quote on the limits of the code-compliance verification process (contextual lead-in).

- Section 3.2, p. 32–33 — narrative naming the "ICC Evaluation Service (ES)" process as a hindrance to innovation and competitiveness.
- Section 3.2, p. 34 — research subtopic header framing ICC compliance and material testing as innovation inhibitors.
- Section 3.2, p. 34 — the full ICC-ES subtopic narrative, the report's most detailed discussion of the ICC-ES process, its cost, time burden, and difficulty with larger subassemblies.
- Section 3.2, p. 34–35 — the four related research questions on ICC-ES's impact on small businesses and new entrants.

Sources

HUD Funds Fast Track ICC/NIBS/MODX Monopoly

Offsite Construction for Housing: Research Roadmap. U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2023

What Is A ICC-ES Evaluation Report?

HUD Archives: News Releases:February 23, 2024