

**KENNETH THOMAS ORGOGLIOSO DBA KENS FLOORING COMPANY EST. 1979**

**SB25-002 A BILL FOR AN ACT CONCERNING THE DEVELOPMENT OF REGIONAL BUILDING CODES THAT ACCOUNT FOR LOCAL CLIMATIC AND GEOGRAPHIC CONDITIONS FOR THE CONSTRUCTION AND INSTALLATION OF RESIDENTIAL AND NONRESIDENTIAL FACTORY-BUILT STRUCTURES.**

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**Comments on Senate Bill 25-002 REENGROSSED and pending before the**

**House Transportation, Housing & Local Government Committee**

**Kenneth Thomas Orgoglioso**

**4/7/2025**

**Senate Bill 25-002 for the construction of factory manufactured and site built residential homes can significantly reduce new residential building, energy, water and operational costs by incorporating rules and codes supporting current and proven building science methods**

# SB 25-002 Summary abstract regarding THE DEVELOPMENT OF REGIONAL BUILDING CODES THAT ACCOUNT FOR LOCAL CLIMATIC AND GEOGRAPHIC CONDITIONS FOR THE CONSTRUCTION AND INSTALLATION OF RESIDENTIAL AND NONRESIDENTIAL FACTORY-BUILT STRUCTURES.

## Stated Purposes of SB 25-002

Whereas in SB 25-002 SECTION 1. Legislative declaration, the general assembly finds and declares that:

22 it seeks to address the shortage and cost of housing by enacting regional  
23 standards for factory-built structures, rather than standards related to a  
24 specific address, which will increase the supply of housing and lower  
25 housing costs by lowering the cost of construction and encouraging  
26 partners to take advantage of the economies of scale afforded through  
27 factory-built construction.

I wish to submit that if we will constructively solve Colorado's current housing inventories and affordability and Colorado's current energy and water issues, we must change our current State modular building rules and the balkanization of scores of local building and permitting codes and costs for special transportation permitting to include a category for NEW HIGH PERFORMANCE FACTORY MANUFACTURED and SITE BUILT MODULAR HOUSING using DEPARTMENT OF LOCAL AFFAIRS Division of Housing RESOLUTION NO. 38, where Division of Housing certified installers and inspectors will be manufacturer trained and State certified to perform both the manufacturing and on-site assembly of high performance affordable manufactured Structurally Insulated Panel homes, ready for local 3rd party utility inspections and hookups.

DEPARTMENT OF LOCAL AFFAIRS Division of Housing RESOLUTION NO. 38 provides for State oversight of installers and inspectors for factory *and* on-site assembly for modular buildings assemblies and inspections.

1. Current data on productivity and quality outcomes for traditional new modular on-site building assemblies under State jurisdiction compared to traditional on-site assemblies using local codes:
  - 1.2. Faster Construction Timelines: Modular construction involves fabricating building components in a factory and then assembling them on-site, allowing for faster project completion.
  - 1.3 Potential Cost Savings: Modular construction can optimize material utilization, reduce waste, and streamline the construction process, potentially leading to cost savings of up to 20%.
  - 1.4. Controlled Environment: Factory production offers a controlled environment, which can lead to better quality control and reduce weather-related delays.
  - 1.5. Simultaneous Construction: Site preparation and module fabrication can occur concurrently, further accelerating the project timeline.
  - 1.6. Reduced Labor Needs: On-site assembly requires less labor than traditional construction, which can be beneficial in areas with labor shortages.
  - 1.7. Colorado's Modular Construction Initiatives: Colorado has recognized the benefits of modular construction and is actively supporting its growth through initiatives like the Modular Administrative Program of the Year Award and investments in modular manufacturing.
2. Current data on the permitting and moving costs for traditional modular on-site housing assemblies compared to traditional on-site assemblies using local codes:

Permitting:

2.1 Plan Review - Expect plan review fees of around \$0.10 per square foot.

2.2 Construction permit and inspection fees - Are based on the value of the work, with some jurisdictions using a tiered system.

2.2.a. Specific permit and inspection fees examples:

2.2a 1. Weld County: Fees are calculated based on the valuation of the work, with specific rates for different types of buildings.

2.2a 2. Summit County: Fees are based on the total valuation, with a base fee plus additional charges for each increment of value.

2.2a 3. City of Boulder: Fees are based on the value of the work covered by the permit.

2.2a 4. Remote Business Deposit Fees are based on the valuation, with different rates for different value ranges.

2.2a 5. Portable/Modular Building Fees: In some areas, there are specific fees for portable or modular buildings, such as \$800 for the first unit and \$100 for each additional unit, up to 10 units.

2.3. Moving fees:

2.3.a Transportation: The cost to move a manufactured or modular home can range from \$5,000 to \$8,000 for a single-wide within 50 miles, and \$10,000 to \$13,000 for a double-wide.

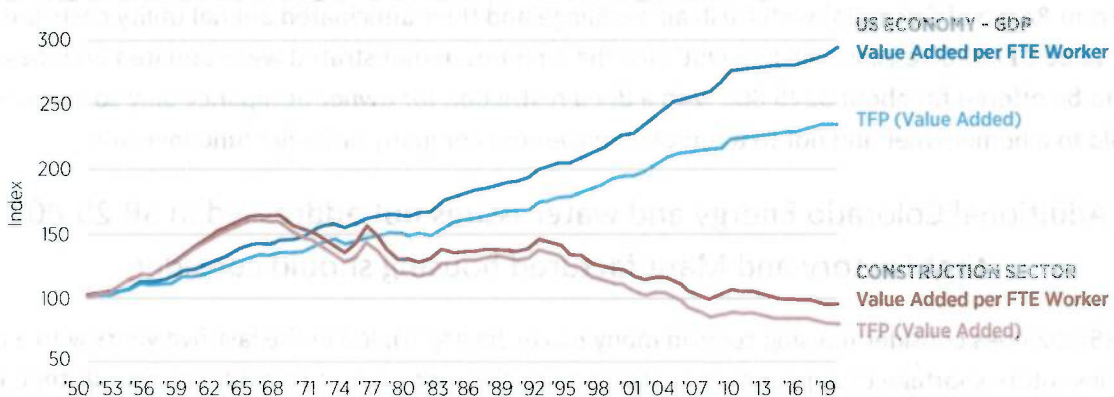
2.3a 1. Variable factors affecting moving fees; Size and Type of Building: Double-wide homes and modular homes, which require more complex moving procedures, will cost more to move.

Current local codes within our State, where they are present, are generally used for traditional on-site stick built housing assemblies.

3. Current data on productivity, quality and water conservation for traditional new stick built on-site building assemblies under local jurisdictions compared to traditional on-site assemblies using State modular codes.

3.1. Productivity – Despite aggregate productivity for the US economy having doubled over the past 50 years, the country’s construction sector has diverged considerably, trending downward throughout that period. And this is no slight decrease. Raw BEA data suggest that the value added per worker in the construction sector was about 40 percent lower in 2020 than in 1970 (see graph below).

Indexes of Value Added Per Full-Time-Equivalent (FTE) Worker and Total Factor Productivity (TFP), Overall US Economy and Construction Sector (BEA Data)



Note: This figure shows indexes of US construction sector labor productivity and total factor productivity (TFP) from 1950 to 2020. For comparison, it also plots the same indexes for the overall economy. Throughout the 1950s and well into the 1960s, both measures of construction sector productivity grew steadily. Indeed, they outpaced their whole-economy counterparts during that period. By 1970, however, the construction sector’s labor productivity and TFP had both begun to fall. This downturn was not temporary; the decline has continued for the past half-century.



3.2. Quality – 66% of new home buyers feel regrets about the home-building process including

3.2.a 26% who wish they had purchased an existing home instead.

3.2.b 89% of buyers deal with premature repairs or maintenance after moving into their new homes.

3.2.b Premature repairs or maintenance with; Security systems 37%; Plumbing 36%; Electrical 36%

3.2.c Since 2019, issues with premature maintenance have increased in nearly every category. Electrical systems issues have increasing by 41% and HVAC systems issues increasing by 38%.

3.2.d 32% of new homebuyers would not recommend their builders or contractors to others.

3.2.e 11% would turn down a financial incentive for referrals and 9% wouldn't recommend their builder under any circumstance.

<https://www.realestatelitch.com/buying-new-construction-home-2022-data/>

3.3 Water – Currently reclaimed water can only be used for toilets, urinals and irrigation.

NSF/ANSI 350 standard is required for the certification of the reclamation system and this certification also provides for commercial clothes washing and other uses that are considered non-potable. *Studying and expanding the use of these systems into residential clothing and dishwashing machines could save an additional 20% of residential water consumption.*

### Current Building Science and Construction data on Structurally Insulated Panel NEW HIGH PERFORMANCE FACTORY MANUFACTURED and SITE BUILT MODULAR HOUSING.

Structurally Insulated Panel home's floors, walls and roof can be manufactured and delivered on-site within weeks from an approved set of plans with all the necessary plumbing and electrical laterals embedded into the panels and with the eaves and exterior siding rain screening already in place. The panel walls can have a vapor open assembly and can exceed passive house air requirements and can be constructed with 70% post-consumer recycling content. Current data indicates that Structurally Insulated Panel (SIP) buildings can have an operational cost of 10 cents per square foot per month. A properly trained SIP installation crew can cut framing time by 55 percent compared to conventional wood framing. [Structurally Insulated Panel Assn](#)

In Birmingham Alabama, Navigate Affordable Housing Partners is manufacturing and finishing 1400 square foot 3 bedroom and two bath Structurally Insulated Panel homes in two weeks. These home's panels are factory manufactured by Extreme Panel Technologies with the plumbing and electrical chase ways precut and marked for a registered installer to rough-in. The building's factory manufactured floor, exterior walls, roof and interior walls are assembled and dried in in one day by 6 registered installers. Their Home Energy Rating System (HERS) testing measures at 42 and they are blow testing at .4 with no need for on site dumpster or commercial trash removal. They are all electric with a single two zone 18,000 BTU heat pump ( Birmingham is two zones warmer than our Front Range of Colorado) with fresh air exchange and their anticipated annual utility costs are estimated to be \$1100.00 a year. The large lot's for the 4 homes demonstrated were donated and these homes are going to be offered for about \$225,000 with a deed restriction for owner occupancy only so these homes will only be sold to a homeowner and not to a rental management company or hedge fund investor.

### Additional Colorado Energy and water issues not addressed in SB 25-002 that Factory and Manufactured housing should consider

While SB 25-002 does consider housing costs in many places having tripled in the last five years with a current statewide inventory shortage of approximately 100,000 housing units, scientific evidence reveals that a major foundation in our energy and growing water shortages comes from our housing inventory's occupancy, materials and energy use of Colorado's traditionally constructed housing. Current methods for the production of new housing accounts for the operational costs for a building's life cycle energy consumption at over 80%.

SB 25-002 should address lifetime energy and water operational costs using energy and water conservation solutions in affordable manufactured housing.

[University of Michigan Center for Sustainable Systems CO2 report on housing 04/2024](#) [Colorado DOLA 4/24/2024 Does Colorado have enough water](#)

#### Housing energy usage:

Colorado households consume more energy than the national average. Approximately one-quarter of Colorado's electricity is used by residential housing annually. Most Colorado households rely primarily on natural gas for heating. The Colorado residential sector is the largest consumer of natural gas, accounting for over one-third of the state's total natural gas demand, making residential housing the primary user of energy in Colorado. [US Energy Information Administration Colorado State Energy Estimates](#)

Today Colorado buildings consume more than 650 trillion British thermal units (Btu) and represent more than \$6,000,000 in energy costs for homes and businesses annually. While Colorado was in the top 10 states for new construction in 2022, the average cost of a home is more than \$600,000. [Colorado Office of Operations Energy Office](#)

#### Housing water usage:

The 2023 Colorado Water Plan estimates that cities and towns use about 380,000 acre-feet of water each year used for drinking, watering parks and green spaces, and running sprinklers and outdoor water use accounts for about 55 percent of the residential water use in urban areas along the Front Range. Cities, towns and industries currently have enough water, but by 2050, they could be short 230,000 acre-feet to 740,000 acre-feet in dry years, according to the 2023 Colorado Water Plan. This potential shortage could equal, or surpass, all current municipal and industrial water use, which hovers around 496,000 acre-feet on average.

**Proposition for Incorporating State Codes into SB 2025-002 to expedite  
NEW HIGH PERFORMANCE FACTORY MANUFACTURED and SITE BUILT MODULAR HOUSING  
using DEPARTMENT OF LOCAL AFFAIRS Division of Housing RESOLUTION NO. 38  
MANUFACTURED HOUSING INSTALLATIONS: 8 CCR 1302-7**

Although there have been many advances in construction science and technologies, most residential homes are timber framed, as was adopted in the early 1600's, and suburban community production homes are still built in subdivisions like Levittown was in 1947 with framing wall and floor systems. Today it's still common to see dozens of sub-contractors and as many materials suppliers driving trucks back and forth daily to the same residential building sites for weeks or months, consuming many thousands of gallons of fuel to construct a single home, adding over 20 pounds of carbon dioxide into our atmosphere with each gallon burned. Stick built homes today are more efficient, but their building materials and construction carbon inputs continue to increase as their quality and longevity have significantly declined.

In order to "address the shortage and costs of housing by enacting regional standards for factory-built structures, *rather than standards related to a specific address* which will increase the supply of housing and lower housing costs by lowering construction costs and encouraging partners to take advantage of the economies of scale afforded through factory-built construction", the SB 2025-002 Advisory Committee should consider issues with our current state rules and local codes for manufactured modular housing and modular on-site housing construction including *their current up front construction and long term operational costs* in order to create a better set of codes that could save and redirect current building costs towards affordable high performance structures that would fully realize both the intentions of SP 2025-002 and of our People's Governor in our 2025 State of the State address where Governor Jared Polis specified "We aim to do more, to do better, for more people to climb higher, to improve our standard of living. To keep communities cleaner and safer, to increase access to housing that Coloradans can actually afford and to offer the jobs, careers and businesses that we want, we need, we deserve, to protect our wild spaces. To help every student thrive — right here, right now. No excuses."

I would respectfully submit that in order to consider the de-balkanization and rationalization of our local on-site building codes and the potential speed of construction and savings that could be realized and incorporated into additional cost saving features for NEW HIGH PERFORMANCE FACTORY and SITE BUILT MODULAR HOUSING under DEPARTMENT OF LOCAL AFFAIRS Division of Housing RESOLUTION NO. 38 "MANUFACTURED HOUSING INSTALLATIONS: 8 CCR 1302-7" that would not be a standard to a specific address, I respectfully offer the following additional two amendments to SENATE BILL 25-002 on page 13 in bold italic with the strikeouts highlighted in yellow be considered as follows:

- 1       IN THIS SUBSECTION (3)(b)(I.5), "RESTRICTIVE STANDARDS" MEANS
- 2       ZONING REGULATIONS, SUBDIVISION REGULATIONS, AND ANY OTHER
- 3       REGULATION AFFECTING DEVELOPMENT, INCLUDING STANDARDS RELATED
- 4       TO:
- 5       (A) HOME SIZE OR SECTIONAL REQUIREMENTS;
- 6       (B) IMPROVEMENT LOCATION;
- 7       (C) MINIMUM FLOOR SPACE;
- 8       (D) PERMANENT FOUNDATIONS;
- 9       (E) SETBACK STANDARDS; AND
- 10      (F) SIDE-YARD STANDARDS.
- 11      (II) Nothing in this subsection (3) ~~shall prevent~~ PREVENTS a
- 12      county from enacting any zoning, developmental, use, aesthetic, or
- 13      historical standard, including, but not limited to, requirements relating to
- 14      permanent foundations, minimum floor space, unit size or sectional
- 15      requirements, and improvement location, side yard, and setback standards
- 16      to the extent that such standards or requirements are applicable to existing
- 17      HOUSING OR STRUCTURES or new SITE-BUILT housing within the specific
- 18      use district of the county.
- 19      (III) Nothing in this subsection (3) ~~shall preclude~~ PRECLUDES any
- 20      county from enacting county building code provisions for unique public
- 21      safety requirements such as snow load roof, wind shear, WILDFIRE RISK,
- 22      "water" and energy conservation factors, ~~unless "to" the home is~~ IT IS A
- 23      FACTORY-BUILT STRUCTURE certified by the division of housing created
- 24      in section 24-32-704 or a party authorized to act on its behalf ~~or~~ "unless it is" A
- 25      MANUFACTURED HOME CERTIFIED BY the United States department of
- 26      housing and urban development through its office of manufactured
- 27      housing programs, a successor agency, or a party authorized to act on its