

## Proposed Title, Scope and Structure of New Committee on Tiny Houses

### TITLE: Committee E\_\_ on Tiny Houses

#### SCOPE:

The focus of this committee is the development and maintenance of voluntary consensus standards for tiny houses, with attention to safety, quality, uniformity, reliability, consumer confidence, and ethical business practices, including, but not limited to, best building practices, test methods, certification, a global quality assurance program, requirements and auditing of 3rd parties that provide plan review and inspect tiny houses, tiny house community developments, micro-grid utilities, and minimum construction requirements. The work of this committee will be coordinated with other ASTM technical committees and other national and international organizations having mutual or related interests.

#### STRUCTURE:

##### E\_.01- Tiny Houses on Wheels

- a) Tiny House on Wheels: life, health, fire, road safety, incorporating seismic, thermal, wind, and roof load requirements
- b) Tiny House Chassis: Design, engineering, fabrication, road safety, registration, and state and federal regulations
- c) Sprinkler Systems for Tiny Houses

##### E\_.02- Tiny Houses on a Foundation a)

- Minimum design and building specifications b)
- Structural safety practices
- c) Transport and siting of the house d)
- Permanent foundations: including, but not limited to perimeter foundations, pier foundations, drilled piers, or a concrete slab
- e) Removable foundation standard: including, but not limited to, tie-downs, pier foundations, ground screws, and skids

##### E\_.03- Certification

- a) Minimum requirement for manufacturing facilities
- b) Minimum requirement for a manufacturer for plan review and Inspections
- c) Referencing ASTM E541 for the personnel requirements of 3rd party agencies that provide plan review and inspect tiny houses
- d) Minimum requirements for 3rd party agencies that provide plan review and inspect tiny houses
- e) Minimum requirements for a 3rd party agency to be audited or accredited
- f) Certification path for the DIYer (Owner Built Tiny House)
- g) Global Quality Control Assurance Program

##### E\_.04- Tiny House Communities

Adaptable Community Codes and Standards (ACCS): Referencing codes and standards to establish protocols to protect lives and property in the development of multiple tiny houses in community developments, relevant to both tiny houses on a foundation and on wheels.

##### E\_.05- Micro-Grid Utilities

Micro-Grid Utilities standards are companion standards to tiny house community standards for the creation of unique "Pocket Neighborhoods" that interconnect tiny houses with shared utilities, localizing the distribution of water, electricity, heating, cooling, and bio-waste on site.

#### Initial Justification for Creating a New Committee on Tiny Houses

## **All Across the World There Is a Global Debate. Is a Tiny House on Wheels a Vehicle or a Building?**

A tiny house on wheels can be either or both, it is a hybrid. The ASTM Tiny House Standards Committee will devise procedures that will not only satisfy the regulations and requirements for road safety but can meet the foundation requirements that a jurisdiction may stipulate for full-time living with the added benefit of being mobile, permanent, and mobile again for tiny houses on wheels.

### **Tiny Houses Are Lacking Unified Industry Standards**

At this time, there is not one unified industry standard that is recognized for tiny houses on a foundation or on wheels and each country, district, province, state, jurisdiction, consumer, bank, insurance agency, builder, etc... could have a different definition and criteria to deny or allow them.

In the US, most builders are building tiny houses on wheels to the NFPA 1192 Standard or the Park Model Standard, ANSI 119.5 for the ability to have them certified and registered, obtain a Vin number and a title.

Building tiny houses to RV standards is now seen as a threat by the Recreational Vehicle Industry and they are now lobbying against the tiny house industry to create a clear separation from temporary use that RVs are intended for and permanent living that tiny houses are built primarily for.

In Australia, tiny houses on wheels are considered caravans, which does not generally allow for permanent living.

In Canada, The National Building Code has declined to incorporate tiny houses on wheels and CSA standards do not allow for permanent occupancy.

In China, tiny houses on are required to be inspected and certified, but their certification is not honored in the exported countries, causing an unnecessary duplication of inspection and extra engineering and architectural fees, which is a similar issue with most countries.

In New Zealand, there have been many court cases debating the confusion over whether a tiny house on wheels is a vehicle or a building and each district has an inconsistent approach between councils and local authorities.

Globally, we share common challenges for the allowance of tiny houses. Defining tiny houses and developing standards with ASTM that are unique to the tiny house industry will eliminate the barriers that tiny houses are facing and will establish uniformity and the universal acceptance that tiny houses are a viable housing solution.

*This will also close the gaps of the grey areas and the unchecked loopholes that plague the tiny house industry at this time because of a lack of standards.*

Tiny Houses Have Attracted a Grassroots Movement of Small Manufacturers, DIYers (Owner Built) And Passionate Advocates.

It has been estimated that there are between 500-1000 small manufacturers across the United States, and double that globally. To organize these companies and advocate for the burgeoning industry, numerous associations have formed across the globe to lobby for changes in legislation and zoning to legalize tiny houses as a viable solution for affordable and attainable housing. There are think tanks, affordable housing

summits, festivals and meeting after meeting is occurring, all with the goal to create more legal places for tiny houses to be approved.

However, we all come back from these meetings slightly empty handed, because of our lack of uniformity.

### **The Missing Link Globally Is Uniform Industry Standards**

#### *The Lack of Industry Standards for Tiny Houses is Contributing to:*

- Creates Confusion-Adds Mountains of Red Tape
- Affordable Housing Solutions Are Delayed
- We Are Lobbied Against by The RV Industry for Co-opting RV Standards
- Lack of Financing
- Not included In Mainstream Insurance
- Lack of Recognition as An Appreciating Asset
- Homeowners Are Being Evicted
- Some Manufacturers Make Up Their Own Standards or Partially Adopt Other Standards •
- Misinformation Flourishes That Cannot Be Fact Checked
- Lack Of Legal Places to Live
- People Live Illegally Under the Radar
- Not A Clear Path of How Tiny Houses Should Be Built
- Unsafe Building Practices
- Breeding Ground for Unethical Practices: Manufacturers Have Neither Building nor Business Standards
- Duplicate Certification When Exporting Internationally
- International Manufacturers Are Uncertain of How to Meet All the Different Demands in Various Countries
- Regulatory Bodies Are Flooded with Inquiries They Are Unable to Answer
- Adds Extra Costs for Engineering and Architectural Fees
- No uniformity in zoning to where tiny houses are allowed
- Ambiguous certification, standards and inspection practices, or no oversight, inspection and certification at all

#### **Organization of a New Main Committee on Tiny Houses:**

**Membership:** Tiny houses are a worldwide phenomenon, sharing a common solution to address the housing crisis on a global scale. Just in the exploratory phase with ASTM, we have attracted five of the leading global 3rd party agencies in the world with 30 to 45 years expertise in testing, inspection, certification, plan review, and standards development.

The tiny house committee will include tiny house organizations, advocates, architects, engineers, builders, end-users, lenders, appraisers, planners, government regulators, material manufacturers, community developers, environmental and sustainability specialists, experts in fire safety, air quality and more, and we predict a robust and enthusiastic participation.

**Meeting Strategy:** Since the tiny house industry has a large global footprint, it is likely that meetings will take place in different countries in Europe, North America, Oceania, and Asia as well as at ASTM Committee Weeks, in addition to bi-monthly task group meetings.

## **Additional Purposes of a New ASTM Tiny House Standards Committee**

- Additional functions that may advance, improve, standardize, unify such standards, including implementing the standards in contracts, ordinances, legislation, model acts, and assist ASTM committees
- We have enthusiastic grassroots advocates that will introduce our new voluntary standards for adoption.
- We have the much-needed stakeholders to join the E36-Accreditation and certification committee. We have asked for the reinstatement of ASTM E541. It will be crucial for the requirements of 3rd party agencies that provide plan review and inspect tiny houses.
- Support jurisdictions, government officials, nonprofits, and various organizations through education, webinars, white papers, and sample ordinances.
- Initiate an ASTM cross-committee collaboration initiative to create a Visual Climate Construction Global Map with all seismic, thermal, wind, roof loads for requirements in differing geographical regions.
- Introduce the tiny house industry stakeholders to SEI, a subsidiary Of ASTM for certification and accreditation of their products and services.
- We will promote a common language between countries, consumers, regulatory, bodies, jurisdictions, manufacturers, organizations, and government officials.

## **Collaboration With Other ASTM Committees**

**E05**-Fire Standards

**E06**-Performance of Buildings

**E36**-Accreditation and certification

**E-37**-Thermal Measurements

**E-44**-Solar, Geothermal, And Other Alternative Energy Resources

**E-57**-3D Imaging Systems

**E-60**-Sustainability

**F-17**-Plastic Pipe Systems

**F-36**-Technology and underground utilities

*We Envision a World Where Legislators, Building Code Officials, Builders and Consumers No Longer Have to Weave the Mass Confusion of Conflicting Codes and Standards for Tiny Houses.*

In collaboration with ASTM, tiny house standards will profoundly change the future and will open the flood gates for affordable and attainable housing and will broaden the dream of homeownership.

The tiny house industry shares the mission of ASTM to promote public health and safety, support the

protection and sustainability of the environment, and the overall quality of life, contributing to the reliability of material products, systems, services and to facilitate international, regional, and national commerce.

We thank ASTM for the opportunity and for your consideration to grant a new committee for tiny houses.

## **APPENDIX A – Committee E\_ On Tiny Houses: Subcommittee Details and Justification**

### **E\_.01- Tiny Houses on Wheels**

- a) *Tiny House on Wheels*: The tiny house on wheels standard will address all life, health, fire, road safety, and regulations, incorporating seismic, thermal, wind, and roof load requirements and regulations, utilizing zone maps to address differing climates in geographical regions. The zones will apply to where the house is sited, (*Not the Location Where It Is Built*).

The subcommittee will define a tiny house on wheels. Possibly referencing NFPA 1192, ANSI 11.95, Appendix Q Tiny House, and The Tiny House Construction Guide developed by the Australian Tiny House Association, as well as additional building and construction standards as needed (IRC, IBC, IPC, IMC, IEEC, etc.)

- b) *Tiny House Chassis*: Design, engineering, fabrication, road safety, registration.  
*Possible Referencing of Related Standards.*

*SAE - The Society of Automotive Engineers - There are several standards available on VINs and WMIs:*

- SAE - J218 - Passenger Car Identification Terminology
- SAE - J272 - Vehicle Identification Number Systems
- SAE - J853 - Vehicle Identification Numbers
- SAE - J1044 - World Manufacturer Identifier
- SAE - J1229 - Truck Identification Terminology
- SAE - J1877 - Recommended Practice for Bar-Coded Vehicle Identification Number Label -
- SAE - J2750 - Assigned Identification Number Structure and Usage for North American Vehicles/ Watercraft Other than Certified to Federal Regulations
  
- ISO 3779 - Road Vehicles - Vehicle Identification Number (VIN) Content
- ISO 3780 - Road Vehicles - World Manufacturer Identifier (WMI) Code

- c) *Sprinkler Systems for Tiny Houses*: Referencing NFPA 13D with the possibility of referencing ASTM F876 and ASTM F877.

### **E\_.02- Tiny Houses on a Foundation:**

Tiny houses on a foundation standard will possibly reference Appendix Q Tiny House and The Tiny House Construction Guide Developed by The Australian Tiny House Association as the beginning basis of the standard. The committee will define a tiny house on a foundation.

- a) Minimum design and building specifications and structurally safe practices in all phases of construction
- b) Transport and siting of the house
- c) *Permanent foundations*: Foundations for tiny houses that are structurally attached, including, but not limited to, perimeter foundations, pier foundations, drilled piers, or concrete slab. d) *Removable foundation standard*: Applying to transportable relocatable structures: A foundation that could be removable that include, but are not limited to, tie-downs, pier foundations, ground screws, and skids.

### *Removable Foundations Can Also Be Applicable to Tiny Houses on Wheels*

*The standard could also be applicable to **tiny houses on wheels** that could satisfy both road regulations and safety, and the building department requirement if the jurisdiction requires a foundation for permanent living, allowing a tiny house on wheels to be mobile, permanent, and to be mobile again for relocation purposes and for disaster relief to escape fires, floods, and all-natural disasters.*

#### **E\_.03 - Certification:**

- a) Minimum requirement for manufacturing facilities
- b) Minimum requirements for a manufacturer for plan review and inspection
- c) Referencing ASTM E541 for the minimum personnel requirements of 3rd party agencies that provide plan review and inspect tiny houses
- d) Minimum requirements for 3rd party agencies that provide plan review and inspect tiny houses
- e) Minimum requirements for a 3rd party agency to be audited or accredited
- f) Certification path for the DIYer (Owner Built Tiny House)
- g) Global Quality Control Assurance Program Standard

#### Unifying All the ASTM Tiny House Standards

A global quality control assurance program standard will be the key to unifying all the ASTM Tiny House Standards that the Committee develops, creating conformity without borders, standardizing the process from start to finish.

Developing a global quality control assurance manual will be a suggested requirement for all new builders and manufacturers that will be approved by a 3rd party agency that provides plan review and inspects tiny houses. This will result in the integration of the voluntary procedures for the manufacturer, 3rd party agencies, authorities having jurisdiction for approval and adoption, regulatory bodies, and for consumer confidence and safety.

#### **E\_.04- Tiny House Communities**

The subcommittee will establish a set of Adaptable Community Codes and Standards (ACCS) which will reference a blended set of existing tiny house building codes and standards (both on foundations and on wheels), local construction and zoning requirements, and health and safety best practices, for tiny house Communities of Interest (COI) ranging in size from, but not limited to, 5 to 30 tiny houses.

It is envisioned that this new “ACCS Standard” will accommodate multiple tiny houses to be placed into single or multi-family zoning in most municipalities and rural communities as well as to be able to be upgraded to exist in specialized Community of Interest (COI) Housing Developments. This new standard will support private land-owner leasing of “spaces” to tiny house owners or renting out privately owned tiny houses on their property for both short-term (VRBO) rentals as well as month-to-month, and term rentals as an affordable housing solution.

The standards will establish appropriate protocols to protect lives and property with the possible referencing of NFPA 1194, NFPA 1144, NFPA 501, NFPA 501A, and NFPA 5000.

The ACCS Standard will be the basis of a Model Act to present to authorities having jurisdiction to establish acceptance and uniformity.

#### **E\_.05- Micro-Grid Utilities**

Micro-Grid Utilities standards are companion standards to tiny house community standards for the creation of unique “Pocket Neighborhoods” that interconnect tiny houses with shared utilities, localizing the distribution of water, electricity, heating, cooling, and bio-waste on site.

Micro-Grids have been identified as a key component of the Smart Grid for improving power reliability and quality, increasing system energy efficiency, and providing the possibility of grid independence to individual and user sites.

#### **APPENDIX B – Initial Standards**

- Tiny houses on wheels
- Tiny house chassis
- Sprinkler System for tiny houses
- Tiny houses on a foundation
- Foundations for tiny houses
- Global Quality Control Assurance Program for Tiny House Builder and Manufacturers
- Certification requirements
- Standards for our stakeholders that have tiny house related products
- Standard for tiny house communities
- Standard for Micro-Grid Utilities

*The Future of Affordable Housing Will Be the Shared Cost of Infrastructure*

#### **Potential Additional Standards**

- a) A Universal Standard in-compliance with The Fair Housing Act and Global Accessibility For The Disabled And For The Elderly Aging In Place Promoting Multi-generational living applied to tiny houses.
- b) 3D Printed Tiny House
- c) Duplex And Triplex
- d) Van, Truck, or Bus Conversion

#### **APPENDIX C – Supportive Organizations**

- Tiny House Alliance USA
- Australian Tiny House Association
- Tiny Home Alliance Canada
- United Tiny House Association
- Washington Tiny House Association
- New Zealand Tiny House Association
- Life Size Tiny Communities
- Straightforward Communications
- Ensemble Ventures LLC
- Levini Law
- IBTS

- PFS TECO
- RADCO
- T.R. Arnold
- Intertek
- NFPA *has committed to assisting us with standards when our committee is approved*
- Liberty Bank of Utah
- PPI: The Plastic Pipes Institute
- Tiny Towns Com Au
- Piedmont Green
- Electric Power Research Institute
- Safe Room Designs
- Wind River Homes
- Utopian Villas
- Decathlon Tiny Homes
- Incredible Tiny Homes
- Construction Coach
- Sunshine Tiny Homes
- Carriage Houses NW
- PSE Consulting Engineers
- Partnerships For Developments
- BC Tiny House Collective
- Hoover & Co.
- Seattle Tiny Homes
- Pins Foundation
- PSM LLC
- Wolf Industries
- Stopdigging Ground Screws
- Jet Stream Innovations
- Tiny House Developers
- American Tiny House
- TSTUD Engineered Wood
- NOAH (National Organization of Alternative Housing)
  - Tiny Building Experts •
  - NYU Designs and Digz2Go •
  - Tiny House USA
  - Davis Tiny Homes
  - ARVC