

<p style="text-align: center;"><b>DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT</b> Housing - Federal Housing Commissioner</p> <p><b>TO: DIRECTORS, SINGLE FAMILY HOCs</b> <b>DIRECTORS, MULTIFAMILY HUBs</b></p>	<p><b>STRUCTURAL ENGINEERING BULLETIN NO. 789 Rev. 10</b> (Supersedes issue dated July 25, 2006)</p>				
	<p><b>ISSUE DATE</b> August 13, 2015</p>				
	<p><b>REVIEW DATE</b> August 13, 2018</p>				
<p><b>SUBJECT:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; vertical-align: top;"><b>1. Item Description</b></td> <td>Shop Fabricated Wood Frame Modular Dwelling Units</td> </tr> <tr> <td style="vertical-align: top;"><b>2. Name and address of Manufacturer</b></td> <td>New England Homes by Preferred Building Systems 143 Twistback Road Claremont, NH 03743</td> </tr> </table>		<b>1. Item Description</b>	Shop Fabricated Wood Frame Modular Dwelling Units	<b>2. Name and address of Manufacturer</b>	New England Homes by Preferred Building Systems 143 Twistback Road Claremont, NH 03743
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This Structural Engineering Bulletin (SEB) should be filed with other SEBs and related Bulletins on materials or products as required by prescribed procedures.

The technical description, requirements and limitations expressed herein do not constitute an endorsement or approval by the Department of Housing and Urban Development (HUD) of the subject matter, and any statement or representation, however made, indicating approval or endorsement by HUD is unauthorized and false, and will be considered a violation of the United States Criminal Code, 18 U.S.C. 709.

**NOTICE: THIS BULLETIN APPLIES TO DWELLING UNITS BUILT UNDER HUD HOUSING PROGRAMS. NON-HUD-INSURED UNITS MAY OR MAY NOT BE IN CONFORMITY WITH THE REQUIREMENTS OF THE HUD MINIMUM PROPERTY STANDARDS.**

Any reproduction of this Bulletin must be in its entirety and any use of all or any part of this Bulletin in sales promotion or advertising is prohibited.

1. GENERAL:

This Bulletin sets forth specific requirements under the Technical Suitability of Products Program for determining the eligibility of housing to be constructed under HUD mortgage insurance, or other HUD housing programs.

2. SCOPE:

This Bulletin applies only to the structural features of this method of construction. Final determination of eligibility is made by the appropriate HUD Field Office or Homeownership Center. Other factors considered by the HUD Field Office or Homeownership Center will be valuation, location, architectural planning and appeal, mechanical equipment, thermal characteristics, and market acceptance. Consideration is also necessary to determine whether a specific property will qualify under the specific HUD program, when constructed according to the method outlined in this Bulletin, and where the structure is to be located.

In geographical areas subject to hurricanes, earthquakes, or other severe conditions affecting dwelling structures, the HUD Field Office or Homeownership Center shall require additional safeguards in proposed designs, when necessary.

3. MINIMUM PROPERTY STANDARDS (MPS):

Compliance with HUD MPS will be determined by the HUD Field Office or Homeownership Center on the same basis as submissions involving conventional construction, except for the special features described in this Bulletin.

4. FIELD INSPECTION:

Field compliance inspections covering conventional items of construction and any special features covered in this Bulletin shall be made in accordance with prescribed procedures.

The appropriate HUD Field Office or Homeownership Center shall furnish a copy of a HUD field inspection report to Headquarters, Office of Manufactured Housing Programs, when there is:

- a. Evidence of noncompliance with any portion of the system of construction described in this Bulletin.
- b. Faulty shop fabrication, including significant surface defects.
- c. Damage to shop fabricated items or materials due to improper transportation, storage, handling, or assembly.
- d. Unsatisfactory field workmanship or performance of the product or system.
- e. Any significant degradation or deterioration of the product or evidence of lack of durability or performance.

Periodic plant inspections will be made by HUD designated representatives in accordance with their prescribed procedures. Factory inspection reports shall be submitted to HUD Headquarters, upon request.

5. CERTIFICATION:

The manufacturer named in this Bulletin shall furnish the builder with written certification stating that the product has been manufactured in compliance with the HUD Minimum Property Standards (MPS), except as modified by this Bulletin. The builder shall endorse the certification with a statement that the product has been erected in compliance with HUD MPS except as modified by this Bulletin, and that the manufacturer's certification does not relieve the builder, in any way, of the responsibility under the terms of the Builder's Warranty required by the National

Housing Act, or under any provisions applicable to any other housing program. This certification shall be furnished to the HUD Field Office or Homeownership Center upon completion of the property.

## OUTLINE DESCRIPTION, CATEGORY I CONSTRUCTION

### GENERAL:

Completely shop fabricated wood frame modular dwelling units, from 11, 12, 13, 14, 15, 16, feet wide and up to 64 feet in length, are furnished in this method of construction. Units are factory finished on both the interior and the exterior. Units are transported to the building site, where they are set on conventional foundations and joined together.

Construction is basically of conventional wood framing which may include various types of interior and exterior finish materials. All materials and methods of installation shall be in accordance with HUD Minimum Property Standards, Use of Materials Bulletins (UM) and Materials Releases (MR), except as may be specifically noted herein. Plumbing, heating and electrical systems are shop installed and field connected.

This Bulletin is based on a structural review of the Two-and Three-Bedroom models of the New England Homes by Preferred Building Systems (the Manufacturer), but may be considered applicable to all structurally similar units of this company. Foundation design and nonstructural items (such as architectural, plumbing, heating and electrical features) are not covered by this Bulletin.

### SPECIFICATIONS:

Form HUD-92005, "Description of Materials" specifying only the structurally related items (Nos. 1 to 12, 14, 26 and 27), as originally submitted for technical suitability determination, describes the materials that shall be used in construction of housing units under this system of construction. Form HUD-92005, furnished with each application for use under HUD housing programs, shall include as a minimum the same structural materials.

### DRAWINGS:

The following drawings by New England Homes, Inc. shall be considered an integral part of this Bulletin:

<u>Drawing No.</u>	<u>Date</u>	<u>Release Code</u>	<u>Description</u>
E	1988	(88.3)	Elevations Cover Sheet
E.01.RA	1988	(88.2)	Ranch Style Elevation
E.01.RR	1988	(88.2)	Raised Ranch Style Elevation
E.01.CA	1988	(88.3)	Cape Style Elevation
E.01.FF	1988	(88.2)	Flush Front Style Colonial Elevation
E.01.GA	1988	(88.2)	Garrison Front Colonial Style Elevation

<u>Drawing No.</u>	<u>Date</u>	<u>Release Code</u>	<u>Description</u>
S	1988	(88.4)	Sections Cover Sheet
S.01.A	2009	(09.1)	28' Wide Ranch, 6/12P Roof
S.01.B	2009	(09.1)	28' Wide Raised Ranch, 6/12P Roof
S.01.C	2009	(09.1)	28' Wide Colonial, 6/12P Roof
S.01.D	2009	(09.1)	28' Wide Cape, 12/12P Roof
S.01.H	2009	(09.1)	28' Wide Component Cape with 12/12P Front & 5.5/12P Rear Shed Dormer
F	1988	(88.4)	Foundation Cover Sheet
F.01	1988	(88.1)	Typical Foundation
F.02	1988	(88.0)	Foundation Details
C4	1988	(88.6)	Stair Components Cover Sheet
C4.01.1 & .03.1	1988	(88.2)	28' Wide Ranch Stair, 8-1/4 "R/9"T
C4.04.1	1990	(90.2)	28' Wide Ranch Stair, 8-1/4 "R/9"T
C4.05.1	1988	(88.2)	28' Wide Ranch Stair, 8-1/4 "R/9"T
C.25.1	1988	(88.2)	28' Wide Split Entry Stair, 8-1/4 "R/9"T
C4.41.4	1990	(90.2)	28' Wide Cape Stair, 8-1/4 "R/9"T
C4.65.4	1988	(88.2)	28' Wide Colonial Stair, 8-1/4 "R/9
C5	1988	(88.5)	Floor Systems Cover Sheet
C5.01	1988	(88.3)	First Floor Deck Framing
C5.02	1988	(88.2)	Second Floor Deck Framing
C5.03	1988	(88.3)	Girt Design and Loading
C6	1988	(88.6)	Wall Systems Cover Sheet
C6.01.01	1988	(88.1)	Front & Rear Wall Framing Layouts
C6.02.01	1988	(88.1)	Marriage Wall Framing Layouts
C6.03.01	1988	(88.1)	Gable Endwall Framing Layouts
C6.04.01	1988	(88.1)	Stubwall Framing Layouts
C6.05.01	1988	(88.1)	Interior Partition Framing Layouts
C7	1988	(88.3)	Ceiling Systems Cover Sheet
C7.01	1988	(88.2)	Ceiling Framing Layout
C7.02	1988	(88.2)	Combination Second Floor/Ceiling Layout
R	1988	(88.10)	Roof Systems Cover Sheet
R0.01.03	1990	(90.0)	Roof Details
R0.01.04	1990	(90.0)	Roof Details
R4.44.89	1991	(91.2)	14' Wide 12/12P Pinned Rafter
CS 140140	2002	(02.2)	14'Wide Component Shed Dormer Truss
R5.44.39NH	2002	(02.4)	14' Wide 5/12P Truss
R5.44.46NH	2002	(02.4)	14' Wide 6/12P Truss
R5.44.59NH	2003	(03.4)	14' Wide 8/12P Truss

<u>Drawing No.</u>	<u>Date</u>	<u>Release Code</u>	<u>Description</u>
A	1988	(88.9)	Schedules Cover Sheet
A1.01	1988	(88.3)	Framing Schedules and Details
A1.02	1988	(88.1)	Framing Schedules and Information
A2.01	1988	(88.2)	Exterior Wall Header Schedule and Details
A2.02	1988	(88.3)	Marriage Wall Header Schedule & Detail
A2.03	1999	(99.0)	Jack Stud Quantity Charts
A9.01	1988	(88.5)	Fastening Schedule
A9.02	1988	(88.2)	Sheathing, Gypsum Board and Miscellaneous Fastening
A9.03	1988	(88.3)	Polyurethane Adhesive (Gypsum Board-to- Ceiling Framing Attachment)
A9.04	1990	(90.3)	Roof Covering, Siding & Trim Fastening Schedules

The Builder shall submit construction drawings to the HUD Field Office or Homeownership Center with each application under HUD housing programs, which shall include the same or similar structural features as shown on the drawings listed above. Copies of these listed drawings shall also be furnished to the HUD Field Office or Homeownership Center by the Builder upon request.

#### DESIGN AND CONSTRUCTION REQUIREMENTS:

Design Loads: The method described in this Bulletin is based on maximum design loads of 50, 90, or 120 psf for snow, Seismic Zone 2 and a Basic Wind Speed of 100 mph and Exposure B (American Society of Civil Engineers Standard 7-88). The Builder shall submit structural calculations to the HOC if housing units are to be located in geographical areas where these conditions are exceeded.

Framing of Loadbearing Walls: Wood-to-wood connections shall be provided between bearing walls and roof/ceiling or floor construction. Floor covering, including carpeting and vinyl tile, shall not be continued under loadbearing walls.

Roof Construction: Trussed rafters shall be designed and constructed in accordance with ANSI/TPI 1-1995 Standard (American National Standards Institute and Truss Plate Institute), "National Design Standard for Metal Plate Connected Wood Truss Construction."

#### MANUFACTURING PLANT:

Housing units covered under this Bulletin will be produced in the following plant:

Preferred Building Systems  
143 Twistback Road  
Claremont, NH 03743  
Tel.: (603) 372-1050

The State of New Hampshire will inspect this plant in accordance with their prescribed procedures.

### QUALITY CONTROL:

The State of New Hampshire in whose jurisdiction the manufacturing plant is located reviews and approves plant fabrication procedures and quality control program. The quality control program includes field erection and supervision by Preferred Building Systems.

### RECORD OF PROPERTIES:

The manufacturer shall provide a list of the first ten properties in which the component or system described in this Bulletin is used. The list shall include the complete address, or description of location, and approximate date of installation or erection. Failure of the manufacturer to provide HUD with the above information may result in cancellation of this Bulletin.

### NOTICE OF CHANGES:

The manufacturer shall inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or materials used in this product. Further, HUD must be informed of any revision to corporate structure, change of address or change in name or affiliation of the prime manufacturer. Failure of the manufacturer to notify HUD of any of the above changes may result in cancellation of this Bulletin.

### EVALUATION:

This SEB shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this SEB shall apply for a renewal or revision 90 days prior to the Review Date printed on this SEB. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development  
Office of Manufactured Housing Programs  
451 7<sup>th</sup> Street SW, Room 9168  
Washington, DC 20410-8000

Appropriate User Fee shall be sent to:

U. S. Department of Housing and Urban Development  
Miscellaneous Income – Technical Suitability of Products Fees  
Bank of America  
P. O. Box 198762  
Atlanta, GA 30384-8762

The holder of this SEB may apply for revision at any time prior to the Review Date. Minor revisions may be in the form of a supplement.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program", and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the SEB. HUD will notify the manufacturer that the SEB may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,
2. the manufacturer has changed its organizational form without notifying HUD, or
3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the SEB should not be canceled. No refund of fees will be made on a canceled document.

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This Structural Engineering Bulletin is issued solely for the captioned firm and is not transferable to any person or successor entity.  
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