§ 3280.816 Examination of equipment for safety.

The examination or inspection of equipment for safety, according to this standard, shall be conducted under uniform conditions and by organizations properly equipped and qualified for experimental testing, inspections of the run of goods at factories, and service-value determinations through field examinations.

Subpart J—Transportation

§ 3280.901 Scope.

Subpart J of this standard covers the general requirement for designing the structure of the manufactured home to fully withstand the adverse effects of transportation shock and vibration without degradation of the integrated structure or of its component parts and the specific requirements pertaining to the transportation system and its relationship to the structure.

§ 3280.902 Definitions.

(a) Chassis means the entire transportation system comprising the following subsystems: drawbar and coupling mechanism, frame, running gear assembly, and lights.

(b) Drawbar and coupling mechanism means the rigid assembly, (usually an A frame) upon which is mounted a coupling mechanism, which connects the manufactured home’s frame to the towing vehicle.

(c) Frame means the fabricated rigid substructure which provides considerable support to the affixed manufactured home structure both during transport and on-site; and also provides a platform for securement of the running gear assembly, the drawbar and coupling mechanism.

(d) Running gear assembly means the subsystem consisting of suspension springs, axles, bearings, wheels, hubs, tires, and brakes, with their related hardware.

(e) Lights means those safety lights and associated wiring required by applicable U.S. Department of Transportation regulations.

(f) Transportation system, (Same as chassis, above).

(g) Highway, includes all roads and streets to be legally used in transporting the manufactured home.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 47 FR 28093, June 29, 1982]

§ 3280.903 General requirements for designing the structure to withstand transportation shock and vibration.

(a) The cumulative effect of highway transportation shock and vibration upon a manufactured home structure may result in incremental degradation of its designed performance in terms of providing a safe, healthy and durable dwelling. Therefore, the manufactured home shall be designed, in terms of its structural, plumbing, mechanical and electrical systems, to fully withstand such transportation forces during its intended life. (See §§ 3280.303(c) and 3280.305(a)).

(b) Particular attention shall be given to maintaining watertight integrity and conserving energy by ensuring that structural components in the roof and walls (and their interfaces with vents, windows, doors, etc.) are capable of resisting highway shock and vibration forces during primary and subsequent secondary transportation moves.
(c) In place of an engineering analysis, either of the following may be accepted:

1. Documented technical data of suitable highway tests which were conducted to simulate transportation loads and conditions; or
2. Acceptable documented evidence of actual transportation experience which meets the intent of this subpart.

§ 3280.904 Specific requirements for designing the transportation system.

(a) General. The entire system (frame, drawbar and coupling mechanism, running gear assembly, and lights) shall be designed and constructed as an integrated, balanced and durable unit which is safe and suitable for its specified use during the intended life of the manufactured home. In operation, the transportation system (supporting the manufactured home structure and its contents) shall effectively respond to the control of the braking, while traveling at applicable towing vehicle in terms of tracking and highway speeds and in normal highway traffic conditions.

NOTE: While the majority of manufactured homes utilize a fabricated steel frame assembly, upon which the manufactured home structure is constructed, it is not the intent of this standard to limit innovation. Therefore, other concepts, such as integrating the frame function into the manufactured home structure, are acceptable provided that such design meets the intent and requirements of this part.

(b) Specific requirements—(1) Drawbar. The drawbar shall be constructed of sufficient strength, rigidity and durability to safely withstand those dynamic forces experienced during highway transportation. It shall be securely fastened to the manufactured home frame by either a continuous weld or by bolting.

(2) Coupling mechanism. The coupling mechanism (which is usually of the socket type) shall be securely fastened to the drawbar in such a manner as to assure safe and effective transfer of the maximum loads, including dynamic loads, between the manufactured home structure and the hitch-assembly of the towing vehicle. The coupling shall be equipped with a manually operated mechanism so adapted as to prevent disengagement of the unit while in operation. The coupling shall be so designed that it can be disconnected regardless of the angle of the manufactured home to the towing vehicle. With the manufactured home parked on level ground, the center of the socket of the coupler shall not be less than 20 inches nor more than 26 inches from ground level.

(3) Chassis. The chassis, in conjunction with the manufactured home structure, shall be designed and constructed to effectively sustain the designed loads consisting of the dead load plus a minimum of 3 pounds per square foot floor load, (example: free-standing range, refrigerator, and loose furniture) and the superimposed dynamic load resulting from highway movement but shall not be required to exceed twice the dead load. The integrated design shall be capable of insuring rigidity and structural integrity of the complete manufactured home structure and to insure against deformation of structural or finish members during the intended life of the home.

(4) Running gear assembly. (i) The running gear assembly, as part of the chassis, shall be designed to perform, as a balanced system, in order to effectively sustain the designed loads set forth in §3280.904(b)(3) and to provide for durable dependable safe mobility of the manufactured home. It shall be designed to accept shock and vibration, both from the highway and the towing vehicle and effectively dampen these forces so as to protect the manufactured home structure from damage and fatigue. Its components shall be designed to facilitate routine maintenance, inspection and replacement.

(ii) Location of the running gear assembly shall be determined by documented engineering analysis, taking into account the gross weight (including all contents), total length of the manufactured home, the necessary coupling hitch weight, span distance, and turning radius. The coupling weight shall be not less than 12 percent nor more than 25 percent of the gross weight.

(5) Spring assemblies. Spring assemblies (springs, hangers, shackles, bushings and mounting bolts) shall be capable of withstanding all the design loads.