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\* NOT MEASUREMENT \*  
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20 June 1991  
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SUPERSEDING  
MIL-T-45386E  
20 June 1984

FEDERAL SPECIFICATION

SEMITRAILERS, BOLSTER, COMMERCIAL, POLE TYPE,  
2 TO 20 TONS

1. SCOPE

1.1 Scope. This specification covers single and tandem axle, commercial, pole type, bolster semitrailers with or without special load adapters, having minimum capacities of 2 to 20 tons.

1.2 Classification. Semitrailers shall be of the following types, classes and styles, as specified (see 6.2):

- Type I - Single axle semitrailer
- Type II - Tandem axle semitrailer

- Class A - 2-ton payload capacity (type I only)
- Class B - 3-1/2 ton payload capacity (type I only)
- Class C - 10-ton payload capacity
- Class E - 13-ton payload capacity (type II only)
- Class F - 20-ton payload capacity (type II only)

- Style 1 - Integral A-frame towbar with coupler ring
- Style 2 - Adjustable single tongue towbar with coupling ring
- Style 3 - Adjustable single tongue or telescoping towbar with fifth wheel kingpin

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\*Beneficial comments (recommendations, additions, deletions) and any pertinent\*  
 \*data which may be of use in improving this document should be addressed to: \*  
 \*Commanding Officer (Code 156), Naval Construction Battalion Center, Port \*  
 \*Hueneme, CA 93043-5000, by using the self-addressed Standardization \*  
 \*Document Improvement Proposal (DD Form 1426) appearing at the end of this \*  
 \*document or by letter. \*  
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FSC 2330

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\* 2. APPLICABLE DOCUMENTS

2.1 Government documents.

\* 2.1.1 Specification and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATION

FEDERAL

ZZ-T-381 - Tires, Pneumatic, Vehicular (Highway)

MILITARY

MIL-B-46176 - Brake Fluid, Silicone, Automotive, All Weather, Operational and Preservative, Metric

MIL-V-62038 - Vehicle, Wheeled, Preparation for Shipment and Storage of

STANDARDS

FEDERAL

FED-STD-297 - Rustproofing of Commercial (nontactical) Vehicles

MILITARY

MIL-STD-209 - Slings and Tiedown Provisions for Lifting and Tying Down Military Equipment.

MS75021 - Connector, Receptacle, Electrical - 12 Contact, Intervehicular, 24-Volt, Waterproof

\* 2.1.2 Other Government. The following other Government documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DEPARTMENT OF TRANSPORTATION (DoT)

Federal Motor Vehicle Safety Standards and Regulations  
Federal Motor Carrier Safety Regulations

(Application for copies should be addresses to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

\* 2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents which are current on the date of the solicitation (see 6.2).

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American Welding Society, Inc. (AWS):

AWS D1.1 - Structural Welding Code.

(Applications for copies should be addressed to the American Welding Society, Inc., 550 N.W. Le Jeune Road, P.O. Box 351040, Miami, FL 33135.)

Society of Automotive Engineers, Inc. (SAE):

SAE J534 - Lubrication Fittings  
SAE J560 - Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable  
SAE J588 - Turn Signal Lamps for use on Motor Vehicles less than 2032 mm Overall Width  
SAE J682 - Rear Wheel Splash and Stone Throw Protection  
SAE J697 - Safety Chain of Full Trailers or Converter Dollies  
SAE J700 - Upper Coupler Kingpin Commercial Trailers and Semitrailers  
SAE J702 - Brake and Electrical Connection Location Truck Tractor and Truck Trailer  
SAE J1292 - Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

State of California:

California Vehicle Code

(Application for copies should be addressed to the Department of Motor Vehicles, 2570 24th Street, Sacramento, CA 95809.)

Tire and Rim Association, Inc. (TRA):

TRA Yearbook

(Application for copies should be addressed to the Tire and Rim Association, Inc., 175 Montrose West Avenue, Coply, OH 44321.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

\* 2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Description. The semitrailers shall be the bolster, commercial, pole type 2 to 20 tons payload capacity. Performance capabilities and components furnished shall be in accordance with the requirements as stated in section 3 of this specification.

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3.1.1 Standard commercial product. The semitrailer shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer's standard commercial product, shall be included in the semitrailer being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

\* 3.2 First production vehicle inspection. The contractor shall furnish a semitrailer for first production vehicle inspection.

3.3 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification unless otherwise specified.

3.4 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.5 Semitrailer weights and ratings.

3.5.1 Curb weight. The curb weight of the fully equipped semitrailer shall include chassis, bolsters, portable towbar, and all attachments and accessories.

3.5.2 Payload. The payload capacity shall be not less than specified for the class semitrailer (see 1.2), with the load evenly distributed over the semitrailer body load area.

3.5.3 Gross weight. The gross weight shall include the curb weight of the semitrailer and the specified payload (see 3.5.2). The imposed loading on the axle(s), measured at the ground, shall be computed using the curb weight, and the specified payload uniformly distributed over the semitrailer body load area.

3.5.4 Ratings. Component and semitrailer ratings shall not be raised to meet the requirements of this specification.

3.6 Type. Semitrailer shall be of type I single axle design, or type II tandem axle design.

3.6.1 Style. Semitrailer shall be of the following styles:

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3.6.1.1 Style 1. Style 1 semitrailer shall be integral A-frame towbar with coupler ring. Two stationary bolsters shall be installed on the semitrailer frame. When specified (see 6.2), the semitrailer shall be furnished with either an adjustable extension tongue with an integrated coupler ring (see 3.6.3) for the A-frame towbar, or with the portable towbar specified in 3.6.2.

3.6.1.2 Style 2. Style 2 semitrailer shall have an adjustable single tongue towbar with coupler ring. One swivel bolster shall be installed on semitrailer frame. When specified (see 6.2), another swivel bolster shall be furnished with the semitrailer for mounting on prime mover. When specified (see 6.2), a portable towbar conforming to 3.6.2 shall be furnished in lieu of the swivel bolsters specified. When the portable towbar is furnished, one or two stationary bolsters shall be installed on the semitrailer frame.

3.6.1.3 Style 3. Style 3 semitrailer shall be provided with an adjustable single tongue or telescoping towbar, embodying a combination stationary bolster and fifth wheel kingpin hitch. Two stationary bolsters shall be positioned approximately above each axle. The adjustable tongue or towbar design shall provide for adjustments in increments of not less than 24 inches. The kingpin shall be fabricated of heat-treated alloy steel and shall conform to SAE J700.

3.6.2 Portable towbar. When specified (see 3.6.1.1 and 3.6.1.2), a portable towbar shall be the manufacturer's standard with coupler ring conforming to 3.6.3. The portable towbar shall be equipped with chains, screw type chain binders, and other necessary devices for securely fastening and holding the towbar to the load.

3.6.3 Coupler ring. Towbars for style 1 and 2 semitrailers shall be provided with manufacturer's standard coupler ring of solid steel not less than 2-5/8 inches inside diameter. The ring cross section shall not exceed 1-5/8 inch diameter.

### 3.7 Performance.

3.7.1 Travel speed. Semitrailer, fully equipped and loaded with maximum rated payload, shall be capable of being towed over unimproved roads (see 6.6), and reasonably hard, uneven terrain at a speed of 10 miles per hour (mph), and shall be capable of being towed over improved roads at speeds as great as 50 mph.

3.7.2 Turning ability. When towed, the style 1 and 2 semitrailers shall be capable of forming a 70 degree (deg) angle, and style 3 semitrailer a 90 deg angle with the towing vehicle, without cramping or damage to semitrailer or towing vehicle.

\* 3.7.3 Trailing ability. The semitrailer shall not exceed the allowance for tracking deviation specified in DoT Federal Motor Carrier Safety Regulations, section 393.70(a).

3.7.4 Brake performance. The brakes shall comply with the performance requirements specified in DoT Federal Motor Carrier Safety Regulations, section 393.52. Service brakes and parking brakes shall conform to Federal Motor Vehicle Safety Standard No. 121.

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3.8 Dimensions and clearances. Dimensions and clearances shall be established with the semitrailer uncoupled from prime mover, placed in level position on a level surface and without payload.

3.8.1 Length. Unless otherwise specified (see 6.2), the overall length of the semitrailer shall be the manufacturer's standard.

3.8.2 Width. Unless otherwise specified (see 6.2), the overall width shall be not more than 96 inches.

3.8.3 Ground clearance. Ground clearance shall be the maximum practicable, but not less than 9 inches with rated payload.

3.8.4 Load capacity. Semitrailer shall be capable of supporting and hauling the rated payloads specified in 1.2.

3.8.5 Height. The overall height from ground to top of bolster(s) shall be the minimum practicable. Load areas shall be approximately level when the unit is coupled to a truck tractor having a fifth wheel height of 50 inches +/-1 inch.

\* 3.8.6 Stress analysis. Stress analysis for the semitrailer, loaded as specified in 3.5.2 shall be furnished. The stress analysis shall include shear and moment diagrams and deflection calculations. The strength of the floor, crossmembers, and outside frame members shall not be included in the calculations to compute the main frame maximum fiber stress. Weight of the floor, crossmembers, and outside frame members imposed on the main frame shall be included in the total load imposed on the main frame.

### 3.9 Components.

3.9.1 Frame. Chassis frame shall be the manufacturer's current standard all-steel construction having structural capacity to withstand the flexural and torsional forces, without permanent set or part failures, under the operating conditions specified in 3.7.

3.9.2 Towbar. Towbar shall be the manufacturer's current standard all-steel construction for the class and style of semitrailer specified and shall provide structural strength to resist bending and twisting without permanent deformation or damage under operating conditions specified in 3.7. Towbar shall conform to applicable requirements of DoT Federal Motor Carrier Safety Regulations, section 393.71(h).

3.9.3 Bolsters and stanchions. Bolster shall be manufacturer's current standard construction for the class and style of semitrailer specified and shall be mounted in accordance with standard commercial practice. Two stanchions shall be furnished with each bolster. Stanchions shall be adjustable for load width, demountable from bolster, and provided with a locking device for holding in any position.

3.9.4 Suspension. Semitrailer shall be equipped with manufacturer's standard suspension system with components having rated capacity at least equal to the load imposed on each member, measured at the ground, with the semitrailer loaded with the maximum payload specified in 1.2.

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3.9.4.1 Springs. Main springs (and helper springs, if required) shall be the manufacturer's current standard for the type, class, and style of semitrailer specified. The main springs shall be semi-elliptical leaf type, having capacity to support the imposed loads, without permanent set or breakage, under the service conditions specified in 3.7.

3.9.4.2 Axle(s). The axle(s) shall be the manufacturer's current standard for the type, class, and style of semitrailer specified. Axle rating shall be at least equal to the load imposed on each axle, measured at the ground, with the semitrailer loaded to gross weight.

3.9.4.2.1 Single axle. Single axle suspension system shall have leaf springs and a one-piece through shaft. The shaft shall be tubular or structural shape steel.

3.9.4.2.2 Tandem axle. Tandem axle suspension system shall have leaf springs and two one-piece through shafts, or shall employ rubber-cushioned walking beams and two one-piece through shafts. The axle system shall provide sufficient articulation to maintain equal loading on each wheel.

3.9.5 Wheels and rims. Wheels shall be the manufacturer's current standard. Rim and tire ratings shall conform to TRA Yearbook recommendations for the type and size of tires furnished. Unless otherwise specified (see 6.2), type I, class A and B semitrailers shall be furnished with two single wheels, and class C semitrailers shall be furnished with two dual wheels; type II, class C semitrailers shall be furnished with four single wheels, and class E and F semitrailers shall be furnished with four dual wheels.

\* 3.9.6 Tires and tubes. Steel belted radial, or when specified (see 6.2), bias ply tires shall be furnished. Tires shall be tube or tubeless type with highway tread. Tires shall be rated capacity at least equal to the load imposed on each tire, measured at the wheel, at the ground, with semitrailer loaded with its maximum rated payload. Tires shall conform to TRA recommendations, or to ZZ-T-381 with a size designation system the same as the TRA. When tube type tires are furnished, tubes shall be of heavy-duty type, and shall be of proper size for tires furnished. Tire flaps shall be provided for tube type tires in accordance with TRA recommendations.

\* 3.9.7 Splash guards and fenders. Semitrailer shall be equipped with manufacturer's standard splash guards. When specified (see 6.2), semitrailer shall be equipped with fenders. Splash and stone throw protection shall be in accordance with SAE J682. A metal strip of not less than 1/8 inch thick and not less than one inch wide, extending the entire width of the mud flap, shall be installed to prevent the bolt heads or bolt nuts from damaging the mud flap. As an alternate method of attaching the mud flaps, tabs or clips with minimum surface contact dimensions of 1 inch high by 1-1/4 inch wide by 3/32 inch thick shall be furnished at each bolt.

3.9.8 Safety chains. Safety chains, conforming to the requirements of DoT Federal Motor Carrier Safety Regulations, section 393.70(f), 393.7.1(h), and SAE J697, shall be furnished.

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\* 3.9.9 Service brakes. When applicable to the type of service brakes specified (see 3.9.9.1), the semitrailer shall as a minimum shall conform to DoT Federal Motor Carrier Safety Regulations, sections 393.40, 393.42, 393.43, and 393.45 through 393.52, as applicable. Service brakes shall conform to DoT Federal Motor Vehicle Safety Standard No. 121. Brake linings shall be of nonasbestos material. No part of the braking system shall extend below the bottom of the wheel rim. Unless otherwise specified (see 6.2), class A, B, and C semitrailers shall be equipped with the manufacturer's current standard brake system. When specified (see 6.2), contractor shall provide certification that the brake components utilized are compatible with silicone brake fluid requirements of MIL-B-46176.

\* 3.9.9.1 Air brakes. Unless otherwise specified (see 6.2), class E and F semitrailers shall be equipped with full air internal expanding drum type brakes conforming to applicable Federal Carrier Safety Regulations (see 3.9.9). The brake system shall include as a minimum standard breakaway features, relay emergency valves, air reservoir, automatic slack adjusters, piping, hose connections, gladhands, couplings equipped with security chains, provision for stowing the dummy couplings and all other components required for a complete system. Air hose coupling set shall conform to SAE J702.

3.9.9.2 Emergency service brake requirements. When specified (see 6.2), the service brake system shall conform to the requirements of the California Vehicle Code, section 26508.

3.9.9.3 Electric brakes. When furnished, electric type brakes shall be wired through the seven contact lighting connector sockets specified in 3.9.14. An electrical brake controller shall be furnished for subsequent installation in the towing vehicle. Brakes shall be operable on the 12-volt system of the towing vehicle. Provisions for mounting and connecting the battery and brake operating interlock switch required to operate the brakes, in the event of a breakaway from the towing vehicle, shall be furnished. Battery shall not be furnished. When electric brakes are furnished and parking brakes are required, chock blocks (see 3.9.11), may be furnished in lieu of the parking brake.

3.9.9.4 Hydraulic brakes. When specified (see 6.2), semitrailer shall be equipped with hydraulic vacuum brakes or air over hydraulic brakes of manufacturer's current standard type.

3.9.10 Manual parking brake. When specified (see 6.2), a semitrailer shall be equipped with manually operated parking brakes. Brakes shall be capable of holding the semitrailer loaded with rated payload, on a 20 percent grade, when uncoupled from towing vehicle and headed up or down the incline.

\* 3.9.11 Wheel chock blocks. The semitrailer shall be equipped with wheel chock blocks in addition to the parking brake. Chock blocks shall be attached to the semitrailer by retaining chains.

3.9.12 Landing leg. A folding type landing leg, with pad, shall be furnished and installed.

3.9.13 Special load adapters. When specified (see 6.2), a semitrailer shall be equipped with two saddles and a spindle for transporting cable reels. Saddles shall be quickly demountable and interchangeable with rear bolster. Reel spindle



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shall be 2-1/2 inches in diameter, provided with adjustable guides for various reel sizes up to 48 inches wide and 84 inches in diameter.

\* 3.9.14 Lighting and wiring system. Lighting and wiring system shall be manufacturer's standard of 12-volt potential negative ground and shall comply with DoT Federal Motor Carrier Safety Regulations, sections 393.16, 393.23, 393.25 through 393.29, 393.32, and 393.33, as applicable. Wire color-coding connector socket shall conform to SAE J560. Wiring installation shall conform to SAE J1292. Lights and reflectors shall be recessed and guarded, and wiring shall be properly routed, grommeted and anchored for protection from damage. Turn signal lamps shall comply with SAE J588, class A.

\* 3.9.14.1 Brake lights. At least one pair of brake lights shall override the four-way emergency flashers or the two systems shall be independent of each other. Modifications to the manufacturer's standard product to accommodate this requirement shall not compromise conformance to any Federal Motor Carrier Safety Regulation referenced herein or to any Federal Motor Vehicle Safety Standard. If additional lights are added to the vehicle, the lights shall be selected from the semitrailer manufacturer's standard matching hardware.

\* 3.9.14.2 Receptacle 12-volt. The front of the semitrailer shall be equipped with a 7-contact receptacle conforming to SAE J560 with the connectors and color-coding as specified therein. The receptacle shall be provided with a spring-loaded cover.

\* 3.9.15 Interconnected 24-volt Direct Current system. Means for operating the 12-volt dc system from a towing vehicle equipped with a nominal 24-volt dc electrical system shall be provided.

\* 3.9.15.1 Receptacle for 24-volt dc system. The front of the semitrailer shall also be equipped with a 12-contact receptacle and cover conforming to MS75021, part no. MS75021-1. The 12-contact receptacle shall be provided with resistance to each circuit to reduce the voltage of a tactical military design towing vehicle from a nominal 24 volts dc to 12 volts dc. The 24-volt dc, 12-contact receptacle shall be connected to the lights as follows:

- Contact B - Connect to left-hand turn signal and stoplamp (yellow).
- Contact D - Connect to ground (white).
- Contact E - Connect to clearance, side marker, identification, and tail lamps (black and brown).
- Contact J - Connect to right-hand turn signal and stoplamp (green).
- Contact L - Connect to ground (white).

The remaining contacts shall not be connected. Circuits B and J on tactical (military design) trucks are combination stop and turn indicator circuits. On the interconnected 24-volt dc system, the normal 12-volt dc turn signal lights will function both as turn signals and stoplamps and the normal 12-volt stoplamps will not be in operational when the semitrailer is connected to a towing vehicle with a 24-volt dc power supply. Because of this condition, the stoplamp (red) circuit is not connected to the 24-volt, 12-contact receptacle.

\* 3.9.15.2 Resistors. The 12-contact receptacle shall be provided with resistance to each circuit to reduce the voltage of the tactical towing vehicle from a nominal 24 volts dc to 12 volts dc. Each circuit resistor shall be

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selected to reduce the voltage of the tactical truck to within the maximum rated voltage of the semitrailer electrical components. The resistor assembly shall be located in a protective housing and provided with adequate ventilation or a heat sink to prevent overheating and any damage to resistors, wiring, or adjacent components.

3.10 Lubrication. Means for lubrication shall be in accordance with the manufacturer's standard practice. The lubricating points shall be easily visible and accessible. Hydraulic lubrication fittings shall be in accordance with SAE J534. Where use of high-pressure lubricating equipment, 1,000 pound-force per square inch (psi) or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

\* 3.11 Servicing and adjusting. Prior to acceptance of the semitrailer by the Government, the contractor shall service and adjust the semitrailer for immediate operational use as required in the operator's manual. The servicing and adjusting shall include at least the following:

- a. Inflation of all tires.
- b. Adjustment of brakes (when required).
- c. Proper functioning of all lighting and electrical systems.
- d. Complete lubrication with grades of lubricants recommended for ambient temperature at the delivery point.

The semitrailer shall be conspicuously tagged to identify the lubricants and their temperature range.

3.12 Lifting and tiedown attachments. The semitrailer shall be equipped with lifting and tiedown attachments. Lifting and tiedown attachments shall conform to type II or type III of MIL-STD-209. A nonferrous transportation plate shall be provided and mechanically attached to the semitrailer. Transportation plates shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each attachment, and the required length and size of each sling cable. A silhouette of the item furnished showing the center of gravity shall be provided on the transportation plate. Tiedown attachments may be identified by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tie down of the semitrailer on the carrier when shipped.

3.13 Identification plate. An identification plate will be furnished by the contracting officer for each semitrailer. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each semitrailer in a conspicuous place with brass screws or bolts not less than 1/8 inch in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.14 Instruction plates. The semitrailer shall be equipped with instruction plates suitably located, describing any special or important procedures to be followed in operating and servicing the equipment. Plates shall be of a material which will last and remain legible for the life of the equipment, and shall be securely affixed thereto with nonferrous screws or bolts of not less than 1/8-inch diameter.

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3.15 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. The color of the finish coat shall be as specified (see 6.2). Surfaces to be painted shall be cleaned and dried to insure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning, and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to insure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects. All machine surfaces rotating parts, lube fittings, bolted and riveted holes shall be free of paint.

### 3.16 Workmanship.

3.16.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.16.2 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.16.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.16.4 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.16.5 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the castings ability to perform its intended function.

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3.16.6 Welders. Before assigning any welder to manual work covered by this specification, the contractor shall provide the contracting officer certification that the welder has passed qualification tests as prescribed by the following listed code for the type of welding operations to be performed and that such qualification is effective as defined by the particular code, AWS D1.1 Structural Welding Code, Section 5, Qualification. Contractors who make only horizontal welds need not qualify welds for "all position welding." Subject to approval by the Government, contractor's standard welder qualifications may be substituted in lieu of the above code. The contractor shall be responsible for determining that automatic welder equipment operators are capable of producing quality welds in accordance with AWS codes.

\* 3.17 Rustproofing. The vehicle shall be rustproofed in accordance with FED-STD-297.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

\* 4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First production vehicle inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

\* 4.2.1 First production vehicle inspection. The first production vehicle inspection shall be performed on one complete semitrailer. This inspection shall include the examination of 4.3 and the tests of 4.4. The first production vehicle may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

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4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the test of 4.4.6, and the packaging inspection of 4.5.

\* 4.3 Examination. Each semitrailer shall be examined for compliance with the requirements specified in section 3 of this document. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirement or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

#### 4.4 Tests.

\* 4.4.1 Towing tests. The fully equipped semitrailer, loaded with maximum rated payload, shall be towed a minimum of 100 miles over courses as specified in 3.7.1. At least 20 percent of the distance shall be over unimproved roads and reasonably hard terrain. Towing speeds shall be as specified in 3.7.1. Trailing ability shall be checked for conformance to the requirements of 3.7.3. Semitrailer shall be observed during the run and examined after the run for interference, part failure, or other defects.

4.4.2 Performance test. Semitrailer, with maximum rated payload, shall be towed on dry, level road free from loose material, to test conformance of service brakes to the requirements of 3.7.4. Turning ability shall be tested to verify compliance to 3.7.2. Mounted equipment shall be tested in all positions within their range.

4.4.3 Parking brake test. Parking brake shall be tested for conformance to 3.9.10.

4.4.4 Reel pickup and loading. Rear bolster shall be removed, saddles installed, and pickup and loading shall be performed at least three times to verify conformance to 3.9.13.

4.4.5 Lifting and tiedown attachment tests. When required, the lifting and tiedown attachments shall be tested to conform to 3.12.

4.4.6 Production unit tests. The contractor's testing system shall, as a minimum, assure that the semitrailer is capable of meeting the performance requirements specified herein.

4.5 Packaging inspection. The vehicle shall be inspected to verify conformance to the requirements of section 5.

\* 4.6 Production sample. Upon acceptance of the first production vehicle, it shall remain at the manufacturing facility as a production sample, and may be the last vehicle shipped on the contract. The contractor shall maintain the vehicle in a serviceable condition for the duration of the contract.

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\* 4.7 First production vehicle inspection. The first vehicle produced under the contract shall be inspected by the contractor at his plant under the direction and in the presence of Government representatives. The purpose of the inspection shall be to determine vehicle conformance to the contract. Acceptance of the first production vehicle shall not constitute a waiver by the Government of its right under the provisions of the contract.

## 5. PACKAGING

\* 5.1 Vehicle processing. The equipment shall be preserved and packed in accordance with the contractor's standard practice. When specified (see 6.2), equipment shall be preserved and packed in accordance with the requirements of MIL-V-62038 with the level of preservation and packing as specified (see 6.2).

## \* 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Semitrailers covered by this specification are intended for use by the Government in transporting logs, poles, pipes, structural steel, piling, and other long loads.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type, class, and style of semitrailer required (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When adjustable extension tongue or portable towbar is required (see 3.6.1.1).
- e. When another swivel bolster or portable towbar is required (see 3.6.1.2).
- f. Overall length of semitrailer, if not manufacturer's standard (see 3.8.1).
- g. Overall width of semitrailer, if not as specified (see 3.8.2).
- h. Wheel arrangement if not as specified (see 3.9.5).
- i. When bias tires are required (see 3.9.6).
- j. When fenders are required (see 3.9.7).
- k. When brake system requires brake fluid conforming to MIL-B-46176 (see 3.9.9).
- l. Brake system if not as specified (see 3.9.9 or 3.9.9.1).
- m. When service brake system is required to conform to California Vehicle Code (see 3.9.9.2).
- n. When hydraulic brake system is required and type of brakes (see 3.9.9.4).
- o. When manual parking brake is required (see 3.9.10).
- p. When cable reel transporting equipment is required (see 3.9.13).
- q. Color of finish coat required (see 3.15).
- r. When preservation-packing in accordance with MIL-V-62038 is required and the level of preservation-packing required (see 5.1).

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6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 Subject term (key word) listing.

Gross weight  
Payload  
Performance

6.5 Changes from previous issue. The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

6.6 Definitions.

6.6.1 Improved road. An improved road is a smooth, hard surfaced road, such as concrete or asphalt paved highway.

6.6.2 Unimproved road. An unimproved road is an unpaved, unstabilized road with an undulating surface having occasional chuckholes and exposed rocks.

MILITARY INTERESTS:

Custodians

Army - AT  
Navy - YD  
Air Force - 99

Review Activity

Air Force - 84

User Activities

Army - MI  
Navy - MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD

(Project 2330-0097)

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.