

[INCH-POUND]  
A-A-50577  
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SUPERSEDING  
MIL-S-28611D  
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## COMMERCIAL ITEM DESCRIPTION

### SEMITRAILERS, REAR DUMP; SINGLE AXLE AND TANDEM AXLE

The General Services Administration has authorized the use of this commercial item description for all Federal agencies.

1. SCOPE. This specification covers single axle and tandem axle rear dump semitrailers.
2. CLASSIFICATION. Semitrailers are of the following types, as specified (see 7.2).

- Type I - Single axle, 12-ton (10 886 kilograms (kg)) payload capacity, loose material.
- Type II - Tandem axle, 20-ton (18 144 kg) payload capacity, sand and gravel.
- Type III - Tandem axle, 34-cubic yard (26 cubic metre (m<sup>3</sup>)) capacity, demolition.
- Type IV - Tandem axle, 30-cubic yard (23 m<sup>3</sup>) capacity, U-shaped dump body.

### 3. SALIENT CHARACTERISTICS.

#### 3.1 Design.

3.1.1 Federal Motor Vehicle Safety Standards. The semitrailer shall comply with DoT Federal Motor Vehicle Safety Standards in effect at time of manufacture.

3.1.2 Curb weight. The curb weight shall include the weight of the semitrailer in operating condition with all attachments, equipment, and accessories.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Commanding Officer (Code 1581), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 2330

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3.1.3 Gross weight. The rated gross weight shall include the curb weight and the specified payload required in table I, evenly distributed over the dump body area. Established component and vehicular ratings and capacities shall not be increased to meet the requirements of this specification.

3.1.4 Dimensions. Semitrailer dimensions shall be as specified in table I, when the floor of the semitrailer body is in travel position on level ground, without payload.

TABLE I. Weights and dimensions.

	TYPE I	TYPE II	TYPE III	TYPE IV
Payload (min) (pounds (lb.)) (kg)	24 000 (10 886 kg)	40 000 (18 144 kg)	50 000 (22 680 kg)	
Cubic yard capacity (min)	-	-	34 (26 m <sup>3</sup> )	
Overall length of semitrailer (inches (in), maximum (max))	408 (10 363 mm)	446 (11 328 mm)	372 (9 449 mm)	360 (9 144 mm)
Overall width of semitrailer (in, max) (mm, max)	96 (2 438 mm)	96 (2 438 mm)	96 (2 438 mm)	96 (2 438 mm)
Height of body sides, interior (in, +1, -0) (mm, +25.4, -0)	52 (1 321 mm)	24 (610 mm)	60 (1 524 mm)	48 (1 219 mm)
Body width, interior (min)	88 (2 235 mm)	88 (2 235 mm)	84 (2 134 mm)	80 (2 032 mm)
Body length, interior (in, +18, -0) (mm, +457, -0)	288 (7 315 mm)	336 (8 534 mm)	336 (8 534 mm)	350 (8 890 mm)
Ground clearance (in, min) (mm, min)	9.5 (241 mm)	9.5 (241 mm)	9.5 (241 mm)	9.5 (241 mm)
Ground clearance under landing gear assembly in retracted position (in, min) (mm, min)	14 (356 mm)	14 (356 mm)	12 (305 mm)	12 (305 mm)
Landing wheel clearance, 6 inches (152 mm) below centerline of the kingpin, measured rearward, without any interference (in, min) (mm, min)	82 (2 083 mm)	82 (2 083 mm)	82 (2 083 mm)	82 (2 083 mm)
Kingpin location, measured rearward from front of the semitrailer (in, ±6) (mm, ±152)	30 (762 mm)	30 (762 mm)	30 (762 mm)	30 (762 mm)
Height of upper fifth wheel plate (in, ±1) (mm, ±25.4)	51 (1 295 mm)	51 (1 295 mm)	51 (1 295 mm)	52 (1 321 mm)
Swing radius from centerline of kingpin to nearest interference point on the semitrailer (in, min) (mm, min)	60 (1 524 mm)	60 (1 524 mm)	60 (1 524 mm)	60 (1 524 mm)

3.2 Performance. The semitrailer, fully equipped and loaded with specified minimum (min) payload in pounds (lbs) (kg) (see table I), shall be capable of being towed at speeds as great as 10 miles per hour (mph) (16 kilometre per hour (km/h)) over unimproved roads (i.e. unpaved, unstabilized road with an undulating surface having occasional chuck holes and exposed rocks), and over reasonably hard uneven terrain; and being towed at speeds as great as 50 mph (80 km/h) over improved roads (i.e. smooth hard surface).

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3.2.1 Turning ability. The semitrailer shall be capable of assuming a 90-degree angle to the coupled towing vehicle without cramping or damage to the semitrailer or the towing vehicle.

3.2.2 Tracking ability. The semitrailer shall conform to the tracking requirements of DoT Federal Motor Carrier Safety Regulations.

3.2.3 Brake performance. The semitrailer service brake system shall stop the semitrailer-tractor combination with the semitrailer loaded with specified payload within the stopping distance requirements of DoT Federal Motor Carrier Safety Regulations.

### 3.3 Chassis components.

3.3.1 Frame. The semitrailer frame shall be full length and the manufacturer's standard.

3.3.2 Suspension system. The semitrailer shall be furnished with the manufacturer's standard suspension system. Each component of the suspension system shall have a rated capacity at least equal to the load imposed, measured at the ground, when the semitrailer is loaded with its rated payload. Clearance shall preclude interference between tires and any other part of the semitrailer under the operating conditions specified herein.

3.3.3 Axle(s). Type I semitrailer shall be furnished with a single axle. Types II, III, and IV semitrailer shall be furnished with tandem axles. Axle ratings shall be at least equal to the load imposed on each axle, measured at the ground, with semitrailer loaded with rated payload. The wheel bearings and axle spindles shall be oil lubricated. The oil viscosity shall be in accordance with the manufacturer's recommendations. The hubcaps shall have a window for visual determination of oil level. Provision for venting, or other method of withstanding internal pressure buildup, and for replenishing the oil supply shall be incorporated.

3.3.4 Wheels and tires. Semitrailer shall be equipped with dual disk type wheels on each axle. Tires shall be steel belted radial tubeless type with highway tread. The wheel and tire ratings shall conform to TRA recommendations for the type and size of tires furnished. Tire and wheel sizes shall be the same for all wheels of the semitrailer. Tires shall be rated capacity at least equal to the load imposed on each tire, measured at each wheel at the ground, with semitrailer loaded with rated payload.

3.3.5 Tire carrier. One tire carrier shall be provided and installed in a readily accessible location under the chassis. Means shall be provided for securing a spare wheel and tire assembly within the carrier to prevent accidental loss. When specified (see 7.2), a spare wheel and tire shall be mounted on the tire carrier. The wheel will have an inflated tire mounted on it. The tire will be of the same size and tread design and of the same ply rating as tires installed on the semitrailer.

3.3.6 Brakes. Brakes shall be of the full air operated, internal expanding type and shall conform to DoT Federal Motor Carrier Safety Regulations and as specified herein. The braking system shall include manual or automatic slack adjusters, piping, hose connections, gladhands, spring loaded dust covers or dummy gladhands equipped with security chains, and all other components

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required for a complete airbrake system. Gladhands shall conform to SAE J318. Air hose location shall comply with SAE J702. The braking system shall be installed in a manner which provides road clearance for travel over uneven terrain and protection against damage caused by objects striking components. No part of the braking system shall extend below the bottom of wheel rims.

3.3.6.1 Parking brakes. The semitrailer shall be provided with coil spring actuated type parking brakes. The parking brakes shall be automatically applied upon disconnection to the emergency air line and under emergency braking conditions. The parking brakes shall hold the semitrailer, with rated payload, on a 20 percent grade despite the depletion of the compressed air supply. Parking brakes shall conform to DoT Federal Motor Carrier Safety Regulations.

3.3.7 Upper fifth wheel plate. The upper fifth wheel plate shall conform to DoT Federal Motor Carrier Safety Regulations. The kingpin shall be of heat treated alloy steel and shall conform to SAE J700. The forward end of the upper fifth wheel plate shall have turned-up lip for ease of coupling.

3.3.8 Lighting. The electrical lighting system shall be 12-volt (V) direct current (dc) design. The lighting system shall conform to DoT Federal Motor Carrier Safety Regulations. All lights and reflectors shall be protected from operational hazards by mounting in recessed or otherwise guarded locations. Lights and reflectors shall not be mounted on vertical surfaces of the rub rails, unless recessed and fully protected, or semitrailer bumpers. The front of the semitrailer shall be equipped with a receptacle conforming to SAE J560, with the receptacle located and the conductors connected and color coded as specified herein. All electrical wiring shall conform to SAE J1292. Turn signal lamps shall conform to SAE J588.

3.3.9 Landing gear. Semitrailer shall have two vertical lift, telescopic, nonrotating landing legs, with two speed gears and a handcrank on the curbside. Landing legs shall be equipped with steel wheels or self-leveling skid pads. Supports for the crank extension shafts and clips for holding cranks when folded shall be provided. The landing gear shall withstand, without deformation, the combined static and dynamic forces due to proportion of gross weight sustained and the forces resulting from impact during coupling and uncoupling operations. The landing gear shall have a range of adjustment to vary the height of the upper fifth wheel plate, at centerline of kingpin, from 45 inches (1 143 millimetre (mm)) to not less than 53 inches (1 346 mm) from the ground. With the semitrailer coupled to a towing tractor and in level position, the clearance under the fully retracted landing gear shall be not less than specified in table I.

3.3.10 Support jacks. When specified (see 7.2), two hinged type support jacks shall be provided for type I and type II semitrailers at the front of the semitrailer. When in static position, the jacks shall be capable of supporting their share of the load imposed, when semitrailer is loaded with rated payload.

3.3.11 Rear wheel splash and stone throw protection. Rear wheels shall have mud flaps at rear. Splash and stone throw protection shall be in accordance with SAE J682. When specified

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(see 7.2), steel fenders that cover the top and not less than 15 degrees radius of the forward portion of the tires shall be furnished.

### 3.4 Body components.

3.4.1 Dump body. The semitrailer shall be equipped with a rear dump body from which the load is gravity dumped by opening the rear tailgate and raising the front end of the body. The body and the tailgate shall be of all welded fabrication, utilizing high-tensile steel having a yield point of not less than 45,000 pound-force per square inch (310 264 kilopascals (kPa)) for all plate and reinforcing structural members. Sides shall be of plate that is corrugated, bowed, or reinforced by wrap around of vertical braces of the pyramid, triangular or box types, to withstand their proportion of the body and of the maximum payload of the semitrailer. The sides of type II semitrailer shall have standard 2.75-inch (70 mm) slots for adding wooden or steel sideboards. The floor shall be of butt-welded metal plates reinforced by crossmembers or interlaced under-structure, to withstand its proportion of the maximum payload of the semitrailer. The tailgate and its hinge components shall withstand the force of the specified payload when the body is raised to its maximum dump angle with the tailgate closed. The height for both the front end and the tailgate of type II semitrailer shall exceed the height of the sides. The body front and sides of type III semitrailer shall be constructed of not less than 0.1345-inch (3.42 mm) (U.S. revised standard gage No. 10) thick steel, and the floor and tailgate of not less than 0.1793-inch (4.55 mm) (U.S. revised standard gage No. 7) thick steel. The interior of the body shall have no obstructions which will impede the flow of the material during dumping. A front box or hoist housing is acceptable. The dump shall be U-shaped for type IV semitrailer and be the manufacturer's standard commercial product.

3.4.1.1 Tailgate, types I, II, IV. The type I, type II, and type IV semitrailer shall be provided with a double-acting tailgate, hinged at both top and bottom. The tailgate shall be furnished with chains to permit the tailgate, hinging at the top, to open completely when dumping; to permit the tailgate, hinging at the top, to have a choice of openings at the bottom for spreading of aggregate; and to allow the tailgate, hinging at the bottom, to be laid flat with the floor of the body. Unless otherwise specified (see 7.2), the tailgate shall be opened at the bottom by a driver-actuated, tailgate-trip control installed on the left front of the body. Release of the tailgate for dumping a heaped load shall not require driver effort in excess of 60 pounds (27 kg) at the control. Air controls, when furnished, shall be protected from falling aggregate.

3.4.1.2 Tailgate, type III. The type III tailgate shall be of the side-hinged, barn door type with outside latches. The tailgate shall be reinforced with vertical and horizontal high strength structural members.

3.4.1.3 Tarpaulin. When specified (see 7.2), a tarpaulin of sufficient size to cover the top of the body with overlap on the sides shall be furnished. The tarpaulin shall be 16-ounce (0.45 kg) neoprene rubber coated nylon cloth with grommets or tie loops on 24-inch (610 mm) centers. Tarpaulin tiedown rails shall be provided. The required number of rubber tiedown straps with hooks at both ends shall be provided to secure the tarpaulin over the body.

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3.4.1.4 Tarpaulin rack. When tarpaulin is specified (see 3.4.1.3), a tarpaulin storage rack shall be installed on the front of the body. The rack shall be a shelf or basket type and shall be fabricated of metal. A means of storage for the required number of tiedown straps shall be provided.

3.4.2 Hydraulic system. The semitrailer shall be equipped with an engine power source (see 3.4.4), hydraulic body hoist system. The hydraulic system shall be complete with all operating accessories, including pump(s), reservoir, hydraulic cylinders, valves, pressure gages, pressure relief valves, filter, hoses, piping, and fittings. The dump body shall hoist to the dump angle of the manufacturer's standard semitrailer. Hydraulic fluid conforming to MIL-H-46170 shall be provided in the hydraulic system. A permanent decal near the filler opening shall be installed with this statement: "CAUTION: USE HYDRAULIC FLUID CONFORMING TO MIL-H-46170 ONLY." At least 6.5 inches (165 mm) of clearance shall be provided between exhaust systems. The cylinder rams or telescopic tubes shall be ground and polished.

3.4.2.1 Hoist system. The hoist system shall consist of components rated to perform the hydraulically powered operations of the dump body in accordance with the specified payload. Mechanisms and reservoirs shall be positioned or guarded to prevent any possible hazard or damage from hot surfaces, debris, or obstructions. The dump hoist control shall be the three-way type, providing hoist, lower, and hold.

3.4.2.2 Hoist actuation. The actuation of the body hoist system shall be the self-contained type, whereby the complete hoist system shall be mounted on the semitrailer with an auxiliary engine driving hydraulic pump. The engine and hydraulic pump components shall be mounted on the gooseneck of the semitrailer.

3.4.2.3 Hoist system controls. The hoist system controls shall be mounted on the street side front of the semitrailer and adjacent to the engine controls. The controls shall be located to permit operation by the operator from a standing position on the ground.

3.4.3 Shroud. Engine shall be provided with a sheet metal shroud, with side panels, to protect the engine when loading the semitrailer and during inclement weather conditions. Panels shall be removable. Louvers shall be provided for air circulation.

3.4.4 Power source. A standard commercial, four-stroke cycle, air-cooled gasoline or diesel engine shall be provided to drive the hydraulic pump assembly. The engine shall be mounted in conjunction with the hydraulic pump. Mounting shall be so as to minimize transfer of vibration. The engine shall have the horsepower, torque, and speed characteristics to meet satisfactorily all performance requirements specified herein.

3.4.4.1 Engine components. The engine shall be equipped with, as a minimum, the following components:

- a. Ignition system.
- b. Electric starting system, 12V dc.
- c. Manufacturer's standard air cleaner.

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- d. Manual choke (gasoline).
- e. Battery, 12V dc.
- f. Governor.
- g. Manually operated hand throttle.
- h. Ammeter or charging indicator.
- i. Fuel gage or indicator.

3.4.4.2 Engine control panel. An engine control panel shall be provided. The key-operated ignition switch, hand throttle, and ammeter or charging indicator shall be installed in the control panel.

3.4.4.3 Engine fuel tank. An engine fuel tank shall be furnished. The fuel tank cap shall be attached to the tank by means of a corrosion-resistant chain. A sump shall be provided in the fuel tank suitable for collection and accumulation of water. A drain shall be located at the bottom of the sump for complete drainage of the fuel tank. A shutoff valve shall be provided in the line to the power source and a decal shall be furnished and marked denoting the type of fuel to be used, and shall be located in a conspicuous location near the filler cap.

3.4.4.4 Exhaust system. The exhaust system shall be furnished with a muffler and a rain cap when pipe ending is upright and means shall be provided to vent exhaust fumes away from the operating personnel. The exhaust system shall be shielded to prevent contact of hydraulic oil in the event of a line rupture or leaking in the hydraulic system.

3.5 Treatment and painting. Unless otherwise specified (see 7.2), the semitrailer shall be treated and painted in accordance with the manufacturer's standard practice. All surfaces of the semitrailer, other than corrosion-resisting steel, shall be protected against corrosion and present a neat appearance.

3.6 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. Wheel alignment (when required).
- e. Adjustment of engine to include tune-up (when required).
- f. Complete lubrication with grades of lubricants recommended for ambient temperature at the delivery point.
- g. Cooling system filled to capacity with a clean solution of equal parts by volume of water and antifreeze (ethylene glycol). The semitrailer shall be conspicuously tagged to identify the lubricants and their temperature range.



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#### 4. REGULATORY REQUIREMENTS.

4.1 Materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR). Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this commercial item description 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. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this commercial item description.

4.2 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest version of ASTM E380, and all other requirements of this commercial item description including form, fit and function are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer has the option of accepting or rejecting the product.

#### 5. QUALITY ASSURANCE PROVISIONS.

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer’s own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

6. PACKAGING. The preservation, packing, and marking shall be as specified in the contract or order.

#### 7. NOTES.

##### 7.1 Source of documents.

7.1.1 Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.

7.1.2 The Federal Acquisition Regulation (FAR) and DoT Federal Motor Carrier Safety Regulations may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

7.1.3 ASTM documents are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.



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7.1.4 SAE documents are available from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

7.1.5 TRA documents are available from the Tire and Rim Association, 175 Montrose West Avenue, Suite 150, Copley, OH 44321.

7.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this commercial item description.
- b. Type of semitrailer required (see 2.).
- c. When spare wheel and tire is required (see 3.3.5).
- d. When support jacks are required (see 3.3.10).
- e. When rear wheel fenders are required (see 3.3.11).
- f. When the tailgate operation is to be different from that specified (see 3.4.1.1).
- g. When tarpaulin is required (see 3.4.1.3).
- h. When rustproofing is required (see 3.5).

7.3 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor. The PIN to be used for items acquired to this description are created as follows:

CID number \_\_\_\_\_ AA50577 - X  
 Type: \_\_\_\_\_

- I - Single axle, 12-ton (10 886 kg) payload capacity, loose material.
- II - Tandem axle, 20-ton (18 144 kg) payload capacity, sand and gravel.
- III - Tandem axle, 34-cubic yard (26 m<sup>3</sup>) capacity, demolition.
- IV - Tandem axle, 30-cubic yard (23 m<sup>3</sup>) capacity, U-shaped dump body.

7.4 National Stock Numbers (NSNs). The following is a list of NSNs assigned which correspond to this commercial item description. The list may not be indicative of all possible NSNs associated with the commercial item description.

2330-01-315-1480

7.5 Subject term (key word) listing.

Disposal  
 Payloads  
 Productivity

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MILITARY INTEREST:

Custodian:  
Navy - YD1

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

Preparing Activity:  
Navy - YD1

(Project 2330-0245)