
* INCH-POUND *

OO-C-2868
July 10, 1995

SUPERSEDING
MIL-C-28562C(YD)
19 June 1989

FEDERAL SPECIFICATION

CENTRAL MIX PLANT, CONCRETE, MOBILE
100 CUBIC YARDS (77 CUBIC METERS) PER HOUR CAPACITY

The General Services Administration has authorized the use of this federal specification, by all federal agencies.

1. SCOPE

1.1 This specification covers a complete central mix concrete plant in a single mobile unit, electric-driven, with automatic controls, capable of producing not less than 100 cubic yards (yd^{L3J}) or 77 cubic meters (m^{L3J}) of concrete mix per hour when accompanied with a mobile mixer unit.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications 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).

Federal Specifications

- W-B-131 - Battery, Storage: Vehicular, Ignition, Lighting and Starting
- CC-G-2745 - Generator Sets, Diesel Engine, Alternating Current, for Facilities Construction: 10 KW through 1000 KW

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, *
 *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 3895

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Military Specifications

MIL-V-173 - Varnish, Moisture and Fungus Resistant (for Treatment of Communications, Electronic, and Associated Equipment)

Federal Standards

FED-STD-595 - Colors Used in Government Procurement

Military Standards

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

(Unless otherwise indicated, copies of federal and military specification, standards, and handbooks are available from the Standardization Documents Order

Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents and publications. The following other Government documents and publications 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 Carrier Safety Regulations.

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

2.2 Non-Government publications. The following documents 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 the documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C143 - Standard Test Method for Concrete, Slump of Hydraulic Cement.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

CONCRETE PLANT MANUFACTURER'S BUREAU (CPMB)

Concrete Plant Standards.

(Application for copies should be addressed to the Concrete Plant Manufacturer's Bureau, 900 Spring Street, Silver Springs, MD 20910.)

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NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

- NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
- NEMA MG 1 - Motors and Generators.
- NEMA WC 3 - Wire and Cable, Asbestos.
- NEMA WC 7 - Cross-Linked, Thermosetting-Polyethylene-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

(Application for copies should be addressed to the National Electrical Manufacturers Association, 2101 L Street, N.W., Washington, DC 20037.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 70 - National Electrical Code.

(Application for copies should be addressed to the National Fire Protection Association, Battery March Park, Quincy, MA 02269.)

SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

- SAE J534 - Lubrication Fittings.
- SAE J700 - Upper Coupler Kingpin - Commercial Trailers and Semitrailers.

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

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, Suite 150, Copley, OH 44321.)

UNDERWRITERS LABORATORIES, INC. (UL):

- UL 508A - Industrial Control Panels

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.)

(Non-Government standards and other publications are normally available from the organizations which prepare or which 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.

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3. REQUIREMENTS

3.1 Description. The central mix concrete plant, hereinafter called the concrete plant, shall consist essentially of an aggregate bin with three compartments, conveyor belts or screw conveyors, a weighing means, a cement bin or silo, control console panel, water delivery, air, and hydraulic systems, instruments and controls, delivery conveyors or gravity discharge. All equipment shall be mounted on a single semitrailer chassis frame with kingpin.

When applicable, the plant includes a mobile tiltable or horizontal shaft concrete mixer with stand and skid mounted diesel engine driven generator set.

3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.2.1, 6.2 and 6.3).

3.3 Safety. All rotating or reciprocating parts that are of such nature or so located as to become a hazard to operating or maintenance personnel shall be enclosed or properly guarded.

3.4 Standard commercial product. The concrete plant shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product (see 6.6.1). 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 concrete plant being furnished.

3.5 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Unless otherwise specified herein, all equipment, material, and articles are to be new and fabricated using materials produced from recovered materials (see 6.6.2) to the maximum extent possible without jeopardizing the intended use. Used or rebuilt products shall not be used.

3.6 Performance. The assembled concrete plant shall be rated for not less than 100 yd³ (77 m³) per hour of pavement quality, 1-inch or 25 millimeters (mm) slump concrete, based on a 1-minute mix cycle per batch, utilizing a six-bag mix and 2-1/2 to 3-inch (63 to 76 mm) maximum sized aggregate; and not less than 100 yd³ (77 m³) per hour of structural quality, 3-inch (76 mm) slump concrete, utilizing a six-bag mix and 1-1/2-inch (38 mm) maximum sized aggregate, and within 1 percent for cement of the preset requirement. Mix design shall be verified by slump test method in accordance with ASTM C143. The batching of aggregates and cement shall be synchronized with the demand cycle of the mixer. The concrete plant, including the mixer unit when furnished, shall be capable of being towed over an uneven dirt or gravel road at speeds up to 5 miles per hour (mph) or 8 kilometers per hour (kph) and over paved highways at speeds up to 35 mph (56 kph) without damage, malfunction, or permanent set.

3.7 Construction. The concrete plant shall conform to CPMB Concrete Plant Standards, complete with CPMB rating plates. The equipment shall be designed and constructed to facilitate field maintenance. All adjustments and replaceable accessories shall be readily accessible.

3.7.1 Aggregate bin. An aggregate bin having three approximately equal compartments, for sand and two different sizes of aggregates, shall be furnished. Total capacity shall be calculated in accordance with CPMB and be

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not less than 20 yd³ (15.3 m³). The compartment tops shall be of sufficient size to facilitate loading by a standard commercial 2-1/2 yd³ (2 m³) front end loader. The interior of the compartments shall be free from obstructions, and the sides shall be sloped from top to bottom, or the lower portion of the sides shall be sloped, to insure free flow of the material and prevent bridging. The sand compartment shall be furnished with a moisture sensing device located so as to be visible to the plant operator at the controls. The moisture sensing device shall be the direct reading, pen or dial type calibrated to show the percentage of free moisture by weight. A separate conversion chart, table, or dial scale shall be furnished to facilitate converting the amount of free moisture in volume per 100 pounds (lb) or 45 kilograms (kg) of sand. A means shall be provided to weigh the aggregate and shall have a capacity of not less than 20,000 lb (9070 kg) and shall be calibrated in increments of 20 lb (9 kg) or less with a weighing tolerance within 2 percent for each aggregate material being weighed.

3.7.2 Cement bin. The cement bin or silo, shall have a capacity of not less than 740 cubic feet (21 m³) of cement and shall include a pressure relief valve and filter vent. The cement bin shall be provided with self-loading means, mechanical or pneumatic. A low pressure/high volume air injection shall be provided to insure free flow of the dry cement from the bin. The cement batcher, equipped with filter vent system, shall be provided with a hopper sized to hold a full batch of cement for the mixer. A dust collector system shall also be provided. A means shall be provided to weigh the cement having a capacity of not less than 3,600 lb (1632 kg) and shall be calibrated in increments of not more than 3 lb (1.36 kg). The cement bin shall be provided with a content indicator of the high-low type, located so as to be visible to the plant operator at the controls.

3.7.2.1 Cement bin loading system. When specified (see 6.2), the unit shall be provided with a cement bin loading system which shall enable the operator to load the cement bin while standing on the ground. The loading system shall incorporate a hopper of not less than 6 cubic foot (.17 m³) capacity, with debagger and utilizing the manufacturer's design.

3.7.3 Batch conveyor or delivery conveyor(s). Material transfer shall be accomplished either by a motor driven batch conveyor of the inclined trough or channeled belt type at least 24 inches (610 mm) wide (with 3-piece trough type idlers or rollers), with a foldable, demountable, retractable discharge head, or by motor driven conveyor(s) for each material being delivered to the batcher. The batch conveyor shall be covered to guard the materials against inclement weather. All troughing idler bearings shall be either of the antifriction or bronze bearing type with dustproof seals. Idlers shall be designed to insure true running and self-centering of the conveyor belt with the width and running speed of the conveyor belt, so as to assure efficient movement of material, without spillage and pileup at receiving points, when the plant is operating at full capacity. An accessible adjustment for maintaining proper belt tension shall be provided, as well as a cleaning device capable of removing foreign material adhering to the pulley side of the belt. The height of the conveyor(s) discharge head(s) shall be compatible with the charging height of the mixer. A water feeding system with automatic metering controls shall be installed on the conveyor(s), discharge head(s), or on a location directly over the mixer receiving opening for adding the required amount of water to obtain the desired concrete mixtures.

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3.7.4 Mixer. When specified (see 6.2), the concrete plant shall be supplemented with a powered tiltable or horizontal shaft type mixer having a capacity rating of not less than 4-1/2 yd³ (3.5 m³). Mixer shall be motor driven and compatible with the plant capacity in producing or exceeding the specified production. A system shall be provided on the mixer for loading and unloading the mixer. The mixer shall be equipped with a stand or other means so as to have a discharge height of not less than 13-1/2 feet (4.11 m) above ground level to facilitate unloading into dump trucks without spillage. The liner and the edge of charging and mixing blades shall be fabricated of abrasion-resistant steel. The mixer shall be furnished with a slump meter.

3.7.5 Water system. A water system, consisting of a pump of adequate capacity to supply all demands of the plant, cycling timer, piping, hose, and all the necessary accessories shall be provided with the plant. The required amount of water shall be discharged to the mixer while the mixer is being charged with aggregate. The suction and discharge connections of the pump shall have not less than 3-inch (76 mm) National Taper Pipe Thread. The pump shall have a constant speed motor drive, and automatic start-stop controls.

3.7.6 Air system. Air required to operate the plant shall be supplied by compressor(s) of adequate capacity to satisfy all demands. The compressor(s) shall be equipped with an oiler, strainer, relief valve, moisture separator, drain, and receiver with an unloading valve.

3.7.7 Hydraulic system. Hydraulic power required to operate the plant shall have a constant speed motor driven pump of adequate capacity with a relief valve, and automatic start-stop controls to satisfy the operational demands.

3.7.8 Admix dispensing system. An air entraining admix dispensing system shall be provided with the plant. The system shall include pump, meter, piping, and all necessary components for a complete dispensing system.

3.7.9 Electrical system. All electrical equipment and wiring shall conform to NFPA 70. Wiring shall be installed inside a conduit.

3.7.9.1 Motors. All motors for driving components of the concrete plant shall be totally enclosed, fan cooled, conforming to NEMA MG 1, and rated for 230/460 volts (V), 3-phase, 60 Hertz (Hz), alternating current. All motors larger than 15 horsepower shall be started from nonreversing reduced voltage starters with under-voltage and overload protection.

3.7.9.2 Power panel. The power panel enclosure shall be NEMA type 3S in accordance with NEMA ICS-6 with doors and shall be UL approved, certifying conformance to UL 508A. The power panel shall contain master switch circuit breakers, motor starters, and all items necessary for 460 V, 3-phase, hookup of the concrete plant. The power plant shall be furnished with two 50-foot (15 m), rubber covered, 4-conductor (one conductor for each phase, plus an equipment ground (green) conductor) cable conforming to NEMA WC-3 or WC-7. The cable shall have lugs for connecting to an electrical system. The cables shall have conductive capacity to meet the electrical requirements of the concrete plant. The cables shall be portable power cables, with extra heavy duty jacket, rated for 600V. Cables shall be UL approved. The power panel shall have an instruction plate permanently affixed in a conspicuous location. In addition to instructions for connecting and operating the plant, the instruction plate shall

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show the applicable power supply requirements for the plant, in bold type, as follows:

POWER SUPPLY REQUIRED

460 VOLTS, THREE-PHASE,		
INPUT CAPACITY, MAXIMUM	KVA (KW)
OPERATING LOAD (AT RATED CAPACITY)	KVA (KW)

3.7.9.3 Diesel engine-driven generator set. When specified (see 6.2), a diesel engine generator set shall be furnished. The generator set shall comply with CC-G-2745, and shall have 60 Hz, 460 V current generation. The rated power output of the generator set shall be adequate for the total maximum connected load, including start-up, of the concrete plant and auxiliary electrical equipment, plus 5 percent additional load for area lighting for night operations. The diesel engine shall start at any temperature from -20 to +120 deg F (-29 to +49 deg C) and shall include an hour meter. Starting aids shall be either a electric glow plug or ether primer. When an ether primer system is provided, it shall be of the measured shot type with storage capacity of not less than 12 fluid ounces (.35 liters). The generator set shall be provided with a weatherproof housing. The housing shall protect the generator set for both storage and operation in all weather conditions. Unless otherwise specified (see 6.2), the battery furnished with the diesel engine shall be dry charged in accordance with W-B-131, without electrolyte, with sealed caps to prevent the intrusion of atmospheric moisture.

3.7.10 Scales. Scales shall be of the level balance, springless or load cell type. The aggregate scale shall be of the accumulative three-material type, capable of automatically weighing preset amounts of the three materials. The cement scale shall be one material type, capable of weighing a preset amount of cement. Scales shall be equipped with zero interlocks to prevent charging of a new batch, or the next material of the batch, or discharging of the batch until the preset weights are reached and within the tolerances as specified herein.

3.7.11 Control panel and controls. The concrete plant shall be furnished with a dust and weather tight control panel with key-locked door(s) or cover(s). The control panel, or console, shall contain all the necessary controls to enable automatic, as defined by the CPMB, and manual operation of the plant by one operator at the control panel. Automatic batching, mixer(s) charging, water introduction, and mixing time cycle controls shall be provided with manual over-ride controls. The mixer shall be discharged by activation of discharge control at the control panel or at the mixer. An emergency stop control shall be provided to enable complete shutdown. The control panel shall be provided with preset type controls to control the amount of three sizes of aggregate, cement, water, and mixing time per batch of concrete. A digital type batch counter and a water readout (gallons or liters) per batch shall be provided.

3.7.12 Semitrailer units. The concrete plant (and mixer when furnished) shall be separated into two semitrailer units for transportation. The semitrailer units shall be designed to withstand shock loads incumbent with performance requirements specified herein. Each semitrailer unit shall be equipped with full air service brakes controlled from the towing vehicle. Service brakes, lighting, reflectors, and associated equipment shall conform

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to DoT Motor Carrier Safety Regulations. The kingpin shall conform to SAE J700. Support jacks, legs, or braces shall be provided in sufficient number and location to support the plant semitrailer unit in its operating position when the semi-trailer is unhooked from the towing vehicle. Jacks, legs, and braces shall be retractable or removable to preclude interference with travel capabilities. Axle and suspension ratings shall be at least equal to the imposed load. The plant semitrailer units shall conform to table I.

TABLE I. Dimensions and clearances.

* Maximum overall height	* 13-1/2 feet (4.11 m)	*
* Maximum overall width	* 12 feet (3.66 m)	*
* Maximum length centerline of kingpin to rear	* 65 feet (19.8 m)	*
* Kingpin height from ground	* 48 to 52 inches	*
	* (1.22 to 1.32 m)	*
* Centerline of kingpin to front	* 24 to 36 inches	*
	* (610 to 915 mm)	*
* Minimum swing clearance (radius from center of king		*
* pin to any portion of semitrailer 6 inches (153 mm)		*
* or more below upper fifth wheel plate)	* 82 inches (2.1 m)	*
* Angle of departure, not less than	* 23 degrees	*
* Vertical road clearance, except for axle assembly		*
* not less than	* 6 inches (153 mm)	*

3.7.13 Tires and rims. The tire and rim ratings shall conform to TRA Yearbook recommendations for the type and size of tires furnished. Tire and rim sizes shall be the same for all wheels. Tires shall be tubeless type with highway tread. Tires shall be or rated capacity at least equal to the load imposed on each tire, measured at each wheel at the ground. Tires shall be not less than 100 level quality and shall be of domestic make. Disc wheels are required.

3.8 Toolbox. A toolbox shall be provided. The toolbox shall be large enough to store all tools required for field service or maintenance, but shall have external closed dimensions of not less than 14 inches (356 mm) in length, 6 inches (153 mm) in width, and 6 inches (153 mm) in height. The toolbox shall be of nominal 0.0740-inch (1.88 mm) thick steel, with a hinged lid and a lockable fastener to keep the lid secure. The toolbox shall be mounted in a protected, accessible location.

3.9 Dissimilar metals. Intimate contact which can be expected to cause galvanic corrosion shall be avoided. When such contact cannot be avoided, an interposing insulating material shall be provided to minimize the corrosive effect.

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 gauge or 6895 kilopascals (kPa) or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

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3.11 Fungus resistance. When specified (see 6.2), electrical components and circuit elements, including terminal and circuit connections, shall be coated with varnish conforming to MIL-V-173, except that:

- a. Components and elements inherently inert to fungi or in hermetically sealed enclosures need not be coated.
- b. Current-carrying contact surfaces, such as relay contact points, shall not be coated.

3.12 Lifting and tiedown attachments. When specified (see 6.2), the plant shall be equipped with lifting and tiedown attachments. Lifting and tie-down attachments shall conform to type II or type III of MIL-STD-209. Lifting devices shall be designed and constructed to preclude the use of spreader bars.

A nonferrous transportation plate shall be provided and mechanically attached to the plant. 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 markings shall indicate which attachments are intended for the tiedown of the plant on the carrier when shipped.

3.13 Instruction plates. The plant 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. Plates shall be securely affixed to the equipment with nonferrous screws or bolts of not less than 1/8-inch (3 mm) diameter.

3.14 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.

3.15 Identification plate. The contracting officer will furnish to the Government inspector the required metal identification plates. The contractor will be required to stamp the necessary data in the blank spaces thereon and securely affix said plates in a conspicuous place on each unit, assembly or subassembly, and parts as directed by the Government inspector. Nonferrous screws, rivets, or bolts of not less than 1/8-inch (3 mm) in diameter shall be used to affix the plates. Nomenclature shall be "CENTRAL MIX PLANT, CONCRETE, 100 CUBIC YARDS (77 CUBIC METERS) PER HOUR CAPACITY."

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

1. Inflation of all tires.
2. Adjustment of brakes.
3. Proper functioning of all lighting and electrical systems.
4. Adjustment of engine to include tune-up when engine generator is furnished.
5. Complete lubrication with grades of lubricants recommended for

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ambient temperature at the delivery point.

6. Cooling system filled to capacity with a clean solution of equal parts by volume of water and antifreeze (ethylene glycol) when engine generator is furnished.

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

3.17 Marking. The empty weight of the plant shall be conspicuously marked on each side of the plant by stenciling or other suitable means. Block or stencil type letters not more than 1-inch (25 mm) and not less than 3/4-inch (19 mm) high shall be used.

3.18 Cleaning, treatment, and painting. Surfaces normally painted shall be cleaned, treated, and painted as specified herein. Surfaces to be painted shall be cleaned and dried to ensure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion products, or any other interfering substances. As soon as practicable after cleaning, and before any corrosion product or other coating interfering material can result, the surface shall be prepared or treated to ensure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat of acrylic enamel or polyurethane enamel. 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 (.0635 mm) over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects. Color of the finish coat shall be Green, No. 14064, conforming to FED-STD-595. The end item, allied equipment, and attachments shall be the same color. Wheels painted with black, No. 17038 are acceptable. All wheels shall be the same color. When repainting is required to provide the green, No. 14064 finish color, the base color shall not be visible at any location. The repaint coating material shall be compatible with the original paint material.

3.19 Workmanship.

3.19.1 Metal 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. All bends shall be made by controlled means to ensure uniformity of size and shape.

3.19.2 Bolted connections. Boltholes shall be punched or drilled within manufacturer's design tolerances and shall have the burrs removed. Washers or lockwashers shall be provided, and all bolts, nuts, and screws shall be tight.

3.19.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets 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.

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3.19.4 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.

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

3.20 System of measurement. The dimensions used in this specification are not intended to preclude the use of the metric system of measurement in the fabrication and production of the material, individual parts, and the finished product, provided form, fit, and function requirements are satisfied.

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 specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification 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.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

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

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

4.2.1 First article inspection. The first article inspection shall be performed on one concrete plant when a first article is required (see 3.2, 6.2 and 6.3). This inspection shall include the examination of 4.3 and the first article tests indicated herein. The first article may be either a first

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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. When the contractor desires to deliver the first article test unit as a contract item, it shall be delivered only after the contractor, at its own expense, completely cleaned, devoid of foreign material, reconditioned or overhauled, making such replacements or modifications thereto as are required to make the unit as a contract item.

4.2.1.1 First article tests. Failure to pass any of the following tests shall constitute cause for rejection.

- a. Road test. Each trailer-mounted unit shall be towed for not less than 5 miles or 8 kilometers (km) over dirt or gravel roads and for not less than 20 miles (32 km) over paved roads to verify conformance to 3.6.
- b. Production test. The assembled plant shall be operated a sufficient period of time to verify that the concrete plant is capable of meeting the production performance specified in 3.6.
- c. Lifting and tying down attachments tests. When furnished, the lifting and tying down attachments shall be tested to verify conformance to 3.12.

4.2.1.2 Certificate of conformance. The contractor may submit for approval of the contracting officer or his authorized representative a certificate of conformance to the requirements cited in 4.3 and 4.2.1.1. The government reserve the right to re-examine and require a retest to determine the validity of the certification.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3 and the acceptance test as follows:

- a. Acceptance tests. Each concrete plant shall be erected to function as a complete plant to determine conformance to 3.6. All controls shall be operated a sufficient number of times to determine ease of operation and responsiveness. Failure to pass this test shall constitute cause for rejection.

4.3 Examination. Each concrete plant shall be examined for compliance with the requirements specified in section 3 of this specification. 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 requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packing, and marking. The preservation, packing, and marking shall be as specified in the contract or purchase order.

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6. NOTES

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

6.1 Intended use. This central concrete mix plant will be used either as a concrete mix plant or, when not using the mixer unit, as a dry batch plant.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. 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).
- c. When first article is required for inspection and approval (see 3.2, 4.2.1, and 6.3).
- d. When a cement bin loading system shall be furnished (see 3.7.2.1).
- e. When tiltable or horizontal shaft mixer(s) are required (see 3.7.4).
- f. When diesel engine-driven generator is required (see 3.7.9.3).
- g. When battery is other than as specified (see 3.7.9.3).
- h. When fungus resistance is required (see 3.11).
- i. When lifting and tying down attachments are required (see 3.12).

6.3 First article. When a first article inspection is required, the item will be tested and should be a first production item consisting of one complete central mix plant or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.4 Waiver of test. Any or all tests requirements in section 4 may be waived by the contracting officer provided the contractor furnishes actual test results which were accepted by the Government under a previous contract for an identical item acquired to this specification.

6.5 Supersession data. This specification replaces military specification MIL-C-28562C(YD) dated 19 June 1989.

6.6 Definition.

6.6.1 Standard commercial product. 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.

6.6.2 Recovered materials. 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.

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6.7 Subject term (key word) listing.

Batch plant, aggregate and cement
Concrete batch plant, movable
Concrete mixer

MILITARY INTERESTS:
ACTIVITIES:

Navy - YD1

CIVIL AGENCY COORDINATING

GSA - FSS

PREPARING ACTIVITY:

Navy - YD1

(Project 3895-0368)

