SECTION 224213.16 - COMMERCIAL URINALS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			1. SUMMARY
				1. Section Includes:

Stall urinals.

Wall-hung urinals.

Waterless urinals.

Urinal flushometer valves.

Supports.

* + - * 1. Related Requirements:

Retain subparagraph below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 224600 "Security Plumbing Fixtures" for security urinals.

* + - 1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for urinals.

Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

* + - * 1. Sustainable Design Submittals:

Retain "Shop Drawings" paragraph below if equipment includes wiring.

* + - * 1. Shop Drawings: Include diagrams for power, signal, and control wiring.
			1. CLOSEOUT SUBMITTALS
				1. Operation and Maintenance Data: For flushometer valves[**and electronic sensors**] to include in operation and maintenance manuals.
			2. MAINTENANCE MATERIAL SUBMITTALS
				1. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.

Flushometer-Valve Repair Kits: Equal to [**10**] <**Insert number**> percent of amount of each type installed, but no fewer than [**one**] [**six**] <**Insert number**> of each type.

Waterless Urinal Trap-Seal Cartridges: Equal to [**200**] <**Insert number**> percent of amount of each type installed, but no fewer than [**12**] <**Insert number**> of each type.

Waterless Urinal Trap-Seal Liquid: Equal to [**1 gal.**] <**Insert volume**> for each urinal installed.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

Do not use same urinal designation as is used for another urinal in Section 224600 "Security Plumbing Fixtures."

* + - 1. STALL URINALS

Copy "Urinals - Stall, Washout Type" paragraph below and re-edit for each type of stall, wash-out-type urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Stall, Washout Type: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3707) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172022).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172023).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172024).

Approved equivalent.

Caution: This urinal type requires a drainage piping trap under the urinal. This trap is not part of the urinal fittings.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Type: [**Straight or sloped**] <**Insert type**> front.

Retain "Seam Covers" subparagraph below if installing two or more stall urinals side by side.

Seam Covers: For [**21-inch**] [**24-inch**] urinal centers.

Strainer: Separate; removable.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.5 gpf**] [**1.0 gpf**].

Spud Size and Location: NPS 3/4; top.

Outlet Size and Location: NPS 2; bottom for separate trap.

Color: [**White**] <**Insert color**>.

Flushometer Valve: <**Insert urinal flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

* + - 1. WALL-HUNG URINALS

Copy "Urinals - Wall Hung, Back Outlet, Blowout" paragraph below and re-edit for each type of wall-hung, back-outlet, blowout urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Blowout: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3708) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172098).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172097).

Approved equivalent.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Second option in "Strainer or Trapway" subparagraph below may not be available from some manufacturers. Extended shields vary in shape and dimensions. Verify availability and suitability if required.

Strainer or Trapway: [**Manufacturer's standard strainer**] [**Open trapway**] with integral trap.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

First option in "Spud Size and Location" subparagraph below is available from some manufacturers. Back spud is used with a remote hard-wired, solenoid-actuator, electronic-sensor flushometer valve. Verify availability if required.

Spud Size and Location: NPS 1-1/4; [**back**] [**top**].

Outlet Size and Location: NPS 2; back.

Color: [**White**] <**Insert color**>.

Flushometer Valve: <**Insert urinal-flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for coupling.

Size: NPS 2.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I urinal carrier**] <**Insert carrier**> with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Design Consultant to review code references and verify that the referenced sections/tables are current. Note that code references shall be based on the current version of the Uniform Code.

Copy "Urinals - Wall Hung, Back Outlet, Siphon Jet" paragraph below and re-edit for each type of wall-hung, back-outlet, siphon-jet urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Siphon Jet: [**Accessible**] <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3709) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172100).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172105).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172101).

Approved equivalent.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Option in "Type" subparagraph below may not be available from some manufacturers. Extended shields vary in shape and dimensions. Verify availability and suitability if required.

Type: Siphon jet[**with extended shields**].

Strainer or Trapway: [**Manufacturer's standard strainer**] <**Insert strainer**> with integral trap.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

First option in "Spud Size and Location" subparagraph below is available from some manufacturers. Back spud is used with a remote hard-wired, solenoid-actuator, electronic-sensor flushometer valve. Verify availability if required.

Spud Size and Location: NPS 3/4; [**back**] [**top**].

Outlet Size and Location: NPS 2; back.

Color: [**White**] <**Insert color**>.

Flushometer Valve: <**Insert urinal flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for coupling.

Size: NPS 2.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I urinal carrier**] <**Insert carrier**> with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Copy "Urinals - Wall Hung, Back Outlet, Washout" paragraph below and re-edit for each type of wall-hung, back-outlet, washout urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Washout: [**Accessible**] <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3710) Subject to compliance with requirements, provide products by one of the following:

[Advanced Modern Technologies Corporation - AMTC](http://www.specagent.com/Lookup?uid=123457172039).

[American Standard](http://www.specagent.com/Lookup?uid=123457172027).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172035).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172026).

Approved equivalent.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Type: Washout with extended shields.

Strainer or Trapway: [**Manufacturer's standard strainer**] <**Insert strainer**> with integral trap.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

First option in "Spud Size and Location" subparagraph below is available from some manufacturers. Back spud is used with a remote hard-wired, solenoid-actuator, electronic-sensor flushometer valve. Verify availability if required.

Spud Size and Location: NPS 3/4, [**back**] [**top**].

Outlet Size and Location: NPS 2, back.

Color: [**White**] <**Insert color**>.

Flushometer Valve: <**Insert urinal flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for coupling.

Size: NPS 2.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I urinal carrier**] <**Insert carrier**> with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Copy "Urinals - Wall Hung, Bottom Outlet, Washout" paragraph below and re-edit for each type of wall-hung, bottom-outlet, washout urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Bottom Outlet, Washout: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3711) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172109).

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172115).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172108).

Approved equivalent.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Drain: Separate removable chrome-plated dome strainer with chrome-plated, NPS 1-1/2 tailpiece.

Strainer or Trapway: Manufacturer's standard strainer and NPS 1-1/2 tailpiece.

Inlet Spud Size and Location: NPS 3/4; top.

Outlet Size and Location: NPS 1-1/2; bottom.

Color: [**White**] <**Insert color**>.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

Flushometer Valve: <**Insert urinal flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2.

Trap:

Size: NPS 1-1/2.

Retain "Material, Chrome Plated" or "Material, Stainless Steel" subparagraph below.

Material, Chrome Plated: [**Two-piece, cast-brass trap and swivel elbow with 0.032-inch- thick brass tube to wall**] [**two-piece, cast-brass trap and ground-joint swivel elbow with 0.032-inch- thick brass tube to wall**] [**one-piece, cast-brass trap with swivel 0.029-inch- thick tubular brass wall bend**] <**Insert trap type**>; and chrome-plated brass or steel wall flange.

Material, Stainless Steel: Two-piece trap and swivel elbow with 0.012-inch- thick, stainless steel tube to wall; and stainless steel wall flange.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type II urinal carrier**] <**Insert carrier**> with hanger and bearing plates.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Copy "Urinals - Wall Hung, Back Outlet, Washdown" paragraph below and re-edit for each type of wall-hung, back-outlet, washdown urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Washdown: [**Accessible**] <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13950) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172747).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172746).

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172744).

Approved equivalent.

Fixture:

Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.

Material: Vitreous china.

Type: Washdown with extended shields.

Strainer or Trapway: [**Manufacturer's standard strainer**] <**Insert strainer**> with integral trap.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

First option in "Spud Size and Location" subparagraph below is available from some manufacturers. Back spud is used with a remote hard-wired, solenoid-actuator, electronic-sensor flushometer valve. Verify availability if required.

Spud Size and Location: NPS 3/4, [**back**] [**top**].

Outlet Size and Location: NPS 2, back.

Color: [**White**] <**Insert color**>.

Flushometer Valve: <**Insert urinal flushometer-valve designation from "Urinal Flushometer Valves" Article**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for coupling.

Size: NPS 2.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I urinal carrier**] <**Insert carrier**> with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Copy "Urinals - Wall Hung, Bottom Outlet, Washdown" paragraph below and re-edit for each type of wall-hung, bottom-outlet, washdown urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals, Wall Hung, Bottom Outlet, Washdown: <**Insert drawing designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3712) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172044).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172041).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172043).

Approved equivalent.

Fixture:

Standards: ASME A112.19.1/CSA B45.2 and ASME A112.19.5/CSA B45.15.

Material: Enameled cast iron.

Size: [**36 inches**] [**48 inches**] [**60 inches**] [**72 inches**].

Drain: Separate removable chrome-plated dome strainer with chrome-plated, NPS 1-1/2 tailpiece.

In "Water Consumption" subparagraph below, not all manufacturers offer each option. Consult manufacturers.

Water Consumption: [**0.125 gpf**] [**0.25 gpf**] [**0.5 gpf**] [**1.0 gpf**].

Flushing Device: Manufacturer's standard self-closing valve with washdown pipe of length matching fixture.

Outlet Size and Location: NPS 1-1/2; bottom.

Color: [**White**] <**Insert color**>.

Flushometer Valve:

Standard: ASME A112.18.1/CSA B125.1.

Flushing Device: Manufacturer's standard for NPS 1/2 supply; self-closing valve; and washdown pipe of length matching fixture.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2.

Trap:

Size: NPS 1-1/2.

Retain "Material, Chrome Plated" or "Material, Stainless Steel" subparagraph below.

Material, Chrome Plated: [**Two-piece, cast-brass trap and swivel elbow with 0.032-inch- thick brass tube to wall**] [**two-piece, cast-brass trap and ground-joint swivel elbow with 0.032-inch- thick brass tube to wall**] [**one-piece, cast-brass trap with swivel 0.029-inch- thick tubular brass wall bend**] <**Insert trap type**>; and chrome-plated brass or steel wall flange.

Material, Stainless Steel: Two-piece trap and swivel elbow with 0.012-inch- thick, stainless steel tube to wall; and stainless steel wall flange.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I sink carrier**] <**Insert carrier**>.

Sink/Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

* + - 1. WATERLESS URINALS

Copy "Urinals - Wall Hung, Back Outlet, Waterless, Vitreous China" paragraph below and re-edit for each type of wall-hung, back-outlet, waterless, vitreous-china urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Waterless, Vitreous China: <**Insert drawing designation**>. Designed for liquid-trap-seal operation.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3713) Subject to compliance with requirements, provide products by one of the following:

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172119).

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172118).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172122).

Approved equivalent.

Fixture:

Standard: ASME A112.19.2/CSA B45.1, except without water supply.

Trap-Seal Method: Proprietary cartridge with liquid seal.

Outlet Size and Location: [**NPS 2**] <**Insert pipe size**> flange; back.

Trap-Sealing Liquid: Proprietary.

Color: [**White**] <**Insert color**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for transition coupling, trap, and waste pipe.

Size: [**NPS 2**] <**Insert pipe size**>.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Type I urinal carrier**] <**Insert carrier**> with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

Copy "Urinals - Wall Hung, Back Outlet, Waterless, Plastic" paragraph below and re-edit for each type of wall-hung, back-outlet, waterless, plastic urinal required.

Insert drawing designation. Use these designations on Drawings to identify each urinal.

* + - * 1. Urinals - Wall Hung, Back Outlet, Waterless, Plastic: <**Insert drawing designation**>. Designed for liquid-trap-seal operation.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3714) Subject to compliance with requirements, provide products by the following:

[Waterless Co](http://www.specagent.com/Lookup?uid=123457172124).

Approved equivalent.

Fixture:

Standard: IAPMO Z124/CSA B45.5, except without water supply.

Material: [**FRP**] <**Insert material**>.

Trap-Seal Method: Proprietary cartridge or trap system.

Outlet Size and Location: NPS 2; back. Include transition coupling.

Trap-Sealing Liquid: Proprietary.

Color: [**White**] <**Insert color**>.

Waste Fitting:

Standard: ASME A112.18.2/CSA B125.2 for transition coupling, trap, and waste pipe.

Size: [**NPS 2**] <**Insert pipe size**>.

Coordinate "Support" subparagraph below with "Supports" Article.

Support: [**Metal plate in wall**] [**Wood blocking in wall**] [**Type I urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture**] <**Insert carrier**>.[**Include rectangular, steel uprights.**]

Urinal Mounting Height: [**Standard**] [**Child**] [**Handicapped/elderly according to UNIFORM CODE A117.1**].

* + - 1. URINAL FLUSHOMETER VALVES

Caution: Flushometer-valve consumption must match the water consumption of the urinal.

Copy "Lever-Handle, Diaphragm Flushometer Valves" paragraph below and re-edit for each type of lever-handle, diaphragm flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Lever-Handle, Diaphragm Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3715) Subject to compliance with requirements, provide products by one of the following:

[Advanced Modern Technologies Corporation - AMTC](http://www.specagent.com/Lookup?uid=123457172052).

[American Standard](http://www.specagent.com/Lookup?uid=123457172134).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172050).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Solenoid-Actuator, Diaphragm Flushometer Valves" paragraph below and re-edit for each type of solenoid-actuator, diaphragm flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Solenoid-Actuator, Diaphragm Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3716) Subject to compliance with requirements, provide products by one of the following:

[I-Con Systems, Inc](http://www.specagent.com/Lookup?uid=123457177174).

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172055).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172056).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Actuator: Solenoid complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Trip Mechanism: [**Battery-powered**] [**Hard-wired**] electronic sensor complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Motor-Actuator, Diaphragm Flushometer Valves" paragraph below and re-edit for each type of motor-actuator, diaphragm flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Motor-Actuator, Diaphragm Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13828) Subject to compliance with requirements, provide products by one of the following:

[Advanced Modern Technologies Corporation - AMTC](http://www.specagent.com/Lookup?uid=123457172095).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172094).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Actuator: Geared-motor actuator complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Trip Mechanism: [**Battery-powered**] [**Hard-wired**] electronic sensor complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Hydraulic-Actuator, Push-Button, Diaphragm Flushometer Valves" paragraph below and re-edit for each type of hydraulic-actuator, push-button, diaphragm flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Hydraulic-Actuator, Push-Button, Diaphragm Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3717) Subject to compliance with requirements, provide products by one of the following:

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172126).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172135).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Lever-Handle, Piston Flushometer Valves" paragraph below and re-edit for each type of lever-handle, piston flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Lever-Handle, Piston Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3718) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172065).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172063).

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172061).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172064).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Hard-Wired, Solenoid-Actuator, Piston Flushometer Valves" paragraph below and re-edit for each type of hard-wired, solenoid-actuator, piston flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Hard-Wired, Solenoid-Actuator, Piston Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3719) Subject to compliance with requirements, provide products by one of the following:

[Sloan Valve Company](http://www.specagent.com/Lookup?uid=123457172128).

[TOTO USA, INC](http://www.specagent.com/Lookup?uid=123457172129).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172131).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Actuator: Solenoid complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Trip Mechanism: Hard-wired electronic sensor complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

Copy "Battery-Powered, Solenoid-Actuator, Piston Flushometer Valves" paragraph below and re-edit for each type of battery-powered, solenoid-actuator, piston flushometer valve required.

Insert designation. Use these designations to identify each valve.

* + - * 1. Battery-Powered, Solenoid-Actuator, Piston Flushometer Valves: <**Insert designation**>.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=3720) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457172075).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457172068).

[TOTO USA, INC](http://www.specagent.com/Lookup?uid=123457172071).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172073).

Approved equivalent.

Standard: ASSE 1037/ASME 112.1037/CSA B125.37.

Minimum Pressure Rating: 125 psig.

Features: Include integral check stop and backflow-prevention device.

Material: Brass body with corrosion-resistant components.

Exposed Flushometer-Valve Finish: Chrome plated.

Retain "Panel Finish" subparagraph below for concealed flushometer-valve components.

Panel Finish: Chrome plated or stainless steel.

Style: [**Exposed**] [**Concealed**].

Actuator: Solenoid complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Trip Mechanism: Battery-powered electronic sensor complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.

Consumption: [**0.5 gal.**] [**1.0 gal.**] <**Insert value**> per flush.

Minimum Inlet: [**NPS 3/4**] [**NPS 1**].

Minimum Outlet: [**NPS 3/4**] [**NPS 1-1/4**].

* + - 1. SUPPORTS
				1. Type I Urinal Carrier:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=12547) Subject to compliance with requirements, provide products by one of the following:

[Josam Company](http://www.specagent.com/Lookup?uid=123457172080).

[WATTS](http://www.specagent.com/Lookup?uid=123457172078).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172076).

Approved equivalent.

Standard: ASME A112.6.1.

* + - * 1. Type II Urinal Carrier:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=12548) Subject to compliance with requirements, provide products by one of the following:

[Josam Company](http://www.specagent.com/Lookup?uid=123457172086).

[WATTS](http://www.specagent.com/Lookup?uid=123457172084).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172082).

Approved equivalent.

Standard: ASME A112.6.1.

* + - * 1. Type I Sink Carrier:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=12549) Subject to compliance with requirements, provide products by one of the following:

[Josam Company](http://www.specagent.com/Lookup?uid=123457172753).

[WATTS](http://www.specagent.com/Lookup?uid=123457172756).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457172757).

Approved equivalent.

Standard: ASME A112.6.1.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before urinal installation.
				2. Examine walls and floors for suitable conditions where urinals will be installed.
				3. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. INSTALLATION
				1. Urinal Installation:

Install urinals level and plumb according to rough-in drawings.

Install wall-hung, back-outlet urinals onto waste fitting seals and attached to supports.

Install wall-hung, bottom-outlet urinals with tubular waste piping attached to supports.

Indicate on Drawings those urinals that are required to be accessible.

Install accessible, wall-mounted urinals at mounting height for the handicapped/elderly, according to UNIFORM CODE A117.1.

Install trap-seal liquid in waterless urinals.

* + - * 1. Support Installation:

Install supports, affixed to building substrate, for wall-hung urinals.

Use off-floor carriers with waste fitting and seal for back-outlet urinals.

Use carriers without waste fitting for urinals with tubular waste piping.

Use chair-type carrier supports with rectangular steel uprights for accessible urinals.

* + - * 1. Flushometer-Valve Installation:

Install flushometer-valve water-supply fitting on each supply to each urinal.

Attach supply piping to supports or substrate within pipe spaces behind fixtures.

Install lever-handle flushometer valves for accessible urinals with handle mounted on open side of compartment.

Install fresh batteries in battery-powered, electronic-sensor mechanisms.

* + - * 1. Wall Flange and Escutcheon Installation:

Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations.

Install deep-pattern escutcheons if required to conceal protruding fittings.

Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

Retain "Joint Sealing" paragraph below if sealants are not specified in Section 079200 "Joint Sealants."

* + - * 1. Joint Sealing:

Seal joints between urinals and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.

Match sealant color to urinal color.

Comply with sealant requirements specified in Section 079200 "Joint Sealants."

* + - 1. PIPING CONNECTIONS

Coordinate piping installations and specialty arrangements with Drawings and with requirements specified in piping systems. If Drawings are explicit enough, these requirements may be reduced or omitted.

* + - * 1. Connect urinals with water supplies and soil, waste, and vent piping. Use size fittings required to match urinals.
				2. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
				3. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
				4. Where installing piping adjacent to urinals, allow space for service and maintenance.
			1. ADJUSTING
				1. Operate and adjust urinals and controls. Replace damaged and malfunctioning urinals, fittings, and controls.
				2. Adjust water pressure at flushometer valves to produce proper flow.
				3. Install fresh batteries in battery-powered, electronic-sensor mechanisms.
			2. CLEANING AND PROTECTION
				1. Clean urinals and fittings with manufacturers' recommended cleaning methods and materials.
				2. Install protective covering for installed urinals and fittings.
				3. Do not allow use of urinals for temporary facilities unless approved in writing by Director’s Representative.

END OF SECTION 224213.16