

SECTION 05 70 00

DECORATIVE STAINLESS STEEL DRAINS AND GRATES

EDITING NOTE: DELETE SYSTEMS AND MATERIALS THAT ARE NOT REQUIRED FOR THE PROJECT. MATERIAL AND SIZE CHOICES ARE NOTED WITH BRACKETS [] FOR SPECIFIER'S SELECTION.

PART 1 - GENERAL

1.1 SUMMARY:

EDITING NOTE: THESE PRODUCTS ARE SUITABLE FOR COMMERCIAL (EDUCATIONAL, MEDICAL, SENIOR LIVING, GOVERNMENT, OFFICE BUILDINGS, AND OTHER COMMERCIAL FACILITIES) AS WELL AS SINGLE-FAMILY AND MULTI-FAMILY RESIDENTIAL APPLICATIONS, INCLUDING RESTROOMS, BATHROOMS, KITCHENS, PEDESTRIAN AREAS, POOL AREAS AND BALCONIES.

- A. Work of this section includes custom stainless steel [drains and grates] [knife slots] for the following applications:
 - 1. Linear floor/shower drains, wedgewire design.
 - 2. Linear floor/shower drains, tile insert design.
 - 3. Linear floor/shower drains, pattern grate design.
 - 4. Square tile insert floor/shower drains.
 - 5. Countertop drains.
 - 6. Knife slots.
 - 7. Linear landscape channel drains.
 - 8. Linear balcony channel drains.
 - 9. Linear swimming pool channel drains.
- B. Related work:
 - 1. [Waterproofing.]
 - 2. [Tiling.] [Stone work.]
 - 3. [Countertops.]
 - 4. Plumbing.

1.2 SUBMITTALS:

- A. Shop drawings: Indicate sizes, shapes, configuration, sections, locations, fabrication and installation details. Indicate details of adjacent surfaces,

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fabricated sizes and plumbing details. Include dimensioned plan of anchorage devices, materials, finishes and itemization of parts and accessories.

- B. Product data: Indicate product description, including compliance with specified requirements and installation requirements. Mark manufacturer's brochures to include only those products proposed for use.
- C. Samples: Submit one full-size sample of each specified item. Design and finish of samples shall indicate materials proposed for use on this project.

1.3 QUALITY ASSURANCE:

- A. Reference standards: Standards of ASTM International (ASTM) as referenced herein.
- B. Manufacturer's qualifications: Manufacturer shall have been engaged in the successful fabrication of decorative stainless steel elements as proposed for this project for a minimum of ten (10) consecutive years.
- C. Installer's qualifications: Installer shall have been engaged in the successful installation of tile, stone and finish masonry projects as proposed for this project for a minimum of three (3) consecutive years.

1.4 DELIVERY, STORAGE AND HANDLING:

- A. Deliver decorative stainless steel materials and assemblies just prior to time for installation.
- B. Store materials in manufacturer's original packaging, labels intact, indoors, off floor, protected from damage.
- C. Handle materials to prevent damage and staining during installation and until Date of Substantial Completion.

1.5 PROJECT CONDITIONS:

- A. Coordinate installation of specified assemblies with installation of waterproofing, tile, stone, and other related assemblies.

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- B. Do not install specified materials until adjacent materials and assemblies are installed, approved and protected from construction operations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Basis of design: LUXE Linear Drains, LLC (www.lineardrains.com).
- B. Substitutions: [No substitutions allowed.] [Refer to Section 01 25 00 Substitution Procedures for proposed substitution requirements.]

2.2 MATERIALS:

- A. Bars and shapes: Stainless steel meeting ASTM A276, Type 304.
- B. Sheet, strip, plate and flat bar: Stainless steel meeting ASTM A666, Type 304.
- C. Tubing: Stainless steel meeting ASTM A554 Grade MT 304.
- D. Pipe: Stainless steel meeting ASTM A312, Grade TP 304.

2.3 FLOOR/SHOWER DRAINS: ASME A112.18.2-2011/CSA B125.2-11

- A. Linear wedgewire floor/shower drains:
 - 1. Description: Type 304 stainless steel drain assembly consisting of a wedgewire grate, and a solid drain channel with a central outlet for insertion in plumbing drains.
 - 2. Overall size: [Standard width of 3.35" (85mm)] [Custom width of _____" (____mm)] by 0.79" (20mm) depth, excluding outlet.
 - 3. Channels: 18 gauge stainless steel, with 2.0" (50mm) diameter central outlet for insertion in 2" nominal flanged floor drains.
 - 4. Grate:
 - a. Width: 2.95" (75mm).
 - b. Grate frame: Type 304 stainless steel 0.16" (4mm) wide by 0.71" (18mm) deep.
 - c. Wedgewire grate construction:
 - 1) Wire: 0.20" (5mm) diameter full-length stainless steel wire with 0.16" (4mm) gap between wires.

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- 2) Cross brace bars: 0.12" by 0.32" (3mm by 8mm) stainless steel bars spaced at 0.87" (22mm).
 5. Length: [30" (762mm).] [36" (914mm).] [48" (1219mm).] [60" (1524mm).] [Custom length of _____" (____mm).]
- B. Linear tile insert floor/shower drains:
1. Description: Type 304 concealed stainless steel drain assembly consisting of a tile tray, and a solid drain channel with a central outlet for insertion in plumbing drains.
 2. Overall size: [Standard width of 3.35" (85mm)] [Custom width of _____" (____mm)] by [standard depth of 1.18" (30mm).] [depth of 0.87" (22mm).] excluding outlet.
 3. Channels: 18 gauge stainless steel, with 2.0" (50mm) diameter central outlet for insertion in 2" nominal flanged floor drains.
 4. Tile tray: 0.12" (3mm) thickness stainless steel.
 - a. Width: 2.56" (65mm).
 - b. Depth: Suitable for tile up to 0.5" (13mm) thickness.
 5. Tile for inserting in tile tray: Maximum 0.5" (13mm) thickness. Match floor tile; cut to proper size for installation in tray.
 6. Length: [30" (762mm).] [36" (914mm).] [48" (1219mm).] [60" (1524mm).] [Custom length of _____" (____mm).]
- C. Linear polished stainless grate floor/shower drains:
1. Description: Type 304 stainless steel drain assembly consisting of a polished (#8 finish) insert, and a solid drain channel with a central outlet for insertion in plumbing drains.
 2. Overall size: [Standard width of 3.35" (85mm)] [Custom width of _____" (____mm)] by 0.79" (20mm) depth, excluding outlet.
 3. Channels: 18 gauge stainless steel, with 2.0" (50mm) diameter central outlet for insertion in 2" (51mm) drains.
 4. Polished Stainless insert:
 - a. Pattern grate design: Custom design [as shown on the drawings.] [as determined by the Architect.]
 - b. 18 gauge stainless steel
 - c. Width: 2.56" (65mm).
 - d. Depth: 0.79" (20mm).
 5. Length: [30" (762mm).] [36" (914mm).] [48" (1219mm).] [60" (1524mm).] [Custom length of _____" (____mm).]
- D. Linear pattern grate floor/shower drains:

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1. Description: Type 304 stainless steel drain assembly consisting of a pattern grate, and a solid drain channel with a central outlet for insertion in plumbing drains.
2. Overall size: [Standard width of 3.35" (85mm)] [Custom width of ____" (____mm)] by 0.79" (20mm) depth, excluding outlet.
3. Channels: 18 gauge stainless steel, with 2.0" (50mm) diameter central outlet for insertion in 2" (51mm) drains.
4. Pattern grate:
 - a. Pattern grate design: Custom design [as shown on the drawings.] [as determined by the Architect.]
 - b. 18 gauge stainless steel
 - c. Width: 2.95" (75mm).
 - d. Depth: 0.79" (20mm).
5. Length: [30" (762mm).] [36" (914mm).] [48" (1219mm).] [60" (1524mm).] [Custom length of _____" (____mm).]

E. Square tile insert floor/shower drains:

1. Description: Type 316 or 304 concealed stainless steel drain assembly consisting of a tile tray, and a solid drain channel with a central outlet for insertion in plumbing drains.
2. Overall size: 5" by 5" (127mm by 127mm) by [standard depth of 1.18" (30mm),] [depth of 0.87" (22mm),] excluding outlet.
3. Channels: 18 gauge stainless steel, with 2.0" (50mm) diameter central outlet for insertion in 2" nominal flanged floor drains.
4. Tile tray: 18 gauge stainless steel.
 - a. Face size: 4.25" by 4.25" (108mm by 108mm).
 - b. Depth: Suitable for tile up to 0.39" (10mm) thickness.
5. Tile for inserting in tile tray: Maximum 0.39" (10mm) thickness. Match floor tile; cut to proper size for installation in tray.

2.4 COUNTERTOP DRAINS:

A. Suitable countertops for installation of countertop drains:

1. Stone, quartz and solid surfacing countertops are suitable for installation of countertop drains.
2. Do not install countertop drains in plastic laminate countertops or other tops consisting of wood or wood byproducts.

B. Wedgewire countertop drains:

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1. Description: Type 304 stainless steel countertop drain assembly consisting of a wedgewire grate, and a solid drain channel with a central outlet for insertion in plumbing drains.
2. Overall size: 4.33" (110mm) width by 0.79" (20mm) depth, excluding outlet.
3. Channels: 18 gauge stainless steel, with 0.375" (9.5mm) diameter tubing spout for connection to sink plumbing drain.
4. Grate:
 - a. Width: 3.93" (100mm).
 - b. Grate frame: Type 304 stainless steel 0.16" (4mm) wide by 0.71" (18mm) deep.
 - c. Wedgewire grate construction:
 - 1) Wire: 0.20" (5mm) diameter full-length stainless steel wire with 0.16" (4mm) gap between wires.
 - 2) Cross brace bars: 0.12" by 0.32" (3mm by 8mm) stainless steel bars spaced at 0.87" (22mm).
5. Length: []" ()mm).] [17.72" (450mm).] [27.95" (710mm).] [31.89" (810mm).] [35.43" (900mm).] [39.37" (1000mm).]

2.5 KNIFE SLOTS:

- A. Suitable countertops for installation of countertop drains: Stone, quartz and solid surfacing countertops are suitable for installation of countertop drains. Do not install countertop drains in plastic laminate countertops.
- B. Countertop knife slots:
 1. Description: Type 304, 16 gauge stainless steel knife slots for installation in countertops.
 2. Length: [11.81" (300mm).] [17.72" (450mm).] [23.62" (600mm).]

2.6 LINEAR [LANDSCAPE] [BALCONY] CHANNEL DRAINS:

- A. Description: Type 304 stainless steel continuous drain assembly consisting of a wedgewire grate, and solid drain channels with outlets for insertion in plumbing drains.
- B. Continuous drain channels:
 1. Description: 18 gauge stainless steel, with 2" (50mm) diameter central outlet for insertion in 2" nominal flanged floor drains.
 2. Length: As shown on the drawings and approved shop drawings.

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3. Size:
 - a. 2.36" (60mm) width by 0.98" (25mm) depth to receive 1.96" (50mm) wide wedgewire grate.
 - b. 3.35" (85mm) width by 0.98" (25mm) depth to receive 2.95" (75mm) wide wedgewire grate.
 - c. 4.33" (110mm) width by 1.18" (30mm) depth to receive 3.94" (100mm) wide wedgewire grate.
 - d. 4.33" (110mm) width by 1.58" (40mm) depth to receive 3.94" (100mm) wide wedgewire grate.
 - e. 5.51" (140mm) width by 2.95" (75mm) depth to receive recessed 3.94" (100mm) wide wedgewire grate.
 - f. Custom width of _____' (____mm) by _____" (____mm) depth to receive _____" (____mm) wide wedgewire grate.

- C. Grate:
 1. Width: As specified herein, to match size of continuous drain channels.
 2. Grate frame: Type 304 stainless steel 0.16" (4mm) wide by 0.71" (18mm) deep.
 3. Wedgewire grate construction:
 - a. Wire: 0.20" (5mm) diameter full-length stainless steel wire with 0.16" (4mm) gap between wires.
 - b. Cross brace bars: 0.12" by 0.32" (3mm by 8mm) stainless steel bars spaced at 0.87" (22mm).

- D. Accessories: Provide preformed corner units, end/termination plates, joiner splices, construction sealant/adhesive and other accessory materials as required for a complete installation.

2.7 LINEAR SWIMMING POOL CHANNEL DRAINS:

- A. Description: Type 304 stainless steel continuous drain assembly consisting of a wedgewire grate, and solid drain channels with outlets for insertion in plumbing drains.
- B. Continuous drain channels:
 1. Description: 18 gauge stainless steel, with 1.69" (43mm) diameter central outlet for insertion in 2" nominal flanged floor drains.
 2. Length: As shown on the drawings and approved shop drawings.
 3. Size:

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- a. 2.36" (60mm) width by 0.98" (25mm) depth to receive 1.96" (50mm) wide wedgewire grate.
- b. 3.35" (85mm) width by 0.98" (25mm) depth to receive 2.95" (75mm) wide wedgewire grate.
- c. 4.33" (110mm) width by 1.18" (30mm) depth to receive 3.94" (100mm) wide wedgewire grate.
- d. 4.33" (110mm) width by 1.58" (40mm) depth to receive 3.94" (100mm) wide wedgewire grate.
- e. 5.51" (140mm) width by 2.95" (75mm) depth to receive recessed 3.94" (100mm) wide wedgewire grate.
- f. Custom width of _____' (____mm) by _____" (____mm) depth to receive _____" (____mm) wide wedgewire grate.

C. Grate:

1. Width: As specified herein, to match size of continuous drain channels.
2. Grate frame: Type 304 stainless steel 0.16" (4mm) wide by 0.71" (18mm) deep.
3. Wedgewire grate construction:
 - a. Wire: 0.20" (5mm) diameter full-length stainless steel wire with 0.16" (4mm) gap between wires.
 - b. Cross brace bars: 0.12" by 0.32" (3mm by 8mm) stainless steel bars spaced at 0.87" (22mm).

- D. Accessories: Provide preformed corner units, end/termination plates, joiner splices, construction sealant/adhesive and other accessory materials as required for a complete installation.

2.8 ACCESSORY MATERIALS:

A. Sealants and adhesives:

1. Acceptable manufacturers:
 - a. Custom Building Products.
 - b. Dow Corning.
 - c. Laticrete.
 - d. Mapei.
 - e. Sika Corp.
2. Description: Mold- and mildew-resistant sealant/adhesive as recommended by decorative metal manufacturer, suitable for forming seals at showers, bathtubs, sinks, countertops, drains and plumbing piping.

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3. Durometer hardness: Shore A hardness.
 4. Movement capability: Minimum 25%.
 5. FDA compliance: Meeting FDA Regulation No. 21 CFR.
 6. Color: [Manufacturer's standard] [Custom] color as selected by Architect.
- B. Accessories: Provide preformed corner units, end/termination plates, joiner splices, and other accessory materials as required for a complete installation.

PART 3 - EXECUTION

3.1 PREPARATION:

- A. Installation of waterproofing and plumbing drain piping shall be complete, watertight and successfully tested prior to installation of decorative drains and grates as specified herein.
- B. Installation of [tile and stone floors and walls] [landscape pavements] [balcony finishes] [swimming pool and pool finishes] shall be complete and acceptable to the Architect prior to installation of decorative drains and grates as specified herein.
- C. Contractor shall verify that finished substrates slope properly to drain areas, minimum 1/8" (3mm) per foot. Correct improper and inadequate slopes prior to installation of decorative drains and grates.

3.2 INSTALLATION OF LINEAR FLOOR/SHOWER DRAINS:

- A. Verify that delivered linear drain assembly is correct for installation area by inserting into prepared trough.
- B. Verify that channel assembly is minimum 0.08" (2mm) lower than adjacent finished flooring, for proper drainage.
- C. Install drain assemblies in strict accordance with manufacturer's product data and installation instructions. Install end/termination plates, joiner splices, construction sealant/adhesive and other accessory materials as required for a complete installation.
- D. Install channels into trough ensuring that drain outlet is properly inserted into watertight plumbing drains.

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- E. Install specified sealant/adhesive at splices, corner units, perimeter of channel and adjacent tile or stone finished flooring, ensuring a flexible, tight seal.
- F. Install specified: [wedgewire grate] [pattern grate] [polished stainless] [tile tray] into channel assembly.
- G. [Install tile into tile tray using specified sealant/ adhesive. Tile shall be parallel to edges of tile tray.]

3.3 INSTALLATION OF SQUARE TILE INSERT FLOOR/SHOWER DRAINS:

- A. Verify that delivered tile insert drain assembly is correct for installation area by inserting into prepared drain area.
- B. Verify that drain assembly is minimum 0.08" (2mm) lower than adjacent finished flooring, for proper drainage.
- C. Install drain assemblies in strict accordance with manufacturer's product data and installation instructions. Install end/termination plates, sealant/adhesive and other accessory materials as required for a complete installation.
- D. Install drain into prepared area ensuring that drain outlet is properly inserted into watertight plumbing drains.
- E. Install specified sealant/adhesive at perimeter of drain and adjacent tile or stone finished flooring, ensuring a flexible, tight seal.
- F. Install specified tile tray into channel assembly.
- G. Install tile into tile tray using specified sealant/adhesive. Tile shall be parallel to edges of tile tray.

3.4 INSTALLATION OF COUNTERTOP DRAINS:

- A. Cut rectangular opening in countertops to receive countertop drain assembly. Edges of stone, quartz and solid surfacing countertops shall be smoothed and polished prior to installation of countertop drain installation.

- B. Do not install countertop drains in plastic laminate countertops or other tops consisting of wood or wood byproducts.
- C. Verify that delivered drain assembly is correct for installation area by inserting into prepared drain area.
- D. Verify that drain assembly is flush with adjacent countertops.
- E. Install drain assemblies in strict accordance with manufacturer's product data and installation instructions. Install end/termination plates, sealant/adhesive and other accessory materials as required for a complete installation.
- F. Install drain into prepared area ensuring that drain outlet is properly inserted into watertight plumbing drains.
- G. Install specified sealant/adhesive at perimeter of drain and adjacent countertops, ensuring a flexible, tight seal.
- H. Install specified grate into channel assembly.

3.5 INSTALLATION OF KNIFE SLOTS:

- A. Cut rectangular opening in countertops to receive knife slots.
- B. Verify that delivered tile knife slot is correct for installation area by inserting into prepared drain area.
- C. Verify that knife slot is flush with adjacent countertops.
- D. Install knife slot in strict accordance with manufacturer's product data and installation instructions.
- E. Install specified sealant/adhesive at perimeter of knife slot cutout. Install knife slot into wet sealant/adhesive and adhere to countertops. Immediately remove excess sealant/adhesive from perimeter of knife slot.

3.6 INSTALLATION OF LINEAR [LANDSCAPE] [BALCONY] CHANNEL DRAINS:

- A. Verify that delivered drain assembly is correct for installation area by inserting into prepared drain area.

- B. Verify that drain assembly is minimum 0.08" (2mm) lower than adjacent finished surfaces, for proper drainage.
- C. Install drain assemblies in strict accordance with manufacturer's product data and installation instructions. Install preformed corner units, end/termination plates, joiner splices, sealant/adhesive and other accessory materials as required for a complete installation.
- D. Install drain into prepared area ensuring that drain outlet is properly inserted into watertight plumbing drains.
- E. Install specified sealant/adhesive at splices, corner units, perimeter of drain and adjacent surfaces, ensuring a flexible, tight seal.

3.7 INSTALLATION OF LINEAR SWIMMING POOL CHANNEL DRAINS:

- A. Verify that delivered drain assembly is correct for installation area by inserting into prepared drain area.
- B. Verify that drain assembly is minimum 0.08" (2mm) lower than adjacent finished flooring, for proper drainage.
- C. Install drain assemblies in strict accordance with manufacturer's product data and installation instructions. Install preformed corner units, end/termination plates, joiner splices, sealant/adhesive and other accessory materials as required for a complete installation.
- D. Install drain into prepared area ensuring that drain outlet is properly inserted into watertight plumbing drains.
- E. Install specified sealant/adhesive at splices, corner units, perimeter of drain and adjacent surfaces, ensuring a flexible, tight seal.

3.8 PROTECTION:

- A. Protect installed stainless steel assemblies using resilient or rigid coverings until Date of Substantial Completion.

END OF SECTION

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