



C.S.I. PRODUCT GUIDE SPECIFICATIONS

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including MasterFormat (2010 Edition), SectionFormat, and PageFormat, contained in the CSI Manual of Practice.

The section must be carefully reviewed and edited by the engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 05 50 00

SLIP RESISTANT METAL FABRICATIONS Specifier Notes: This section covers **SLIPNOT®**, consisting of "Grip Plate®", "Flex-Grip®", "Grid Grip®", and "Grip Grate®" made from steel, stainless steel, or aluminum. Slip resistant metal fabrications include floor plate, perforated plate, expanded metal, floor grating, plate stair treads and covers, grating stair treads, nosings, grating nosings, ladder rung covers, round ladder rungs, and square ladder rungs.

Consult SLIPNOT® for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Slip-resistant metal fabrications.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list as required for the project. List other sections with work directly related to the slip resistant metal fabrications.

- A. **Section 05 05 13** - Shop-Applied Coatings for Metal: Finishes for slip resistant metal fabrications.
- B. **Section 05 05 23** - Metal Fastenings: Fastening slip resistant metal fabrications.
- C. **Section 05 12 00** - Structural Steel Framing: Structural support for slip resistant metal fabrications.
- D. **Section 05 51 00** - Metal Stairs and 05 51 33 Metal Ladders.
- E. **Section 05 53 00** - Metal Gratings.
- F. **Section 05 54 00** - Metal Floor Plates.
- G. **Section 05 55 00** - Metal Stair Treads and Nosings.
- H. **Section 11 13 00** - Loading Dock Equipment: Dock levelers and dock lifts.
- I. **Section 05 52 20** - Metal Railings.
- J. **Section 33 46 00** - Surface Drains.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. **ASTM C 633** - Adhesion or Cohesive Strength of Flame-Sprayed Coatings.
- B. **ASTM E 140** - Hardness Conversion Tables for Metals.
- C. **ASTM E 384** - Microhardness of Materials.

1.4 SUBMITTALS

- A. **Comply with Section 01330** - Submittal Procedures.
- B. **Product Data:** Submit manufacturer's product data.
- C. **Shop Drawings:** Submit manufacturer's shop drawings, showing slip resistant metal fabrications, sizes, dimensions, manufacturer's factory-applied finishes, fastening, and installation details.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. **Delivery:** Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. **Storage:** Store materials in a clean, dry area in accordance with manufacturer's instructions. Allow adequate ventilation of products to prevent condensation forming in SLIPNOT® surfaces. Do not store for extended time in original banding or distortion may occur in products.
- C. **Handling:** Protect materials, surfaces, and finishes during handling and installation to prevent damage. Avoid all metal on metal contact with aluminum SLIPNOT® surface.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. SLIPNOT®, 2545 Beaufait Street, Detroit, Michigan 48207.
Toll Free (800) 754-7668. Phone (313) 923-0400. Fax (313) 923-4555. Web Site www.slipnot.com.
Email info@slipnot.com.

2.2 SLIP-RESISTANT METAL FABRICATIONS

Specifier Notes: Special shapes, sizes, and fabrications are available for all slip-resistant metal fabrications. Consult W.S. Molnar Company for assistance in editing this article for the specific application.

- A. **Floor Plate:** SLIPNOT® Grip Plate®.
 - 1. Size: As indicated on the drawings.
- B. **Perforated Plate:** SLIPNOT® Flex-Grip®.
 - 1. Hole Size: As indicated on drawings.
 - 2. Plate Hole and Margin Spacing: As indicated on drawings.
 - 3. Size: As indicated on the drawings.
- C. **Expanded Metal:** SLIPNOT® Grid Grip®.
 - 1. Style: As indicated on drawings.
 - 2. Size: As indicated on the drawings.
- D. **Floor Grating:** SLIPNOT® Grip Grate®.
Specifier Notes: Floor grating is available in all metal grating sizes.
 - 1. Bar Spacing: As indicated on drawings.
 - 2. Bar Size: As indicated on drawings.
 - 3. Trim banded, Load banded, No Banding.
- E. **Plate Stair Treads and Covers:** SLIPNOT® Stair Treads/Covers.
 - 1. Thickness: As indicated on the drawings.

2. Size: As indicated on the drawings.
3. Style: As indicated on the drawings.
4. Mounting Holes: Countersunk mounting holes, if required.

F. Grating Stair Treads: SLIPNOT® Grating Treads.

Specifier Notes: Grating stair treads are available in all metal grating sizes.

1. Type: As indicated on the drawings.
2. Size: As indicated on the drawings.

G. Nosings: SLIPNOT® Nosings.

1. Thickness: As indicated on the drawings.
2. Size: As indicated on the drawings.
3. Edge: Squared or Rounded.
4. Attachment: None, J-Hooks, Countersunk holes.

H. Grating Nosings: SLIPNOT® [Grating Nosings].

1. Edge: [Square].
2. Thickness: 1 1/4 x 1 1/4 x 1/8.
3. Size: As indicated on the drawings.

I. Ladder Rung Covers: SLIPNOT® Ladder Rung Cover.

1. 1" x 1/2" x 1/8" – fits up to 3/4" round rungs.
2. 1/4" x 1/2" x 1/8" -- fits up to 1" round rungs.
3. 1/2" x 1/2" x 1/8" -- fits up to 1 1/4" round rungs.
4. Size: As indicated.

J. Round Ladder Rungs: SLIPNOT® Round Ladder Rung.

1. Diameter [3/4 inch] [1 inch] [As indicated on the drawings].

K. Square Ladder Rungs: SLIPNOT® Square Ladder Rung.

1. Thickness [3/4 inch] [1 inch] [As indicated on the drawings].

L. Metal Railings: SLIPNOT® Metal Railings.

1. Style: As indicated on the drawings.
2. Wall Thickness: As indicated on the drawings.
3. Size: As indicated on the drawings.

M. Drains: SLIPNOT® Drains.

1. Type: As indicated on the drawings.
2. Size: As indicated on the drawings.
3. Supports: As indicated on the drawings.

2.3 MATERIALS

Specifier Notes: Specify steel, stainless steel, or aluminum separately for the surface and for the substrate. SLIPNOT® provides the design flexibility to offer unique combinations of different metal surfaces and substrates. Consult SLIPNOT® for assistance in determining the required surface and substrate materials for the specific application.

A. Steel Surface on Steel Substrate:

1. Type: Anti-slip, non-gritted, steel surface on steel substrate. *Specifier Notes: Specify surface texture based on the following:*

Grade 1 - Fine: A fine surface texture with minimum surface depth variation for comfort where pedestrian traffic flow is not directional only, but requires a lot of turning and reversing. Subject to only moderate thin liquid accumulation.

Grade 2 - Medium: A medium surface texture particularly applicable to heavier and more viscous accumulations. This is the all-purpose surface.

Grade 3 - Coarse: A coarse surface texture applicable for extremely heavy traffic and higher debris accumulation and high viscosity fluids.

Consult SLIPNOT® for assistance in determining the required surface texture for the specific application.

2. Surface Texture: [Grade 1, Fine] [Grade 2, Medium] [Grade 3, Coarse].
3. Surface: All metal plasma stream deposition process bonds surface to substrate. Anti-slip primarily martensitic steel surface consisting of a random hatch matrix. Add to all surface coverage 100%.
4. Surface Hardness, Rockwell C Scale, ASTM E 140 and E 384: Minimum of 55.
5. Bond Strength, Surface to Substrate, ASTM C 633: Minimum of 4,000 psi.
6. Coefficient of Friction, Anti-Slip Surface: Minimum of 0.6.
7. UL Listed: UL 410 slip resistant.

B. Aluminum Surface On Aluminum Substrate:

1. Type: Anti-slip, aluminum surface on aluminum substrate.
2. Surface Texture: [Grade 1, Fine] [Grade 2, Medium].
3. Bond Strength, Surface to Substrate, ASTM C 633: Minimum of 2,000 psi.
4. Coefficient of Friction, Anti-Slip Surface: Minimum of 0.6.
5. UL Listed: Slip-resistant.

C. Stainless Steel Surface On Stainless Steel Substrate:

1. Type: Anti-slip, non-gritted, stainless steel surface on stainless steel substrate.
2. Surface Texture: [Grade 1, Fine] [Grade 2, Medium].
3. Surface: Anti-slip stainless steel surface consisting of a random hatch matrix.
4. Surface Hardness, Rockwell C Scale, ASTM E 140 and E 384: Minimum of 55.
5. Bond Strength, Surface to Substrate, ASTM C 633: Minimum of 4,000 psi.
6. Coefficient of Friction, Anti-Slip Surface: Minimum of 0.6.
7. UL Listed: Slip-resistant.
8. Approval: FDA and USDA.

D. Steel Surface On Aluminum Substrate:

1. Type: Anti-slip, non-gritted, steel surface on aluminum substrate. Surface Texture: [Grade 1, Fine] [Grade 2, Medium] [Grade 3, Coarse].
3. Surface: All metal plasma stream deposition process bonds surface to substrate. Anti-slip primarily martensitic steel surface consisting of a random hatch matrix.
4. Surface Hardness, Rockwell C Scale, ASTM E 140 and E 384: Minimum of 55.
5. Bond Strength, Surface to Substrate, ASTM C 633: Minimum of 4,000 psi.
6. Coefficient of Friction, Anti-Slip Surface: Minimum of 0.6.
7. UL Listed: Slip-resistant.

E. Stainless Steel Surface On Aluminum Substrate:

1. Type: Anti-slip, non-gritted, stainless steel surface on aluminum substrate.
2. Surface Texture: [Grade 1, Fine] [Grade 2, Medium].
3. Surface: Anti-slip stainless steel surface consisting of a random hatch matrix.
4. Surface Hardness, Rockwell C Scale, ASTM E 140 and E 384: Minimum of 55.
5. Bond Strength, Surface to Substrate, ASTM C 633: Minimum of 4,000 psi.
6. Coefficient of Friction, Anti-Slip Surface: Minimum of 0.6.
7. UL Listed: Slip-resistant.

2.4 FACTORY-APPLIED FINISHES

Specifier Notes: Specify the required factory-applied finish and delete the others. Shop coat of black paint is the standard factory-applied finish. Consult SLIPNOT® for assistance in determining the required factory-applied finish for the specific application.

A. Shop Coat: Black paint.

1. Steel SLIPNOT® must be protected from corrosion/rusting as with any steel product. Both the surface and substrate material (Plate/Grating/Etc.) need to be protected.
2. The SLIPNOT® surface is a molten metal plasma stream deposition resulting in a random hatch matrix. The surface texture is available in fine (Grade 1), medium (Grade 2) and coarse (Grade 3).
3. The Grade 1 - Fine surface is about 0.010" in depth and any priming/painting/powder coating combination should not exceed 5 mils to prevent degradation of the SLIPNOT® performance. Hot-dip galvanizing should be used in conjunction with our Grade 1 (Fine) surface.
4. The Grade 2 - Medium surface has an average depth of about 0.020" the total surface treatment (including priming/painting/powder coating) should not exceed a total of 10 mils. Hot-dipped galvanizing is an ideal surface protection for this grade of material.
5. Surface treatments (including priming/painting/powder coating) for Grade 3 - Coarse materials should not exceed 15 - 18 mils. As with Grade 2 - Medium, hot-dip galvanizing is the preferred anti-rust protection.

Specifier Notes: If pickling exceeds maximum specified time, the SLIPNOT® surface may start to lift off. Consult SLIPNOT® for additional information.

B. Hot-Dip Zinc: Galvanized.

SLIPNOT® strongly recommends that galvanizing be provided by us or contracted directly with Voigt & Schweitzer Galvanizers in Redford, MI. If the SLIPNOT® surface is galvanized by a third party, the following guideline must be observed.

SLIPNOT® is not liable for damage to the SLIPNOT® surface by third parties.

1. For ambient temperature hydrochloric acid solutions, acid pickling times should not exceed ten (10) minutes.
2. Heated sulfuric acid solutions are not recommended and if used, should not exceed a minute or so immersion. Care should be taken that rack loading allows for sufficient spacing between items so that the heat of the pickling process does not create "hot spots" within the pickling tanks and damage to the SLIPNOT® surface.
3. SLIPNOT® also recommends any additional steel, such as stringers, support angles, stiffeners, etc., be shot or sand blasted prior to attachment to the SLIPNOT® surface materials. These pieces should be de-scaled and rust free prior to submission to the galvanizer.
4. SLIPNOT® also strongly recommends that all material be protected from humidity and must be protected from the elements. Surface rust will require sufficient acid pickling to allow for proper galvanizing and excess acid exposure will result in damage to the SLIPNOT® surface. Keep material inside and wrapped to prevent surface rust from forming.
5. Care must be taken in the pickling portion of the hot dipped galvanizing process as the SLIPNOT® surface may lift off if pickling times exceed recommendations.

C. Mill: Unfinished.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive slip-resistant metal fabrications. Notify engineer if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A. Install slip-resistant metal fabrications at locations indicated on the drawings and in accordance with manufacturer's instructions.
- B. Install slip-resistant metal fabrications level, square, rigid, with flush installation.
- C. Fasten slip-resistant metal fabrications to support steel as indicated on the drawings.
- D. Repair damaged factory-applied finishes as directed by engineer.
- E. Replace defective or damaged slip-resistant metal fabrications as directed by engineer.