



This guide specification is written according to the Construction Specifications Institute (CSI) formats, including MasterFormat, SectionFormat, and PageFormat.

Carefully review and edit this section to meet the requirements of the project and local building code. Coordinate this section with other specification sections and drawings.

Delete all "Specifier Notes" when done editing this section.

SECTION 23 05 63.13

ANTI-MICROBIAL COATINGS FOR HVAC DUCTS AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Shop-applied antimicrobial coatings for HVAC ducts and accessories.

1.2 RELATED SECTIONS

Specifier Note: In this article, specify work specified in other sections that is related to work of this section.

Specifier Note: The following paragraph is a sample that may be used in this article. Add to or delete from the following as appropriate for the specific project.

- A. [Section Number] – [Section Title]: [Include brief description of work specified in another section that is related to the work of this section.]

1.3 REFERENCE STANDARDS

Specifier Note: In this article, include standards referenced elsewhere in section. Include the designation, title, and date of issuance.

- A. ASTM International (ASTM):
 1. ASTM D522/D522M-17 - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
 2. ASTM D2794-93 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
 3. ASTM D3359-17 - Standard Test Methods for Rating Adhesion by Tape Test.
 4. ASTM D3363-20 - Standard Test Method for Film Hardness by Pencil Test.
 5. ASTM D4400-99 - Standard Test Method for Sag Resistance of Paints Using a Multinotch Applicator.
- B. Underwriters Laboratories, Inc. (UL):
 1. UL 723-18 – Safety Test for Surface Burning Characteristics of Building Materials.



1.4 SUBMITTALS

Specifier Note: In this article, specify various types of data to be furnished by the contractor before, during, or after construction. Topics included in this article are product data, shop drawings, samples, design data, test reports, certificates, manufacturers' instructions, manufacturers' field reports, qualification statements, and closeout submittals.

- A. Submit under provisions of Section [01 33 00] [_____].
- B. Product Data: Submit for shop-applied antimicrobial coating, primer, and cleaner.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS

- A. Basis-of-Design Product: Silver Bullet AM distributed and sourced by Bio Shield Tech.

Specifier Note: Retain one of the options in the following paragraph as required for a specific project.

- B. [Substitutions will be considered under provisions of Section 01 25 00.] [Substitutions are not permitted.]

2.2 SHOP-APPLIED ANTIMICROBIAL COATINGS FOR HVAC DUCTS AND ACCESSORIES

- A. Antimicrobial Coating: Silver Bullet AM[®] antimicrobial protected liquid epoxy coating containing Agion[®] Silver Zeolite compound with the following characteristics:

1. Antimicrobial coating compound shall be tested for efficacy by a National Recognized Testing Laboratory (NRTL) and registered by the EPA for use in HVAC systems.
2. Antimicrobial Coating Compound Hardness: ASTM D3363; minimum 2H.
3. Impact Resistance: ASTM D2794; 160-inch-lbs. direct, 160-inch-lbs. reverse.
4. Cross Hatch Adhesion: ASTM D3359, Method B; rates 5B on steel and aluminum.
5. Mandrel Bend: ASTM D522/D522M, Method B; pass 1/8-inch bend.
6. Sag Resistance: ASTM D4400; no sag at 10 mils.
7. Surface Burning Characteristics: UL 723; maximum flame spread of 25 and maximum smoke development of 50 as certified by an NRTL.

Specifier Note: Retain one of the options in the following paragraph as required for a specific project.

- 8. Color: [White] [Black].
- B. Cleaner: Silver Bullet AM[®] BC-4000 Cleaner; general purpose liquid alkaline cleaner.
- C. Primer: Prime Solution 5250 / 5253 Acrylic Water Based Primer (Red or Gray).

2.3 SHOP APPLICATION

- A. Apply antimicrobial coating to all interior surfaces of HVAC sheet metal duct, fittings, and accessories including but not limited to access doors, turning vanes, volume control dampers, internal duct reinforcement (tie-rods), and traverse duct connections (standing slip and flat slip).



GUIDE SPECIFICATIONS

- B. Do not apply antimicrobial coating to VAV boxes, hot water coils, fire dampers, smoke dampers, motor dampers, humidifiers, and items bearing a UL label.
- C. After fabricating duct to approximately 70 percent completion, clean all sheet metal interior surfaces to remove all grease, oils, salts, and other contaminants using antimicrobial coating manufacturer's recommended cleaner thinned from five parts water to one part cleaner, up to nine parts water to one part cleaner. Failure to sufficiently clean sheet metal can result in future coating failure.
- D. After interior surfaces are sprayed with cleaner, allow it to set for one to two minutes. Remove cleaner by spraying areas again with clean water and hand-wiping using clean rags or towels or by air drying using compressed air. After surfaces are allowed to dry, make sure that no water is left behind.
- E. Prime surfaces to receive antimicrobial coating with primer recommended by manufacturer.

Specifier Note: Include the optional text in the following paragraph if added application control is desired.

- F. Apply one coat of antimicrobial coating to all primed interior surfaces at 3.0 mils wet film to achieve a dry film thickness of 1.0 mils. Ensure that coating thickness is achieved on hard to coat areas such as corners, edges, and angles. Verify film buildup throughout with a wet film thickness gauge in multiple locations. [After coating has cured, test the thickness with a dry film thickness gauge.]

2.4 SOURCE QUALITY CONTROL

- A. Adhesion Testing: Random select a piece of coated duct and perform testing to determine the bond between the coating and the substrate below. Perform tests in accordance with ASTM D3359.

PART 3 - EXECUTION (Not Used)

END OF SECTION

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