This specification guide is NOT intended to be edited as an individual section. Rather it contains articles and paragraphs which can be inserted into other sections which specify product made from CuVerro bactericidal copper. This document is also NOT intended to replace any professional legal or engineering advice.

The antimicrobial copper products and materials addressed in this document are those which are currently available at time this document was created. Consult with Olin Brass to learn about new antimicrobial copper products and materials that may have been added.

This document addresses standard antimicrobial copper products and materials. Consult with Olin Brass regarding availability and technical issues of custom fabricated antimicrobial copper items.

SECTION 000000 - TITLE

Section number and title below are not relevant in this document since this document is not a section. However, the section number and title line has been included here as a point of reference for formatting.

PART 1 - GENERAL

1.1   SUMMARY

Practically any construction product made from stainless steel and used on a building's interior can be manufactured or fabricated using CuVerro Antimicrobial Copper. If the product needed does not appear in this specification guide or there are any questions regarding availability, practicality, or costs of providing CuVerro Antimicrobial Copper for a specific product as an alternate to stainless steel, please contact Olin Brass by phone at (877) 311-2883 or email at CuVerro@olinbrass.com.

   A.   Section Includes:

         1.   Antimicrobial Copper Railings [**and Guards**].
         2.   Antimicrobial Copper Wall Panels.
         3.   Antimicrobial Copper Casework Hardware.
         4.   Antimicrobial Copper Countertops.
         5.   Antimicrobial Copper Door Hardware.
         6.   Antimicrobial Copper Shower Pans.
         7.   Antimicrobial Copper Wall and Door Protection.
         8.   Antimicrobial Copper Grab Bars.
         9.   Antimicrobial Copper Athletic Equipment.
         10.   Antimicrobial Copper Manual [**Window Treatment**] [**Blind**] [**Curtain**] [**Drape**] [**Interior Shutter**] [**Shade**] [**Cubical Curtain and Track**] Controls.
         11.   Antimicrobial Copper Custom Armrests.
         12.   Antimicrobial Copper [**Sink**] [**Lavatory**] Drains.

13.   Antimicrobial Copper [**Lavatories**] [**Bar Sinks**] [**Kitchen Sinks**] [**Scrub Sinks**] [**Cleaning Stations**].
14.   Antimicrobial Copper Wallplates and Electrical Switches.

1.2   ALTERNATES

A.   Portions of the Work of this Section are part of Alternate No. <**insert number**>: <**insert name of Alternate**>, refer to Section [**012000 "Price and Payment Procedures."**] [**012300 "Alternates."**] [<**insert section number**> "<**insert section title**>."]

Many products manufactured or fabricated from stainless steel can also be fabricated from antimicrobial copper. Consult with Olin Brass to determine manufacturers and fabricators that may be willing to custom fabricate products using antimicrobial copper.

1.   Provide antimicrobial copper <**insert product name**> instead of stainless steel <**insert product name**>.

B.   Related Sections:

The "Related Sections" paragraph in a specification section is intended to inform a contractor where to find information effecting the work of the section but which is specified elsewhere. For example, Section 042000 "Unit M**a**sonry" may include a Related Section reference to Section 055000 "Metal Fabrications" for steel angle lintels which are specified and provided under Section 055000 "Metal Fabrications" but are installed under Section 042000 "Unit M**a**sonry."

Even if related products or materials are specified elsewhere, the "Related Sections" paragraph does not always appear in project specifications, nor does it have to. The inclusion or exclusion of the "Related Sections" paragraph is more a matter of office policy. Verify whether the "Related Sections" paragraph is required or not before including.

The following is a list of Related Sections that might have CuVerro products specified in them. This list is not intended to be comprehensive, but it is provided as a guide to sections that may need to be modified if CuVerro products are included in a project.

Include only those section which are applicable and which have related products. For example, if all handrails and guardrails on a project are to be made from antimicrobial copper, whether they are part of an emergency egress stair or a monumental stair, then Section 055213 "Pipe and Tube Railings" could include a "Related Sections" paragraph with a reference to Section 057313 "Glazed Decorative Metal Railings" and Section 057313 "Glazed Decorative Metal Railings" could include a reference to Section 055213 "Pipe and Tube Railings.".

Verify Section numbers and titles since these may be different depending on the design professionals involved and the project requirements.

1.   Section [**055100 "Metal Stairs"**] [**055200 "Metal Railings"**] [**055213 "Pipe and Tube Railings"**] [**057300 "Decorative Metal Railings"**] [**057313 "Glazed Decorative Metal Railings"**] for the following:

a.   Antimicrobial copper railings [**and guards**].

2. Section [**062500 "Prefinished Paneling"**] [**062513 "Prefinished Hardboard Paneling"**] [**097800 "Interior Wall Paneling"**] [**097813 "Metal Interior Wall Paneling"**] for the following:

   a. Antimicrobial copper wall panels.

3. Section 064100 "Architectural Wood Casework" for the following:

   a. Casework antimicrobial copper hardware.
   b. Antimicrobial copper countertops.

4. Section [**087000 "Hardware"**] [**087100 "Door Hardware"**] for the following:

   a. Antimicrobial copper [**door hardware**] [**push plates** [**and handles**]] [**locksets**] [**latches**] [**and**] [**knobs and levers**].

5. Section 093000 "Tiling" for the following:

   a. Antimicrobial copper shower pans.

If retaining Section 102600 "Wall and Door Protection" in the subparagraph immediately below, then retain any or all of the selections in the "Antimicrobial Copper" subparagraph below as applicable.

If retaining a selection other than Section 102600 "Wall and Door Protection" in the subparagraph immediately below, then retain only the corresponding selection from the "Antimicrobial Copper" subparagraph below.

6. Section [**102600 "Wall and Door Protection"**] [**102616 "Bumper Guards"**] [**102616.13 "Bumper Rails"**] [**102616.16 "Protective Corridor Handrails"**] [**102623 "Protective Wall Covering"**] [**102623.13 "Impact Resistant Wall Protection"**] [**102633 "Door and Frame Protection"**] for the following:

   a. Antimicrobial copper [**wall panels**] [**armored plates**] [**corner guards**] [**bumper guards**] [**bumper rails**] [**and**] [**railings**].

7. Section [**102800 "Toilet, Bath, and Laundry Accessories"**] [**102813.19 "Healthcare Toilet Accessories"**] for the following:

   a. Antimicrobial copper grab bars.

8. Section 102819 "Tub and Shower Enclosures" for the following:

   a. Antimicrobial copper shower pans.

9. Section 115300 "Laboratory Equipment" for the following:

   a. Casework antimicrobial copper hardware.
   b. Antimicrobial copper countertops.

10. Section [**116600 "Athletic Equipment"**] [**116613 "Exercise Equipment"**] [**116623 "Gymnasium Equipment"**] for the following:

a. Antimicrobial copper [**dumbbells**] [**barbells**] [**free weights**] [**kettle bells**] [**grips**].

11. Section 117000 "Healthcare Equipment" for the following:

a. Antimicrobial copper [**over-bed tables**].

12. Section [**102123 "Cubicle Curtains and Track"**] [**122000 "Window Treatments"**] [**122100 "Window Blinds"**] [**122200 "Curtains and Drapes"**] [**122300 "Interior Shutters"**] [**122400 "Window Shades"**] [**122500 "Window Treatment Operating Hardware"**] for the following:

a. Manual operations control, antimicrobial copper wands.

13. Section [**123000 "Casework"**] [**123100 "Manufactured Metal Casework"**] [**123200 "Manufactured Wood Casework"**] [**123400 "Manufactured Plastic Casework"**] [**123500 "Specialty Casework"**] [**123570 "Healthcare Casework"**] for the following:

a. Casework antimicrobial copper hardware.
b. Antimicrobial copper countertops.

14. Section [**123600 "Countertops"**] [**123616 "Metal Countertops"**] for the following:

a. Antimicrobial copper countertops.

15. Section 125670 "Healthcare Furniture" for the following:

a. Antimicrobial copper armrests.

16. Section [**220500 "Common Work Results for Plumbing"**] [**221300 "Facility Sanitary Sewerage"**] [**221319.13 "Sanitary Drains"**] for the following:

a. Antimicrobial copper drains and drain covers.

17. Section [**224000 "Plumbing Fixtures"**] [**224100 "Residential Plumbing Fixtures"**] [**224200 "Commercial Plumbing Fixtures"**] [**224300 "Healthcare Plumbing Fixtures"**] [**224316 "Healthcare Sinks"**] [**224500 "Emergency Plumbing Fixtures"**] for the following:

a. Antimicrobial copper [**lavatories**] [**bar sinks**] [**kitchen sinks**].

18. Section [**260500 "Common Work Results for Electrical"**] [**260900 "Instrumentation and Control for Electrical Systems"**] for the following:

a. Antimicrobial copper wallplates for electrical switches, outlets, and control panels.

1.3   REFERENCES

"Antimicrobial Copper in Architecture - Design Handbook" by Copper Development Association Inc. is a comprehensive resource presenting as much information about antimicrobial copper's properties, existing technology and application to the educational design and construction field as presently exists.

For information about the Design Handbook go to http://www.antimicrobial copper.org/applications/architecture/arch_dhb/.

    A.   CDA: Copper Development Association Inc.

    B.   EPA: Environmental Protection Agency.

1.4   DEFINITIONS

Include this definition for "Antimicrobial Copper" in all sections where antimicrobial copper is to be specified. "Antimicrobial Copper" is a term defined by EPA.

    A.   Antimicrobial Copper: Copper approved by the US EPA under Section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and listed in the EPA's Pesticide Product Label System (PPLS).
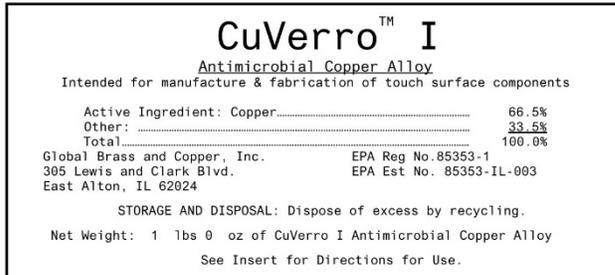
"Bactericidal Copper" is a proprietary term that defines a copper that complies with EPA standards for antimicrobial copper but more clearly defines the actual function and properties of this type of copper. While "Antimicrobial Copper" is a commonly recognized name, the term antimicrobial can be misleading because many coatings and additives that claim to be antimicrobial do not actually kill bacteria. These coatings and additives only reduce odor and discoloration or inhibit bacterial growth. While antimicrobial means to inhibit, the term bactericidal literally means kill or destroy bacteria. CuVerro® bactericidal copper surfaces actually kill bacteria and are registered with the EPA to make public health claims. Learn more at: http://www.cuverro.com/what-is-cuverro/bactericidal-copper#sthash.hiVJYYO3.dpuf.

    B.   Bactericidal Copper: An antimicrobial copper which continuously kills bacterial and Remains effective even after repeated wet and dry abrasion and re-contamination.

1.5   SUBMITTALS

    A.   Samples:

        1.   [**Welding**] [**and**] [**Brazing**] Samples: Provide samples of [**welded**] [**and**] [**brazed**] joints demonstrating the quality of workmanship [**and color of finish materials**].

```
                    CuVerro™ I
                  Antimicrobial Copper Alloy
    Intended for manufacture & fabrication of touch surface components

        Active Ingredient: Copper…………………………………………………  66.5%
        Other: …………………………………………………………………………………   33.5%
        Total……………………………………………………………………………………  100.0%
    Global Brass and Copper, Inc.        EPA Reg No.85353-1
    305 Lewis and Clark Blvd.            EPA Est No. 85353-IL-003
    East Alton, IL 62024

             STORAGE AND DISPOSAL: Dispose of excess by recycling.

     Net Weight:  1  lbs 0  oz of CuVerro I Antimicrobial Copper Alloy

                    See Insert for Directions for Use.
```

B.   Labels: Copy of EPA product labels.

C.   Certificates:

1.   Manufacturer's certification stating "If used as intended, this product is wear-resistant and the durable antibacterial properties will remain effective for as long as the product remains in place and is used as directed".

2.   Manufacturer Certificate: Certificate with manufacturer's EPA registration number.

3.   Fabricator Certificate: Certificate with fabricator's EPA registration number.

D.   Reports:

1.   Sealants Test Report: Provide results of [**preconstruction laboratory**] [**field**] sealant adhesion testing[**, or provide sealant manufacturer's adhesion test data base on previous testing according to ASTM C 794 to antimicrobial copper surface and adjacent substrates done within the last 24 months**].

1.6   SUSTAINABLE DESIGN SUBMITTALS

   A.   Product Data: Provide documentation verifying the percentage of recycled content of
        antimicrobial copper products by weight of post-consumer and by weight pre-consumer
        content.

   B.   Cost Data: Provide documentation verifying cost of antimicrobial copper products with
        recycled content.

1.7   CLOSEOUT SUBMITTALS

Include the "Operation and Maintenance Data" paragraph below if a sealant is required as part of
the antimicrobial copper product or material installation.

   A.   Operation and Maintenance Data: Manufacturer's cleaning and maintenance
        instructions.

1.8   QUALITY ASSURANCE

Include "Labels" paragraph below in all sections where antimicrobial copper is to be specified.

   A.   Labels: Provide antimicrobial copper products and packaging for antimicrobial copper
        products with EPA labels attached.

   B.   Welding Standards: "Copper-Nickel Welding and Fabrication" by Copper
        Development Association Inc.

   C.   Welding Qualifications: Provide qualified welders and comply with the welding
        requirements of the following:

Retain only those welding and brazing requirements applicable to the product being fabricated.

        1.   AWS A5.6, "Copper and Copper Alloy Covered Electrodes."
        2.   AWS A5.7, "Copper and Copper Alloy Bars, Welding Rods."
        3.   AWS A5.8, "Brazing Filler Metal."
        4.   AWS A5.13, "Surface Welding Rods and Electrodes."
        5.   AWS A5.15, "Welding Rods for Welding Cast Iron."
        6.   AWS A5.27, "Copper and Copper Alloy Rods for Oxyfuel Gas Welding."

Include either the "Laboratory Testing" paragraph or the "Field Testing" paragraph below if a
sealant is required as part of the antimicrobial copper product or material installation.

   D.   Preconstruction Laboratory Testing: Conduct preconstruction laboratory tests
        according to ASTM C794 "Standard Test Method for Adhesion-in-Peel of Elastomeric
        Joint Sealants" to determine whether a primer is required or other special preparation
        methods are required to obtain optimum adhesion to antimicrobial copper surface and
        adjacent substrates.

   E.   Field Testing: Conduct field tests according to ASTM C794 "Standard Test Method for
        Adhesion-in-Peel of Elastomeric Joint Sealants" to determine whether a primer is

required or other special preparation methods are required to obtain optimum adhesion to antimicrobial copper surface and adjacent substrates.

F.   Manufacturer Qualifications: EPA registered manufacturer qualified to produce antimicrobial copper products.

G.   Fabricator Qualifications: EPA registered fabricator qualified to fabricate antimicrobial copper materials.

1.9   DELIVERY, STORAGE, AND HANDLING

A.   Package Labels: Deliver antimicrobial copper products in packaging bearing an EPA label identifying that the products comply with EPA requirements for antimicrobial copper.

PART 2 - PRODUCTS

2.1   MANUFACTUERS

A.   Antimicrobial Copper Manufacturer: Subject to compliance with requirements, provide antimicrobial copper products and materials manufactured by Olin Brass.

1.   ATEK Access Technologies (Larco Brand); push plate, wall switches (automatic door openers).
2.   Black Iron Strength; dumbbells, kettlebells, grips and attachments.
3.   Colonial Bronze (CuSalus Brand); cabinet hardware (pulls).
4.   Drapery Industries; curtain wands.
5.   E.B. Bradley; laminated MDF panels.
6.   Eaton Wiring Devices (Arrow Hart brand); wallplates and switches.
7.   Elkay; sinks, and drains.
8.   Frigo Design; countertops, shower pans, chair arms, table tops, tiles.
9.   Just Manufacturing; sinks, faucet wing blades.
10. MedWurx; cabinets (blanket warmers, instrument cabinets, etc.) with copper pulls.

11. Midbrook; custom medical equipment.
12. Modula S; modular buildings will all copper walls and fixtures.
13. Modular Services Company; hospital headwalls.
14. MR Label; adhesive-backed copper labels.
15. NuAire; incubators.
16. Operator Interface technology; keyboards, wrist rests, computer mouse.
17. Pedigo Products; stretcher bed, IV pole.
18. R & B Wagner; grab bars and railing systems.
19. Rocky Mountain Hardware; Door and cabinet hardware, grab bars, faucets, push plates, door and wall protection products.
20. Trimco; door hardware and grab bars, door and wall protection products.
21. Tubular Specialties Manufacturing (TSM); grab bars and washroom accessories, door and wall protection products.

Include the "Source Limitations" paragraph below in all applicable sections to be sure that antimicrobial copper products provided are from a single source. This will help assure uniformity of quality throughout the project and assure there will be a sole source of responsibility all antimicrobial products in the project.

B.   Source Limitations for Antimicrobial Copper: Obtain antimicrobial copper products and materials from the [**same supplier**] [**and**] [**same manufacturer**], whether specified in this section or another section of the Specifications.

2.2   PERFORMANCE REQUIREMETNS

For further information regarding EPA Series 810 - Product Performance Test Guidelines, refer to https://www.epa.gov/test-guidelines-pesticides-and-toxic-substances/series-810-product-performance-test-guidelines.

A.   Antimicrobial Properties: Comply with the Environmental Protection Agency's (EPA), Series 810 "Product Performance Test Guidelines" for Group B "Antimicrobial Efficacy Test Guidelines.".

1. Kills greater than 99.9% of bacteria within two hours, and continues to kill 99% of bacteria even after repeated contamination.
2. Provides continuous and ongoing antibacterial action, remaining effective in killing greater than 99.9% of bacteria within 2 hours.
3. Inhibits buildup and growth of bacteria within 2 hours of exposure between routine cleaning and sanitizing steps.
4. Kills greater than 99.9% of Gram-negative and Gram-positive bacteria within 2 hours of exposure.
5. Continuously reduces bacterial contamination, achieving 99.9% reduction within 2 hours of exposure.
6. Antibacterial activity against the following bacteria:

   a. Methicillin-resistant Staphylococcus aureus (MRSA).
   b. Vancomycin-resistant enterococcus faecalis (VRE).
   c. Staphylococcus aureus.
   d. Enterobacter aerogenes.
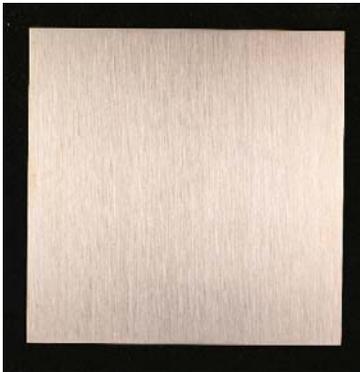   e. Pseudomonas aeruginosa.

f. E. coli O157:H7.

2.3 MATERIAL

A. Recycled Content: Provide antimicrobial copper products where the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least [**80**] [**90**] [**100**] <**insert percentage**> percent.

B. Antimicrobial Copper, General: EPA registered antimicrobial copper.

.	.	.
C70600 Rose.	C71000 White Bronze	C75200 White Bronze

C. Antimicrobial Copper Sheets:

1. ASTM B122, Alloys [**C70600 (Rose)**] [**and**] [**or**] [**C71000 (White Bronze)**].

D. Antimicrobial Copper Shapes and Plates:

1. ASTM B122, Alloys [**C70600 (Rose)**] [**and**] [**or**] [**C71000 (White Bronze)**].

E.	Antimicrobial Copper Rods:

1.	ASTM B122, Alloys [**C75200 (White Bronze)**] [**and**] [**or**] [**C71000 (White Bronze)**].

Tubes refer to cylindrical structural sections and piping refers to cylindrical sections used for plumbing.

F.	Antimicrobial Copper Tubes and Piping: Rolled and welded [**tubes**] [**and**] [**or**] [**piping**].

CuVerro V is Alloy C70600 (Rose). CuVerro III is Alloy C71000 (White Bronze).

1.	ASTM B122, Alloys [**C70600 (Rose)**] [**and**] [**or**] [**C71000 (White Bronze)**].

G.	Antimicrobial Copper Castings:

The photos immediately below illustrate the color and finish of cast antimicrobial copper.

ROSE BRONZE   WHITE BRONZE

MATTE (RAM)   MATTE (WAM)

BRUSHED (RAB)   BRUSHED (WAB)
.

CuVerro VI is Alloy C99710 (White Bronze).

CuVerro V is Alloy C96200 (Rose).

CuVerro III is C96300 (White Bronze).

1.	ASTM B176, Alloy C99710 (White Bronze).
2.	ASTM B30, Alloy C96200 (Rose).

3.   ASTM B492, Alloy C96300 (White Bronze).

A.   Exterior Plywood: DOC PS 1; Grade C-C, Face C Plugged.

A.   Particleboard: ANSI A208.2, Grade M-2[**-Exterior Glue**] [**and manufactured using binders containing no urea formaldehyde**].

B.   Medium Density Fiberboard (MDF): ANSI A208.2, Grade [**130**] <**Insert grade number**>[**, made with binder containing no urea formaldehyde**] [**and fire-retardant treated**].

2.4   ANTIMICROBIAL COPPER RAILINGS [**AND GUARDS**]

A.   Handrails[**and**][**Guardrails**]: Provide antimicrobial copper handrails[**and**][**guardrails**] of size and section [**indicated on Drawings**] [**according to model number and name specified**] [**as selected by the Architect from full range of manufacturer's standards**] [**but not less than required to meet Performance Requirements**].

1.   [**Basis of Design**]Product: Subject to compliance with requirements, provide R & B Wagner; <**insert model name or number of system**> Railing Systems [**.**] [**or comparable product by one of the following:**].

a.   <**Insert name of manufacturer**>.

B.   Antimicrobial Copper Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

C.   Antimicrobial Copper Finish: [**Matte**] [**Brushed**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

D. Antimicrobial Copper Texture: [**Embossed**] [**Glass bead**] [**Polished**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.5 ANTIMICROBIAL COPPER WALL PANELS

Retain the core type selection appropriate for the project in the "Antimicrobial Copper Wall Panels" paragraph below. These selections reflect the most commonly used backer materials. If the desired backer material is not indicated below, contact an E. B. Bradley Co. representative http://ebbradley.com/Contacts/tabid/134/Default.aspx.

A. Antimicrobial Copper Wall Panels: Factory fabricated panels with antimicrobial copper sheets laminated to [**MDF**] [**solid, extruded thermoplastic**] [**honeycomb**] <**insert core material**> backer.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide E.B. Bradley; <**insert model name or number of system**> Wall Panels[**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

B. Antimicrobial Copper Sheets: [**0.030 inch (0.762 mm)**] [**0.0475 inch (1.207 mm)**] <**insert thickness**> thick antimicrobial copper.

Retain MDF paragraph from the Part 2 MATERIALS article above if specifying the MDF Panel Backer immediately below.

C. MDF Panel Backer: [**1/2 inch (12.5 mm)**] [**5/8 inch (16 mm)**] <**insert thickness**> thick [**fire retardant**,] MDF board.

   1. Burning Characteristics: ASTM E 84.

      a. Flame Spread Index: 25 or less.
      b. Smoke Development Index: 200 or less.

D. Extruded Thermoplastic Panel Backer: [**1/2 inch (12.5 mm)**] [**5/8 inch (16 mm)**] <**insert thickness**> thick [**fire retardant**,] solid, extruded thermoplastic board.

   1. Burning Characteristics: ASTM E 84.

      a. Flame Spread Index: 25 or less.
      b. Smoke Development Index: 25 or less.

E. Honeycomb Panel Backer: [**1/2 inch (12.5 mm)**] [**5/8 inch (16 mm)**] <**insert thickness**> thick [**fire retardant**,] resin impregnated honeycomb.

   1. Burning Characteristics: ASTM E 84.

      a. Flame Spread Index: 25 or less.
      b. Smoke Development Index: 25 or less.

F. <**Insert backer material**> Panel Backer: [**1/2 inch (12.5 mm)**] [**5/8 inch (16 mm)**] <**insert thickness**> thick [**fire retardant,**] <**Insert backer material**>.

    1. Burning Characteristics: ASTM E 84.

        a. Flame Spread Index: [**25**] <**Insert index number**> or less.
        b. Smoke Development Index: [**25**] <**Insert index number**> or less.

G. Panel Size: [**48 by 96 inches (1200 by 2400 mm)**] [**As indicated on the Drawings**] <**Insert size**>.

If more than one color and finish is required, coordinate color and finish designations between Drawings and Specification. Be sure the Drawings clearly indicate locations for each color and finish.

H. Antimicrobial Copper Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

I. Antimicrobial Copper Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.6 ANTIMICROBIAL COPPER CASEWORK HARDWARE

http://www.cusalus.com/.

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

    1. Colonial Bronze (CuSalus Brand).
    2. Rocky Mountain Hardware; Door and cabinet hardware, grab bars, faucets, push plates.
    3. <**Insert name of manufacturer**>.

B. Antimicrobial Copper Cabinet Door and Drawer Pulls:

    1. Material: Cast antimicrobial copper.
    2. Over All Length: [**4 inches (100 mm)**] [**6.5 inches (165 mm)**] <**insert dimension**>.
    3. Standoff Center to Center: [**3.5 inches (90 mm)**] [**6 inches (150 mm)**] <**insert dimension**>.
    4. Projection: [**1.125 inches (28.5 mm)**] <**insert dimension**>.

C.   Antimicrobial Copper Cabinet Round Catch Pulls: Round figure pulls.

    1.   Material: Cast antimicrobial copper.
    2.   Diameter: 1.5 inches (38 mm) <**insert dimension**>.
    3.   Projection: 1.0625 inches (27 mm) <**insert dimension**>.

2.7   ANTIMICROBIAL COPPER COUNTERTOPS

Note that Antimicrobial Copper Alloy has not been reviewed by the Food and Drug Administration and therefore is not approved for direct food contact or food packaging uses.

A.   Antimicrobial Copper Countertops: Shop fabricate countertops [**and**] [**backsplashes**] [**and**] [**endsplashes**] using [**0.0475 inch** (**1.207 mm**)] [**0.060 inch** (**1.524 mm**)] <**Insert thickness**> thick antimicrobial copper sheet.

    1.   [**Basis of Design**]Product: Subject to compliance with requirements, provide Frigo Design; <**insert model name or number of system**> Antimicrobial Copper Countertops[**.**] [**or comparable product by one of the following:**].

        a.   <**Insert name of manufacturer**>.

Be sure the countertop profile is clearly indicated on the drawings.

    2.   Surface: Clean, smooth; free of dents and defects.

Be sure the countertop profile is clearly indicated on the drawings.

    3.   Profile: As indicated on the Drawings.

If countertops are to be installed in section, be sure to either show the joint locations on the Drawings or require that the joint locations appear on the Shop Drawings.

    4.   Joints: Shop fabricate [**butt-welded joints for countertop installation as a single unit**] [**countertop in section for joints that will be completed in the field**].

5. [**Backsplashes**] [**and**] [**Endsplashes**]: Form countertop with coved, integral [**backsplashes**] [**and**] [**endsplashes**].
6. Laminating Adhesive: Single component, moisture curing, polyurethane adhesive.

   a. VOC Content: Less than 56.0 g/l.

7. Substrate: 3/4 inch (20 mm) thick [**exterior plywood**] [**particleboard**].
8. Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].
9. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.8   ANTIMICROBIAL COPPER DOOR HARDWARE

A. Antimicrobial Copper Tubular Door Pulls: Tubular pulls with square [**offset**] [**straight**] standoffs.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Trimco, Triangle Brass Manufacturing Company, Inc.; 1185 Series Adjustable and Configurable, Square [**Offset**] [**Straight**] Standoff, Pulls[**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

   2. Grip Length: [**17 inches (430 mm)**] [**29 inches (430 mm)**] [**41 inches (430 mm)**] [**Custom,** <insert length in> **inches** (<insert length in> **mm)**].
   3. Diameter: 1.25 inches (32 mm).
   4. Projection: 3 inches (75 mm).
   5. Clearance: 1.5 inches (38 mm).
   6. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

B. Antimicrobial Copper Flush Cup Door Pulls: Non-handed, surface mounted, [**ADA compliant**] cup door pulls with recessed grips.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Trimco, Triangle Brass Manufacturing Company, Inc.; Series 1111 Large Flush Cup Pulls[**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

   2. Size: 5 by 5 by inches (125 by 125 mm).

Retain the .6 by 6 by inches (150 by 150 mm) size below for ADA compliant door pulls.

3. Size: 6 by 6 by inches (150 by 150 mm).
4. Depth: 1.1875 inches (30 mm).
5. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

C. Antimicrobial Copper Pull/Pull Sets: Fixed vertical handles with escutcheon plates and locking mechanism.

    1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Pull/Pull Sets[**.**] [**or comparable product by one of the following:**].

        a. <**Insert name of manufacturer**>.

    2. Size: 3.5 by 20 inches (90 by 500 mm).

    3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.
    4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

D. Antimicrobial Copper Privacy Sets: ADA compliant return lever handles with escutcheon plates and locking mechanism.

    1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Privacy Set[**.**] [**or comparable product by one of the following:**].

        a. <**Insert name of manufacturer**>.

    2. Size: 2.5 by 10 inches (65 by 250 mm).
    3. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

E. Antimicrobial Copper Entry Sliding Door Sets: ADA compliant return lever handles with escutcheon plates and locking mechanism.

    1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Entry Sliding Door Set[**.**] [**or comparable product by one of the following:**].

a. <**Insert name of manufacturer**>.

2. Size: 2.5 by 10 inches (65 by 250 mm).

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.
4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

F. Antimicrobial Copper Latch Sets: ADA compliant [**return**] lever handles with escutcheon plates and locking mechanism.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Verdura Antimicrobial [**Passage Latch Sets**] [**Entry Latch Sets**] [**Privacy Sets** [**with indicator**]] [**Patio Latch Sets**][**.**] [**or comparable product by one of the following:**].

a. <**Insert name of manufacturer**>.

2. Size: 3 by 9 inches (75 by 230 mm).

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.
4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

G. Antimicrobial Copper Passage Sets: ADA compliant [**return**] lever handles with escutcheon plates and locking mechanism.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Verdura Antimicrobial Passage[**.**] [**or comparable product by one of the following:**].

a. <**Insert name of manufacturer**>.

2. Size: 3 by 3 inches (75 by 75 mm).

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.

4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

H. Antimicrobial Copper Flush Door Pulls: Non-handed, surface mounted, [**ADA compliant**] door pulls with recessed grips.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Flush Pulls (FP208)[**.**] [**or comparable product by one of the following:**].

   a. <**Insert name of manufacturer**>.

2. Size: 2.5 by 8 inches (65 by 200 mm).

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.

4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

I. Antimicrobial Copper Hospital Latch Sets: ADA compliant, non-handed[**, return**] handles with escutcheon plates and locking mechanism.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Hospital Latch Set[**.**] [**or comparable product by one of the following:**].

   a. <**Insert name of manufacturer**>.

2. Size: 4 by 6.625 inches (100 by 143 mm).

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.

4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect

      from manufacturer's full range of standard colors] [**Match Architect's sample**].

J.   Antimicrobial Copper Grips: Vertical, [**back-to-back through bolted**] [**surface mounted**], bar grips.

(G10529) is 48" (1200 mm) long and (G10525) 24" (600 mm) long.

     1.   [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Verdura Antimicrobial Grip [(**G10529**)] [(**G10525**)][**.**] [**or comparable product by one of the following:**].

          a.   <**Insert name of manufacturer**>.

     2.   Projection: 3.25 inches (83 mm).

(G10529) is 48" (1200 mm) long and (G10525) 24" (600 mm) long.

     3.   Length: [**48 inches (1200 mm)**] [**24 inches (600 mm)**].
     4.   Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

K.   Antimicrobial Copper Grips: Vertical, [**thru-bolted, single**] [**back-to-back mounted, double**], bar grips.

12" (G22012) is actually 13" (330 mm) long and 7.5" (G22075) is actually 8.5" (216 mm) long.

     1.   [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Grip [**12" (G22012)**] [**7.5" (G22075)**][**.**] [**or comparable product by one of the following:**].

          a.   <**Insert name of manufacturer**>.

     2.   Projection: 2.625 inches (67 mm).

12" (G22012) is actually 13" (330 mm) long and 7.5" (G22075) is actually 8.5" (216 mm) long.

     3.   Length: [**13 inches (330 mm)**] [**7.5 inches (190 mm)**].
     4.   Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

L.   Antimicrobial Copper [**Return**] Lever Handles: ADA compliant [**return**] lever handles.

(L10502) is 0.875 by 5.5625 inches (22 by 140 mm) and (L10501) is 0.875 by 5.4375 inches (22 by 138 mm).

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Verdura Antimicrobial [**Return Lever (L10502)**] [**Lever (L10501)**][**.**] [**or comparable product by one of the following:**].

   a.   <**Insert name of manufacturer**>.

(L10502) is 0.875 by 5.5625 inches (22 by 140 mm) and (L10501) is 0.875 by 5.4375 inches (22 by 138 mm).

2. Dimension: [**0.875 by 5.5625 inches (22 by 140 mm)**] [**0.875 by 5.4375 inches (22 by 138 mm)**].
3. Projection: 2.3125 inches (58.75 mm).
4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

M.   Antimicrobial Copper Single Cylinder Lock Sets: Single cylinder, dead bolt, lock sets.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Single Cylinder Lock Set Dead Bolt (DB22002)[**.**] [**or comparable product by one of the following:**].

   a.   <**Insert name of manufacturer**>.

2. Size: 2.5-inch (65 mm) diameter.
3. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

N.   Antimicrobial Copper Passage Sets: Door handles with retracting latch.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Passage Set 3 1/4"[**.**] [**or comparable product by one of the following:**].

   a.   <**Insert name of manufacturer**>.

2. Escutcheon Size: 3.25-inch (83 mm) diameter.

Confirm availability of functions before editing "Function" subparagraph below.

3. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.
4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

O. Antimicrobial Copper Push Bar Trim for Exit Device: Push bar cover plate for exit devices.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Trimco, Triangle Brass Manufacturing Company, Inc.; PBT8000 Push Bar Trim for Exit Device [**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

Retain the "Length" subparagraph immediately below for doors between 30" (760 mm) to 36" (915 mm) wide. Retain the first option if specifying Von Duprin 98/99 exit device. Retain the second option if specifying Stanley Apex 2000 exit device.

   2. Length: [**16-5/16 inches** (**414 mm**)] [**19-3/16 inches** (**487 mm**)]

Retain the "Length" subparagraph immediately below for doors between 37" (940 mm) to 48" (1220 mm) wide. Retain the first option if specifying Von Duprin 98/99 exit device. Retain the second option if specifying Stanley Apex 2000 exit device.

   3. Length: [**22-5/16 inches** (**567 mm**)] [**19-3/16 inches** (**487 mm**)]
   4. Width: 2-1/4 inches (57 mm).
   5. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

P. Antimicrobial Copper Privacy Indicator Sets: Thumb turn and escutcheon plate with occupancy indicator.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Rocky Mountain Hardware; Pure Antimicrobial Privacy Indicator Set (PI22000)[**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

   2. Escutcheon Size: 2.5-inches (65 mm) diameter.
   3. Indicator Colors: Green to Red.

Confirm availability of functions before editing "Function" subparagraph below.

   4. Function: [**Passage**] [**Privacy**] [**Storeroom closet lock**] [**Entrance/Office lock**] [**Classroom Lock**] [**Deadlock**] [**Apartment Exit**] [**Hotel / Motel**] [**Dormitory**] [**Utility, Asylum, Institutional**] [**Entrance/Apartment**] [**Entrance/Storeroom**] [**Entrance/Apartment**] <**insert function**>.

2.9   ANTIMICROBIAL COPPER SHOWER PANS

Shower pans which are custom fabricated in the field must be fabricated by EPA registered fabricators.

A. Shower Pans: [**Shop**] [**or**] [**Field**] fabricate shower pans to dimensions and shape [**indicated on Drawings**] [**required to suite in-place construction and accommodate finished shower**] from [**0.0475 inch** (**1.207 mm**)] [**0.060 inch** (**1.524 mm**)]<**Insert thickness**> thick antimicrobial copper.

    1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Frigo Design; <**insert model name or number of system**> Antimicrobial Copper Shower Pans[**.**] [**or comparable product by one of the following:**].

        a. <**Insert name of manufacturer**>.

2.10 WALL AND DOOR PROTECTION

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

The following list of manufacturers produce wall and door protection products using stainless steel. However, they will custom produce the same items using antimicrobial copper.

Consult these manufacturers to determine cost, availability, and practicality providing the specific antimicrobial copper wall and door protection products required.

    1. Rocky Mountain Hardware.
    2. Trimco.
    3. Tubular Specialties Manufacturing (TSM).
    4. <**Insert name of manufacturer**>.

Retain the Alternate Article in PART 1 - GENERAL if antimicrobial copper wall and door protection products are being considered as an Alternate.

B. Antimicrobial copper [**wall panels**] [**armored plates**] [**corner guards**] [**bumper guards**] [**bumper rails**] [**and**] [**railings**].

    1. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.11 ANTIMICROBIAL COPPER GRAB BARS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

    1. R & B Wagner; grab bars.
    2. Trimco; door hardware and grab bars.
    3. Tubular Specialties Manufacturing (TSM); grab bars and washroom accessories Olin Brass | Please provide technical information regarding athletic equipment.

B. Material: Antimicrobial copper tubes.

C.   Dimensions:

    1.   Diameter: [**1-1/4 inches (32 mm)**] [**1-1/2 inches (38 mm)**] O.D.
    2.   Length: As indicated on Drawings.
    3.   Configuration: As indicated on Drawings.

D.   Mounting Type: Antimicrobial copper flanges with [**concealed**] [**exposed**] fasteners.

2.12   ATHLETIC EQUIPMENT

http://www.blackironstrength.com/ .

A.   Manufacturers: Subject to compliance with requirements, provide products by the following:

    1.   Black Iron Strength; dumbbells.
    2.   <**Insert name of manufacturer**>.

B.   Antimicrobial Copper [**Dumbbells**] [**Barbells**] [**Free Weights**].

    1.   Adjustable [**dumbbells**] [**barbells**] [**free weights**] sets.
    2.   Number of Sets: [**As indicated on Drawings**] [**One be set of weights**] <**insert number**>.
    3.   [**Dumbbells**] [**Barbells**] [**Free Weights**] per Set:

Copy and edit the subparagraph below for each size weight required each set.

        a.   [**2**]<**insert quantity**> [**5 lbs (2.25 kg)**] <**insert weight**> [**dumbbells**] [**barbells**] [**free weights**].

C.   Antimicrobial Copper Kettle Bells.

Copy the subparagraph below for each size kettle bell required each set.

    1.   [**2**]<**insert quantity**> [**10 lbs (4.5 kg)**] <**insert weight**> kettle bells.

D.   Antimicrobial Copper Cable Attachments.

Stirrup Grip   Low-Row   Single Strap Grip

Handle Bars   Lat Pulldown

1.   Stirrup Grips: U-shaped, chrome plated, steel brackets for attachment to lifting
      cables, with independent rotating handles of knurled, antimicrobial copper.

      a.   Handle Diameter: [**1.125-inch (28.5 mm)**] [**1.375-inch (35 mm)**] O.D.
      b.   Quantity: <**insert quantity**>

2.   Low-Row: Dual, V-shaped, chrome plated, steel brackets for attachment to
      lifting cables, with independent rotating handles of knurled, antimicrobial copper.

      a.   Handle Diameter: [**1.125-inch (28.5 mm)**] [**1.375-inch (35 mm)**] O.D.
      b.   Quantity: <**insert quantity**>

3.   Single Strap Grip: Chrome plated, steel plate connector for attachment to lifting
      cables, with rope strap and independent rotating handles of knurled, antimicrobial
      copper.

      a.   Handle Diameter: [**1.125-inch (28.5 mm)**] [**1.375-inch (35 mm)**] O.D.
      b.   Quantity: <**insert quantity**>

4.   Handle Bars: Straight, chrome plated, steel tube for attachment to lifting cables,
      with 2 independent rotating handles of knurled, antimicrobial copper, one at each
      end of bar.

      a.   Handle Diameter: 1.5-inch (38 mm) O.D.
      b.   Lengths:

Copy and edit the subparagraph below for each length required.

            1)   [**2**]<**insert quantity**> handle bars [**14 inches (355 mm)**] [**20 inches
                  (500 mm)**] [**26 inches (660 mm)**]<**insert length**> long.

5.   Lat Pulldown: Bent, chrome plated, steel tube for attachment to lifting cables,
      with 2 independent rotating handles of knurled, antimicrobial copper, one at each
      end of bar.

      a.   Handle Diameter: 1.375-inch (35 mm) O.D.
      b.   Quantity: <**insert quantity**>

E.	Weight Racks: Manufacturers standard [**fixed**][**rolling**], [**chrome plated**] [**factory painted**] steel racks for holding weights.

1.	Quantity: [**As indicated on Drawings**] [**One be set of weights**] <**insert number**>.

2.13	HEALTHCARE EQUIPMENT

A.	Manufacturers: Subject to compliance with requirements, provide products by the following:

MedWurx manufacturers: Antimicrobial copper blanket warming cabinets, instrument cabinets, and mobile tables for medical facilities.

1.	MedWurx.

Midbrook manufacturers: Custom fabricated, antimicrobial copper mobile shelves and carts for medical facilities.

2.	Midbrook.

Modular Services Company manufacturers: Antimicrobial copper patient bed service walls for medical facilities.

3.	Modular Services Company.

NuAire manufacturers: Antimicrobial copper incubators for medical facilities.

4.	NuAire; incubators.

Pedigo Products manufacturers: Antimicrobial copper infusion pump and I.V. stands and stretchers with antimicrobial copper rails for medical facilities.

5.	Pedigo Products; stretcher bed, IV pole.
6.	<**Insert name of manufacturer**>.

B.	[**Blanket Warmer**] [**and**] [**Instrument**] Cabinets: Stainless steel [**blanket warmer**] [**and**] [**instrument**] cabinets with antimicrobial copper pulls.

Include the following information with the description of Blanket Warmer and Instrument Cabinets.

1.	Antimicrobial Copper Pulls:

a.	Diameter: [**0.472 inch** (12 mm)].
b.	Length: [**3 inches** (75 mm)] [**6 inches** (150 mm)].

2.	Color: C70600 (Rose).

C.	Antimicrobial Copper Incubators [**Liners**] [**Shelves**] [**and**] [**Brackets**]:

      1.   Antimicrobial Copper Sheets: [**0.030 inch** (**0.762 mm**)] [**0.0475 inch** (**1.207 mm**)] [**0.060 inch** (**1.524 mm**)] <**insert thickness**> thick antimicrobial formed copper sheets.

      2.   Accessories and Components: Antimicrobial copper.

D.   Antimicrobial Copper [**Mobile Shelves**] [**Carts**] [**Mobile Tables**].

      1.   Antimicrobial Copper Sheets: [**0.030 inch** (**0.762 mm**)] [**0.0475 inch** (**1.207 mm**)] [**0.060 inch** (**1.524 mm**)] <**insert thickness**> thick antimicrobial formed copper sheets.

      2.   Antimicrobial Copper Tubing: Rolled and welded tubing. Fabricated from continuous tube sections without joints, except at intersections, and with uniform with bend at directional changes.

      3.   Accessories and Components: Antimicrobial copper.

      4.   Color: [**C70600 (Rose)**] [**or**] [**C71000 (White Bronze)**].

E.   Stretchers with Antimicrobial Copper Rails:

      1.   Antimicrobial Copper Tubing: Rolled and welded tubing. Fabricated from continuous tube sections without joints, except at intersections, and with uniform with bend at directional changes.

      2.   Color: [**C70600 (Rose)**] [**or**] [**C71000 (White Bronze)**].

F.   Antimicrobial Copper [**Infusion Pump**] [**and**] [**I.V.**] Stands:

      1.   Antimicrobial Copper Tubing: Rolled and welded tubing. Fabricated from continuous tube sections without joints, except at intersections, and with uniform with bend at directional changes.

      2.   Accessories and Components: Antimicrobial copper.

      3.   Color: [**C70600 (Rose)**] [**or**] [**C71000 (White Bronze)**].

G.   Antimicrobial copper patient bed service walls:

      1.   Antimicrobial Copper Sheets: [**0.030 inch** (**0.762 mm**)] [**0.0475 inch** (**1.207 mm**)] <**insert thickness**> thick antimicrobial formed copper sheets.

          a.   Color: [**C70600 (Rose)**] [**or**] [**C71000 (White Bronze)**].

H.   Antimicrobial Copper Over-Bed Tables.

1. Antimicrobial Copper Sheets: [**0.030 inch (0.762 mm)**] [**0.0475 inch (1.207 mm)**] [**0.060 inch (1.524 mm)**] <**insert thickness**> thick antimicrobial formed copper sheets.
2. Antimicrobial Copper Tubing: Rolled and welded tubing. Fabricated from continuous tube sections without joints, except at intersections, and with uniform with bend at directional changes.
3. Color: [**C70600 (Rose)**] [**or**] [**C71000 (White Bronze)**].

2.14 ANTIMICROBIAL COPPER MANUAL [**WINDOW TREATMENT**] [**BLIND**] [**CURTAIN**] [**DRAPE**] [**INTERIOR SHUTTER**] [**SHADE**] [**CUBICAL CURTAIN AND TRACK**] CONTROLS

Retain the option immediately below if specifying operating hardware for window treatments, blinds, curtains, drapes, interior shutters, or shades. Delete the option immediately below if specifying Operating Hardware cubical curtains and tracks.

A. Manual [**Tilt**] Control Mechanism: **3/8-inch (9 mm)** diameter fiberglass wand with **6-inch (150 mm)** long, antimicrobial copper cover on handle. Antimicrobial copper cover attached to fiberglass wand with cyanoacrylate adhesive.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Drapery Industries, SafeGrip™ Wands[**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

Wands are available in custom lengths up to a maximum of 48 inches (1200 mm).

   2. Wand Length: <**Insert length**> inches (mm).
   3. Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].
   4. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.15 ANTIMICROBIAL COPPER CUSTOM ARMRESTS

A. Antimicrobial Copper Armrests: Custom fabricated chair armrest using [**0.030 inch (0.762 mm)**] [**0.0475 inch (1.207 mm)**] [**0.060 inch (1.524 mm)**] <**insert thickness**> thick antimicrobial copper sheet [**wrap**] [**inlay**] [**mechanically fastened**] [**adhered**] to [**steel**] [**stainless steel**] [**aluminum**] [**hardwood**] <**insert material**>chair armrest.

   1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Frigo Design; <**insert style name or number**> Antimicrobial Copper Custom Fabricated Chair Armrest [**.**] [**or comparable product by one of the following:**].

      a. <**Insert name of manufacturer**>.

2. Size and Configuration: As indicated on Drawings.

Retain "Laminating Adhesive" subparagraph below if specifying antimicrobial copper inlay armrest.

3. Laminating Adhesive: Single component, moisture curing, polyurethane adhesive.

   a. VOC Content: Not more than 56.0 g/l.

4. Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].
5. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.16 ANTIMICROBIAL COPPER [**SINK**] [**LAVATORY**] DRAINS

The vandal resistant drain screen is not available on all models. Verify its availability before specifying.

A. Antimicrobial Copper [**sink**] [**lavatory**] drains, with perforated[,**vandal resistant**] drain screens, Designed to fit [**1-1/2-inch (38 mm) or 1-5/8-inch (41 mm)**] [**3-1/2-inch (88 mm)**] diameter drain openings with an overall flange dimension of 2-1/4-inch (57mm) diameter.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide Elkay.; <**insert model name or number**> Antimicrobial Copper sink [**.**] [**or comparable product by one of the following:**].

   a. <**Insert name of manufacturer**>.

2. Tail Piece: [**1-1/4-inch (32 mm) O.D. by 6-inch (152 mm) long chrome plated brass**] [**1-1/2-inch (38 mm) O.D. by 4-inch (102 mm) long**] tailpiece.

The overflow feature is not available on all models. Verify its availability before specifying.

3. Feature: Overflow.

2.17 ANTIMICROBIAL COPPER [**LAVATORIES**] [**BAR SINKS**] [**KITCHEN SINKS**] [**SCRUB SINKS**] [**CLEANING STATIONS**]

A. Antimicrobial Copper [**Lavatories**] [**Bar Sinks**] [**Kitchen Sinks**] [**Scrub Sinks**]: [**lavatory**] [**bar sink**] [**kitchen sink**] units of [**0.0475 inch (1.207 mm thick)**] <**Insert thickness**> thick antimicrobial copper sheet.

1. [**Basis of Design**]Product: Subject to compliance with requirements, provide [**Elkay**.] [**Just Manufacturing**.]; <**insert model name or number**> Antimicrobial Copper sink [**.**] [**or comparable product by one of the following:**].

   a. [**Elkay**.].
   b. [**Just Manufacturing**.].
   c. <**Insert name of manufacturer**>.

2. Configuration: [**Round**] [**Oval**] [**Square sink with** [**square**] [**round**] [**oval**] **bowl**] [**Rectangular** [**single**] [**double**] **bowl**] <**insert description**>.
3. Type: [**Countertop mounted**] [**Wall hung**] [**Wall hung, corner mounted**] <**insert type**>.
4. Dimensions: [**As indicated on the drawings.**] [**As indicated by manufacturer's product designation.**] [**As follows**:].

   a. Overall Dimensions: <**Insert width by length by depth in inches (width by length by depth in mm)**>.

   b. Bowl Dimensions: <**Insert width by length by depth in inches (width by length by depth in mm)**>.

5. Mounting: [**Under mount**] [**Top mount**].
6. Sound Deadening: Full spray sides and bottom.

7. Front and Side Panels: 0.0625-inch (1.59 mm) thick, Type 304, stainless steel.

   a. Removable front panel for access to drain trap.

8. Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].
9. Finish: [**Matte**] [**Brushed**] [**Polished (mirror-like)**] [**Milled**] [**Peened (glass bead)**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect**

from manufacturer's full range of standard colors] [**Match Architect's sample**].

2.18   ANTIMICROBIAL COPPER WALLPLATES AND ELECTRICAL SWITCHES

A.   Wallplates and Electrical Switches: Provide antimicrobial copper wallplates and electrical [**decorator**] [**and**] [**toggle**] switches.

    1.   [**Basis of Design**]Product: Subject to compliance with requirements, provide Eaton Wiring Devices (Arrow Hart brand); [**Specification Grade AC Wallplates**] [**Commercial Grade Decorator Switches**] [**and**] [**Industrial Grade AC Toggle Switches**][**.**] [**or comparable product by one of the following:**].

        a.   <**Insert name of manufacturer**>.

B.   Antimicrobial Copper Wallplates: Formed metal wallplates for [**electrical**] [**outlets**] [**and**] [**switches**] complying with ANSI/NEMA WD 6 "Wiring Devices—Dimensional Specifications.".

Retain "Wallplates" subparagraph below if specifying AC decorator and toggle switches.

    1.   Wallplates: Stamped from 0.040-inch (1.0 mm) thick antimicrobial copper.

C.   Antimicrobial Copper Switches: [**Commercial Grade Decorator Switches**] [**and**] [**Industrial Grade AC Toggle Switches**].

Retain "Outer Switch Housing" subparagraph below if specifying AC decorator and toggle switches. Retain the first selection for Specification Grade Decorator Switches. Retain the second selection for Specification Grade Toggle Switches.

    1.   Outer Switch Housing: Stamped from [**0.021-inch (0.53 mm)**] [**0.032-inch (0.81 mm)**] thick antimicrobial copper.

Switches and wallplates are not available in silicon bronze.

D.   Color: [**Rose (C70600)**] [**White bronze (C71000)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

E.   Finish: [**Matte**] [**Brushed**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

2.19   MISCELLANEOUS MATERIALS

Include the "Solder for Antimicrobial Copper" paragraph below for antimicrobial copper sheet metal and piping products which require soldered connections.

A.   Solder for Antimicrobial Copper: ASTM B32 "Standard Specification for Solder Metal" Grade Sn50 general purpose alloy for standard tinning and sheet metal work.

B.   Brazing for Antimicrobial Copper: Provide type and alloy of brazing materials as recommended by manufacturer of antimicrobial copper product or material.

C.   Sealants for Antimicrobial Copper: Comply with requirements of Section [**079200 "Joint Sealants."**] [<**Insert Section number**> "<**Insert Section title**>."].

D.   Adhesives for Antimicrobial Copper: [**Fabricator's**] [**Manufacturer's**] standard laminating adhesive for copper sheets.

    1.   VOC Content: Less than 56.0 g/l.

E.   Fasteners for Antimicrobial Copper: Wood screws, sheet metal screws, self-tapping screws, nails, annular threaded nails, rivets, bolts and other suitable fasteners as required for complete assembly and installation [**of the following metal**] [**of one of the following metals**]:

    1.   Antimicrobial copper.
    2.   Brass.
    3.   Bronze.
    4.   Passivated stainless steel, 300 Series.

2.20   FABRICATION

A.   General: Perform shop fabrication of antimicrobial copper items employing only EPA registered fabricators.

B.   Antimicrobial Copper Products and Materials: Fabricate antimicrobial copper products and materials according to recommendations in "Guide to Working with Copper Alloys" and "Copper-Nickel Welding and Fabrication" by Copper Development Association Inc.

C.   Soldering Antimicrobial Copper: Perform soldering according to ASTM B32 "Standard Specification for Solder Metal.".

D.   Shop [**Welding**] [**and**] [**Brazing**] Antimicrobial Copper: Perform [**welding**] [**and**] [**brazing**] in compliance with AWS for recommended practices.

1.   [**Weld**] [**and**] [**Braze**] concealed surfaces only.
2.   Provide exposed surfaces that are free of distortions and discoloring.
3.   Remove flux from [**welded**] [**and**] [**brazed**] joints.

2.21   ANTIMICROBIAL COPPER FINISHES

A.   Antimicrobial Copper Color: [**C70600 (Rose)**] [**C71000 (White Bronze)**] [**C75200 (White Bronze)**] [**C99710 (White Bronze)**] [**C96200 (Rose)**] [**C96300 (White Bronze)**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

B.   Antimicrobial Copper Finish: [**Matte**] [**Brushed**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

C.   Antimicrobial Copper Texture: [**Embossed**] [**Glass bead**] [**Polished**] [**Knurled**] [**As indicated on the Drawings**] [**As selected by Architect from manufacturer's full range of standard colors**] [**Match Architect's sample**].

PART 3 - EXECUTION

3.1 ANTIMICROBIAL COPPER [**PRODUCTS**] [**AND**] [**MATERIALS**] INSTALLATION

    A.   General: Install antimicrobial copper products and materials according to recommendations in "Guide to Working with Copper Alloys" and "Copper-Nickel Welding and Fabrication" by Copper Development Association Inc.

3.2 FIELD FABRICATION [**OF ANTIMICROBIAL COPPER**]

Retain this Article if any antimicrobial copper items, such as custom fabricated shower pans, may require field fabrication.

    A.   General: Perform field fabrication of antimicrobial copper items employing only EPA registered fabricators.

Include the "Antimicrobial Copper Products and Materials" paragraph below to establish general quality level for means, methods, and workmanship.

    A.   Antimicrobial Copper Products and Materials: Fabricate antimicrobial copper products and materials according to recommendations in "Guide to Working with Copper Alloys" and "Copper-Nickel Welding and Fabrication" by Copper Development Association Inc.

Include the "Soldering Antimicrobial Copper" paragraph below for Antimicrobial Copper sheet metal and piping products which require soldered connections performed in the shop.

    B.   Soldering Antimicrobial Copper: Perform soldering according to ASTM B32 "Standard Specification for Solder Metal.".

    C.   Field [**Welding**] [**and**] [**Brazing**] Antimicrobial Copper: Perform [**welding**] [**and**] [**brazing**] in compliance with AWS for recommended practices.

        1.   [**Weld**] [**and**] [**braze**] concealed surfaces only.
        2.   Provide exposed surfaces that are free of distortions and discoloring.
        3.   Remove flux from [**welded**] [**and**] [**brazed**] joints.

3.3 CLEANING [**OF ANTIMICROBIAL COPPER**]

    A.   Clean antimicrobial copper surfaces using a cleaning agent typically used for traditional touching surfaces.

Cleaning and sanitation requirements will differ depending on the type of facility and the Building Owner's and Maintenance Staff's policies. Consult with the Building Owner before editing the cleaning paragraph below to confirm if they have formalized infection control guidelines or more basic cleaning standards.

    B.   Clean and sanitize antimicrobial copper surfaces according to Owner's [**standard practice**] [**infection control guidelines**].

C.   Maintain the antimicrobial copper surfaces in accordance with Owner's infection control guidelines.

3.4   PROTECTION [**OF ANTIMICROBIAL COPPER**]

A.   Protect antimicrobial copper products and materials from damage with a protective paper or plastic wrap until final completion.

B.   Do not allow antimicrobial copper products and materials to be waxed, painted, lacquered, varnished, or otherwise coated.

3.5   MAINTENANCE [**OF ANTIMICROBIAL COPPER**]

A.   Do not apply wax, paint, lacquer, varnish, or otherwise coating to antimicrobial copper products and materials after removing protective wrap.

The "End of Section" line is not relevant in this document since it is not a section. However, the "End of Section" line has been included here as a point of reference for formatting.

END OF SECTION