

Special Flooring
Product Classification: 09700
Sweet's Catalog Code: 09700/HUB
BuyLine: 0610

HUBBELLITE America, Inc.

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**Architectural Specifications:
Hubbellite 300 & Hubbellite 100 Seamless Flooring**

**Hubbellite® 100 Cupric Oxychloride Seamless Flooring
New Concrete Floors**

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. CAST-IN-PLACE CONCRETE, SECTION 03300

1.02 QUALITY ASSURANCE

A. Acceptance Sample:

1. Three (3) 3-1/2" x 3-1/2" square acceptance samples of the specified flooring system shall be prepared by the Manufacturer's representative and submitted to the Owner prior to the bidding phase of the project. All bidders shall inspect the "acceptance samples" before submitting their bids. No contractor shall submit a bid that has not seen these samples.
2. The installed flooring system shall duplicate the acceptance samples in thickness, color, texture and degree of overall appearance and finish. The color of the acceptance samples shall be red and the color shall extend through the entire thickness of the flooring.

B. The finished flooring system shall be uniform in color, texture and appearance. All edges that terminate at walls, floor discontinuities and other embedded items shall be sharp, uniform and cosmetically acceptable, using plastic edge strips of the proper height (equal to Hubbellite thickness) wherever possible.

C. Reference Standards:

1. ACI 308 - Standard Practice for Curing Concrete
2. ACI 302.1R-80 - Guide for Concrete Floor and Slab Construction
3. United States Department of Agriculture acceptance

D. Contractor Prequalification Requirements:

1. Each bidder for this project shall be a prequalified and approved Hubbellite installer at the time of bid submittal.
2. Each approved applicator shall have been prequalified in all phases of surface preparation and application of the specified flooring system.

1.03 SUBMITTALS

- A. Acceptance Samples: The acceptance samples shall be three (3) 3-1/2" x 3-1/2" square samples of the specified Hubbellite flooring system.
- B. Manufacturer's Literature: Descriptive data and specific recommendations for mixing, application and curing.
- C. Manufacturer's Material Safety Data Sheets (MSDS) for each respective product being used.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered in original manufacturer's sealed containers, with all pertinent labels intact and legible.
- B. Store materials in protected area at a temperature between 35° F. to 80° F. Keep materials, bags and containers dry.
- C. Follow all manufacturer's specific instructions and prudent safety practices for storage and handling.

1.05 JOB CONDITIONS

- A. The material and air temperatures shall be in the range of 55° F. to 85° F. during application and cure.
- B. Maintain a uniform temperature throughout the work area without drafts. Air currents shall be diffused so as not to be blown directly on or across flooring until it is fully cured. Maintain a minimum temperature of 65° F. for a period of 48 hours prior to commencement of work and for a period of two (2) weeks after the Hubbellite 100 installation has been completed.
- C. The relative humidity in the specific location of the application shall be less than 85% and the surface temperature shall be at least 5° F. above the dew point.
- D. The surfaces to be covered shall have been prepared as specified in Section 3.02 "SURFACE PREPARATION."
- E. Protect all adjacent surfaces not to be coated with masking and covers.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Hubbellite America, Inc., 415 Neptune Street, Pittsburgh, PA 15220. TEL (412) 920-0500, FAX (412) 920-2764.

B. Equivalent materials of other manufacturers may be substituted on approval of the Architect or Engineer by written addendum. Requests for substitution will be considered, if submitted within ten (10) days before the bid due date and shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended thickness, certified test reports showing results to equal the performance criteria as specified herein and the Manufacturer's Safety Data Sheets (MSDS) for each product. No request for substitution shall be considered that would change the generic type of flooring system specified.

2.02 APPROVED MATERIALS

A. Hubbellite Cupric Oxychloride Cement Flooring System:

1. Primer Coat: Acrylic Latex bonding agent
2. Finish Flooring: Hubbellite 100 3/8" or 1/2" thick
3. Sealer: Selected Hubbellite dressing

2.03 PRODUCT REQUIREMENTS

A. Hubbellite 100 Performance Criteria:

1. Weight

3/8" thickness - 3.2 lbs./sq. ft.

1/2" thickness - 3.8 lbs./sq. ft.

2. Strength

Compressive Strength - 5,000 psi

Tensile Strength - 2,350 psi

Adhesive Strength - 500 psi

3. Modulus of Elasticity, ASTM C-580, psi - 4.3×10^5

4. Coefficient of Thermal Expansion, ASTM C-531, in./in./F. - 6×10^{-6}

5. Abrasion Resistance, ASTM C-501, 33.01 Wear Index

6. Fire Resistance - Incombustible

7. Slip Resistance - Apparatus: NBS Brungraber Slip Tester. Six readings each with wet and dry samples.

Static coefficient of friction results:

Dry sample

.79
.76
.75
.75
.76
.80

Avg. Coef. of Friction: .77

Wet (water) sample

.74
.75
.73
.73
.71
.73

Avg. Coef. of Friction: .73

8. Resilience - Resiliometer Tests (1/2" steel ball - 48" drop)

Type Floor: Hardwood (on sleepers)

Return Height: 7" +/- 0.5"

Type Floor: Hubbellite 100 1/2" (over 3" concrete)

Return Height: 8" +/- 1.0"

Type Floor: Hubbellite 100 3/8" (over 3" concrete)

Return Height: 9" +/- 1.0"

Type Floor: Rubber Tile (over 3" concrete)

Return Height: 9" +/- 0.5"

Type Floor: Asphalt Tile (over 3" concrete)

Return Height: 21" +/- 1.5"

Type Floor: Concrete (3" slab fin. surface)

Return Height: 21" +/- 1.5"

Type Floor: Terrazzo (Portland Cement)

Return Height: 28" +/- 1.0"

Type Floor: Quarry Tile (Cement Set)

Return Height: 39" +/- 1.5"

9. Chemical Resistance

Effect of weak acids - slight

Effect of strong acids - significant

Effect of alkalies - none

Effect of salt solutions - none

Effect of gasoline, oil, grease - none

Effect of solvents, organics - none

Effect of sunlight, UV - none
Effect of food acids and sugars- none

2.04 MATERIAL PREPARATION

- A. Preparation of gauging solution and mixing of all materials shall be in strict accordance with the manufacturer's specific instructions and procedures, considering the area to be worked and the ambient temperature and humidity.
- B. Stage material bags and liquid components in an orderly manner that will support an efficient sequence of opening and mixing efforts.

PART 3 - EXECUTION

3.01 PRE-WORK INSPECTION

- A. Examine all surfaces to be covered with these materials and report any conditions that adversely affect the appearance or performance of the flooring system and which cannot be put into acceptable condition by the preparatory work specified in Paragraph 3.02.
- B. Do not proceed with surface preparation and application until the surface is acceptable or authorization to proceed is given by the Architect or Engineer.
- C. Ensure that adequate lighting has been installed to support the surface preparation and application efforts. Hubbellite 100 is minimally reflective; sufficient lighting is necessary to properly trowel and finish the Hubbellite surface.
- D. If there are areas in the floor that must be filled to satisfy grade or drainage requirements, refer to the manufacturer's recommendations and procedures for materials and techniques.

3.02 SURFACE PREPARATION

A. General:

The General Contractor shall ensure that:

1. The concrete in floors to be covered with these materials must have been cured a minimum of 28 days at or above 70° F. and must be visibly dry at the surface. Follow specific manufacturer's recommendations for concrete curing at temperatures below 70° F. Do not use curing agents or hardeners that remain on or in the concrete's surface.
2. New concrete should be steel troweled once and must be flat and true with proper pitch to floor drains. The surface of new concrete must be left at least 3/8" below finished grade to accommodate the thickness of the Hubbellite flooring. Significant accumulations of laitance must be removed by acid cleaning prior to application of Hubbellite.
3. Dislodge dirt, mortar spatter and other dry surface accumulations and contamination by scraping, brushing, sweeping, vacuuming or compressed air blow-down.

B. Placement of Plastic Joint and Edge Strips; Wire Lath:

1. Plastic edge strips specifically recommended by Hubbellite America shall be used to terminate the Hubbellite 100 at the top of coves, edges at doors and other sharp terminations. Do not allow Hubbellite 100 to be feathered. Plastic strips shall also be used at nominal 20 foot spacings to follow expansion/contraction movement. Follow specific manufacturer's instructions for bonding and anchoring of strips and placement of wire lath as required.

C. Bond Coat Application:

1. The acrylic latex bond coat material shall be prepared and mixed in strict accordance with the manufacturer's specific instructions and procedures.
2. The acrylic latex bond coat shall be broom applied to all properly prepared and dry floor surfaces and allowed to cure before application of the Hubbellite 100.

3.03 APPLICATION

- A. This application shall consist of applying and spreading the 3/8" or 1/2" finish flooring, using the proper technique and equipment, followed by the requisite number of troweling efforts to derive a surface that is smooth and dense.
- B. Mix batches of components to be used in each specific application that will support the spreading rate for the areas involved. Refer to the manufacturer's data sheets for specific recommendations to determine the size of batches to prepare and mix.
- C. Place the mixture of the proper consistency for formation of all coves first. Following placement of coves, mix additional material and pour the mixture onto the floor surface, spreading the material out to form a uniform, continuous layer.
- D. Trowel the Hubbellite the requisite number of times to derive a smooth, dense, compacted surface.
- E. Allow the finish flooring to dry and cure overnight with the work areas closed to drafts and circulating air.
- F. Seal the floor the next day with selected dressing as recommended and supplied by Hubbellite America, Inc.
- G. When the sealer is dry, General Contractor shall cover the finished floor with sawdust and/or other protective coverings until the flooring is to be turned over to the Owner to protect the surface from traffic and abuse. Keep all traffic off the flooring for at least 12 hours. Do not subject the flooring to flooding by water during the initial seven (7) days.
- H. The finished appearance of this flooring system must be similar to the acceptance samples as noted in Paragraph 1.02A and must meet all acceptance criteria before final acceptance by the Architect, Engineer or Owner.

3.04 INSPECTION

- A. Request acceptance of the acrylic latex bond coat before application of the finish flooring commences; likewise for the finish flooring before application of the sealer.

- B. All work that is not acceptable to the Architect, Engineer or Owner must be corrected before consideration of final acceptance.

3.05 CLEAN-UP

- A. Remove any material spatters and other material that is not where it should be. Remove masking and covers, taking care not to contaminate surrounding area and abuse the fresh Hubbellite.
- B. Repair any damage that should arise from either the application effort or from the clean-up effort.

Hubbellite® 300 Cupric Oxychloride Conductive Seamless Flooring New Concrete Floors

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. CAST-IN-PLACE CONCRETE, SECTION 03300

1.02 QUALITY ASSURANCE

A. Acceptance Sample:

1. Three (3) 3-1/2" x 3-1/2" square acceptance samples of the specified flooring system shall be prepared by the Manufacturer's representative and submitted to the Owner prior to the bidding phase of the project. All bidders shall inspect the "acceptance samples" before submitting their bids. No contractor shall submit a bid that has not seen these samples.
2. The installed flooring system shall duplicate the acceptance samples in thickness, color, texture and degree of overall appearance and finish. The color of the acceptance samples shall be black and the color shall extend through the entire thickness of the flooring.

- B. The finished flooring system shall be uniform in color, texture and appearance. All edges that terminate at walls, floor discontinuities and other embedded items shall be sharp, uniform and cosmetically acceptable, using plastic edge strips of the proper height (equal to Hubbellite thickness) wherever possible.

C. Reference Standards:

1. ACI 308 - Standard Practice for Curing Concrete
2. ACI 302.1 R-80 - Guide for Concrete Floor and Slab Construction
3. NFPA Bulletin #56-A

D. Contractor Prequalification Requirements:

1. Each bidder for this project shall be a prequalified and approved Hubbellite installer at the

time of bid submittal.

2. Each approved applicator shall have been prequalified in all phases of surface preparation and application of the specified flooring system.

1.03 SUBMITTALS

- A. Acceptance Samples: The acceptance samples shall be three (3) 3-1/2" x 3-1/2" square samples of the specified Hubbellite flooring system.
- B. Manufacturer's Literature: Descriptive data and specific recommendations for mixing, application and curing.
- C. Manufacturer's Material Safety Data Sheets (MSDS) for each respective product being used.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered in original manufacturer's sealed containers, with all pertinent labels intact and legible.
- B. Store materials in protected area at a temperature between 35° F. to 80° F. Keep materials, bags and containers dry.
- C. Follow all manufacturer's specific instructions and prudent safety practices for storage and handling.

1.05 JOB CONDITIONS

- A. The material and air temperatures shall be in the range of 50° F. to 85° F. during application and cure.
- B. Maintain a uniform temperature throughout the work area without drafts. Air currents shall be diffused so as not to be blown directly on or across flooring until it is fully cured. Maintain a minimum temperature of 65° F. for a period of 48 hours prior to commencement of work and for a period of two (2) weeks after the Hubbellite 300 installation has been completed.
- C. The relative humidity in the specific location of the application shall be less than 85% and the surface temperature shall be at least 5° F. above the dew point.
- D. The surfaces to be covered shall have been prepared as specified in Section 3.02 "SURFACE PREPARATION."
- E. Protect all adjacent surfaces not to be coated with masking and covers.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Hubbellite America, Inc., 415 Neptune Street, Pittsburgh, PA 15220. TEL (412) 920-0500, FAX (412) 920-2764.

- B. Equivalent materials of other manufacturers may be substituted on approval of the Architect or Engineer by written addendum. Requests for substitution will be considered, if submitted within ten (10) days before the bid due date, and shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended thickness, certified test reports showing results to equal the performance criteria as specified herein and the Manufacturer's Safety Data Sheets (MSDS) for each product. No request for substitution shall be considered that would change the generic type of flooring system specified.

2.02 APPROVED MATERIALS

A. Hubbellite 300 Conductive (Cupric Oxochloride) Cement Flooring System:

1. Primer Coat: Acrylic Latex bonding agent
2. Finish Flooring: Hubbellite 300 1/2" thick
3. Sealer: Selected Hubbellite dressing

2.03 PRODUCT REQUIREMENTS

A. Hubbellite 300 Performance Criteria:

1. Weight

1/2" thickness - 4.1 lbs./sq. ft.

2. Strength

Compressive Strength - 5,000 psi

Tensile Strength - 2,350 psi

Adhesive Strength - 500 psi

3. Abrasion Resistance, ASTM C-501, 51.67 Wear Index

4. Fire Resistance - Incombustible

5. Chemical Resistance – Withstands grease and oil and the following type solvents used in critical areas:

Acetates

Alcohol

Amines

Aromatic solvents

Biodegradable surfactants

Defoamers

Dimethyl Formamide

Dowicides

Dry Dresinates

Fluorocarbon solvents

Glycerine
Glycol Ethers
Ketones
Methocel
Monomers
Nonionic surfactants
Petroleum Naphthas
Plasticizers
Polyglycos
Synthetic resins
Terpene solvents
Tetrahydrofuran

6. Non-Sparking – From either abrasion or striking with a hand tool
7. Static Disseminating
8. Electrical Resistance – Less than 1,000,000 and more than 25,000 Ohms.
9. Finish surfaces shall be non-fading, non-bleaching, resilient, possessing a black non-denting, non-dusting surface that performs under the required service conditions.

2.04 MATERIAL PREPARATION

- A. Preparation of gauging solution (magnesium chloride and water) and mixing of all materials shall be in strict accordance with the manufacturer's specific instructions and procedures, considering the area to be worked and the ambient temperature and humidity.
- B. Stage material bags and liquid components in an orderly manner that will support an efficient sequence of opening and mixing efforts.

PART 3 - EXECUTION

3.01 PRE-WORK INSPECTION

- A. Examine all surfaces to be covered with these materials and report any conditions that adversely affect the appearance or performance of the flooring system and which cannot be put into acceptable condition by the preparatory work specified in Paragraph 3.02.
- B. Do not proceed with surface preparation and application until the surface is acceptable or authorization to proceed is given by the Architect or Engineer.
- C. Ensure that adequate lighting has been installed to support the surface preparation and application efforts. Hubbellite 300 is minimally reflective; sufficient lighting is necessary to properly trowel and finish the Hubbellite surface.
- D. If there are areas in the floor that must be filled to satisfy grade or drainage requirements, refer to the manufacturer's recommendations and procedures for materials and techniques.
- E. If floor is to be grounded, refer to the manufacturer's recommendations and procedures for materials and techniques.

3.02 SURFACE PREPARATION

A. General:

The General Contractor shall ensure that:

1. The concrete in floors to be covered with these materials must have been cured a minimum of 28 days at or above 70° F. and must be visibly dry at the surface. Follow specific manufacturer's recommendations for concrete curing at temperatures below 70° F. Do not use curing agents or hardeners that remain on or in the concrete's surface.
2. New concrete should be medium broom finished and must be flat and true with proper pitch to floor drains. The surface of new concrete must be left at least 1/2" below finished grade to accommodate the thickness of the Hubbellite flooring. Significant accumulations of laitance must be removed by acid cleaning prior to application of Hubbellite.
3. Dislodge dirt, mortar spatter and other dry surface accumulations and contamination by scraping, brushing, sweeping, vacuuming or compressed air blow-down.

B. Placement of Plastic Joint and Edge Strips; Wire Lath:

1. Plastic edge strips specifically recommended by Hubbellite America shall be used to terminate the Hubbellite 300 at the top of coves, edges at doors and other sharp terminations. Do not allow Hubbellite 300 to be feathered. Plastic strips shall also be used at nominal 20 foot spacings to follow expansion/contraction movement. Follow specific manufacturer's instructions for bonding and anchoring of strips and placement of wire lath as required.

C. Bond Coat Application:

1. The acrylic latex bond coat material shall be prepared and mixed in strict accordance with the manufacturer's specific instructions and procedures.
2. The acrylic latex bond coat shall be broom applied to all properly prepared and dry floor surfaces and allowed to cure before application of the Hubbellite 300.

3.03 APPLICATION

- A. This application shall consist of applying and spreading the 1/2" finish flooring, using the proper technique and equipment, followed by the requisite number of troweling efforts to derive a surface that is smooth and dense.
- B. Mix batches of components to be used in each specific application that will support the spreading rate for the areas involved. Refer to the manufacturer's data sheets for specific recommendations to determine the size of batches to prepare and mix.
- C. Place the mixture of the proper consistency for formation of all coves first. Following placement of coves, mix additional material and pour the mixture onto the floor surface, spreading the material out to form a uniform, continuous layer.

- D. Trowel the Hubbellite the requisite number of times to derive a smooth, dense, compacted surface.
- E. Allow the finish flooring to dry and cure overnight with the work areas closed to drafts and circulating air.
- F. Seal the floor the next day with selected dressing as recommended and supplied by Hubbellite America, Inc.
- G. When the sealer is dry, General Contractor shall cover the finished floor with sawdust and/or other protective coverings until the flooring is to be turned over to the Owner to protect the surface from traffic and abuse. Keep all traffic off the flooring for at least 12 hours. Do not subject the flooring to flooding by water during the initial seven (7) days.
- H. The finished appearance of this flooring system must be similar to the acceptance samples as noted in Paragraph 1.02A and must meet all acceptance criteria before final acceptance by the Architect, Engineer or Owner.

3.04 INSPECTION

- A. Request acceptance of the latex bond coat before application of the finish flooring commences; likewise for the finish flooring before application of the sealer.
- B. All work that is not acceptable to the Architect, Engineer or Owner must be corrected before consideration of final acceptance.

3.05 CLEAN-UP

- A. Remove any material spatters and other material that is not where it should be. Remove masking and covers, taking care not to contaminate surrounding area and abuse the fresh Hubbellite.
- B. Repair any damage that should arise from either the application effort or from the clean-up effort.

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