

PROJECT MANUAL

**Delaware Technical Community College  
Stanton Campus A Wing Restroom  
Renovations**

PROJECT ADDRESS

400 Stanton Christiana Road  
Newark, DE 19713

OWNER ADDRESS

Delaware Technical Community College  
One Corporate Commons  
100 West Commons Blvd, Suite 100  
New Castle, DE 19720

Bidding & Contract Requirements  
Technical Specification Divisions

Construction Documents  
March 25<sup>th</sup> 2020

ARCHITECT

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## 06 6116 SOLID SURFACING FABRICATIONS

### PART 1 - GENERAL

#### 1.01 REFERENCES

##### A. Definitions:

1. Solid Surface: Non-porous, homogeneous material maintaining the same composition throughout with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

##### B. Reference Standards:

1. ASTM C920-14a - Standard Specification for Elastomeric Joint Sealants
2. ASTM D638-10 - Standard Test Method for Tensile Properties of Plastics
3. ASTM D785-08 - Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials
4. ASTM D790-10 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
5. ASTM D5420-10 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact)
6. ASTM E84-14 - Standard Test Method for Surface Burning Characteristics of Building Materials
7. ASTM E228-11 - Standard Test Method for Linear Thermal Expansion of Solid Materials with a Push-Rod Dilatometer
8. ASTM G21-13 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
9. ASTM G22-76(96) - Standard Practice for Determining Resistance of Plastics to Bacteria
10. ASTM G155-13 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
11. CSA B45.5-11/  
IAPMO Z124-2011 - Plastic Plumbing Fixtures
12. NFPA 255-06 - Standard Method of Test of Surface Burning Characteristics of Building Materials
13. NSF/ANSI 51-07 - Food Equipment Materials
14. SCAQMD Rule 1168 - Adhesive and Sealant Applications (amended January 2005)
15. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials
16. UL Environment/  
GREENGUARD  
UL 2818 - Standard for Chemical Emissions for Building Materials,  
- Finishes and Furnishings, Section 7.1
17. UL Environment/  
GREENGUARD  
UL 2818 - Gold Standard for Chemical Emissions for Building Materials,  
- Finishes and Furnishings, Section 7.1 and 7.2
18. UL 2824 - GREENGUARD Certification Program, Method for Measuring Microbial Resistance from Various Sources Using Static Environmental Chambers

## 1.02 SUBMITTALS

- A. Product Data: Indicate Product description including solid surface sheets, sinks, bowls and illustrating full range of standard colors, fabrication information and compliance with specified performance requirements. Submit Product data with resistance to list of chemicals.
- B. Shop Drawings: Submit Shop Drawings for work of this Section in accordance with Section 01 30 00. Indicate plans, sections, dimensions, component sizes, edge details, thermosetting requirements, fabrication details, attachment provisions, sizes of furring, blocking, including concealed blocking and coordination requirements with adjacent work. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacles and other items installed in solid surface.
- C. Coordination Drawings: Submit coordination drawings indicating plumbing and miscellaneous steel work indicating locations of wall rated or non-rated, blocking requirements, locations and recessed wall items and similar items.
- D. Samples: Submit samples in accordance with Section 01 30 00. Submit minimum 6" x 6" samples. Cut sample and seam together for representation of inconspicuous seam. Indicate full range of color and pattern variation. Approved samples will be retained as standards for work.

## 1.03 CLOSEOUT SUBMITTALS

- A. Operational and Maintenance Data:
  - 1. Submit manufacturer's care and maintenance data, including repair and cleaning instructions. Include in Project closeout documents.
  - 2. Provide a commercial care and maintenance kit and video. Review maintenance procedures and warranty details with Owner upon completion.

## 1.04 QUALITY ASSURANCE

- A. Qualifications:
  - 1. Installers: Provide work of this Section executed by competent installers with minimum 5 years experience in the application of Products, systems and assemblies specified and with approval and training of the Product manufacturers.

## 1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements: Deliver no components to Project site until areas are ready for installation.
- B. Storage and Handling Requirements:
  - 1. Store components indoors prior to installation.
  - 2. Handle materials to prevent damage to finished surfaces.

## 1.06 WARRANTY

- A. Manufacturer Warranty: Provide manufacturer's standard warranty for material only for period of 10 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Architect and at no expense to Owner.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

A. Manufacturer List: Products of following manufacturers are acceptable subject to conformance to requirements of Drawings, Schedules and Specifications:

1. Corian® by DuPont; [www.corian.com](http://www.corian.com)
2. Samsung Chemical USA; [www.staron.com](http://www.staron.com)
3. Wilsonart Contract; [www.wilsonartcontract.com](http://www.wilsonartcontract.com)

B. Substitution Limitations: This Specification is based on Corian® Products. Comparable Products from manufacturers listed herein will be accepted provided they meet requirements of this Specification.

### 2.02 MATERIALS

A. Description:

B. Performance/Design Criteria:

	<b>Property</b>	<b>Requirement (min or max)</b>	<b>Test Procedure</b>
1.	Solid Surface Based Products:		
a.	Tensile Strength	6000 psi min	ASTM D638
b.	Tensile Modulus	1.5 x 10 <sup>6</sup> psi min	ASTM D638
c.	Tensile Elongation	0.4% min.	ASTM D638
d.	Flexural Strength	10000 psi min	ASTM D790
e.	Flexural Modulus	1.2 x 10 <sup>6</sup> psi min	ASTM D790
f.	Hardness	>85-Rockwell "M" scale min.	ASTM D785
g.	Thermal Expansion	2.2 x 10 <sup>-5</sup> in./in./°F	ASTM E228
h.	Fungi and Bacteria	Does not support microbial growth	ASTM G21 & G22
i.	Microbial Resistance	Highly resistant to mold growth	UL 2824
j.	Ball Impact	No fracture - 1/2 lb. Ball: 6 mm slab - 36" drop 12 mm slab - 144" drop	NEMA LD 3, Method 3.8
k.	Weatherability	ΔE*94<5 in 1,000 hrs	ASTM G155
l.	Flammability	ASTM E84, NFPA 255 & UL 723	
		<b>All Colors</b>	
		<b>6 mm</b>	<b>12 mm</b>
m.	Flame Spread	<25	<25
n.	Smoke Developed	<25	<25
o.	Class	A	A
			NFPA 101®, Life Safety Code

- C. Solid Surface Material:
- D. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment; not coated, laminated or of composite construction; meeting following criteria:
- E. Flammability: Class 1 and A when tested to UL 723.
- F. Adhesive for Bonding to Other Products: One component silicone to ASTM C920.

## 2.03 COMPONENTS

- A. Counter Perimeter Frame: Ensure 1/2" thick, moisture resistant exterior grade plywood with waterproof adhesive, Fir or Poplar plywood, veneer core only.
- B. Fabrication:
  - 1. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved Shop Drawings and solid polymer manufacturer requirements. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints. Provide factory cutouts for plumbing fittings and bath accessories as indicated on Drawings.
  - 2. Where indicated, thermoform corners and edges or other objects to shapes and sizes indicated on Drawings, prior to seaming and joining. Cut components larger than finished dimensions and sand edges to remove nicks and scratches. Heat entire component uniformly prior to forming.
  - 3. Ensure no blistering, whitening and cracking of components during forming.
  - 4. Fabricate backsplashes from solid surfacing material with optional radius cove where counter and backsplashes meet as indicated on Drawings. Backsplashes for most colors may be fabricated by traditional means discussed in K-25294 *Backsplashes*. Colors with metallic/mica particle or veined colors creating directional aesthetics (K-26833 *Directional Aesthetics*) may require the techniques in Technical Bulletin K-28235 *Thermoformed Backsplash*.
  - 5. Fabricate joints between components using manufacturer's standard joint adhesive. Ensure joints are inconspicuous in appearance and without voids. Attach 50 mm (2") wide reinforcing strip of solid polymer material under each joint. Reinforcing strip of solid polymer material is not required when using DuPont™ Joint Adhesive 2.0.
  - 6. Provide holes and cutouts for plumbing and bath accessories as indicated on Drawings.
  - 7. Rout and finish component edges to a smooth, uniform finish. Rout cutouts, then sand edges smooth. Repair or reject defective or inaccurate work.
  - 8. Finish: Ensure surfaces have uniform finish:

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Verification of Conditions:
1. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.
  2. Verify actual site dimensions and location of adjacent materials prior to commencing work.
  3. Examine cabinets upon which counter tops are to be installed. Verify cabinets are level to within 1/8" in 10' - 0".
  4. Notify Architect in writing of any conditions which would be detrimental to installation.
- B. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

#### 3.02 INSTALLATION

- A. Install components plumb, level, rigid, scribed to adjacent finishes in accordance with reviewed Shop Drawings and Product installation details.
- B. Fabricate field joints using manufacturer's recommended adhesive, with joints being inconspicuous in finished work. Exposed joints/seams are not permitted. Keep components and hands clean when making joints. Reinforce field joints as specified herein. Cut and finish component edges with clean, sharp returns.
- C. Route radii and contours to template. Anchor securely to base component or other supports. Align adjacent components and form seams to comply with manufacturer's written recommendations using adhesive in color to match work. Carefully dress joints smooth, remove surface scratches and clean entire surface.
- D. Install countertops with no more than 1/8" sag, bow or other variation from a straight line.
- E. Seal between wall and components with joint sealant as specified herein and in Section 07 92 00, as applicable.
- F. Provide backsplashes and endsplashes as indicated on Drawings. Adhere to countertops using a standard color-coordinated silicone sealant. Adhere applied sidesplashes to countertops using a standard color-matched silicone sealant. Provide coved backsplashes and sidesplashes at walls and adjacent millwork. Fabricate radius cove at intersection of counters with backsplashes to dimensions shown on reviewed Shop Drawings. Adhere to countertops using manufacturer's standard color-coordinated joint adhesive.
- G. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Ensure components are clean on date of Substantial Completion of the Work.
- H. Coordinate connections of plumbing fixtures with [Division 22] [Mechanical]. Make plumbing connections to sinks in accordance with [Division 22] [Mechanical].

#### 3.03 REPAIR

- A. Repair minor imperfections and cracked seams and replace areas of severely damaged surfaces in accordance with manufacturer's "Technical Bulletins".

#### 3.04 SITE QUALITY CONTROL

- A. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Architect at no cost to Owner.

3.05 CLEANING

- A. Remove excess adhesive and sealant from visible surfaces.
- B. Clean surfaces in accordance with manufacturer's "Care and Maintenance Instructions".

3.06 PROTECTION

- A. Provide protective coverings to prevent physical damage or staining following installation for duration of Project.
- B. Protect surfaces from damage until date of Substantial Completion of the Work.

END OF SECTION

**SECTION 08 83 00**

**MIRRORS**

**PART 1 - GENERAL**

1.1 SUMMARY

A. Section includes the following types of silvered flat glass mirrors:

1. Film-backed glass mirrors qualifying as safety glazing.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include mirror elevations, edge details, mirror hardware, and attachments to other work.

C. Samples:

1. Mirrors: 12 inches square, including edge treatment on two adjoining edges.
2. Mirror Trim: 12 inches long.

D. Preconstruction test reports.

E. Warranty: Sample of special warranty.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 QUALITY ASSURANCE

A. Glazing Publications: Comply with GANA's "Glazing Manual" and "Mirrors, Handle with Extreme Care: Tips for the Professional on the Care and Handling of Mirrors."

B. Safety Glazing Products: For film-backed mirrors, provide products complying with testing requirements in 16 CFR 1201 for Category II materials.

C. Preconstruction Mirror Mastic Compatibility Test: Submit mirror mastic products to mirror manufacturer for testing to determine compatibility of mastic with mirror backing and substrates on which mirrors are installed.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which mirror manufacturer agrees to replace mirrors that deteriorate within specified warranty period. Deterioration of mirrors is defined as defects developed from normal use that are not attributed to mirror breakage or to maintaining and cleaning mirrors contrary to manufacturer's written instructions. Defects include discoloration, black spots, and clouding of the silver film.

1. Warranty Period: Five years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 SILVERED FLAT GLASS MIRRORS**

- A. Glass Mirrors, General: ASTM C 1503; manufactured using copper-free, low-lead mirror coating process.
  1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Avalon Glass and Mirror Company.
    - b. Binswanger Mirror; a division of Vitro America, Inc.
    - c. Gardner Glass, Inc.
    - d. Guardian Industries.
    - e. Independent Mirror Industries, Inc.
    - f. National Glass Industries.
    - g. Virginia Mirror Company, Inc.
    - h. Walker Glass Co., Ltd.

### **2.2 MISCELLANEOUS MATERIALS**

- A. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- B. Edge Sealer: Approved by mirror manufacturer.
- C. Mirror Mastic: An adhesive setting compound, asbestos-free, produced specifically for setting mirrors.
- D. Film Backing for Safety Mirrors: Film backing and pressure-sensitive adhesive; both compatible with mirror backing paint as certified by mirror manufacturer.

### **2.3 MIRROR HARDWARE**

- A. Top and Bottom Aluminum J-Channels: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate mirrors of thickness indicated and in lengths required to cover bottom and top edges of each mirror in a single piece.
  1. Finish: Clear bright anodized.
- B. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching it in finished color and texture where fasteners are exposed.
- C. Anchors and Inserts: Provide devices as required for mirror hardware installation.

## 2.4 FABRICATION

- A. Cutouts: Fabricate cutouts for notches and holes in mirrors without marring visible surfaces. Locate and size cutouts so they fit closely around penetrations in mirrors.
- B. Mirror Edge Treatment: Rounded polished. Seal edges of mirrors with edge sealer.
- C. Film-Backed Safety Mirrors: Apply film backing with adhesive coating over mirror backing paint as recommended in writing by film-backing manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Examine substrates, over which mirrors are to be mounted, with Installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance of the Work.
  - 1. Verify compatibility with and suitability of substrates, including compatibility of mirror mastic with existing finishes or primers.
  - 2. Proceed with installation only after unsatisfactory conditions have been corrected and surfaces are dry.
- B. Comply with mastic manufacturer's written installation instructions for preparation of substrates, including coating substrates with mastic manufacturer's special bond coating where applicable.
- C. General: Install mirrors to comply with mirror manufacturer's written instructions and with referenced GANA publications. Mount mirrors accurately in place in a manner that avoids distorting reflected images.
- D. Wall-Mounted Mirrors: Install mirrors with mastic and mirror hardware. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed with anchors or inserts as applicable. Install fasteners so heads do not impose point loads on backs of mirrors. Apply mastic to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrors and face of mounting surface.
- E. Protect mirrors from breakage and contaminating substances resulting from construction operations.
- F. Do not permit edges of mirrors to be exposed to standing water.
- G. Maintain environmental conditions that will prevent mirrors from being exposed to moisture from condensation or other sources for continuous periods of time.
- H. Wash exposed surface of mirrors not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash mirrors as recommended in writing by mirror manufacturer.

**END OF SECTION**

## SECTION 09 30 00

### TILING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Ceramic tile
2. Porcelain tile
3. Metal edge strips.
4. Waterproofing and Crack Suppression Membranes

##### 1.2 PERFORMANCE REQUIREMENTS

###### A. Dynamic Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ANSI A137.1 by Dynamic Coefficient of Friction (DCOF) AcuTest:

1. Level Surfaces: Minimum 0.42.

##### 1.3 ACTION SUBMITTALS

###### A. Product Data: For each type of product indicated.

###### B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

1. Include plans of rooms and elevations of walls showing tile and patterns; include section showing underlayments, setting materials, and grouting materials.

###### C. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than 4 tiles. Use grout of type and in color or colors approved for completed Work.
3. Full-size units of each type of trim and accessory for each color and finish required.
4. Metal edge strips in 6-inch lengths.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each type of product, signed by product manufacturer.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 2 percent of amount installed for each type, composition, color, pattern, and size indicated.
  - 2. Grout: Furnish quantity of grout equal to 2 percent of amount installed for each type, composition, and color indicated.

#### 1.6 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile from one source or producer.
  - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
  - 1. Waterproof membrane.
  - 2. Joint sealants.
  - 3. Metal edge strips.
- D. Pre-installation Conference: Conduct conference at Project site.
  - 1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store liquid materials in unopened containers and protected from freezing.
- D. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

## 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

## 1.9 COORDINATION

- A. Coordinate installation of products and systems with interfacing and adjoining construction to provide a successful installation without failure.

## 1.10 WARRANTY

- A. Installer's Warranty: Furnish installer's written workmanship warranty signed by an authorized representative using installer's standard form agreeing to provide labor required to repair or replace work which exhibits workmanship defects. "Defects" is defined to include but not limited to deterioration or failure to perform as required.
  - 1. Warranty Period: Installer shall warrant the installation to be free from workmanship defects for a period of 2 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
  - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

1. Large Format Tile: Comply with ANSI A 118.5 series for tile installation standards.
  - a. Back buttering the tile to obtain 100 percent mortar coverage.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
  1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.
- D. Factory-Applied Temporary Protective Coating: Where recommended by tile and grout manufacturer, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film that is easily removable without damaging tile or grout. Do not coat unexposed tile surfaces.
- E. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide manufacturer's shapes as selected.

## 2.2 TILE PRODUCTS

- A. Ceramic and Porcelain Floor and Wall Tile:
  1. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated in Finish Legend on Drawings.
- B. Glass Tile Products:
  1. General: Tile having an overall non-crystalline microstructure with silica dioxide as the primary constituent and manufactured by one or more of three primary processes: cast, fused, or low-temperature coated.
  2. ANSI Glass Tile Standard: Provide glass tile that complies with ANSI A137.2 for types and other characteristics indicated. Furnish tiling complying with Standard grade requirements unless otherwise indicated.
- C. Floor and Wall Tile Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide manufacturer's standard shapes for review and approval.

## 2.3 TILE BACKING PANELS

- A. Type as specified in Section 092900 "Gypsum Board."

## 2.4 SETTING MATERIALS

### A. Thick-Set Portland Cement Mortar:

1. Material Quality Standard: ANSI A118.1, with the following physical properties:
  - a. Cleavage Membrane: Any membrane underlayment product listed and designated by manufacturer to be suitable for thick-set applications
  - b. Portland Cement: ASTM C 150 Type 1, grey color. Use white color with light colored stone, translucent marble, or light color grout as recommended by manufacturer.
  - c. Hydrated Lime: ASTM C 206 Type S or ASTM C 207 Type S
  - d. Aggregate: ASTM C 144, washed clean and graded natural sand passing 16-mesh sieve
  - e. Reinforcing Wire Fabric: Galvanized, welded wire fabric
  - f. Suitable for use in thick set mortar beds up to 2 in thick

### B. LHT (Large Heavy Tile – Greater than 12 inches in any direction) Latex-Portland Cement Mortar: ANSI A118.4 and ANSI A118.15.

1. Manufacturer's premium polymer modified LHT mortar product; gray color. Use white color with light colored stone, translucent marble, or light color grout.
2. Integral antimicrobial product added during manufacturing to resist mold and mildew growth.
3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. ARDEX Engineered Cements; X 77 Microtec
  - b. Custom Building Products; ProLite Tile and Stone Mortar
  - c. Laticrete International; Laticrete 255 MultiMax
  - d. Mapei Corp; Ultraflex LFT Mortar

### C. Thin-Set Latex-Portland Cement Mortar (All tile types except glass): ANSI A118.4 and ANSI A118.15.

1. Manufacturer's premium polymer modified thin-set mortar product; gray color. Use white color with light colored stone, translucent marble, or light color grout.
2. Integral antimicrobial product added during manufacturing to resist mold and mildew growth.
3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.
4. Suitable for use in thin set mortar beds up to 1/4 in thick
5. Floor Tiling - Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. ARDEX Engineered Cements; X 77 Microtec
  - b. Custom Building Products; ProLite Tile and Stone Mortar
  - c. Laticrete International; Laticrete 254 Platinum Thin-Set

- d. Mapei Corp; Ultraflex 3 Mortar
6. Wall Tiling - Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. ARDEX Engineered Cements; X 77 Microtec
  - b. Custom Building Products; ProLite Tile and Stone Mortar
  - c. Laticrete International; Laticrete 255 Multimax Multipurpose Thin-Set Mortar
  - d. Mapei Corp; Ultralite Mortar
- D. Thin-Set Mortar for Glass Tile: ANSI A118.4
- 1. Manufacturer's premium glass tile mortar
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. ARDEX Engineered Cements; X 77 Microtec
    - b. Custom Building Products; Glass Tile Premium Thin-Set Mortar
    - c. Laticrete International; Glass Tile Adhesive
    - d. Mapei Corp; Mosaic & Glass Tile Mortar

## 2.5 GROUT MATERIALS

- A. High Performance Epoxy Tile Grout: ANSI A118.3
- 1. Material Quality Standards:
    - a. 100 percent solids
    - b. Chemical-resistant, water-cleanable, multiple-component product
    - c. Mold and mildew resistant
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Custom Building Products; CEG-IG 100% Solids Industrial Grade Epoxy Grout
    - b. Laticrete International, Inc.; Latapoxy 2000 Industrial Grout
    - c. MAPEI Corporation.; Kerapoxy IEG
    - d. ARDEX Engineered Cements; WA Epoxy Grout
- B. Grout Color: As selected by Architect from manufacturer's full range.

## 2.6 ELASTOMERIC SEALANTS

- A. Sealant Colors: Match color of adjacent grout unless otherwise indicated
- B. Mildew-resistant floor or wall joint sealant

1. Material Quality Standard: ASTM C 920, Type S, Grade NS, Class 25 with the following properties
  - a. Integral antimicrobial product added during manufacturing to resist mold and mildew growth
  - b. Intended for sealing interior ceramic tile joints and other nonporous substrates
  - c. Resistant to in-service exposures of high humidity and temperature extremes
2. Description: One-part mildew resistant silicone Sealant
3. Manufacturers and Products:
  - a. ARDEX Engineered Cements; SX
  - b. Custom Building Products; Commercial 100% Silicone Caulk
  - c. Dow Corning Corp; 786
  - d. Laticrete International; Latisil
  - e. Pecora Corp; 898
  - f. Tremco Inc; Tremsil 200

C. Chemical Resistant Floor Joint Sealant:

1. Description: Two-part self-leveling epoxy sealant
2. Manufacturers and Products:
  - a. BASF Construction Chemicals; MasterSeal CR 190
  - b. Euclid Chemical Co; Euco 800
  - c. L&M Construction Chemical Inc; Epoflex SL

D. Backer Rods

1. Material Quality Standard: ASTM C 1330, Type B
2. Description: Non-gassing (when punctured), bi-cellular polyethylene or polyolefin foam rod with a surface skin, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

- E. Backer Tape: Bond-breaking polyethylene or other plastic tape, self-adhesive where applicable, recommended by sealant manufacturer for preventing sealant from adhering to back of joint where such adhesion would result in sealant failure.

## 2.7 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Cementitious Underlayments: Trowelable or self-leveling as required by conditions; pre-mixed, latex modified, Portland cement based formulation provided by or

specifically approved by setting material manufacturer; include primers if required for concrete substrate condition.

C. Metal Transition Strips:

1. Floor Transitions: Schluter Systems LP
2. Corner Transitions: Schluter Systems LP

D. Temporary Protective Coating: Provide product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; is compatible with tile, mortar, and grout products; and is easily removable after grouting is completed without damaging grout or tile.

1. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as a temporary protective coating for tile.

E. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

F. Prefabricated Niches: High density, extruded polystyrene foam coated with acrylic polymer finish for thinset installation of ceramic tile. 1" thick foam unless noted otherwise. Prefabricated niche as manufactured by selected waterproofing manufacturer, in size noted on drawings. Include all accessories, tapes, sealants, and blocking for waterproof and defect free installation. Install per manufacturers instructions.

G. Glass Fiber Tape: Self-adhering alkali-resistant glass fiber tape, 10 by 10 or 10 by 20 threads per 1 in, minimum 2 in wide.

H. Grout Sealer: Grout manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout or tile.

## 2.8 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work as specified in Section 090512 "Concrete Floor Moisture Content and pH Testing."
  - 1. Proceed with application only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Concrete Substrates:
  - 1. Prepare concrete floor substrates to comply with flatness tolerance of 1/4 in in 10 ft
  - 2. Fill cracks, holes, and depressions with trowelable cementitious underlayments and patching compounds.
  - 3. Remove concrete protrusions, bumps, and ridges by sanding or grinding.
  - 4. If substrate does not have fine broom finish, mechanically scarify concrete substrates to not less than ICRI CSP 4 finish.
- B. Prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
- D. Substrate Joints, Gaps, Penetrations, and Different Substrates: Prior to installing tile, seal the following joints, gaps, and spaces between differing materials as follows:
  - 1. Base of Wall Joints within Shower and Tub Enclosures: Where using membrane waterproofing and crack isolation, follow manufacturer's details for lapping and sealing membrane to tub enclosure or prefabricated shower receptor, thick-set mortar bed, or floor slab. Apply wall joint sealant at joint between coated glass-mat water resistant board and create water resistant barrier in accordance with TCNA Installation B420.
  - 2. Penetrations: Apply wall joint sealant at penetrations through wall substrates to create water resistant barrier, especially at piping and valve penetrations. Where using membrane waterproofing and crack isolation, follow manufacturer's details.
  - 3. Toilet Accessories: Apply wall joint sealant at fastener penetrations and around perimeter of backing plates to create water resistant barrier.
  - 4. Joints and Corners: Apply glass-fiber tape to joints and corners of substrates within showers and tub enclosures with thin-set mortar.

### 3.3 TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
  - 1. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
  - 2. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths:
  - 1. Ceramic Mosaic Tile – Less than 6 sq in: 1/16 in
  - 2. Tile – 6 Sq in or more: 1/4 in
- F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
  - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
  - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- H. Grout Sealer: Apply grout sealer to grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

- I. Metal Trim: Install at locations indicated and where exposed edges of tile exist including but not limited to outside corners, top of wainscoting, and perimeter of niche openings.

### 3.4 MOVEMENT JOINTS

- A. Movement Joints, General: Installation Quality Standard in accordance with TCNA Movement Joint Design Essentials EJ171 and as specified below
- B. Wall Joints: The following conditions shall not be grouted; install wall joint sealant and backer rod or backer tape:
  - 1. Gypsum board assembly control joints
  - 2. Building expansion joints – utilize expansion joint cover
  - 3. Interior corners of tiled walls, including shower and bathtub walls
  - 4. Around substrates and tile at penetrations through tiled substrates
  - 5. At one side of changes in direction or plane of wall
  - 6. At joint closest and parallel to changes in substrates supporting tile between wall and floor
- C. Floor Joints:
  - 1. General Requirements:
    - a. Continue construction, contraction, and expansion joints in building through tile work
    - b. Isolate tile work that abuts a restraining structure or assembly
    - c. When metal trim or sealant backer is used for joint, width shall not be less than width of joint in building structure.
    - d. Tile shall not be placed over building expansion joints.
  - 2. Schedule of Sealant Products
    - a. Epoxy Grouted Floors: Install chemical resistant floor joint sealant full depth without backer rod at horizontal joints in epoxy grout setting conditions
  - 3. Schedule of floor joint installation:
    - a. Construction Joints: Floor joint sealant and backer rod
    - b. Contraction (Control) Joints: Floor joint sealant and backer rod
    - c. Isolation Joints: Floor joint sealant and backer rod
    - d. Tile Expansion Joints: Floor joint sealant and backer rod
    - e. Perimeter Joints between wall and floors: Floor joint sealant with backer tape

### 3.5 TILE BACKING PANEL INSTALLATION

- A. Comply with Section 092900 "Gypsum Board."

### 3.6 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
  - 1. Remove grout residue from tile as soon as possible.
  - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
  - 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

### 3.7 INTERIOR TILE INSTALLATION SCHEDULE

- A. Floors, Concrete Substrate:
  - 1. TCNA Installation Method F125A (Crack Isolation Membrane; full coverage): Thin-set latex-portland cement mortar over crack isolation membrane over concrete subfloor; epoxy grout
    - a. Location: Where scheduled in Room Finish Schedule and in all thin-set tile locations which have neither waterproofing nor sound isolation scheduled
  - 2. TCNA Installation Method F122 (Waterproof Membrane): Thin-set latex-portland cement mortar over waterproof membrane over concrete subfloor; epoxy grout
    - a. Location: Where scheduled in Room Finish Schedule and in all toilet rooms
- B. Walls, Gypsum Board Substrate:
  - 1. TCNA Installation Method W243: Thin-set mortar on coated glass-mat gypsum board; epoxy grout
    - a. Location: Walls to receive tile but not within shower area

2. Tile Installation W245: Thin-set mortar on coated glass-mat, water-resistant gypsum backer board; TCNA W245.

C. Walls, Gypsum Board Substrate, Bathtub / Shower Surfaces:

1. Walls, Including Tub Unit or Pre-Fabricated Shower Receptors: TCNA Installation method B419 (Waterproof Membrane): Thinset latex-portland cement mortar over waterproof membrane over coated-glass-mat gypsum board; epoxy grout
2. Shower Receptors: TCNA Installation Method B420 (Waterproof Membrane): Thin-set latex-portland cement mortar over waterproof membrane over coated-glass-mat gypsum board walls and concrete subfloors; epoxy grout.

**END OF SECTION 09 30 00**

**SECTION 10 21 13.15**  
**STAINLESS STEEL TOILET COMPARTMENTS**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Stainless steel toilet compartment partitions - floor mounted, wall mounted, overhead braced for following applications:
    - a. Toilet enclosures.
    - b. Urinal screens.
- B. ASTM International (ASTM):
1. ASTM A 240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
  2. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
  3. ASTM A 743/A 743M - Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application.
  4. ASTM B 86 - Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings.
  5. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  6. ASTM B 221/B 221M - Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings.
- C. International Code Council (ICC)/American National Standards Institute (ANSI):
1. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities, as applicable to toilet compartments designated as accessible.
- D. United States Department of Justice:
1. ADA - Americans with Disabilities Act, Excerpt from 28 CFR Part 36 - ADA Standards for Accessible Design.

1.2 ACTION SUBMITTALS

- A. Product Data: Manufacturer's data sheets for each type of product indicated. Include fabrication details, description of materials and finishes.
1. Product Test Reports: When requested by Architect, submit documentation by qualified independent testing agency indicating compliance of products with requirements.
- B. Shop Drawings: Include overall product dimensions, floor plan, elevations, sections, details, and attachments to other work. Include choice of options with details.

- C. Samples for Selection: Furnish samples of manufacturer's full range of finishes for final selection.
- D. Samples for Verification: Furnish physical sample of material in selected finish.
  - 1. Size: 2 by 2 inch (52 by 52 mm) minimum, in type of finish specified.

### 1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance and cleaning instructions.

### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Approved manufacturer listed in this section, with minimum 5 years experience in the manufacture of toilet compartments.
  - 1.
- B. Installers Qualifications: Experienced Installer regularly engaged in installation of toilet compartments for minimum 3 years.
- C. Source Limitations: Obtain toilet compartment components and accessories from single manufacturer.
- D. Accessibility Requirements: Comply with requirements of ICC/ANSI 117.1, and with requirements of authorities having jurisdiction.
- E. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: 0.
  - 2. Smoke-Developed Index: 0.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver toilet compartments to site until building is enclosed and HVAC systems are in operation.
  - 1. Deliver toilet compartments in manufacturer's original packaging.
  - 2. Store in an upright condition.

## 1.7 WARRANTY

- A. Special Manufacturer's Warranty: Provide manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship during the following period after substantial completion:
  - 1. Stainless Toilet Partitions: Against rust-out: 15 years.
  - 2. Stainless Steel Hardware: Lifetime.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Bradley

### 2.2 MATERIALS

- A. Stainless Steel Sheet: A 666, 300 series commercial stainless steel sheet suitable for exposed applications. Provide smooth material, without creases or ripples.
  - 1. Provide with No. #4 finish.
- B. Stainless Steel Castings: ASTM A 743/A 743M.
- C. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.
- D. Aluminum: ASTM B 221/B 221M.

### 2.3 STAINLESS STEEL TOILET COMPARTMENTS

- A. Toilet Compartment Type:
  - 1. Overhead braced.
    - a. Basis of Design Product: **Bradley, Mills Partitions, Sentinel, Series 400.**
  - 2. Floor and ceiling anchored.
    - a. Basis of Design Product: **Bradley, Mills Partitions, Floor to Ceiling, Series 700.**
- B. Urinal Screen Style:
  - 1. Wall-hung with Brackets:
    - a. Basis of Design Product: **Bradley, Mills Partitions, Model No. 4.**

- C. Door, Panel, and Pilaster Construction, General: Form edges with interlock to provide watertight fit without crown molding. Braze corners and finish smooth.
  - 1. Provide exposed surfaces free of pitting, visible seams and fabrication marks, stains, telegraphing of core material, or other imperfections.
  - 2. Core Material: Manufacturer's standard sound-deadening, water resistant honeycomb in thickness required to provide finished thickness for doors, panels and pilasters.
- D. Door Construction: 1 inch (25 mm) thick, constructed from 0.0313 inch/22 ga (0.794 mm) stainless steel.
  - 1. Provide each door with internal 0.0625 inch/16 ga (1.59 mm) and 0.0781 inch/14 ga (1.98 mm) welded reinforcements at top and bottom hinge locations, with factory installed concealed true gravity cam hinges.
  - 2. Provide pre-punched hole to permit field installation of ADA-compliant concealed slide latch.
- E. Panel Construction: 1 inch (25 mm) thick, constructed from 0.0313 inch/22 ga (0.794 mm) stainless steel.
  - 1. Grab-Bar Reinforcement: Provide concealed internal reinforcement for grab bars mounted on units.
- F. Pilaster Construction: 1 1/4 inch (32 mm) thick, constructed from 0.0375 inch/20 gauge (0.953 mm) stainless steel.
  - 1. Provide pilaster with internally welded bracket suitable to accept minimum 3 inch (76 mm) long, 5/16 inch (7.9 mm ) stainless steel hex bolt for leveling.
- G. Headrail: Extruded anodized aluminum headrail with anti-grip profile. Provide fasteners for attachment to pilaster and stainless steel brackets to secure to wall.
- H. Shoes: 4 inches (102 mm) high minimum, Type 304 stainless steel with No. 4 satin brushed finish. Secured to the floor with tamper-resistant screws.
- I. Urinal-Screen Construction: Matching toilet compartment panel construction
- J. Brackets (Fittings):
  - 1. Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.

## 2.4 HARDWARE

- A. Hardware, Standard Duty: Manufacturer's standard chrome-plated zamac castings, including corrosion-resistant, tamper-resistant fasteners:
  - 1. Hinges: Self-closing continuous spring-loaded type adjustable to hold doors open at any angle up to 90 degrees, with emergency access by lifting door.
  - 2. Latch and Keeper: Surface-mounted slide latch with wrap-around rubber-faced combination door strike and keeper, with provision for emergency access, meeting requirements for accessibility at accessible compartments.
  - 3. Coat Hook: Combination hook and rubber-tipped stop, sized to prevent door from hitting compartment-mounted accessories. Provide wall bumper where door abuts wall. Provide formed L-shaped hook without stop at outswing doors.
  - 4. Door Pull: Standard unit on outside of inswing doors. Provide pulls on both sides of outswing doors.

## 2.5 FABRICATION

- A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.
- B. Floor-and-Ceiling-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment at tops and bottoms of pilasters. Provide shoes and sleeves (caps) at pilasters to conceal anchorage.
- C. Door Size and Swings: Unless otherwise indicated, provide 26-inch- (660-mm-) wide, in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide, out-swinging doors with a minimum 32-inch- (813-mm-) wide clear opening for compartments designated as accessible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine work area to verify that measurements, substrates, supports, and environmental conditions are in accordance with manufacturer's requirements to allow installation.
  - 1. Proceed with installation once conditions meet manufacturer's requirements.

### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
- B. Install toilet partitions and screens in spaces with operating, temperature controlled HVAC systems. Shield partitions and screens from direct sunlight.
- C. Clearances: Install with clearances indicated on Drawings. Where clearances are not indicated, allow maximum 1/2 inch (13 mm) between pilasters and panels, and 1 inch (25 mm) between panels and walls.
- D. Stirrup Brackets: Secure panels to walls and to pilasters with no fewer than two brackets attached near top and bottom of panel. Locate wall brackets so holes for wall anchors occur in masonry or tile joints. Align brackets at pilasters with brackets at walls.

### 3.3 ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 15 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

3.4 FINAL CLEANING

- A. Remove packaging and construction debris and legally dispose of off-site.
- B. Clean partition and screen surfaces with materials and cleansers in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 10 21 13.19  
SOLID PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Solid plastic toilet compartments including the following: (Eclipse)
  - 1. Floor mounted overhead-braced toilet compartments.
  - 2. Wall mounted urinal screens.

1.2 REFERENCES

- A. ASTM B 85 - Standard Specification for Aluminum-Alloy Die Castings.
- B. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- B. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.
- C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.
- B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.
- C. Performance Requirements:
  - 1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with the ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials:
    - a. Class A flame spread/smoke developed rating, tested to ASTM E84.

- b. Class B flame spread/smoke developed rating, tested to ASTM E84.
2. Material Fire Ratings:
  - a. National Fire Protection Association (NFPA) 286: Pass.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

#### 1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.7 WARRANTY

- A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. (Labor not included in warranty.)

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Scranton Products
  2. Bradley
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. MATERIAL
    - a. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface;
  2. Fire Rating: Not required.
    - a. Fire-resistance Rating: Class A.
    - b. Fire-resistance Rating: Class B.
    - c. Fire-resistance Rating: NFPA 266.
    - d. Recycled Content (Post Industrial): 25 %.
    - e. Recycled Content (Post Industrial): 100 %.
    - f. Recycled Content (Post Consumer): 100 %.
- C. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.
- D. Aluminum Die Castings: ASTM B85, A380 alloy.
- E. Stainless Steel Castings: ASTM A167, Type 304.
- F. Rubber: Abrasion resistant Styrene Butadiene Rubber, 65 to 80 Shore A durometer, black.

#### 2.2 SOLID PLASTIC TOILET COMPARTMENTS AND SCREENS

- A. Basis of Design: Eclipse Toilet Partitions as manufactured by and supplied by Scranton Products.
  1. Style: Floor mounted overhead-braced toilet compartments.

- B. Doors and Panels: High density polyethylene (HDPE), fabricated from SEQ CHAPTER 1 extruded polymer resins, forming single thickness panel.
  - 1. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
  - 2. Thickness: 1 inch (25 mm).
  - 3. Edges: Shiplap.
  
- C. Panel Color: Metallic Series:
  - 1. Stainless - Rotary Brushed.
  
- D. Doors and Dividing Panels:
  - 1. High Privacy:
    - a. Height: 62 inches (1575 mm) high and mounted at 8 to 14 inches (203 to 356 mm) above the finished floor.
    - b. Doors: 60 degree angle on two opposite edges for enhanced privacy.
    - c. Dividing Panels: Two modular pieces, both slotted on one edge to accept wall bracket.
  
- E. Metal Posts: 82.75 inches (2102 mm) high, heavy duty extruded aluminum, clear anodized finish, fastened to foot with stainless steel tamper resistant screw.
  
- F. Hidden Shoe (Foot): One-piece molded polyethylene invisible shoe inserted into metal post and secured to metal post with stainless steel tamper resistant screw.
  
- G. Headrail Cap and Corner Cap: One-piece molded polyethylene secured to metal post with stainless steel tamper resistant screw; adjustable to level headrail to finished floor.
  
- H. Hidden Wall Brackets: Continuous heavy duty extruded aluminum, clear anodized finish, inserted into slotted panel and fastened to panels with stainless steel tamper resistant screws.
  - 1. Type: Single Ear bracket aluminum.
  - 2. Type: Double ear bracket aluminum.
  - 3. Length: 54 inches (1372 mm).
  - 4. Length: 65 inches (1651 mm).
  - 5. Length: 71 inches (1803 mm).
  
- I. Headrail: Heavy duty extruded aluminum, designer anti-grip design, clear anodized finish, fastened to headrail bracket with stainless steel tamper resistant screw and to headrail cap or corner cap with stainless steel tamper resistant screw.
  - 1. Headrail Brackets: Heavy duty extruded aluminum, clear anodized finish, secured to wall with stainless steel tamper screws.
  
- J. Door Hardware:
  - 1. Hinges:
    - a. Edge-mounted stainless steel continuous hinge.
  - 2. Door Keeper:
    - a. Fabricated from heavy duty extruded aluminum, clear anodized finish.
    - b. Length: 3-1/2 inches (89 mm).
    - c. Mount in gap between dividing panel and door.
  - 3. Latch and Housing:
    - a. Fabricated from heavy duty extruded aluminum.
    - b. Latch housing: Clear anodized finish.
    - c. Slide bolt and button: Black anodized finish.
    - d. Provide occupancy indicator.
  - 4. Door Pulls:
    - a. Fabricated from heavy duty extruded aluminum, clear anodized finish.
    - b. Single component providing door pull capability on outswing doors.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install partitions rigid, straight, plumb, and level.
- C. Locate bottom edge of doors and panels 8" – 14" inches above finished floor.
- D. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).
- E. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.
- F. Finished surfaces shall be cleaned after installation and be left free of imperfections.

#### 3.4 ADJUSTING

- A. Adjust doors and latches to operate correctly.

#### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION