

SECTION 12 36 45 – PORCELAIN SLAB COUNTERTOPS [AND TRIM]

This specification section is for countertops shop fabricated from Crossville Porcelain Countertop® supplied by Crossville Inc. that are large porcelain slabs with similar performance characteristics to large format porcelain tiles. Crossville Tile was a pioneer in developing large format porcelain tile and has developed Crossville Porcelain Countertop® slabs that can be shop fabricated for countertops, as well as other uses.

Because Crossville Porcelain Countertops® are UV stable and unaffected by freeze/thaw cycles, they can be used for outdoor countertops.

Contact Crossville or visit Crossvilleinc.com for a copy of the Crossville Porcelain Countertop® Fabrication Guide (LIT-CPCFG-18) that has helpful information for detailing this new product.

Square brackets [item] in this example specification indicate options in the text. Angle brackets <insert> indicate insertion points for editing.

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Countertops fabricated from porcelain slabs.

Specifier Note: This versatile product can also be used for trim such as the following.

2. Window stools.
3. Cap trim on half-height partitions.
4. Wall base.
5. Table tops.
6. Backsplashes.

B. Related Requirements:

1. Section 079200: Perimeter sealant joints at walls.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Porcelain slabs.
2. Fabrication and installation adhesives.

B. Selection Samples: Available standard color patterns.

- C. Verification Samples: Each required color pattern.
 - 1. Countertops: **[8 by 8] [12 by 12]** inch slabs **[with exposed edge detail]**.
 - 2. Backsplash: **[8-] [12-]**inch lengths.
 - 3. Wall Cap: **[8-] [12-]**inch lengths.
 - 4. Wall base: **[8-] [12-]**inch lengths.
- D. Shop Drawings: Each installation.
 - 1. Edge and backsplash profiles.
 - 2. Cutouts for plumbing fixtures.

1.3 INFORMATIONAL SUBMITTALS

- A. Sustainable Design Submittals:

Specifier Note: Following subparagraph is applicable to LEED 2009 NC, CI, and CS; LEED v4; IgCC; ASHRAE 189.1; and Green Globes.

- 1. Product Data: VOC content of adhesives.

Specifier Note: Following subparagraph is applicable to LEED 2009 for Schools, LEED v4, IgCC, ASHRAE 189.1, and Green Globes. Coordinate with requirements for adhesives.

- 2. Laboratory Test Reports: VOC content of adhesives.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Cleaning.
- B. Manufacturer warranties transferrable to Owner.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop experienced in fabrication of fabrication of stone, stone agglomerate, and porcelain stoneware panels utilizing water-fed diamond blade cutting and waterjet machining.
- B. Installer Qualifications: Fabricator of products.
- C. Mockups:

Specifier Note: Adjust description of mockups for Project.

- 1. Construct one typical countertop designated by Architect.
- 2. Approval of mockups does not constitute acceptance of deviations from requirements of the Contract Documents unless specifically stated in writing by Architect.

3. Approved mockups shall be evaluation standard for remaining work.
4. Approved mockups in compliant condition may become part of the completed Work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver fabrications until building is enclosed and supporting construction is in place.
- B. Store products inside building.
- C. Protect fabrications from abrasion and other damage.
- D. Store slabs vertically on long edges.

1.7 SITE CONDITIONS

- A. Field Measurements: Measure in-place **[and existing]** construction as needed for fabrication and execution. No changes to Contract Sum or Contract Time will be allowed for differences between Drawing dimensions and field measurements.
- B. Do not install products until HVAC system is operating at occupancy levels.

1.8 MANUFACTURER WARRANTIES

- A. Provide manufacturer's standard warranty against manufacturing defects.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Porcelain Slabs: Structurally strengthened with fiberglass mesh bonded to back face.
 1. Manufacturer: Crossville, Inc.
 2. Product: Crossville Porcelain Countertop®

Specifier Note: For detailing, note that usable size of slabs is 63-3/4 by 127-1/2 inch (1620 mm by 3240 mm) in size.

3. Thickness: 12 mm (0.47 inch).

Specifier Note: Crossville Porcelain Countertop is available in the following finishes:

4. Finish: **[Matte UP] [Polished PO]**.
5. Color Pattern: Standard color pattern selected by Architect.
6. Physical Characteristics:
 - a. Breaking strength: >4000 N, tested to ISO 10545.4.

Specifier Note: The hardness of Crossville Porcelain Countertop makes the product very scratch and abrasion resistant. First value below is for unpolished slabs, second is for polished.

- b. Mohs Scale Hardness: **[5 to 7] [Maximum 5]** tested to UNI EN 101.
- c. MOR: 50 N/sq mm average, tested to ISO 10545-4.
- d. Resistance to Deep Abrasion: ≤ 175 mm³, tested to ISO 10545-6.
- e. Water Absorption: 0.1 percent average, tested to ISO 10545-3.
- f. Freeze/Thaw Resistance: Classed as Resistant when tested to EN 14614-5.
- g. Thermal Shock Resistance: Classed as Resistant when tested to ISO 10545-9.
- h. Resistance to Staining: Passing ASTM C1378 testing.

Specifier Note: The following test includes common household cleaning chemicals, as well as diluted acids and bases. Abrasive cleaners should be avoided, especially on polished slabs.

- i. Resistance to Chemicals: Passing ASTM C650 testing.

2.2 INSTALLATION MATERIALS

- A. Fabrication and Installation Adhesives: As recommended by slab manufacturer for Project applications.

Specifier Note: Subparagraph below is for LEED 2009 NC, CI, and CS; LEED v4; IgCC; ASHRAE 189.1; and Green Globes. VOC content limit is that for multipurpose construction adhesives.

- 1. VOC Content: Maximum **[70]** <Insert value> g/L.

Specifier Note: Subparagraph below applies to LEED v4.

- 2. Compliance with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Fabrication Adhesive: 2-part epoxy or moisture-cured polyurethane adhesive in matching color for mitered edge joints.
- C. Field Assembly Adhesive: Neutral-cure medium modulus silicone sealant or moisture-cured polyurethane adhesive in matching color.
- D. Installation Adhesive: Neutral-cure medium modulus silicone sealant.

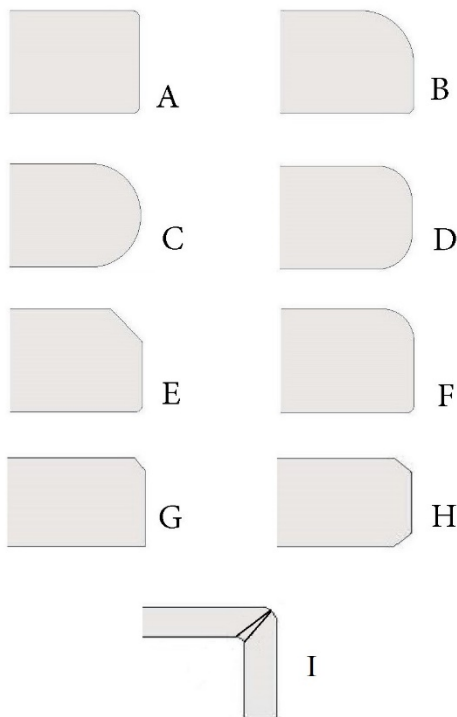
2.3 FABRICATION

- A. Cut porcelain countertops accurately to required shapes and dimensions.
- B. Cut holes for sinks, faucets, toilet accessories.
- C. Round exposed edges, including cutouts, to 2-3 mm radius and polish to match finish of slab face.

Specifier Note: Alternatively, edges can be fabricated with a small chamfer.

- D. Chamfer exposed edges, including cutouts, to 2-3 mm face and polish to match finish of slab face.
- E. Fabricate inside corners with not less than 5 mm radius and polish to match finish of slab face.
- F. Fabricate back- and end-splashes as separate pieces for field assembly.

Specifier Note: The strength of Crossville Porcelain Countertop allows overhangs of up to 13 inches without additional support. The following diagrams show the most common arrangements for countertop edges.



- G. Exposed Countertop Edge Configuration: **[As indicated on Drawings] [Extend slab beyond face of supporting construction with rounded edges] [Vertical edge with miter joint to horizontal slab and with rounded edges] [Built-up double thickness surface with rounded edges].**
- H. Fabricate changes in direction for field assembly butt joints.
- I. Fabricate joints with uniform width.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subtops on supporting casework are level and in plane, with flush joints.
- B. Verify vertical surfaces are plumb and free of irregularities that affect installation.

3.2 PREPARATION

- A. Clean substrates of dirt, dust, and materials that would impair adhesive bond.

3.3 INSTALLATION

- A. Comply with manufacturer's installation instructions.
- B. Set countertops so front edge is parallel to supporting casework.
- C. Secure countertops to subtops with adhesive spread to uniform thickness.
- D. Secure back- and end-splashes to wall and to countertops with adhesive.

Specifier Note: Delete following if not applicable to Project.

- E. Secure **[deep edge pieces] [and] [aprons]** with adhesive.
- F. Bond assembly joints with adhesive to provide smooth, hairline appearance. Mask surfaces adjacent to joints to protect exposed surfaces from adhesive smears.
- G. Tolerances:
 - 1. Level, Plane: 1/8 inch maximum deviation in 12 feet.
 - 2. Field Joints: Flush, no lippage.

3.4 PROTECTING AND CLEANING

- A. Remove adhesive misapplications from exposed surfaces immediately.
- B. Clean exposed surfaces after installation and provide temporary covering to protect against abrasion, staining, and other damage. Use non-abrasive cleaning agents.
- C. Provide new replacements for components that are damaged or have soiling or staining that cannot be satisfactorily cleaned.

END OF SECTION