

## SECTION 12 36 21

### RICHLITE PAPER COMPOSITE COUNTERTOPS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Countertops for architectural cabinetwork.
- B. Countertops for manufactured casework.
- C. Wall-hung counters and vanity tops.
- D. Backsplashes.
- E. Trim.

##### 1.2 RELATED SECTIONS

- A. Section 06 41 00 - Custom Cabinets.
- B. Section 12 35 30 - Residential Casework.
- C. Section 22 40 00 - Plumbing Fixtures: Sinks.

##### 1.3 REFERENCES

- A. ANSI A208.1 - American National Standard for Particleboard; 1999.
- B. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use; 2002.
- C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2004.
- D. AWI/AWMAC (QSI) - Quality Standard Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2003.
- E. PS 1 - Construction and Industrial Plywood; 1995.
- F. WI (MAN) - Manual of Millwork; Woodwork Institute; 2003.
- G. Forest Stewardship Council (FSC-US), Information regarding FSC in LEED Projects
- H. LEED® US Green Building Council, Leadership in Energy and Environmental Design Green Building Rating System™

##### 1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. 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. Specimen warranty.

- 4. MSDS for finish sealer.
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors.
- E. Selection Samples: For each finish product specified, product samples representing manufacturer's full range of available colors.
- F. Selection Samples: For each finish product specified, product samples of newly manufactured material representing manufacturer's full range of available colors.
- G. Verification Samples: For each finish product specified, minimum size 6 inches (150 mm) square, representing actual product, color, patterns, and edge profile.
- H. LEED Report:
  - 1. Credit MR 4.1, 4.2: Submit documentation for percentage of pre-consumer or post-consumer recycled content, indicate percentage of recycled content, unit cost of product, and quantity of product furnished on project.
  - 2. Credit MR 5.1-5.2: Submit documentation of locally-sourced products (manufacture within 500 miles of project site); certify location of harvest and manufacture.
  - 3. Credit MR 6.1: Submit documentation for rapidly renewable content (product made from plants having less than 10 years between planting and harvesting); indicate percentage of rapidly renewable content, unit cost of product, and quantity of product furnished on project.
  - 4. Credit MR 7: Submit documentation for Certificates of chain-of-custody signed by manufacturers certifying products specified to be made from certified wood were made from certified wood obtained from forests certified by an FSC-accredited certification body to comply with FSC1.2 *Principles and Criteria*.
  - 5. Credit IEQ 4.4: Submit documentation for paper products made without formaldehyde; certify that product is formaldehyde-free.
- I. Installation Instructions: Manufacturer's installation instructions and recommendations.
- J. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

#### 1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Authorized fabricator by material manufacturer.
- B. Installer Qualifications: Fabricator.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.7 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.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Paper Composite Countertops: Richlite Company: [www.richlite.com](http://www.richlite.com).
- B. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Substitutions: Not permitted.

### 2.2 COUNTERTOP ASSEMBLIES

- A. Countertop Assemblies: Surfaced with paper composite sheet.
  - 1. Flat Sheet Thickness: 1/2 inch (19 mm), minimum.
  - 2. Flat Sheet Thickness: \_\_\_\_\_ inch (\_\_\_\_\_ mm), minimum.
  - 3. Sinks and Bowls: Separate units for overcounter mounting.
  - 4. Sinks and Bowls: Separate units for undercounter mounting.
  - 5. Cutouts and Drain Grooves: As shown on drawings.
  - 6. Finish on Exposed Surfaces: Matte, with field-applied surface sealer.
  - 7. Color: As selected from manufacturer's standard selection.
  - 8. Color: \_\_\_\_\_.
  - 9. Exposed Edge Treatment: Same thickness as countertop.
    - a. Profile: Square edge.
    - b. Profile: Radiused edge.
    - c. Profile: As indicated on drawings.
    - d. Profile: \_\_\_\_\_.
  - 10. Back and End Splashes: Same sheet material as countertops.
    - a. Thickness: 1/2 inch (13 mm), minimum.
    - b. Top Profile: Square.
    - c. Top Profile: Radiused.
    - d. Top Profile: \_\_\_\_\_.
    - e. Height: \_\_\_\_\_ inch (\_\_\_\_\_ mm), minimum.
    - f. Color: As indicated on drawings.
  - 11. Skirts: As indicated on drawings.
- B. Other Components: 1/2 inch (12 mm) thick, minimum.

### 2.3 MATERIALS

- A. Paper Composite Sheets: Cellulose or hemp-fiber paper heat pressed with phenolic resin; color consistent throughout thickness.
  - 1. Surface Burning Characteristics: Flame spread 30, maximum; smoke developed 30, maximum; when tested in accordance with ASTM E 84.
  - 2. Density: 75.84 pounds per cu ft (1215 kg per cu m).
  - 3. Water Absorption: 0.36 percent for 1 inch (25 mm) thickness, unsealed material, 24 hour fully submerged test.
  - 4. Specific Gravity: 1.213.
  - 5. Thermal Properties:

- a. Coefficient of Thermal Expansion, X Direction: 5.2 microinches per inch degree F (9.4 microns per mm degree C).
  - b. Coefficient of Thermal Expansion, Y Direction: 12.8 microinches per inch degree F (23.0 microns per mm degree C).
  - c. Coefficient of Thermal Expansion, Z Direction: 45.9 microinches per inch degree F (82.7 microns per mm degree C), for span of 73.5 inches (1.87 m).
  - d. Thermal Conductivity: 0.00051 Cal cm/sq cm sec degree C.
6. Tensile Strength:
- a. X Direction: 19,200 psi (132.4 MPa).
  - b. Y Direction: 13,100 psi (90.3 MPa).
7. Compressive Strength:
- a. X Direction: 18,400 psi (126.9 MPa); 7.09 percent strain at failure.
  - b. Y Direction: 15,900 psi (109.6 MPa); 7.15 percent strain at failure.
  - c. Z Direction: 30,000 psi (206.8 MPa); 20 percent strain at failure.
8. Flexural Strength, Face in Tension:
- a. X Direction: 22,000 psi (151.7 MPa).
  - b. Y Direction: 17,300 psi (119.3 MPa).
9. Flexural Strength, Edge in Tension:
- a. X Direction: 20,400 psi (140.6 MPa).
  - b. Y Direction: 16,100 psi (111.0 MPa).
10. Izod Impact, Face Impact:
- a. X Direction: 2.48 ft lb per inch of width (0.046 J/m of width).
  - b. Y Direction: 1.46 ft lb per inch of width (0.027 J/m of width).
11. Izod Impact, Edge Impact:
- a. X Direction: 0.68 ft lb per inch of width (0.013 J/m of width).
  - b. Y Direction: 0.62 ft lb per inch of width (0.012 J/m of width).
- B. Adhesives: Chemical resistant two-part epoxy waterproof adhesive as recommended by manufacturer.
- C. Joint Sealant:
- 1. Sealant Type: Mildew-resistant silicone.
  - 2. Sealant Type: Silicone.
  - 3. Sealant Type: \_\_\_\_\_.
  - 4. Color: White.
  - 5. Color: Clear.
  - 6. Color: \_\_\_\_\_.

## 2.4 FABRICATION

- A. Fabricate in accordance with standards governing fabrication quality that are specified in the following sections: Section 06 40 00; Section 12 30 00; and \_\_\_\_\_.
- B. Fabricate in accordance with standards governing fabrication quality in accordance with WI's Manual of Millwork.
- C. Fabricate in accordance with standards governing fabrication quality in accordance with AWI's Quality Standard Illustrated.
- D. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
  - 1. Join lengths of tops using best method recommended by manufacturer.
  - 2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
  - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

4. Place seams to run full width of countertop, and at natural positions such as corners and midpoints as indicated on drawings.
  5. Cut and place sections with the grain of the material running crosswise to the width of the surface.
- E. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
  2. Height: 4 inches (102 mm), unless otherwise indicated.
  3. Height: 3-1/2 inches (90 mm), unless otherwise indicated.
  4. Height: \_\_\_\_ inches (\_\_\_\_ mm), unless otherwise indicated.
- F. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings; finish to match countertop.

### 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.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

#### 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.

#### 3.3 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Seal joint between back/end splashes and vertical surfaces.
  1. Where indicated use cove molding.
  2. Where applied cove molding is not indicated use specified sealant.

#### 3.4 CLEANING AND PROTECTION

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

END OF SECTION