

GENERAL REQUIREMENTS FOR INSTALLING FINISHES USING PRODUCTS MANUFACTURED BY CUSTOM BUILDING PRODUCTS

Note: The recommendations within this document are common industry standards and Custom Building Products' requirements. Additional limitations or specific recommendations may be listed within the Technical Data Sheets of products used in an installation assembly. When those instructions conflict with this document, the most stringent requirements and limitations shall apply.*

All substrates and surfaces must be structurally sound, stable and suitable for the project's intended usage including managing weight and deflection from live and dead loads for the lifetime of the structure. Maximum deflection limits are L/360 for all flooring finishes over concrete and all vertical substrates, and L/720 for natural stone over wood framing.

Concrete, cement-based and gypsum-based underlayment and patching compounds must be adequately cured and not exhibit signs of excessive moisture emissions, condensation, efflorescence and/or hydrostatic conditions/issues beyond the finish product manufacturers' limits or limits of the other products within the assembly.

CUSTOM®/CustomTech™ cement-based preparation products may be used in assemblies over concrete with high moisture vapor emission levels provided that other materials such as finish flooring, adhesives or membranes are recommended in these conditions. Consult the manufacturers for their limitations and requirements. Effective moisture mitigation is required when products and finishes in the assembly limit moisture emission levels. Note: Moisture mitigation systems manage moisture vapor emissions from the initial concrete placement and when an effective vapor retarder/barrier is placed directly below on-ground slabs. They are not intended to manage excessive water intrusion or negative hydrostatic pressure.

Concrete is to have ≥ 3000 psi (20.7 MPa) compressive strength and lightweight or gypsum-based underlayment must obtain ≥ 2000 psi (≥ 13.8 MPa) compressive strength and tensile strengths ≥ 200 psi (≥ 1.4 MPa). Surfaces must be clean, dry and free from contaminants that would prevent or inhibit adhesion bonding. Contaminants and curing compounds should be mechanically removed before installation. Most CUSTOM® products require absorptive surfaces. To assess surface absorption, refer to ASTM F3191 for horizontal areas and place water droplets

no higher than 1" (25mm) from the surface. Use a damp sponge to evaluate water absorption on vertical or overhead areas. Cracks in concrete 1/8" (3mm) or wider are generally considered to be structural. Cracks and differential (out of plane) substrate surfaces are to be evaluated by the contractually-obligated project design professional and remedied prior to applying an installation system.

Follow appropriate industry standards and individual product recommendations for treating concrete slab shrinkage cracks and slab joint treatment. Consult ASTM F710 for resilient, carpet tile, carpet and wood flooring, or ANSI A108 and TCNA ej171 Movement Joints for ceramic tile and natural stone tile.

All surfaces must be flat and smooth (and properly pitched, level or plumb when required) prior to installing finishes. As shown below, flatness tolerances vary from the required plane for different finishes when measured from the high points in the surface. It is the responsibility of the installer to determine the suitability of the substrate and any required preparation work necessary to ensure a successful installation.

Industry Tolerances - Flatness and Pitch:

Ceramic tile <15" - 1/4 in. in 10 ft. (6 mm in 3 m) and no more than 1/16 in. in 1 ft. (1.6 mm in 0.3 m)

Ceramic tile $\geq 15"$ & Gauged Porcelain Tile/Panels - 1/8 in. in 10 ft. (3 mm in 3 m) and no more than 1/16 in. in 2 ft. (1.6 mm in 0.6 m)

Resilient, Carpet Tiles, Carpet - 3/16 in. (3.9 mm) in 10 ft. and 1/32 in. (0.8 mm) in 12 in. (305 mm)

Hardwood – Concrete - 1/8 - 3/16 in. in 10 ft. radius (3 - 3.9 mm in 305 cm radius)

Hardwood – Plywood - 3/16 in. in 10 ft. (3.9 mm in 305 cm) or 1/8 in. in 6 ft. (3 mm in 183 cm)

Pitch - Exterior and drainage areas to be sloped at a minimum of 1/4 in. per linear ft. (≥ 6 mm in 300 mm)

Substrate and ambient temperatures, relative humidity, UV exposure, excessive wind and inclement weather can affect product performance, drying or curing time frames during and after installation. Acceptable temperatures for products, mixing water and additives are generally between 50°F - 90°F (10° - 32° C). The area where finishes are installed should be acclimated prior to installation by providing heat or cooling and protection as needed. These conditions are to stay in place during and after installation to allow products to properly cure. Disable radiant heating systems at least 24 hours prior,



during and 72 hrs. after installation. Follow radiant heating system manufacturer's instructions for start-up procedures to gradually introduce heat. Follow industry guidelines for water and moisture exposure to installation assemblies, especially with fill and draining rates in water features.

Industry Association References:

[International Building Code](#) (IBC)

[International Residential Code](#) (IRC)

[American Concrete Institute](#) (ACI)

[International Concrete Repair Institute](#) (ICRI)

[ASTM International](#) formerly American Society for Testing and Materials

[Tile Council of North America](#) (TCNA)

[American National Standards Institute](#) (ANSI)

[Resilient Floor Covering Institute](#) (RFCI)

[National Wood Flooring Association](#) (NWFA)

[Natural Stone Institute](#) (NSI)

[National Tile Contractors Association](#) (NTCA)

[International Masonry Institute](#) (IMI)

* Consult individual product Technical Data Sheets for specific recommendations and limitations regarding project conditions. Assembly mockups can determine suitability for these conditions on specific projects. Contact CUSTOM Technical Services for questions and product information: [CONTACT CUSTOM](#) or (800) 282-8786. Instructional videos, technical bulletins, case studies, FAQs and white papers: custombuildingproducts.com/reference-library.aspx

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