

SURFACE PREPARATION

Substrate Requirements

- Ensure substrate is **structurally sound**, with proper deflection/movement compliance.
- Surface must be **clean, smooth, dry**, and free from **wax, grease, soap scum, dust, sealers, curing compounds**, or any other contaminants.
- **Concrete substrates** must be fully cured (at least 28 days) and moisture tested per ASTM standards.

Repair and Preparation

- **Patch** and **level** all cracks, spalls, pits, and other imperfections.
- **Remove** any loose materials, moldings, trims, or appliances that might interfere.
- **Undercut door jambs** to allow tile to slide underneath for a cleaner look.

Flatness Tolerances

Follow TCNA (Tile Council of North America) guidelines:

- **Tiles < 15" edge length:** Max $\frac{1}{4}$ " variation over 10 feet.
- **Tiles \geq 15" edge length:** Max $\frac{1}{8}$ " variation over 10 feet.

Floor Support

- Reinforce flooring if there is **deflection, flexing, or movement**.
- Install ceramic and porcelain tile on a clean, level and rigid floor.

PLANNING THE LAYOUT

Map the Installation

- **Find the center** of the room by measuring midpoint on opposing walls.
- **Snap chalk lines** to form a center cross; lines must be **square** (90° angles).

Dry Fitting

- **Dry lay tiles** from the center, leaving appropriate grout joint spacing.
- Arrange to maximize full tiles and minimize cuts along edges.

INSTALLATION

Applying Thinset

- Select appropriate **ANSI A118.1, A118.4, or A118.15 mortar** based on tile and substrate.
- **Spread thinset** with a properly sized notched trowel (larger tiles = larger notches).
- Maintain **proper coverage**:
 - Minimum 80% coverage for dry areas.
 - Minimum 95% for wet areas (showers, pools).

Setting Tile

- Begin from the **center reference lines**.
- Place tiles firmly into the mortar bed, using a slight **back-and-forth motion**.
- **Use spacers** for consistent joint widths. Remove spacers before mortar hardens.
- Periodically **lift tiles** to verify full coverage.

Cleaning Excess Mortar

- Clean excess mortar **from tile surface and joints** while it's fresh, using water and a sponge.

Tile Adjustment and Cutting

- Cut perimeter tiles using **wet saw** or **score-and-snap** methods.
- Avoid **dry cutting** to minimize silica dust exposure. Always wear appropriate PPE if dry cutting is necessary.

Final Setting

- Once installed, allow tile to **cure undisturbed** following thinset manufacturer's recommendations (typically 24 hours).

GROUTING

- Mix grout per manufacturer's instructions.
- Apply grout diagonally across tiles using a rubber float.
- Clean the surface with a damp sponge once grout becomes firm.
- Buff haze off tiles after grout has fully set.

ADDITIONAL INSTALLATION BEST PRACTICES

Wet Cutting and Silica Safety

- **Wet cutting** is recommended to reduce silica dust.
- Always follow **OSHA guidelines** for exposure prevention, including wearing N95 respirators if necessary.

Joint Widths and Alignment

- Follow ANSI standards: Grout joint width = minimum 3x facial dimension variation.
- **Running Bond Patterns:** For tiles longer than 18", offset no more than 33% unless approved by project owner after mockup.

Pattern Installations

- Always **order additional tile** (10–15% overage recommended).
- Blending is critical: **Mix tiles from multiple boxes** to avoid visible shade variation.

Leveling Systems

- For **planks or large-format tiles (>18")**, consider using a **tile leveling clip system** to reduce lippage and maintain tight grout joints.

SPECIAL CONDITIONS

Wall Wash Lighting

- Wall wash lighting closer than 24" to a wall may highlight surface irregularities and lippage.
- **Mock-up approval** from owners/specifiers is recommended before proceeding.

IMPORTANT REMINDERS

- Read and follow **all manufacturer instructions** for tile, setting materials, and grout.
- Always comply with **TCNA Handbook, ANSI A108/A118/A136 standards**, and **local building codes**.
- Ensure all installation steps are properly **documented** for warranty purposes.

INSTALLATION SUCCESS CHECKLIST

- ☐ Surface properly prepped and flat?
- ☐ Layout planned and chalk lines snapped?
- ☐ Mortar correctly mixed and applied?
- ☐ Full coverage achieved?
- ☐ Spacers used and removed appropriately?
- ☐ Excess mortar cleaned immediately?
- ☐ Grout joints uniform and clean?
- ☐ Final cleaning performed post-grouting?