

Mingle^{HDP}®

Technical Sheet

Mingle^{HDP} abandons the conventional concept of what a stone installation needs to look like. We have re-imagined and repurposed the tradition. By dissecting the classic looks of Travertine, Marble and Limestone down to their basic graphical properties, there were elements that, regardless of the pattern, could all work together. We were then able to piece them back together to create a cohesive look that both blends in and stands out at the same time.



Intended Uses: Residential, Light Commercial

Product Group: Porcelain: Suitable for floor and wall application

Surface Finish: Matte

ANSI A326.3: Interior Wet [IW] (Porcelain Field Tile), Interior Wet Plus [IW+] (Porcelain Mosaics)

Edge Finish: Pressed

Country of Origin: United States of America

Corporate Contact Information

Florida Tile Inc.

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Lexington, KY 40513

Phone: 859-219-5200

Website: www.floridatile.com

Format, Thickness, and Caliber

Porcelain Tile				
12"x12" (9.5mm)			12"x24" (10mm)	
Caliber	Avg Size (mm)		Caliber	Avg Size (mm)
0	296x296		0	297x596
1	297x297		1	298x598
2	298x298		2	299x600
3	299x299		3	300x602
4	300x300		4	301x604
5	301x301		5	302x606
6	302x302		6	303x608
7	303x303		7	304x610
8	304x304		8	305x612

Mosaic	
M12 (9.5mm)	
Caliber	Avg Size (mm)
3	298x298

Porcelain Tile
3.75"x12" rectified
(9.5mm)
Avg Size (mm)
95x300

Bullnose
P43C9 (3"x12")
[9.5mm]
Avg Size (mm)
71x300

Technical Data

Technical Characteristics	Test Method (ASTM)	ANSI A137.1	Series Average Values
Water Absorption	C373	$\leq 0.5\%$ (Porcelain)	Conforms
		$7.0\% < \text{Value} \leq 20.0\%$ (Ceramic)	Conforms
Breaking Strength	C648	$\geq 250 \text{ lb}_f$ (Porcelain)	$\geq 510 \text{ lb}_f$
		$\geq 125 \text{ lb}_f$ (Ceramic)	$\geq 150 \text{ lb}_f$
Linear Thermal Expansion	C372	Not Required	Conforms
Thermal Shock Resistance	C484	No sample must show visible signs	Conforms
Chemical Resistance	C650	Not Required	Conforms
Stain Resistance	C1378	Not Required	Conforms
Freeze/Thaw Resistance	C1026	No sample must show visible signs	Conforms
Bond Strength	C482	$\geq 50 \text{ PSI}$ (0.34 MPa)	Conforms
Shade Variation	ANSI 137.1	Manufacturer Statement	V2 Slight Variation
Thickness	C499	Max Range 0.040" (1.02 mm)	max ± 0.030 inch
Surface Hardness	Mohs Scale	As Reported	7 Mohs (porcelain only)
Warpage Edge	C485	Porcelain	Conforms
		Ceramic	Conforms
Warpage Diagonal	C485	Porcelain	Conforms
		Ceramic	Conforms
Dynamic Coefficient of Friction (DCOF)	A326.3	≥ 0.42 (Internal Wet Environment)	Pass (Porcelain Only)

Collection Color Variations

Cool Summer Mix



Warm Winter Mix



Soft Rock



Dry Stream



Certifications

- Recycled Content: 40% pre consumer
- Greensquared Certification
- Greenguard Gold Certification
- Health Product Declaration
- Safety Data Sheet
- Environmental Product Declaration



General Tile Installation

The following information is a general ceramic tile installation guide. Every application is unique to the end user's desire. For specific guideline on a particular application, please consult an experienced tile installer or the TCNA handbook.

Substrate Requirements

- Maximum Allowable Deflection for Floor Systems and Substrates
 - Floor systems, whether wood framed or concrete, over the tie will be installed using the appropriate TCNA method, according to the "Floor Tiling Installation Guide" shall be in conformance with the International Residential Code (IRC) for residential application and International Building Code (IBC) for commercial applications.
 - For ceramic tile installations over framed floors, the maximum live load and concentrated load allowable deflection should not exceed $L/360$.
 - L is the clear span length of the supporting member per applicable building code
 - For natural stone installations over framed floors, the maximum live load and concentrated load allowable deflection should not exceed $L/720$.
- Natural Stone Tile Installations on Post-Tensioned Concrete
 - TCNA installation method is the only method for installing natural stone tile over post-tensioned slabs, above ground or on ground since dynamic movement of post-tensioned slabs have been proven to be problematic for directly bonded natural stones.
- Proper Spacing for Wood Subflooring and Wood Underlayment
 - Plywood subflooring, OSB subflooring, and plywood underlayment should be installed with proper spacing between the sheet (usually $1/8^{\text{th}}$ in., unless specified otherwise per wood manufacturer).
- Natural Stone Tile Installations Over Wood Substrates
 - Two layers of structural wood panels are required on floors to receive stone tiles when backer board will be used as the tile substrate. The Marble Institute of America (MIA) prohibits installation of stones over single-layer wood floor systems under backer board because of the discontinuity of the system seams between subfloor panels.

- Natural Stone Tile Installation Over Frame Construction
 - Strongbacks, bridging, or other load-sharing members may be required within a wood framed system to reduce differential deflection between adjacent framing members. Project design professionals are responsible for determining the necessity of such.
- Suitable substrate
 - Plywood
 - Manufactured with fully waterproof adhesive and with an exposure durability rate of Exposure 1 of Exterior may be used on residential horizontal surface. Wood based substrates failing to meet the requirement risk expansion and contraction based on water content which can be detrimental to tile installation and are not recommended.
 - Gypsum Board
 - A membrane and metal lath to cover the backing is recommended when specifying gypsum for setting tile in Portland cement mortar.
 - Gypsum board should NEVER be used in wet area applications except for interior application where water exposure is minimum.
 - Concrete
 - Provide properly located control joints or other effective measures (uncoupling membrane) to prevent cracking
 - Cementitious Backer Unit (CBU)

Substrate Tolerances

- Flatness for Ceramic Tile and Stone Tile Installations
 - To facilitate a tile installation that will meet ANSI finish flatness requirements or a stone installation that will meet MIA finish flatness requirements, the installation substrate must meet ANSI A108.02 and MIA's DSDM.
- General Substrate Tolerance
 - The finish flatness allowable deviation for ceramic tile installation is 1/4th inch in 10 feet from the required plane according to ANSI. For stone installation, the allowable deviation is 1/8th inch in 10 feet from the required plane according to MIA.
- Substrate Tolerance for Thin-Bed Methods
 - For cementitious bonding material, including mortar for large and heavy tiles, for tiles with edges shorter than 15 inches, the maximum allowable deviation in the tile substrate is 1/4th in 10 feet with no more than 1/16th inch variation in 12 inches when measured from the high points in the surface.
 - For tiles with at least on edge longer than 15 inches, the maximum allowable deviation is 1/8th inch in 10 feet with no more than 1/16th inch variation in 24 inches when measured from the high points in the surface.
 - For organic/epoxy bonding material, the maximum allowable deviation in the tile substrate is 1/16th in 3 feet with no abrupt irregularities greater than 1/32 inch.

Installation

- Cutting Instructions
 - Florida Tile recommends all cuts to be made with a wet saw or manual cutting. Dry cutting is inadvisable due to improper use of PPE could expose the installer to harmful silica dust.

- Setting Material
 - Portland Cement Mortar Bed
 - Refer to ANSI A108.1A-C and follow setting material manufacturer instructions.
 - Thin Set Method
 - Refer to ANSI A108.4, A108.5, A108.9, A108.12, A108.13, and A108.17 and follow setting material manufacturer instructions.
 - Minimum Mortar Thickness: 3/32 inch
 - Maximum Mortar Thickness: 3/16 inch
- Grout Joint
 - Per TCNA Handbook, the minimum required joint width for ceramic tile and natural stone is 1/16 inch. Setting ceramic or stone without a grout joint of a least 1/16 inch, often referred to as a butt joint, does not provide sufficient accommodation for dynamic building movement, differential thermal expansion, or allowable variation in fabrication or manufacturing. Florida Tile recommends a minimum 3/16 inch grout joint for all calibrated, ceramic tile and natural stone installations and 1/8 inch grout joint for rectified tiles.
- Offset (Brick) Patterns
 - The TCNA Handbook recommends no more than a 33% offset and a wider grout joint for offset installations of tile larger than 15" on the longest side. This is because all tiles are higher in the middle than at the edges. When the highest point (middle) of one tile is next to the lowest point (edge) of the tile next to it, unacceptable lippage can result. Florida Tile is aware that many installers wish to use tiles (especially 12"x24" tiles) in brick patterns with a 50% offset. Typically, our tiles are flatter than those of our competitors and better suited for this type of application. Florida Tile encourages installers to follow the TCNA Handbook recommendations. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. TCNA handbook recommends a minimum 1/8 inch grout joint for rectified tiles and a minimum 3/16 inch grout joint for calibrated tiles.
- Wet Area Applications
 - For grouting tiles in wet area applications, epoxy grout or polymer modified grout is highly recommended.
 - Unmodified grout is NOT recommended since water can penetrate the grout and get into the body of the tile. This is particularly a nuisance for non-porcelain tile since the body of the tile will get wet and darken.
 - Due to the nature of the material, ceramic and porcelain tile will absorb water. The structure of the tile determines the amount of water the material will absorb. Thus, proper waterproofing methods and drainage systems need to be in place for a successful wet area installation. If water penetrates behind shower tiles, it soaks into the body and changes the color of the tile. This is common for ceramic tile due to its high absorption rate. Water penetration could be the result of a leak in the shower, damaged corner joints, leaking taps, or missing grout (grout not being flushed with the surface of the tile). A leak in the shower is a serious problem and can quickly get worse. Once repaired, the tiles will dry naturally, and the tile color will return to normal
- Sealer/Impregnators
 - It is not recommended to seal glazed tile. However, grout joints should be sealed to prevent staining.
 - It is common practice to treat natural stone tile with impregnators. Impregnators and sealers are not the same. Impregnators are formulated to allow the transmission of vapor, which maintains the breathability of the stone. Sealers form a protective layer on the surface of the stone tile. Sealers and

impregnators can cause undesirable color alteration, usually darkening. Please refer the manufacturer's instructions when applying either the sealer or impregnator solution. Always test a small area to make sure desired results can be obtained.

Care and Maintenance

Initial Cleaning

The most important cleaning a tile will receive is during installation. The number one issue with cleaning tile is grout haze which is caused when water that contains trace amounts of grout or setting material is allowed to dry on the surface of the tile. Grout haze can be recognized when the installed tile has varying amounts of gloss when viewed from an angle or when dirt adheres to the tile easily and is difficult to remove.

Care must be taken to completely remove all traces of grout from the surface of the tile during installation. When being installed, use a diluted, neutral pH detergent cleaner followed by a thorough rinse with water until no cloudiness is apparent. When the tile is dirt-free, dry the surface with a clean towel.

Once this grout haze has been allowed to cure on the surface of the tile, it will not be removed with damp mopping or steam cleaning. Additional scrubbing using a nylon scrubbing pad or, a rotary buffer with a nylon pad for large areas, and a grout haze remover is recommended.

It is imperative to follow the manufacturer's instructions when using a grout haze remover. Florida Tile does not advise the use of "acid washing" for cleaning grout haze. Acid can react with the grout and leave a white film that is very difficult to remove and may structurally weaken the grout joint. If the use of a nylon scrubbing pad is not sufficient to remove the grout haze, a mild solution of sulfamic or phosphoric acid (NOT hydrofluoric) will not harm the tile and can be used for cement-based (non-epoxy) grouts by closely following the manufacturer's recommendations, including thorough rinsing. If an epoxy-based grout is used, the grout manufacturer will have suggestions for removing epoxy grout haze.

After installation, tile should be protected from foot traffic until grout has had time to fully cure. Consult grout packaging or the grout manufacturer for specific time required to set. Typically, this is done using cardboard, construction paper, plywood, or similar covering to shield tile. Florida Tile does not recommend plastic for this purpose as it does not allow air to reach the surface of the grout and can become slippery when wet.

Routine Maintenance

It is important to clean up spills and stains quickly. For routine maintenance, vacuum, dry mop, or sweep debris from the tile to prevent surface abrasion on the tile. Routine sponging or wet mopping with a diluted neutral pH detergent is usually sufficient for cleaning tile. Do not use cleaners with oils, soaps, or fats in the ingredients as these can build up on the surface of the tile over time and attract more dirt.

Mechanically remove sticky residue such as chewing gum or stickers with a putty knife or spatula before cleaning. For food or grease stains, de-greasing cleaners are accepted but should be tested on a small surface area prior to use. This will ensure the cleaner does not react with the tile or grout as they are alkaline in composition. Abrasive cleaners should be used sparingly and rinsed thoroughly with clean water after use.

Florida Tile recommends using commercial cleaners specifically designed for porcelain tiles and/or natural stone, depending on the installation type, for routine maintenance. Refer to manufacturer's instructions for concentration of each product and when/how to use them.

Heavy Duty Maintenance

Tougher stains such as lipstick, oil-based paint, wax, etc., may require the use of a poultice which contains gentle abrasives that can remove the stain. A poultice is available at most tile retailers and is made into a paste with the addition of water. Care must be taken to ensure that the area where the poultice was applied is thoroughly rinsed. A nylon scrubbing pad or soft bristle brush can assist removing stubborn stains in combination with these cleaners.

Hard water deposits can form on tile when it is routinely in contact with water containing minerals. The best way to prevent hard water buildup is by using a squeegee to remove water and then drying with a towel. Once hard water stains form, a chemical cleaner designed for hard water must be used.

Florida Tile has not tested all chemical cleaners with tile; before any cleaner is used for the first time, it is recommended to try it in an inconspicuous location on the tile to make sure it does not harm the tile or the grout. Porcelain is very durable and should not react to most chemical cleaners.

Commercial Cleaning Techniques

Properly maintained tile floors should not require the use of rotary buffing or polishing equipment. This equipment can wear the surface of the floor over time and should not be a part of a regular cleaning regimen. Steam cleaners can be used on particularly dirty floors and should not harm the tile. Be mindful, however, that steam cleaning will not remove chemically attached stains like grout haze and hard water deposits. Consult a knowledgeable tile-cleaning specialist for unusual cleaning situations.

Florida Tile, Inc. Limited Warranty

Florida Tile, Inc. ("Florida Tile") makes the following limited warranty with respect to its products:

Florida Tile Products: Florida Tile warrants Florida Tile branded tile products and all other products manufactured by Florida Tile ("Florida Tile Products") to meet or exceed the applicable requirements of American National Specifications Institute, Specification ANSI A137.1-2012. Florida Tile further warrants Florida Tile Products to conform to any specific physical properties stated in Florida Tile's then-current product literature, and to be reasonably free from manufacturing defects.

Residential Lifetime Warranty: The warranty set forth above for Florida Tile Products installed in a residence will remain in effect for as long as the original purchaser owns his or her home and is non-transferable.

Commercial Warranty: Florida Tile defines a commercial installation as any structure other than a dwelling occupied by the owner of the tile. The warranty set forth above for Florida Tile Products installed in a commercial installation will extend for a period of 18 months from the date of shipment of the product.

Third Party Products: Any and all products sold by Florida Tile other than Florida Tile Products as defined above ("Third Party Products") shall be sold subject to the manufacturer's express warranties. Florida Tile makes no other warranty with respect to Third Party Products.

Warranty Limitations:

The warranty set forth above is Florida Tile's sole and exclusive warranty, and Florida Tile expressly disclaims any and all other warranties, express or implied, including without limitation any warranty of merchantability or fitness for a particular purpose. Florida Tile will provide replacement tile or refund the purchase price at Florida Tile's sole

discretion if any Florida Tile Product fails to meet the limited warranty set forth above, which shall be Purchaser's exclusive remedy. Under no circumstances shall Florida Tile be liable for any special, indirect, incidental or consequential damages, including without limitation labor costs for removal of existing product and installation of replacement product. This warranty is void with respect to any Florida Tile Products that are not installed in a workmanlike manner and in accordance with all applicable standards and installation instructions. Purchaser shall be solely responsible for ensuring compatibility of any and all products or materials utilized in connection with the installation of Florida Tile Products. Shade match of the replacement product to that being replaced cannot be guaranteed. No installer, dealer, agent, or employee of Florida Tile has the authority to modify the obligations or limitations of this warranty.

This limited warranty gives specific legal rights. Since some states have laws governing consumer rights and damages, some of the above limitations may not apply to you, and you may have other rights which vary from state to state. Except for these other rights, the remedy provided under these warranties state the limit of Florida Tile's responsibilities.