THIN PORCELAIN TILE
At the end of this program, participants will be able to:

- Understand what is a Thin Porcelain Tile (TPT)
- Know how (TPT) is made and its benefits
- Identify the various types of (TPT) available
- Applications to use (TPT)
- Avoid issues while specifying the product
- Installation and setting materials
- Recommendations and guidelines
TPT

Composition:

- Clay + Water + Fire
- (100% Natural Material)
- Ceramic tile has been made by man for over 4,000 years
- From 4x4 to (TPT)

3,5MM
What is a thin porcelain tile (TPT)?

- Thin porcelain tile (TPT) AKA thin porcelain panels, are characterized by their minimal thickness of anywhere between 3 to 6 mm and a dimension of up to 5x10 feet in length and width.

- TPT is structurally reinforced with a 0.5mm glass fiber mesh.
THIN PORCELAIN TILES

MANUFACTURING
Thin porcelain tiles (TPT) are made by natural materials including:

- Clays
- Feldspar
- Silica
- Minerals
TPT is manufactured by using sinterization which is the high pressure, high temperature kilning process that creates the panels.

Natural raw materials and minerals are placed through a kiln and exposed to high pressure and temperatures reaching 1,500°C.
Sintering is the process of **compacting** and forming a solid mass of material by heat or pressure without melting it to the point of liquefaction.
Continuous press is an innovative compaction technology that breaks through productivity barriers for large size tiles.

Continuous press allows the manufacture of porcelain slabs and tiles within a wide size and thickness range, personalized both on the surface and in-body, at higher output rates than those attainable with traditional products.
Compaction occurs because of two very stiff motor-driven belts. The powder is deposited on the lower belt and carried inside the machine, where the combined action of the two belts with two compaction rollers allows the material to form.

The lower belt has a length that allows the use of decoration systems prior to the compaction stage, while the upper belt can be specially engraved to imprint relief structures on the slab. The machine is designed so that the decorations can be replaced quickly.
(TPT) Manufacturing Process

Continuous Compaction Process
Stratification
Raw materials of different types and colors can be mixed in a wide variety of combinations.
Continuous compaction of the powder layer directly on the conveyor belt.
The compacted ceramic slab is cut as it moves.
TPT

BENEFITS
(TPT) Features

- Frost Resistant
- Fire Resistant
- Waterproof
- Recyclable
- Resistant to Chemicals
- Fast Assembly
- Stain Resistant
- Frost Resistant
(TPT) Features

Some of its features are:
Lightweight and bendable. Only 8kg/m²
Seamless look.
Minimal grout joint
Colors are permanent - add info from DWT
(TPT) Features

Green benefits:
- TPT can be laid over existing floors and walls reducing the materials removed and trashed
- Lightweight: less fuel is required to transport them
- Low Maintenance
- Some colors can be made from recycle materials
THIN PORCELAIN TILES

(TPT) Thicknesses

3,5MM
6MM
12MM
THIN PORCELAIN TILES

(TPT) Dimensions

Also available for custom orders
(TPT) Dimensions
(TPT) Possibilities

Finishes
- Multiple colors and styles available:
  - Natural Stone
  - Wood
  - Concrete look
- Matte
  - Recommended for floor and wall applications
- Polished
  - Recommended for walls only
THIN PORCELAIN TILES

TYPES
THIN PORCELAIN TILES

STARTING FROM DECORATED THROUGH BODY PORCELAIN TILE
TPT

APPLICATIONS
(TPT) Applications

There are various recommendations depending on the thickness including:

- 3 mm
  - Furniture and door veneer
  - Walls, fireplaces

- 6 mm
  - Wall cladding
  - Flooring (up to 48x48”)

- 12 mm
  - Countertops, all of the above
REDESIGNING
COUNTERTOPS
(TPT) Applications

- Most TPT can be installed indoors and outdoors. Follow the manufacturer recommendations

TPT can be used in:
  • Residential Applications
  • Feature Walls
  • Countertops and backsplashes
  • Fireplaces
  • Bathroom walls and floors (5mm)
  • Exterior cladding
(TPT) Applications

Commercial Applications:

- Feature walls for lobbies and common areas
- Bathroom walls and floors (5mm)
- Wall protection
- Elevators
- Exterior cladding
- Countertops
- Front Desk
(TPT) Applications

Commercial Projects:

- Restaurants
- Retail
- Hotels
- Multifamily
- Office buildings
- Healthcare
- Education
- Government
THIN PORCELAIN TILES

INSTALLATION
(TPT) Avoid issues while specifying

Follow the manufacturer guidelines for each application (Thickness matters)

(TPT) placement requires qualified personnel.

Using the appropriate tools for each type of work is essential.
(TPT) Installation guidelines

Surface Preparation – The maximum allowable variation in the substrate not to exceed 1/8” in 10 feet or 1/16” in 1 foot
100% thin set contact between the tile and the substrate is recommended, especially near the grout joints.

Placement joints shall be of at least 1 mm. The use of spacers that facilitate wall tile leveling is recommended.
(TPT) Installation guidelines

Apply the joint material with a rubber trowel, avoiding the formation of bubbles, cracks, or gaps.
(TPT) Setting Materials

- The right choice of adhesive must be used. It is important to bear in mind the properties of the substrate to be tiled. It is recommended using a high-performance cement-based adhesive, suitable for placing all (TPTs).

- Line of type CG 2 technical mortars for sealing joints, suitable for all ceramic tile types. Characterized by their fine finish, suitable for sealing joints of up to 4 mm.

- For outdoors environments it is recommended to mix with latex.
(TPT) Setting Materials

Profiles
Currently on the market, there is a wide variety of profiles, including sizes that are suitable for ceramic pieces that are slightly larger than 3 mm thick.
Profiles
Neutral silicone for sealing joints. Highly recommended for sealing perimeter and movement joints. Can be used in both indoor and outdoor applications.
(TPT) Tools

Follow the manufacturer guidelines for each application (Thickness matters)

(TPT) placement requires qualified personnel.

Using the appropriate tools for each type of work is essential.
How to Install (TPT)
Installation and setting materials recommendations and guidelines

References
Follow the TCNA manual for modern installation methods
Installation and setting materials recommendations and guidelines

References
ANSI A108 Series – American national standards for installation of ceramic tile

ANSI A137.1 - American national standards for installation of ceramic tile (TPT don’t meet breaking standard requirements)

TCNA (HB) – Handbook for ceramic, glass and stone tile installation; Tile Council of North America

ISO 13007 – International Standards Organization: classification for grout and adhesives


http://www.stoneworld.com/articles/88134-the-growing-popularity-of-thin-porcelain-tile
THANK YOU FOR YOUR TIME.

ANY QUESTIONS?

This concludes The American Institute of Architects Continuing Education Systems Program.