



Introduction to Types of Tiles

1. Types of Tiles & Their Characteristics
2. Features and Benefits

Technical Introduction to Different Types of Tiles

A common dilemma when it comes to choosing tiles is whether to pick ceramic or porcelain. What is the difference? Which do I need? Is one better than the other?

Ceramic tiles are made from natural clay with a durable glaze; the biscuit of the tile is baked to reduce water content. Next the design is added to the same biscuit before it's baked again in a kiln at a high temperature.

Porcelain tiles are also made from natural clay but of a denser nature as finely ground sand is also added into the manufacturing mix. This mixture is then pressed and fired at a much higher temperature than ceramic tiles, and are also fired for longer to remove almost all of the water content and make them less porous than a ceramic tile. In simple terms this means porcelain tiles are much more hardwearing and suitable for both indoor and outdoor applications.

Whilst ceramic tiles are only recommended for interior walls and floors, porcelain tiles are a more now popular choice for floors that anticipate heavier traffic such as kitchen floors, hallways and commercial applications as they are increasingly resistant to scratching, chipping and wearing.

Aim of this presentation...

To enable you to make informed decisions when helping customers choose tiles for projects. This section will provide information and advice on different types and characteristics of tiles; and provide an easily accessible & practical source of information when required.



1. Types of Tiles

A. Glazed Ceramic Tiles – Wall

Includes;

- Red Body Glazed Tiles
- White Body Glazed Tiles - Rectified & Non Rectified
- Glazed Porcelain Tiles - Rectified & Non Rectified
- Glossy, Matt & Satin Finishes

B. Glazed Ceramic Tiles – Floor

Includes;

- Red Body Floor Tiles
- Glazed White Body Tiles
- Glazed Porcelain Tiles - Rectified & Non Rectified
- Glossy, Matt & Satin Finishes

C. Unglazed Tiles - Generally Floor

Includes;

- Clinker Tiles
- Quarry Tiles
- Extruded Tiles
- Matt & Structured Finishes

D. Quartz and other Resin Based Tiles

- Generally, three types of resin agglomerated floor tiles are available, these are: quartz, granite and marble
- Suitable for walls and floors
- Moisture Sensitive

E. Porcelain Tiles - Can be used on Wall and Floor

Includes;

- Glazed Porcelain
- Full Body Or Through Body Porcelain
- Numerous Finishes; Natural Finishes, Satin/Honed/Lapatto Finishes, Polished Finishes and Structured (Anti-Slip) Finishes
- Polished Porcelains - Soluble Salts Tiles, Double Loaded Tiles
- Sealing Porcelain Tiles - Micro-pores and Hooks
- Nano Sealed Polished Porcelain Tiles



2. Characteristics of Different Types of Tiles

A. Characteristics of Glazed Red Body Tiles

- Body of tile (back) is Porous - Glazed surface is not porous.
- Softer than porcelain.
- Potential for impact damage high. Glaze can chip as a result
- Red body can sometimes be seen at grout edges if tiles are not grouted properly
- Water penetration can cause 'shadowing' behind the glaze
- Generally available in smaller sizes and are cheaper to produce as the raw materials cost less, and less energy is used in production as lower firing temperature in the kilns is required
- The glazes on red body tiles can be matt, satin, glossy or even anti slip.

B. Characteristics of White Body Tiles

- A finer smoother body than the red which allows for a better, cleaner and smoother finish on the glaze.
- If grout is not fixed properly the "defect" is not as obvious as it would be with red body tiles
- Body is soft and susceptible to impact damage. Glaze can chip as a result
- If rectified, can be fitted with smaller joint to provide a clean minimal appearance.
- Rectified tiles are more susceptible to damage before or during fixing, but less so after
- Smooth level walls and a skilled fixer are needed to fix rectified tiles as if they are not fixed level the tile may show signs of "lippings" at the edge.
- Generally available in larger wall tile sizes than red body tiles and are more expensive to produce due to the costs of the raw materials used to create the smooth white biscuit

C. Characteristics of Glazed Porcelain Tiles

- Porcelain body with a glazed surface
- Body is durable and less subject to impact damage as the body is fired to temperatures in excess of 1200 degrees centigrade which make the tile almost impervious to water and gives the body greater strength
- The glaze is still subject to wear and tear according to the PEI ratings unlike full or through body porcelain tiles which are unglazed, highly durable, frost, scratch and stain resistant.

D. Characteristics of Unglazed Tiles - Generally Floor

- Examples of these are quarry and clinker tiles, e.g. Sierra Gres, Gres De Aragon
- These tiles are generally used outside due to their more anti-slip properties
- These tiles can be pressed, like porcelain tiles, or extruded, like quarry tiles
- Generally more rustic and traditional in appearance

E. Quartz and other Resin Based Tiles

Marble and granite are used to manufacture blocks, which comprise a mix of 95% selected and dried raw materials and 5% polyester resins (this will vary depending on the manufacturer, some manufacturers use a higher percentage of resin, which can affect the performance of the floor tiles. A higher percentage of resin will increase the coefficient of thermal expansion and reduce abrasion resistance. These materials are then vibro-compressed under vacuum and allowed to stand while the resin generates heat to set.

Resin agglomerated tiles may show varying degrees of moisture sensitivity and this characteristic is exhibited by curling caused by differential expansion. Therefore, resin agglomerated tiles are not recommended for use in external areas or swimming pools or any other water retaining structures, e.g. spa baths or fountains. Resin agglomerated tiles can be used externally on facades by utilising mechanical fixing.

F. Characteristics of Porcelain Tiles

There are two types of porcelain tiles;

- **Through-body (Unglazed) Porcelain**

Through-body (also known as full body) porcelain is where the tile has no glaze so the colour and design are the same all the way through. So, if there was any wear or chips to the tile they would be very difficult to see. They are highly durable, frost, scratch and stain resistant, and can be used in almost any domestic or commercial installation on both floors and walls. While through-body porcelain tend to be blander in finish, recent updates in Ink-jet printing technology have resulted in much more decorative full-bodied porcelain tiles creating tiles that look amazing and perform better than virtually any other surface.

- **Glazed Porcelain**

Glazed porcelain is where the tile has been manufactured with a glaze applied to the tile face. In this case the body of the tile is just as hard wearing as a through body porcelain however the glaze has the same characteristics as the glaze on a ceramic tile. Please check suitability for use in different areas by referring to PEI and Slip-resistant Ratings as appropriate.

- **What are Coloured Body Porcelain Tiles**

Just to confuse matters a little some porcelain tiles have a glaze mixed with the body and therefore are classed as neither full body nor glazed!! These Coloured Body tiles are created with continuous coloured stains from the glaze surface throughout the body of the tile. Mixing the colour of both the glaze and body lessens the visibility of any impact chips which may occur. The colour remains consistent throughout the tile, but any surface design does not continue through the tile body.

Further Notes on Through (Full) Body Porcelain Tiles

- Are suitable for use in heavy traffic areas such as shopping malls, supermarkets, airports, train stations, leisure centres and swimming pools etc.
- Can be used outside, providing they are fixed according to manufacturer's instructions and slip-resistance ratings are taken into consideration.
- Are available in large formats; 750x750mm, 800x800mm, 900x900mm, 1000x1000mm, 1200x1200mm, 1200x600mm, 1800x800mm and even in large thin slabs, e.g. 3000x1000x6mm
- Can be produced to look like other materials including natural stone and wood, due to huge advances in decorating and digital technology
- The finish on the tile can be honed/natural, semi-polished, polished and even bush hammered to create a stone effect with anti-slip properties

Types of Porcelain Tile Finishes

Porcelain tiles are not only available in a large variety of shapes, size and colours, there are also many different finishes. When choosing tiles for your home it is important to consider the look and feel you are trying to achieve. Whether it's a shiny gloss look, matt natural look, a smooth velvety look or even a textured finish tile can represent an opportunity to stamp your personal style on a project.

- **Polished Porcelain Tiles**

After being fired porcelain tiles are polished by a machine to give a mirror like finish before being cut to square the edges of the tile. The shiny finish gives the tiles a rich high-end flawless appearance which is also extremely durable.

Polished porcelain tiles are very easy to clean, and if you ensure to use the correct product to prevent any water marks or streaks your floor will maintain its finish and shine. However, shiny tiles are very slippery when wet.

- **Semi Polished Tiles**

The semi polished finish on tiles is also referred to as "**Lappato**".

The tile is lightly polished, using the same process as polished porcelain, to create a velvety, silky finish with a reflective surface. It is recommended that ALL Semi Polished tiles being installed on a floor are treated with a protective impregnator immediately after installation. This is to fill the micropores created on the surface during manufacturing, prevent ingress of dirt and contaminants filling up the pores and make the tiles easier to clean during their lifetime of use.

- **Satin Porcelain Tiles**

During manufacture the tile is prefinished with a decorative glaze leaving a smooth, satin surface. This is slightly more slip resistant than the polished finish but does need more maintenance. Occasionally marks from grinding may be visible.

- **Matt Porcelain Tiles**

Matt finish tiles are also known as "unpolished". They are incredibly stylish and on trend today, especially in concrete effect and jura limestone finishes. During the manufacturing process the tile comes out of the fire kiln in its natural form and no further treatment or processing is required.

- **Structured Porcelain**

The surface of the matt tile is pressed to create a rough texture or structured finish that can provide more slip resistance. The slip resistance of a tiled floor finish is the most important safety consideration particularly for older, mobility impaired and visually impaired people. Effective and suitable slip resistant characteristics are also important on commercial projects to reduce the likelihood of slipping. The only downside is that structured tiles can be more difficult to keep clean.

3. Features & Benefits of Tiles

Ceramic Tiles V's Porcelain Tiles

- Porcelain tiles are fired to higher temperatures than ceramic tiles (1200C +) and as a result, become almost impervious to water penetration. This means that porcelain tiles are extremely durable, stain, scratch and impact resistant and can be used in high traffic commercial areas
- Ceramic tiles can be cheaper to purchase but are more susceptible to chipping, breakages and general wear and tear over time
- Porcelain tiles are made in larger formats than ceramic, e.g. 600x600mm, 750x750mm, 800x800mm, 1200x600mm, 1000x1000mm, 1200x1200mm, 3000x1000mm etc
- New technologies have allowed porcelain tiles to appear like natural stones, woods and marbles. However, porcelain tiles have more technical advantages than the materials that they imitate. For example, stone, marble and wood can stain and scratch more easily than porcelain
- Porcelain tiles are more suitable than ceramics for use in high traffic commercial areas
- Porcelain tiles can be suitable for use outdoors (check with supplier first) as they are generally frost resistant. Ceramic tiles (generally) should not be used outdoors as they are not frost resistant
- Porcelain tiles come in many different sizes and finishes and some of these finishes are suitable for use in areas that require anti-slip flooring.



Ceramic Vs Porcelain

Ceramic: How it's made

Ceramic tiles are made from a clay biscuit that is baked to reduce the water content.

01

02

Price

Ceramic tiles are generally cheaper

Uses

Ceramic is less durable and recommended for domestic walls and floors only.

03

04

Design & Form

Ceramic tiles tend to be smaller sizes with a plainer matt or glass finish.

Porcelain: How it's made

Manufactured using a combination of clay and fine sand for a denser product.

01

02

Price

The better quality is reflected in a higher price.

Uses

Suitable for heavier traffic areas in both domestic and commercial applications.

03

04

Design & Form

Available in larger decorative sizes in matt, polished, satin and structured finishes.

Summary

The law requires flooring surfaces to be safe but does not specify what should be used. Employers, Manufacturers, Suppliers & Specifiers all have a responsibility to ensure the correct product is supplied to the end user. Government guidelines focus the application of tiles in commercial/work related environments rather than domestic applications.

An appropriate cleaning & maintenance regime is essential in preventing slips and trips as sustainability of slip resistance is vital during the lifetime of the tile.

Technical Advice

If you have any questions or queries please do not hesitate to contact our friendly and knowledgeable team.

1150 Eglinton Ave, East, Unit # 202,
Mississauga, Ontario L4W 2M6
Canada

+1 416-876-8864
tajammul@bultecglobal.com

+1 416-877-4909
faizulislam@bultecglobal.com

contact@pietrafutura.ca

www.pietrafutura.ca

www.bultecglobal.com

