

WHITE PAPER

The Performance, Precision & Possibility of Gauged Porcelain Panels in Commercial Construction

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Introduction

Materials must work harder and smarter as commercial spaces demand ever-higher durability, aesthetic value, and sustainability standards. Gauged Porcelain Panels (GPPs) meet that challenge head-on. These large-format, slim-profile tiles offer the look of natural stone or

engineered quartz with the technical performance of high-density porcelain. Backed by precise engineering, GPPs reshape the material landscape in commercial interiors, exteriors, and brand environments.

This paper outlines why GPPs have become a go-to solution for various project types, from national brand programs to healthcare facilities and office spaces.

Performance That Lasts

GPPs are engineered with durability at the core. Despite their slim profile (ranging from 3.5mm to 7mm), they meet or exceed ANSI and ASTM standards for strength, making them a highly resilient solution for high-traffic, moisture-prone, and demanding commercial environments.

Key Performance Attributes:

- **Water Absorption:** <0.5% (impervious; suitable for wet areas)
- **Slip Resistance:** Surface textures with slip resistance are available and suitable for commercial flooring.
- **Flexural Strength:** Exceeds ASTM C880
- **Scratch, Chemical & Stain Resistance:** Ideal for public-use and high-contact areas.
- **Thermal Shock & UV Resistance:** Stable in extreme conditions; ideal for interior and exterior use.

GPPs maintain their appearance and integrity throughout their lifecycle without requiring sealing or special surface treatments.

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A Precision Product

The production of gauged porcelain involves advanced kilning and compaction techniques, resulting in exceptional dimensional stability. Each panel is flat, precisely sized, and ready for installation with narrow grout joints, allowing for a contemporary finish that stays visually consistent across large-scale applications.

Size & Weight Advantages:

- **Dimensions:** From 15"x30" to 63"x126"
- **Lightweight:** ~2.8–3.5 lbs per square foot
- **Edge Finish:** Rectified for tight joint installations

The result? Panels that are easier to transport and install on vertical surfaces, while still delivering a large-scale visual impact with fewer seams and joints.

Design Versatility Across Applications

From feature walls and branded environments to countertops and façades, GPPs offer unmatched flexibility. Their broad color range and ability to replicate materials like marble, concrete, metal, and wood give designers creative freedom without compromising durability.

Common Commercial Applications

- Lobby floors and vertical surfaces
- Façades and cladding (ventilated or adhered)
- Wet areas, including showers and steam rooms
- Reception desks
- Hospitality feature walls
- Custom furniture and casework

Whether the goal is to achieve a luxurious, seamless stone look or a clean, minimal surface with high-performance specifications, GPPs offer the visual and structural solution.

Sustainable and Cost-Efficient

GPPs are engineered with both environmental and financial longevity in mind. Made from natural raw materials and fired in high-efficiency kilns, GPPs are inherently non-emitting and do not off-gas harmful VOCs, making them ideal for healthy building environments. Their thin profile and lightweight nature reduce shipping-related emissions and structural load requirements, contributing further to sustainable building practices.

But sustainability doesn't stop at material sourcing. GPPs also provide significant value through total cost of ownership. Their long life span, resistance to damage, and ease of maintenance reduce the need for costly repairs, replacements, and specialized upkeep. The large-format design minimizes grout joints, making cleaning faster and reducing long-term janitorial labor and chemical use.

Sustainability Highlights:

- No VOC emissions; inherently non-emitting
- Recyclable content and responsible manufacturing
- Contributes to LEED credits in multiple categories
- Supports WELL building standards through material health and longevity

Cost-Efficiency Highlights:

- **Reduced Labor Costs:** Larger format and faster installation reduce overall hours required on-site.
- **Lower Maintenance Over Time:** GPPs resist staining, fading, and scratching, eliminating the need for ongoing sealing or surface treatments.
- **Minimized Downtime:** Durable surfaces require fewer repairs or replacements, helping commercial spaces stay operational.
- **Long Lifecycle Value:** The material's resilience ensures extended usable life, decreasing the frequency of redesign cycles and surface replacements.
- **High Surface Coverage per Panel:** Fewer panels are needed to cover large spaces, reducing material usage and installation time.
- **Optimized Freight Efficiency:** Lightweight material lowers transportation costs and simplifies handling logistics.

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Installation Requires Expertise—But It's Well Worth It

Proper installation is essential to the success of GPPs. While installation differs from traditional porcelain tile due to the format and handling requirements, certified professionals following ANSI A108.19 standards ensure smooth delivery and high-performance results.



Installation Best Practices

- Use suction cup lifting systems and frame carts
- Back-butter with ANSI A118.15 thin-set mortars
- Maintain substrate flatness within 1/8" over 10 feet
- Use tile leveling clips and vibrating suction tools to avoid lippage
- Grout joints must be at least 1/16" with movement joints per TCNA standards

Installers must be trained in handling, cutting, and setting techniques specific to GPPs—but when done right, the result is flawless.

Coordinate Delivery = Project Install Success

Project coordination is a critical part of the process to protect the integrity of the panels from the warehouse to the warehouse or the warehouse to the jobsite. This includes:

- Confirming crate vs. A-frame delivery needs
- Scheduling liftgate or flatbed equipment
- Providing installers with sample guides and support
- Documenting and resolving any shipping damage immediately

Creative Material's dedicated coordination team ensures that materials arrive intact, on time, and ready for installation.

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How GPPs Compare to Other Surfaces

FEATURE	GAUGED PORCELAIN PANELS (GPPs)	NATURAL STONE	QUARTZ	LARGE-FORMAT STANDARD THICKNESS PORCELAIN
Aesthetic Variety	Wide range of stone, concrete, metal, wallpaper, and custom looks	Limited color control; unique, natural variation	Consistent, engineered appearance; fewer natural patterns	Wide range of stone, concrete, metal, wallpaper, and custom looks
Size	15"x30" up to 63"x126"	Approx. 60"x120"	Standard sizes: 55"-63" x 120"-126"	Generally smaller, often max at 36"x72"
Thickness	3.5mm up to 7mm	2cm or 3cm	2cm or 3cm	8mm up to 12mm
Weight	Lightweight: Approx. 2.8 - 3.5 lbs per square foot (varies by thickness)	Heavy: Approx. 12 - 22 lbs per square foot (varies by thickness)	Heavy: Approx. 20 - 25 lbs per square foot (varies by thickness)	Medium Weight: Approx. 5.5 lbs per square foot (varies by thickness)
Durability	Highly Resistant: Scratch, Stain, Heat, UV	Prone to scratches and stains. UV sensitive. Heat Resistant.	Not UV stable. Resistant to scratch, stain, and heat.	Equal to GPP, but more grout joints required.
Water Absorption	Impervious <0.5%	Typically porous; varies by stone type	Non-porous	Impervious <0.5%
Applications	Interior & Exterior: Walls, Floors, Façades, Countertops	Countertops, walls, some floors	Countertops, walls	Interior & Exterior: Walls, Floors, Limited Façades and Countertops
Maintenance	Low: No sealing required, easy to clean	High: Requires sealing and specialized care	Low: No sealing required, easy to clean	Low: No sealing required, easy to clean
Sustainability	Comprised of natural materials, no VOC, recyclable. Can contribute to LEED credits.	High environmental impact from quarrying. Natural material.	May contain resins. Limited recyclability. Engineered.	Comprised of natural materials, no VOC, recyclable. Can contribute to LEED credits.
Installation	Requires skilled installers with specialized tools. Can be fabricated on-site.	Requires skilled installers. Heavy handling with fabrication off-site.	Requires skilled installers. Heavy handling with fabrication off-site.	Easier than GPP, standard tools and methods.
Cost Efficiency	High surface coverage. Fewer grout joints. Lower lifecycle costs. Total cost range = \$20-\$40/SF	High upfront and maintenance costs. Total cost range = \$30-\$55/SF	Moderate to high cost. Total cost range = \$40-\$65/SF	Lower cost; more grout lines increase maintenance requirements. Total cost range = \$12-\$23/SF

*Total cost ranges include material and installation costs. Costs can vary by region, project scale, and installer experience. Ranges reflect typical U.S. commercial market averages as of 2024 and are for comparison purposes only.

Mock Case Study: LUMEN Hotel

Project Type: Hospitality

Application: Lobby feature wall and monolithic reception desk

Product: Expansia Peacock Green

Size: 48"x98"x7mm

Finish: Polished

When LUMEN Hotel began planning its flagship property in downtown Chicago, its vision was clear: create a bold, elevated entry experience that reflected the brand's modern luxury aesthetic. The design team was tasked with specifying a material that offered the high-end look of marble without the weight, maintenance, or sustainability concerns associated with natural stone.

Gauged Porcelain Panels (GPPs) were selected to define both the floor-to-ceiling lobby feature wall and the custom-fabricated reception desk, creating a unified visual statement that welcomes guests from the moment they arrive.

Design Objectives:

- Create visual continuity between vertical and horizontal surfaces.
- Achieve a seamless marble aesthetic with minimal grout joints.
- Use durable, low-maintenance material suitable for high-traffic hospitality environments.
- Ensure ease of fabrication for custom elements like desk panels and mitered corners.
- Support sustainability goals without compromising on luxury.

Material Advantages with Gauged Porcelain Panels:

- Ultra-realistic marble appearance without veining inconsistencies.
- Lightweight 6mm panels allowed easy installation on walls and millwork substrates.
- Scratch-, stain-, and UV-resistant surface stood up to 24/7 front-of-house operations.

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Mock Case Study: LUMEN Hotel (cont.)

Material Advantages with Gauged Porcelain Panels: (cont.)

- No sealing required, minimizing maintenance and long-term upkeep.
- Large-format size (63"x126") reduced grout joints and created a continuous, monolithic effect.

Fabrication & Installation

The reception desk was custom-built using mitered returns in GPPs, all fabricated on-site with appropriate tools and diamond polishing pads. All panels were back-buttered and installed using ANSI A118.15-compliant thin-set mortars. Installers used leveling clips and vibrating suction tools to prevent lippage on the large-format wall.

Creative Materials' Project Coordination Team managed delivery, crating, and jobsite scheduling to ensure a seamless handoff and flawless finish.

Results

The use of GPPs at LUMEN Hotel enhanced both aesthetics and operations. The continuous grain match between the feature wall and reception desk created a gallery-like experience, boosting the lobby's visual impact. Maintenance efficiency improved by over 30% due to the low-porosity, easy-to-clean surface. The executive team viewed the installation as pivotal to the brand's luxury identity. The low VOC content and large-format efficiency also supported LEED goals by contributing credits for low-emitting materials and reduced construction waste.



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Conclusion

Gauged Porcelain Panels combine the elegance of natural materials with the performance, durability, and adaptability of advanced porcelain. Their ability to deliver on scale, sustainability, and long-term value makes them an ideal choice for commercial interiors, exteriors, and branded environments.

At Creative Materials Corporation, we support every stage of your project—from concept to completion—with expert guidance, technical resources, and seamless coordination.

To request samples, sign up for the Gauged Porcelain CEU, or learn more, please contact your dedicated consultant, info@creativematerialscorp.com or call 800.207.2967.

