



A PRAGMATIC SHIFT OF POLYGRANITE SHEETS INSTEAD OF TRADITIONAL METHODS IN CONSTRUCTION INDUSTRY.

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ABSTRACT

The Indian construction industry is a significant economic engine, projected to grow steadily in the coming years, driven by robust government initiatives and increasing infrastructure investments. It is expected to continue growing due to government initiatives, urbanization, and rising incomes. A form of synthetic material used in building and interior design is called polygranite sheets. Typically, resins, polymers, and grains of natural stone are used to make them. Paint is a fundamental part of construction that serves multiple purposes, from protective coatings to aesthetic enhancements. It is not only about colour; it's about improving the longevity, safety, and overall performance of the built environment. Polygranite sheets are known for their durability, resistance to scratches, stains, and heat, and ease of installation and low maintenance.

Key words: Construction, painting, polygranite sheets, durability and design.

I. INTRODUCTION:

The Indian construction industry is a significant economic engine, projected to grow steadily in the coming years, driven by robust government initiatives and increasing infrastructure investments. It's expected to reach USD 2.13 trillion by 2030, with a CAGR of 12.6% from 2024 to 2030. This growth is fuelled by

initiatives like the National Investment Pipeline (NIP) and a focus on urban development and infrastructure projects. The industry also plays a crucial role in employment, with millions working in the construction sector.

Polygranite sheets are a synthetic building material used in interior and exterior applications, offering a lightweight and durable alternative to natural stone like marble or granite. They are typically made from polymers, fillers, and additives, and come in various colors, designs, and thicknesses. Polygranite sheets are known for their durability, resistance to scratches, stains, and heat, and ease of installation and low maintenance. Polygranite sheets are known for their durability, resistance to scratches, stains, and heat, and ease of installation and low maintenance.

II. OBJECTIVES OF THE STUDY

1. To study the polygranite sheets in construction industry
2. To analyse poly granite sheets and painting
3. To measure comparison between polygranite sheet and painting

III. METHODOLOGY OF THE STUDY

The study is conducted using both analytical and descriptive type of methodology. The study primarily depends on primary and secondary data.

Sampling Size and Design

The primary data are collected through survey method. The survey is conducted using well formulated Questionnaire. Multi Stage Random Sampling is applied for generating data. Samples for the purpose of the study are selected systematically.

Sample Selection

The multistage random sampling method is applied to collect the primary data. The random sampling method is applied to obtain the responses from the employees. Hence, the multistage sampling method is justified to collect the samples from the automobile companies.

Secondary Data

The Secondary data are collected from Journals, Magazines, Publications, Reports, Books, Dailies, Periodicals, Articles, Research Papers, Websites, Company Publications, Manuals and Booklets.

IV. REVIEW OF LITERATURE OF THE STUDY

The Indian construction industry is a significant part of the nation's economy, contributing to infrastructure development and employment. It is expected to continue growing due to government initiatives, urbanization, and rising incomes. However, the industry also faces challenges like labor shortages and environmental concerns.

Key aspects of the Indian construction industry

Economic Importance: The industry is a major contributor to India's GDP and employment, creating opportunities across various related sectors.

Growth Potential: Driven by government infrastructure projects, urbanization, and increasing disposable incomes, the industry is poised for substantial growth.

Challenges: The industry faces challenges such as labor shortages, the need for skill development, and the need to adopt more sustainable and eco-friendly practices.

Government Initiatives: The Indian government is actively promoting infrastructure development through policies and investments, aiming to boost economic growth.

Technological Advancements: The industry is increasingly adopting technological advancements like prefabrication, modular construction, and smart building systems to enhance efficiency and sustainability.

Sustainability: Environmental awareness and the need for sustainable practices are gaining traction, with builders and consumers increasingly seeking eco-friendly alternatives.

Skill Development: There is a growing need for skill development initiatives to address the shortage of skilled labour and enhance the workforce's capabilities.

What is polygranite?

A form of synthetic material used in building and interior design is called polygranite sheets. Typically, resins, polymers, and grains of natural stone are used to make them. Although more lightweight and adaptable, polygranite sheets are similar to genuine stone surfaces like granite.

Polygranite sheets are a synthetic building material used in interior and exterior applications, offering a lightweight and durable alternative to natural stone like marble or granite. They are typically made from polymers, fillers, and additives, and come in various colors, designs, and thicknesses. Polygranite sheets are known for their durability, resistance to scratches, stains, and heat, and ease of installation and low maintenance.

Key Features:

Durability: Resistant to impact, scratches, abrasions, and moisture, making them suitable for high-traffic areas.

Versatility: Can be used for various applications, including wall cladding, countertops, flooring, and furniture.

Lightweight: Easier to handle and install than natural stone.

Low Maintenance: Non-porous surface resists dust, moisture, and stains, making them easy to clean.

Variety of Designs: Available in a wide range of colors and marble patterns, including white, beige, black, green, and others, offering the appearance of real marble veins.

Fire-Resistant: Polygranite sheets are inherently fire-resistant, making them a safer option for building projects.

Applications:

Exterior Wall Cladding: Providing a durable and aesthetically pleasing finish for buildings.

Interior Walls: Used for decorative accents, accent walls, or full-wall installations.

- **Countertops:** A durable and stylish alternative to natural stone.

- **Flooring:** Offering a variety of designs and textures for floors.
- **Furniture:** Used for cabinets, shelves, and other furniture pieces.

Installation:

Easy to Install: Lightweight and can be cut to any size or shape, making them easy to install.

No Special Tools Required: Can be installed with standard tools and adhesive.

Maintenance:

Low Maintenance:

Non-porous surface resists dust, moisture, and stains, making them easy to clean.

No Polishing or Sealing Required:

Unlike natural stone, polygranite sheets do not require regular polishing or sealing.

Paint is a fundamental part of construction that serves multiple purposes, from protective coatings to aesthetic enhancements. It is not only about color; it's about improving the longevity, safety, and overall performance of the built environment. Whether it's ensuring the structural integrity of a building, contributing to energy efficiency, or creating a welcoming space, the role of paint in construction cannot be underestimated.

Painting is done to protect the surface from environmental effects, to prevent the wood from decay and metal from corrosion, to provide a decorative finish and to obtain a clean, hygienic and healthy living atmosphere.

1. Protection of Surfaces

- **Weather Resistance:** Paint acts as a barrier to moisture, preventing rust, corrosion, and decay, particularly for metal surfaces and wood. This is especially important for structures exposed to extreme weather conditions like -rain, snow, humidity, or UV rays from sunlight.
- **Corrosion Prevention:** For metal components like steel beams, gates, or railings, special anti-corrosive paints are used. These paints form a protective layer to reduce the effects of oxidation, extending the life of the metal.
- **Waterproofing:** Paints with water-repellent properties are often applied to exterior surfaces to protect against water infiltration, especially in basements, roofs, and exterior walls.

2. Aesthetic Appeal

- **Appearance:** Paint is an essential tool in enhancing the visual appeal of both the interior and exterior of buildings. By adding color, texture, and finishes, paint can help create specific themes, mood settings, or align with architectural styles.
 - **Surface Finish:** Paint provides a smooth, clean, and polished look, covering up imperfections in surfaces like walls, ceilings, and wooden doors or windows.
4. **Health and Safety:** These paints are often used in hospitals, schools, kitchens, and bathrooms to prevent the growth of harmful microorganisms like mold, mildew, and bacteria. This contributes to maintaining a healthy indoor environment.

Traditional Materials in Home Improvement

Traditional materials have long been utilized in home improvement projects, offering a sense of familiarity and timelessness. Some of the commonly used traditional materials include wood, marble, and ceramic tiles. Each of these materials possesses its own unique characteristics and aesthetic appeal.

Wood has been a staple in home construction and renovation for centuries. It exudes warmth, elegance, and a natural beauty that can enhance any living space. However, wood requires regular maintenance to preserve its appearance and protect it from moisture, pests, and wear. Additionally, it may be susceptible to scratching, fading, and warping over time.

Marble, known for its luxurious and sophisticated look, has been a popular choice for counter-tops, flooring, and accents. Its natural veining and wide range of colours create a timeless appeal. However, marble is a porous material and can be prone to staining and etching. It also requires periodic sealing and delicate care to maintain its pristine condition.

Ceramic tiles, available in various shapes, sizes, and designs, have been widely used in kitchens, bathrooms, and flooring applications. They offer durability, water resistance, and a wide range of style options. However, ceramic tiles can be susceptible to cracks and chips, especially in high-traffic areas. Grout lines may also require regular cleaning and maintenance to prevent discoloration and bacterial growth.

While traditional materials have their own charm and advantages, an increasing number of end users are opting for modern solutions like polygranite sheets. Polygranite sheets offer a compelling alternative due to their remarkable durability, versatility, and aesthetic appeal. With the advancement of technology, polygranite sheets can now simulate the appearance of traditional materials while providing superior resistance to wear, stains, and impact.

Comparison: Polygranite Sheets vs. Traditional Materials

Polygranite sheets have gained significant popularity among end users in recent years, with many opting for this modern solution over traditional materials in their home improvement projects. In this comparison, we will explore the reasons behind this shift in preference and highlight the advantages of polygranite sheets over traditional materials.

When it comes to durability and resilience, polygranite sheets have a clear edge over traditional materials. Polygranite sheets are composed of a blend of polymers and granite particles, resulting in a highly durable and impact-resistant surface. They can withstand heavy foot traffic, resist scratches, stains, and chipping, making them ideal for high-traffic areas like kitchens and bathrooms. In contrast, traditional materials such as wood, marble, or ceramic tiles are more susceptible to wear and damage over time.

Aesthetic appeal and design possibilities are another area where polygranite sheets shine. They are available in a wide range of colours, textures, and patterns, allowing for versatile design options to suit any interior style. Whether you prefer a sleek and modern look or a classic and timeless design, polygranite sheets offer flexibility and customization that traditional materials may struggle to match. Additionally, the patterns and colours of polygranite sheets are consistent, eliminating the natural variations found in traditional materials.

Installation and maintenance are also key factors in choosing between polygranite sheets and traditional materials. Polygranite sheets are relatively easy to install, often requiring fewer specialized tools and skills.

compared to materials like wood or ceramic tiles. They can be cut to size and easily fitted into place. Moreover, polygranite sheets require minimal maintenance. They are non-porous, making them resistant to stains, and they do not require sealing or regular polishing like some traditional materials do.

In terms of environmental considerations, polygranite sheets offer a more sustainable choice. They are recyclable and can be manufactured using recycled materials, reducing waste and environmental impact. Traditional materials often involve mining and quarrying processes, which have a significant ecological footprint.

V. COMPARISON AND DISCUSSION

Painting Cost:

Distemper: ₹10-₹20 per sq. ft.

Emulsion: ₹20-₹40 per sq. ft.

Enamel: ₹25-₹50 per sq. ft.

Texture and Designer Paints: ₹80-₹150 per sq. ft.

Fresh Painting (Per sq. ft.): ₹18 to ₹60

Repainting (Per sq. ft.): ₹14 to ₹45

Polygranite Cost:

The price of a poly granite sheet is 60 to 80 rupees per square foot.

Prices range from Rs 120 to Rs 180 per square foot, including installation.

Polygranite Sheets: Range from ₹1,000 to ₹3,000 per sheet, depending on thickness, design, and supplier.

Customers are not bothered about the cost or price. They always think about tastes and their preference of designs. Now a days customer prefer new look and uniqueness of designs and colours.

VI. CONCLUSION OF THE STUDY

The comparison between polygranite sheets and traditional materials clearly showcases the advantages of the modern solution. Polygranite sheets offer superior durability, a wide range of design possibilities, easier installation, lower maintenance requirements, and environmental benefits. These factors explain why end users are increasingly opting for polygranite sheets in their home improvement projects, seeking a stylish and durable solution that meets their needs for the long term. Painting works in construction are integral to the final presentation and protection of a building. From selecting the right paint and preparing surfaces to applying coats and finishing touches, every step plays a vital role in achieving a successful result. Now a day's people prefer polygranite sheet instead of painting because of long durability and customer selected design. These sheets look like as granite and looks very awesome in interior designs of the walls. Present study clearly explains that customers are not considering cost of the constructions, they thinking to a high-quality, long-lasting finish that enhances the beauty and durability of their construction, so they choose poly granite instead of painting.

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