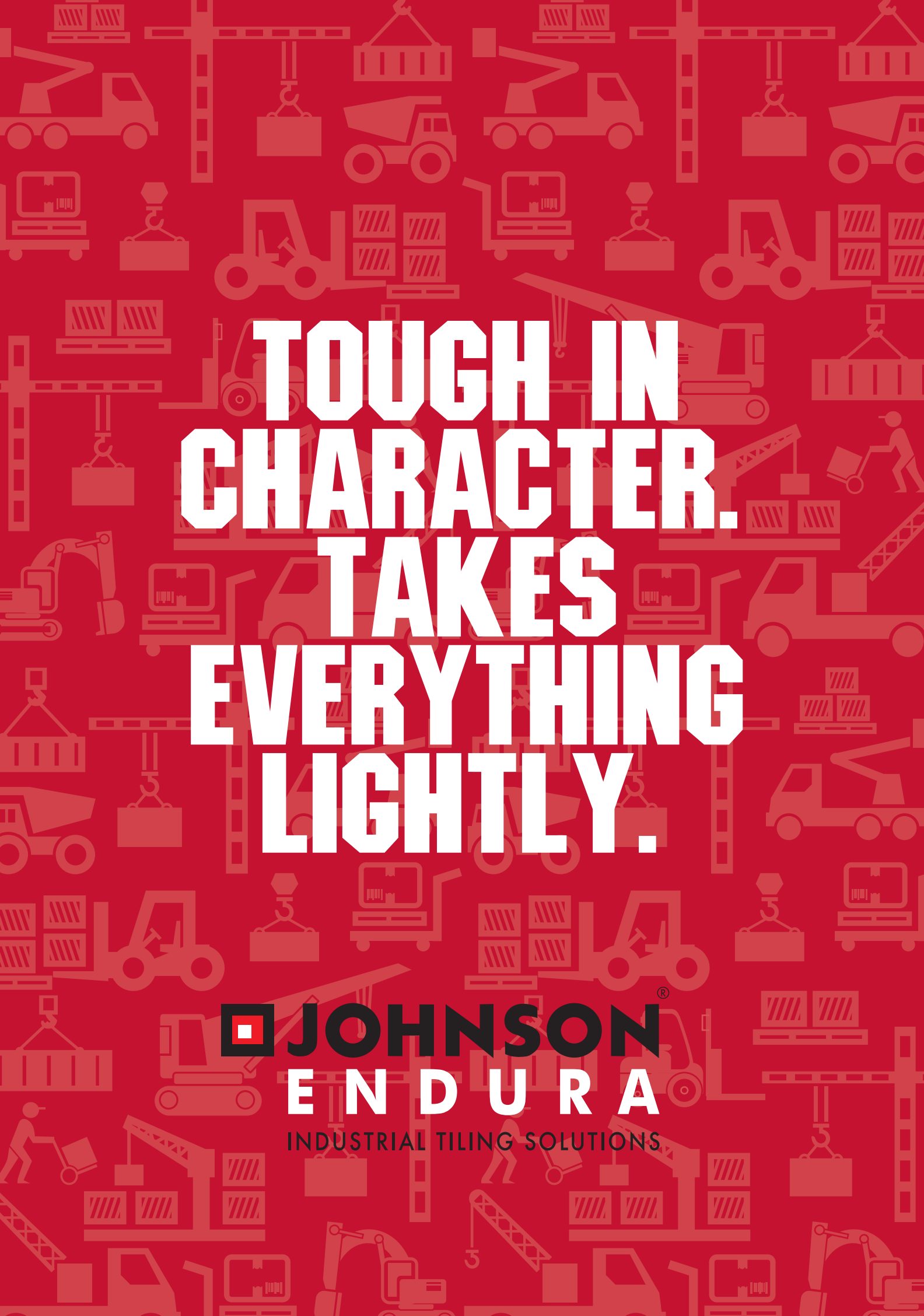


The background is a solid red color with a repeating pattern of white industrial icons. These icons include various types of trucks (concrete mixers, dump trucks, flatbeds), forklifts, cranes, excavators, and pallets with boxes. The icons are arranged in a dense, overlapping manner, creating a textured effect.

**TOUGH IN
CHARACTER.
TAKES
EVERYTHING
LIGHTLY.**

 **JOHNSON**[®]
ENDURA
INDUSTRIAL TILING SOLUTIONS



index

Hi-Traffic	4	Frequently Asked Questions	126
• Sandex Series	6	Technical Specifications	
• Sandex Plus Series	16	• Hi-Traffic & Industrial Tiles	132
• Plain Series	18	• EDC Designer Collection Tiles	
• Colour Series	20	- 1.2cm Thick	133
• Good Grip Series	22	- 1cm Thick	134
• Step Tile Series	27	• Cool Roof Tiles	135
• Super Grip Series	28	• Meteor Tiles	136
• Tac Tile Series	30	• Anti-Static Series	137
• Pavers Series	34	• Swimming Pool Tiles & Fittings	138
Designer Collection	36	• CladStone	139
Cool Roof	66	Packaging Details	140
Meteor	74	Select Clientele	141
Industrial	88	Success Stories	145
• Plain Series	90	Tile Fixing Instructions	146
• Colour Series	100	Recommended Tile Matrix	147
• Textured Series	100	End-to-End Solutions	148
• Anti-Static Series	106	Manufacturing Excellence	151
Swimming Pool	110	Pioneering Innovations	152
• Pool Tiles	112	Research & Development	153
• Pool Fittings	114	Green Initiative	154
• Step & Edge Tiles	116	Certifications	155
CladStone	120	Awards	156
• CladStone Series	122	Contact Details	159
Application Areas	124		



HI-TA





TRAFFIC



Endura Hi-Traffic tiles are best suited for places with heavy footfalls like commercial buildings, malls, schools, parking lots, driveways, pathways, pavements, etc. They are scratch resistant and resistant to UV rays which make them perfect for outdoors.

Sandex Collection 60X60cm

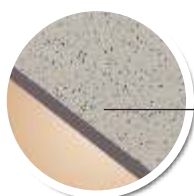
Exterior flooring is prone to wear and tear caused by heavy pedestrian and vehicular traffic. The challenge here is to meet these demands without hampering aesthetics or adding to maintenance costs. The Endura Sandex collection strikes a perfect balance between aesthetics, functionality, and cost. Its comprehensive range of flooring solutions enables you to make your garden, pathway, patio, porch area, shopping mall, hyper mart or automobile showrooms “as attractive as any indoor room”. Endura Sandex is a full body vitrified tile that stands apart when compared to other matt GVT & scratch resistant ceramic tiles owing to its full body characteristics, and is recognized and accepted as the best long term performing product in the industry. The Endura Sandex collection comprises of full body vitrified tiles in beautiful, natural earthen shades, in two exclusive textures - Neutral and Plus - that offers tremendous design opportunities for discerning customers.

The Sandex Neutral texture is a matt antiskid finish that is ideal for all types of exterior applications subjected to high pedestrian traffic or light vehicular movement, and wherever high antiskid properties and safety standards are desired. Its non-slip finish with a high coefficient of friction makes it an ideal choice for use in driveways, gardens, skywalks, terraces etc.

The Sandex Plus texture provides a finish in-between neutral & satin surface, and is recommended for internal applications. This finish makes ease-of-cleaning a breeze, making it ideally suited for floors subjected to high foot-fall coupled with a need for a high level of aesthetics and easy of maintenance, such as hyper marts, hospitals, educational institutions, restaurants, automobile showrooms etc.

Endura Sandex

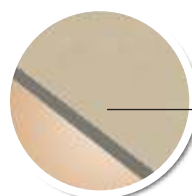
- Full body vitrified tile
- Neutral matt Finish
- Antis-skid property with high coefficient of friction
- Suitable for high pedestrian and light vehicular traffic
- Salt & Pepper designs in earthen shades
- Scratch resistant
- Tough and durable
- Low recurring or maintenance cost
- Suitable for driveways, gardens, auto workshops, skywalks etc



Unique
Anti-Skid surface

Endura Sandex Plus

- Full body vitrified tile
- Neutral-to-Satin finish
- Easy to clean - no footmarks
- Suitable for interior applications
- Salt & Pepper earthen shades
- Scratch resistant
- Tough and durable
- Low maintenance cost
- Suitable for hyper marts, retail chains, religious places, restaurants, educational institutions, hospital corridors etc



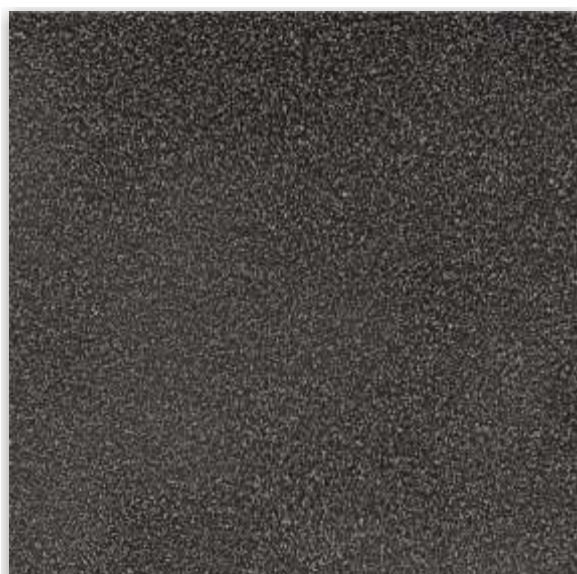
Unique Satin
easy clean surface







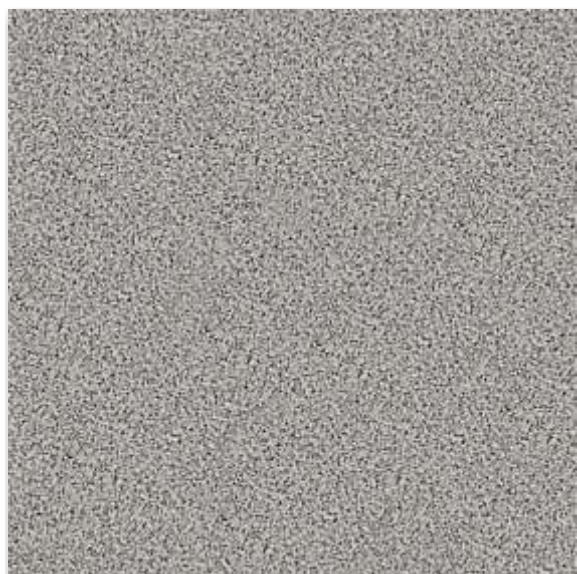
sandexsaltandpepperseries 60X60cm 1cmthick



Benaulim P



Candolim P



Donapaula P



Majorda P





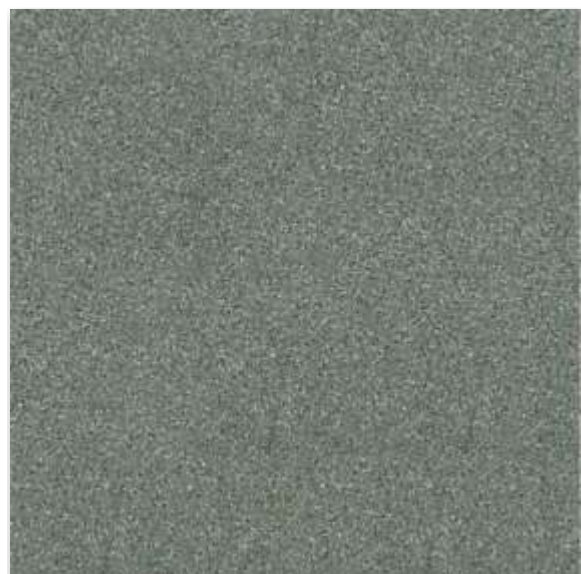
sandexsaltandpepperseries 60X60cm 1cmthick



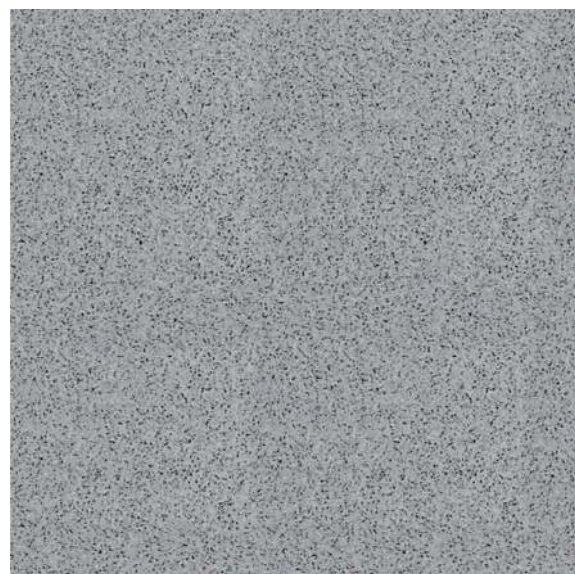
Miramar P



Velsoa P



Colva P



Vaga P

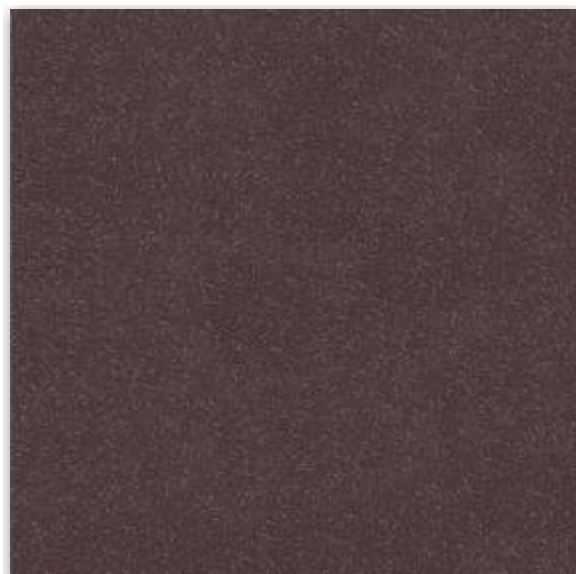




sandexsaltandpepperseries 60X60cm 1cmthick



Gmalo P



Palolem P



Grey P



Terracotta P

P Pen

● Made to order. Required time : 45 days. Minimum quantity : 2500sqm. ● Made to order. Required time : 30 days. Minimum quantity : 1500sqm.





sandexsaltandpepperseries 60X60cm 1cmthick



Ivory P

sandexcoatedseries 60X60cm 1cmthick



Grey Coated P



Ivory Coated P

sandexplusseries 60X60cm 1cmthick



Au Black Plus P



White Plus P



Terracotta Plus P



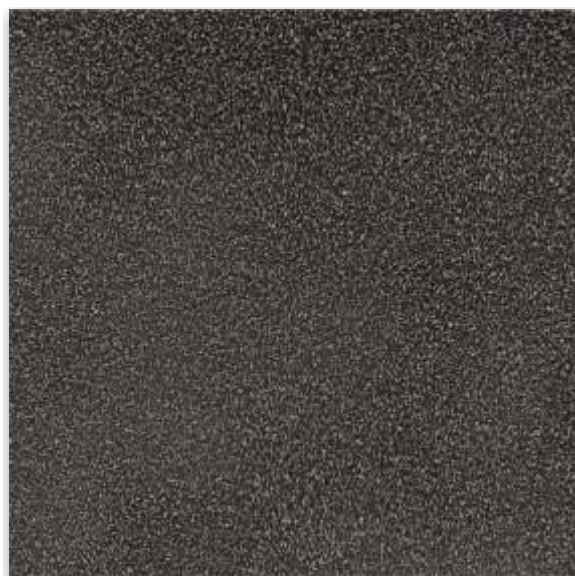
Grey Plus P



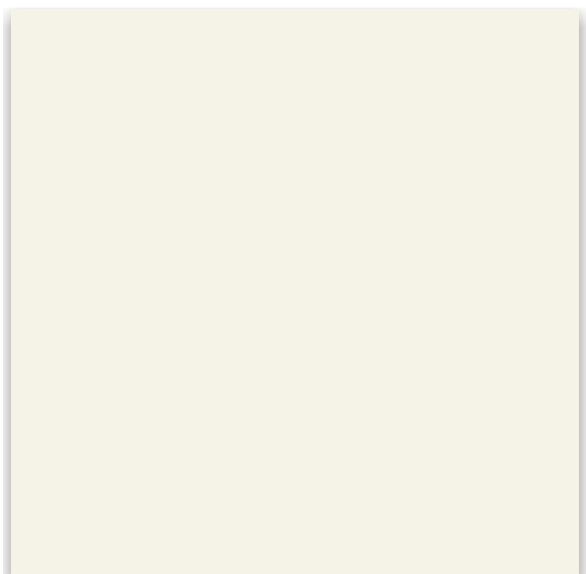
sandexplusseries 60X60cm 1cmthick



Miramar Plus P



Benaulim Plus P



Adoks Chalk P



Stiria Beige P

plainseries 40X40cm 1cmthick



Ivory Plus 



Terracotta Plus 



Grey Plus 



plainseries 30X30cm 1cmthick



Ivory Plus 



Terracotta Plus 



Grey Plus 



plainseries 30X30cm 1cmthick



Grey D/K

D Dewas D/K Dewas & Kunigal

● Made to order. Required time : 45 days. Minimum quantity : 2500sqm.







colourseries 30X30cm 1cmthick



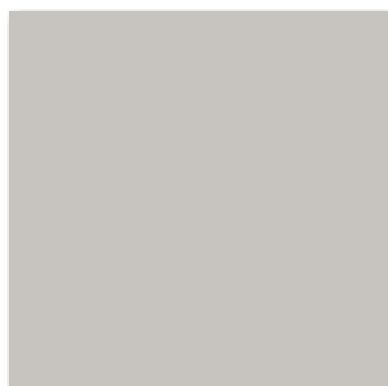
Super Ivory D/K



Yellow D/K



Tata Blue D/K



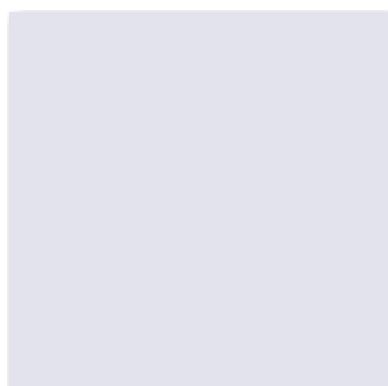
Coated Grey D/K



Red D



Coated Black D



White Plus D/K



Green D

D Dewas K Kunigal D/K Dewas & Kunigal

Made to order. Required time : 45 days. Minimum quantity : 2500sqm. Made to order. Required time : 60 days. Minimum quantity : 2500sqm.

goodgripseries 30X30cm 1cmthick



Ivory Plus D/K Terracotta Plus D/K Grey Plus D/K



Ivory Plus D/K Terracotta Plus D/K Grey Plus D/K



Ivory Plus D/K ● Terracotta Plus D/K ● Grey Plus D/K ●



goodgripseries 30X30cm 1cmthick

Polka Delta Dot

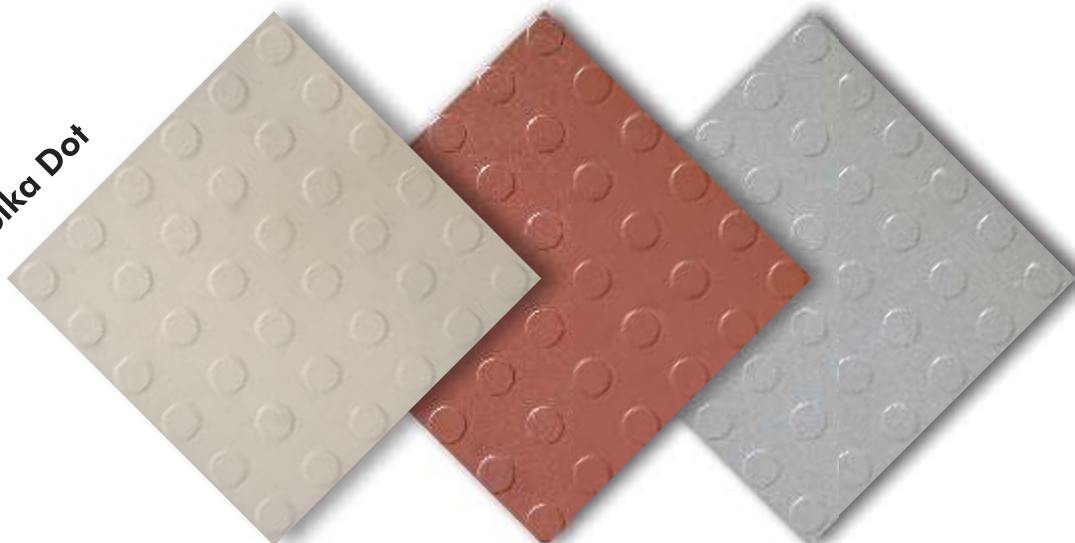


Ivory Plus D/K

Terracotta Plus D/K

Grey Plus D/K

Polka Dot



Ivory Plus D/K

Terracotta Plus D/K

Grey Plus D/K

Polka Dot Strip



Ivory Plus D/K ●

Terracotta Plus D/K ●

Grey Plus D/K ●





goodgripseries 30X30cm 1cmthick

Polka Rectangle



Ivory Plus D/K

Terracotta Plus D/K

Grey Plus D/K

Polka Strip



Ivory Plus D/K ●

Terracotta Plus D/K ●

Grey Plus D/K ●

wavy

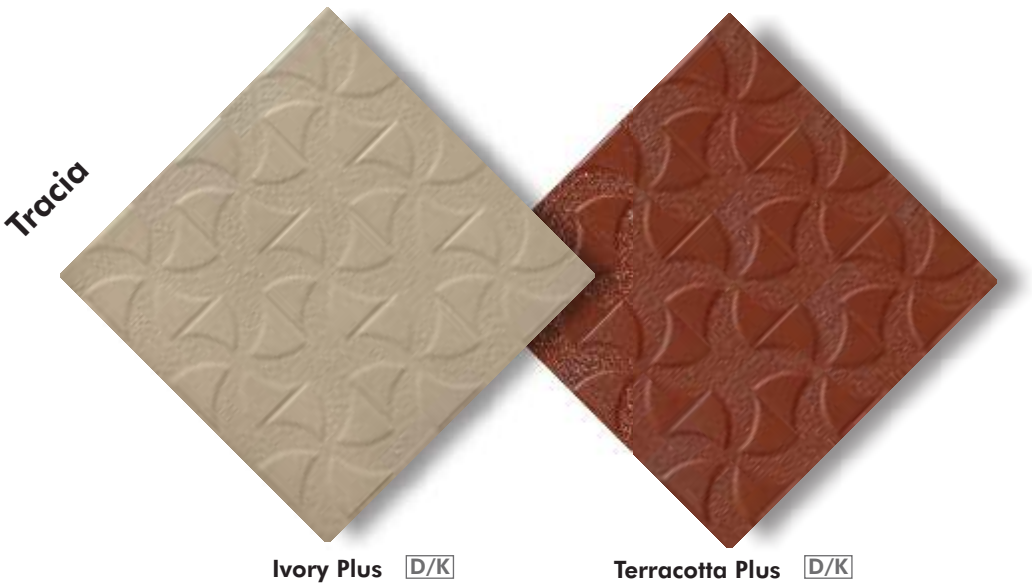
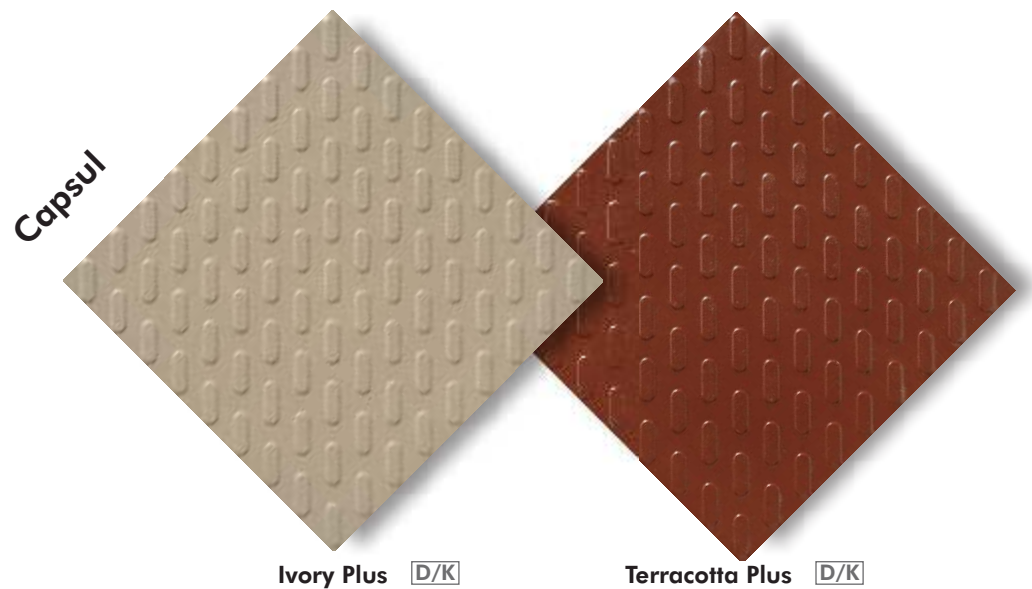


Ivory Plus D/K

Terracotta Plus D/K

Grey Plus D/K

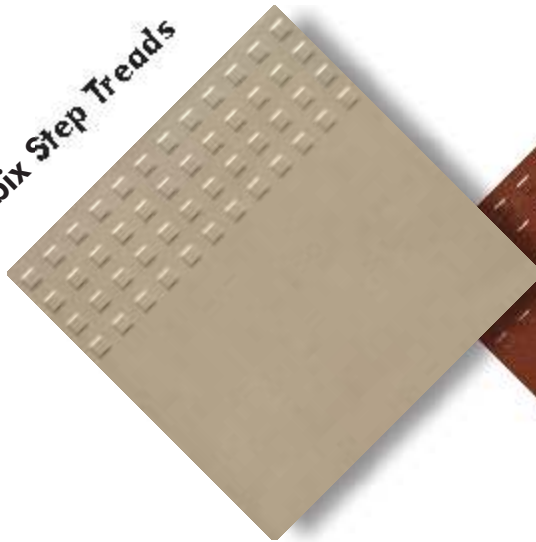
goodgripsseries 30X30cm 1cmthick



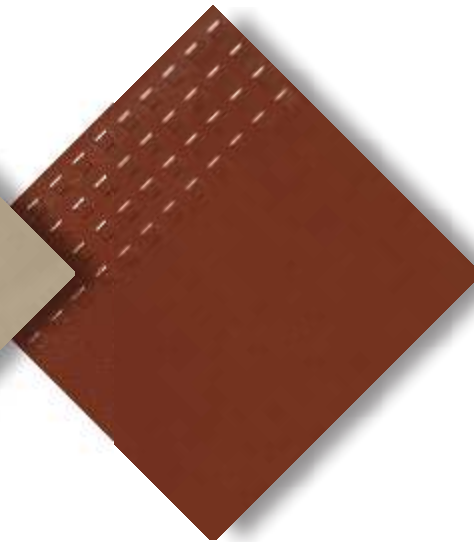


step**tile**series 30X30**cm** 1**cm**thick

Cubix Step Treads

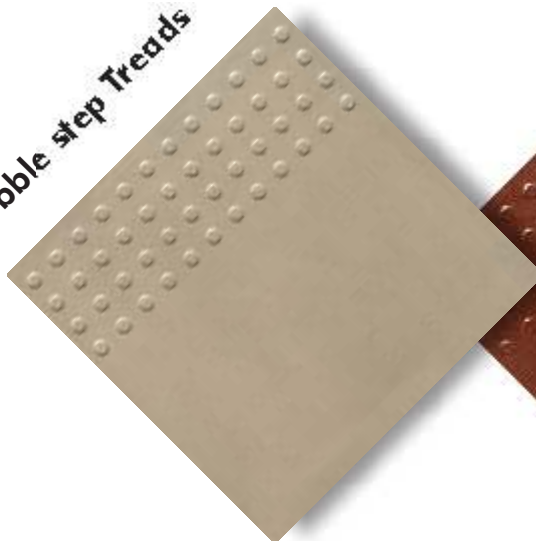


Ivory Plus D/K

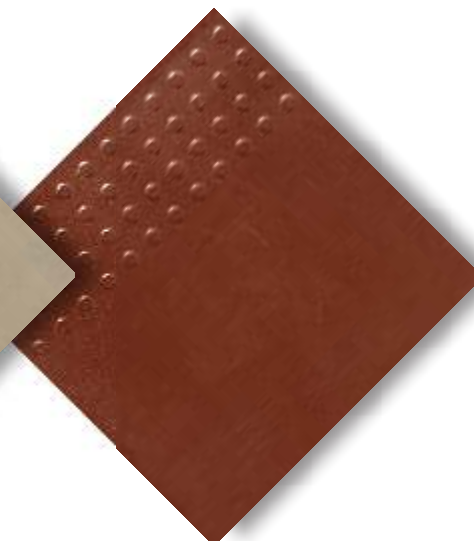


Terracotta Plus D/K

Bubble step Treads



Ivory Plus D/K



Terracotta Plus D/K

supergripseries 30X30cm 1cmthick



Ivory Plus **D/K** Terracotta Plus **D/K** Grey Plus **D/K**



● Ivory Plus **D** ● Terracotta Plus **D** ● Grey Plus **D**

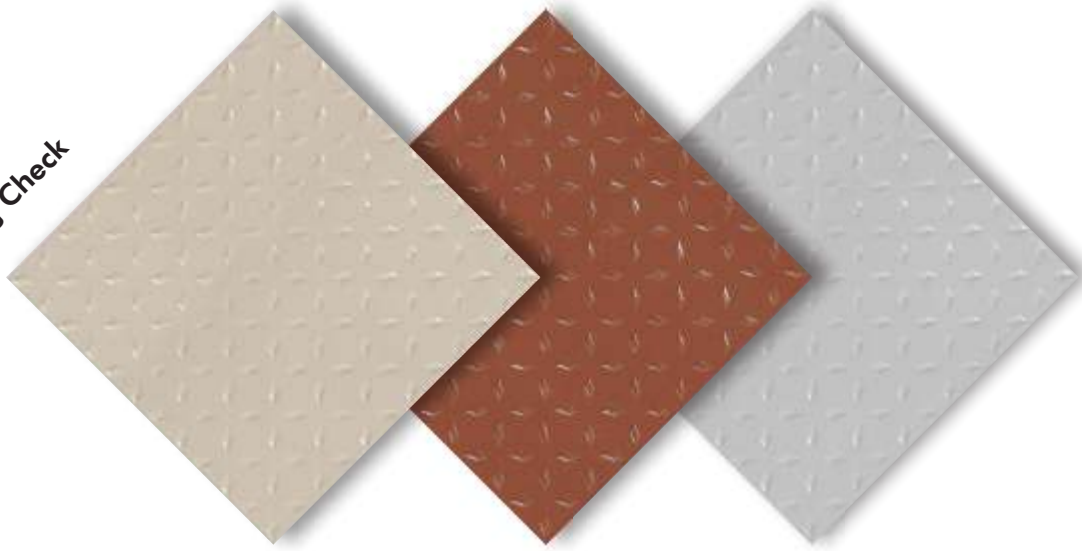


● Ivory Plus **D** ● Terracotta Plus **D** ● Grey Plus **D**



super**grip****s**series 30X30**cm** 1**cm****thick**

Big Check



Ivory Plus **D/K**

Terracotta Plus **D/K**

Grey Plus **D/K**



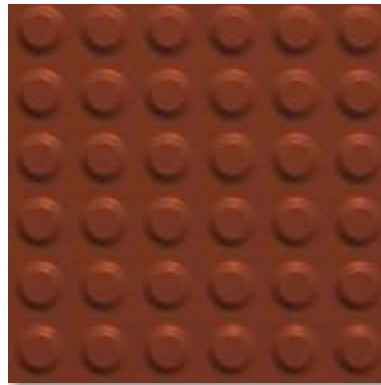




tactileseries 30X30cm 1.5cmthick



Tac Button Ivory Plus 



Tac Button Terracotta Plus 



Tac Button Yellow Plus 



Tac Liner Ivory Plus 



Tac Liner Terracotta Plus 



Tac Liner Yellow Plus 

What are Tactiles?

Tactiles (also called truncated domes, detectable warnings, Tactile ground surface indicators, detectable warning surfaces) are unique non-fade, non-slip ground surface indicators. These indicators provide cues, which combined with other environmental information, assist visually challenged people with their orientation.

Tactile warnings provide a distinctive surface pattern of "truncated domes" (which are small domes that have had their tops cut off, or truncated) or "truncated bars" detectable by long cane or underfoot which are used to alert visually challenged people of their approach to streets and hazardous drop-offs - thereby alerting them of impending danger from oncoming vehicles or a change in path gradient.

Tactile ground surface indicators are an important and mandatory design element in all modern construction and public infrastructure projects. The Johnson Endura Hi-Traffic Tactile collection has been designed with emphasis on reliability, safety, dignity and independence for visually challenged people.





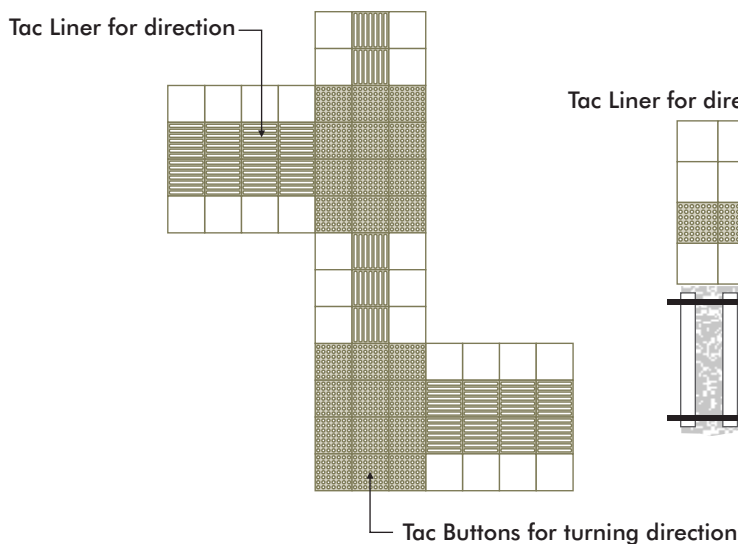
Endura Tactiles - Benefits & Features

- Specially designed to assist the visually impaired - "Foot Braille".
- Special textures & colors for use as "Warning Floor Tile" located at areas of risk.
- Vitrified porcelain body suitable for exterior or interior application - frost, heat and weather proof.
- Corundum finish for enhanced hardness and slip-resistance.
- Standardized designs which conform to with RNIB (The Royal National Institute for the Blind, UK), DETR (Department of the Environment, Transport and the Regions, UK) & ADA (Americans with Disabilities Act, USA).
- Two types of textures to suit a variety of applications.
- Colours that best represent areas requiring demarcation.
- Low water absorption, below 0.5% - high strength and durability.
- High stain and chemical resistance.
- Four times more abrasive resistant than concrete or polymer based products.
- Support services : drawings / layouts etc.

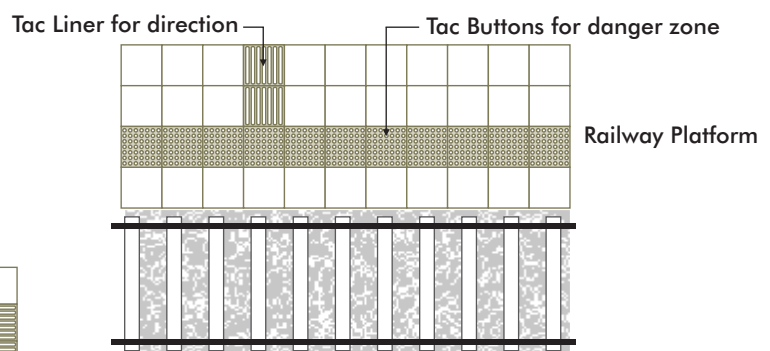
Technical Characteristics

- Fully vitrified unglazed porcelain tile.
- Low water absorption, below 0.5%.
- Approved profiled tactile design.
- Approved size = 30cm x 30cm x 1cm.
- Tac Button Profile = 1cm + 0.45cm.
- Tac Liner Profile = 1cm + 0.45cm.
- Corundum addition for Mohs hardness >7.
- Excellent slip resistance.
- Very dense, durable and abrasion resistant.
- Solid through color - fade proof.
- High chemical and stain resistance.

For Direction & Turning



Danger Zone



20X20 Vitrified Paving Tiles

The outdoor area of your house tells a lot about your stature. In fact, it creates the first impression that further complements your elegant interiors. Now beautify your outdoor areas with Johnson Endura Pavers, a collection of 20X20 cm fully vitrified paving tiles. With its unique small size and palette of 9 lively colours Endura Pavers enable you to create the mix and match combinations of your choice. The tiles are virtually maintenance free owing to their ability to resist impacts, scratches, stains, chemicals and frost. Its incredible strength and textured, anti-skid surfaces make it a perfect choice for sloping ramps, entrance lobbies, pathways, patios, parking areas, swimming pool decks and garden pathways. Easy to install, Johnson Endura Pavers are an ideal solution for renovation as they can be installed over existing concrete. An amazing melange of elegance, strength and practicality, Johnson Endura Pavers are designed to give new lease of life to your outdoor areas.





paversseries 20X20cm 1cmthick



Terracotta D



White D



Grey D



Yellow D



Black D



Brown D



Blue D



Green D



Pink D



DESIGN
COLLEGE

GENERATION PROTECTION

Johnson now introduces
the product range which
adds the element of beauty
and aesthetics to its robust
all-weather flooring options.

Elegant, Durable and
Coordinated flooring solutions.

 **JOHNSON**[®]
ENDURA
INDUSTRIAL TILING SOLUTIONS



Beauty that goes beyond
what meets the eye.

beauty/strength

Why do beauty and strength have to be a matter of choice? Do we really have to let go of one to choose the other? Why can't they exist in harmony? At Johnson we set out to find answers to these questions. And the quest came to a fruitful culmination with the 1.2cm Endura EDC collection. They are Matt Glazed Vitrified Tiles (GVT). Which means they are robust, skid-resistant, and all-enduring. It comes in a series of four exotic design categories – Cotto, Wood, Cemento, Slate. Making them a practical and sensible alternative to actual stone, wood, cement or even slate.

Maximum Variety Minimum Care

The range has been conceived as a range of Art Deco tiles; with every collection coming with its own motif and highlighter tiles. Altogether, they help you create that stately, heritage look for your living spaces. And just as their beauty begins to cast a spell on you, their sheer strength and endurance gives you a sense of reassurance only a few tiles in its category could afford. And it is this quality of being beautiful inside out is what makes it ideal for high-traffic areas like Malls, Retail Showrooms, or even your dream home. Come see for yourself, a revelation of beauty and strength, ready to permeate every aspect of your living spaces.

E D C 12³
ENDURA
Designer Collection



distinctive values >

Main features :

Dimensions: 30 x 30 cm & 1.2 cm thick.

Why Endura Designer Collection?

The unique Endura Designer Collection Glazed Vitrified tiles are 1.2 cm thick and are also made scratch-resistant and stain resistant through a special Glazed Vitrification process. Two unique properties that make them the perfect choice, if you seek an all-enduring and an aesthetically pleasing ambience. Along with these there several other aspects to the Endura EDC 1.2cm that make it the tile you would choose with eyes closed -

- **Strong Body**

Vitrified with high sheer and tensile strength. It means longevity and durability even in the most high traffic applications and performance in higher temperature variations.

- **Robust Surface**

Layers of special glazes and coating that provide slip-resistance, scratch-resistance and robustness to perform under high footfall traffic conditions, while keeping a fresh and new look, intact for years to come.

- **Elegant Designs**

Designed keeping in mind the post-application flow, shades and textures; thereby maintaining design harmony and semblance in mix-matched patterns.

- **So Casually Random**

Nature is unpredictable. And in this unpredictability lies its beauty. That's why every EDC tile comes with varying patterns that put them on a pedestal right below nature. Adding beauty to its nature-inspired concepts - Cotto, Wood, Slate and Concrete.

- **Wide Applications**

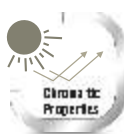
Entrance lobbies, courtyards, restaurants, schools, shopping areas, terraces, passages, balconies, exteriors, and more; Basically any high-traffic area that demands to look pleasing, demand the use of Endura EDC. Not just for external use, these concepts just suit compliment internal applications, especially when your theme demands rich, earthen shades, a contemporary yet rustic theme.

- **Minimum Care**

With the upper surface being totally sealed it leaves no room for porosity or absorb anything. Which means you get to flaunt all you want, without a care.

Come, touch and feel this unique collection and realise its potential for your project – no matter big or small, commercial or residential, external or internal. And then you'll experience it in all its beauty and strength.

We recommend usage of 3-4 mm spacers and Ardex Endura grouts for EDC installations in your project as per international tile fixing standards.





cementoseries 30X30cm 1.2cmthick



Cemento Verde 1 [D]



Cemento Verde 2 [D]



Slate Grey Art 1 [D]



Cemento Verde 3 [D]



Cemento Verde 4 [D]



Cemento Portland 1 [D]



Cemento Portland 2 [D]



Slate Grey Art 2 [D]



Cemento Portland 3 [D]



Cemento Portland 4 [D]

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



cementoseries 30X30cm 1.2cm thick



Cemento Cool Grey 1 



Cemento Cool Grey 2 



Cemento Cool Grey 3 



Cemento Cool Grey 4 



Cemento Ash 1 



Cemento Ash 2 



Cemento Ash 3 



Cemento Ash 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



cottoseries 30X30cm 1.2cm**thick**



Cotto Classic 1 



Cotto Classic 2 



Cotto Art 1 



Cotto Classic 3 



Cotto Classic 4 



Cotto Rosso 1 



Cotto Rosso 2 



Cotto Art 2 



Cotto Rosso 3 



Cotto Rosso 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



cottoseries 30X30cm 1.2cm**thick**



Cotto Ivory 1 



Cotto Ivory 2 



Cotto Ivory 3 



Cotto Ivory 4 



Cotto Beige 1 



Cotto Beige 2 



Cotto Beige 3 



Cotto Beige 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



slateseries 30X30cm 1.2cm**thick**



Slate Anthracite 1 



Slate Anthracite 2 



Slate Grey Art 1 



Slate Anthracite 3 



Slate Anthracite 4 



Slate Light Grey 1 



Slate Light Grey 2 



Slate Grey Art 2 



Slate Light Grey 3 



Slate Light Grey 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



slateseries 30X30cm 1.2cmthick



Slate Dark Grey 1 



Slate Dark Grey 2 



Slate Dark Grey 3 



Slate Dark Grey 4 



Slate Light Beige 1 



Slate Light Beige 2 



Slate Light Beige 3 



Slate Light Beige 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



woodseries 30X30cm 1.2cmthick



Trunk Sleeper 1 



Trunk Sleeper 2 



Trunk Art 1 



Trunk Sleeper 3 



Trunk Sleeper 4 



Trunk Antique 1 



Trunk Antique 2 



Trunk Art 2 



Trunk Antique 3 



Trunk Antique 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.



woodseries 30X30cm 1.2cmthick



Trunk Vogue 1 



Trunk Vogue 2 



Trunk Vogue 3 



Trunk Vogue 4 



Trunk Timber 1 



Trunk Timber 2 



Trunk Timber 3 



Trunk Timber 4 

* Four types of design patterns as shown for each SKU represents randomness to augment natural flow of design and shall be available in varying quantities within each box to supplement the same.

Endura is the first and most respected Brand in the industrial and commercial flooring. It offers range of products addressing high wear and tear, attack of chemicals, frost resistance, slip resistance and performance under high dynamic and static pressure. Endura exterior tiling solutions that include parking tiles and pavers, are known for its elegance, durability and performance. In special tiling solutions, Endura offers Swimming pool tiles, external wall cladding tiles, Anti-static tiles, Tac tiles for visually challenged people and cool-roof tiling for terraces.

Johnson now introduces the product range which adds the element of beauty and aesthetics to its robust all-weather flooring options. **EDC – Endura Designer collection!**

Elegant, Durable and Coordinated flooring solutions.

Johnson product philosophy – ‘Tile is not the End-product’ remains the guiding principle for our product development team and EDC is designed to create Flooring Concepts, not just Tile. The collection brings the culmination of Durability, Functionality and Aesthetics for your floors.

Presented here are the elements of strength and aesthetics in the size of **30 cm x 30 cm**. You shall be pleased by EDC flooring created by a single element or by combining complementary elements as per your designing instinct!

Some of the Value propositions of EDC are

- **Strong Body** – EDC tiles are vitrified with high sheer and tensile strength. It means longevity and durability in most practical applications and usage even in huge temperature variations.
- **Robust Surface** – EDC has layers of special glazes and coating that provides slip resistance, scratch resistance and superb robustness to perform under high footfall traffic conditions. over a very very strong body It brings slip resistance and scratch resistance. The flooring looks fresh for years to come even in high traffic situations.

Elegant Designs – EDC elements are designed keeping in mind the post application flow of design, shades and textures. Some of the basic patterns are shown in this small presentation which would encourage you to explore further and create a personalised floor pattern!

Wide Application – Spaces subject to high wear and tear, entrance lobbies, courtyards, restaurants, schools, shopping areas, terraces, passages, balconies, exteriors, etc; many of these concepts just suite to internal applications when your theme demands rich, earthen shades, stony appearance and a contemporary rustic theme and you do not mind an extra strength to come inside your house.

Minimum Care - The upper surface is totally sealed. Practically, no porosity to absorb anything is another quality that makes it a perfect flooring option. Go all out on EDC floor and maintain the same with minimum care.

We request you to physically see, feel and touch this unique collection and realize its potential for your project – big or small, commercial or residential, external floor or internal flooring. After all, a photograph printed on the paper cannot represent the actual product with all its beauty and strength!

We also recommend usage of 0.3-0.4 cm spacers and Ardex Endura grouts for EDC installations in your project as per the international tile fixing standards.

EDC
ENDURA
Designer Collection





enduradesignercollection 30X30cm



Inlay Ash [K]



Urbano Mix [K]



Urbano Gris [K]



Marc [K]



Marc Feature [K]



Parx Slate [K]



Flowcept Choco [K]



Flowcept Azul [K]

enduradesignercollection 30X30cm



Cross Ochre D/K



Cross Chalk D/K



Cross Nero D/K



Stonecept Light D/K



Stonecept Dual D/K



Cross Wood D/K



Stonecept Feature D/K



Stonecept Dark D/K



Aspire Mix K



Flocept



62 Vintage

endura**designer**collection 30X30cm



Flocept Light D/K



Flocept Dual D/K



Flocept Feature D/K



Flocept Dark D/K



Royal Moss D/K



Royal Rust D/K



Vintage Feature D/K



Vintage Mocha D/K



Pallets Rust K

endura**designer**collection 30X30cm



Mixstone Gris D



Warm Blend D/K



Warm Blend LT K



endura**designer**collection 30X30cm



Blocks Gris D/K



Parx Gris D/K



Rockcept Light D



Blocks Ochre D/K



Parx Rust D/K



Rockcept Dark D



Cella Mocha D/K



Cella Gris D/K



Cella-sierra D/K

COOL





ROOF

**Endura Cool Roof tiles
reflect sun rays thereby
help keep the inside
temperature cool and also
save energy.**

 **JOHNSON**[®]
ENDURA
INDUSTRIAL TILING SOLUTIONS



ENDURA

COOL ROOF

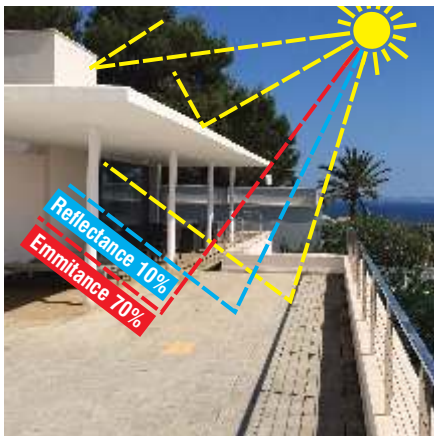
SRI TILES

Summers. They have a knack of bringing out the worst in us. Especially Indian summers. The sun shines with a vengeance and lets rip its heat upon us. What if we told you that you can now beat the heat inside your home? That your interior temperature could be cooler by 10 – 15° C without increasing load on your cooling appliances? Sounds unbelievable? Understandably, so. Presenting Johnson Endura Cool Roof SRI tiles. A range of unique tiles that keep the harsh rays of the sun off your building and bounce them back into the atmosphere. The upshot of an ingenious Glazing Process, these tiles help keep the room temperatures cool naturally and therefore helps reduce load on external cooling appliances like your air-conditioner or cooler. Now, imagine all the savings on your electricity bills while you sit cosily, within the cool comforts of your home. Lay them out on your terrace, your balcony or exterior walls directly exposed to sunlight and they will continue to perform for years to come.

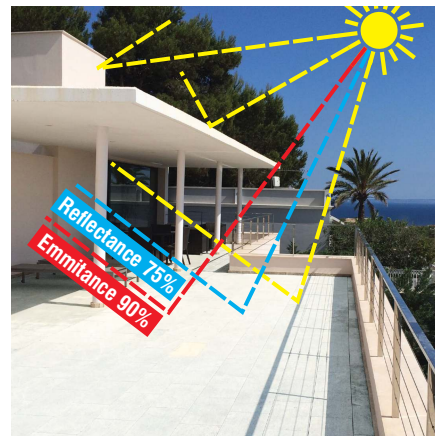


What is SRI?

- Solar Reflective Index (SRI) measures the surface's ability to reflect solar heat and emit infra-red heat.
- Endura Cool Roof SRI tiles reflect solar heat and emit absorbed radiation back into the atmosphere thus help keep the interiors of the building cooler.
- The U. S. Green Building Council's LEED 2.2 uses SRI as a way to evaluate the surface's capacity to reflect solar heat. The roof of the building need to have a minimum SRI value of 78 to qualify for LEED accreditation.
- Endura Cool Roof SRI Tiles have SRI value >90 (White Colour).
- Endura Cool Roof SRI Tiles on the roof and facades of the building can reduce inside temperature by 10° to 20° celsius.



Ordinary Roof



Roof having Endura Cool Roof SRI

The Revolutionary Technology

With Endura we have devised a special process of glazing that makes the tiles reflect most of the solar heat. The special glaze is composed of Alumina silicate fine particles embedded with nano particles of zirconium silicate and zinc oxide admixtures, fired at a very high temperature. The result is tile surface having a Solar Reflective Index (SRI) value above 90 (White Colour).

Endura Cool Roof Tile Size & Thickness



White

Endura Cool Roof SRI tiles are offered in satin matte finish that provides anti-skid surface making them safe and practical for terraces, roofs, pavements etc. They come in a convenient size of 30 X 30 cm and thicknesses of 1 cm and higher .*

* Higher thickness are available on made-to-order basis only.

Benefits of Endura Cool Roof SRI:

- Reduce surface temperature by 10 to 20 degree celsius.
- Improve indoor comfort.
- Reduce cooling requirement and save electricity.
- Reduce conduction of heat into the building.
- Reduce the "heat island effect" in cities.
- Reduction in global warming and saving of ozone layer.
- Endura Cool Roof SRI Tiles is a sensible choice for the buildings - saving electricity and saving the environment.

Application Areas:

- Building roofs
- Balconies
- Exterior facades cladding
- Pavements





testreportforenduracoolroofSRI



BUILDING ENERGY PERFORMANCE LABORATORY

Test Report for Solar Reflectance Index (SRI)



T-2169

Report No: BEPL/RPT/SRI/126

Report Date: 27th March 2014

3. Results of the measurement:

Solar Direct Reflectance

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
Endura White (D)	SRI/03/14/1127	0.7397	0.7380	0.7394	0.7390

Emissivity

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
Endura White (D)	SRI/03/14/1127	0.896	0.896	0.896	0.896

Solar Reflectance Index (SRI) under different wind conditions

Sample name	Sample ID	Solar Reflectance Index (SRI)		
Endura White (D)	SRI/03/14/1127	Low Wind($h_c=5 \text{ W m}^{-2} \text{ K}^{-1}$)	Medium Wind($h_c=12 \text{ W m}^{-2} \text{ K}^{-1}$)	High Wind($h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$)
		91	91	92

Surface Temperature (T_s) under different wind conditions

Sample name	Sample ID	Surface Temperature ($^{\circ}\text{C}$)		
Endura White (D)	SRI/03/14/1127	Low Wind($h_c=5 \text{ W m}^{-2} \text{ K}^{-1}$)	Medium Wind($h_c=12 \text{ W m}^{-2} \text{ K}^{-1}$)	High Wind($h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$)
		54.4	47.9	42.5

4. Certificate of Accuracy:

This is to certify that the test results herein presented are, to the best of my knowledge, true and accurate representations of the samples submitted.

Dr. V. P. Patel
Technical Director
Building Energy Performance Laboratory

Disclaimer:

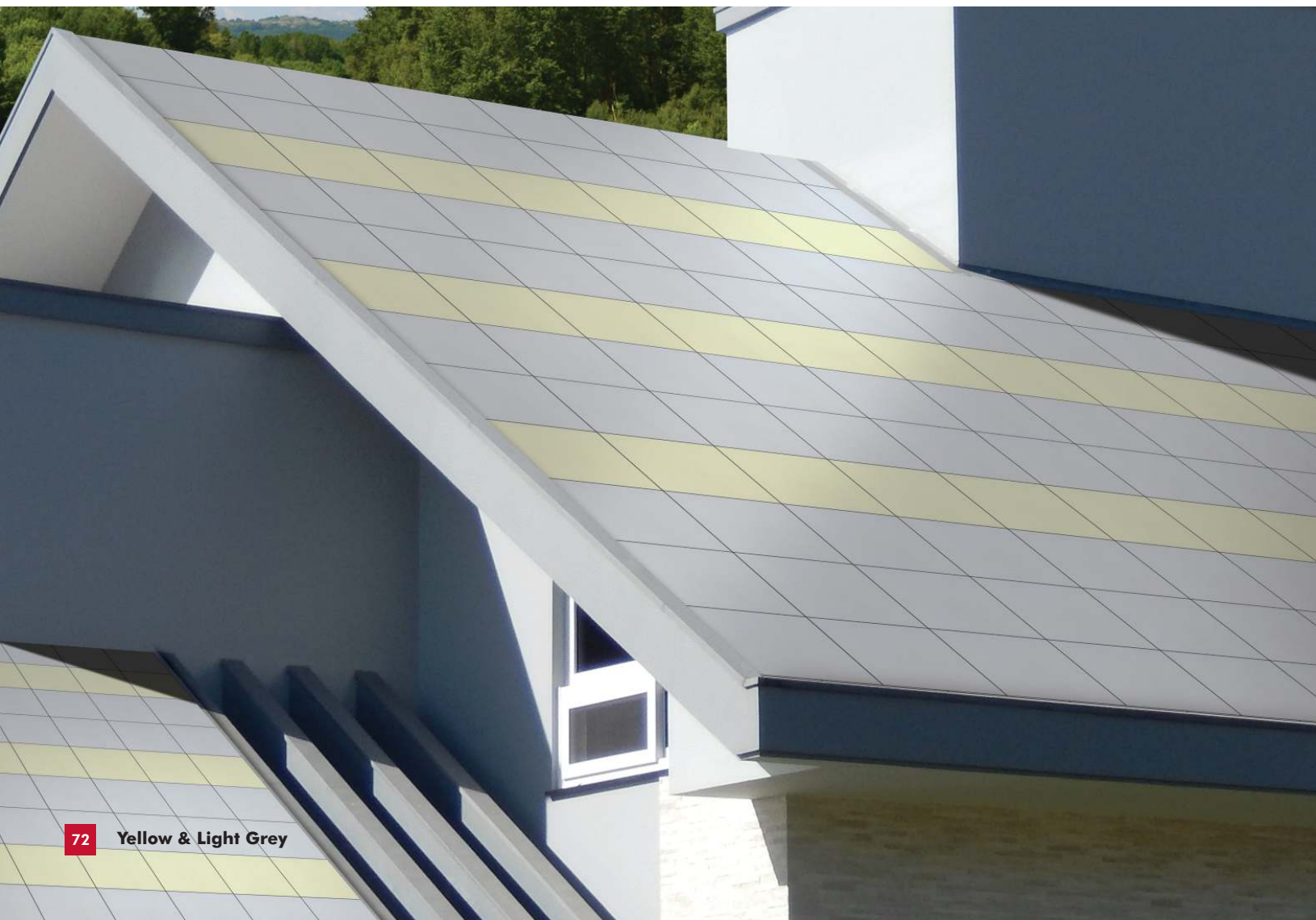
1. The CARBSE / BEPL are not responsible for any kind of alterations in the physical property of the sample and the customer is solely responsible for it and its consequences.
2. Result relates to the sample tested only. Sample will be destroyed after 7 days of issue of the report unless specified by the customer.
3. Any complains about this report should be communicated in writing within 7 days of issue of the report.
4. The test report shall not be reproduced fully or partially or in parts and cannot be used as an evidence in a court of law and shall be used in advert singeing media without written approval of Executive Director, BEPL.

BEPL, Centre for Environmental Planning and Technology, K. L. Campus, Navrangpura, Ahmedabad- 380 009.
Phone No: 079-26302470- Extn: 383, 26302740 Fax: +91 79 26302075 Email: ashajoshi@cepl.ac.in/bepi@cepl.ac.in
Page 2 of 2

F/TR/01/SRI, ISSUE No. 2



Pink & White

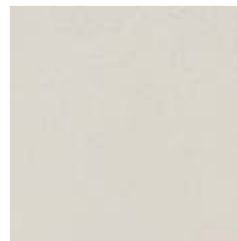


72 Yellow & Light Grey



ENDURA COOL ROOF SRI TILES : SPECTRUM OF COLOURS

Although it is scientifically proven that white surface reflects heat like no other colour can, Endura Cool Roof SRI Tiles offer a spectrum of 6 beautiful pastel shades other than white. What's more, all these colour tiles have SRI value greater than 78. Endura has truly achieved a golden mean - developing energy efficient, highly practical tiling solutions that are aesthetically appealing as well.



Ivory*



Light Grey*



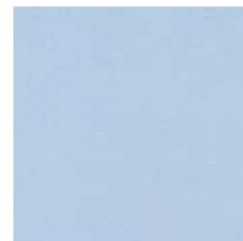
Yellow*



Pink*



Almond*



Sky Blue*

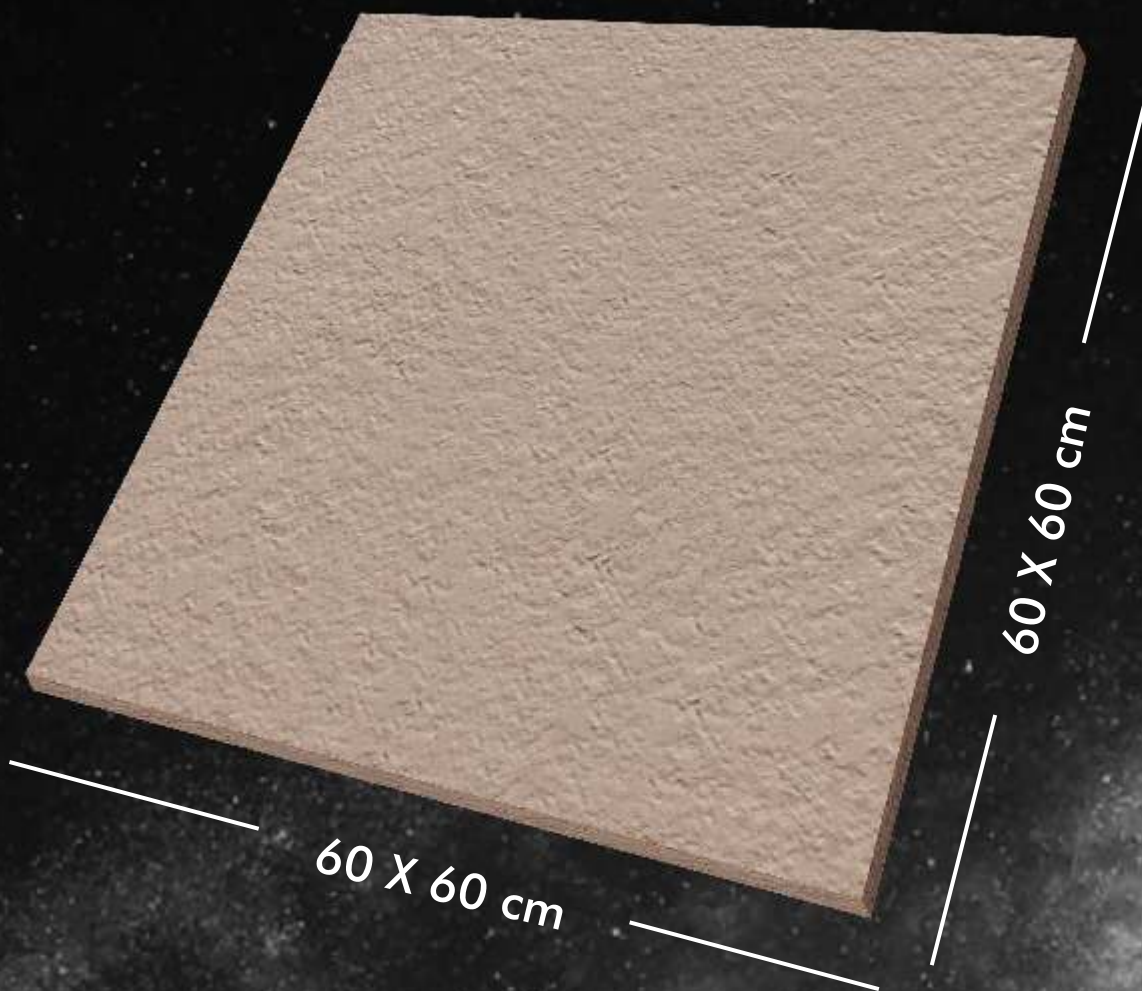
Endura Cool Roof tiles are suitable for low sloped and steep sloped roof applications starting from a pitch of 9.5 degree (2:12 rise over run). They are designed to meet IGBC / LEED SRI requirements for both low slopes and steep slopes. Besides, the Cool-Roof tiles are suitable for use on pavements and will qualify for IGBC / LEED Heat Island Effect Reduction Non-Roof credits.

* Available on made-to-order basis only.

MET



 **JOHNSON**[®]
ENDURA
INDUSTRIAL TILING SOLUTIONS



Endura Meteor promises you a strong & beautiful outdoor.

Johnson Endura Meteor collection is the most recent addition to the Endura product portfolio. These 60 X 60 cm tiles are of 1.5 cm & 2 cm thickness and are perfect for gardens, pathways, swimming pool decks, verandah/porches, public places & corridors. They are an ideal combination of performance, looks and versatility.

Johnson Endura Meteor tiles are more suitable than standard flooring alternatives like concrete tiles, paver blocks, natural stones etc. making it the best choice for outdoor usage. The exceptional features of Endura meteor do not diminish with the passage of time and can be fitted by using one of the following tile fixing method- raised flooring with support, directly on top of gravel/soil/sand or using the traditional solution with adhesive.

METHODS OF INSTALLATION



RAISED FLOORING WITH SUPPORTS

The raised installation allows for the creation of a technical gap of variable height between the substrate and the foot plan. It can be replaced and inspected at any time without damaging the surface and allows wires, pipe ducts and lighting systems to be concealed.



DRY INSTALLATION GRAVEL

The dry installation allows for the positioning of the slabs directly onto substrates in gravel to create pedestrian pathways that can be immediately walked upon. This type of application is easy & quick and does not require the use of adhesive for installation.

APPLICATION AREAS



VERANDAH / PORCHES

SERVER ROOM & IT INDUSTRY



GARDENS

PATH WAYS

COURTYARDS

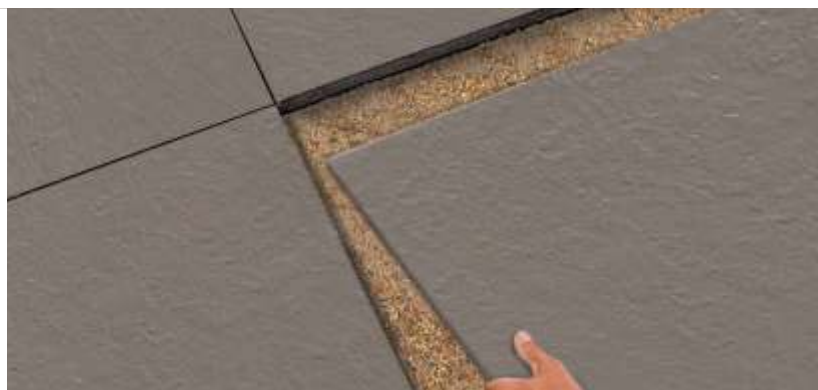


PUBLIC PLACES



TRADITIONAL ADHESIVE SYSTEM

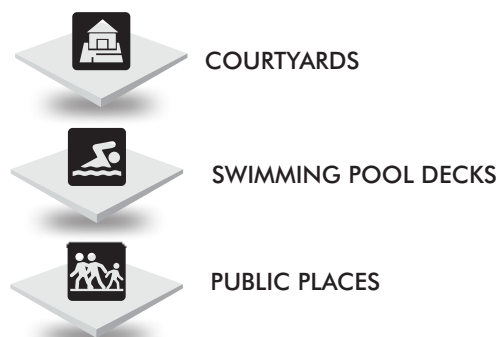
The traditional adhesive installation onto screed guarantees an excellent breakage load thanks to the performance of 2cm thickness. This installation method represents the perfect solution for carriageable lanes as well as lanes with vehicular movement.



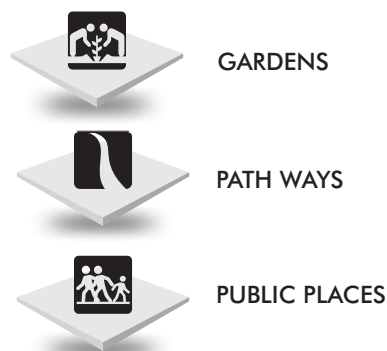
DRY INSTALLATION SAND

The dry installation allows for the positioning of the slabs directly onto substrates in sand to create pedestrian pathways that can be immediately walked upon. This type of application is easy & quick and does not require the use of adhesive for installation.

APPLICATION AREAS



APPLICATION AREAS





DRY INSTALLATION GRASS

The dry installation allows for the positioning of the slabs directly onto substrates in grass to create pedestrian pathways that can be immediately walked upon. This type of application is easy & quick and does not require the use of adhesive for installation.

APPLICATION AREAS



PATHWAYS



SWIMMING POOL DECKS



meteorseries 60X60cm 2cmthick



Kreo Ivory 



Kreo Terra 



Kreo Gris 



Korneto Gris 

meteorseries 60X60cm 2cmthick



Korneto Ivory 



Korneto Beige 

 Dewas  Pen





meteorseries 60X60cm 1.5cmthick



Slate White P



Slate Ivory P



Quartzite White P

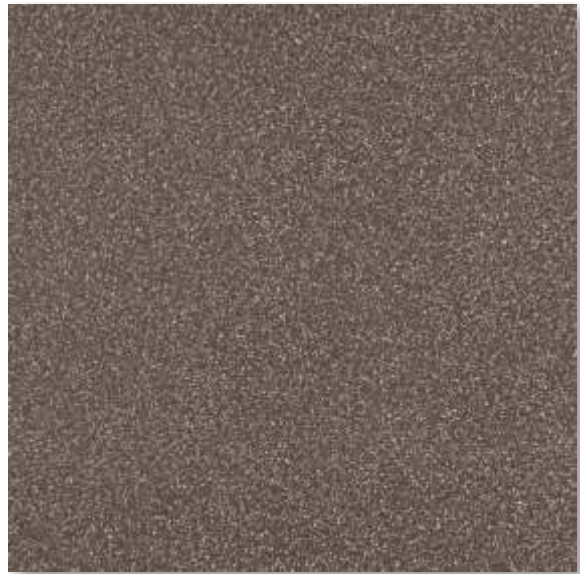


Quartzite Ivory P

meteorseries 60X60cm 1.5cmthick



Plain Donapaula P



Plain Benaulim P





meteorseries 60X60cm 1.5cmthick



Plain White P



Plain Grey P



Ozran P





meteorseries 60X60cm

Features	Advantages	Benefits
High Abrasion Resistance. Deep abrasion volumeloss <144mm ³	Johnson Endura Meteor tiles have the highest abrasion resistance value when compared with other traditional floors like concrete tiles, paver blocks, natural stones etc, thus ensuring lowest possible abrasion & wear off.	This helps customer maintain aesthetic value of floor year on year and avoid recurring maintenance costs.
Harsh weather & UV Resistance - Neutral to the Sun's UV effect	No fading of floor colors	Ideal for external flooring.
Easy to Install	Quick & easy fixing in least possible time with less cumbersome process. Three ways: 1.Raised flooring with supports (accessible underneath floor). Can be reused & refitted. 2.On top of gravel (bank gravel i.e. river run, crushed stone/ fine gravel) or compacted soil. Can be reused & refitted. 3.Cement sand mortar / adhesive system.	Quick completion of project.
Acid Alkali Resistant	Any spills or stains can be easily cleaned with commercial acids or alkalis (except HF and their derivatives)	Ideal for flooring in extreme weather conditions. Also helps in getting newer look over a period of time by acid wash on floor affected by stains due to uncontrolled external use.
High MOH Hardness (>6)	MOH is a measure to test surface scratch hardness value on a relative scale from 1 to 10 Higher the value, more the hardness, thus protecting the surface from scratches. MOH value of > 6 ensures these do not get scratched even with coarser sand, stone grits etc thus providing a tough, rigid, floor without scratches especially on continuous use & vehicular traffic.	Enhanced long lasting aesthetic beauty due to scratch free surface
Higher breaking strength	Endura Meteor tiles can take large loads, high pedestrian traffic much better than stone & concrete tiles in a variety of outdoor / indoor applications without giving away .	Suitable for high load and heavy traffic usage.
Stain resistance	Provides sufficiently good stain resistance property making the surface impervious to dusts, stains and external liquid agents .	Retains aesthetics.
Low water absorption < 0.5%	Ensures compact body thus preventing stains & percolation of liquid based media .	Helps in maintaining good housekeeping norms.

INDUSTRY





Industrial tiles have a high breaking strength and do not give way under heavy load of goods, machineries, forklifts and vehicles. These tough and durable tiles are used in small as well as large industrial units.



Ivory & Terracotta (20X10-2cm)



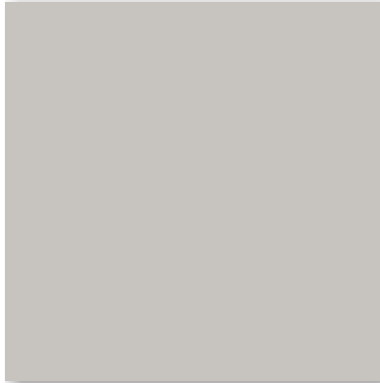
90 Ivory (30X30-1.5cm)



2cmthick plainseries 30X30cm



Ivory 



Grey 



Terracotta 



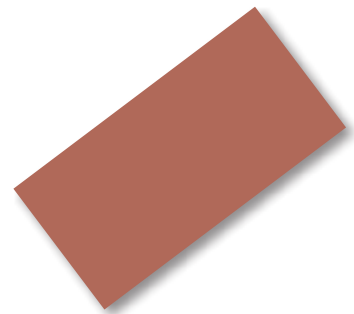
2cmthick plainseries 20X10cm



Ivory 



Grey 



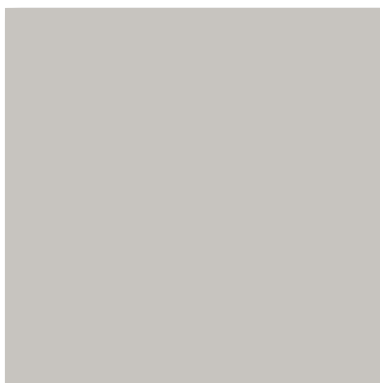
Terracotta 



1.5cmthick plainseries 30X30cm



Ivory 



Grey 



Terracotta 



Ivory & Grey (20X20-1.5cm)



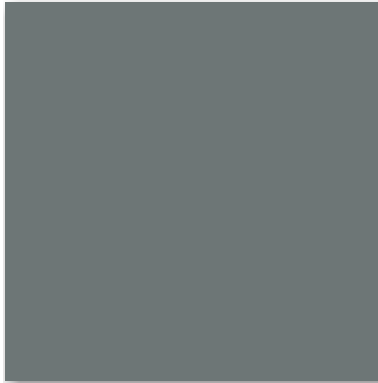
92 Grey (20X20-1.5cm)



1.5cm thick plainseries 30X30cm



Silver Grey Plus D



Silver Grey Plus SPL D



1.5cm thick plainseries 20X20cm



Ivory D



Grey D



Terracotta D



Yellow D



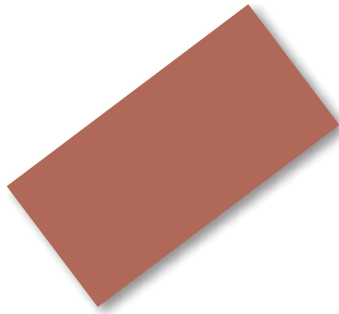




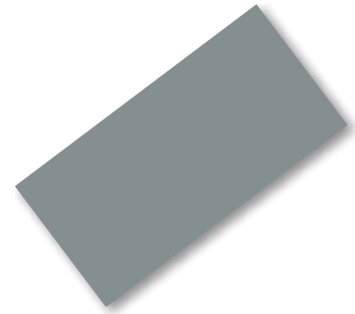
1.5cm thick plainseries 20X10cm



Ivory D



Terracotta D



Silver Grey D



1.2cm thick plainseries 30X30cm



To Yellow Plus D



Majorda D



Benaulim D



Silver Grey Plus D



To Blue Plus D



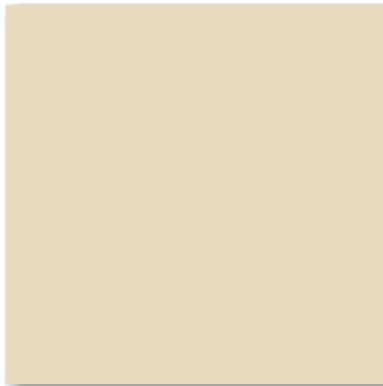
To Green Plus D



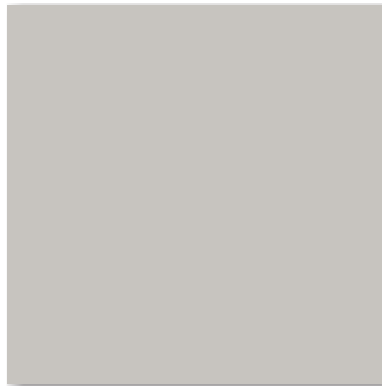




1.2cm **thick** plain **series** 30X30cm



Ivory D/K



Grey D/K



Terracotta D/K



Grey Plus D

D Dewas K Kunigal D/K Dewas & Kunigal



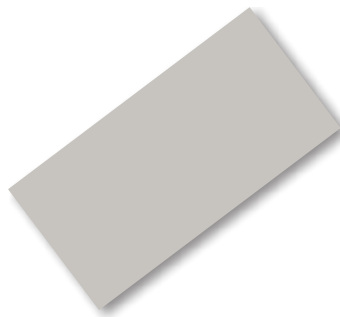




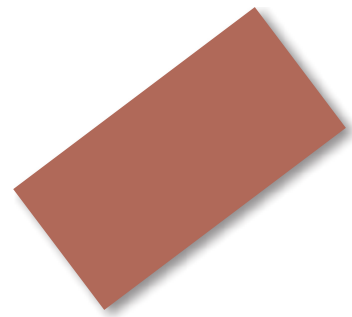
1.2cm^{thick} plain^{series} 20X10cm



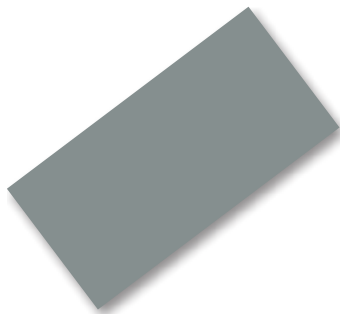
Ivory D ●



Grey D ●



Terracotta D ●

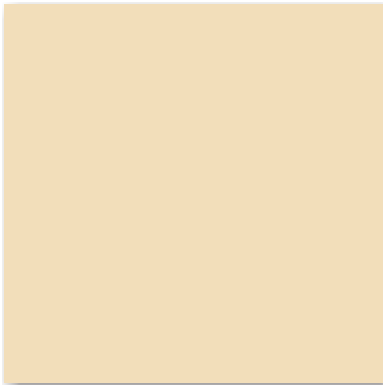


Silver Grey Plus D ●

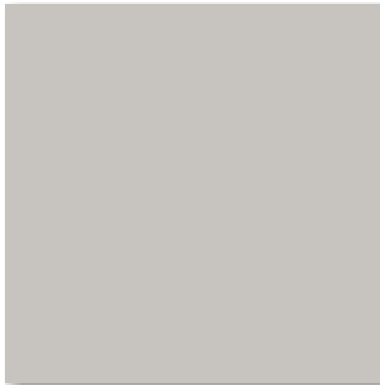




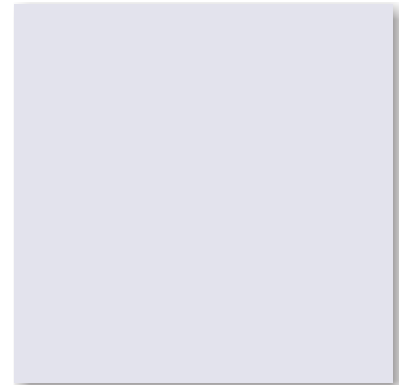
1.2cm thick color series 30X30cm



Super Ivory D



Coated Grey Plus D



White Plus D



1.2cm thick textured series 30X30cm



Checkered Ivory D



Checkered Grey D



Checkered Terracotta D



benefits of endura industrial tiles

Johnson endura Industrial Tiles	AR Bricks
Johnson Endura tiles conform to IS 4457 : 2007. These are stringent specifications.	AR Bricks conform to IS 4860 specification.
Lowest water absorption (<0.5%). Acids cannot percolate through tile body, thereby leaving the bedding underneath intact for years.	Water absorption 3% to 5%. High porosity and hence acid or chemical percolation possible resulting in corrosion of the bedding material underneath.
Johnson Endura is a vitrified tile body with a compact mass that provides high strength. Thus with the recommended 1.2, 1.5 and 2cm thick tiles, overall structural load can be reduced.	AR bricks are ceramic tiles in nature with high porosity and low strength, requiring the need for a high thickness of 38mm that results in increased structural load.
Mohs hardness of Endura is >7 making the surface virtually scratch proof. Even metals like hardened steel used in trolley, etc. cannot scratch the tile.	Mohs hardness scale of AR brick is 5 to 6 making it prone to scratches and flaking.
Johnson Endura tiles are manufactured to meet highest quality standards by H & R Johnson (India) in state-of-the-art plants.	AR bricks are manufactured by the unorganized sector.
Johnson Endura Industrial tiles are available in a variety of sizes and thicknesses such as :- 30X30 - 2cm, 20X10 - 2cm, 30X30 - 1.5cm, 20.4X20.4 - 1.5cm, 20X10 - 1.5cm, 40X40 - 1.2cm, 30X30 - 1.2cm, 20X10 - 1.2cm	AR bricks are typically available in a single fixed size of 9"x 4" - 3.8cm.
Johnson Endura Industrial Tiles	Epoxy Floorings
High traction resistance. Excellent performance under continuous vehicular traffic without any erosion.	Poor traction resistance. Gets scratched and wears-off on continuous vehicular traffic movement.
Very high breaking strength. Suitable for heavy loads with hard-wheel trolley movements.	High wear and tear on use of hard-wheel heavy load trolley movements.
Very high scratch resistance. Mohs scale >7. Even metals cannot create scratch on tiles.	Prone to scratches. Mohs hardness 4-5.
Highest abrasion resistance amongst all flooring options with abrasion value of < 144mm ³ (ISO 13006/EN 176). Retains aesthetics for a long term.	Low abrasion resistance. Leads to high wear & tear on continuous use.
Can withstand point loads.	Cannot take point loads.
Ease of repair and maintenance. Even a single damaged tile can be replaced quickly without affecting surrounding tiles.	Repair and maintenance is difficult. Repairing the affected area gives the floor a patchy incongruent look.
Johnson Endura is maintenance free and is a very durable floor covering.	Epoxy floors have a huge recurring cost for maintenance besides workshop shut down costs and inconvenience.
Johnson Endura Industrial tiles are highly durable, maintenance free, scratch proof, economical and an aesthetic flooring option for industrial shop floors.	Epoxies are aesthetic, but delicate and expensive in the long run
Johnson Endura Industrial Tiles	Kota & Other Natural Stones
Properties are homogeneous across the entire body of tile. Shades are fairly consistent across the tile.	As natural stones are mined, their properties may vary from stone to stone and also within a stone. They are also prone to a high degree of shade variation.
Compact body with low water absorption of < 0.5%.	Very high porosity. Water absorption may vary from 2-4%.
High traction resistance.	Poor traction resistance.
Very high breaking strength. Suitable for heavy loads with hard-wheel trolley movements.	Susceptible to breakage on heavy load (> 1 ton) movement with hard-wheel trolleys.
Very high scratch resistance. Mohs scale >7. Even metals cannot create scratch on tiles.	Prone to scratches. Mohs hardness 4-5.
Highest abrasion resistance amongst all flooring options with abrasion value of < 144mm ³ (ISO 13006/EN 176). Retains aesthetics for a long term.	Low abrasion resistance. Leads to high wear & tear on continuous use.
Use of 12 to 20mm thickness ensures low structural load with high performance.	Use of higher thickness increases weight and structural load.



comparison of kota stone, mandana, epoxy and endura industrial tiles

Technical Features / Flooring Material	Kota Stone	Mandana Stone	Epoxy Flooring	Endura Industrial Tiles
Main Constituents	Limestone or Calcite	Quartzitic Sandstone	Organic Copolymers	Inorganic oxides
Flexural Strength (N/mm²)	20 to 25	25 to 30	25 to 35	>38
Water Absorption	2% to 4%	1% to 2%	0.2% to 0.5%	<0.5%
Bulk Density (g/cm³)	2.1 to 2.3	2.3 to 2.5	2.1	2.4
Slipperiness	Polished surface is slippery	Less Slippery	Slippery	Antiskid with co-efficient of friction > 6
Acid-Alkali Resistance	Not Resistant to Acids	Not Resistant to Alkalis	Not Resistant to Acids	Resistant to Acids & Alkalis
Shear Resistance	Low	Low	Very Low	High
Resistance to heavy duty hard wheel trolley movement	Low	Low	Very Low	High
Scratch Resistance (Mohs Scale)	3 to 4	5 to 6	4 to 5	>7
Fire Resistance	Moderate	Good	Inflammable	Fire Proof
Maintenance Cost	High	High	Very High	Low
Service Life	5 years	5 years	1 year	10 years plus
Shade Variation	High	High	Very Low	Low
Environment friendliness	Requires extensive mining and destroys natural resources	Requires extensive mining and destroys natural resources	NA	Environment friendly and adherence to ISO 14001 standards
Production & Working Conditions	Very Hazardous. Unorganized.	Very Hazardous. Unorganized.	Adherence to ISO 18001 standards	Adherence to ISO 18001 standards
Safety Standards	No safety standards	No safety standards	Complies with all safety gear requirements as per ISO 18001 health & safety standards	Complies with all safety gear requirements as per ISO 18001 health & safety standards
Waste Disposal	Disposal in open land without any treatment	Disposal in open land without any treatment	Effluent treatment as per ISO 14001 standards	Effluent treatment as per ISO 14001 standards
Child Labor	Employed	Employed	No Child Labor	No Child Labor
Labor Exploitation	Yes. Day-Night shifts with below minimum wages	Yes. Day-Night shifts with below minimum wages	Safe & good working conditions. Adhering to Minimum Wages Act	Safe & good working conditions. Adhering to Minimum Wages Act
Ecological Imbalance	Extensive digging and mining can lead to earthquakes	Extensive digging and mining can lead to earthquakes	NA	NA
Sizes	2'x 2', 2'x 1.5'	2' x 1.5', 2' x 2', 2' x 2.5'	NA	30X30-2cm, 20X10-2cm, 30X30-1.5cm, 20.4X20.4-15cm, 20X10-1.5cm, 40X40-1.2cm, 30X30-1.2cm, 20X10-1.2cm





industrialtiles

Features	Advantages	Benefits
Higher breaking strength 1.2cm - >2500N, 1.5 cm - >4000N, 2 cm - > 7500 N	Higher breaking strength performs the function of transferring large loads effectively down to the bedding underneath without breaking.	Customer is benefitted with a strong and durable floor with no maintenance.
High Mohs Hardness >7	Mohs is a measure to test surface scratch hardness value on a relative scale from 1 to 10. Higher the value, more the hardness, thus protecting the surface from scratches. Mohs value of > 7 ensures Endura Industrial tiles do not get scratched even with metals thus providing a tough, rigid, floor without scratches especially on continuous use & even during maintenance activities.	Customer is benefitted by enhanced long lasting aesthetic beauty due to scratch free surface.
High Abrasion Resistance. Deep Abrasion Volume Loss < 144mm ³	Johnson Endura Industrial tiles have the highest abrasion resistance value when compared with other traditional floors like VDF, Natural Stones, Epoxies, PU, PVC etc, thus ensuring lowest possible abrasion & wear off.	This helps customers maintain aesthetic value of floor year on year and avoid recurring maintenance costs.
Matt Finish Skid Resistance Floor – Coefficient of Friction > 0.6	Provides reasonably good traction to vehicles, pedestrians, material carrying carts, fork lifts, trolleys.	Customer benefitted by a safe floor meeting Industrial safety norms.
Stain resistance	Provides sufficiently good stain resistance property to effectively maintain the matt finish floor.	Helps in maintaining good housekeeping norms.
Low water absorption < 0.5%	Ensures compact body thus preventing stains & percolation of liquid based media.	Helps in maintaining good housekeeping norms.
For Acid Resistant flooring		
Resistance to concentrated Acid – Weight loss < or = 1%	Extremely high acid resistance of Johnson Endura Industrial tiles (1.2, 1.5 & 2 cm) meeting the stringent specification norms of IS 4457:2007 ensure excellent performance in Acid/Chemical/Alkali (except HF acid and its derivatives) attack area thus helping corrosion protection of reinforcement in concrete & protecting erosion of the structure.	Customer benefitted by the long service life of the structure and enhanced safety. Application areas of pollution control & corrosion protection, lend themselves well to Johnson Endura Industrial tiles.

Johnson Endura, the industrial tiling solution provider has looked into very niche but highly important areas, which are sensitive to static electricity. Johnson Endura Anti-Static Tiles have been specially developed for such areas :

Fire Hazardous Areas :

Anti-static Dissipative type : (Surface Resistance between 1 Mega Ohm to 1 Giga Ohm)

Static electricity accumulates on the surface of any floor be it natural stone, ceramic tile or any other flooring material. This static electricity is accumulated due to the friction between any two surfaces like shoes and the floor. This static electricity could lead to sparks which could lead to fire hazards in areas like petrochemical industries, shell making factories, ordnance factories, defence industries, chemical plants, bulk drug plants and other fire prone areas. Johnson Endura Anti-static tiles remove the static electricity charge from the surface of the tile and earth it; and hence the fire hazard is minimized.

Electronic Equipment Areas :

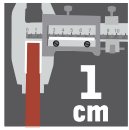
Anti-static Conductive Type: (Surface Resistance below 1 Mega Ohm)

Anti-static tiles are also used for server rooms, computer rooms & electronic equipment rooms where static electricity can damage the working of electronic equipments.

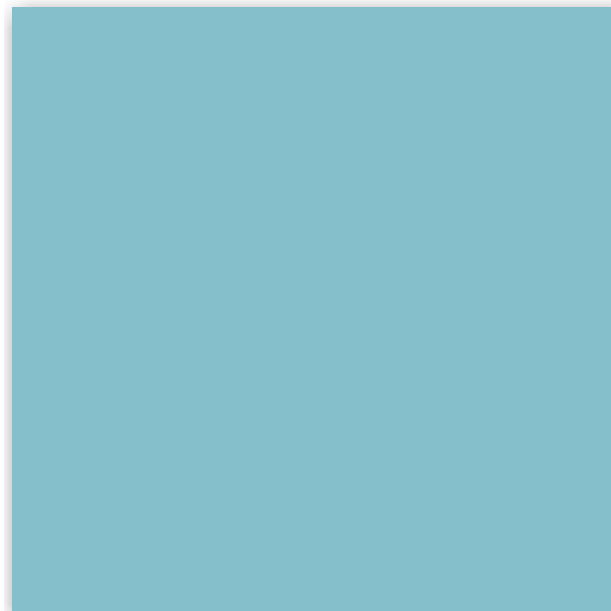
Application Areas :

Server Rooms, Petrochemical Factories, Ordnance Factories, Chemical Plants, Bulk Drug Plants, Fire Prone Areas, Computer Rooms, Electronic Equipment Rooms, PLC Panel Rooms, PCB Manufacturing, IT Industry, Sophisticated Equipment Laboratories, Shell Making Factories, Defence Factories, Hospital Operation Theatres.





1cm^{thick} antistatic^{series} 60X60cm



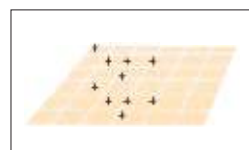
Asc Blue P



Working of antistatic tiles



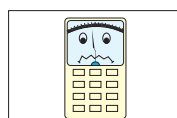
Normal Floor



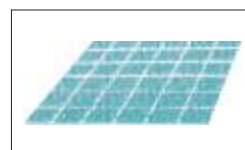
Static Electricity after friction



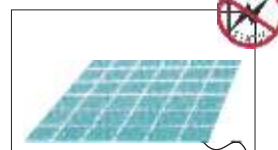
Possibility of fire hazard



Can damage electronic equipment



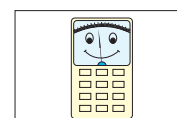
Endura Anti-Static Floor



Static Electricity is earthed



No fire hazard



Eliminates possibility of damage





antistatictile

Features	Advantages	Benefits
Surface Electrical Resistance – Conductive <1 Mega Ohm & Dissipative – 1 Mega Ohm to 1 Giga Ohm	Surface electrical resistance being the property of material decides the nature of product in terms of its charge conductance. Surface Electrical resistance as per ANSI norms ensures smooth transfer of accumulated static charge to grounding path.	Static hazard-free area resulting in smooth uninterrupted functioning of critical equipments. Helps in mitigating fire hazard from floor due to static charges.
Static decay Time – Conductive - <0.5 sec Dissipative - <0.5 sec	Static decay time as per ANSI norms ensure smooth discharge of accumulated static electricity from the surface.	Compliance with critical requirement of such sensitive areas. Static Hazard free area resulting in smooth uninterrupted functioning of critical equipments. Helps in mitigating fire hazards from floors due to static charges.
Firm & Effective Grounding of Floors	Vitrified anti-static tiles help provide firm and permanent grounding.	Assures Anti Static property throughout the service life of product.
60cm X 60cm Matt finish AS Blue Tile	Bigger size offers lesser joints. Matt finish with anti-skid elegant floor in blue shade.	Customer benefitted by safe floor to meet industrial safety norms along with excellent aesthetic ambience.
Stain Resistance	Provides sufficiently good stain resistance property to effectively maintain the matt finish floor. Being a glazed vitrified tile, the tile is virtually stain proof	Helps in maintaining good housekeeping norms.
Endura Anti-Static Tiles Patented Product	In ceramic tile industry, whereas all products are insulators, Johnson Tiles have developed a special patented product for their customers to address the specific concerns on ESD hazard.	Customer benefitted by the best and only product from ceramic industry which not only offers protection from ESD hazards but also provides excellent service life due to its mechanical properties.

SWIM
PO



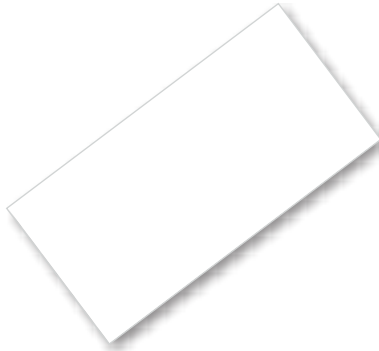


Our swimming pool tiles range has variants for leisure, private and competition pools. The comprehensive range includes fittings, accessories, field tiles and tiles for steps & edges making it a complete pool solution. Hygienic and easy to maintain these tiles prevent germs and moss accumulation.

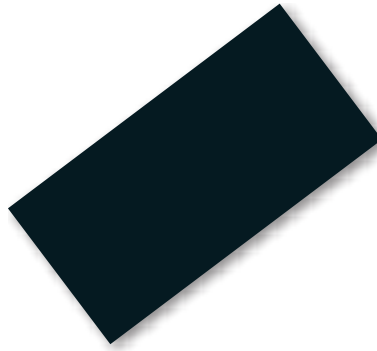




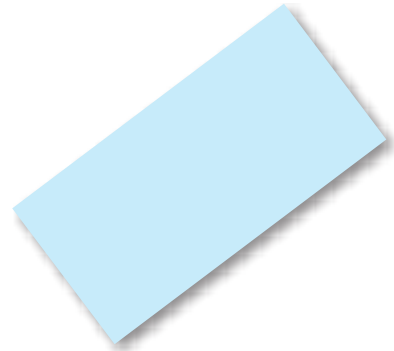
pooltiles 24.7X12.2cm 0.8cmthick



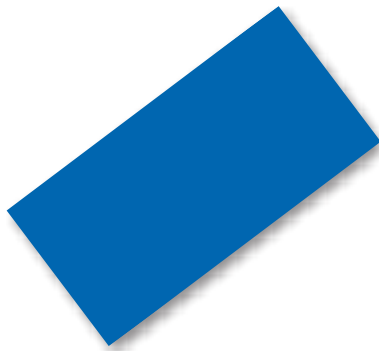
White  



Black  



Orient Blue  



Dark Blue  



New Blue  

poolfittings



Internal Cove ●
 Size: 24.4cm X 4cm
 Code: P 1050
 Colour: Orient Blue



External Angle ●
 Size: 25cm X 5cm
 Code: P 2050
 Colour: Orient Blue



**Internal Angles of
 Wall-Floor Junction** ●
 Size: 4cm X 4cm
 Code: P 6050
 Colour: Orient Blue



**Junction of 3
 External Angles** ●
 Size: 4cm X 4cm
 Code: P 4050
 Colour: Orient Blue



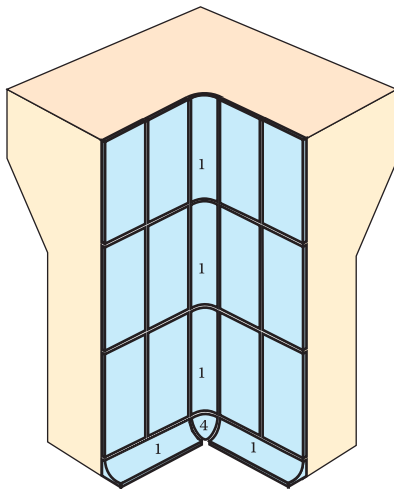
**External Angles of
 Wall-Floor Junction** ●
 Size: 7.2cm X 7.2cm
 Code: P 5050
 Colour: Orient Blue

● Sizes & thickness of pool fittings are subject to change without prior notice. Kindly verify the actual sample before placing the order .

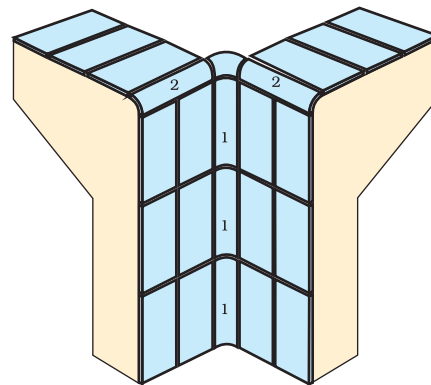




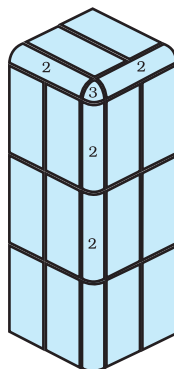
poolfittings - assemblydiagram



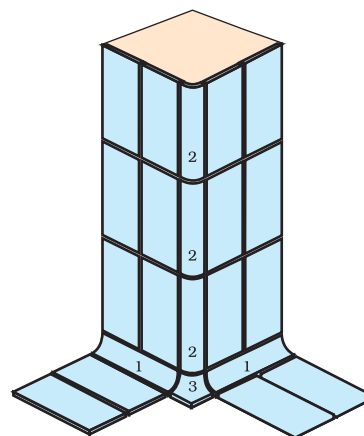
Internal



Top Internal Corner



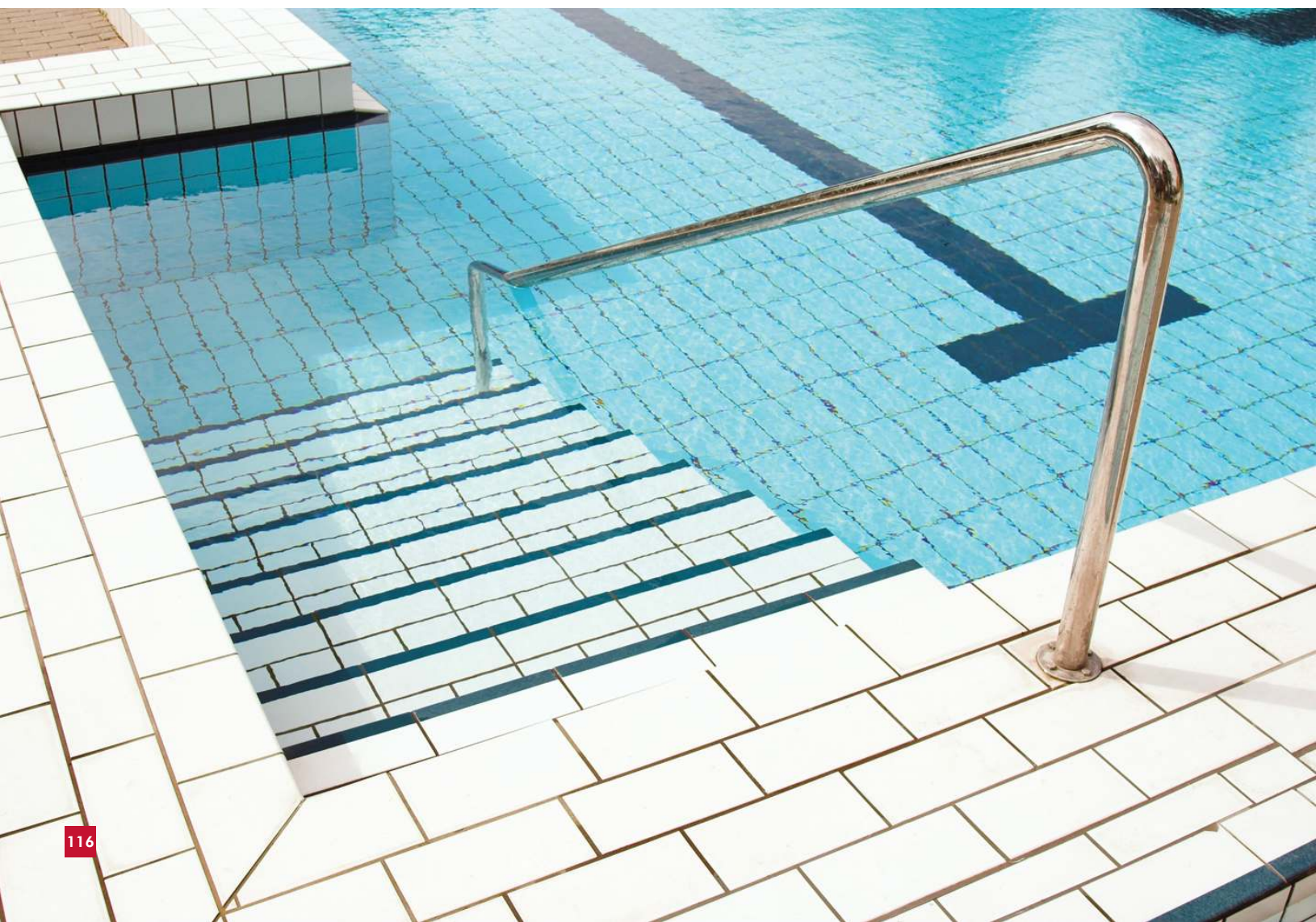
External



Bottom External Corner

1. Internal Cove (P 1050)
2. External Angle (P 2050)
3. Junction of 3 External Angles (P 4050)
4. Internal Angles of Wall-Floor Junction (P 6050)

1. Internal Cove (P 1050)
2. External Angle (P 2050)
3. External Angles of Wall-Floor Junction (P 5050)





steps&edges



Anti-Slip Tile ●
Size : 24.4cm X 11.9cm
Code : E 1070
Colour : Ivory



**Finger Grip with
Safety Marking** ●
Size : 24.4cm X 11.9cm
Code : E 4070
Colour : Blue



**Grooved Anti-Slip Tile
With Safety Marking** ●
Size : 24.4cm X 11.9cm
Code : E 2070
Colour : Ivory

● Availability needs to be verified with the plant before order confirmation.



swimmingpooltiles

Features	Advantages	Benefits
Size 24.7 cm x 12.2 cm	In conformance with Standard Olympic Pools norms.	Easier path to certification with related benefits . Ideal for competition pools.
Wide range of Colours – Orient blue, New Blue, Dark Blue, White, Black	As desired by Olympic standard norms. Dark Colours are used especially as lane markers.	Provides conformance to Olympic full & half size competition pools with enhanced aesthetic appeal .
Specialized pool fittings – Internal Cove, External Cove, Internal Angles wall – floor junction, External Angles of Wall floor Junction, Junction of 3 external angles	Enables proper rounding of corners & junctions avoiding sharp edges & dust, dirt accumulations.	Customer benefitted by enhanced safety & hygiene factor.
Tiles for Steps & Edges	Provides higher grip to soles of feet while entering into the pool. Safety marking cautions about the level difference in the pool. Finger grip with safety marking provides holding support while in pool & also highlights the level difference at the edge of the pool.	Customer benefitted by enhanced safety and great aesthetics . Helps in compliance with International standards
Specialized Glazed tiles	Ensures no algae formation on pool tiles.	Higher Hygiene factor and safety.
Higher MOR >30 N/mm ²	Withstands water pressure better than ordinary ceramic tiles.	Longer service life.
Water Absorption <3%	Lower Water Absorption means superior crazing & frost.	Better hygiene & Safety for Pool users.





Cladstone is an exterior wall cladding tile used to cover surfaces like compound walls or building exteriors. These tiles work as a protective layer and safeguard the walls from wear and tear caused by climatic conditions and pollution.

cladstone**series** 24X6cm 0.6cm**thick**



Bone White 



Choco Brown 



Copper Brown 



French Black 



Jaipur Pink 



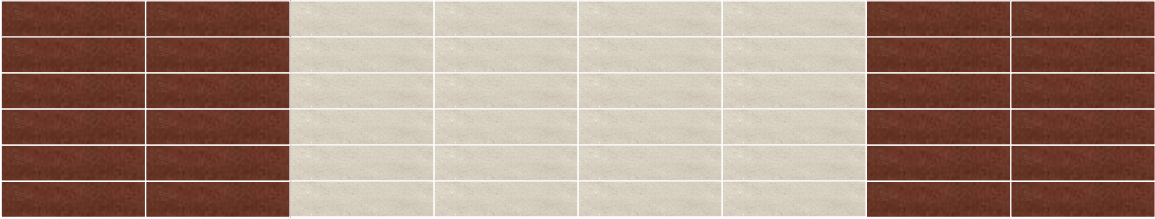
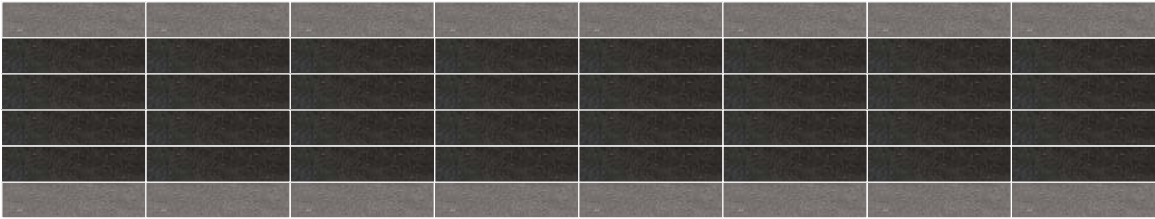
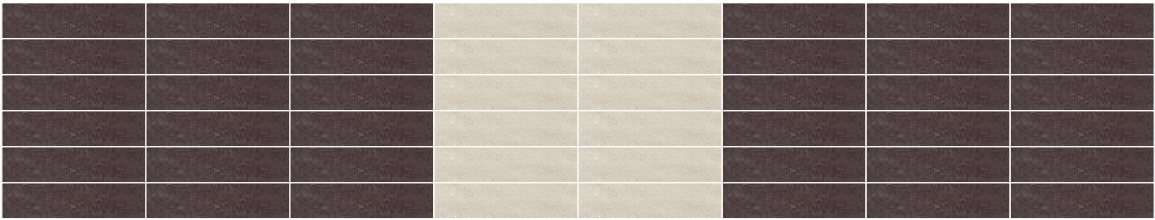
Luna Grey 



Terracotta 



Winter Blue 





cladstonetiles

Features	Advantages	Benefits
Wide range of 8 colours	Architects & customers can creatively work with combination of colors suited to their aesthetic sense.	Unique and landmark building structures can be designed.
Vitrified Endura body with lowest water absorption of <0.5%, MOH hardness of > 7	Durable & long lasting.	Cost effective in long run as compared to other options of paint, aluminum facades etc. Higher cost savings with lowest maintenance.
UV resistance – Neutral to sun’s UV effect	No fading of colours.	Shades maintained forever.
Acid aesistance	Acid rains do not affect the building structure.	Long life structural protection.
240mm x 60mm x 6mm format	Structural stability with low dead weight.	Safe cladding.
Specially designed back panel	Enhances mechanical bonding with adhesive.	Safety with stronger bonds.



application areas

Hi-Traffic

Sandex :

- Office Lobbies
- Corridors
- Super Markets
- Automobile Service Centres
- Restaurants
- Community Halls

Colour :

- Parking Lots
- Pathways
- Walk Ways
- Corridors
- Building Compounds
- Terrace Areas
- Outdoor Sit Out Areas
- Skywalks
- Bridges & Patios

Tactile :

- Train Stations
- Bus Stops
- Pavements
- Footpaths
- Airports
- Signal Crossings
- Housing Projects
- Commercial Projects
- Townships

Pavers :

- Garden Walkways
- Building Entrance
- Walkways
- Pathways
- Corridors
- Building Compounds
- Terrace Areas
- Outdoor Sit Out Areas
- Skywalks and Bridges
- Patios

RusStone :

- Residential Interiors like Kitchens, Bathrooms, Porch and Corridors
- Building Exteriors like Driveways, Walkways, Pathways and Garden-ways
- Recreational Areas
- Commercial Buildings and Public Places
- Landscaping Projects

applicationareas

Industrial

- Chemical Plants
- Power Plants
- Air Hangers
- Food Processing Units
- Breweries
- Factory Floors
- Automobile Workshops
- Pharma Units
- Steel Plants
- Textile Units
- Cement Plants
- Showroom Floors
- Parking Areas
- Depots & Warehouses
- Forklift Movement Areas
- Material Handling Areas
- Processing Units
- Galas
- Storage Units

Anti-Static :

- Server Rooms
- Petrochemical Factories
- Ordnance Factories
- Chemical Plants
- Bulk Drug Plants
- Fire Prone Areas
- Computer Rooms
- Electronic Equipment Rooms
- PLC Panel Rooms
- PCB Manufacturing
- IT Industry
- Sophisticated Equipment Laboratories
- Shell Making Factories
- Defence Factories
- Hospital Operation Theatres

Swimming Pools

- Private, Commercial & Competition Pools
- Water Storage Tanks

CladStone

- Exterior Walls of Residential and Commercial Buildings
- Building Facades
- Compound Walls

frequentlyaskedquestions

Q1. What is Endura?

- A. Endura is brought to you by H & R Johnson (India), the country's largest manufacturer of Industrial, Pavement and Specialty tiles such as Swimming pool tiles, Antistatic tiles, Tac tiles etc. Endura offers virtually all types of interior and exterior tiling solutions.

Q2. What differentiates Endura Pavers in the Hi-Traffic tiles range?

- A. Endura Pavers are smaller format of Hi-Traffic tiles available in a wide range of 10 colors, which help in creating artistic floor combinations that enhance the aesthetics and ruggedness of the landscape. The rock like textured surface of Endura Pavers along with the Salt & Pepper effect offers a rocky- sandy look much sought after. It is recommended to lay Endura Pavers with a gap of 0.6cm to 1cm between the tiles with ARDEX ENDURA tile grouts to enhance both the beauty and functionality of the pavers range.

Q3. Where can Endura RusStone be used?

- A. Endura Glazed Vitrified RusStone is an ideal replacement for all Natural Stones, Ceramic tiles, other Glazed Vitrified tiles & commonly available tiles in market. The additional aesthetic quotient in Glazed Vitrified RusStone combines with the well proven performance of Endura giving a truly memorable Hi-Traffic product. It can be used both for interior applications (porch, kitchens, bathrooms, corridors, terraces) as well as exterior application areas like driveways, walkways, pathways, and for landscaping. Commercial buildings, malls & public places would find the beauty, ruggedness, scratch & stain resistance, eminently suitable for their needs.

Q4. What are the benefits of Johnson Endura Sandex compared to Marble and Granite?

Parameter	Italian Marble	Natural Granite	Johnson Endura Sandex	Benefits of Endura
Porosity	Very high	Medium porosity	Very low porosity	High chemical & stain resistance, clean & hygienic, (Bacteria resistant).
Water absorption	>5%	> 1%	<0.5%	
Flexural strength	6.3 N/mm ²	13.8 N/mm ²	>35 N/mm ²	High strength, durability. Maintenance free.
Abrasion resistance	350mm ³	180mm ³	< 144mm ³	
Hardness on Mohs scale	4	6	>7	
Colour & design variation	Very high	High	Low	Aesthetically superior.
Polish	Tin Oxide polish. Poor durability.	Surface polish. Medium durability.	Unpolished matt finish. High durability.	Polished finish is long lasting.
Laying / installation	Time consuming process. Assorting required.	Time consuming process. Assorting required.	Pre – sized, easy & faster to install.	Ready to use. Easy to lay.
Discolouring (Becomes yellowish)	Frequent	Frequent	Nil	Aesthetically superior.
Life / durability	Low	Low	High	Lasts the lifetime of your home.

frequentlyaskedquestions

Other advantages of Johnson Endura are that it is fade resistant, ecologically compatible, and environmentally green with no chemical or toxic substances, it is odourless and has good heat energy retaining and conducting (conserving) properties. It is not inflammable and is also UV resistant.

Q5. What if any object falls on Endura Industrial Tiles? Will the tile break?

- A. Endura Industrial tiles can withstand normal impact. They have been tested in automobiles garages where various implements and equipment often keep falling with no significant damage to tiles. However, the tiles are not unbreakable and hence the extent of damage, if any, would depend on the weight and shape and height of fall of the falling object. We therefore recommend a gap of few mm between tiles for easy maintenance or replacement, in the event of any damage.

Q6. What are the advantages of Endura Industrial Tiles over cement concrete tiles and Epoxy floors over a long term?

- A. Cement and Cement concrete tiles tend to pit that form pot holes on usage. In epoxy floors, there is a tendency to develop micro cracks which then tend to peel-off the floor. In both these cases it is difficult to repair the floor. When Endura Industrial floors are installed with proper spacing and grouting, they can be easily repaired by replacing the damaged tile.

Q7. Do Endura Industrial Tiles stain easily?

- A. Endura Industrial is a vitrified tile with a very low water absorption. It is highly stain resistant as compared to most natural stones. The application of special over-spray helps seal any residual micro porosity and enhances the stain resistance of the tile.

Q8. Are Endura Industrial tiles good for using above waterproofing surfaces? Do they help in waterproofing?

- A. Endura Industrial tiles are most suited for use over waterproofed terraces as they withstand all the weathering effects roofs are exposed to and insulate against expansion and contraction of the waterproofing layer below. Normally dust on the roof and movement of people leads to abrasion of the waterproofing layer. Endura tiles on a waterproofed roof helps protects this surface. Care should be taken to test the waterproofing layer prior to tiling and tile joints should be sealed properly with epoxy or any other water-proof grouting material.

Q9. Is Endura Industrial Tile available in various shapes?

- A. Endura Industrial tiles come in squares and rectangles. This makes it convenient to cut and create any designs or pattern as desired at the time of laying. Cement concrete tiles are cast into shapes and these cannot be cut.

Q10. What is the best way to fix Endura Industrial Tiles?

- A. Endura Industrial tiles are best fixed using ARDEX ENDURA Tile Fixing Adhesive and the gap between the tiles can be filled with ARDEX ENDURA grouts. ARDEX ENDURA Tile Fixing Adhesives and Grouts are available in India and are most compatible with Endura tiles.

frequentlyaskedquestions

Q11. Are Endura Industrial tiles acid / alkali resistant?

- A. Endura Industrial tiles are resistant to all alkalis and all acid (in high concentration), except HF or their derivatives.

Q12. In what sizes and thicknesses are Endura Industrial tiles available?

- A. Endura Industrial tiles are available in the following sizes and thicknesses: 60X60-2cm, 60X60-1.5cm, 30X30-2cm, 30X30-1.5cm, 30X30-1.2cm, 20.4X20.4-1.5cm, 20.4X20.4-1.2cm, 20X10-2cm, 20X10-1.5cm, 20X10-1.2cm.

Q13. Why are Anti static tiles required?

- A. Static charge is a constant source of problem in various industrial processes, in areas where highly sensitive electronic or computing equipments are in operation, and in many areas of industries where inflammable chemicals or explosives are being used. In such areas sparking resulting from build up of static charge can become a major fire hazard. The use of antistatic conductive and dissipative flooring products helps conduct the static charge away, thus eliminating the hazard.

Q14. Is the Anti-static effect on Endura tiles long lasting?

- A. The Antistatic ceramic tiles (dissipative & conductive variety) are produced by mixing fine semi-conducting oxide powders into the ceramic glaze. Firing of the glaze to a high temperature results in sintering and formation of a stable electrically conducting network of ions in solid solution. This electrically conducting network is fused on the tile, thus making the Antistatic effect permanent for the lifetime of the product.

Q15. How do Antistatic tiles help reduce fire hazards?

- A. Static electricity accumulates on the surface of any floor be it natural stone, ceramic tile or other flooring material. This static electricity is accumulated due to the friction between any two surfaces like shoes and the floor. Endura Anti-static tiles are manufactured using a specially formulated conducting glaze that carries the static electricity charge from the surface of the tile to ground thus eliminating the fire hazard.

Q16. Which are the application areas recommended for Endura Antistatic tiles?

- A. Recommended application areas for Endura Antistatic tiles are Server rooms, Computer Data Center rooms, PLC Panel rooms, PCB Manufacturing units, Laboratories handling sensitive equipment or chemicals, Petro chemical industries, Shell making factories, Ordnance factories and other Defence factories, Bulk Drug plants, Chemical and Fertilizer plants, etc.

Q17. What are the other advantages of using Endura Antistatic tiles?

- A. Apart from antistatic property Endura Anti-static tiles are highly abrasion resistant, have superior chemical durability, very high mechanical strength and are stain-proof.

frequentlyaskedquestions

Q18. What are the advantages of Anti-static Endura tiles versus Vinyl or Epoxy based Polymer tiles and conducting rubber based flooring products?

Comparison between Endura Antistatic Tile & Vinyl Flooring

S. No.	Test Description	Vinyl/Epoxy/ Rubber Antistatic Floor	Endura Antistatic Tile
1	Abrasion Resistance	Will easily scratch & tear	Will not tear & is highly scratch resistant
2	Chemical Resistance	Easily reacts with mild acids and alkalis	Very high resistance to even concentrated acids & alkalis
3	Durability	Low	Very high
4	Stain Resistant	Easily stains	Stain resistant
5	Color Permanence	Fades with time	Color is permanent
6	Hygiene	Dampness or humidity causes fungus formation	Glazed surface is impervious and is easy to clean and maintain
7	Maintenance	High Maintenance	Virtually no maintenance
8	Fire Resistant	Susceptible to fire	Fire resistant
9	Mechanical Strength	Low	High
10	Impact Resistance	Low	High

Q19. What is the recommended procedure for installing Endura Antistatic tiles?

- A. Endura Antistatic tiles can be installed using conventional cement - sand mortar or using synthetic adhesives such as ARDEX ENDURA and maintaining a 0.3cm to 0.5cm joint that is about 0.6cm to 0.8cm deep. Rake open the joints and fix good quality copper wire into the joints. The joints would then need to be sealed with conducting epoxy grout, to allow for a smooth discharge of any accumulated static charge.

Q20. Why are special tiles required for swimming pools ?

- A. Safety of the swimmer and spectator is an important criteria for the swimming pool design. The pool surface is used when the feet are wet and the feet soles are soft after soaking in water. This condition necessitates the tiles to be specially designed to suit barefoot usage since the skin is soft and can get hurt easily.

Q21. What benefits do Endura swimming pool tile offer ?

- A. Endura offers the best designed tiles for covering all areas of the swimming pool. Anti-skid property that give good grip without hurting in dry and wet areas. Coloured pool tiles that show depth and pool edge tiles with safety markings as per international colour coding standard (FINA) Specially designed fitting tiles to cover all corners ensuring no sharp edges. The unique body and glaze composition have been specially designed factoring in the fact that the pool tiles would be continuously exposed to water .

frequentlyaskedquestions

Q22. Do the swimming pool tiles adhere to any international standard?

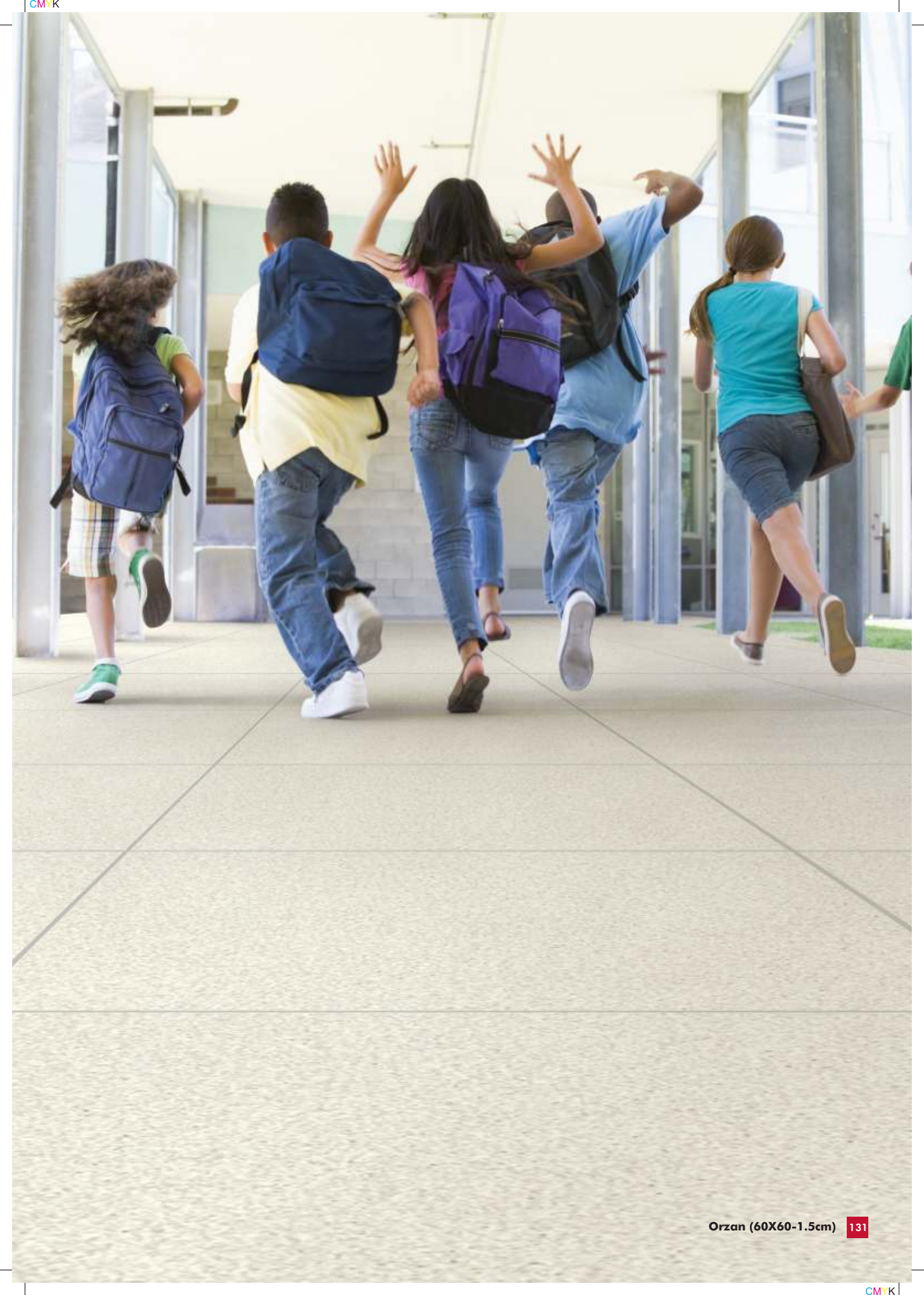
- A. Yes. These tiles are made as per the stringent standards laid down by ASA, FINA (Federation Internationale de Natation Amateur) & European Standards.

Q23. What are the other applications of swimming pool tiles?

- A. Endura swimming pool tiles can be used to line water tanks in buildings. The water storage tank which are either underground or overhead can be lined in the inside with Endura tiles to keep the area clean. The surface will have less algae growth as the tiles are coated with a impervious glass surface, thus making it an ideal choice for water storage, including drinking water.

Q24. How is CladStone different from commonly used Wall tiles?

- A. CladStone is used for exterior application which enhances the Aesthetics & also increases the life of the Cladded Structure. CladStone has been developed in a small size of 24cm X 6cm with 0.6cm body, which makes it unique for exterior wall application. Numerous creative combinations can be worked out with this small sized tile. The vitrified body of Cladstone ensures non fading of colors, thermal & frost resistance & protection of walls from external elements.



technicalspecifications

(Hi-Traffic & Industrial Tiles)

S. No.	Test Description	IS 4457:2007	Hi-Traffic: Sandex, Colours, Series	Hi-Traffic: Pavers Series	Industrial Tiles		
					1.2cm	1.5cm	2cm
A) Dimension Quality							
1	Deviation in Length & Width	±0.75%	±0.2%	±0.6%	±0.6%	±0.6%	±0.6%
2	Deviation in Thickness	±5%	±5%	±5%	±5%	±5%	±5%
3	Straightness of Sides	±0.5%	±0.2%	±0.4%	±0.4%	±0.4%	±0.5%
4	Rectangularity	±0.6%	±0.3%	±0.5%	±0.5%	±0.5%	±0.5%
5	Surface Flatness	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.3%
B) Physical Properties							
1	Water Absorption	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%
2	Mohs Hardness		>7	>7	>7	>7	>7
3	Flexural Strength (Average MOR)	>35N/mm ²	>35N/mm ²	>35N/mm ²	>38N/mm ²	>38N/mm ²	>38N/mm ²
4	Breaking Strength	≥1300N	>1700 N	>1700N	>2500N	>4000N	>7500N
5	Abrasion Resistance/Deep Abrasion	<175mm ³	<144mm ³	<144mm ³	<144mm ³	<144mm ³	<144mm ³
6	Skid Resistance	>0.4	>0.6	>0.6	>0.6	>0.6	>0.6
7	Density (gm/cc)	>2	>2.2	>2.2	>2.2	>2.2	>2.2
8	Moisture Expansion	Nil	Nil	Nil	Nil	Nil	Nil
C) Chemical Properties							
1	Resistance to Conc. Acid (wt. Loss)	< 1.5 %	≤1 %	≤1 %	≤1 %	≤1 %	≤1 %
2	Resistance to Household Chemicals & Swimming Pool Salts	Resistance	Resistance	Resistance	Resistance	Resistance	Resistance
3	Stain Resistance	Resistance	Resistance	Resistance	Resistance	Resistance	Resistance
D) Thermal Properties							
1	Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹
2	Thermal Shock Resistance	No damage	No damage	No damage	No damage	No damage	No damage

technicalspecifications

(EDC Designer Collection Tiles - 1.2cm Thick)

S. No.	Test Description	30-30cm - 1.2cm	Test Method
A) Dimension Quality			
1	Deviation in Length & Width	±0.2%	ISO 10545-2
2	Deviation in Thickness	±4%	ISO 10545-2
3	Straightness of Sides	±0.2%	ISO 10545-2
4	Rectangularity	±0.2%	ISO 10545-2
5	Surface Flatness	±0.2%	ISO 10545-2
B) Physical Properties			
1	Water Absorption	<0.5%	ISO 10545-3
2	Mohs Hardness	>6	EN 101
3	Flexural Strength (Average MOR)	>35 N/mm ²	ISO 10545-4
4	Breaking Strength	>2500 N	ISO 10545-4
5	Abrasion Resistance/Deep Abrasion	NA	ISO 10545-6
6	Abrasion Resistance (PEI Rating)	Min. PEI IV	ISO 10545-7
7	Skid Resistance	>0.6	ASTM C1028-7
8	Density (gm/cc)	>2.2	ASTM C373-16
9	Moisture Expansion	≤ 0.02mm/m	ISO 10545-10
C) Chemical Properties			
1	Resistance to Conc. Acid (wt. Loss)	≤ 1%	IS 4457-2007
2	Resistance to Household Chemicals & Swimming Pool Salts	Resistant	ISO 10545-13
3	Stain Resistance	Resistant	ISO 10545-14
D) Thermal Properties			
1	Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	ISO 10545-8
2	Thermal Shock Resistance	No Damage	ISO 10545-9

technicalspecifications
(EDC Designer Collection Tiles - 1cm Thick)

S. No.	Test Description	Vitrified (Glazed) Floor		Test Method
		ISO 13006/EN 14411 Gr. Bla	Johnson 30x30cm-1cm Vitrified Glazed	
1	Deviation in Length & Width	±0.6%	±0.2%	ISO 10545-2
2	Deviation in Thickness	±5.0%	±4.0%	ISO 10545-2
3	Straightness of Sides	±0.5%	±0.2%	ISO 10545-2
4	Rectangularity	±0.6%	±0.2%	ISO 10545-2
5	Surface Flatness	±0.5%	±0.2%	ISO 10545-2
6	Surface Quality	Min 95%	Min 95%	ISO 10545-2
7	Water Absorption	<0.5%	<0.5%	ISO 10545-3
8	Flexural Strength (Avg MOR)	>35 N/mm ²	>35 N/mm ²	ISO 10545-4
9	Scratch Hardness of Surface (Moh's Scale)	>3	>3	EN 101
10	Resistance to Surface Abrasion (PEI)	PEI I-V	Meets & Exceeds Specs.	ISO 10545-7
11	Crazing Resistance	2 Cycles	Meets & Exceeds Specs.	ISO 10545-11
12	Linear Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	ISO 10545-8
13	Thermal Shock Resistance	No Damage	No Damage	ISO 10545-9
14	Resistance to Household Chemicals	Resistant	Resistant	ISO 10545-13
15	Resistance to Staining	Resistant	Resistant	ISO 10545-14
16	Breaking Strength	>1300 N	Meets & Exceeds Specs.	ISO 10545-4
17	Colour Resistance to UV Light	Resistant	Resistant	DIN 51094
18	Frost Resistance	Frost Proof	Frost Proof	ISO 10545-12

technicalspecifications

(Cool Roof Tiles)

S. No.	Test Description	IS 4457:2007 / ISO 13006 Group Bla	Endura Cool Roof	Test Method
1	Deviation in Length & Width	±0.6%	±0.2%	IS 4457:2007 Annex B
2	Deviation in Thickness	±5%	±5%	IS 4457:2007 Annex B
3	Straightness of sides	±0.2%	±0.2%	IS 4457:2007 Annex B
4	Rectangularity	±0.2%	±0.2%	IS 4457:2007 Annex B
5	Surface flatness	±0.3%	±0.3%	IS 4457:2007 Annex B
6	Surface Quality	Min 95%	Min 95%	IS 4457:2007 Annex B
7	Water Absorption	< 0.5%	< 0.5%	IS 4457:2007 Annex C
8	Scratch hardness of surface (Moh's scale)	≥ 6	≥ 6	IS 13630 part 13
9	Flexural Strength (Average MOR)	>35N/mm ²	>35N/mm ²	IS 4457:2007 Annex D
10	Breaking Strength	>1300N	>1700N	IS 4457:2007 Annex D
11	Resistance to deep Abrasion	<175mm ³	<144mm ³	IS 4457:2007 Annex E
12	Skid Resistance (Friction coefficient)	>0.4	>0.6	ISO 10545-17
13	Bulk Density, in (g/cc)	>2	>2.2	DIN 51082
14	Linear Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	IS 13630 part 4
15	Thermal shock Resistance	No damage	No damage	IS 13630 part 5
16	Frost resistance	Frost proof	Frost proof	IS 13630 part 10
17	Resistance to household chemicals & swimming pool salts	Resistant	Resistant	IS 4457:2007 Annex F
18	Resistance to Conc Acid (wt. Loss)	< 1.5 %	< 1.5 %	IS 4457:2007 Annex G
19	Resistance to Stain	Resistant	Resistant	IS 13630 part 8
20	Colour resistance to UV light	Resistant	Resistant	DIN 51094
21	Moisture expansion	Nil	Nil	IS 13630 part 3
22	Solar Reflectance Index (SRI)	>78	>90 (White Colour) >78 (Other Colours)	ASTM E1980, EN 673, and En411

technical

specifications

(Meteor Tiles)

S. No.	Test Description	Endura 60 x 60 cm - Rectified		Test Method
		1.5cm	2cm	
Dimensional Properties				
1	Deviation in Length & Width	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 15622:2006
2	Deviation in Thickness	±5%	±5%	
3	Straightness of sides	±0.1%	±0.1%	
4	Rectangularity	±0.1%	±0.1%	
5	Surface flatness	±0.2%	±0.2%	
6	Surface Quality	Minimum 95% of the tiles shall be free from visible defects		
Physical Properties				
7	Water absorption	< 0.5%	< 0.5%	IS 4457:2007 Annex C / IS 15622:2006
8	Mohs Hardness	>6	>6	IS 13630 Part 13
9	Flexural strength (average MOR)	>38 N/mm²	>38 N/mm²	IS 4457:2007 Annex D / IS 15622:2006
10	Breaking Strength	>6000N	>8000N	
11	Abrasion resistance/Deep abrasion	<144mm³	<144mm³	IS 4457:2007 Annex E / IS 15622:2006
12	Skid Resistance	>0.6	>0.6	ASTM C1028-7
13	Density (gm/cc)	>2.2	>2.2	ASTM C373-16
14	Moisture expansion	Nil	Nil	ISO 10545-10
Chemical Properties				
15	Resistance to household chemicals & swimming pool salts	Resistant	Resistant	IS 4457:2007 Annex F / IS 15622:2006
16	Resistance to Conc Acid (wt. Loss)	≤ 1 %	≤ 1 %	IS 4457:2007 Annex G
17	Stain resistance	Min. Class 3	Min. Class 3	ISO 10545-14
Thermal Properties				
18	Thermal expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	ISO 10545 -8
19	Thermal shock resistance	No damage	No damage	ISO 10545 -9

technicalspecifications

(Anti-Static Tiles)

S.No.	Test Description	International Std. ISO 13006, Group Bla	Johnson Endura Industrial Tiles: Anti-Static Value	Test Method
1	Deviation in Length & Width	±0.6%	±0.1%	ISO 10545-2
2	Deviation in Thickness	±5%	±4%	ISO 10545-2
3	Straightness of Sides	±0.5%	±0.1%	ISO 10545-2
4	Rectangularity	±0.6%	±0.2%	ISO 10545-2
5	Surface Flatness	±0.5%	±0.2%	ISO 10545-2
6	Water Absorption	< 0.5%	< 0.05%	ISO 10545-3
7	Flexural Strength (Average MOR)	>35N/mm²	>38N/mm²	ISO 10545-4
8	Breaking Strength	>1300N	>1700N	ISO 10545-4
9	Resistance to Surface Abrasion	1 to V	PEI class III	ISO 10545-7
10	Bulk Density, in (g/cc)	>2	>2	DIN 51082
11	Linear Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	ISO 10545-8
12	Thermal Shock Resistance	No damage	No damage	ISO 10545-9
13	Frost Resistance	Frost proof	Frost proof	ISO 10545-12
14	Resistance to Chemicals (Acid & Alkalis)	Resistant	Resistant	ISO 10545-13
15	Moisture Expansion	Nil	Nil	ISO 10545-10
16	Surface Electrical Resistance (ANSI Norms)	Below 1 Mega Ohm (Conductive)	< 50 Kilo Ohm	ANSI ESD S7.1
		Between 1Mega Ohm to 1Giga Ohm (Dissipative)	1Mega Ohm to 1Giga Ohm	
	Static Decay Time	<0.5 Sec (Conductive)	<0.5 Sec	MIL-B-8170 Para 4.8.3 & FED-STD- 101C Method 4046
		< 2 Sec (Dissipative)	<0.5 Sec	

technicalspecifications

(Swimming Pool Tiles)

		Pool Tiles		Pool Fittings		
S. No.	Test Description	International Specification ISO 13006/EN 14411 Group BIb	Johnson Endura Swimming Pool Tile	International Specification BS6431: Part 2, EN 121 Group AI	Johnson Endura Swimming Pool Fitting Test Value	Test Method
1	Deviation in Length/Width	0.75%	0.5%	±2%	1.25%	ISO 10545-2
2	Deviation in Thickness	5%	3.0%	±10%	10%	ISO 10545-2
3	Straightness of Side	0.5%	0.2%	±0.5%	0.5%	ISO 10545-2
4	Rectangularity	0.6%	0.2%	±1%	1.0%	ISO 10545-2
5	Surface Flatness	0.5%	0.2%	0.5%	0.5%	ISO 10545-2
6	Water Absorption	Max 3%	Avg. 2.5%	≤3.0%	<2.5%	ISO 10545-2
7	Modulus of Rupture	>27 N/mm ²	>30 N/mm ²	18N/mm ²	18N/mm ²	ISO 10545-3
8	Scratch Hardness	Min 5	Min 5	Min 5	Min. 5	EN 101
9	Linear Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹	ISO 10545-8
10	Thermal Shock	No damage	No damage	No damage	No damage	ISO 10545-9
11	Chemical Resistance	Resistant	Resistant	Resistant	Resistant	ISO 10545-13
12	Frost Resistance	No damage	No damage	No damage	No damage	ISO 10545-12
13	Resistance to Swimming Pool Water Cleaning Agents	Minimum GB	Minimum GB	Resistant	Resistant	ISO 10545-13

technicalspecifications

(CladStone Tiles)

S. No.	Test Description	IS 4457:2007	CladStone
A) Dimension Quality			
1	Deviation in Length & Width	±0.75%	±0.5%
2	Deviation in Thickness	±5%	±5%
3	Straightness of Sides	±0.5%	±0.3%
4	Rectangularity	±0.6%	±0.5%
5	Surface Flatness	±0.5%	±0.4%
B) Physical Properties			
1	Water Absorption	< 0.5%	< 0.5%
2	Mohs Hardness		>7
3	Flexural Strength (Average MOR)	>35N/mm ²	>38N/mm ²
4	Breaking Strength	≥1300N	>1700N
5	Abrasion Resistance/Deep Abrasion	<175mm ³	<144mm ³
6	Skid Resistance	>0.4	>0.6
7	Density (gm/cc)	>2	>2.2
8	Moisture Expansion	Nil	Nil
C) Chemical Properties			
1	Resistance to Conc. Acid (wt. Loss)	< 1.5 %	≤1 %
2	Resistance to Household Chemicals & Swimming Pool Salts	Resistance	Resistance
3	Stain Resistance	Resistance	Resistance
D) Thermal Properties			
1	Thermal Expansion	<9 x 10 ⁻⁶ K ⁻¹	<9 x 10 ⁻⁶ K ⁻¹
2	Thermal Shock Resistance	No damage	No damage

packagingdetails

Product	Nominal Size (cm)	No. of Tiles/box	Approx. Area/box (sq.m)	Approx. Weight/box (kg)	Approx. Cartons/20' Container	Approx. Area/20' Container (sq.m)	Approx. Boxes/16T Truck	Approx. sqm/16T Truck
Hi-Traffic								
1cm Thick								
20X20	20X20	20	0.80	22	909	754	727	603
30X30R	30X30	10	0.90	20.5	976	878	780	702
40X40R	40X40	6	0.96	21.7	922	885	737	707
60X60R	60X60	4	1.44	30	733	1056	533	768
EDC								
1cm Thick								
(Dewas Plant)	30X30	8	0.72	16	1220	878	1000	720
(Kunigal Plant)	30X30	8	0.72	16	1220	878	1000	720
1.2cm Thick								
30X30	30X30	8	0.72	19.2	1296	933	833	600
Cool Roof								
1cm Thick								
(Dewas Plant)	30X30	10	0.9	20.2	1100	990	792	712
(Kunigal Plant)	30X30	8	0.72	16.2	1220	878	1000	720
Meteor								
1.5cm Thick (Pen Plant)	60X60	3	1.08	35	700	756	457	494
2cm Thick (Dewas Plant)	60X60	2	0.72	31.5	576	415	508	366
Industrial								
1.2cm Thick								
20X10	20X10	30	0.6	16.5	1344	806	970	582
30X30R	30X30	8	0.72	19	1296	933	842	606
1.5cm Thick								
20X10	20X10	20	0.4	13.7	1440	576	1168	467
20X20R	20X20	15	0.6	21.5	1152	691	744	447
30X30R	30X30	6	0.54	18.5	1296	700	865	467
2cm Thick								
20X10	20X10	20	0.4	17	1344	538	941	376
30X30R	30X30	5	0.45	20	1296	583	800	360
Anti-Static Series - 1cm Thick								
60X60R	60X60	4	1.44	29.2	753	1084	548	789
Swimming Pool Tiles								
24.7X12.2	24.7X12.2	30	0.90	16.5	1212	1096	969	872
Cladstone Tiles - 0.6cm Thick								
24X6 0.6cm	24X6	80	1.15	25	800	920	640	736

selectclientele

Many discerning buyers have chosen Johnson Endura products for Pavements, Exteriors, Swimming Pools or Industrial applications. Listed below are a few of them :

BUSINESS HOUSE & COMMERCIAL BUILDING :

- Fortune 2000, Bandra Kurla Complex, Mumbai - Terrace Garden
- Vodafone, Corporate Office, Ahmedabad - Driveway
- Indian Art Gallery, Bhadohi, U. P. - Warehouse
- Supreme Chambers, Andheri (W), Mumbai - Driveway
- Haldia City Centre, Haldia

EDUCATIONAL INSTITUTE :

- VED Vigyan Mahavidyalaya, Baroda - Passages & Rooms
- Mehsana Education Trust, Mehsana - Class Room Flooring
- St. Aloysius College Mangalore - Common Area
- Vendroya Medical & Dental College, Mangalore - Hospital Floor
- Sri Guru Ramdas Medical College, Amritsar.
- DPS Bathinda, Classroom Floor
- Glendale Public School, Hyderabad - Classroom Floors
- Radha International Academy, Aligarh - Corridors
- DPS, Aligarh, Yamunanagar, Hyderabad, Vijayawada
- Doon School, Dehradun - Pathway
- Brilliant Public School, Patiala - Classrooms
- Poddar International School, Ahmedabad - Class rooms, Labs, Foyer
- Career Point, Kota - Parking
- IIIM, Jaipur - Parking
- KIIT University - Bhubaneswar - Bathroom
- Dr. Babasaheb Ambedkar University, Ahmedabad - Class Rooms
- Indian School of Business, Hyderabad - Class Rooms & Common Areas
- National Institute of Technology, Warangal - Common & Passage Area

- BITS Pilani, Hyderabad - Common & Passage Area
- Bengal Engineering College, Shibpur, Kolkata - Swimming Pool Deck
- Rabi Tirtha, Kolkata - Museum
- Regent Education and Research Foundation, Kolkata - Paving

HOSPITAL :

- Laxmi Memorial Education Trust, Mangalore - Hospital Floor
- Indian Red Cross Society, Branch Location - Hall
- MIMS Hospital, Wayanad - Passages & Rooms
- Military Hospital, Jodhpur - Parking Area
- Ahmedabad Cancer Society, Asarva, Ahmedabad - Passages
- AKG Hospital, Kannur - Driveway
- Ambuja Neotia, Kolkata and Siliguri

HOTEL :

- Pola Paradise Hotel, Bellary - Pavement Flooring
- Hotel Green Park, Hyderabad
- Lake View Hotel, Mahabaleshwar - Pavement & Driveway
- Regal Hotel, Mahabaleshwar - Driveway
- Maurya Sheraton Towers, Delhi
- Crowne Plaza, New Delhi - Kitchen & Laundry Area
- J. W. Marriott, New Delhi - Kitchen Area
- Hilton Hotel, Gurgaon - Kitchen & Laundry Area
- Hotel Abha Regency, Aligarh - Kitchen, Staircase & Ramp
- Contel Hotel, Panchkula - Terrace
- Hotel Holiday Inn, Jaipur - Bathroom & Kitchen Area
- Hyatt Regency, Andheri (E), Mumbai - Kitchen Area
- Sinclairs Hotel, Siliguri - Swimming Pool Deck

HOUSING :

- Himalaya Co-operative Housing Trust Ltd.,
Ahmedabad - Parking Passage
- Dynasty Developers, Bangalore - Terrace Floor
- Woods Well Apartments, Bangalore - Car Parking Area
- Shanti Ashram, Mumbai - Pathways around the Ashram
- Malbar Co-operative Housing Society,
Mumbai - Car Garage and Driveway
- Mantri Developers, Hyderabad - Lift Lobby & Common Parking
- Splendid Group, Hyderabad - Open Terrace of Palm Meadow Villas
- Lodha Builders, Dombivli, Thane, Miraroad,
Kanjurmarg, Mumbai - Utility & Balcony Area
- EMAAR MGF, Mohali - Balcony
- Bakeri Group - Ahmedabad - Driveway
- Safal Group, Ahmedabad - Driveway
- Oberoi Builders, Jogeshwari, Mumbai - Utility Area
- Pittie Group, BKC, Mumbai - Driveway & Parking
- Regency Group, Thane - Stilt Parking

SWIMMING POOL :

- Talkatora Stadium, Delhi
- National Games Stadium, Hyderabad - Swimming Pool Deck
- Jaya Bheri Silicon Country, Hyderabad - Swimming Pool Deck
- Supreme Industries, Nagothane - Swimming Pool Deck
- Goel Promoters, Pune - Swimming Pool Deck
- Parmar Farm House, Pen - Swimming Pool

FOOD PROCESSING :

- Ruchi Soya Oil Extraction Unit, Indore
- Nestle, Baddi
- Hindustan Unilever Ltd., Rajpura, Mysore,
Nashik & Kolkata
- Tricom Agrochem Ltd., Pune

- Nilons Enterprise, Jalgaon
- ITC Ltd., Ranjangaon, Pune
- SDC Agrofoods, Hyderabad
- Ravindranath Fruit Canning Industries,
Hyderabad
- FIL Industries Ltd., Jammu
- Perfetti Van Melle Pvt. Ltd., Manesar
- Narmada Drinks Pvt. Ltd., Bilaspur
- Cargill Industries, Daund, Pune
- Tetrapack Industries, Chakan, Pune
- Hindustan Coca Cola Beverages, Kheda,
Hyderabad & Guntur
- Pepsico Holdings, Kanpur
- Dharampal Satyapal Ltd., Kullu, H.P.

BULK DRUGS :

- Alchem, Ankleshwar
- Sun Pharma, Ahmednagar
- Unichem, Roha
- Cadila, Ankleshwar
- Lupin Pharma, Boisar
- Nicholas Piramal, Mumbai
- Avantis, Ankleshwar
- Cipla Ltd., Patalganga, Kurkumbh & Bangalore
- Matrix Laboratories, Hyderabad & Vizag
- Dr. Reddy's Laboratories, Hyderabad & Vizag
- Covalent Labs, Hyderabad & Vizag
- Polydrug Pharma, Ambernath

PHARMACEUTICALS :

- Glaxo, Thane
- Johnson and Johnson, Mumbai
- Wockhardt Ltd., Aurangabad

DAIRY INDUSTRIES :

- Hatsun Foods, Dharmapuri
- Vijaya Dairy, Hyderabad
- Amul Dairy, Dharuhera, Manesar, Virar
- NDDB, Anand
- Gokul Dairy, Kolhapur, Vashi
- Mother Dairy, Anand
- Milma Dairy, Wayanad
- Gowardhan Dairy, Parag Milk Foods, Pune, Chittoor

TEXTILES :

- Bombay Dyeing DMT Plant, Patalganga
- Reliance, Patalganga
- Lavino Kapur, Boisar
- Arvind Mills, Ahmedabad
- Alok Industries, Silvassa, Vapi
- Bombay Rayon, Boisar, Kolhapur & Bangalore
- Mandana Dyeing, Boisar
- Sheetal Fibre Ltd., Ludhiana
- Choudhary Fashions, Jaipur

PETROLEUM :

- Reliance Industries, Jamnagar, Patalganga
- GAIL Gas Pipe Line, Vizag, Vijayawada
- Guru Gobind Singh Refinery, Bathinda
- HPCL, Mahul
- BPCL, Mahul
- IOCL, Haldia, Mathura
- BPCL, Mumbai Manmad Pipe Line, Manmad Sawai Madhopur Extension

AUTO MOBILES :

- Ceat Shoppe, All India
- FIAT, All India
- Maruti, All India
- Mahindra & Mahindra, All India

- Volkswagen, All India
- Skoda India, All India
- BMW, All India
- Daimler India, All India
- Bharat Benz, All India
- Honda, All India
- Hyundai, All India
- Mahindra (Scorpio Showroom), Secunderabad
- Bajaj Auto Showroom, Ahmedabad

CORROSION PROTECTION APPLICATION :

- RCF Thal Plant
- Exide Industries Limited, Hosur in Tamilnadu

BREWERIES :

- Seagram, Nashik
- United Breweries, Aurangabad, Hyderabad, Orissa
- Arian Breweries, Jaipur
- SAB Miller, Aurangabad
- Varun Breweries, Noida
- Carlsberg India, Hyderabad

GOVERNMENT AGENCIES :

- BARC
- MES
- Railways
- Airport Authority of India
- WBTDc, Murti
- Ichapur Rifle Factory, Ichapur
- Chittaranjan Locomotive Works, Chittaranjan
- CPWD, Kolkata

CHEMICAL PLANT :

- SD Finechem, Tarapur
- BASF, Mangalore
- Sarex Overseas, Tarapur
- Salvi Chemicals, Boisar
- Clariant Chemicals, Roha
- Jubilant Life Sciences, Bharuch
- Navin Chemical Enterprise, Dewas

PUBLIC SECTOR UNDERTAKING :

- ONGC
- HPCL
- BPCL

HEAVY INDUSTRIES AND OTHERS :

- Hindalco, Sambalpur
- Adhunik Alloys and Power Ltd., Jamshedpur

LEATHER TRADE :

- Reflexions Narayani Impex Pvt. Ltd., Kolkata

JOHNSON ENDURA ANTISTATIC TILES :

- Chemstroll Engineering, Goa
- Bilag Industries Ltd. (Bayer Group Company), Vapi
- MES, Vizag (Dolphin Nose Station Base)
- Department of Malaria Health Research Institute, Delhi
- Johnson Matthey India Pvt. Ltd., Talaja, Mumbai
- Alen Electronics Pvt. Ltd., Ambernath, Mumbai
- Aurobindo Pharma, Hyderabad & Vizag
- Mylan Labs, Hyderabad & Vizag
- Defense Research & development organization, Santosh Nagar, Hyderabad
- Dr. Reddy Laboratories, Hyderabad
- UP Projects Corporation Ltd. : 200 Bedded Mother & Child Referral Hospital, Gomti Nagar, Lucknow

COOL ROOF SRI :

- Jagat Guru Krupaluji Maharaj Trust Hospital, Virndavan, U.P.
- Sientific Center UPRNN Uttar Pradesh Rashtriya Nirman Nigam, Lucknow, U.P.
- Creative Interior Architect - Bungalow Project, Dapoli, Maharashtra
- Alen Electronics - Medical Equipment Manufacturing Unit, Ambernath, Maharashtra
- Tripura University, Agartala, Tripura
- Pinnacle Infotech Solutions - IT Industry, Durgapur, West Bengal
- Jaye Bheri Temple Tree - Prm Apartment Project, Hyderabad, Telengana
- Naidu College, Bhubaneshwar, Orissa
- Dinbandhu Pahapatra Prm Building Project, Bhubaneshwar, Orissa
- Dr. Chitra - Green House Building Project for Platinum Certification, Tuticorin, Tamilnadu
- Vellore Institute of Technology, Vellore, Tamilnadu
- TCS Project, Chennai, Tamilnadu
- MIND Tree Ltd. - IT Company, Bangalore, Karnataka

successstories

1 Johnson Endura tiles in a Spice Manufacturing Unit

A spice manufacturing unit in Andheri, Mumbai with IPS concrete flooring found the quality of the product hampered by the dust generated. After a warning from the Food and Drug Administration, an attempt was made with epoxy layers, which could not handle the stress well. Then their original flooring was replaced with Johnson Endura tiles. The result? A hygienic, safe spice production area – and a FDA approval.

2 Johnson Endura tiles in a Leather Stitching Factory

A Mohali-based leather-stitching factory with kota-stone flooring was dissatisfied. This dull and ugly flooring had deteriorated badly because of stress and stains by machine and trolley movement. The situation turned into a positive one when their flooring was replaced with Johnson Endura Tiles. The tiles looked good, remained scratch-free and breakage free resulting in low maintenance. The enhanced aesthetics earned praise from corporate buyers .

3 Johnson Endura Tiles in Places of Worship

A Gurudwara in Lucknow had kota-stone kitchen flooring which used to get wet easily. Because of the high footfalls during the langar, the wet flooring caused concern for the safety of the devotees. After the Gurudwara got this flooring replaced with Johnson Endura tiles, their problems were resolved. The new tiles provided grip, were breakage-free and made worship much safer.

4 Johnson Endura Tiles in a Manufacturing Industry

A shocker making unit in Gurgaon had problems with safety – oil spills made operations difficult. After considering other flooring options, Epoxy flooring was installed to combat this. The result was not satisfactory as the deterioration rate of Epoxy flooring was too high. The unit then decided on Johnson Endura tiles. This anti-skid and high-stress surface allowed for easier grip and unrestricted heavy-trolley movement. Resulting in high productivity and a shocker factory environment free of shocks.

5 Johnson Endura Tiles at a Fish Harbor

A fish harbor in Kerala had a rapidly degenerating floor because of the constant movement of fish carts, trucks, tempos, and crates on their concrete and kota flooring. This caused the flooring to break leading to unhygienic conditions and waterborne diseases. This in turn worsened the quality of fish. They solved this long standing problem by replacing their flooring with heavy duty Johnson Endura Tiles which were cleaner, scratch-free and durable. The harbor was then successful in winning the confidence of consumers who visited the Cherai Harbour.

6 Johnson Endura Tiles in a Plastic Molding Unit

A plastic molding unit used kota-stone & mandana-stone on the floors in their Mumbai and Delhi factories. This always led to problems like breakage, stains and scratches during trolley movement. So when the time came for the management to make a choice for their Baddi branch they chose to go with Johnson Endura Tiles. Now the company spends a lot less on maintenance and has happier employees with increased levels of productivity.

7 Johnson Endura Tiles in Railway Battery Rooms

The battery rooms in the Railways used acid resistance bricks which were porous. They used to get stained easily and required high maintenance. The DE of Railways soon decided to put an end to this problem by replacing their flooring with Johnson Endura tiles. The results were there for everyone to see. The floors were finally easy to fix, stain free with low maintenance, making it more conducive for work.

8 Johnson Endura Tiles in Pulp Canning Units

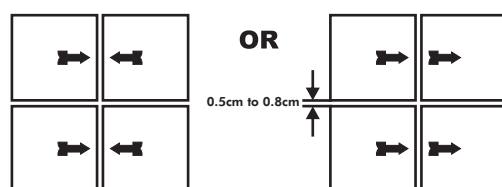
A mango pulp canning unit had been facing a maintenance issue with their kadappa floors constantly chipping off and breaking. The floor also used to catch a lot of stains due to long storage periods of the mangoes. The troubled management of the unit decided to replace their problematic flooring with Johnson Endura Tiles and Epoxy Sealant after they got notified by the local pollution control officials. With new flooring their regular maintenance issues were solved and they got the ISO 14001 certification. The flooring change also helped the unit win canning sub-contracts for big brands like Frooti, Pepsi and Hindustan Coca Cola Beverages.

johnsonenduratilefixinginstructions*

- Before fixing the tiles, lay them out in the desired pattern and make sure that they give an acceptable blend of shade, colour & design. Also make sure that the tiles are acceptable to your satisfaction. Please note that certain amount of shade and size variation is inherent in the manufacturing of ceramic products.
- For fixing these tiles, we recommend the use of ARDEX ENDURA tile fixing adhesives. For best results, follow the tile fixing instruction provided along with the adhesives.
- For fixing Johnson Endura tiles on the floor using sand and cement, follow the instruction given below :
 - Use cement and sand mortar in the ratio of 1 : 4. Add some water to create a consistent paste.
 - Do not add any further water to the mix once it is completed and use the same within one hour.
 - Apply a 2cm to 3cm layer of bedding material over an area of 1 square meter at a time on the surface of the area. Apply a fine slurry to the back of the tile to ensure proper and full bedding. Press gently for even adherence at back of the tile.

DO NOT USE AN IRON HAMMER OR SOME HEAVY MATERIAL TO PRESS THE TILE.
- For fixing Johnson Endura tiles on Dado, we recommend the use of tile fixing adhesive 'Gold Star' from ARDEX ENDURA. Please follow the manufacturer's instructions for the same. We do not recommend the use of sand and cement for fixing on Dado.
- Mark and layout the tiles from the centre of the area to be tiled so that cut tiles if any will be on the outer edge towards the walls.
- The nominal/ work size of the tile is as printed on the carton. It is advisable to maintain a gap of 0.5 cm to 0.8 cm between two tiles to allow for possible expansion as per ISO tolerance norms. This would give the coverage area as mentioned in the grouts.
- Complete the tiles laying process by pressing the cut Johnson Endura tiles firmly into place along the wall / floors.
- Allow 3 to 4 days for bed curing. After this period, fill the joints with cementitious or epoxy grouts from ARDEX ENDURA .
- Fifteen minutes after finishing the grouting process, wipe off excess grout with a damp sponge and polish the tiles with a soft and dry cloth for a clean surface. The tiles can also be cleaned with a mild acid (However Hydrofluoric acid and its derivatives should not be used). You can also use tile & stone cleaners from ARDEX ENDURA.
- Please note that the company does not accept any liability in case of problems arising out of non - adherence to these fixing instructions.
- It is ideal to provide 0.5 cm to 0.8 cm gap between tiles with the help of spacers.
- Kindly look for an arrow (➡) on the back of the tile and follow the laying pattern as shown below.
- THE COMPANY WILL BEAR NO RESPONSIBILITY AFTER THE TILES ARE FIXED.

NOTHING IN THESE INSTRUCTIONS IS A SUBSTITUTE FOR GOOD WORKMANSHIP AND SUPERVISION.



* Specific tile fixing instructions related to industrial tiles, swimming pool tiles, pavers, anti-static & special purpose acid/alkali/chemical resistance tiles, please visit the website www.enduratile.com & contact company representative directly.





Johnson



Johnson Marbonite



Johnson Bathrooms



Johnson Kitchens



Johnson Porselano



**Johnson
Marble&Quartz**

end-to-end**solutions**

Johnson has four sub-brands i.e. Johnson Tiles, Johnson Porcelano, Johnson Marbonite and Johnson Endura that offers end to end tiling solutions for every space and application.

JOHNSON TILES

Johnson Tiles is the flagship brand of H&R Johnson (India).

Under this brand we offer a wide variety of ceramic glazed wall and floor tiles. Some of the trend-setting innovations we have launched in Johnson Tiles include Anti-skid Bathroom Tiles, Water-Repellent Tiles, Joint-Free Tiles, Scratch-Free Tiles, Germ-Free Tiles, 3D digital tiles, Neo Digital Tiles etc.

JOHNSON PORCELANO

The ultimate expression of art in your home.

Create a luxurious sanctuary within your home by adding the exclusivity and modernism of art in its purest form with Johnson Porcelano, a new range of authentic porcelain Tiles designed specially for your walls and floors.

JOHNSON ENDURA

Johnson Endura is the only specialized brand in India offering specialty tiles for industrial premises & outdoor usages.

These offerings include unique solutions for high-traffic areas, swimming pools, tiles with anti-static benefits etc. We also have tiles for visually impaired.

JOHNSON MARBONITE

Johnson Marbonite is a brand that enjoys the reputation of having become a generic name for vitrified tiles.

Under this brand we offer the entire range of vitrified glazed and unglazed products in various large sizes and surface finishes for application in premium homes, offices, shopping malls, Airports etc.



manufacturingexcellence

Johnson has the most modern manufacturing units across strategic locations in India; Madhya Pradesh, Maharashtra, Karnataka, Pondicherry, Gujarat, Andhra Pradesh and Himachal Pradesh. Our manufacturing facilities employ the best technology from world leaders in tile manufacturing equipment. In our pursuit for manufacturing excellence and obsession with quality we have invested in automating our manufacturing process and employ equipments such as non-contact digital printing machines, microprocessor-controlled kilns, laser guided vehicle (LGV), automatic sizing and planarity controls, automatic packing machines, etc. All our plants are ISO compliant with both 9001 and 14001 certifications as well as OHSAS 18001 certification.

pioneeringinnovations

Johnson has pioneered innovation in the Indian tile industry.

- Anti-skid Bathroom Tiles, specially designed for Indian households
- Water-repellent tiles for a cleaner wall
- Joint-free wall, floor and vitrified tiles for minimum grout joints
- Scratch-free tiles for that extra durability under ambient dust conditions
- Germ-free tiles for protection against fungus and bacteria
- Stain-free vitrified tiles with enhanced stain resistance
- Anti-static tiles specially designed for use in areas such as computer server rooms and data centers
- Revolutionary digital printing to make designs come alive
- Tac-tiles to aid the visually challenged navigate
- Intellimate - intelligent toilet system for sanitarywares
- Germ-free sanitarywares

research&development

At the heart of every innovation from Johnson, lies a state-of-the-art Research and Development facility. It's where ideas are birthed, given a heart and a mind to perform. It's where we harness the powers of cutting-edge technology to deliver something that enhances your life. Located at Pen, Maharashtra, it is approved by the Department of Scientific and Industrial Research, Government of India. Every new product developed here is stringently checked for its quality, right from the raw material stage itself. The clay, the pigments, the minerals, the chemicals, whether sourced locally or internationally, are not used until they meet our exacting standards. With geologists on site, examining the quality of material from the mine itself, we ensure that what you get is fit for today and ready for tomorrow.



greeninitiative

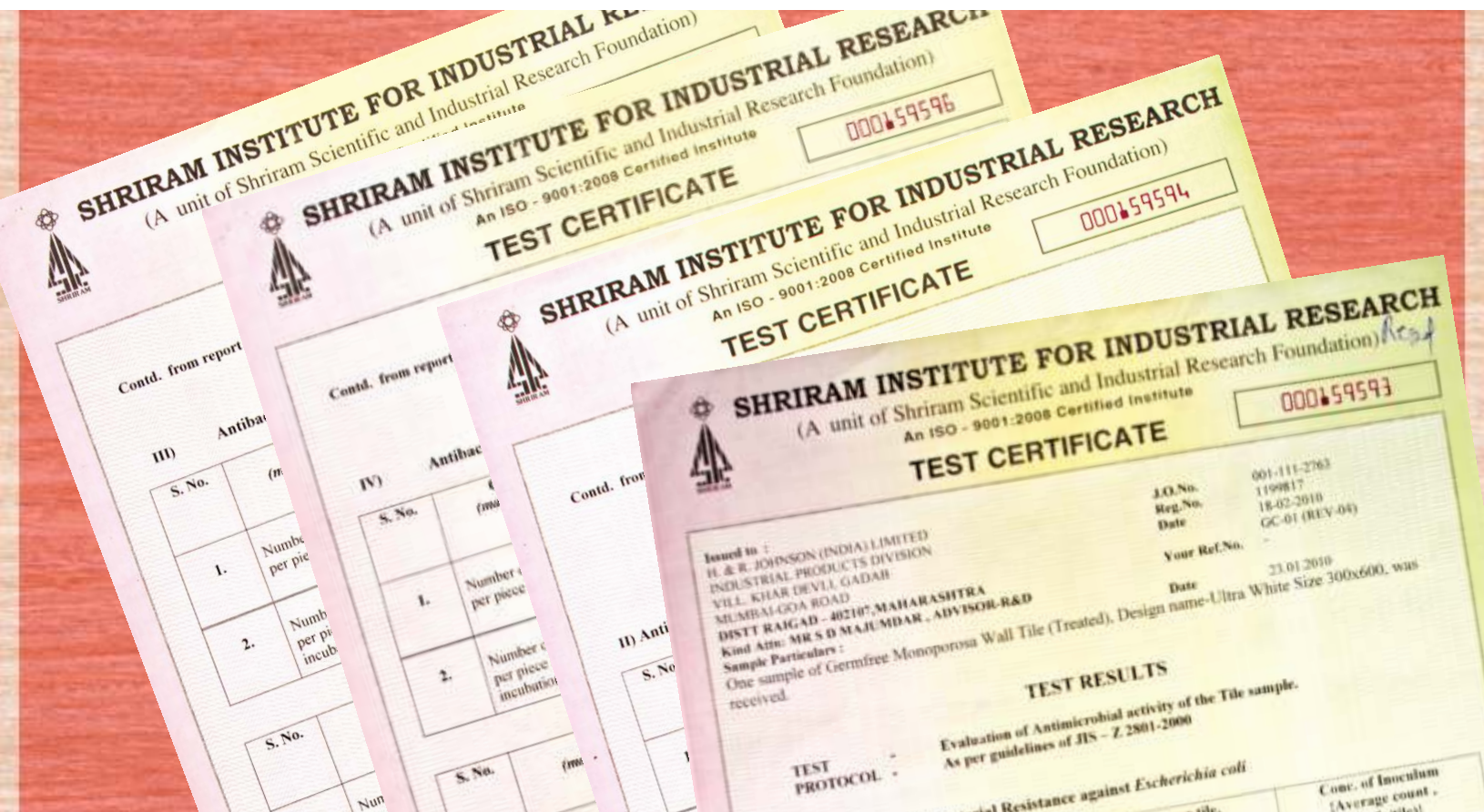
As a socially responsible company, Johnson has initiated a number of measures to reduce energy consumption and to conserve and preserve precious natural resources. Our manufacturing operations are increasingly using greener fuels like biomass and wind energy. We leverage local resources and manufacture and distribute locally in order to cut down on fuel consumption wasted in transportation. We also use minimum water, mostly harvested rainwater, reuse energy diligently and recycle waste. We have also installed high grade pollution abatement devices that restrict the release of noxious gases such as SO_x, NO_x and SPM into the environment. The company has registered two projects under the Clean Development Mechanism which is generating certified emission reduction (CER). Additionally, we have two projects on the VER+ scheme accruing VER+ credits. These initiatives have been recognized by external and Government agencies such as Gas Authority of India Limited (GAIL) and the Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India. The bigger reward, however, is the fact that we are leaving the planet behind for our children, like the way we found it. Pure and green.

Customers choosing to use our products can avail LEED or equivalent credits toward Green Building Certification under the following categories -

Material Resource : Use of local raw materials to reduce energy consumption during transportation - Available points 2.

Recycle Content : Use of recycled material in the manufacture of the product - Available points 2.

certifications



Johnson is India's largest tile manufacturer. It's commitment to quality, service and innovation is backed by certification from world's leading accreditation bodies.

ISO – 9001:2008

For implementing a Quality Management System for the Manufacture and Supply of Ceramic Tiles

OHSAS-18001

For implementing an Occupational Health & Safety Management System for the Manufacturing of Ceramic Tiles.

ISO-14001

For implementing an Environmental Management system for the Manufacturing of Ceramic Tiles.

Certificate of Merit for Energy Conservation, Bureau of Energy Efficiency, Ministry of Power A Recognition for the efficient use of energy and its conservation



awards



Johnson has been awarded the 'The Economic Times Architecture and Designs Top 100 Brands' title.

Superbrand is an internationally recognised award and is regarded as the world's foremost authority on brand management practices. And Johnson is proud to have been bestowed with the title of a Business Superbrand.

Johnson has been awarded the Reader's Digest Trusted Brand award. This is the 9th year that Johnson has received the Gold award in the wall and floor tiles category.



notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

youcanalso reachusat

Region	Branch	Tel.:
EAST	West Bengal (Kolkata) Odisha (Bhubaneswar) Ranchi Siliguri Guwahati	033-22272128/29 0674-6539836/6539837 9798845560 9836065812 9127066591
WEST	Mumbai - Bandra to Dahanu Mumbai - Central Thane to Raigad Pune Ahmedabad Indore	022-30647500/26547300 022-30647500/26547300 022-30246600 020-41301164/31/61/63 079-30072051/52/53/54/55 0731-4007441
NORTH	Jalandhar Chandigarh Delhi Jaipur Ghaziabad Lucknow Patna	01824-505038/39 0172-4697100/4656940 011-49526600 0141-2333922 0120-4110377 0522-4025128/4065471/4026028 0612-2254252
SOUTH	Bangalore Hyderabad Vijayawada Vishakapatnam Tirupathi Chennai Coimbatore Salem Madurai Tuticorin Trichy Ernakulam Calicut Trivandrum	080-25446841/42/43/46 040-29802270/71/72 0866-2543616/17 0891-2796376 0877-3254151 044-28544116/28541881 0422-2540501/2548439 0427-2280636/2280637/2280639 0452-4355584/4355594 0461-2271558/2278585 0431-2904730/40/50 0484-4098500/509/510 0495-2702505/2301474 0471-2551141

For address and contact numbers of our Johnson Exclusive Showrooms and Authorized Retailers, please visit our website www.hrjinida.com

Toll Free No.: 1800-22-7484 **E-mail :** customercare@hrjohnsonindia.com
Website : www.enduratile.com **For Export Enquiries, Email :** export@hrjohnsonindia.com



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Tel.: +91-22-3064 7300 / 2654 7300 **Fax :** +91-22-3064 7400 **Website :** www.hrjindia.com

Registered Office : 305, Laxmi Niwas Apartments, Ameerpet, Hyderabad - 500016, India.

Contact branch for Pre laying services available for select products.

Colors shown are as accurate as the limitations of the printing process will allow. Prospective customers are advised to inspect a sample of the tile before ordering. Every effort has been made to ensure the accuracy of the information given. However, the company reserves the right to change the specifications without prior notice. Sometimes, variations in shade or size may occur which is inherent to the ceramic industry. Before fixing the tiles, we urge you to read and follow the fixing instructions given on the carton box of the tiles. The company will not take any responsibility and will not accept any complaints of shade, size or planarity once the tiles have been fixed.

Although every effort is made to ascertain that all the information provided in this brochure is accurate before printing, errors may still happen. Please contact the local branch office for updated information before placing orders. The information contained in this catalog is given in good faith. The Company takes no liability on account of any loss or damage either consequential or otherwise as a result of the information provided therein.

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