

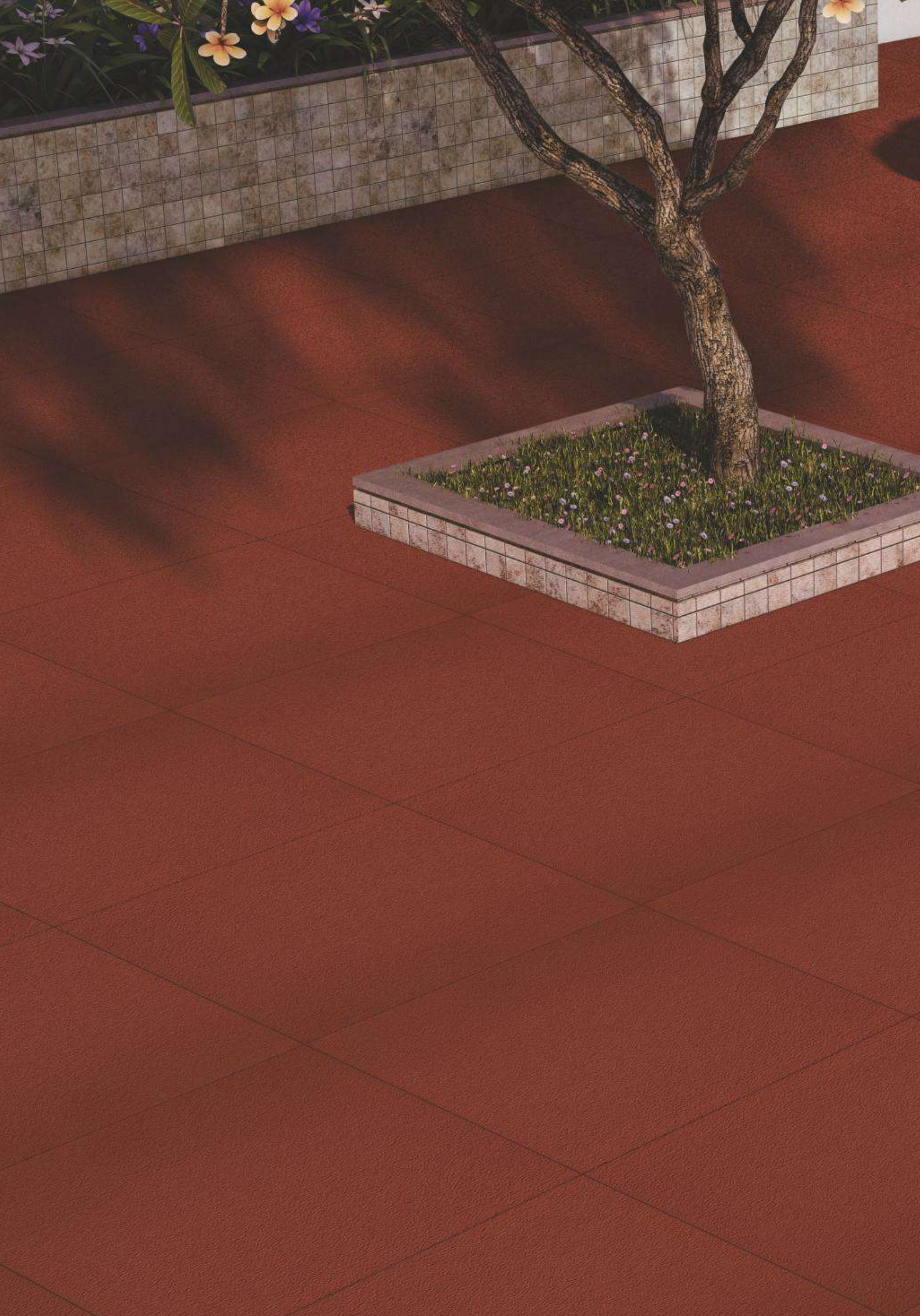
GRAND  
LEGACY OF  
**66**  
YEARS

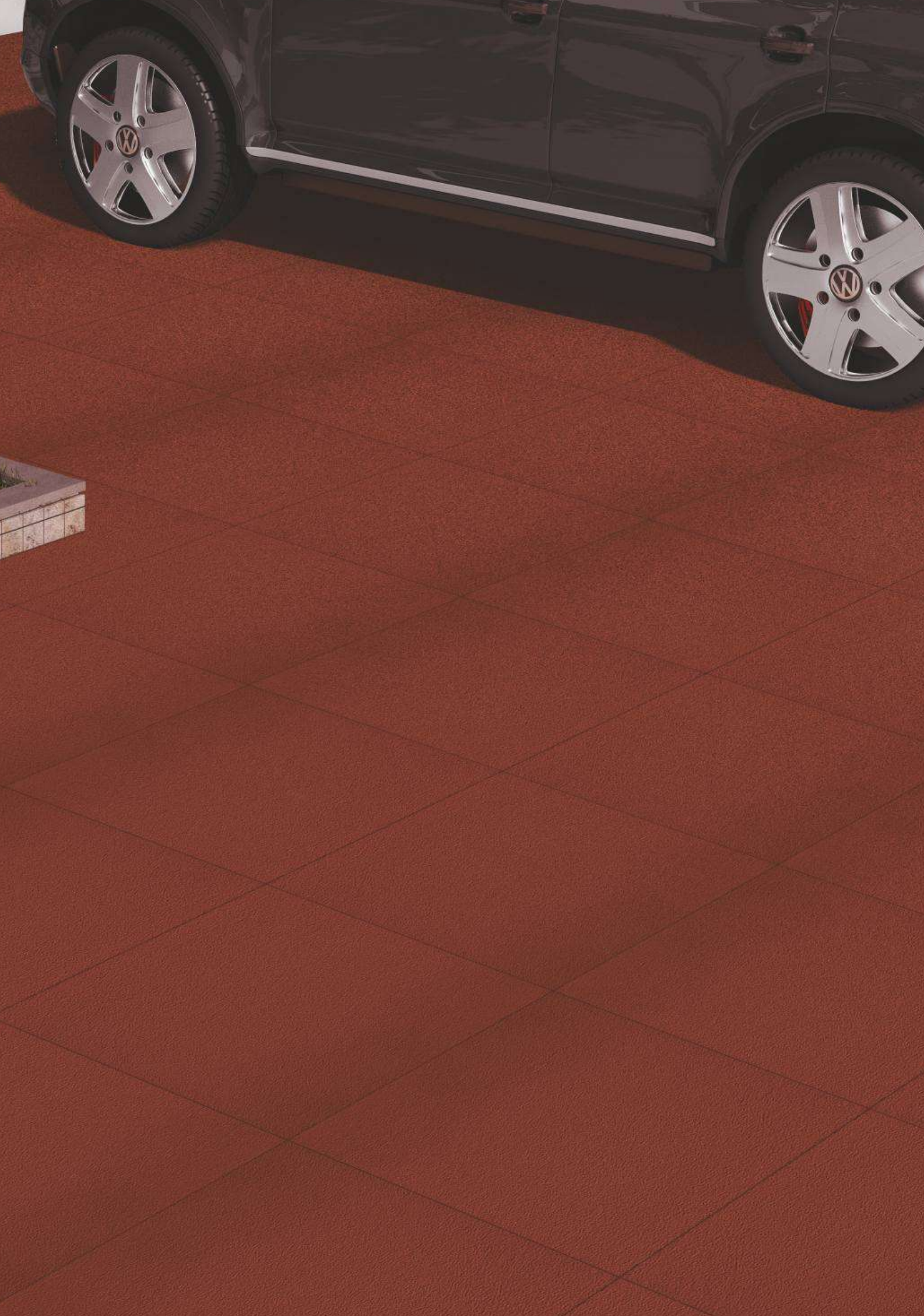


**FUNCTIONAL,  
SPECIALITY & BASIC  
COLLECTION**

Nov-2024

# JOHNSON







# INDEX

## FUNCTIONAL

• Pavers Series	08
• Coolroof	10
• Maxgrip	16
• Evoke	36
• Swimming Pool Tiles	46
• Stepping Stone	60
• Clad Care	72

## SPECIALITY

• Industrial	78
• Tactile	92
• Meteor	96
• Antistatic	110
• Sandex Plus	114
• Sandex Speciality	121
• Sandex	124
• Colour Series Coated	128
• RST	132

## BASIC

• Plain Series	138
• Goodgrips	140
• EDC - Rajkot / Dewas / Kunigal	144

APPLICATION AREAS	164
-------------------	-----

FREQUENTLY ASKED QUESTIONS	167
----------------------------	-----

## TECHNICAL SPECIFICATIONS

• Hi-Traffic Pavers Series	172
• Swimming Pool Tiles & Fittings	173
• Cool Roof Tiles	174
• Clad Care	175
• Stepping Stone Tiles	176
• Maxgrip R10 (60x60 cm)	177
• Maxgrip R11 (60x60 cm)	178
• Maxgrip (30X30 cm - 10mm)	179
• Evoke	180
• Core Tiles	181
• EDC (Kunigal/Dewas)	182
• EDC (Rajkot/Kunigal)	183
• Industrial Tiles	184
• Colour Tiles	185
• Meteor Tiles	186
• Tactile	187
• Anti-Static Series	188
• Hi-Traffic Sandex Series	189

PACKING DETAILS	190
-----------------	-----

SELECT CLIENTELE	192
------------------	-----

SUCCESS STORIES	199
-----------------	-----

END-TO-END SOLUTIONS	200
----------------------	-----

MANUFACTURING EXCELLENCE	201
--------------------------	-----

PIONEERING INNOVATIONS	201
------------------------	-----

RESEARCH & DEVELOPMENT	202
------------------------	-----

GREEN INITIATIVE	202
------------------	-----

CERTIFICATIONS	203
----------------	-----

AWARDS	204
--------	-----

TILE FIXING INSTRUCTIONS	205
--------------------------	-----

CONTACT DETAILS	206
-----------------	-----

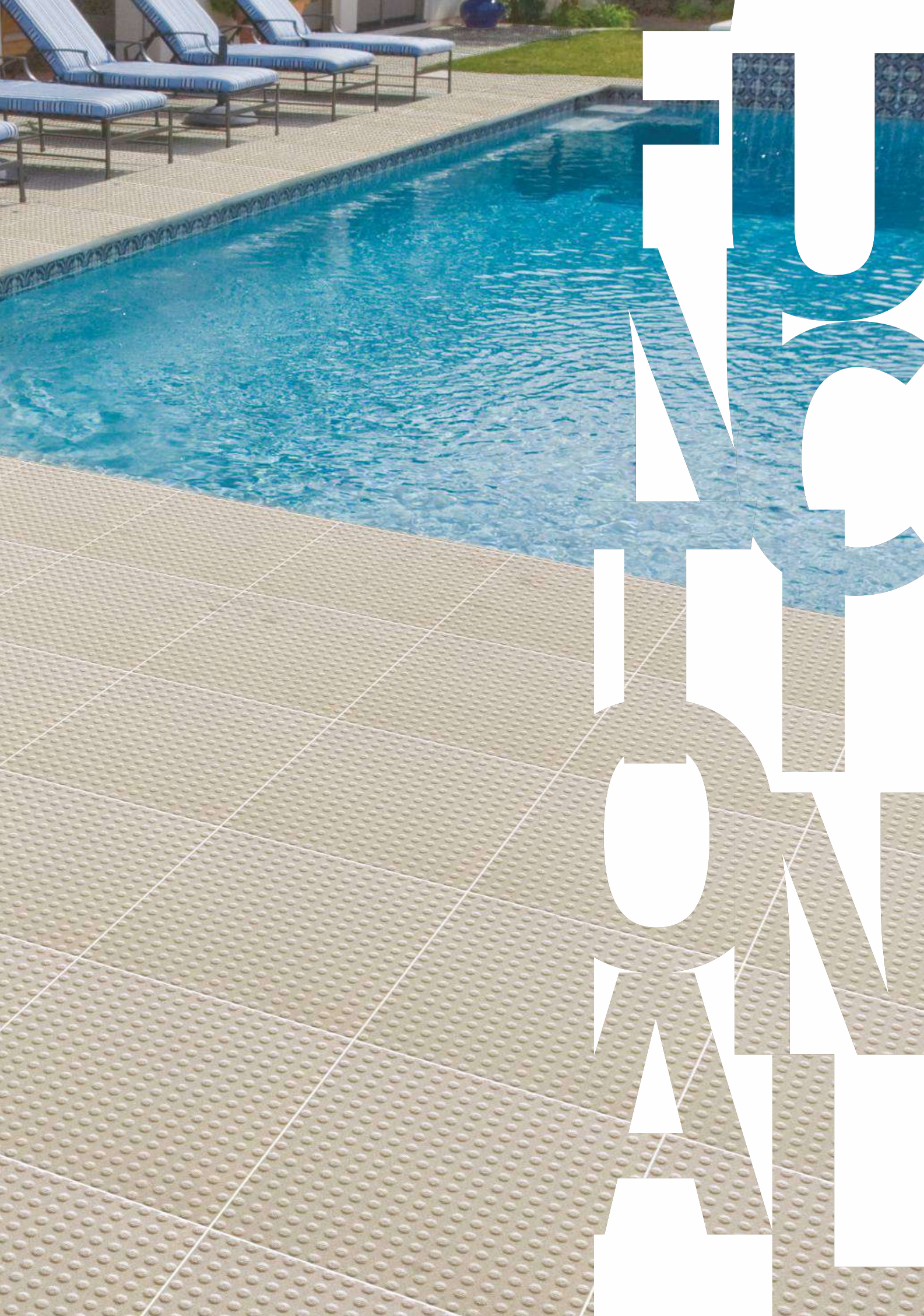
**R/K** Rajkot & Kunigal   **D** Dewas   **P** Pen   **K** Kunigal   **R** Rajkot   **D/K** Dewas & Kunigal

\* Random Phases Are Available

● Make to Order. Required time : 45 days. Minimum quantity : 1500sqm   ● Make to Order. For size 31x152, 62x152 minimum quantity : 1500sqm

● Available in 30x95, 60x95   ● Make to Order. Minimum quantity : 1500sqm





# FOR THE POOL

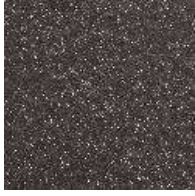
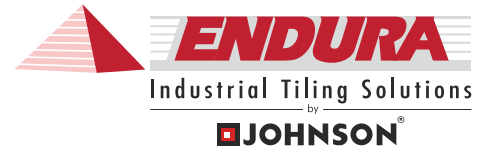
## 20X20 Vitrified Paving Tiles


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 4 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.




# PAVERS SERIES

20X20 cm | 1 CM THICK




Salt & Pepper   
Black




Salt & Pepper   
Grey



Salt & Pepper   
Terracotta



Salt & Pepper   
White



# COOL ROOF

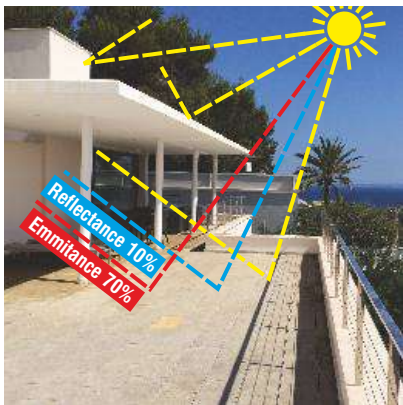


## **E N D U R A** **C O O L R O O F** **S R I T I L E S**

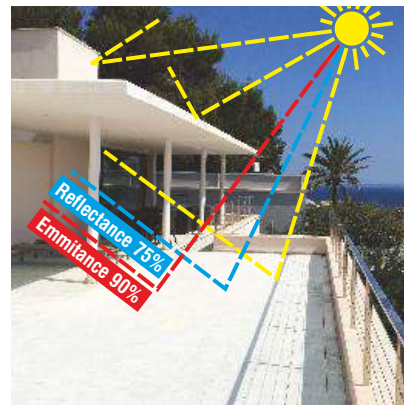
Summers! They have a knack of bringing out the worst in us, Especially Indian summers. The sun shines with a vengeance and let's rip its heat upon us. What if we told you that you can now beat the heat inside your home? That your surface temperature could be cooler upto 15° C without increasing load on your cooling appliances? Sounds unbelievable? Understandably, so presenting 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 to keep the room temperatures cool naturally and therefore helps reduce load on external cooling appliances like your air-conditioner or cooler. Now, experience the cool and ambient temperature in your house. This may also help you to reduce electricity consumption, while you sit cosily and relax 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 Reflectance 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 surface temperature upto 15° celsius.
- The effectiveness & reduction in surface temperature after installation of Johnson Endura Cool Roof tiles may vary from place to place depending on exposed ambient temperature & changing climatic conditions.



**Ordinary Roof**

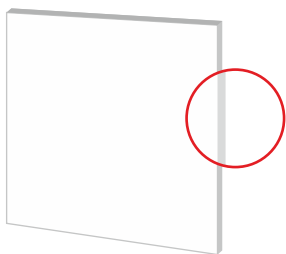


**Roof having Endura Cool Roof SRI**

## 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 Reflectance Index (SRI) value above 90 (White Colour).

## Endura Cool Roof Tile Size & Thickness



Available in  
0.8 cm, 1 cm & 2 cm thickness

Sizes to be mention  
30 x 30 - 0.8 cm  
30 x 30 - 1 cm  
30 x 30 - 2 cm



**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 0.8cm, 1cm and 2cm.\*

\* 2cm thickness are available on made-to-order basis only.

# COOL ROOF

## Benefits of Endura Cool Roof SRI:

- Reduce surface temperature upto 15° 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



## Test Report For Endura Cool Roof SRI



### BUILDING ENERGY PERFORMANCE LABORATORY

#### Test Report for Solar Reflectance Index (SRI)



T-2169

Report No: BEPL/RPT/SRI/126

Report Date: 27<sup>th</sup> 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)		
		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( $h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$ )
Endura White (D)	SRI/03/14/1127	91	91	92

#### Surface Temperature ( $T_s$ ) under different wind conditions

Sample name	Sample ID	Surface Temperature ( $^{\circ}\text{C}$ )		
		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( $h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$ )
Endura White (D)	SRI/03/14/1127	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

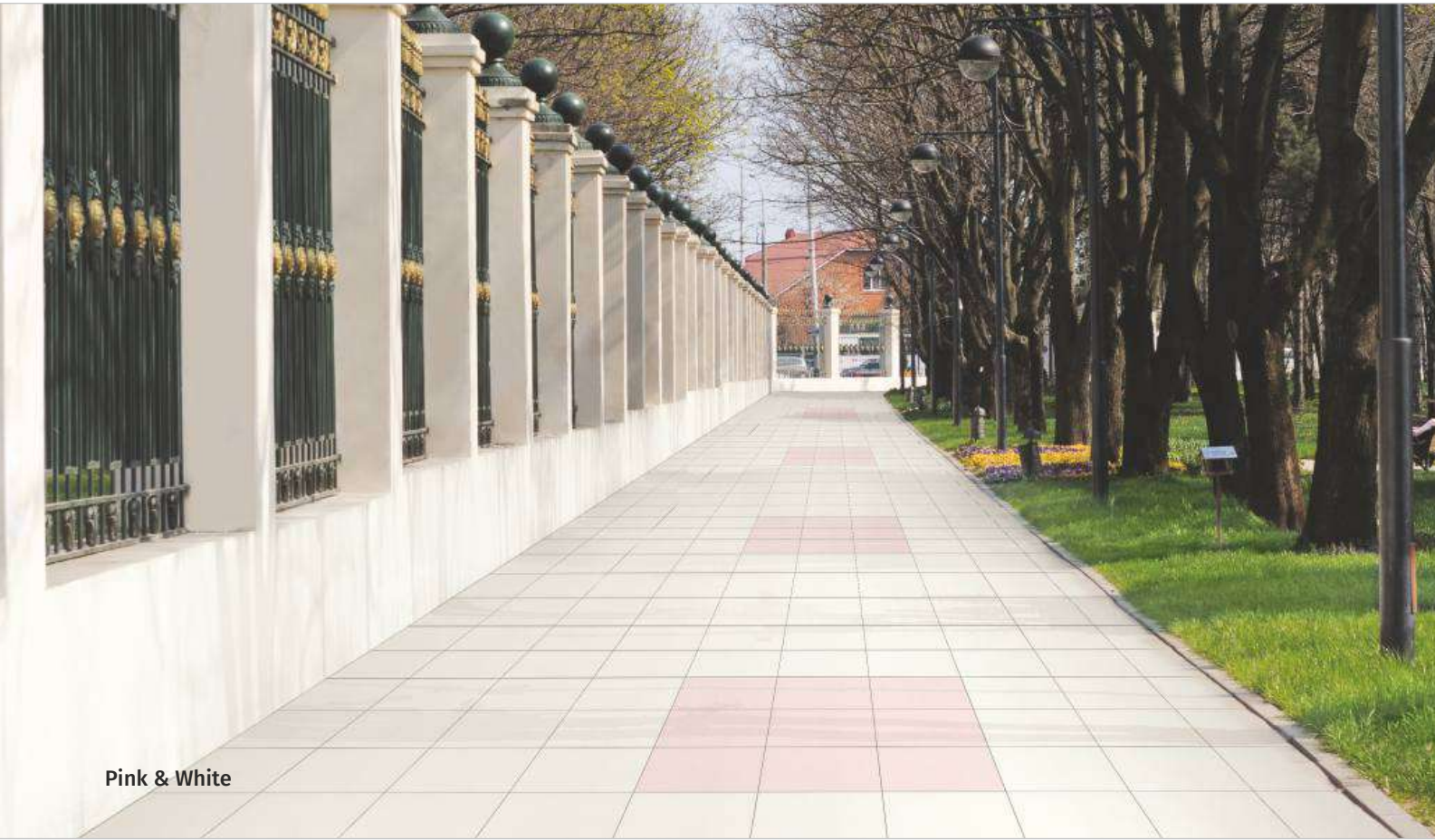
#### Disclaimer:

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

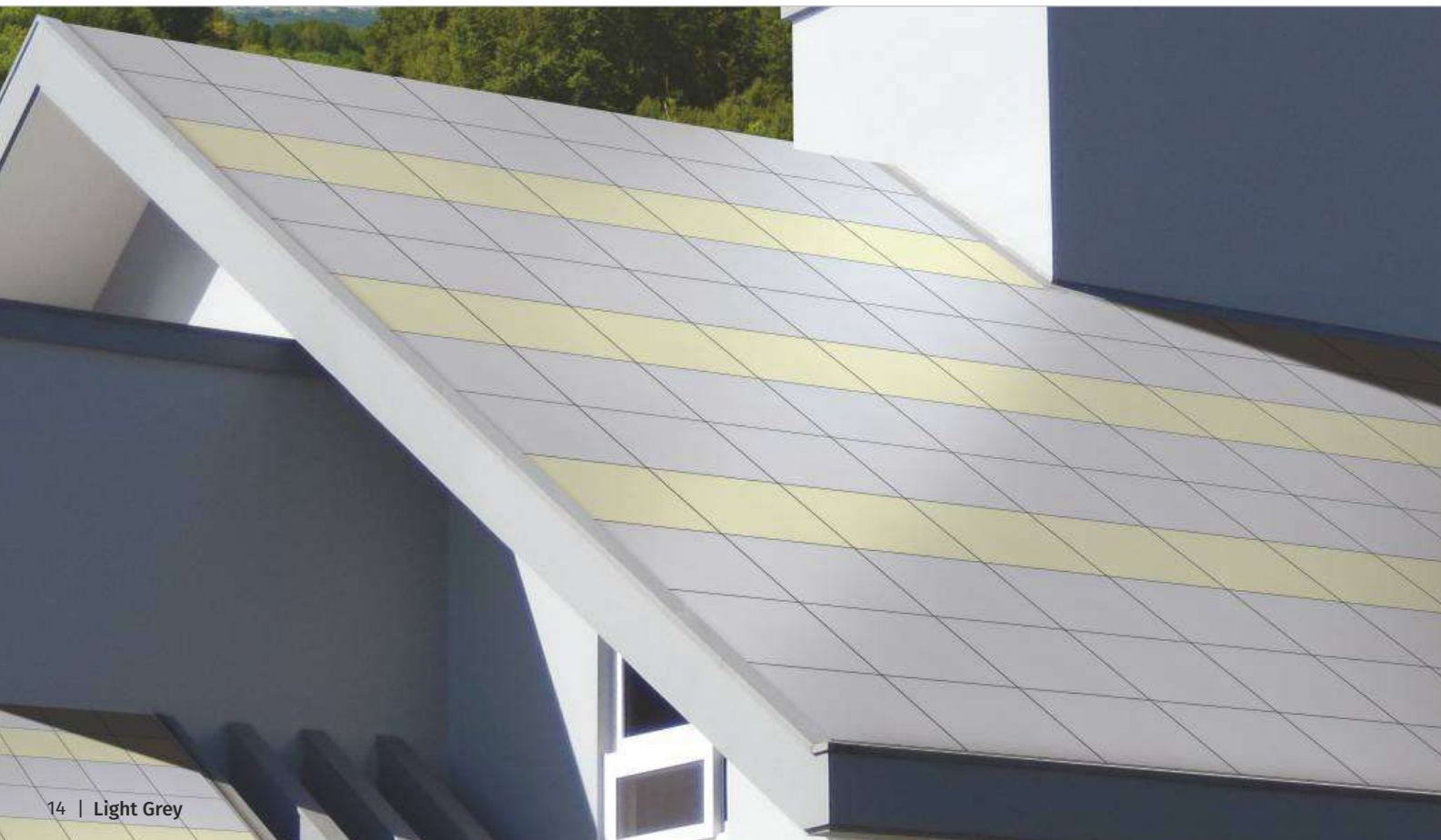
BEPL, Centre for Environmental Planning and Technology, K. L. Campus, Navrangpura, Ahmedabad-380 009.  
Phone No: 079-26302470- Extn: 383, 26302740 Fax: +91 79 26302075 Email: ashajoshi@cept.ac.in/bepl@cept.ac.in  
Page 2 of 2

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

# COOL ROOF



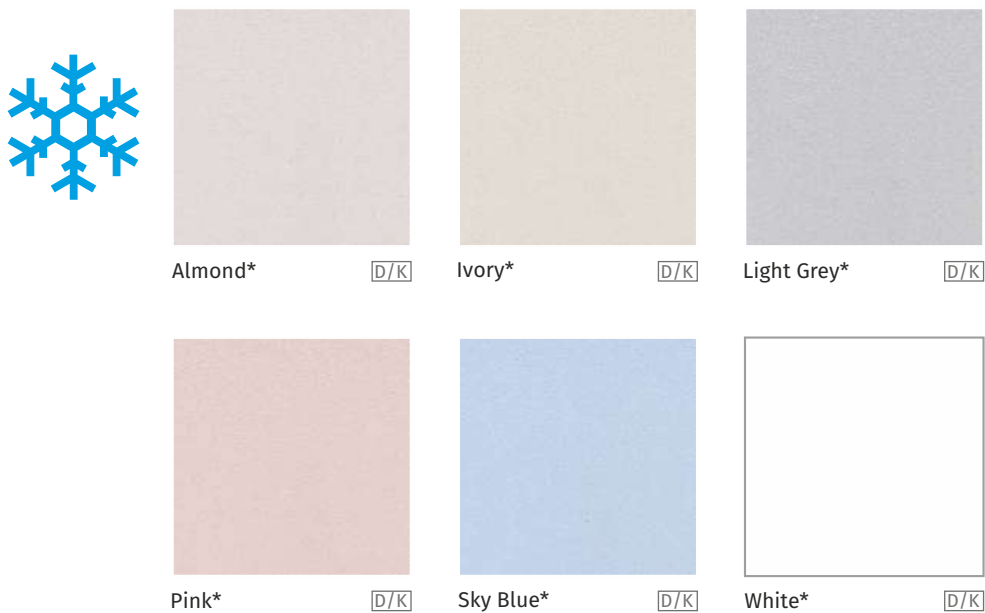
Pink & White



14 | 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 5 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.



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.

1. Almond & White (Dewas & Kunigal), Ivory (Dewas) and Pink (Kunigal) also available in 1cm thickness.
2. 1cm & 2cm thickness will have a lead time of 45 days and Minimum Order Quantity of 1500sqm.
3. 2cm thick ness is available in White from Dewas.

## SLIP PREVENTION 'R' RATINGS FOR FLOORING SURFACES



### Putting the science to test:

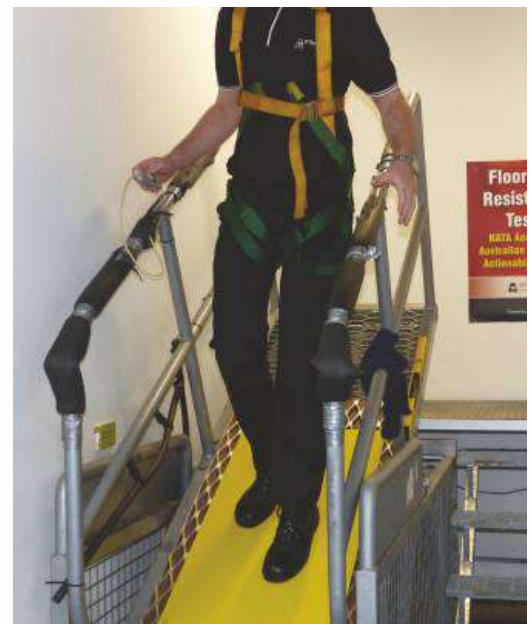
The test performed to determine the value are BOT Digital Tribometer test, Pendulum test & RAMP test. The most popular is the RAMP Test.

#### RAMP Test

##### A) Oil wet ramp slip resistance test:

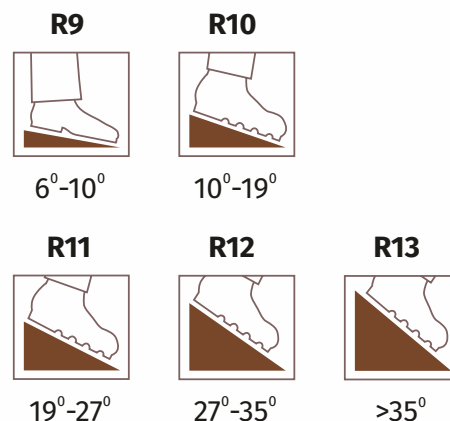
DIN 51130- The slip resistance of tile is tested on an inclined surface with a predetermined slope angle and classified according to rating rules R9 to R13.

This test requires an operator who is protected by a fall restraint harness. The operator, wearing standard footwear, walks back wards and forwards over a sample of a flooring material that has been evenly coated with oil. Beginning with the ramp in a horizontal position he gradually increases the angle of inclination until the limit of safe walking is reached and the test person slips. The acceptance angle obtained is used to express the degree of slip resistance.



#### Assessment Groups:




	Lower limit value	Upper limit value
R9	6°	10°
R10	>10°	19°
R11	>19°	27°
R12	>27°	35°
R13	>35°	



## B) Wet barefoot slip resistance test- (DIN 51097 ABC rating)

The ramp test is carried out barefoot with the use of soapy water as a contaminant (DIN 51097). The angle at which slipping occurs is used to establish an A, B or C rating for the barefoot test

### Classification Groups and Areas of Application:

Classification Groups	Lower limit value	Upper limit value		
<b>A</b>		12°	18°	<ul style="list-style-type: none"> <li>• Barefoot hallways (mainly dry)</li> <li>• Individual and group changing rooms with lockers</li> <li>• Pool floors in non-swimmer areas, where the water level exceeds 80 cm</li> <li>• Sauna and relaxation areas (mainly dry)</li> </ul>
<b>B</b>		>18°	24°	<ul style="list-style-type: none"> <li>• Barefoot hallways, if not classified in A</li> <li>• Showers</li> <li>• Area surrounding the disinfectant sprayers</li> <li>• Pool surrounds</li> <li>• Pool floors in non-swimmer areas in the tide effect pool</li> <li>• Lift slab floors</li> <li>• Paddling pools</li> <li>• Steps and ladders outside the pool area</li> <li>• Sauna and relaxation area, provided they are not assigned to A</li> </ul>
<b>C</b>		>24°		<ul style="list-style-type: none"> <li>• Steps and ladders leading into the water</li> <li>• Stairways leading to diving boards and water slides</li> <li>• Foot basins</li> <li>• Inclined pool borders</li> </ul>



### BOT-3000E Digital Tribometer

The tribometer can accurately measure both static coefficient of friction (SCOF) and dynamic coefficient of friction (DCOF), wet or dry



### Pendulum Test

Pendulum slip resistance test (Dry & Wet) – Pendulum Test value (PTV) MunroStanley – Skid resistance Tester, is based on the Izod principle. In operation, a pendulum of a known mass rotates about a vertical spindle.

**MAXGRIP**



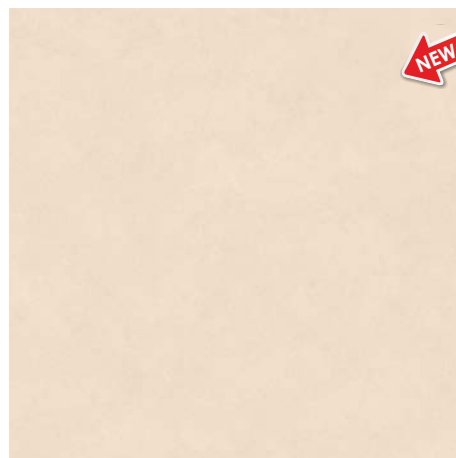
# MAXGRIP R10

60X60 cm



Altona Gris Plus

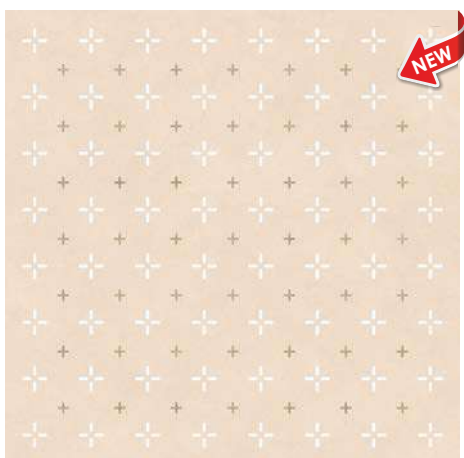
P



Azorte Beige Plus

NEW

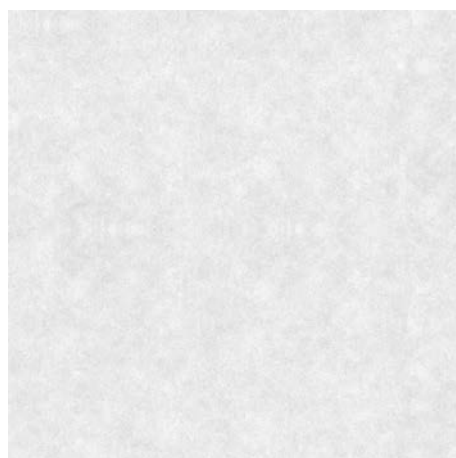
P



Azorte Beige Décor Plus

P

NEW



Cloud Grey Plus

P



Cloud Nero Plus

P



Creaz Cotto Deco Plus

P

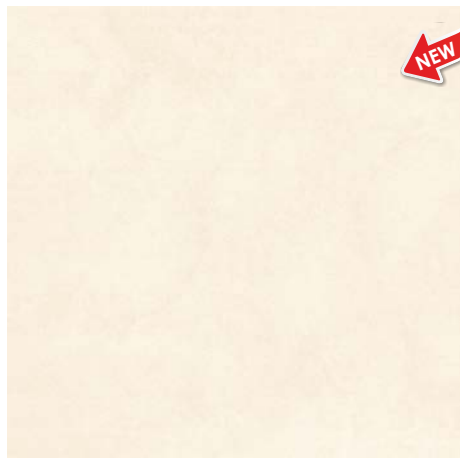
NEW

# MAXGRIP



Crest Brown Plus

P



Ezee Bianco Plus\*

P



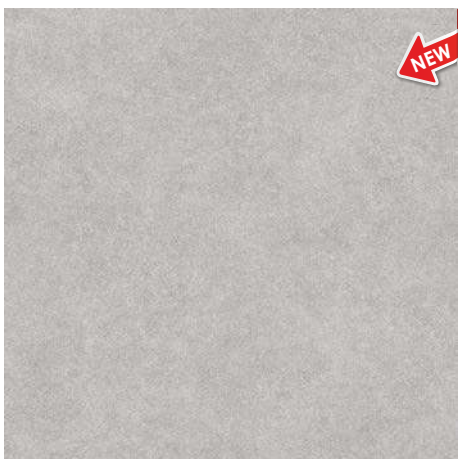
Glance Trazo Beige Plus

P



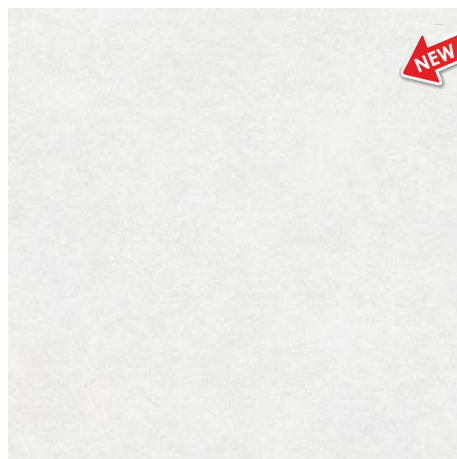
Glance Trazo White Plus

P



Modernz Gris Plus

P

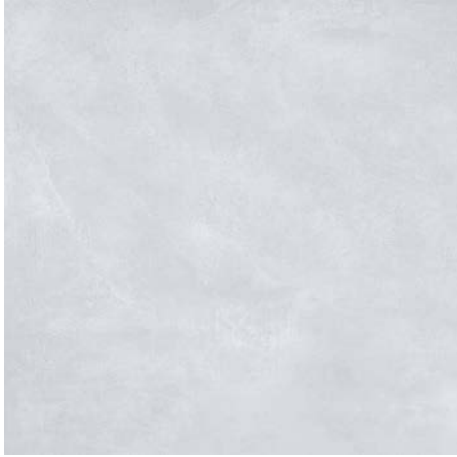
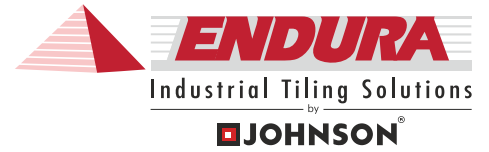


Modernz Smoke Plus

P

# MAXGRIP R10

60X60 cm



Vivid Cool Grey Plus



Vivid Spring Plus

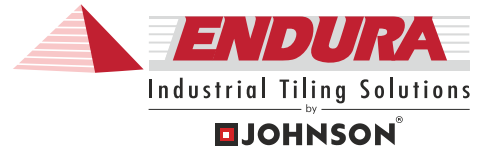


# MAXGRIP



# MAXGRIP R10

60X60 cm



MAXGRIP



# MAXGRIP R11

60X60 cm | 1.5 CM THICK



Blush Bruno



Dots Beige



Dots Benalium



Dots Grey



Dots S&P Grey



Dots Teracota

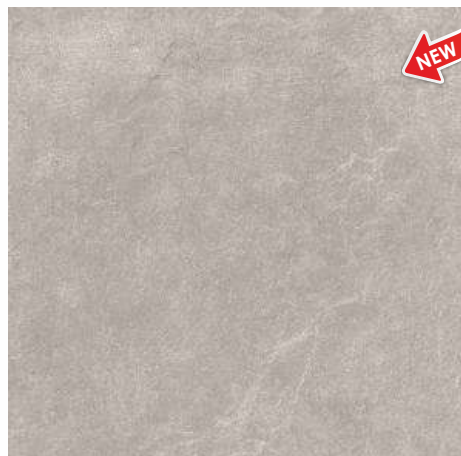


# MAXGRIP



Rock Beige\*

P



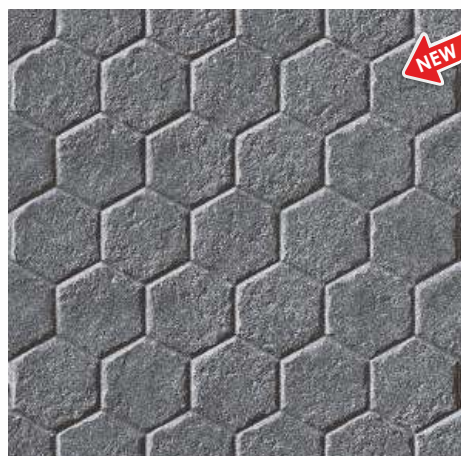
Rock Grey

P



Rock Hexa Grey

P



Rock Hexa Nero

P



Rock Nero

P



Triangle Beige

P

# MAXGRIP R11

60X60 cm | 1.5 CM THICK



Triangle Benalium



Triangle Grey



Triangle S&P Grey



Triangle Teracota



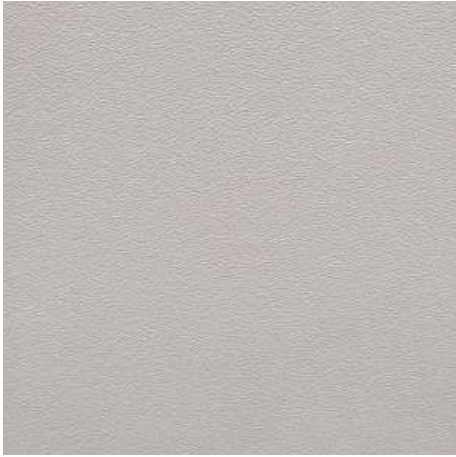
Volcano Beige



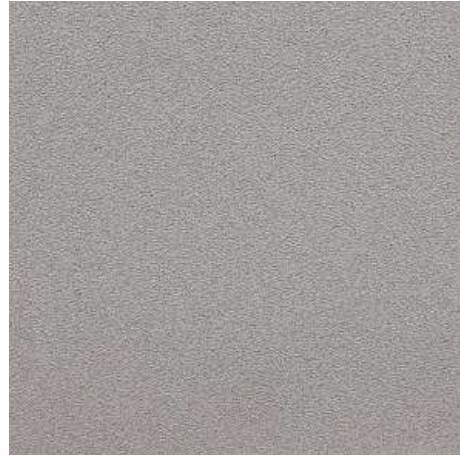
Volcano Benalium



# MAXGRIP



Volcano Grey



Volcano S&P Grey



Volcano Teracota



# MAXGRIP R11

60X60 cm | 1.5 CM THICK



# MAXGRIP



# MAXGRIP R10

30X30 cm | 1 CM THICK




Max Ash 



Max Brick 




Max Cotto 




Max Gris 

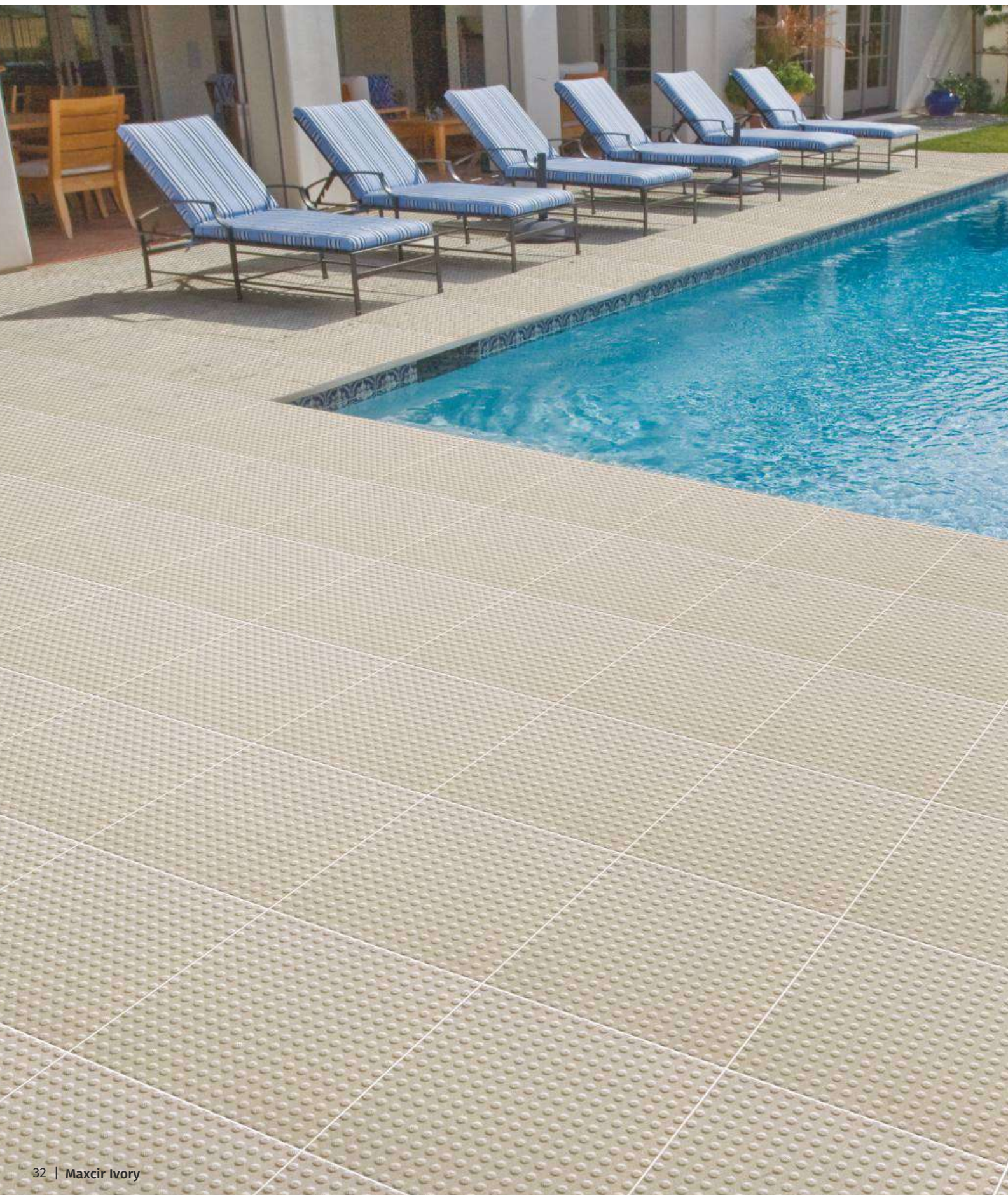


Max Steel 



Max Verde 

# MAXGRIP

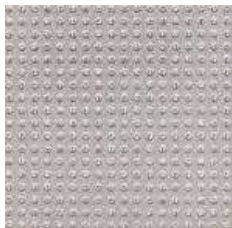



# MAXGRIP R11

30X30 cm | 1 CM THICK




Maxcir Cotto 



Maxcir Grey 



Maxcir SnP Noir 



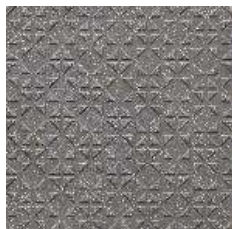
Maxcir SnP White 




Maxcir Ivory 



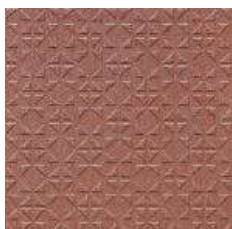
Maxtri Ivory 



Maxtri SnP Noir 




Maxtri SnP White 



Maxtri Cotto 



Maxtri Grey 

# MAXGRIP



# MAXGRIP R12

30X30 cm | 1 CM THICK



Max Ash



Max Beige



Max Bruno



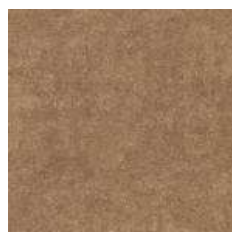
Max Cotto



Max Gris



Max Steel



Max Umber



# EVOKE

Evoke is an exquisite collection of sleek & modern designs, crafted from the finest materials & designed with meticulous attention to details.

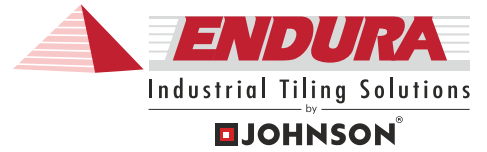
Evoke collection has evolved into a versatile medium that aren't just flooring or wall coverings; they're expressions of style, elegance, & innovation in the indoor and outdoor spaces.



Whether you desire the timeless charm of geometric patterns, opulence of palaces, the contemporary allure of terrazzo, or the bold and intricate creativity of mosaics, the diverse selection of Evoke has you covered.




# EVOKE SERIES

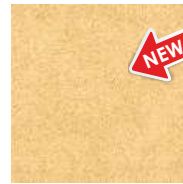
20X20 cm | 0.80 CM THICK





Coral (PO)  



Fleur Nova 





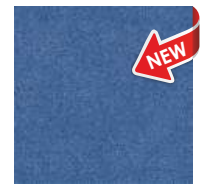
Gold (PO)  




Natura (PO)  



Pearl (PO)  




Sea (PO)  



Athangudi 

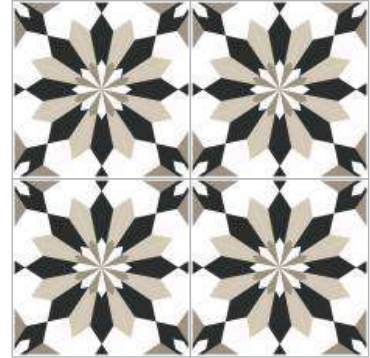


Botanica (PO) 

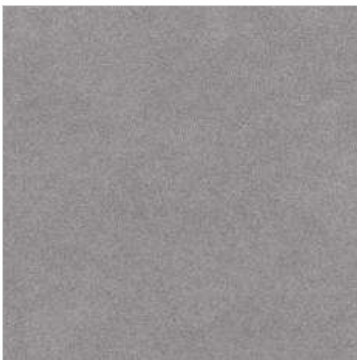
# EVOKE



Era Grey Glow D



Era Aspire D



Era Grey Deep D



Epic Decor\* D



Veteran Print Deco D

# EVOKE SERIES

20X20 cm | 0.80 CM THICK



Tropical Green



Tropical Green Deco

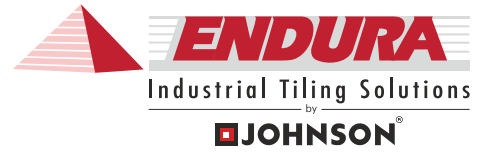



# EVOKE

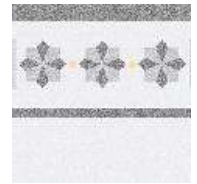



# EVOKE SERIES

20X20 cm | 0.80 CM THICK




Tapis Era Corner 



Tapis Era Border 



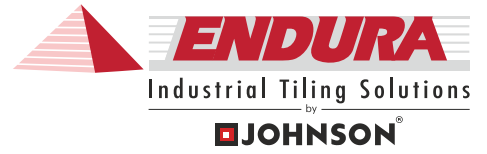
Tapis Era Decor 


EVOKE

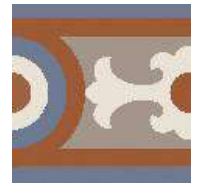



# EVOKE SERIES

20X20 cm | 0.80 CM THICK




Tapis Florix  Corner



Tapis Florix  Border



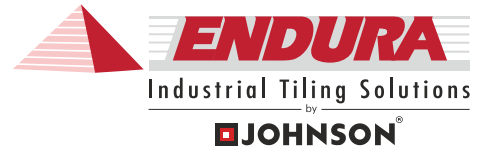
Tapis Florix  Decor

# EVOKE

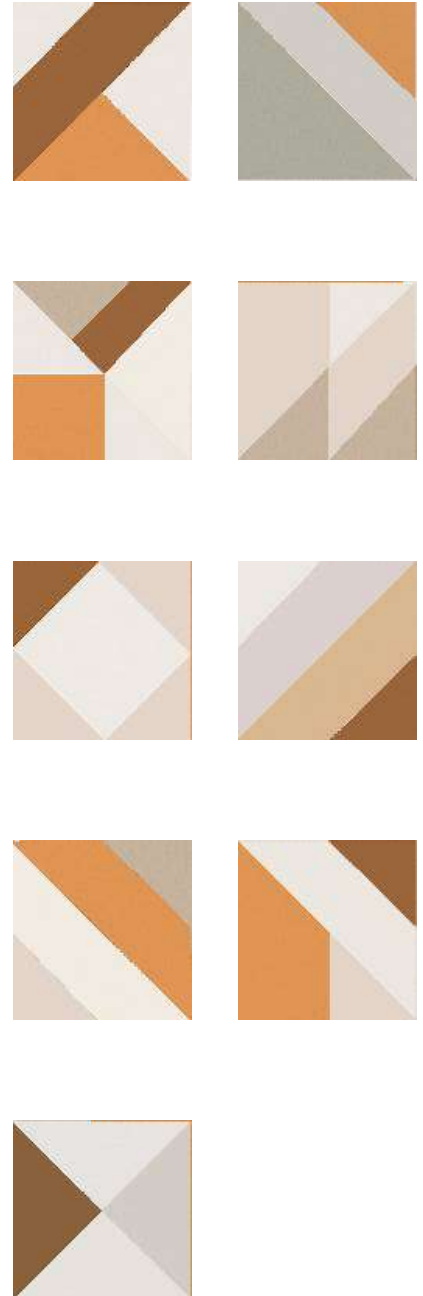


# EVOKE SERIES

20X20 cm | 0.80 CM THICK



Nova Décor D



# SWIMMING POOL

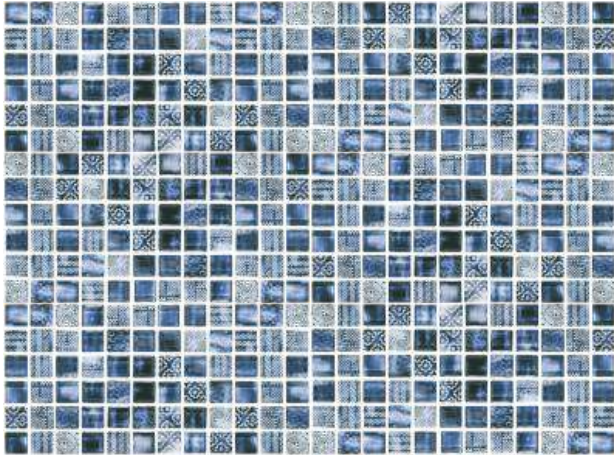
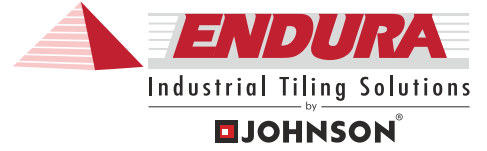
## Pool Tiles 24.7 X 12.2 CM

Our swimming pool tile range brings new 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.

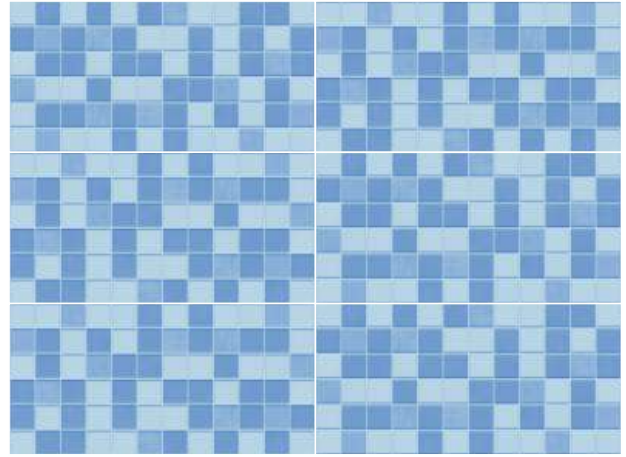


# DESIGNER MOSAIC TILES

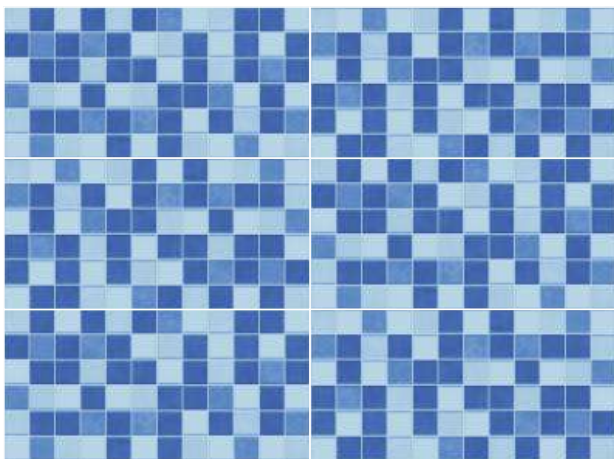
24.7X12.2 cm | 0.8 CM THICK



Neo Pool Art Blue



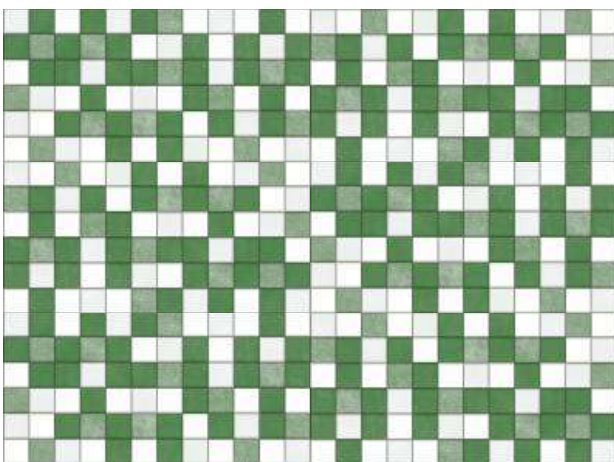
Neo Pool Azure



Neo Pool Deep Blue



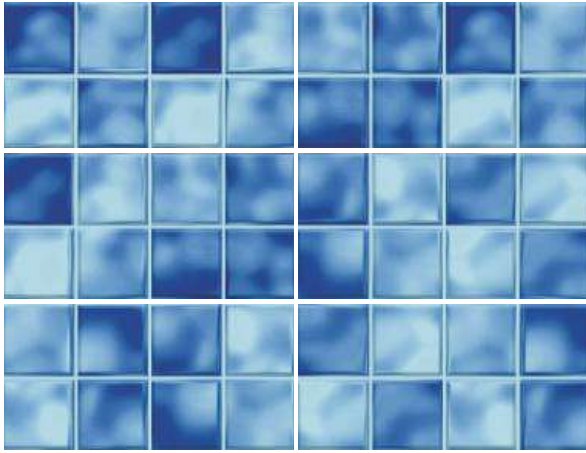
Neo Pool Ocean



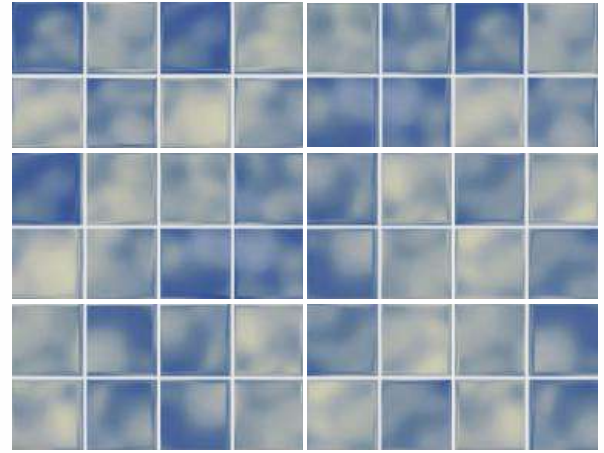
Neo Pool Verde



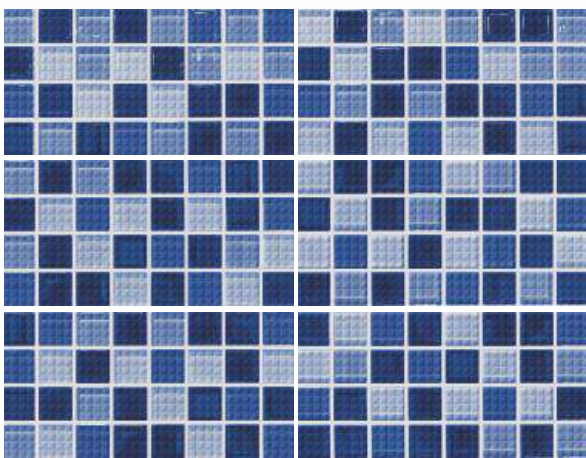
# SWIMMING POOL



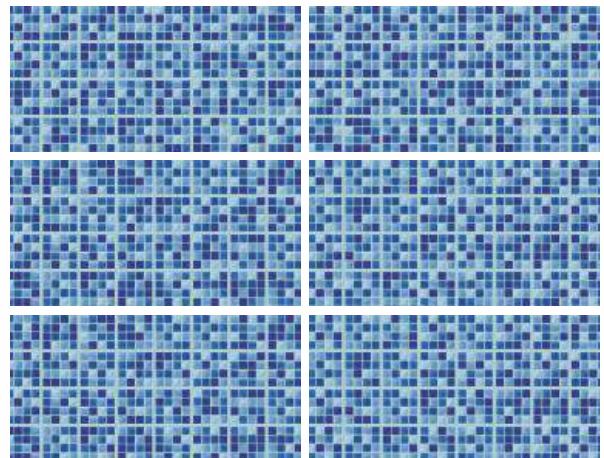
Cloud Deep Sky



Cloud Light Sky



Pearl Glass Azul

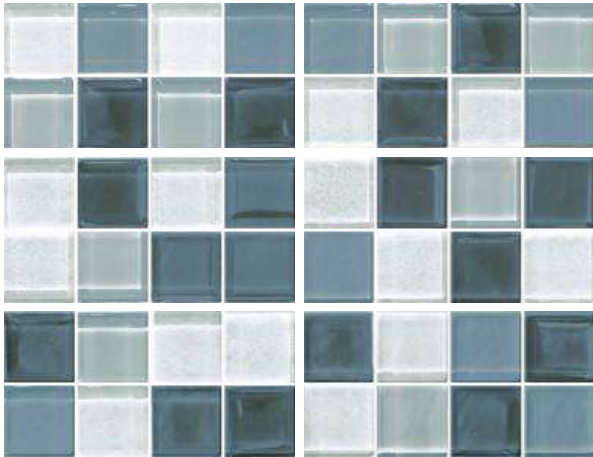
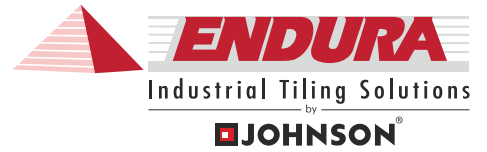


Pearl Royal Blue

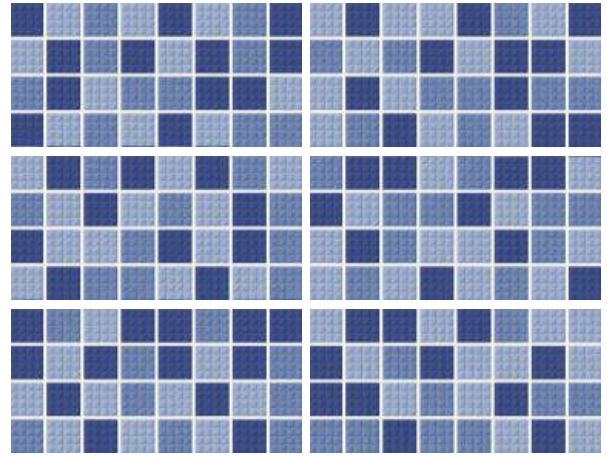


# DESIGNER MOSAIC TILES

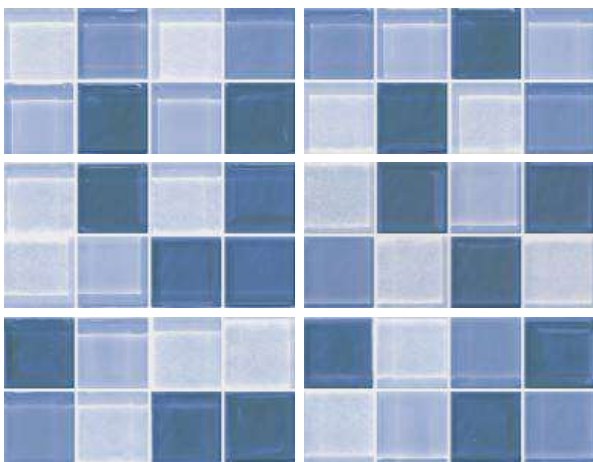
24.7X12.2 cm | 0.8 CM THICK



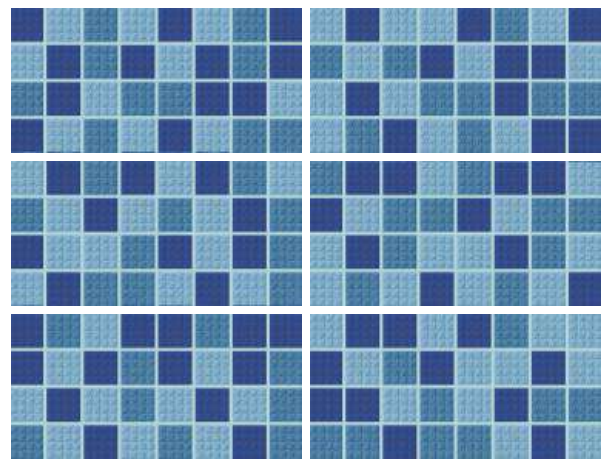
Cloud Mist Green



Pearl Azul



Cloud Mist Smoke



Pearl Textura Blue

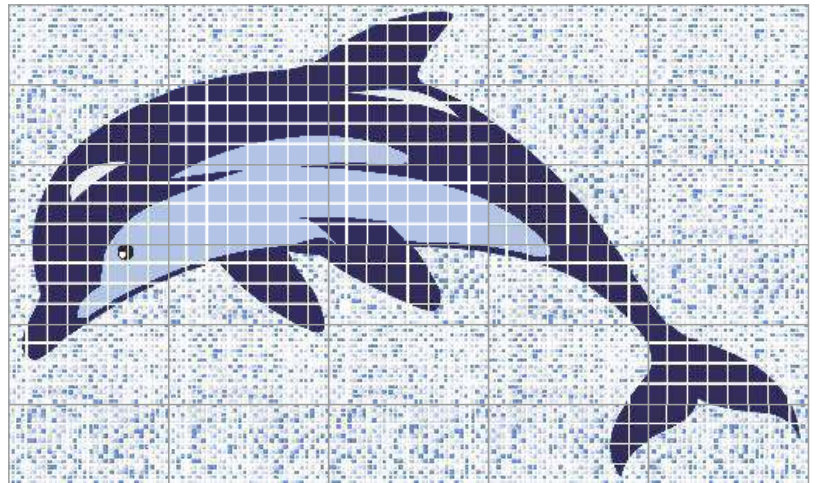
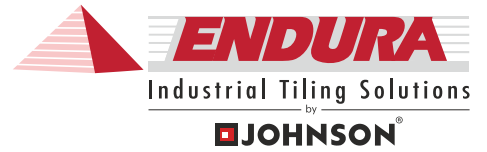


# SWIMMING POOL

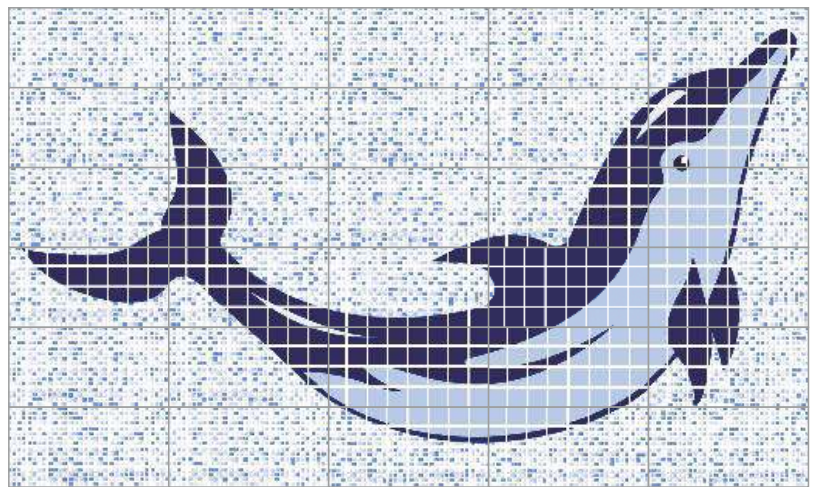


# DESIGNER MOSAIC TILES

24.7X12.2 cm | 0.8 CM THICK



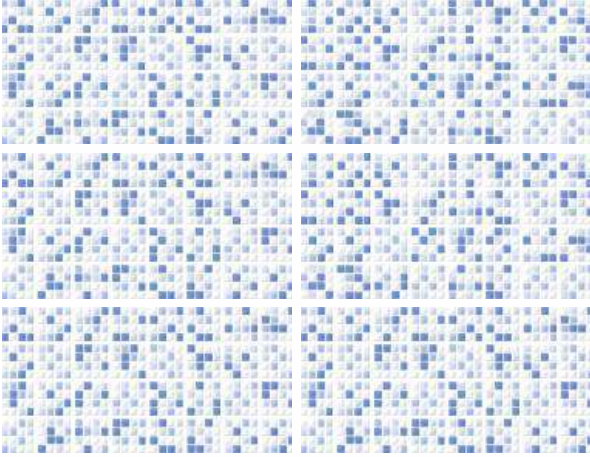
Pearl Fin Diving In



Pearl Fin Diving Out



# SWIMMING POOL



Pearl Fin

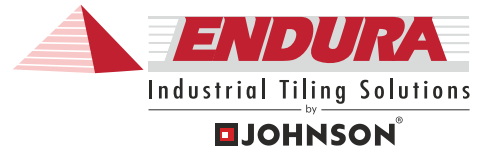


Pearl Fin Mix



# DESIGNER MOSAIC TILES

24.7X12.2 cm | 0.8 CM THICK



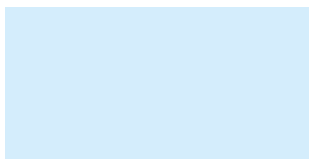
Black



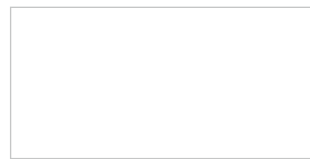
Dark Blue



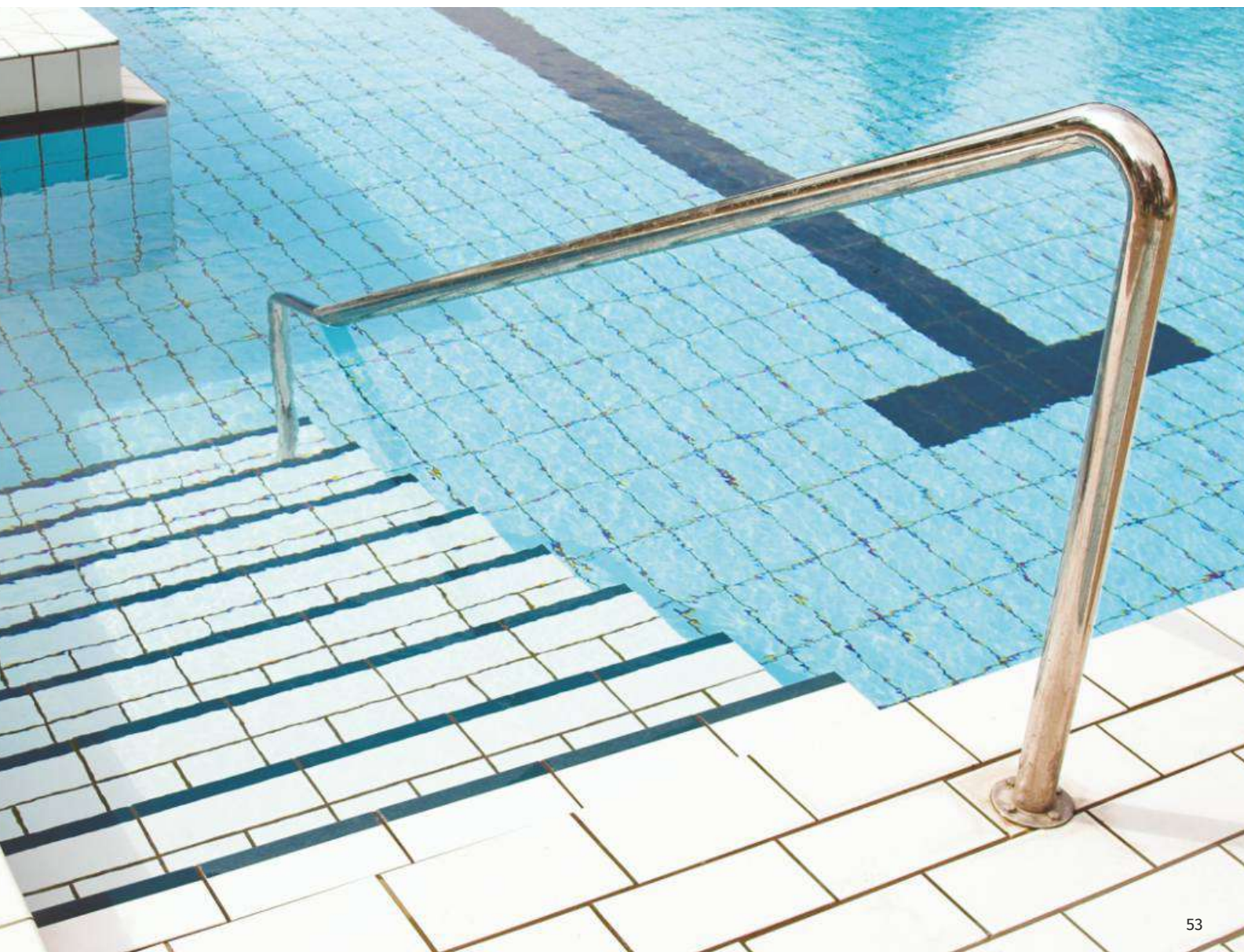
New Blue



Orient Blue



White



# SWIMMING POOL

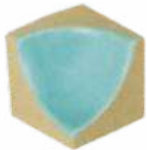
## POOL FITTINGS



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

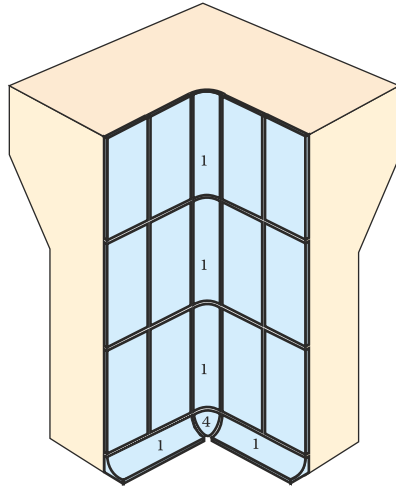


External Angles of  
Wall-Floor Junction ●  
Size: 7.2cm X 7.2cm  
Code: P 5050  
Colour: Orient Blue

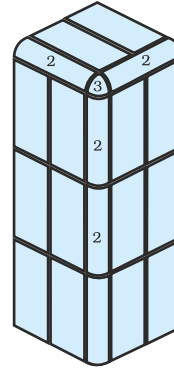
● Sizes & thickness of pool fittings are subject to change without prior notice. Kindly verify the actual sample before placing the order. All are make to order - min 1000sqm.



# POOL FITTINGS - ASSEMBLY DIAGRAM

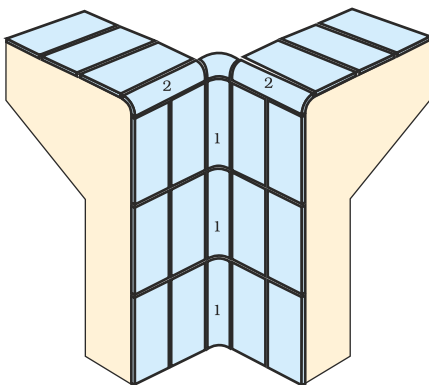


Internal

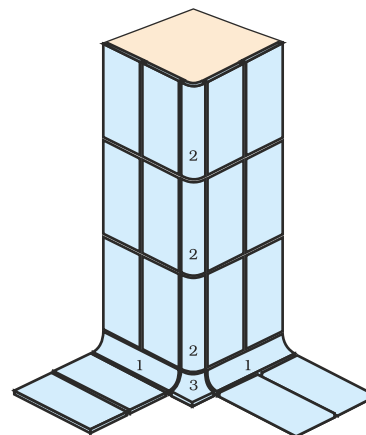


External

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)



Top Internal Corner



Bottom External Corner

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

# SWIMMING POOL



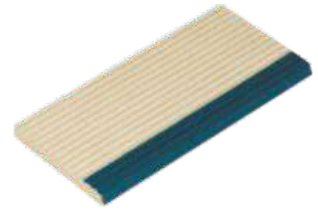
# STEP & EDGES



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



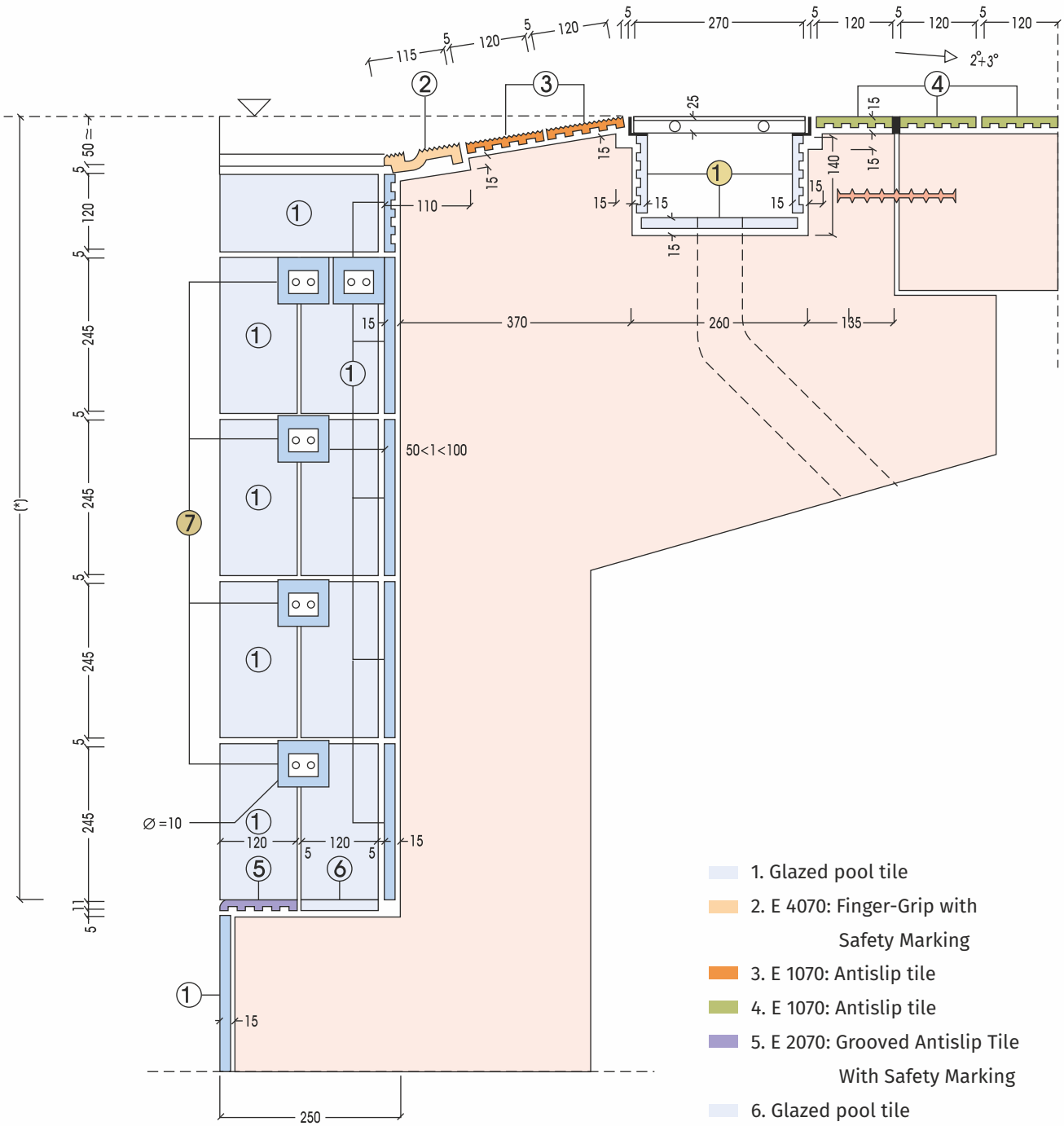
Grooved Anti-Slip Tile  
With Safety Marking ●  
Size : 24.4cm X 11.9cm  
Code : E 2070  
Colour : Ivory

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



# SWIMMING POOL

## Sketch Showing Usage of Swimming Pool Tiles



## Swimming Pool Tiles

Features	Advantages	Benefits
Size 24.7 cm x 12.2 cm	In conformance with Standard Olympic Pools norms. <b>World Aquatics</b> formerly know as FINA	Easier path to certification with related benefits. Ideal for competition pools.
Wide range of Colours	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 <sup>2</sup>	Withstands water pressure better than ordinary ceramic tiles.	Longer service life.
Water Absorption : Avg. 2.5%	Lower Water Absorption means superior crazing & frost.	Better hygiene & Safety for Pool users.

The pool must be built to stringent standards laid down by World Aquatics (formerly known as FINA - Federation Internationale De Natition) the Swiss organization governing worldwide sports. FINA is dedicated to promote and encourage the development of swimming in all possible manifestations and to increase the number of facilities for swimming throughout the world. FINA's regulations specify the layout and the dimensions of the pool tang markings and also the colour scheme, which should combine the tiles and the special fittings.

The extensive Endura pool tiles range, together with special fittings from the 'swimming pool collection' for public and private pools, is in conformance with the FINA standards.

# STEPPING STONE



## Say Goodbye to conventional Staircases

Stairs are used in lieu of elevators in buildings or houses and also play a very important role as emergency exit areas in office buildings and commercial spaces. Until today, staircases were built using marbles and granite, which are expensive, require on-site cutting and finishing, leading to a lot of wastage. They need a lot of manual labour for handling and fixing. Besides, they can stain easily, the surface may be slippery and they can chip or crack during use. They are difficult to replace with same shade and texture if broken, besides also needing constant maintenance.

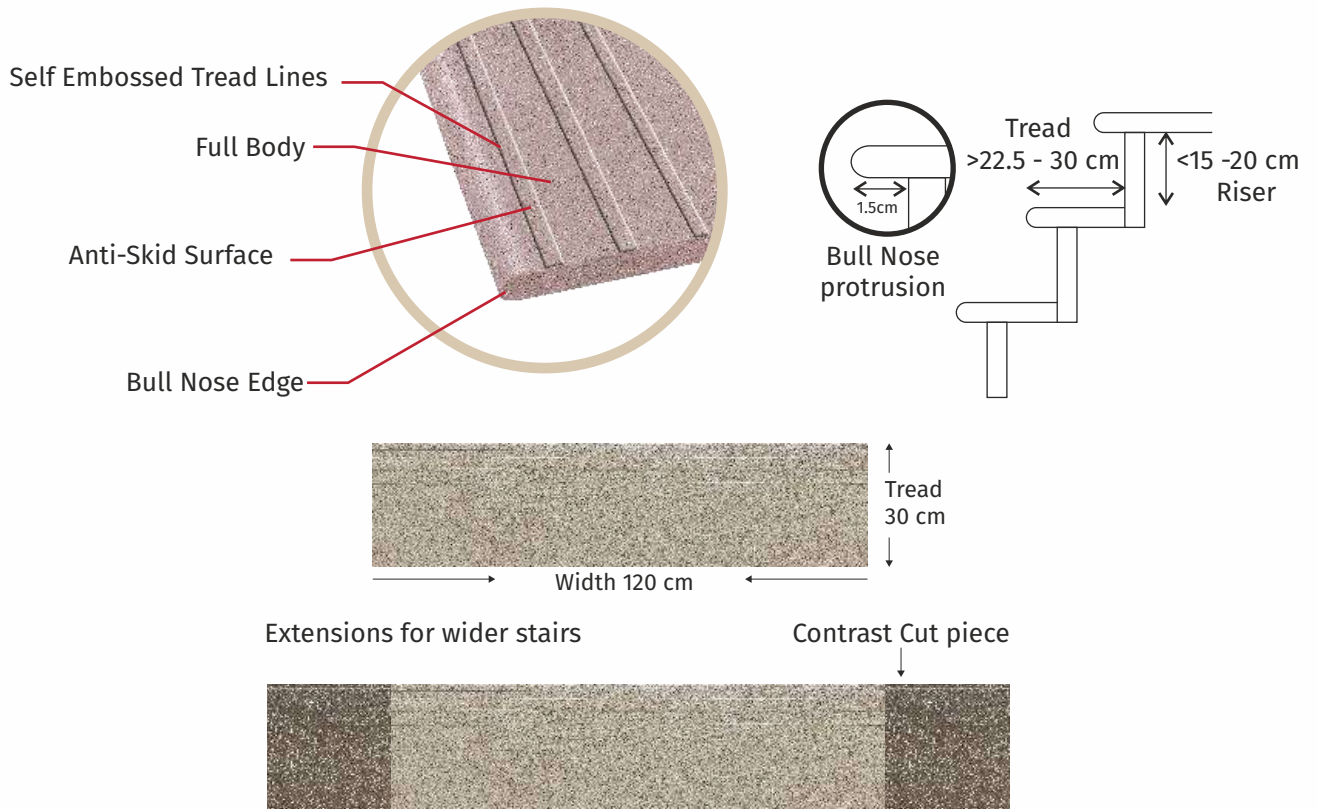


## Get the Johnson Endura Stepping Stone Advantage!

The Johnson Endura Stepping Stone range is a revolutionary way to build staircases with step tiles and risers. The result of an unquantifiable amount of time spent researching the very many possibilities in the world of staircases.

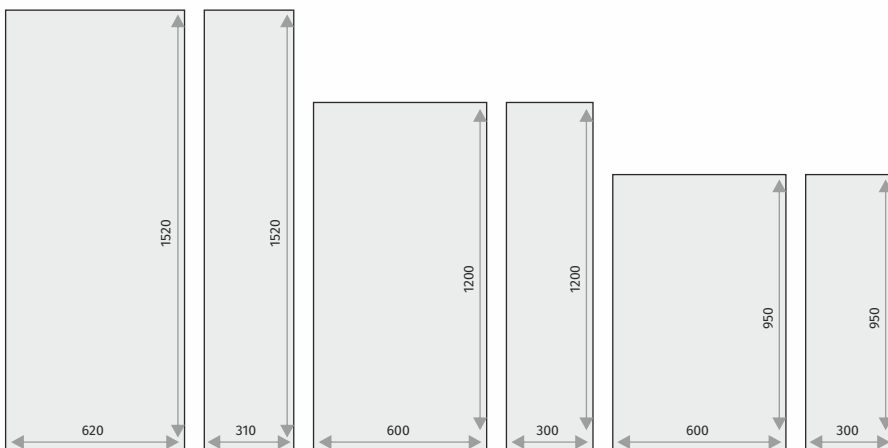
# STEPPING STONE

## India's First Bull Nosing Fully Vitrified Step Tile.



## Riser & Landing Area Tiles

12MM



### Disclaimer in Stepping Series

All mentioned shades are available in 12mm 600x1200 & 300x1200. S&P 5 designs available in 30x95 & 60x95  
 31x152 & 62x152 will be as make to order basis with MOQ of 1500 sq.mtr.  
 Plain Series Only in 300x1200 & 600x1200 Step & Riser

## Safety for All

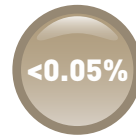
These full-bodied modular tiles come with bull nosing and tread lines that make them skid-resistant and much more safer than conventional stairs.

## Faster Installation

No more handling issues. No more labour-intensive on-site installations, no more wastage costs. Endura Stepping Stone can be easily and speedily installed on site.

## Long Lasting & Easy on Maintenance

Chipped and worn out staircases, constant need for polishing and repairs, are all things of the past. Endura Stepping Stone are full-bodied vitrified tiles, which means they absorb very low water and are impervious to weather or wear and tear induced damage. Fit them and forget them for years of trouble free performance.



less than 0.05%  
Water Absorption



Bull Nosing



Anti Skid



High Flexural  
Strength



Robust, durable  
tiles than  
conventional options



23 Beautiful  
Shades



Faster  
Installation

## The Endura Stepping Stone Advantage.

Features	Benefits
Endura Body Vitrified Step Tiles & Risers	Highly durable, ideal for heavy traffic and commercial areas.
Ready to Install Tiles	Easy and speedy installation. Say goodbye to cumbersome cutting and finishing on site.
Embossed Tread Lines	Provides extra grip for higher safety near step edge.
Bull Nosing Tiles	Unlike other step tiles, Endura Stepping Stone is India's first bull nosed tile, which makes the staircase safer and comfortable to step on. Bull nosing helps to prevent chipping from sharp edges, minimizes impact injuries on barefoot movement and also improves the overall aesthetics of the stairs.
12mm/15mm Thickness	Provides higher strength and durability as desired in big size slabs. An assurance to replace natural stones in a confident way.
Lowest Water Absorption of <math><0.05\%</math> along with Enhanced Stain Resistance.	Even the strongest of dyes - methylene blue cannot stain Endura Stepping Stone. Impervious surface ensures ease of cleaning.

# STEPPING STONE

## Step Tiles - Full Body Marble & Granite Series



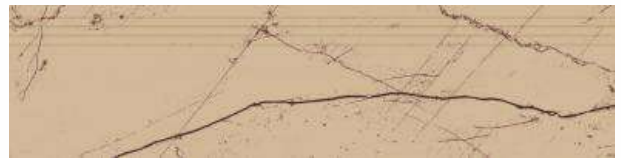
Stone Bianco Marble



Stone Bianco Granite



Stone Grey Granite



Stone Light Beige Granite



## Full Body S & P Colors



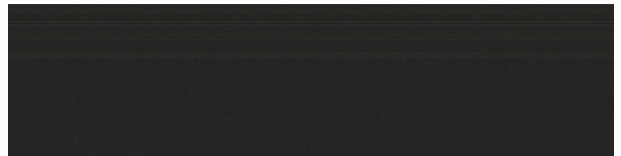
S & P Coffee Stone



S & P Grey Stone



S & P Dark Beige Stone



S & P Jet Black Stone



## Step Tiles - Full Body S & P Colors



S & P Kota Stone



S & P Nero Stone



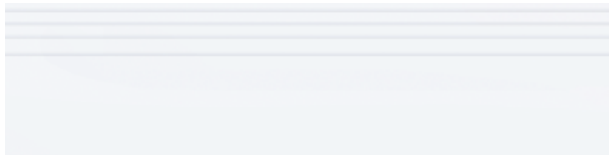
S & P Light Beige Stone



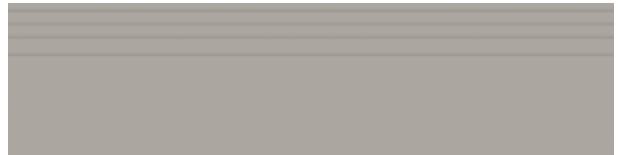
S & P Sky Stone



## Full Body Plain Color



Plain Stone Bianco



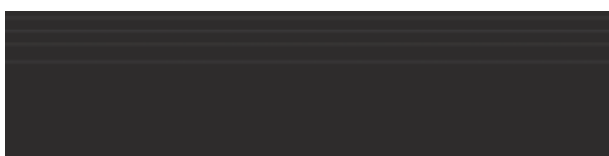
Plain Stone Grey



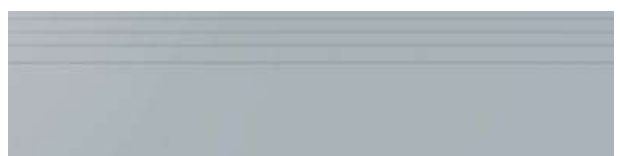
Plain Stone Kota



Plain Stone Light Beige



Plain Stone Nero



Plain Stone Sky



# STEPPING STONE

## Riser & Landing Area Tiles - Full Body Marble & Granite Series



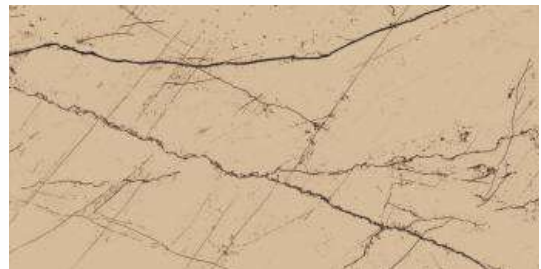
Bianco Marble



Bianco Granite



Grey Granite



Light Beige Granite



## Riser & Landing Area Tiles - Full Body S & P Colors



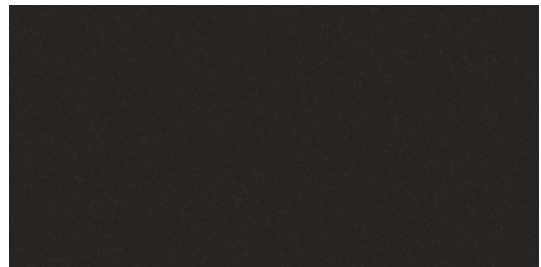
S & P Coffee



S & P Dark Beige



S & P Grey



S & P Jet Black



S & P Kota



S & P Light Beige



S & P Nero



S & P Sky



# STEPPING STONE



## Riser & Landing Area Tiles - Full Body Plain Colors



Bianco



Grey



Kota



Light Beige



Nero



Sky



## Recommended Stair Step Dimensions as per National Building Code, BIS, SP : 7

Type of Building	Minimum Width	Minimum Tread	Maximum Riser
Residential buildings	100 cm	25 cm	19 cm
Residential hotel buildings	150 cm	30 cm	15 cm
Assembly buildings like auditoria, theatres and cinemas	200 cm	30 cm	15 cm
Educational building	150 cm	30 cm	15 cm
Institutional buildings	200 cm	30 cm	15 cm
All other buildings	150 cm	30 cm	15 cm
2 storeyed - LIG Urban Areas	60 cm	22.5 cm	20 cm
3 or more storeyed - LIG Urban Areas	75 cm	25 cm	20 cm

**Note:** Straight flights of steps are preferred by ambulant disabled people. Steps should be of a consistent height and depth throughout the stair. Stairs shall be constructed of non-combustible materials throughout.

# STEPPING STONE



TECHNICAL FEATURES	STEPPING STONE	GRANITE	KOTA STONE
Eco Friendly	Environment friendly and adherence to ISO 14001 standards	Negative effect on Environment due to mining operations	Depend on mines. Negative effect on Environment
Vitrified Step Tiles & Risers	Endura Vitrified Product provides higher strength in 12 & 15 mm thickness	Being a natural stone, granite has its own limitations in terms of strength which might vary from lot to lot	Not Vitrified & Non Homogeneous - Multi Layer Product
Ready to Install Tiles	Pre cut, Pre-sized as per specification	Sizing and finishing to be done on site	Sizing and finishing on site
Embossed Tread Lines	In-built feature	Cannot be done, only grooves can be made which can attract dust	Grooves created on site. Increase in labor cost
Bull Nosing	In-built feature and ready to use	Created onsite with high labour costs	Create on site with increased labour cost
Lowest Water Absorption of <0.05% along with Enhanced Stain Resistance	Even the Strongest of dyes-methylene blue cannot stain Endura Stepping Stone. Impervious surface ensures ease of cleaning	Easily Stainable	Easily Stainable
Colour Options	More than 20 colours	Limited Option	Limited Option
Deep Abrasion Resistant	<120 MM <sup>3</sup>	>1000 MM <sup>3</sup>	>1400 MM <sup>3</sup>
Scratch Resistant - MOH	>6	4 to 5	3 to 4
Breaking Strength N	>3500N	2500N	1400 N
Flexural Strength (N/mm2)	>38	>28	>20

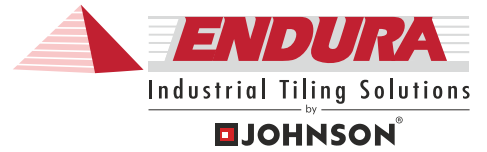
VALUE PROPOSITION	Stepping Stone	Granite	Kota Stone
Product Price/sqft (12mm/15mm Thick)	120 +	150 +	60 +
Labour cost/sqft (Sizing, Polishing, Full Bull Nosing & Treads)	0	40	30
Labour cost/sqft (Application)	40	40	40
Material/sqft	65	65	65
Area (in sqft)	1000	1000	1000
*Price working as per current market practices Total Amount (in Rs)	<b>225000</b>	<b>295000</b>	<b>195000</b>

# CLAD CARE

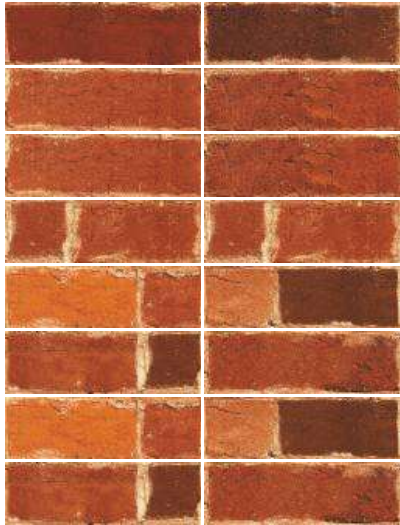


# CLAD CARE SERIES

24X7.5 cm | 0.5 CM THICK



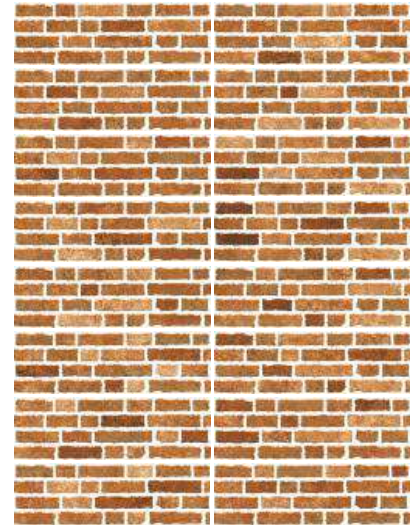
## Matt



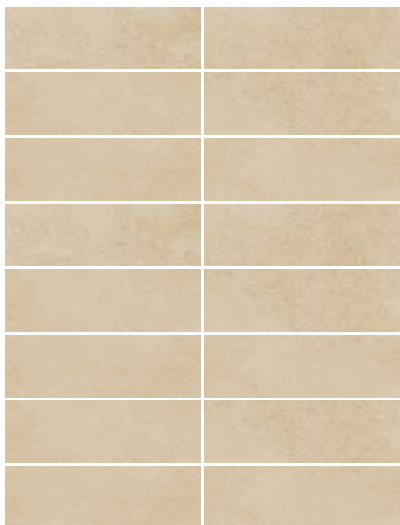
Boston Brick



Claire Brick Café



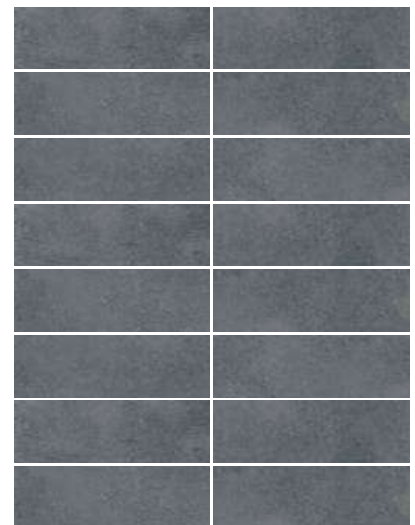
Brique Brick



Claire Brick Beige



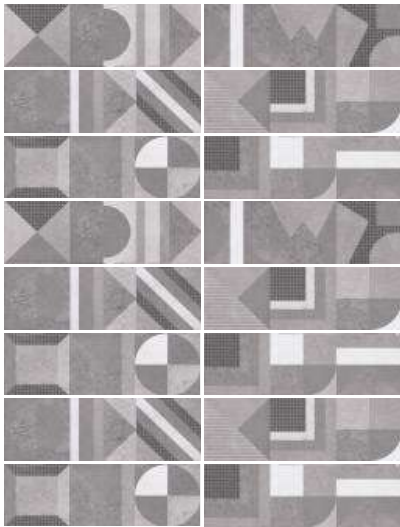
Claire Brick Beige Deco



Claire Brick Noir



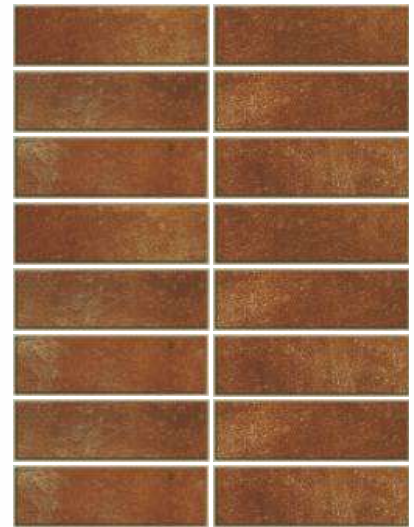
## Matt



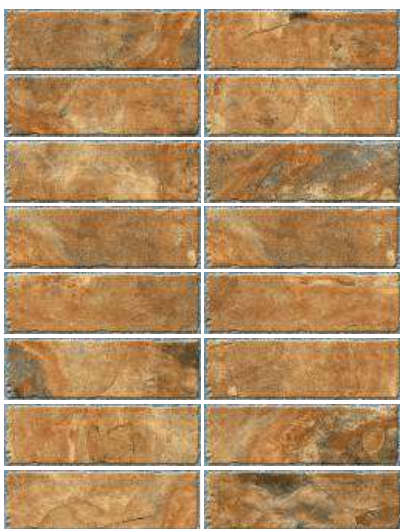
Claire Brick Noir Deco



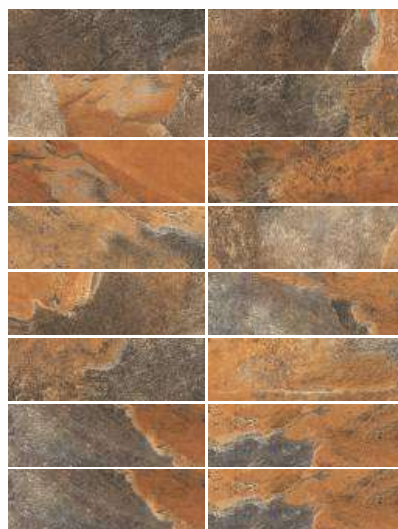
Claire Brick Ivory



Solaire Brick



Oxide Brick

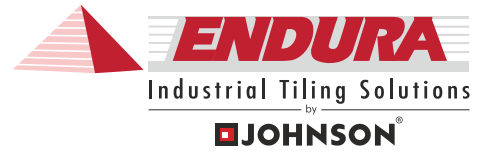


Slate Rock



# CLAD CARE SERIES

24X7.5 cm | 0.5 CM THICK





ZF V 4650  
PH 4



# SPD EFC TAA TAY

## Industrial Series 30X30 cm, 20X10 cm

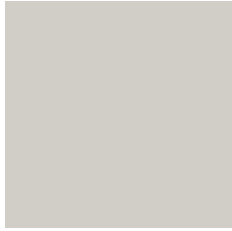
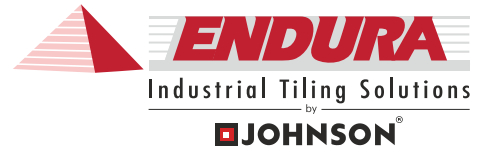
Extra tough, non-abrasive, acid/alkali resistant Endura industrial tiles are designed to withstand the extreme demands of industrial manufacturing areas.

Being anti-skid ensures safety of workers and also minimizes loss of productivity caused by accidents. Easy to clean and maintain Endura industrial tiles are must for warehouses, food, chemical, petrochemical, pharmaceutical and other similar industries where the flooring is constantly prone to fluid spillage.

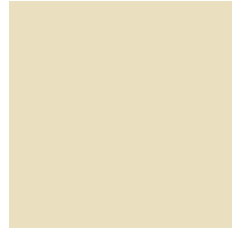


# PLAIN SERIES

30X30 cm | 2 CM THICK



Grey



Ivory



Terracotta



# PLAIN SERIES

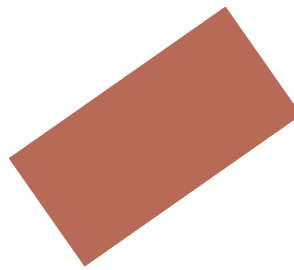
20X10 cm | 2 CM THICK



Grey



Ivory



Terracotta

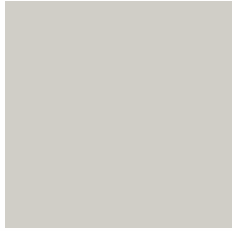


# INDUSTRIAL

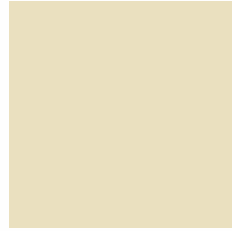




30X30 cm | 1.5 CM THICK



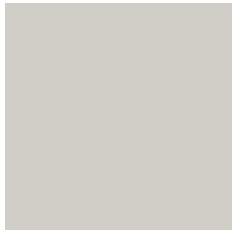
Grey



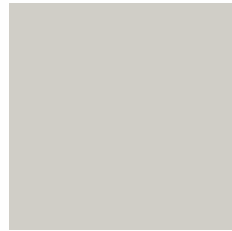
Ivory



Terracotta



Coated Grey Plus



Grey Plus



Silver Grey Plus

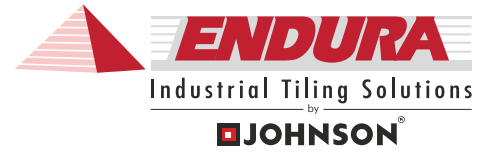


Silver Grey Plus Special



# SPECIALITY SERIES

30X30 cm | 1.5 CM THICK



Caranz



Cavelo

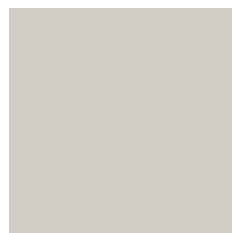


# PLAIN SERIES

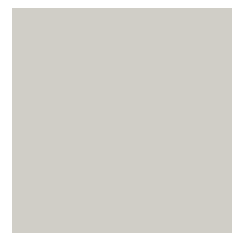
30X30 cm | 1.2 CM THICK



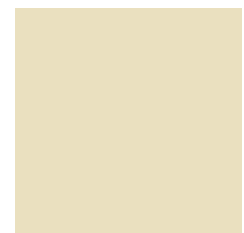
Benaulim



Grey



Grey Plus



Ivory



Majorda



Terracotta



# INDUSTRIAL

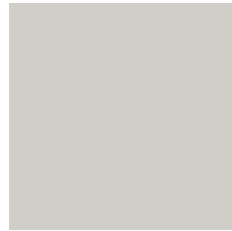


# COLOUR SERIES

30X30 cm | 1.2 CM THICK




Coated Black Plus 




Coated Grey Plus 




Ivory Plus 



Silver Grey Plus 



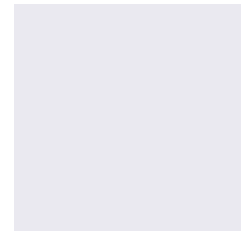
To Blue Plus 




To Green Plus 



Coated Yellow Plus 




White Plus 


# TEXTURED SERIES

30X30 cm | 1.2 CM THICK




Checked Grey 



Checked Ivory 



Checked Terracotta 

# INDUSTRIAL



## 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 $\geq 7$ 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 30X30 - 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 $\geq 7$ . 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 $<120 \text{ mm}^3$ (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 ( $> 1 \text{ ton}$ ) 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 $<120 \text{ mm}^3$ (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.

# INDUSTRIAL



## 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/mm <sup>2</sup> )	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/cm <sup>3</sup> )	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, 20X20-15cm, 20X10-1.5cm, 30X30-1.2cm,

# INDUSTRIAL



## Industrial Tile

Features	Advantages	Benefits
Higher breaking strength 1.2 cm - > 3000 N 1.5 Cm > 5500 N 2 cm - > 8000 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 <120 mm <sup>3</sup>	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 >0.42	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 effective 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.
<b>For Acid Resistant flooring</b>		
Resistance to concentrated Acid – Weight loss < or = 0.8%	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.

# HI-TRAFFIC



# TAC TILE SERIES

30X30 cm | 1.2, 1.5 & 2.5 CM THICK



## 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 combines 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-therby 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.



Tac Button D/K  
Metro Yellow<sup>^</sup>#



Tac Button D/K  
Terracotta<sup>^</sup>#



Tac Button D/K  
Yellow<sup>^</sup>#



Tac Liner D/K  
Metro Yellow<sup>^</sup>#



Tac Liner D/K  
Terracotta<sup>^</sup>#



Tac Liner D/K  
Yellow<sup>^</sup>#

<sup>^</sup> Yellow, Terracotta, Ivory & Metro Yellow in 12mm      # Yellow, Terracotta, Ivory & Metro Yellow in 15mm  
Make to order subject to minimum order quantity & lead time confirmation.

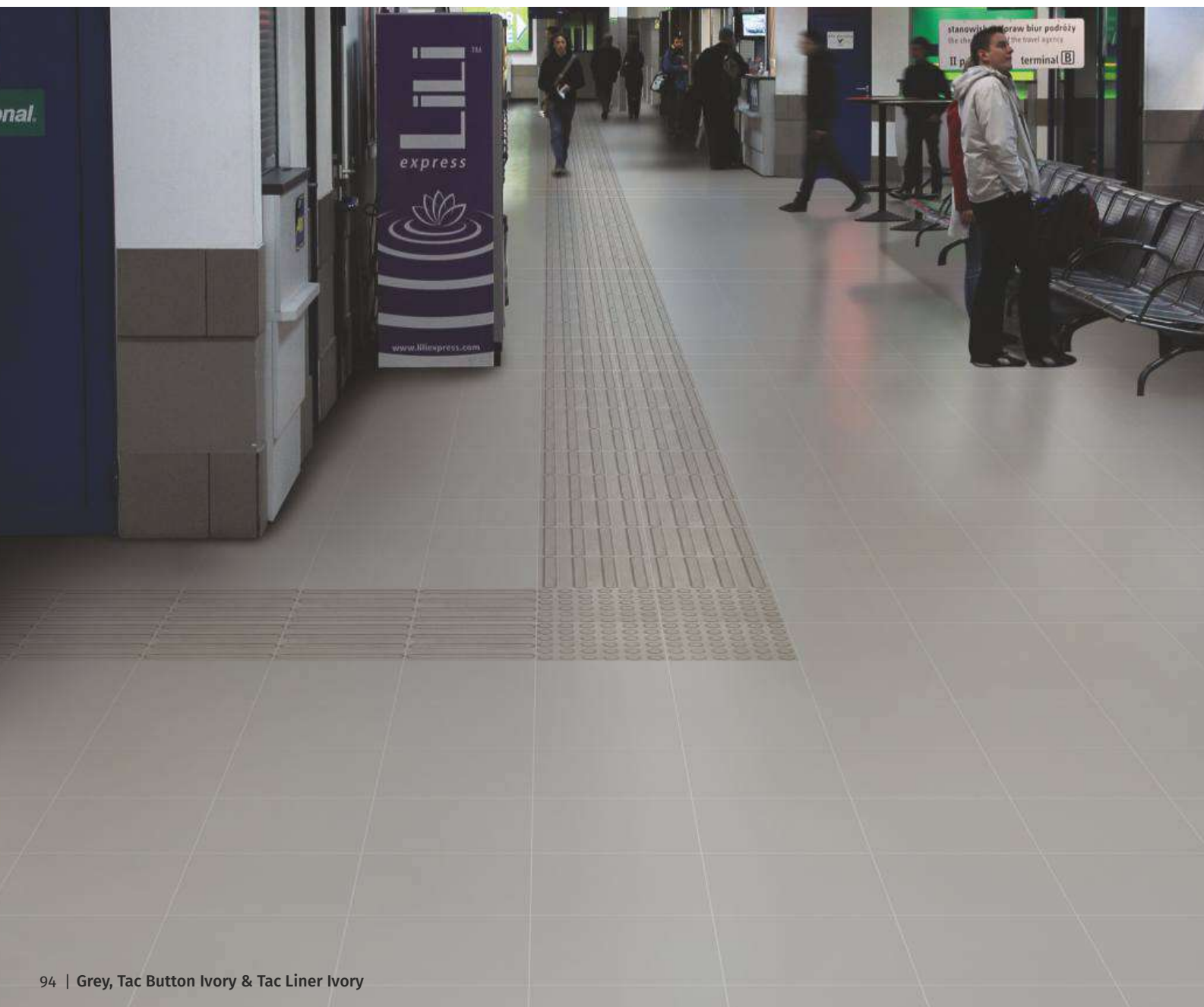
# HI-TRAFFIC



Tac Button D/K  
Ivory^#



Tac Liner D/K  
Ivory^#



# TAC TILE SERIES

30X30 cm | 1.2, 1.5 & 2.5 CM THICK



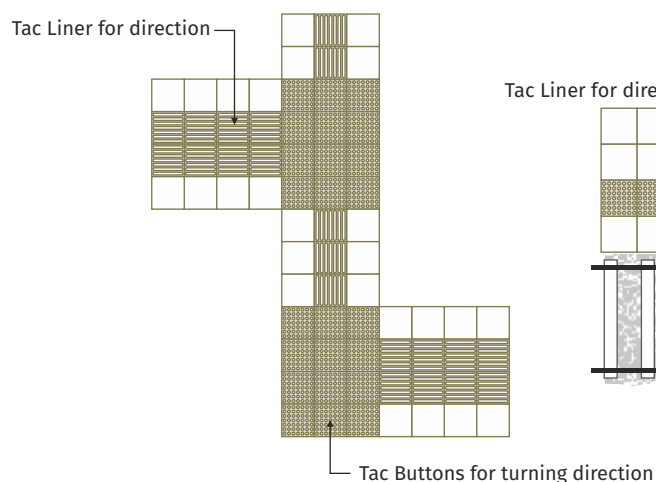
## Endura Tactiles - Benefits & Features

- 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.

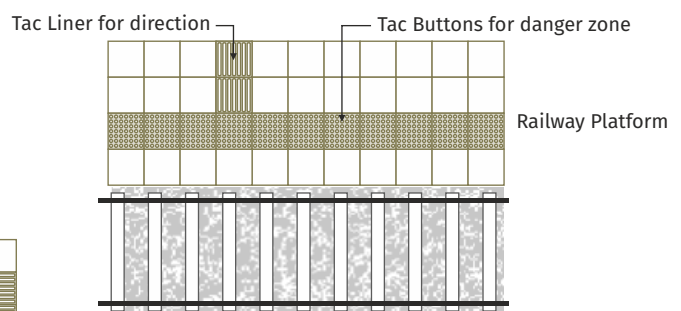
## Technical Characteristics

- Fully vitrified porcelain tile.
- Low water absorption, below 0.5%.
- Approved profiled tactile design.
- Approved size = 30cm x 30cm.
- Tac Button Profile thickness = 0.45cm.
- Tac Liner Profile thickness = 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.

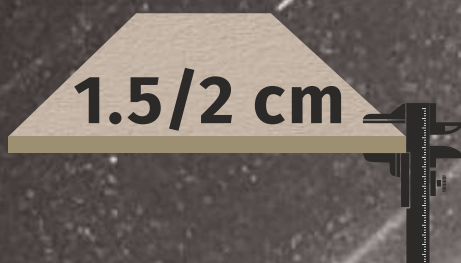
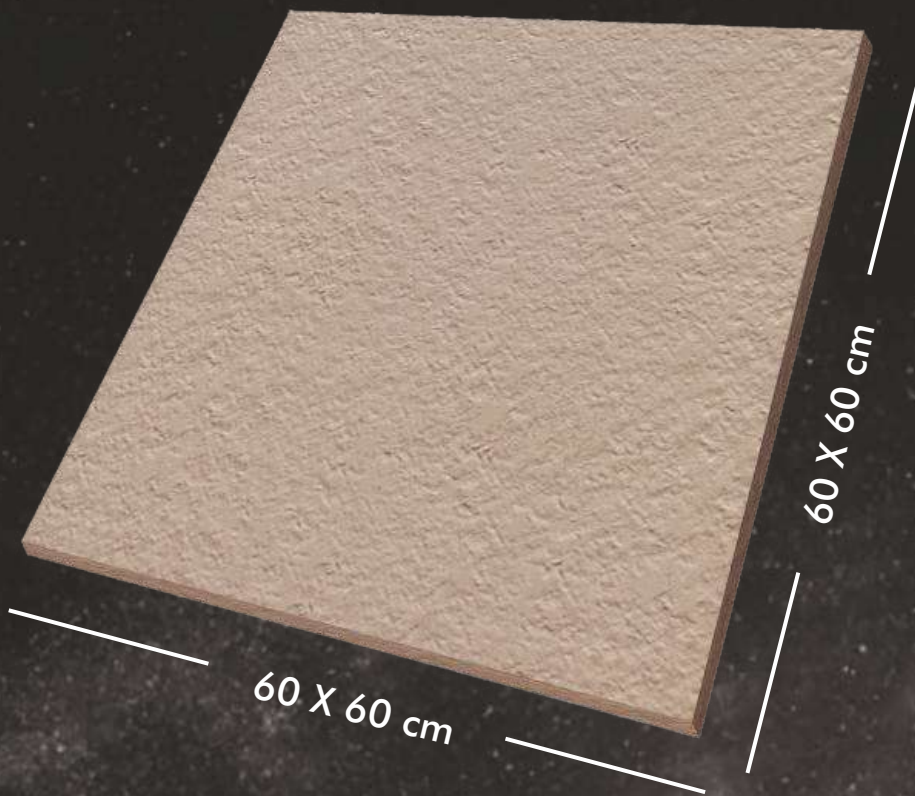
**For Direction & Turning**



**Danger Zone**



# METEOR



Johnson Endura meteor collection is available in 80x80 & 60x60 in 2 and 1.5 thickness. These are more suitable than standard flooring alternatives like concrete tiles, paver blocks, natural stones etc. making it the best choice for outdoor usage like industries, admin block etc. 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.



**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.



**DRY INSTALLATION GRASS**

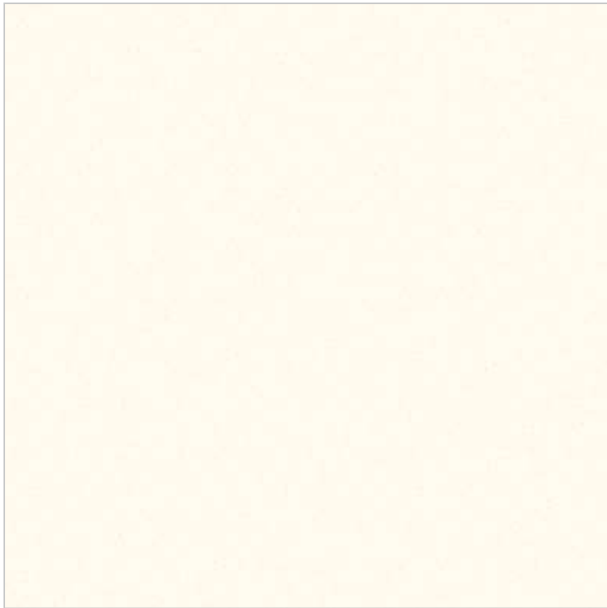
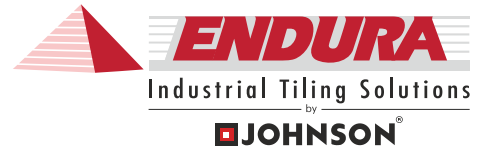
The dry installation allows for the positioning of the slabs directly onto substrates in grass to create pedestrian pathways that can be immediately walked upon. This type of application is easy & quick and does not require the use of adhesive for installation.

# METEOR

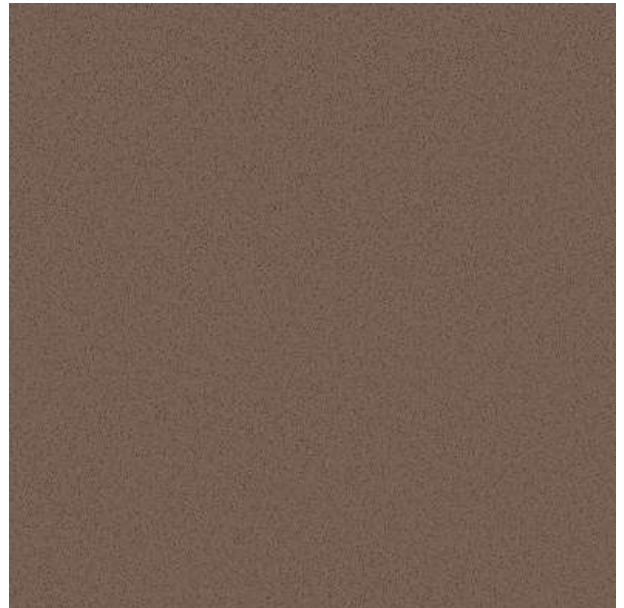


# METEOR SERIES

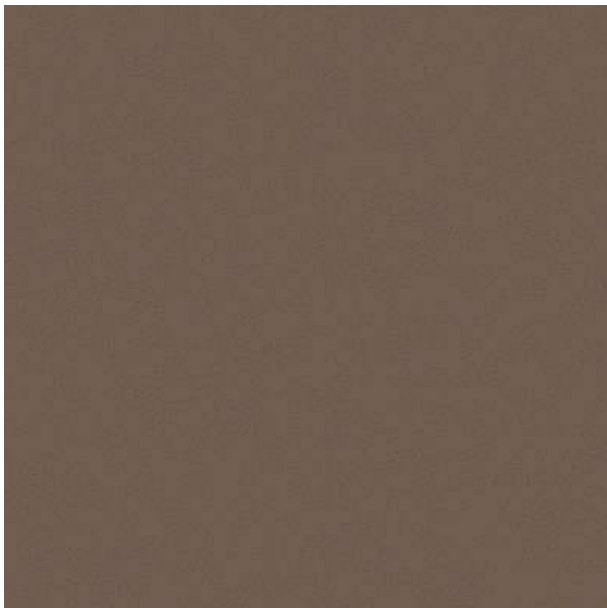
80X80 cm | 1.5 CM THICK



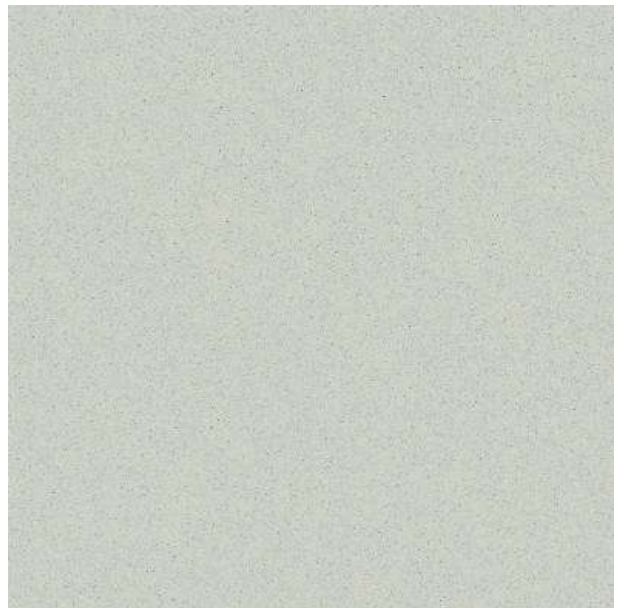
Iris Crema (PO) ●



Palolem ●



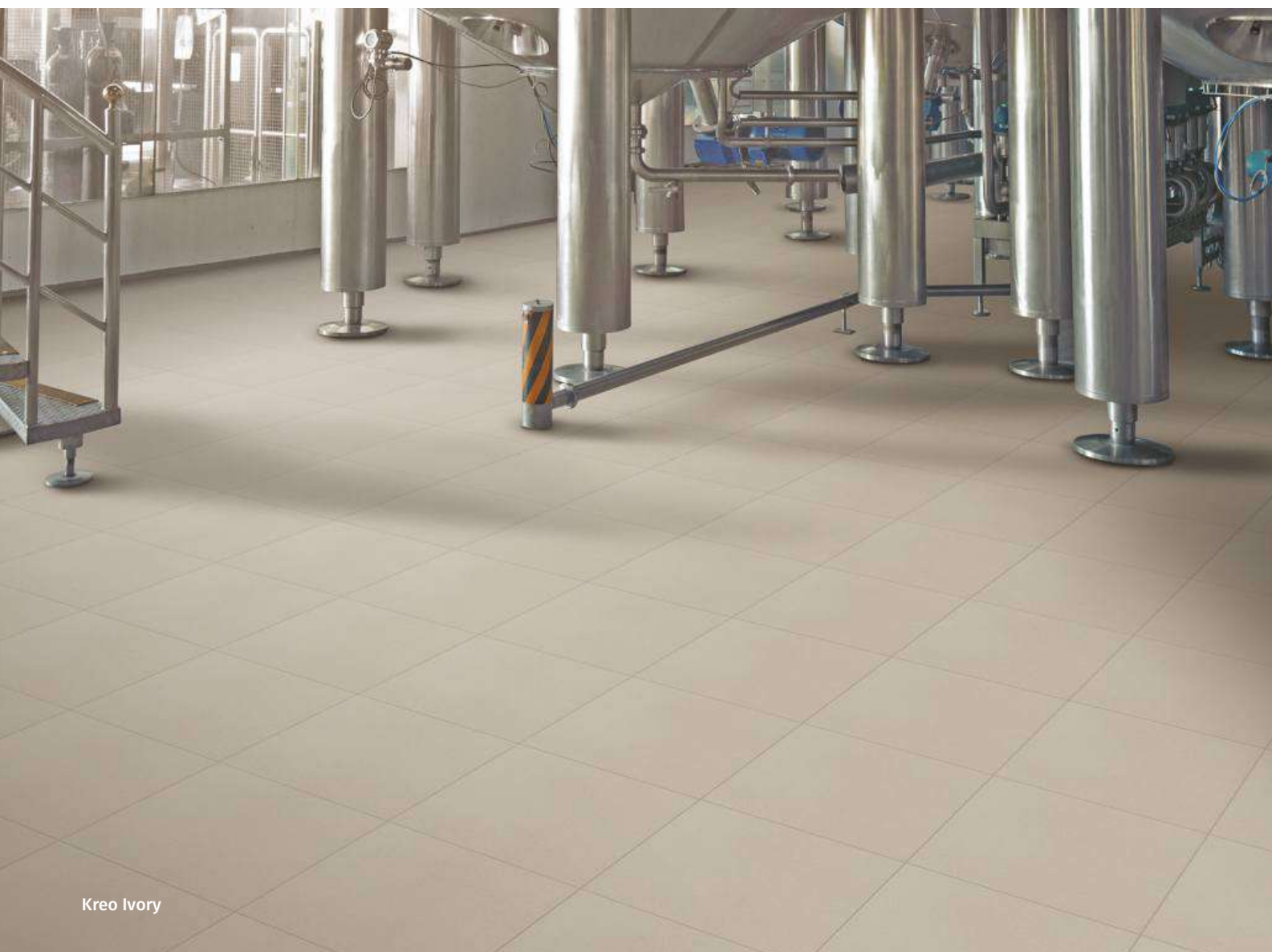
S&P Choco (PO) ●



Vaga ●



# METEOR



Kreo Ivory



Korneto Beige

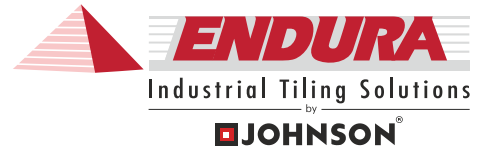


Korneto Gris



# METEOR SERIES

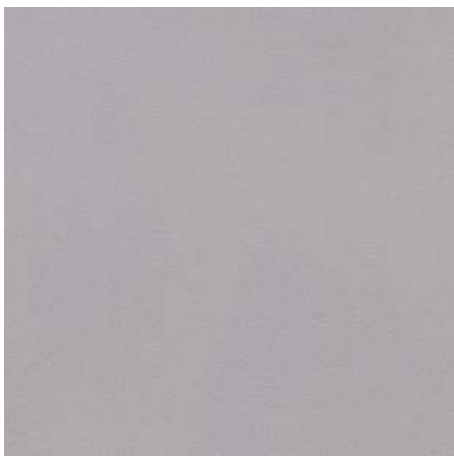
60X60 cm | 2 CM THICK



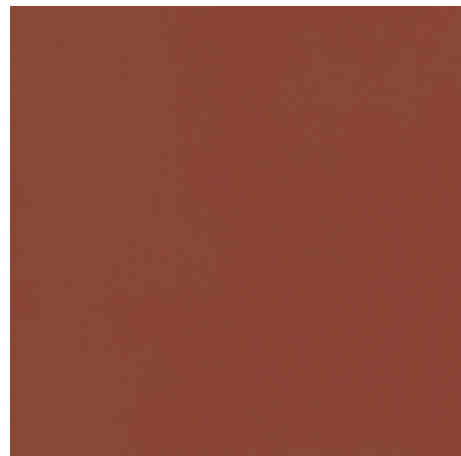
Korneto Ivory



Kreo Beige



Kreo Gris



Kreo Terracotta



Kreo Ivory



# METEOR

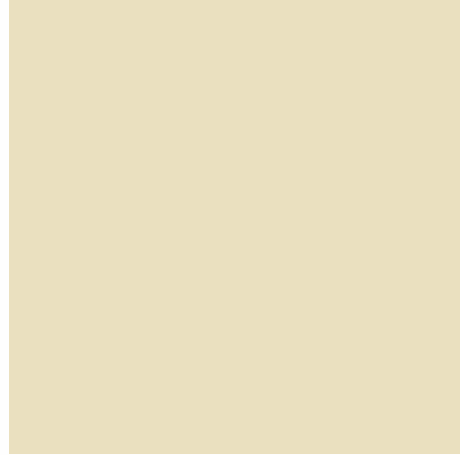
# METEOR SERIES

60X60 cm | 1.5 CM THICK



Coated Grey Plus

D



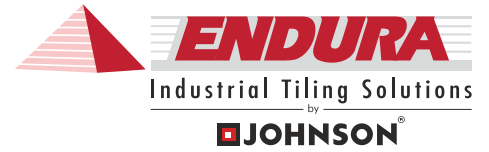
Ivory

P



# METEOR SERIES

60X60 cm | 1.5 CM THICK



Plain Benaulim



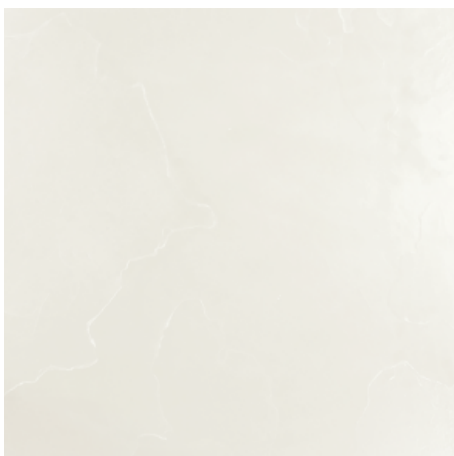
Plain Donapaula



Plain Grey



Plain White



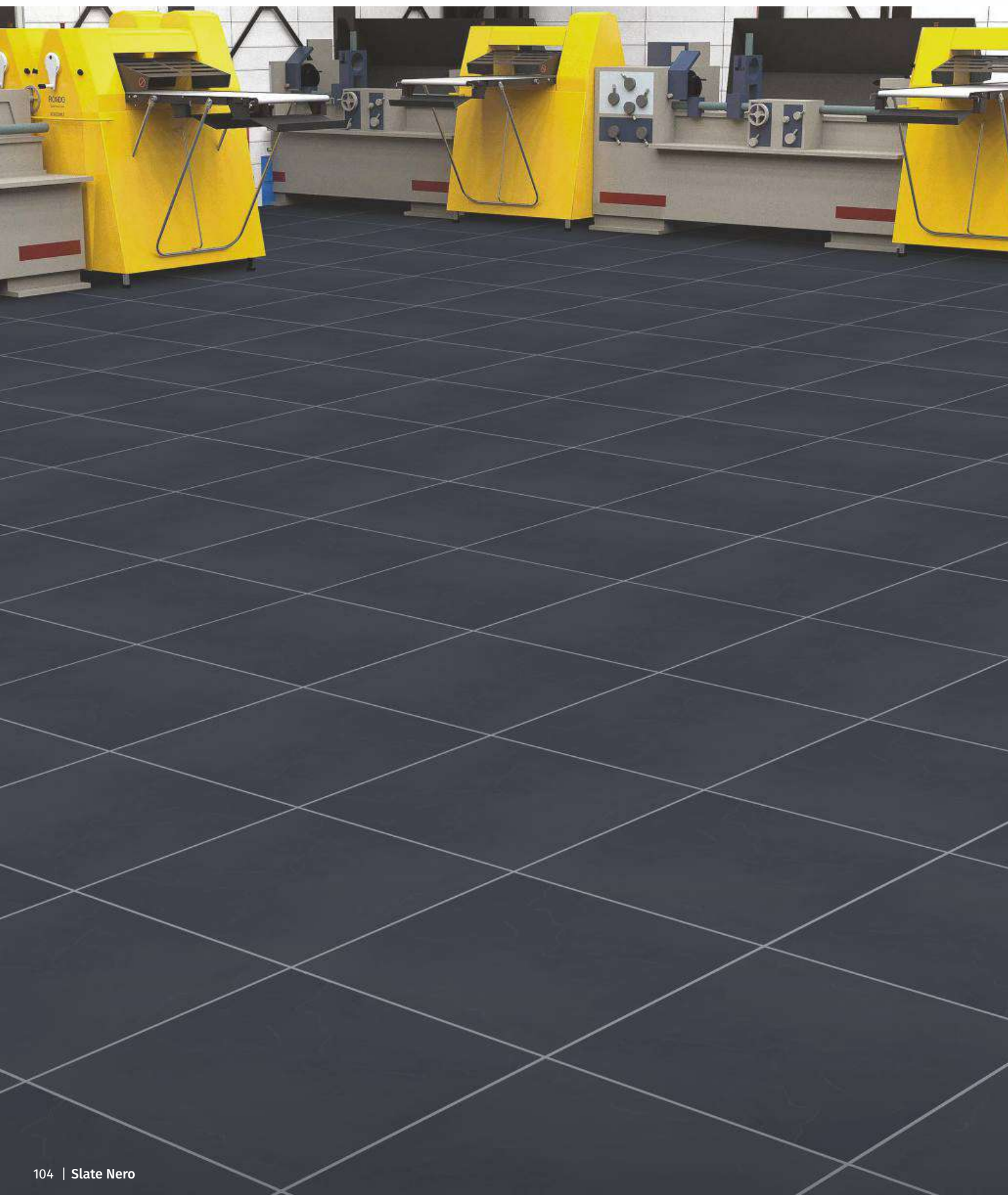
Slate Bianco



Slate Kota green

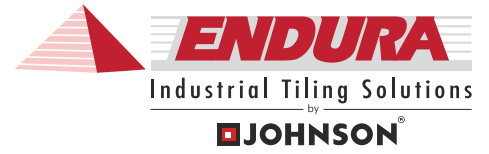


# METEOR



# METEOR SERIES

60X60 cm | 1.5 CM THICK



Slate Nero



Triumph Grey



Terracotta







# METEOR



# METEOR SERIES

60X60 cm



Features	Advantages	Benefits
High Abrasion Resistance. Deep abrasion volumeloss <math><120\text{mm}^3</math>	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 $\leq 0.5\%$	Ensures compact body thus preventing stains & percolation of liquid based media.	Helps in maintaining good housekeeping norms.

## Antistatic Tile

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.

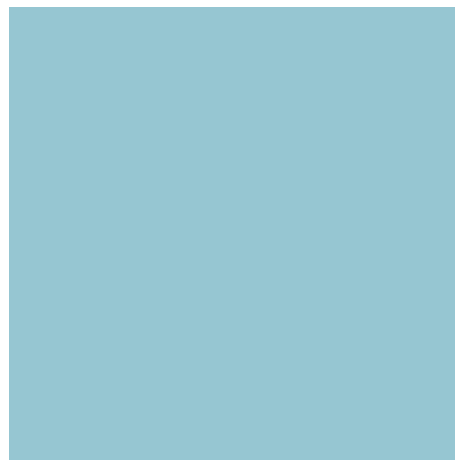
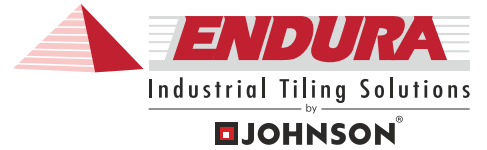
### Application Areas :

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.



# ANTISTATIC SERIES

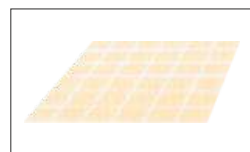
60X60 cm | 1 CM THICK



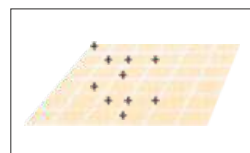
Asc Blue



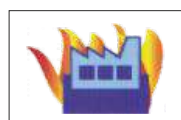
## Working of antistatic tiles



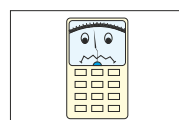
Normal Floor



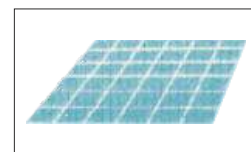
Static Electricity after friction



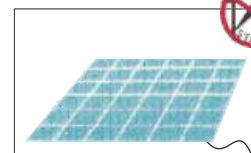
Possibility of fire hazard



Can damage electronic equipment



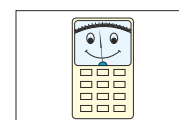
Endura Anti-Static Floor



Static Electricity is earthed



No fire hazard



Eliminates possibility of damage

# INDUSTRIAL



# ANTISTATIC TILE



Features	Advantages	Benefits
<p>Surface Electrical Resistance – Conductive &lt;1 Mega Ohm &amp; Dissipative – 1 Mega Ohm to 1 Giga Ohm</p>	<p>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.</p>	<p>Static hazard-free area resulting in smooth uninterrupted functioning of critical equipments. Helps in mitigating fire hazard from floor due to static charges.</p>
<p>Static decay Time – Conductive - &lt;0.5 sec Dissipative - &lt;0.5 sec</p>	<p>Static decay time as per ANSI norms ensure smooth discharge of accumulated static electricity from the surface.</p>	<p>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.</p>
<p>Firm &amp; Effective Grounding of Floors</p>	<p>Vitrified anti-static tiles help provide firm and permanent grounding.</p>	<p>Assures Anti Static property throughout the service life of product.</p>
<p>60cm X 60cm Matt finish Asc Blue Tile</p>	<p>Bigger size offers lesser joints. Matt finish with anti-skid elegant floor in blue shade.</p>	<p>Customer benefitted by safe floor to meet industrial safety norms along with excellent aesthetic ambience.</p>
<p>Stain Resistance</p>	<p>Provides sufficiently good stain resistance property to effectively maintain the matt finish floor.</p> <p>Being a glazed vitrified tile, the tile is virtually stain proof</p>	<p>Helps in maintaining good housekeeping norms.</p>
<p>Endura Anti-Static Tiles Patented Product</p>	<p>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.</p>	<p>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.</p>

## Sandex Collection

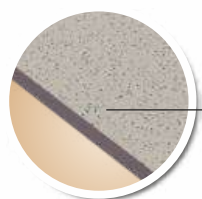
Exterior flooring is prone to wear and tear caused by heavy pedestrian and vehicular traffic. The challenge here is to meet these demands without hampering aesthetics or adding to maintenance costs. The Endura Sandex collection strikes a perfect balance between aesthetics, functionality, and cost. Endura Sandex comprises of full body vitrified tile and few customized glazed vitrified tile which is recognized and accepted as the best long terms performing product in the industry. 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 full body Sandex collection has 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

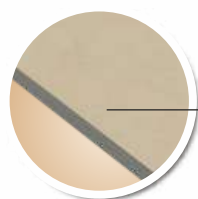
- Full body vitrified tile
- Neutral Matt Finish
- Anti-skid property with high coefficient of friction
- Suitable for high pedestrian and light vehicular traffic
- Salt & Pepper designs in earthen shades
- Scratch resistant
- Tough and durable
- Low recurring or maintenance cost
- Suitable for driveways,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



Unique  
Anti-Skid surface

### Endura Sandex Plus

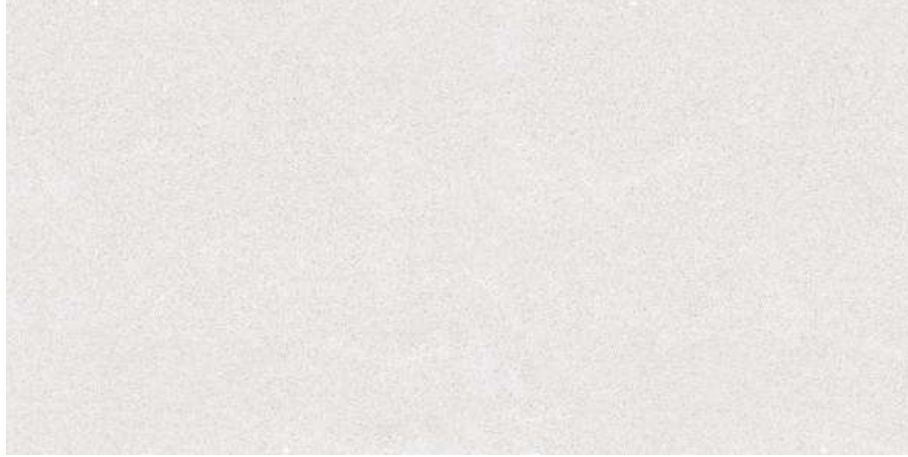
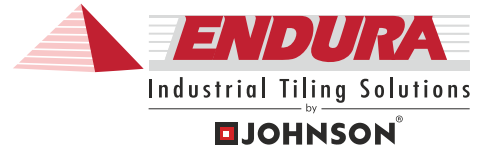
- Full body vitrified tile
- Neutral-to-Satin Finish
- Easy to clean - no footmarks
- Suitable for interior application
- Salt & Pepper earthen shades
- Scratch resistant
- Tough and durable
- Low maintenance cost
- Suitable for hyper marts, retail chains, religious places, restaurants, educational institutions,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



Unique Satin  
easy clean surface

# SANDEX PLUS SERIES

60X120 cm



Adoks Glitter Satin





Adoks Sandune



AU Black Plus

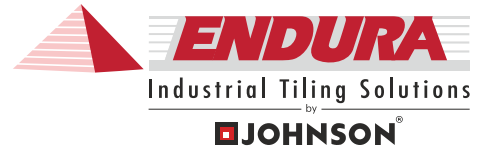


Adoks Grey



# SANDEX PLUS SERIES

60X120 cm



Adoks Crete\*



Grey Plus



# SANDEX PLUS SERIES

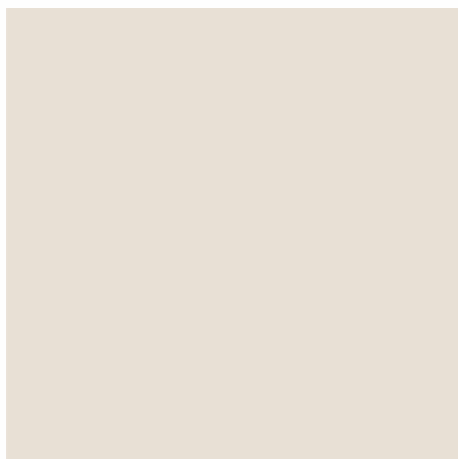
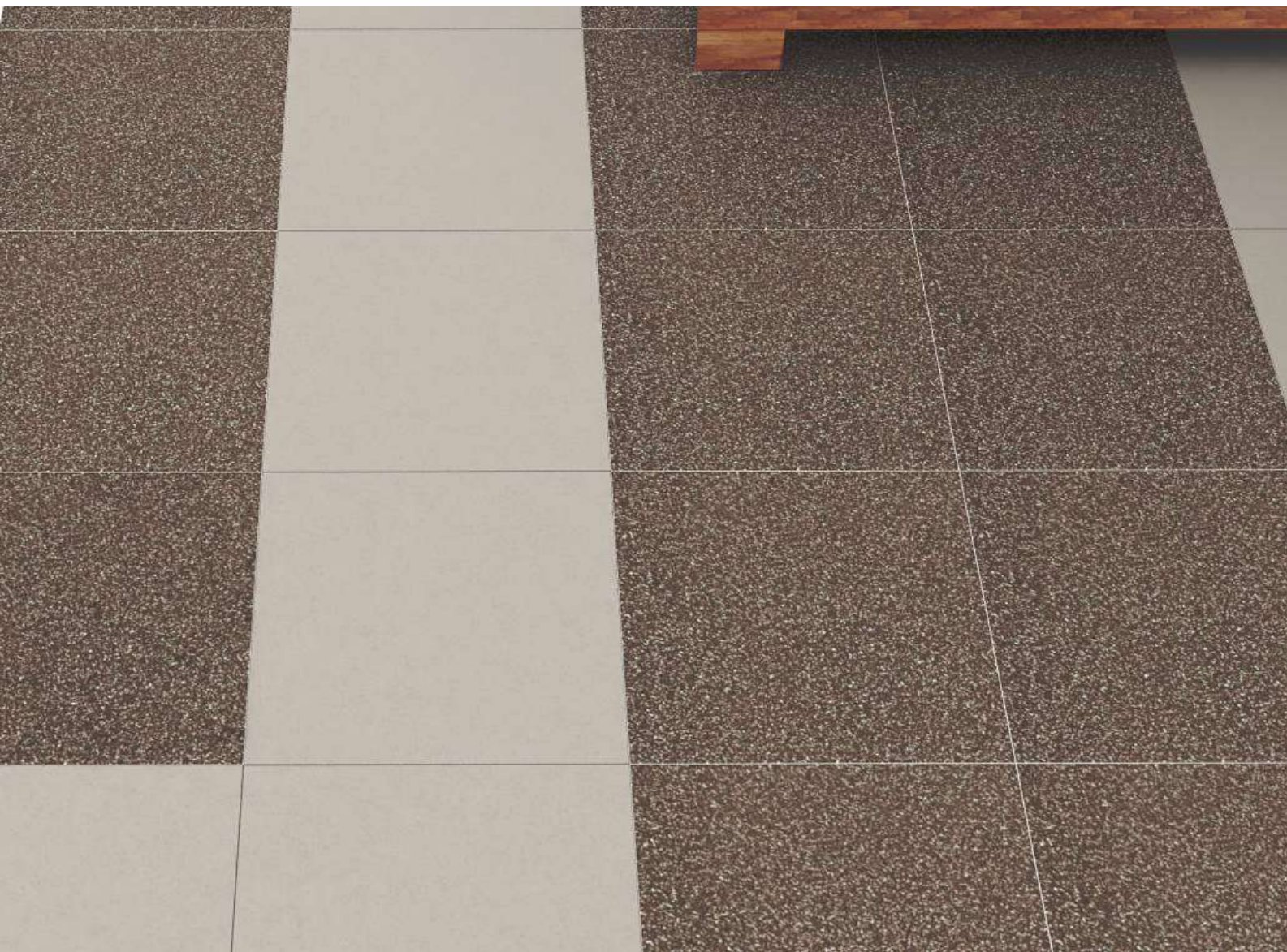
20X120 cm | 1 CM THICK



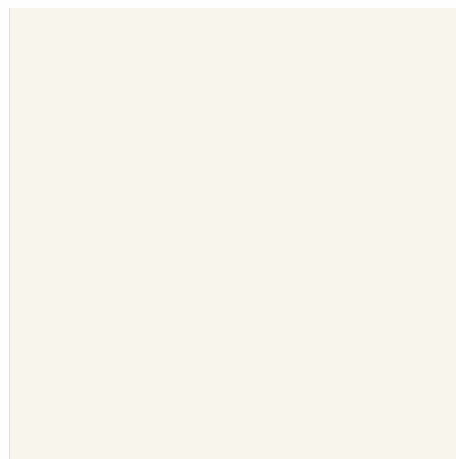
Adoks Firewood



# HI-TRAFFIC



Adoks Beige

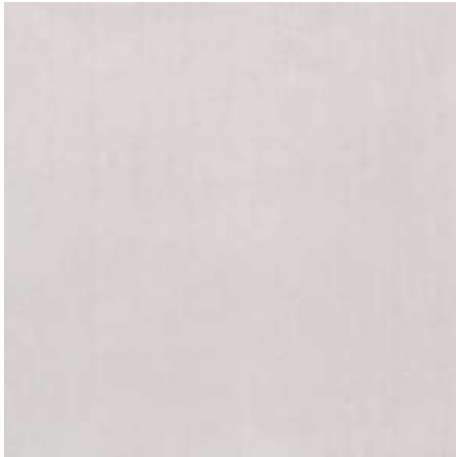
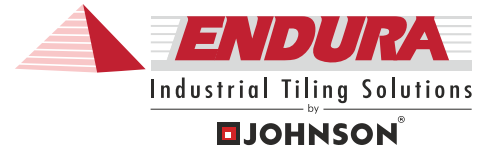


Adoks Chalk New



# SANDEX PLUS SERIES

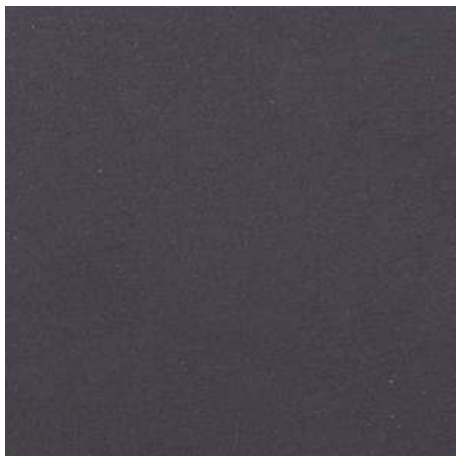
60X60 cm | 1 CM THICK



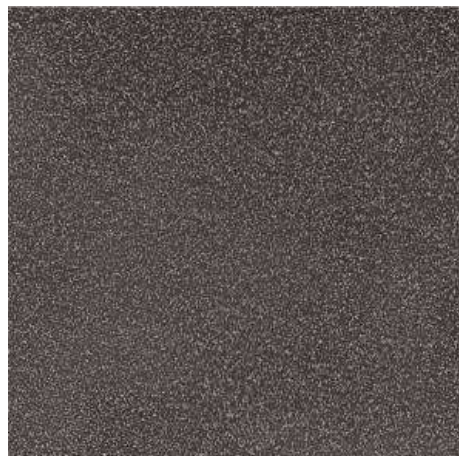
Adoks Grey



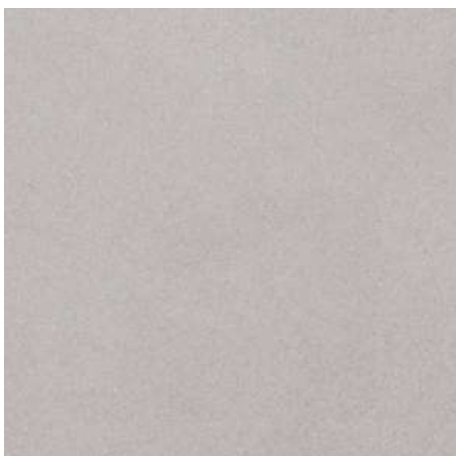
Adoks Rusto Brown\*



Au Black Plus



Benaulim Plus



Grey Plus

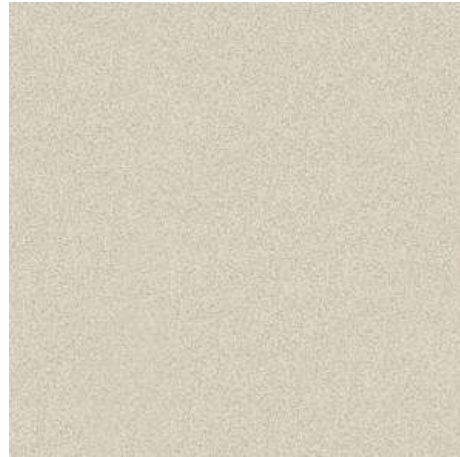


Ivory Plus





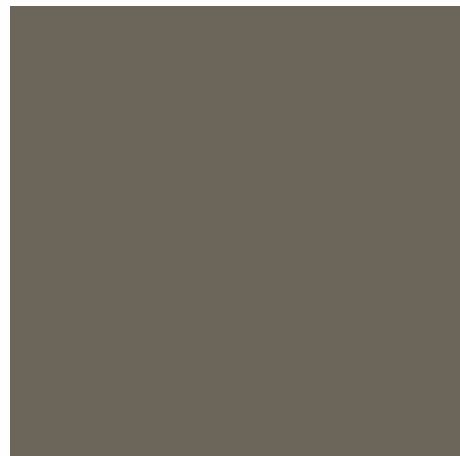
KTM Grey



Miramar Plus



Terracotta Plus



Triumph Café

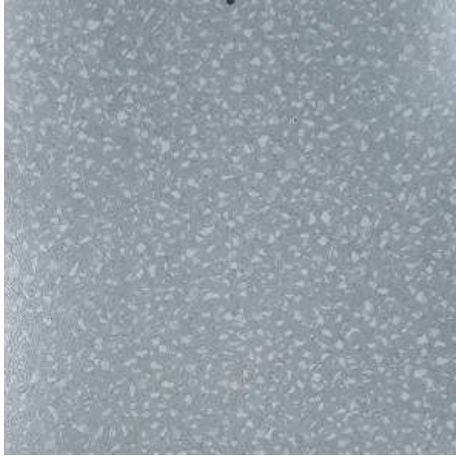
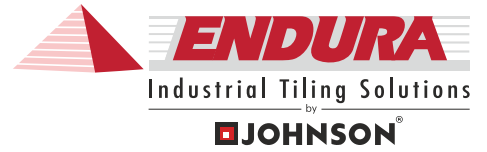


White Plus

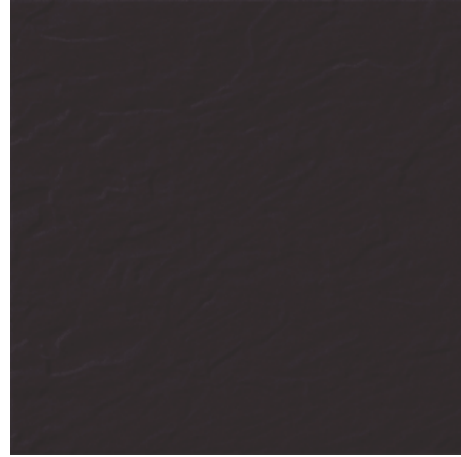


# SANDEX SPECIALITY SERIES

60X60 cm | 1 CM THICK



Adoks Mosiaco Calcada



Charcoal Black



Nero Black





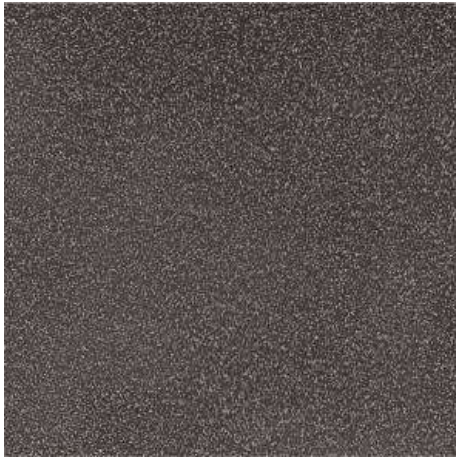
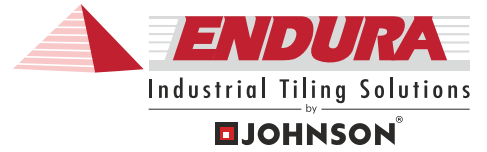


# HI-TRAFFIC



# SANDEX SERIES

60X60 cm | 1 CM THICK



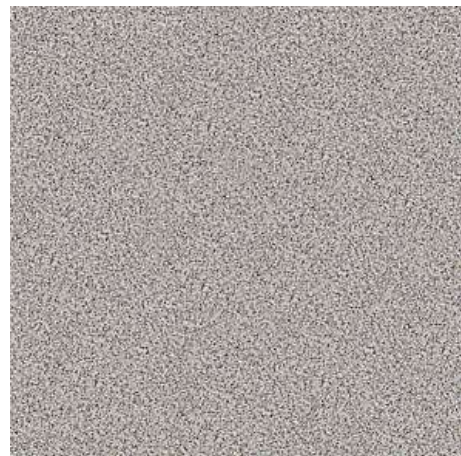
Benaulim



Candolim



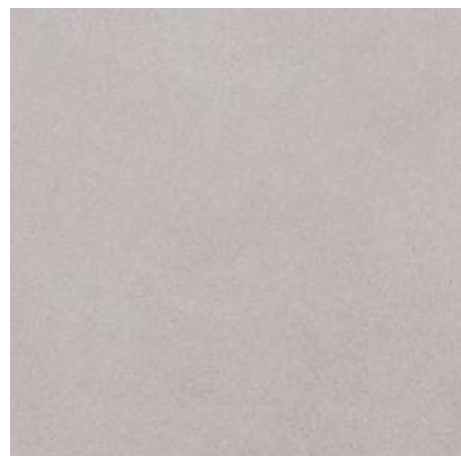
Colva



Donapaula



Gmalo



Grey



# HI-TRAFFIC



Grey Coated



Ivory



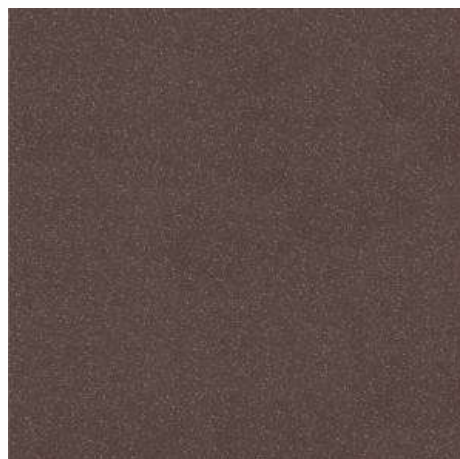
Ivory Coated



Majorda



Miramar

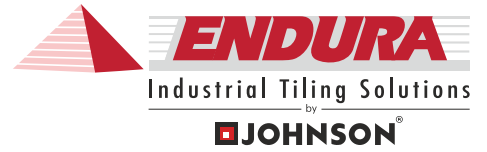


Palolem



# SANDEX SERIES

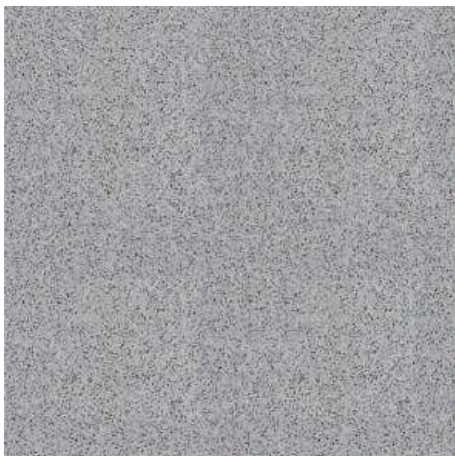
60X60 cm | 1 CM THICK



Terracotta



Tempered Grey



Vaga



Velsoa

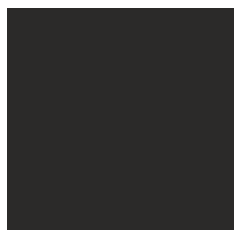


# HI-TRAFFIC

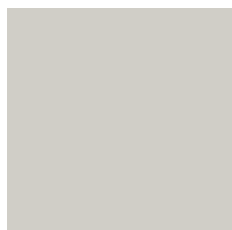


# COLOUR SERIES

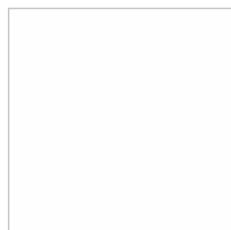
30X30 cm | COATED 1 CM THICK



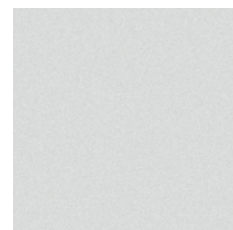
Coated Black D/K



Coated Grey Plus D/K



Coated White K



Grainflow Light D



Green D



Green Coated K



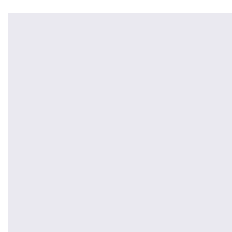
Red D



Super Ivory D



Tata Blue D/K



White Plus D



Yellow D/K





# RADIATION

## Effective in Shielding Harmful X-rays

Discovered more than 100 years ago, X-rays continues to play an important role in patient care, are used to look inside the body to diagnose many ailments and are also used in cancer treatments-Radiotherapy, Interventional Radiology, Computed Tomography, Mammography, Bone Mineral Densitometer, Dental Radiography.

As all good things come with few ill effects, long and over the limit (1mSv/yr for Public) exposures to the radiations and its leakages leads to far reaching health risks, we seriously need to look into the radiation hazards for the technicians, support staffs, people around the imaging facilities and the environment.

As per the regulatory requirement from AERB (Atomic Energy Regulatory Board), appropriate structural shielding shall be provided for walls, doors of the room housing the X-ray equipment so that radiation exposures received by workers and the members of the public are kept to the minimum and shall not exceed their respective dose limits (20mSv/year average over five years for healthcare workers).



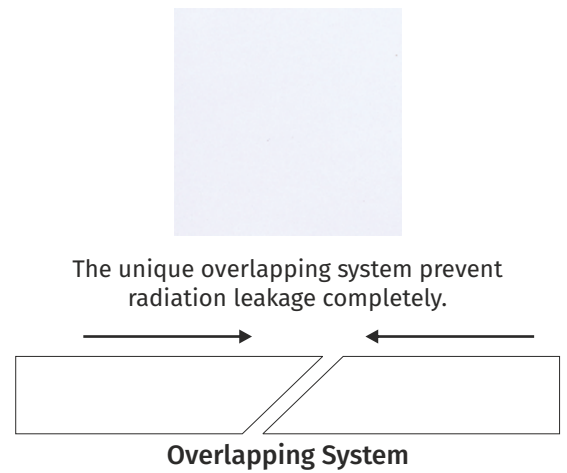
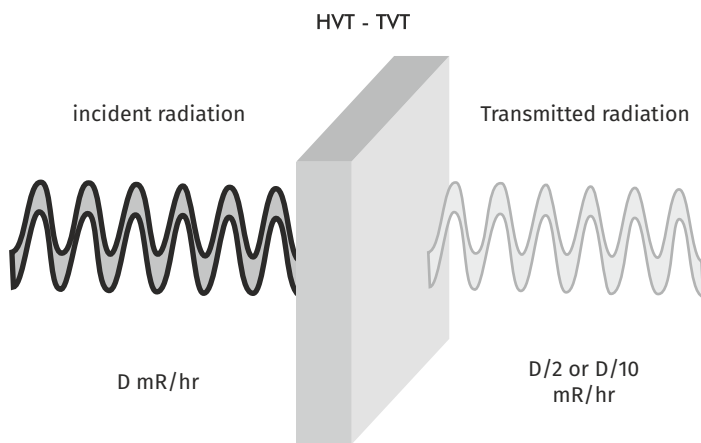
# RADIATION SHIELDING TILES

30X30 cm | 1.2 CM THICK



## shielding...

Thickness of protective shielding is necessary to reduce the exposure rate from any x-ray machine to the desired permissible level.



JOHNSON ENDURA RADIATION SHIELDING TILES (RST): Non Toxic, non-reactive, permanent radiation shielding, easy installation, cost effective

Size: 30 X 30 cm | Tiles: 12 mm thickness ( =2mm Pb @ 100 kV) | Density: 3.9 g/cc  
Color: White (glazed) & Terracotta (non glazed)

Currently Lead, Brick, Concrete and Steels are used as alternate shielding Material as recommended by AERB (Atomic Energy Regulatory Board), but most of them are not effective enough over a period, carcinogenic, expensive and difficult to handle.

Also long-time exposure to lead has been reported to cause anaemia, along with an increase in blood pressure, and that mainly in old and middle aged people. Severe damage to the brain and kidneys, both in adults and children, were found to be linked to exposure to heavy lead levels resulting in death. It is the second topmost hazardous material.

The Department of Health and Human Services (DHHS), Environmental Protection Agency (EPA), and the International Agency for Research on Cancer (IARC) have determined that lead is probably cancer-causing in humans.

“H & R Johnson India has introduced Johnson Radiation Shielding Tile”  
Under Technology License Agreement with CSIR - AMPRI (Advanced Materials and Processes Research Institute), Bhopal



## Current Shielding Materials In Use (As Recommended By Atomic Energy Regulatory Board - Aerb):

Materials	Disadvantages
LEAD	Highly toxic and carcinogenic in nature, life of shielding is less, gap generates due to its self-weight, need high skills of installations, very expensive.
BRICK	No standard control on density, varies from place to place, no guaranteed shielding, no recommendations on grouts, mortars available for grouts are highly porous in nature and not suitable for shielding.
CONCRETE	Prone to develop cracks over a period, have air pockets during casting, X-rays when propagates further develops cracks due to high instant temperature. The shielding efficiency drops within one or two years.
STEEL	Heavy structures difficult to handle and install, conducive in nature and very expensive.

\*\* Lead free shielding materials have been developed by Council of Scientific and Industrial Research (CSIR)- Advanced Materials and Processes Research Institute (AMPRI), Bhopal.

## Johnson Endura Radiation Shielding Tile Benefits Over Existing Lead Sheets

Radiation Shielding Tiles	Carcinogenic Lead Sheet
High thickness of 12 mm.	Low thickness of 1-2mm
Low price	High price
Non toxic	Toxic/Carcinogenic as per IARC
Life of shielding is very high	Life of shielding is less
Easy installation	High skill installation
Non toxic resources	Use of toxic Natural source

## Johnson Endura Radiation Shielding Tile Advantage

- ☑ 100% Lead free and environment friendly.
- ☑ Atomic Energy Regulatory Board-AERB recommended for shielding adequacy
- ☑ Brings down cost of Radiation Shielding.
- ☑ Avoids need for periodic survey as compared to lead which tends to lose its structural integrity over time.
- ☑ Easy and fast installation.

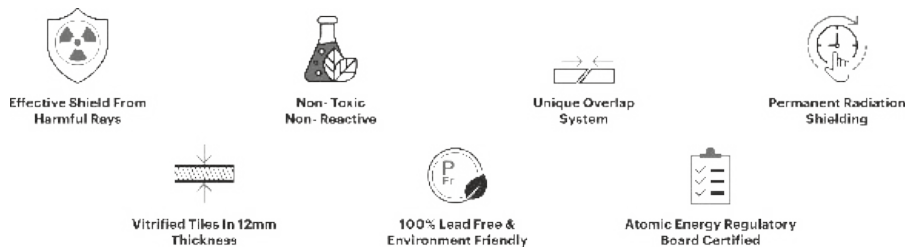
# RADIATION SHIELDING TILES

30X30 cm | 1.2 CM THICK



## Laying Installation

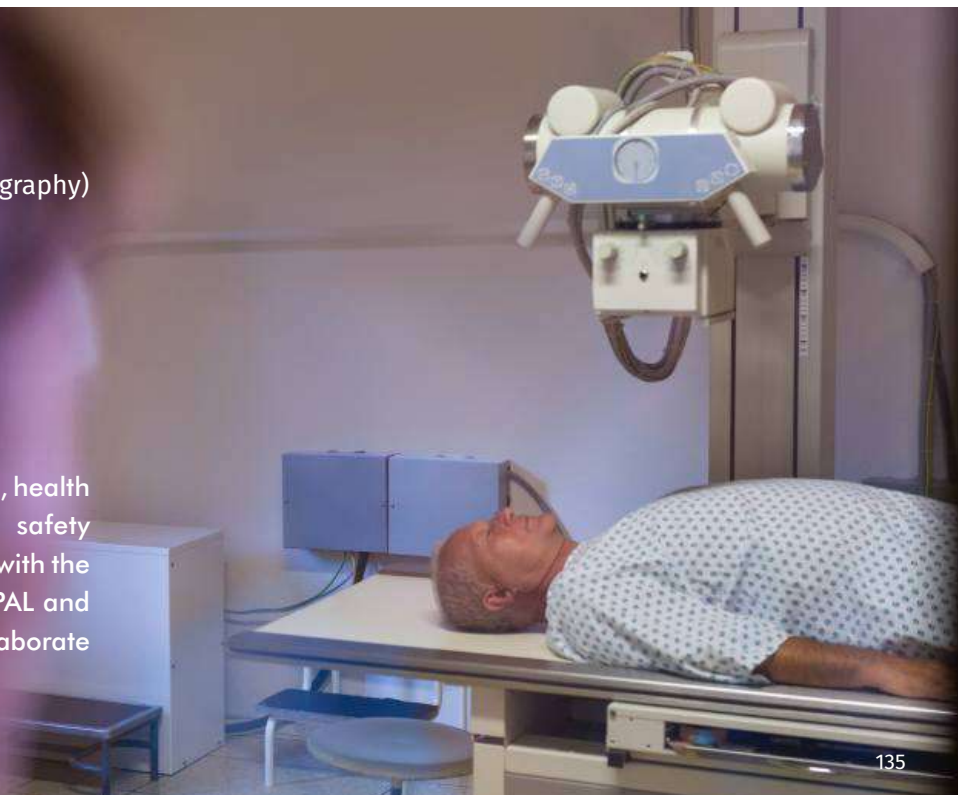
- Read tile fixing instruction before tile laying (available on carton)
- A minimum 6 inch thick brick wall with proper levelled plaster is required for holding high density tiles like RST effectively up to 12 ft height or more.
- The sides of the tile are cut diagonally to overlap the adjacent tile.
- Coat the tile edges with radiation shielding special additive which shall be supplied by H & R Johnson (Approx. consumption of 15 kg for 100 boxes).
- Fix tiles with 'Platinum Star Plus' adhesive from Ardex Endura in 5 to 8 mm Thickness.
- Fill all joint gaps with X-ray Radiation Shielding Additive.
- Post installation, H & R Johnson shall help in getting the facility certified by authorised AERB lab for effective radiation shielding.
- System components & suppliers:
  1. Radiation Shielding Tiles - H & R Johnson (India)
  2. Platinum Star Plus Adhesive - Ardex Endura (India) Pvt. Ltd.
  3. X-ray Radiation Shielding additive for edge & joints - H & R Johnson (India) -Approx. Consumption of 15 kg for 100 boxes.



## Application Areas

- Radiography & Fluoroscopy unit
- Interventional Radiology (Cardiac Angiography)
- Computed Tomography
- Mammography
- Bone Mineral Densitometer
- Dental Radiography (Dental CBCT/OPG)

Increased awareness among institutions, health professionals will improve radiation safety standards in healthcare. H & R Johnson with the technical support of CSIR-AMPRI, BHOPAL and all stakeholders is determined to collaborate and introduce such innovative products!







**BRAGA**

# HI-TRAFFIC



# PLAIN SERIES

30X30 cm | 1 CM THICK

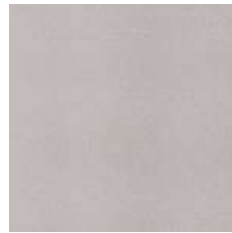


Hi-Traffic tiles are best suited for places with heavy footfalls and vehicular traffic like parking lots, driveways, pathways, pavements etc., They are scratch resistant and neutral to UV rays which make them perfect for outdoors.

These tiles are available in elegant tones of terracotta and natural shades of ivory and grey. The range comprises of distinct surfaces such as plains, textural, super grip and salt & pepper



Grey



Grey Plus



Ivory Plus



Terracotta Plus



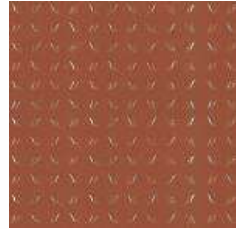
# HI-TRAFFIC

## Big Check



Ivory Plus

D/K



Terracotta Plus

D/K

## Block Check



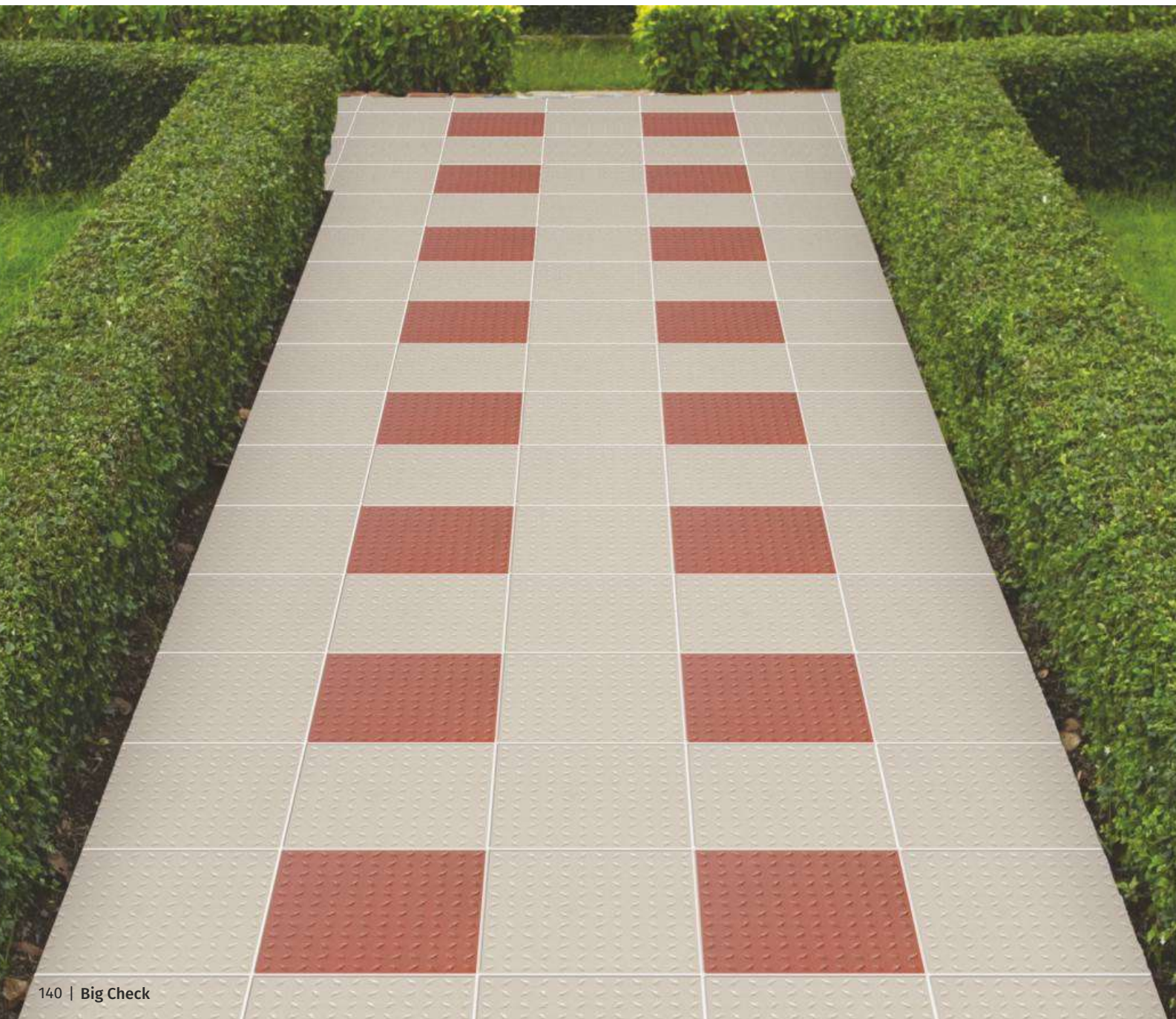
Ivory Plus

K



Terracotta Plus

K



# GOOD GRIPS SERIES

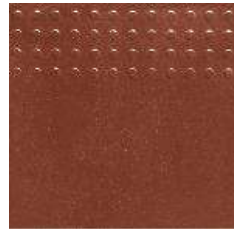
30X30 cm | 1 CM THICK



## Bubble Step Treads

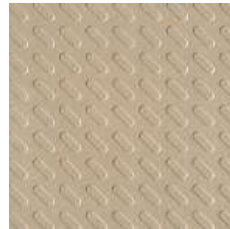


Ivory Plus D/K



Terracotta Plus D/K

## Capsul



Ivory Plus D/K



Terracotta Plus D/K

## Checked



Grey Plus D/K



Ivory Plus D/K



Terracotta Plus D/K

## Cobblestone



Ivory Plus D/K

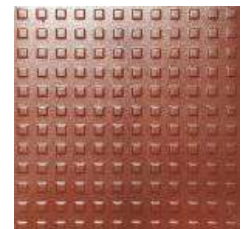


Terracotta Plus D/K

## Cubix



Ivory Plus D/K



Terracotta Plus D/K

## Diamond Cut



Ivory Plus D



Terracotta Plus D

# HI-TRAFFIC

Polka Check



Ivory Plus

D/K



Terracotta Plus

D/K

Polka Delta Dot



Ivory Plus

D/K



Terracotta Plus

D/K



# GOOD GRIPS SERIES

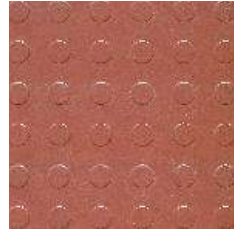
30X30 cm | 1 CM THICK



## Polka Dot



Ivory Plus



Terracotta Plus



Grey Plus

## Polka Dot Strip



Ivory Plus



Terracotta Plus

## Polka Rectangle



Ivory Plus



Terracotta Plus

## Polka Strip



Ivory Plus



Terracotta Plus

## Tracia



Ivory Plus



Terracotta Plus

## Wavy



Ivory Plus



Terracotta Plus



**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. 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 exterior spaces.

## DISTINCTIVE VALUES >

### MAIN FEATURES :

#### Why Endura Designer Collection?

The unique EDC is glazed vitrified tile and are scratch and stain resistant through it's special grazed 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 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.

- **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.

### FEATURES:




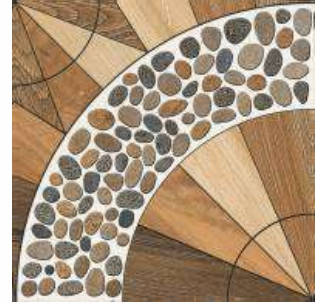
# DESIGNER COLLECTION




Andre Brown Plus 



Arch Stone Natura Plus 



Arch Stone Wood Plus 



# DESIGNER SERIES

40X40 cm



Archie Anchor Plus [K]



Aric Brown Plus [R]



Aric Sepia Plus [K]



Beach Stone Beige Plus [R]



Beach Stone Grey Plus [R]



Betsy Black Plus [R]



Betsy White Plus [R]



Bradley Beige Plus [R]



Bradley Bronze Plus [R]



Bradley Nero Plus [R/K]



Bradley Silver Plus [R/K]



Bruno Wood Plus [R/K]

# DESIGNER COLLECTION



Canewood Gris Plus K



Canewood Natura Plus K



Carron Beige Plus R



Carron Cotto Plus R



Carron Mix Plus R



Carron Wood Plus R



Cosmo Black Plus R/K



Cosmo Cotto Plus K



Cosmo Grey Plus K



Cosmo Marble Plus K



Cosmo Mix Plus R/K



Cosmo Wood Plus K

# DESIGNER SERIES

40X40 cm



Drift Bruno Plus K



Drift Cotto Plus K



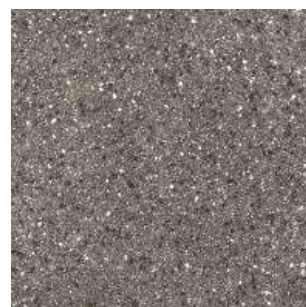
Drift Grey Plus K



Drift Mix Plus K



Flake Grey Plus R



Flake Nero Plus R



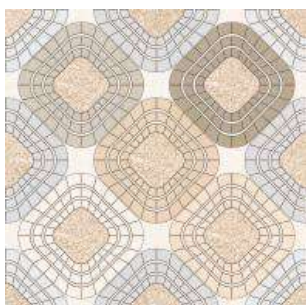
Grano Grey Plus R



Grano Nero Plus R



Ground Stone Grey Plus R/K



Ground Stone Plus R/K



Hexa Cotto Plus K

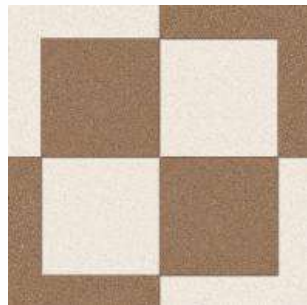


Hexa Grey Plus R/K

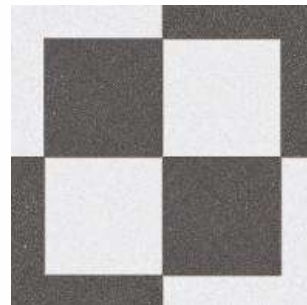
# DESIGNER COLLECTION



Hexa Mix Plus [R/K]



Jezza Bronze Plus [R/K]



Jezza Grey Plus [R/K]



Karpet Azul Plus [K]



Karpet Bronze Plus [K]



Karpet Denim Plus [K]



Karpet Grideco Plus [K]



Karpet Monochrome Plus [K]



Karpet Rust Cotto Plus [K]



Karpet Rust Mix Plus [K]



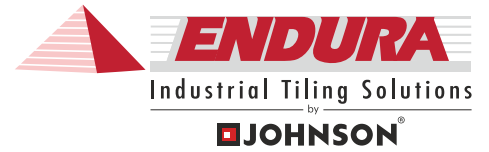
Karpet Smoky Blue Plus [K]



Karpet Tan Plus [K]

# DESIGNER SERIES

40X40 cm



Maze Grey Plus R/K



Maze Mix Plus R/K



Maze Wood Plus R/K



Mica Beige Plus R/K



Mica Bronze Plus R/K



Mica Nero Plus R/K



Mica Slate Plus R/K



Midway Cotto Plus R



Midway Grey Plus R/K



Midway Smoke Plus K



Porto Brown Plus R

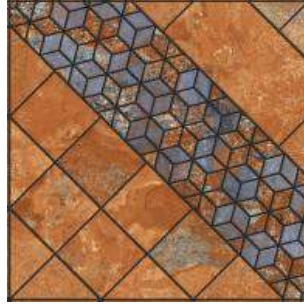


Rangoli Mason Camel Plus R/K

# DESIGNER COLLECTION



Rangoli Mason Choco Plus R



Rangoli Mason Cotto Plus K



Rangoli Mason Russet Plus R/K



Ridge Brown Plus R/K



Ridge Decore Plus R/K



Ridge Nero Plus R/K



Silva Copper Plus R/K



Stone Cotto Plus K



Stone Crema Plus K



Stone Grey Plus K



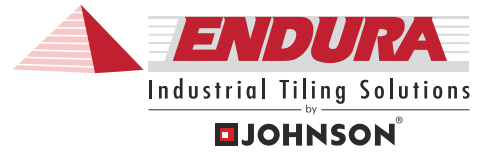
Stone Nero Plus K



Strip Charcoal Plus R/K

# DESIGNER SERIES

40X40 cm



# DESIGNER COLLECTION



# DESIGNER SERIES

40X40 cm



Strip Grey Plus R/K



Strip Sandune Plus K



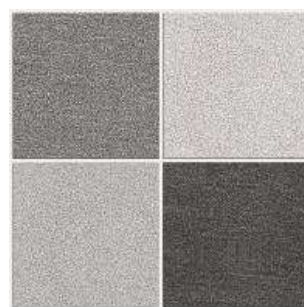
Strip Tanero Plus K



Texture Beige Plus K



Texture Cotto Plus K



Texture Mix Plus K



Texture Wood Plus K



Tito Dot Beige Plus R



Tito Dot Black Plus R/K



Wood Strips Choco Plus R



Wood Strips Grey Plus R

# DESIGNER COLLECTION



# DESIGNER SERIES

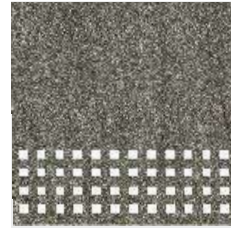
30X30 cm | 1 CM THICK



Aeray Cotto K



Aeray Gris K



Altagris Cube Step K



Altagris Plain K



Angolo Beige D



Angolo Cotto D



Blocks Gris D/K



Blocks Ochre K



Capsule Beige D



Capsule Mix D



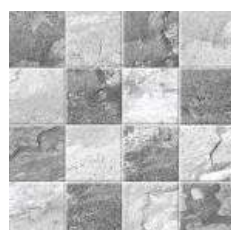
Cella Mocha D



Chessblock Bruno K



Chessblock Gris K



Chessblock Mix K



Cotto Natura K

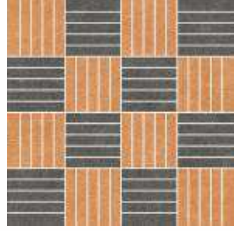


Cross Ash K

# DESIGNER COLLECTION



Cross Chalk D/K



Cross Mix D/K



Cross Moss K



Cross Nero D/K



Cross Ochare D/K



Cross Square Gris K



Cross Square Mix K



Cross Square Umber D/K



Cross Wood D/K



Cross Wood Moss D



Crossbric Slate K



Diam Gris D



Diam Marbo D



Diam Noir D



Floor Block Gris K



Floor Block Mix K

# DESIGNER SERIES

30X30 cm | 1 CM THICK



Flowcept Dark D/K



Flowcept Light D/K



Flower Circle Beige K



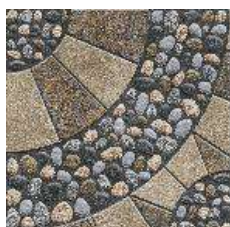
Flower Circle Gris K



Geo Pebble Beige D/K



Geo Pebble Mix K



Geo Pebble Natura D/K



Lithic Gris K



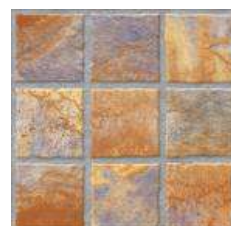
Lithic Nero K



Majestic Bruno D



Majestic Nero Slate K



Majestic Slate D



Mosiko Gris D/K



Mosiko Mix D



Mosiko Mix Cotto K



Mosiko Umber D/K

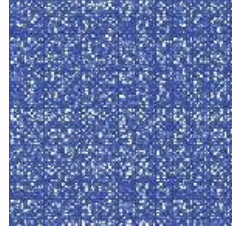
# DESIGNER COLLECTION



Murano Cube Step [K]



Murano Plain [K]



Neo Tosca Azul [D]



Oak Cube Step [K]



Oak Plain [K]



Ocean Cube Step [K]



Ocean Plain [K]



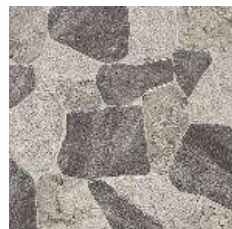
Octblox Café [K]



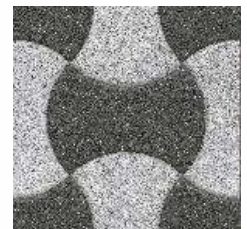
Parx Gris [D/K]



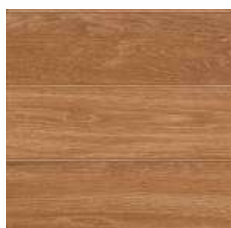
Parx Rust [D/K]



Parx Slate [K]



Paver Blox Nero [D/K]



Plank Natura [D]



Rangoli Square Earth [K]



Rhythm Gris [K]



Rockcept Dark [K]

# DESIGNER SERIES

30X30 cm | 1 CM THICK



Rockcept Light [K]



Royal Azure [D]



Royal Gris [D]



Royal Moss [D]



Royal Natura [D]



Royal Rust [D/K]



Rusblox Natura [K]



Rusblox Slate [K]



Sand Nero [K]



Stonecept Dark [D]



Stonecept Light [D]



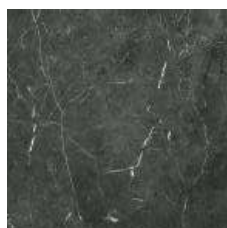
Structo Gris [K]



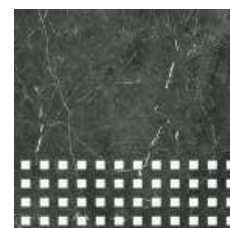
Teak Cube Step [K]



Teak Plain [K]



Verdana [K]



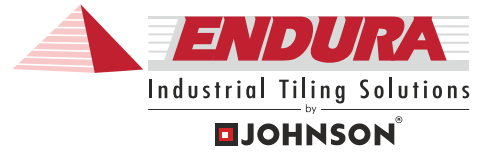
Verdana Step Cube [K]

# DESIGNER COLLECTION



# DESIGNER SERIES

30X30 cm | 1 CM THICK



Vintage Feature D/K



Vintage Mocha D/K



Warm Blend D

# APPLICATION AREAS

## Hi-Traffic

### Pavers :

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

### Swimming Pools

- Private, Commercial & Competition Pools
- Water Storage
- Leisure pools

### MaxGrip

- Malls
- Parking Lots
- Hospitals
- Educational Institutes
- Ramps
- Pools & Gymnasiums

### Cool Roof

- Building roofs
- Balconies
- Exterior facades cladding
- Pavements

## **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 & Warehouse
- Forklift Movement Areas
- Material Handling Areas
- Processing Units
- Galas
- Storage Units

## **Tactile**

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

## **Meteor**

- Verandah / Porches
- Server Room & IT Industry
- Gardens
- Path Ways
- Courtyards
- Public Places
- Swimming Pool Decks
- Industrial Kitchen
- Factories

## **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

### 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

### Radiation Shielding Tile

- Radiography & Fluoroscopy unit
- Interventional Radiology (Cardiac Angiography)
- Computed Tomography
- Mammography
- Bone Mineral Densitometer
- Dental Radiography (Dental CBCT/OPG)
- Radiology Wards of all Government & Private Hospitals, Scanning Centers etc.

**Q1. Why need Antislip flooring?**

A. Every year over 8 million people worldwide suffer from injuries due to slips and falls. Especially in elderly, slip related fall has been the common cause for TBI (Traumatic Brain Injury) It is therefore important to look for ways to prevent slips and falls by keeping the hallways and walk through areas safe at all times. Endura MaxGrip provides an ideal solution to this problem by offering anti slip flooring in 3 grades - R 10, R 11 and R 12, enable you to choose according to the demands of the application area.

**Q2. What is the specialty in Endura MAXGRIP compared to other ordinary slip resistance tile?**

A. Endura MaxGrip tiles are manufactured in consonance with the International Slip Resistance Standard indicated by R value, R 10, R 11 and R 12. The tiles are subjected to stringent tests such as Tribometer, Pendulum and RAMP test. Thus Endura MaxGrip tiles feature unmatched slip resistance compared to the other so called slip resistant tiles.

**Q3. What are the factors associated with Slips ?**

**Controllable factors:**

Environment - adequate lighting, slopes / gradients, external areas etc

Floor material.

Contaminants like water, oil, dust etc. which reduces the contact & traction between the feet & floor surface.

**Predictable factors:**

Use of the surface

Footwear

Behavior: Awareness creation for safe working habits. Human vision, balance & reaction time also plays vital role in slip prevention

**Q4. Why routine cleaning is essential for the performance of slip resistance tile?**

A. In the heavy traffic areas the flooring tends to loosen its grip over the period of time due to constant friction, making it slippery. Furthermore, if proper cleaning regime is not followed, then the tiles fail to perform faster. Therefore it is of utmost importance to follow daily cleaning regime to maintain the performance of slip resistant tiles.

**Q5. How can accidents caused by slipping be prevented?**

A. Prevention of accidents, caused by slipping, is down to correct choice of flooring medium and good management (i.e. contamination prevention, cleaning regimes, type of footwear worn and an assessment of the surrounding environment). In order for management systems to be effective it is important that floor materials are suitable for the application and environment in which they are used, and an appropriate measuring method employed.

**Q6. Why Endura Stepping Stone?**

A. Staircases hitherto have been at mercy of natural stones, which are cumbersome to install, slippery, and also come with a higher installation wage-cost. Endura Stepping Stone is that much-required revolution in the world of staircases, that comes with none of the above mentioned complications. Moreover their convenient size 30x120, 30x95 & 31x152 in 1.2 cm with high bull nosing and tread lines aptly meet the design requirements for staircases along with 60x120, 60x95x & 62x152 in 1.2 cm in matching colour for risers and landing areas.

**Q7. What differentiates Endura Stepping Stone from others?**

A. Safety and confidence are the cornerstones of Stepping Stone. They are full-bodied vitrified tiles with robust strength, antiskid and stain resistant surface providing highest durability. They're designed to help people including persons with ambulant disabilities and persons with visual impairment to negotiate steps and staircases safely and confidently.

**Q8. What are the benefits of bull nose edges?**

A. Endura Stepping Stone is India's first bull nosed fully vitrified step tile. The unique bull nosing makes the staircase safer and comfortable to step on. Bull nosing also helps to prevent chipping along edges and it improves the overall aesthetics of the staircase.

**Q9. What is the purpose of embossed tread lines?**

A. The embossed tread lines provide extra grip for higher safety for the crucial edges of the steps.

**Q10. What are the benefits of thicker tiles?**

A. The Endura Stepping Stone is 1.2 cm, which means it's stronger - a mandate for large-sized slabs. Thereby, being a safe, confident and assuring replacement to natural stones.

**Q11. What are the other benefits of using Endura Stepping Stone?**

A. Easy and speedy installation, low water absorption (<0.05%) with advanced stain resistance technology. Even strongest of dyes – methylene blue - cannot stain Endura Stepping Stone. High abrasion resistance of <120m3 provides 10 times superior surface protection over natural stone against regular wear & tear.

**Q12. What is the best way to fix Endura Stepping Stone?**

A. Endura Stepping Stone are best fixed using ARDEX ENDURA tile fixing adhesive. 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.

**Q13. What are the designs available?**

A. Subtle salt & pepper designs, Plain colors and Granite & Marble variants to evenly compliment the theme and decor of the building.

**Q14. Does Endura Stepping Stone conform to National Building Codes?**

A. Yes, Endura Stepping Stone conforms to National Building Code SP: 7 of the Bureau of Indian Standards.

**Q15. Is Endura Stepping Stone a fire resistant material? Is it suitable for fire exits in the case of an emergency?**

A. Yes, Endura Stepping Stone is a fire-proof, non-combustible, high temperature material. It will not burn or release any toxic fumes in the event of any fire.

**Q16. 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 5 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.

**Q17. 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.

**Q18. 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.

**Q19. 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.

**Q20. 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.

**Q21. 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.

**Q22. 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%	≤ 0.05%	
Flexural strength	6.3 N/mm <sup>2</sup>	13.8 N/mm <sup>2</sup>	≥ 38N/mm <sup>2</sup>	High strength, durability. Maintenance free.
Abrasion resistance	> 1500 mm <sup>3</sup>	> 1240 mm <sup>3</sup>	< 120 mm <sup>3</sup>	
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.	Unpolished 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.

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.

**Q23. 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.

**Q24. 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.

**Q25. 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.

**Q26. 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.

**Q27. 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.

**Q28. 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.

**Q29. 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.

**Q30. 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, 20X10-2cm.

**Q31. 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.

**Q32. 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.

**Q33. 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.

**Q34. 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.

**Q35. 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.

**Q36. 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.

**Q37. 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 & is easy to clean & 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

# TECHNICAL SPECIFICATION

## (Hi-Traffic Pavers Series)

S. No.	Test Description	I.S.- 4457:2007	Hi-Traffic Pavers Series	Test Method
<b>A) Dimension Quality</b>				
1	Deviation in Length & Width	±0.75%	±0.4%	IS 4457:2007 Annex B
2	Deviation in Thickness	±5%	±4%	
3	Straightness of Sides	±0.5%	±0.3%	
4	Rectangularity	±0.6%	±0.3%	
5	Surface Flatness	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	
<b>B) Physical Properties</b>				
1	Water Absorption	<0.5%	<0.5%	IS 4457:2007 Annex C
2	Scratch Hardness of Surface (Moh's scale)	-	>7	IS 13630 part 13
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	IS 4457:2007 Annex D
4	Breaking Strength	≥1300N	>1800N	IS 4457:2007 Annex D
5	Impact Resistance	Manufacturer to declare	≥0.55	IS 13630-14
6	Deep Abrasion resistance (Unglazed tile)	<175mm <sup>3</sup>	<120mm <sup>3</sup>	IS 4457:2007 Annex E
<b># Skid Resistance</b>				
7	a) Skid Resistance - Ramp Test	Manufacturer to declare	>R9	DIN 51130
	b) Coefficient of Friction		>0.42	ISO 10545 -17 /ANSI A 326.3
8	Frost Resistance	-	No damage	IS 13630-10
9	Density (gm/cc)	>2.0	>2.2	IS 13630 part 2
10	Moisture Expansion	Manufacturer to declare	≤0.3mm/m	IS 13630-part 3
11	Color Resistance to UV Light	-	No change in color	DIN 51094
<b>C) Chemical Properties</b>				
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	< 1.5 %	< 0.8 %	IS 4457:2007 Annex G
2	Resistance to Chemicals	Manufacturer to declare	ULA	IS 4457:2007 Annex F /ISO 10545-13
	a) Resistance to Low concentrations of acids & alkalies		UHA	
	b) Resistance to High concentrations of acids & alkalies		UA	
	c) Resistance to household chemicals and swimming pool salts		UB	
3	Stain Resistance	Resistant	Resistant	IS 13630 part 7 /ISO 10545-14
<b>D) Thermal Properties</b>				
1	Linear Thermal Expansion	<7x10 <sup>-6</sup> K <sup>-1</sup>	<7x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	10 Cycle, Min	No damage	IS 13630 part 5 /ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Swimming Pool Tile & Pool Fittings)

S. No.	Properties	Pool Tiles		Pool Fittings -Specification Architectural typical		Test Method
		ISO 13006 /2018 EN 14411 Group Bib	Johnson Endura Swimming Pool Tiles	BS EN ISO 13006 / 14411:2016 Group A1b	Test Value	
<b>A) Dimension Quality</b>						
1	Deviation Length/Width	±0.6% or ± 2.0 mm	±0.6%	±2%	±1.25%	ISO 10545-2 / IS 13630-1
2	Deviation Thickness	±5% or ±0.5 mm	±4%	±10%	±10%	
3	Straightness of Side	±0.5% ± 1.5 mm	±0.3%	±0.6%	±0.5%	
4	Rectangularity	±0.5% ± 2.0 mm	±0.3%	±1%	±1%	
5	Surface Flatness	±0.5% ± 2.0 mm	±0.3%	±1.5%	±1%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>						
1	Water Absorption	Max 3%	Avg. 2.5%	0.5% to 3.0%	<2.5%	ISO 10545-3 / IS 13630-2
2	Modulus of Rupture (Minimum)	≥30N/mm <sup>2</sup>	≥30N/mm <sup>2</sup>	≥23N/mm <sup>2</sup>	≥23N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
3	Breaking Strength	≥1100N	>1100N	≥1100N	>1100N	
4	Crazing Resistance of Glazed Tiles	Report result	4 cycles Min	Report result	4 Cycles	ISO 10545-11 / IS 13630- 9
5	Scratch Hardness	–	Min 5	–	Min. 5	IS 13630 part 13
6	Impact Resistance	Report value	≥0.55	–	–	ISO 10545-5 / IS 13630 -14
7	Bulk Density, in (g/cc)	Report value	>2.2	–	>2.2	ASTM C373-16 / IS 13630-2
8	Moisture Expansion	Manufacturer to declare	0.4 mm/m, Max	0.4 mm/m, Max	0.4 mm/m, Max	IS 13630-part 3 / ISO 10545-10
9	Frost Resistance	Manufacturer to declare	No damage	No damage	No damage	ISO 10545-12 / IS 13630-10
10	Color Resistance to UV Light	Report result	No change in color	No change in color	No change in color	DIN 51094
<b>C) Chemical Properties</b>						
1	Resistance to Chemicals					ISO 10545-13
	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	GLA	Manufacturer to declare	ULA/GLA	
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	GHA	Manufacturer to declare	UHA/GHA	
2	Resistance to Swimming Pool salts & water Cleaning agent	Min B	Min B	Min B	Min B	
3	Stain Resistance	Min Class 3	Min Class 3	Min Class 3	Min Class 3	ISO 10545-14
<b>D) Thermal Properties</b>						
1	Linear Thermal Expansion	Declare value	<7x10 <sup>-6</sup> K <sup>-1</sup>	Declare value	<7x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8/ IS 13630-4
2	Thermal Shock Resistance	No damage	No damage	No damage	No damage	ISO 10545-9 / IS 13630 -5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Cool Roof Tile)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group Bla Requirement	IS - 15622:2017 Group B1b	Johnson Endura Cool Roof Tile			Test Method
				0.8 cm	1.0 cm	2.0 cm	
<b>A) Dimension Quality</b>		Whichever is less applicable. Rectified	Rectified				
1	Deviation in Length & Width	±0.3% or ±1.0mm	±0.1%	±0.1%	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	±5% or ±0.5mm	±5%	±4%	±4%	±4%	
3	Straightness of Sides	±0.3% or ±0.8mm	±0.1%	±0.1%	±0.1%	±0.1%	
4	Rectangularity	±0.3% or ±1.5mm	±0.1%	±0.1%	±0.1%	±0.1%	
5	Surface Flatness	±0.4% or ±1.8mm	±0.5%	±0.3%	±0.3%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>							
1	Water Absorption	≤ 0.5%, Individual Max 0.6%	0.08%<E≤3	≤ 0.5%	≤ 0.5%	≤ 0.5%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)		≥5	≥6	≥6	≥6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥35 N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥30N/mm <sup>2</sup> , Individual 27 min	>35N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1300 N	≥1100N	>1300N	>1800N	>8000N	
5	Impact Resistance	Report value	≥0.55	≥0.55	≥0.55	≥0.55	ISO 10545-5 / IS 13630 -14
6	Crazing Resistance	Report cycle	4 cycle	No damage	No damage	No damage	ISO 10545-11 / IS 13630- 9
7	Abrasion Resistance (PEI Rating)	Report abrasion class	Class II, Min	Min PEI IV	Min PEI IV	Min PEI IV	ISO 10545-7 / IS 13630 - 11
8	Skid Resistance (Coefficient of Friction)	Manufacturer to declare	Manufacturer to declare	>0.42	>0.42	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Bulk Density, in (g/cc)	≥2.0	≥2.0	>2.2	>2.2	>2.2	ASTM C373-16 / IS 13630-2
10	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	≤0.02 mm/m	≤0.02 mm/m	≤0.02 mm/m	IS 13630-part 3 / ISO 10545-10
11	Frost Resistance	Manufacturer to declare	Manufacturer to declare	No damage	No damage	No damage	ISO 10545-12 / IS 13630-10
10	Color Resistance to UV Light	Report result	Report result	No change in color	No change in color	No change in color	DIN 51094
<b>C) Chemical Properties</b>							
1	Resistance to Chemicals						ISO 10545-13 / IS 13630-8
	1) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	GLA	GLA	GLA	
	2) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	GHA	GHA	GHA	
	3) Resistance to household chemicals and swimming pool salts	UB/GB	Manufacturer to declare	B(ISO)/AA (IS)	B(ISO)/AA (IS)	B(ISO)/AA (IS)	
2	Stain Resistance	Min Class 3	Class 1 min	Class 3 (ISO)/ Class 1 ( IS )	Class 3 (ISO)/ Class 1 ( IS )	Class 3 (ISO)/ Class 1 ( IS )	ISO 10545-14 / IS 13630-8
<b>D) Thermal Properties</b>							
1	Linear Thermal Expansion	Report value	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8 / IS 13630 -4
2	Thermal Shock Resistance	No damage	10 Cycle . Min	No damage	No damage	No damage	ISO 10545-9 / IS 13630 -5
<b>E) Solar Reflectance Index (SRI)</b>		>78	-	>90 (White colour)	>90 (White colour)	>90 (White colour)	ASTM E1980, EN 673, and EN411

# Ramp Test: Suitable for all kind of surfaces (Plain, structural...etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Clad Care)

S. No.	Test Description	IS 15622:2017 Group B1b	ISO 13006:2018 / EN 14411 Group B1a Requirement	Clad Care - Unrectified	Test Method
<b>A</b>	<b>Dimensional Properties</b>	whichever is less applicable.			
1	Deviation in Length & Width	±0.4%	±0.6% , ± 2.0 mm	±0.4%	IS 4457:2007 Annex B / ISO 10545-2
2	Deviation in Thickness	±5%	±5% , ± 0.5 mm	±4%	IS 4457:2007 Annex B/ ISO 10545-2
3	Straightness of Sides	±0.3%	±0.5%, ±1.5mm	±0.3%	IS 4457:2007 Annex B / ISO 10545-2
4	Rectangularity	±0.3%	±0.5%, ± 2.0 mm	±0.3%	IS 4457:2007 Annex B / ISO 10545-2
5	Surface Flatness	±0.5%	±0.5%, ± 2.0 mm	±0.3%	IS 4457:2007 Annex B / ISO 10545-2
6	Surface Quality	Min 95%	Min 95%	Min 95%	IS 4457:2007 Annex B / ISO 10545-2
<b>B</b>	<b>Physical Properties</b>				
1	Water Absorption	0.08% < E ≤3	< 0.5%, Individual Max 0.6%	< 0.5%	IS 4457:2007 Annex C / ISO 10545-3
2	Scratch hardness of surface (Moh's scale)	≥5	-	≥5	IS 13630 part 13
3	Flexural Strength (Average MOR)	Average 30 N, Individual 27 N/mm <sup>2</sup>	≥ 35 N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	>38N/mm <sup>2</sup>	IS 4457:2007 Annex D / ISO 10545-4
4	Breaking Strength	≥700N	≥700N	≥700N	IS 4457:2007 Annex D / ISO 10545-4
5	Surface Abrasion Resistance (PEI Rating) Glazed	Class II, Min	Report abrasion class	Min PEI IV - V	ISO 10545-7 / IS 13630-11
6	Bulk Density, in (g/cc)	>2.0	report value	>2.2	ASTM C373-16 / IS 13630-2
7	Moisture Expansion	≤ 0.02 mm/m	Manufacturer to declare	≤ 0.02 mm/m	IS 13630-part 3 / ISO 10545-10
8	Frost resistance	Manufacturer to declare	Manufacturer to declare	No damage	ISO 10545-12 / IS 13630-10
<b>C</b>	<b>Chemical Properties</b>				
1	Resistance to Chemicals				ISO 10545 part 13
	a) Resistance to household chemicals and swimming pool salts	AA	Minimum B	AA ( IS )/GB ( ISO )	
	b) Resistance to acids & alkalies		Manufacturer to declare	Class GLA/GHA	
2	Stain resistance	'Min Class 1	Min Class 3	Class 1( IS)/Class 3 ( ISO )	IS 13630 part 7 / ISO 10545-14
<b>D</b>	<b>Thermal Properties</b>				
1	Linear Thermal Expansion	Max 7 x 10 <sup>-6</sup> K <sup>-1</sup>		≤ 7 x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8/ IS 13630-4
2	Thermal shock resistance	No damage	No damage	No damage	ISO 10545-9 / IS 13630 -5

# TECHNICAL SPECIFICATION

## (Stepping Stone Tiles)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group Bla Requirement	IS - 15622:2017 Group B1a	Johnson Endura Stepping Stone / Riser	Johnson Endura Stepping Stone / Riser	Test Method
<b>A) Dimension Quality</b>		Whichever is less applicable. Rectified edge		12mm	15mm	
1	Deviation in Length & Width	±0.3% or ±1.0mm	± 0.1 %	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	±5% or ±0.5mm	± 5 %	±4%	±4%	
3	Straightness of Sides	±0.3% or ±0.8mm	± 0.1 %	±0.1%	±0.1%	
4	Rectangularity	±0.3% or ±1.5mm	± 0.1 %	±0.1%	±0.1%	
5	Surface Flatness	±0.4% or ±1.8mm	± 0.5 %	±0.3%	±0.3%	
6	Surface Quality	Min 95%	Min 95% free from visible defects	Min 95%	Min 95%	
<b>B) Physical Properties</b>						
1	Water Absorption	≤0.5%, individual Max 0.6%.	Average ≤0.08, Individual 0.1%, Max	≤ 0.05%	≤ 0.05%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)	-	5, Min	>6	>6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥35 N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	Average 35N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	>38N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1300N	≥1300N	>3500N	>5000N	
5	Impact Resistance	Report value	5, Min	≥0.55	≥0.55	ISO 10545-5 / IS 13630-14
6	Deep Abrasion Resistance (Ungalzed)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120mm <sup>3</sup>	<120mm <sup>3</sup>	ISO 10545- 6 / IS 13630-12
# Skid Resistance						
7	a) Skid Resistance - Ramp Test	Manufacturer to declare	Manufacturer to declare	>R9	>R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	Manufacturer to declare	>0.42	>0.42	ISO 10545 -17/ANSI A 326.3
8	Bulk Density, in (g/cc)	-	>2.0	>2.2	>2.2	ASTM C373-16 / IS 13630-2
9	Moisture Expansion	Manufacturer to declare	Manufacturer to declare	≤0.3mm/m	≤0.3mm/m	IS 13630-part 3 / ISO 10545-10
10	Frost Resistance	-	Manufacturer to declare	No damage	No damage	ISO 10545-12 / IS 13630-10
11	Color Resistance to UV Light	Manufacturer to declare	-	No change in color	No change in color	DIN 51094
<b>C) Chemical Properties</b>						
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	-	< 1.5 %	<0.8%	<0.8%	IS 4457:2007 Annex G
Resistance to Chemicals						
2	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	GLA	GLA	ISO 10545-13/IS 13630 -8
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	GHA	GHA	
	c) Resistance to household chemicals and swimming pool salts	Min B	Class AA min	B(ISO)/AA ( IS )	B(ISO)/AA ( IS )	
3	Stain Resistance	Min Class 3	Class 1 min	Min Class 3 ( ISO ), Class 1 ( IS )	Min Class 3 ( ISO ), Class 1 ( IS )	ISO 10545-14 / IS 13630-8
<b>D) Thermal Properties</b>						
1	Linear Thermal Expansion	-	≤6x10 <sup>-6</sup> K <sup>-1</sup>	≤6x10 <sup>-6</sup> K <sup>-1</sup>	≤6x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8 / IS 13630-4
2	Thermal Shock Resistance	No damage	10cycle , Min	No damage	No damage	ISO 10545-9 / IS 13630 -5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural...etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Maxgrip R10 - 60x60 cm)

S. No.	Test Description	IS - 4457:2007	IS - 15622:2017 Group B1b	Endura Maxgrip 60x60 cm - R10	Test Method
<b>A) Dimension Quality</b>					
1	Deviation in Length & Width	±0.6%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides	±0.2%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	<0.5%	0.08<E<3	<0.5%	IS 4457:2007 Annex C / IS 13630-2
2	A) Scratch Hardness of Surface (Moh's scale) - Unglazed tile	-	≥5	≥7	IS 13630 part 13
	B) Scratch Hardness of Surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	≥1800 N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance	-	≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion Resistance (Unglazed Tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 4457:2007 Annex E / IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV - V	IS 13630 - 11
<b># Anti-Slip Properties</b>					
8	a) Ramp Test ® Value)	-	-	R10	DIN 51130
	b) Barefeet on Wet Area (A/B/C) Scale	-	-	A	DIN 51097
9	Frost Resistance	-	Manufacture to declare	No damage	IS 13630-10
10	Density, in (gm/cc)	-	≥2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	-	≤0.3 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
<b>Resistance to Chemicals</b>					
1	a) Resistance to Low Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	ULB /GLB	ISO 10545-13
	b) Resistance to High Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	UHB/GHB	
	c) Resistance to Household Chemicals and Swimming Pool Salts	Manufacturer to declare	UB/GB	UB /GB	
2	Stain Resistance		Resistant	Resistant	ISO 10545-14
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	-	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	10 cycle, Min	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural, etc.)

# Slider (BOT-3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Maxgrip R11 - 60x60 cm)

Sr. No.	Test Description	IS - 4457:2007	IS - 15622:2017 Group B1b	Endura Maxgrip 60x60 cm - R11	Test Method
A) Dimension Quality					
1	Deviation in Length & Width	±0.6%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides	±0.2%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
B) Physical Properties					
1	Water Absorption	<0.5%	0.08<E3	<0.5%	IS 4457:2007 Annex C / IS 13630-2
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥5	>7	IS 13630 part 13
	b) Scratch hardness of surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	≥5500 N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance		≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion resistance (Unglazed tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 4457:2007 Annex E / IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV - V	IS 13630 - 11
# Anti-Slip Properties					
8	a) Ramp Test ® Value)	-	-	R11	DIN 51130
	b) Barefeet on Wet Area (A/B/C) Scale	-	-	B	DIN 51097
9	Frost Resistance	-	Manufacture to declare	No damage	IS 13630-10
10	Density (gm/cc)	-	≥2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	-	≤0.3 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
C) Chemical Properties					
1	Resistance to Chemicals				ISO 10545-13
	a) Resistance to Low Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	ULB /GLB	
	b) Resistance to High Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	UHB/GHB	
	c) Resistance to Household Chemicals and Swimming Pool Salts	Manufacturer to declare	UB/GB	UB /GB	
2	Stain Resistance	-	Resistant	Resistant	ISO 10545-14
D) Thermal Properties					
1	Linear Thermal Expansion	-	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	10 cycle, Min	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural, etc.)

(Maxgrip 30x30 cm - 10mm)

S. No.	Test Description	IS - 4457:2007	IS - 15622:2017 Group Blb	Endura Maxgrip 30x30 cm - 10 mm	Test Method
<b>A) Dimension Quality</b>					
1	Deviation in Length & Width	±0.6%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides	±0.2%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	<0.5%	0.08<E<3	<0.5%	IS 4457:2007 Annex C / IS 13630-2
2	A) Scratch Hardness of Surface (Moh's scale) - Unglazed tile	-	≥5	≥7	IS 13630 part 13
	B) Scratch Hardness of Surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	≥1800 N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance	-	≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion Resistance (Unglazed Tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 4457:2007 Annex E / IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV - V	IS 13630 - 11
8	# Anti-Slip Properties				
	a) Ramp Test ® Value)	-	-	R10/ R11/ R12	DIN 51130
	b) Barefeet on Wet Area (A/B/C) Scale	-	-	A/B/C	DIN 51097
9	Frost Resistance	-	Manufacture to declare	No damage	IS 13630-10
10	Density, in (gm/cc)	-	≥2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	Max 0.02 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
1	Resistance to Chemicals				
	a) Resistance to Low Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	ULB /GLB	ISO 10545-13
	b) Resistance to High Concentrations of Acids & Alkalies	Manufacturer to declare	Manufacturer to declare	UHB/GHB	
c) Resistance to Household Chemicals and Swimming Pool Salts	Manufacturer to declare	UB/GB	UB /GB		
2	Stain Resistance		Resistant	Resistant	ISO 10545-14
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	-	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	≤7 x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	10 cycle, Min	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural, etc.)

# Slider (BOT-3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Evoke Series)

Sr. No.	Test Description	ISO 13006:2018 Group B1b Requirement	IS - 15622:2017 Group B1b	Evoke series	Test Method
<b>A) Dimension Quality</b>		Rectified	Rectified	200x200-8 mm	
1	Deviation in Length & Width	±0.3%	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides	±0.3%	±0.1%	±0.1%	
4	Rectangularity	±0.3%	±0.1%	±0.1%	
5	Surface Flatness	±0.4%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	0.5%<E≤3	0.08%<E≤3, Individual 3.3 max	≤0.5%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)	-	≥5	≥5	IS 13630 part 13
3	Flexural Strength (Average MOR)	Min 30 N	≥30N/mm <sup>2</sup> , Individual 27 min	≥30N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1100 N	≥1100 N	Min 1200 N	ISO 10545-4 / IS 13630-6
5	Impact Resistance	-	≥0.55	≥0.55	ISO 10545-5 / IS 13630 -14
6	Crazing Resistance	-	4 cycle	No damage	ISO 10545-11 / IS 13630- 9
7	Surface Abrasion Resistance (PEI Rating)	-	Class II, Min	Min PEI III - IV	ISO 10545-7 / IS 13630 - 11
8	Skid resistance (Coefficient of Friction)	-	Manufacturer to declare	0.3 to 0.5	ISO 10545 -17 /ANSI A 326.3
9	Bulk Density, in (g/cc)		≥2.0	>2.2	ASTM C373-16 / IS 13630-2
10	Moisture Expansion	-	Max 0.02 mm/m	≤0.02 mm/m	IS 13630-part 3 / ISO 10545-10
11	Frost Resistance	-	Manufacturer to declare	No damage	ISO 10545-12 / IS 13630-10
12	Color Resistance to UV Light		report result	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
1	Resistance to Chemicals				ISO 10545-13 / IS 13630-8
	a) Resistance to Low concentrations of acids & alkalis		report resistance class	GLA	
	b) Resistance to High concentrations of acids & alkalis		report resistance class	GHA	
	c) Resistance to household chemicals and swimming pool salts	Min B	AA min	B(ISO)/AA(BIS)	
2	Stain Resistance	Min Class 3	Class 1 min	Class 3 (ISO) / Class 1 ( IS )	ISO 10545-14 / IS 13630-8
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	-	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8 / IS 13630 -4
2	Thermal Shock Resistance	-	10 Cycle, Min	10 Cycle, Min	ISO 10545-9 / IS 13630 -5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural...etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Core Tiles)

S. No.	Test Description	I.S.- 4457:2007	IS - 15622:2017 Group B1b	Hi-Traffic	Test Method
<b>A) Dimension Quality</b>				30X30X1.0 cm	
1	Deviation in Length & Width (Rectified )	±0.5%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides (Rectified)	±0.2%	±0.1%	±0.1%	
4	Rectangularity (Rectified)	±0.2%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	<0.5%	0.08<E≤3	<0.5%	IS 13630-2
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥5	≥7	IS 13630 part 13
	b) Scratch hardness of surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	IS 13630 - 6
4	Breaking Strength	≥1300N	≥1100N	>1800 N	IS 13630 - 6
5	Impact Resistance	Manufacturer to declare	≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion resistance (Unglazed tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 13630 -12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV - V	IS 13630 - 11
8	# Skid Resistance				
	a) Skid Resistance - Ramp Test	-	-	>R9	DIN 51130
	b) Coefficient of Friction	-	-	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Frost Resistance	-	Manufacture to declare	No damage	IS 13630 -10
10	Density (gm/cc)	-	≥2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	-	≤0.3 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	<1.5 %	-	<0.8%	IS 4457:2007 Annex G
2	Resistance to Chemicals				ISO 10545-13
	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	ULA/GLA	
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	UHA/GHA	
	c) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	AA min	AA min	
3	Stain Resistance	-	Class 1 min	Class 1 min	IS 13630 part 8
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	-	<7 x10 <sup>-6</sup> K <sup>-1</sup>	<7 x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	10 cycle, Min	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT - 3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (EDC Kunigal/Dewas)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group Bla Requirement	IS - 15622:2017 Group B1b	Johnson Endura EDC	Test Method
				30x30 cm - 1.0 cm	
<b>A) Dimension Quality</b>		whichever is less applicable. Rectified	Rectified		
1	Deviation in Length & Width	± 0.3% or ±1.0mm	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	± 5% or ± 0.5mm	±5%	±4%	
3	Straightness of Sides	± 0.3% or ±0.8mm	±0.1%	±0.1%	
4	Rectangularity	± 0.3% or ± 1.5mm	±0.1%	±0.1%	
5	Surface Flatness	± 0.4% or ±1.8mm	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	≤0.5%, individual Max 0.6%	0.08%<E≤3, Individual 3.3 max	≤0.5%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)	-	≥5	≥6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥35N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥30N/mm <sup>2</sup> , Individual 27 min	>35N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1300 N	≥1100 N	>1800 N	ISO 10545-4 / IS 13630-6
5	Impact Resistance	Report value	≥0.55	≥0.55	ISO 10545-5 / IS 13630-14
6	Crazing Resistance	Report cycle	4 cycle	No damage	ISO 10545-11 / IS 13630-9
7	Surface Abrasion Resistance (PEI Rating)	Report abrasion class	Class II, Min	Min PEI IV	ISO 10545-7 / IS 13630-11
8	# Skid Resistance				
	a) Skid Resistance - Ramp Test	Manufacturer to declare	Manufacturer to declare	≥R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	Manufacturer to declare	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Bulk Density, in (g/cc)	≥2.0	≥2.0	>2.2	ASTM C373-16 / IS 13630-2
10	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	≤0.02 mm/m	IS 13630-part 3 / ISO 10545-10
11	Frost Resistance	Manufacturer to declare	Manufacturer to declare	No damage	ISO 10545-12 / IS 13630-10
12	Color Resistance to UV Light	Report result	Report result	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
1	Resistance to Chemicals				ISO 10545-13 / IS 13630-8
	1) Resistance to Low concentrations of acids & alkalis	report resistance class	report resistance class	GLA/AA	
	2) Resistance to High concentrations of acids & alkalis	report resistance class	report resistance class	GHA/AA	
	3) Resistance to household chemicals and swimming pool salts	GB min	AA min	GB( ISO )/AA(BIS)	
2	Stain Resistance	Min Class 3	Class 1 min	Resistant	ISO 10545-14 / IS 13630-8
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	Report value	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8/ IS 13630-4
2	Thermal Shock Resistance	-	10 Cycle , Min	No damage	ISO 10545-9/ IS 13630-5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (EDC-Rajkot/Kunigal)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group BIa Requirement	IS - 15622:2017 Group B1b	Johnson Endura EDC	Test Method
<b>A) Dimension Quality</b>		whichever is less applicable. Rectified	Rectified	40X40	
1	Deviation in Length & Width	± 0.3% or ±1.0mm	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	± 5% or ± 0.5mm	±5%	±4%	
3	Straightness of Sides	± 0.3% or ±0.8mm	±0.1%	±0.1%	
4	Rectangularity	± 0.3% or ± 1.5mm	±0.1%	±0.1%	
5	Surface Flatness	± 0.4% or ±1.8mm	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
<b>B) Physical Properties</b>					
1	Water Absorption	≤0.5%, individual Max 0.6%	0.08%<E≤3, Individual 3.3 max	<0.5%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)	–	≥5	≥6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥35N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥30N/mm <sup>2</sup> , Individual 27 min	>38N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1300 N	≥1100 N	>1800 N	ISO 10545-4 / IS 13630-6
5	Impact Resistance	Report value	≥0.55	≥0.55	ISO 10545-5 / IS 13630-14
6	Crazing Resistance	Report cycle	4 cycle	No damage	ISO 10545-11 / IS 13630-9
7	Surface Abrasion Resistance (PEI Rating)	Report abrasion class	Class II, Min	Min PEI III - IV	ISO 10545-7 / IS 13630-11
8	Skid Resistance (Coefficient of Friction)	NA	Manufacturer to declare	0.3 to 0.5	ISO 10545 -17 / ANSI A 326.3
9	Bulk Density, in (g/cc)	≥2.0	≥2.0	>2.2	ASTM C373-16 / IS 13630-2
10	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	≤0.02 mm/m	IS 13630-part 3 / ISO 10545-10
11	Frost Resistance	Manufacturer to declare	Manufacturer to declare	No damage	ISO 10545-12 / IS 13630-10
12	Color Resistance to UV Light	Report result	Report result	No change in color	DIN 51094
<b>C) Chemical Properties</b>					
1	Resistance to Chemicals				ISO 10545-13 / IS 13630-8
	1) Resistance to Low concentrations of acids & alkalis	report resistance class	report resistance class	GLA	
	2) Resistance to High concentrations of acids & alkalis	report resistance class	report resistance class	GHA	
	3) Resistance to household chemicals and swimming pool salts	Min B	AA min	B( ISO )/AA(BIS)	
2	Stain Resistance	Min Class 3	Class 1 min	Class 3 (ISO) / Class 1 ( IS )	ISO 10545-14 / IS 13630-8
<b>D) Thermal Properties</b>					
1	Linear Thermal Expansion	Report value	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8/ IS 13630-4
2	Thermal Shock Resistance	–	10 Cycle , Min	10 Cycle, Min	ISO 10545-9/ IS 13630-5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Industrial Tiles)

S. No.	Test Description	Endura Industrial Tile					Test Method	
		I.S. - 4457:2007	20X10CM (UR)	IS - 15622:2017 Group B1b	30X30 CM ('R)			
A) Dimension Quality								
1	Deviation in Length & Width	±0.75%	±0.6%	±0.1%	±0.1%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±4%	±5%	±4%	±4%	±4%	
3	Straightness of Sides	±0.5%	±0.5%	±0.1%	±0.1%	±0.1%	±0.1%	
4	Rectangularity	±0.6%	±0.6%	±0.1%	±0.1%	±0.1%	±0.1%	
5	Surface Flatness	±0.5%	±0.4%	±0.5%	±0.3%	±0.3%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	Min 95%	Min 95%	Min 95%	
B) Physical Properties								
1	Water Absorption	<0.5%	<0.5%	0.08<E≤3	<0.5%	<0.5%	<0.5%	IS 4457:2007 Annex C / IS 13630-2
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥7	≥5	≥7	≥7	≥7	IS 13630 part 13
	b) Scratch hardness of surface (Moh's scale) - Glazed tile	-	≥6	≥5	≥6	≥6	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>38 N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>38 N/mm <sup>2</sup>	>38 N/mm <sup>2</sup>	>38 N/mm <sup>2</sup>	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	>8000N	≥1100N	>3000N	>5500N	>8000N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance	Manufacturer to declare	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion Resistance (Unglazed tile)	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	<120 mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 4457:2007 Annex E / IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Min PEI IV - V	Class II, Min	Min PEI IV - V	Min PEI IV - V	Min PEI IV - V	IS 13630 - 11
# Skid Resistance								
8	a) Skid Resistance - Ramp Test	-	>R9	-	>R9	>R9	>R9	DIN 51130
	b) Coefficient of Friction	-	>0.42	-	>0.42	>0.42	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Frost Resistance	-	No damage	Manufacture to declare	No damage	No damage	No damage	IS 13630-10
10	Density (gm/cc)	-	>2.2	≥2	>2.2	>2.2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacture to declare	≤0.02mm/m	Max0.02mm/m	≤0.02mm/m	≤0.02mm/m	≤0.02mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	No change in color	-	No change in color	No change in color	No change in color	DIN 51094
C) Chemical Properties								
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	<1.5 %	<0.8 %	-	<0.8 %	<0.8 %	<0.8 %	IS 4457:2007 Annex G
Resistance to Chemicals								
2	a) Resistance to Low concentrations of acids & alkalies	Manufacturer to declare	ULA/GLA	Manufacturer to declare	ULA/GLA	ULA/GLA	ULA/GLA	ISO 10545-13 / IS 13630 part 8
	b) Resistance to High concentrations of acids & alkalies	Manufacturer to declare	UHA/GHA	Manufacturer to declare	UHA/GHA	UHA/GHA	UHA/GHA	
	c) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	AA min	AA min	AA min	AA min	AA min	
3	Stain Resistance		Class 1 min	Class 1 min	Class 1 min	Class 1 min	Class 1 min	IS 13630 part 8
D) Thermal Properties								
1	Linear Thermal Expansion	-	<7x10 <sup>-6</sup> K <sup>-1</sup>	<7x10 <sup>-6</sup> K <sup>-1</sup>	<7x10 <sup>-6</sup> K <sup>-1</sup>	<7x10 <sup>-6</sup> K <sup>-1</sup>	<7x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	No damage	10 cycle, Min	No damage	No damage	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural, etc.)

# Slider (BOT-3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Colour Tiles)

S. No.	Test Description	I.S.- 4457:2007	IS - 15622:2017 Group B1b	Hi-Traffic Colours Series	Test Method
A) Dimension Quality					
				30X30X1.0 CM	
1	Deviation in Length & Width (Rectified)	±0.5%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in Thickness	±5%	±5%	±4%	
3	Straightness of Sides (Rectified)	±0.2%	±0.1%	±0.1%	
4	Rectangularity (Rectified)	±0.2%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
B) Physical Properties					
1	Water Absorption	<0.5%	0.08<E≤3	<0.5%	IS 13630-2
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥5	>7	IS 13630 part 13
	b) Scratch hardness of surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>35N/mm <sup>2</sup>	IS 13630 - 6
4	Breaking Strength	≥1300N	≥1100N	>1800 N	IS 13630 - 6
5	Impact Resistance	Manufacturer to declare	≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion resistance (Unglazed tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 13630 -12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV - V	IS 13630 - 11
8	# Skid Resistance				
	a) Skid Resistance - Ramp Test	-	-	>R9	DIN 51130
	b) Coefficient of Friction	-	-	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Frost Resistance	-	Manufacture to declare	No damage	IS 13630 -10
10	Density (gm/cc)	-	≥2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	-	≤0.3 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
C) Chemical Properties					
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	<1.5 %	-	<0.8%	IS 4457:2007 Annex G
2	Resistance to Chemicals				
	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	ULA/GLA	ISO 10545-13
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	UHA/GHA	
c) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	AA min	AA min		
3	Stain Resistance	-	Class 1 min	Class 1 min	IS 13630 part 8
D) Thermal Properties					
1	Linear Thermal Expansion	-	<7 x10 <sup>-6</sup> K <sup>-1</sup>	<7 x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal Shock Resistance	-	10 cycle, Min	No damage	IS 13630 part 5 / ISO 10545-9

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Meteor Tiles)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group Bla Requirement	IS - 15622:2017 Group B1b	Johnson Endura Meteor		Test Method
				1.5 cm	2.0 cm	
A) Dimension Quality		Whichever is less applicable. Rectified	Rectified			
1	Deviation in Length & Width	± 0.3% or ±1.0mm	±0.1%	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	± 5% or ± 0.5mm	±5%	±4%	±4%	
3	Straightness of Sides	± 0.3% or ±0.8mm	±0.1%	±0.1%	±0.1%	
4	Rectangularity	± 0.3% or ± 1.5mm	±0.1%	±0.1%	±0.1%	
5	Surface Flatness	± 0.4% or ±1.8mm	±0.5%	±0.3%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	Min 95%	
B) Physical Properties						
1	Water Absorption	≤ 0.5%, individual Max 0.6%	0.08%<E≤3	≤0.5%	≤0.5%	ISO 10545-3 / IS 13630-2
2	Scratch Hardness of Surface (Moh's scale)	-	≥5	>6	>6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥35 N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥30N/mm <sup>2</sup> , Individual 27 min	>38N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
4	Breaking Strength	≥1300 N	≥1100 N	>5500 N	>8000 N	
5	Impact Resistance	Report value	≥0.55	≥0.55	≥0.55	ISO 10545-5 / IS 13630 -14
6	Surface Abrasion Resistance (PEI Rating) Glazed	Report cycle	Class II, Min	Min PEI IV - V	Min PEI IV - V	ISO 10545-7 / IS 13630 - 11
7	Deep Abrasion Resistance (Ungalzed)	Report abrasion class	<175mm <sup>3</sup>	<120mm <sup>3</sup>	<120mm <sup>3</sup>	ISO 10545- 6 / IS 13630-12
8	# Skid Resistance					
	a) Skid Resistance - Ramp Test	Manufacturer to declare	Manufacturer to declare	>R9	>R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	Manufacturer to declare	>0.42	>0.42	ISO 10545 -17 /ANSI A 326.3
9	Bulk Density, in (g/cc)	≥2.0	≥2.0	>2.2	>2.2	ASTM C373-16 / IS 13630-2
10	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	≤0.02 mm/m	≤0.02 mm/m	IS 13630-part 3 /ISO 10545-10
11	Frost Resistance	Manufacturer to declare	Manufacturer to declare	No damage	No damage	ISO 10545-12 / IS 13630-10
12	Color Resistance to UV Light	Manufacturer to declare	report result	No change in color	No change in color	DIN 51094
C) Chemical Properties						
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	-	<1.5 %	<0.8%	<0.8 %	IS 4457:2007 Annex G
2	Resistance to Chemicals					ISO 10545-13 / IS 13630-8
	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	ULA/GLA	ULA/GLA	
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	UHA/GHA	UHA/GHA	
	c) Resistance to household chemicals and swimming pool salts	Min B	AA min	B(ISO)/AA ( IS )	B(ISO)/AA( IS )	
3	Stain Resistance	Min Class 3	Class 1 min	Class 3 (ISO)/ Class 1 ( IS )	Class 3 (ISO)/ Class 1 ( IS )	ISO 10545-14 / IS 13630-8
D) Thermal Properties						
1	Linear Thermal Expansion	Report value	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7 x 10 <sup>-6</sup> K <sup>-1</sup>	≤7 x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8 / IS 13630 -4
2	Thermal Shock Resistance	-	10 Cycle, Min	No damage	No damage	ISO 10545-9 / IS 13630 -5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Tactile)

S. No.	Test Description	I.S.- 4457:2007	IS - 15622:2017 Group B1b	Johnson Endura Tactile			Test Method
				1.2 cm	1.5 cm	2.5 cm	
A) Dimension Quality			Rectified				
1	Deviation in Length & Width	±0.5%	±0.1%	±0.1%	±0.1%	±0.1%	IS 4457:2007 Annex B / ISO 10545-2
2	Deviation in Thickness	±5%	±5%	±4%	±4%	±4%	
3	Straightness of Sides	±0.2%	±0.1%	±0.1%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	±0.1%	±0.1%	
5	Surface Flatness	±0.3%	±0.5%	±0.3%	±0.3%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	Min 95%	Min 95%	
B) Physical Properties							
1	Water Absorption	< 0.5%	0.08<E≤3	< 0.5%	< 0.5%	< 0.5%	IS 4457:2007 Annex C / ISO 10545-3
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥5	≥7	≥7	≥7	IS 13630 part 13
	b) Scratch hardness of surface (Moh's scale) - Glazed tile	-	≥5	≥6	≥6	≥6	
3	Flexural Strength (Average MOR)	>35N/mm <sup>2</sup>	>30N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	>38N/mm <sup>2</sup>	IS 4457:2007 Annex D / ISO 10545-4/IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	>1600 N	>3000 N	>8500 N	IS 4457:2007 Annex D / ISO 10545-4/IS 13630-6
5	Impact Resistance	Manufacturer to declare	≥0.55	≥0.55	≥0.55	≥0.55	ISO 10545-5 / IS 13630 -14
6	Deep Abrasion Resistance (Unglazed tile)	<175mm <sup>3</sup>	<175mm <sup>3</sup>	<120 mm <sup>3</sup>	<120 mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 4457:2007 Annex E / ISO 10545- 6/IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV	Min PEI IV - V	Min PEI IV - V	ISO 10545-7 / IS 13630-11
8	# Skid Resistance						
	a) Skid Resistance - Ramp Test	Manufacturer to declare	Manufacturer to declare	≥R9	≥R9	≥R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	Manufacturer to declare	>0.42	>0.42	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Frost Resistance	-	-	No damage	No damage	No damage	ISO 10545-12 / IS 13630-10
10	Density (gm/cc)	-	≥2.0	>2.2	>2.2	>2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	Manufacturer to declare	≤0.3mm/m	≤0.3mm/m	≤0.3mm/m	IS 13630-part 3 / ISO 10545-10
12	Color Resistance to UV Light	Report result	-		No change in color	No change in color	DIN 51094
C) Chemical Properties							
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	<1.5 %	-	<0.8%	<0.8%	<0.8 %	IS 4457:2007 Annex G
2	Resistance to Chemicals						
	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	ULA /GLA	ULA /GLA	ULA /GLA	ISO 10545-13/IS 13630 -8
	b) Resistance to High concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	UHA /GHA	UHA /GHA	UHA /GHA	
c) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	AA min	AA min	AA min	AA min		
3	Stain resistance	Resistant	Resistant	Resistant	Resistant	Resistant	IS 13630 part 7 / ISO 10545-14
D) Thermal Properties							
1	Linear Thermal Expansion	-	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	≤7x10 <sup>-6</sup> K <sup>-1</sup>	IS 13630 part 4 / ISO 10545-8
2	Thermal shock resistance	No damage	No damage	No damage	No damage	No damage	IS 13630 part 5 / ISO 10545-9
E) The profile of raised Button / Liner							
20	Raised Button / Liner Height	-	-	4.5mm to 5.0mm	4.5mm to 5.0mm	4.5mm to 5.0mm	DETR Standard Chapter 6 / ISO 23599:2012

# Ramp Test: Suitable for all kind of surfaces (Plain, structural...etc)

# Slider (BOT -3000E Digital Tribometer) : suitable for plain / smooth surface and not working for structural / profiled surface

# TECHNICAL SPECIFICATION

## (Anti-Static Tiles)

S. No.	Property	Indian Standard IS 15622:2017 Group B1a Requirement	Endura Anti-Static Value	Test Method
A) Dimensions & Surface Quality				
1	Deviation in Length & Width	± 0.1 %	± 0.1%	ISO 10545-2 / IS 13630-1
2	Deviation in Thickness	± 5 %	± 4%	
3	Straightness of Sides	± 0.1 %	± 0.1%	
4	Rectangularity	± 0.1 %	± 0.1%	
5	Surface Flatness	± 0.5 %	± 0.2%	
6	Surface Quality	Min 95% free from visible defects	>95% free from visible defects	
B) Physical Property				
7	Water Absorption	Average ≤0.08, Individual 0.1%, Max	≤0.05%	ISO 10545-3 / IS 13630-2
8	Modulus of Rupture	Average 35N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥38N/mm <sup>2</sup>	ISO 10545-4 / IS 13630-6
9	Breaking Strength	700 N Min for thickness < 7.5 mm, 1300 Min for thickness ≥7.5mm	≥1800N	ISO 10545-4 / IS 13630-6
10	Moisture Expansion	0.02 mm/m, Max	≤0.02 mm/m	ISO 10545-10 / IS 13630-3
11	Scratch Hardness of Surface (Moh's scale)	5, Min	≥5	IS 13630 -13
12	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	Class II, Min	PEI III-IV	ISO 10545-7 / IS 13630 -11
13	Coefficient of Linear Thermal Expansion	Max, 6 x 10 <sup>-6</sup> K <sup>-1</sup>	≤6 x 10 <sup>-6</sup> K <sup>-1</sup>	ISO 10545-8/ IS 13630-4
14	Thermal Shock Resistance	10 cycles Min	No Damage	ISO 10545-9 / IS 13630 -5
15	Crazing Resistance of Glazed Tiles	4 cycles @7.5 bar Min	No Damage	ISO 10545-11/ IS 13630-9
16	Impact Resistance	0.55, Min	≥0.55	ISO 10545-5 / IS 13630-14
# Skid Resistance				
17	a) Skid Resistance - Ramp Test	Manufacturer to declare	>R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	>0.42	ISO 10545 -17 /ANSI A 326.3
18	Frost Resistance	Required if requested by purchaser	No damage	ISO 10545-12 / IS 13630-10
19	Bulk Density (g/cc)	2.2, Min	≥2.2	ASTM C373-16 / IS 13630-2
20	Color Resistance to UV Light	-	No change in color	DIN 51094
Resistance to Chemicals				
21	1) Resistance to Low concentrations of acids & alkalies	Manufacturer to declare	GLA	ISO 10545-13 / IS 13630-8
	2) Resistance to High concentrations of acids & alkalies	Manufacturer to declare	GHA	
	3) Resistance to household chemicals and swimming pool salts	AA min	AA min	
22	Resistance to Staining - Glazed Tiles	Class 1 min	Class 1 min	ISO 10545-14 / IS 13630-8
23	Lead & Cadmium Release-for Glazed Tiles, where required	-	Nil	ISO 10545-15
24	Surface Electrical Resistance (ANSI Norms)	Below 1 Mega Ohm (Conductive)	< 50 Kilo Ohm	ANSI ESD S7.1
		Between 1Mega Ohm to 1 Giga Ohm (Dissipative)	1Mega Ohm to 1 Giga Ohm	
	Static Decay Time	<0.5 Sec (Conductive)	<0.5Sec	MIL-B-8170 Para 4.8.3 & FED-STD- 101C. Method 4046
	< 2 Sec (Dissipative)	<0.5Sec		

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

## (Hi-Traffic Sandex Series)

S. No.	Property	I.S. 15622:2017 Group B1a Requirement	Hi-Traffic Sandex Series	Test Method
A) Dimensions & Surface Quality				
1	Deviation in Length & Width	± 0.1 %	± 0.1 %	IS 13630-1
2	Deviation in Thickness	± 5 %	± 4 %	
3	Straightness of Sides	± 0.1 %	± 0.1 %	
4	Rectangularity	± 0.1 %	± 0.1 %	
5	Surface Flatness	± 0.5 %	± 0.2 %	
6	Surface Quality	Min 95% free from visible defects	>95% free from visible defects	
B) Physical Property				
1	Water Absorption	Average ≤0.08, Individual 0.1%, Max	≤0.05%	IS 13630- 2
2	Modulus of Rupture	Average 35N/mm <sup>2</sup> , Individual 32N/mm <sup>2</sup> , Min	≥38 N/mm <sup>2</sup>	IS 13630-6
3	Breaking Strength	1300N Min for thickness ≥ 7.5 mm	≥2000 N	
4	Moisture Expansion	0.02 mm/m, Max	≤0.02 mm/m	IS 13630-3
5	Scratch Hardness of Surface (Moh's scale)	5, Min	≥7	IS 13630 -13
6	Deep Abrasion Resistance (Unglazed tile)	<140mm <sup>3</sup>	<120 mm <sup>3</sup>	IS 13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	Class II, Min	PEI III-IV	IS 13630 -11
8	Impact Resistance	0.55, Min	≥0.55	IS 13630-14
10	# Skid Resistance			
	a) Skid Resistance - Ramp Test	Manufacturer to declare	>R9	DIN 51130
	b) Coefficient of Friction	Manufacturer to declare	>0.42	ISO 10545 -17 /ANSI A 326.3
11	Frost Resistance	Required if requested by purchaser	No damage	IS 13630-10
12	Bulk Density (g/cc)	2.2, Min	≥2.2	ASTM C373-16 / IS 13630-2
13	Color Resistance to UV Light	-	No change in color	DIN 51094
C) Chemical Properties				
1	Resistance to Concentrated HNO <sub>3</sub> & H <sub>2</sub> SO <sub>4</sub> Acid (wt. Loss)	<1.5 %	<0.8 %	IS 4457:2007 Annex G
2	Resistance to Chemicals			IS 13630 -8/7
	a) Resistance to Low concentrations of acids & alkalies	Manufacturer to declare	AA/UHA	
	b) Resistance to High concentrations of acids & alkalies	Manufacturer to declare	AA/UHA	
	c) Resistance to household chemicals and swimming pool salts	AA min	AA min	
3	Stain Resistance	Glazed tile- Class 1 min, Unglazed tile -Class 2 min	Glazed tile- Class 1 min, Unglazed tile -Class 2 min	IS 13630 -8/7
D) Thermal Properties				
1	Coefficient of Linear Thermal Expansion	Max, 6 x 10 <sup>-6</sup> K <sup>-1</sup>	≤6 x 10 <sup>-6</sup> K <sup>-1</sup>	IS 13630-4
2	Thermal Shock Resistance	10 cycles Min	No Damage	IS 13630 -5

# Ramp Test: Suitable for all kind of surfaces (Plain, structural..etc)

# Slider (BOT -3000E Digital Tribometer): Suitable for plain / smooth surface and not working for structural / profiled surface

# PACKING DETAILS

## Packing Details

Product	Nominal Size (cm)	No. of Tiles/Box	Approx Area/Box (sq.m)	Approx Weight/Box (kgs)	Approx Cartons/20' Container	Approx Area/20' Container (sq.m)
<b>Functional</b>						
<b>Hi-Traffic</b>						
20x20 (1cm Thk) Pavers	20x20	20	0.8	18	1500	1200
<b>Swimming Pool Tiles</b>						
24.7x12.2	24.7x12.2	30	0.90	16.5	1636	1479
<b>Stepping Stone Tile</b>						
30x120cm (1.5cm Thk)	30x120	4	1.44	50	540	778
60x120cm (1.5cm Thk)	60x120	2	1.44	50	540	778
30x120cm (1.2cm Thk)	30x120	4	1.44	40	675	972
60x120cm (1.2cm Thk)	60x120	2	1.44	40	675	972
30x95cm (1.2cm Thk)	30x95	4	1.14	31	870	992
60x95cm (1.2cm Thk)	60x95	2	1.14	31	870	992
31x152cm (1.2cm Thk)	31x152	4	1.88	52	519	978
62x152cm (1.2cm Thk)	62x152	2	1.88	52	519	978
<b>Cool Roof</b>						
30x30 (0.8cm Thk) Dewas	30x30	10	0.9	15.6	1730	1557
30x30 (1cm Thk) Dewas	30x30	10	0.9	20.2	1336	1202
30x30 (2cm Thk) Dewas	30x30	5	0.45	20.2	1336	601
30x30 (0.8cm Thk) Kunigal	30x30	10	0.9	16.1	1677	1509
30x30 (1cm Thk) Kunigal	30x30	8	0.72	15.8	1708	1230
<b>Clad Care</b>						
24X 7.5 - 5 MM	24X 7.5	40	0.72	8.12	3325	2394
<b>Evoke</b>						
20x20 - 8 MM	20x20	25	1.00	18	1500	1500
<b>Maxgrip</b>						
30x30cm - R10 - 1.0cm	30x30 - R10	10	0.90	18.6	1451	1306
60x60cm - R10	60x60 - R10	4	1.44	28.7	940	1354
60x60cm - R11	60x60 - R11	3	1.08	36	750	810
<b>Speciality</b>						
<b>Hi-Traffic</b>						
30x30 (1cm Thk) Coated Dewas	30X30	10	0.9	20	1350	1215
30x30 (1cm Thk) Coated Kunigal	30X30	10	0.9	19.5	1384	1246
60x60 (1cm Thk) (Sandex & Sandex Pl)	60X60	4	1.44	30	900	1296
60x60 (1.2cm Thk) (Sandex & Sandex Pl)	60X60	4	1.44	37.5	720	1037
60x120 (1cm Thk) (Sandex)	60X120	2	1.44	30	900	1296
60x120 (0.8cm Thk) (Sandex)	60X120	2	1.44	27	1000	1440
20x120 (1cm Thk) (Sandex Plus S&P)	20X120	4	0.96	21	1285	1234
<b>Meteor</b>						
80x80 (1.5cm Thk) Pen	80x80	3	1.92	42.9	629	1208
60x60 (1.5cm Thk) Pen	60x60	3	1.08	35	771	833
60x60 (1.5cm Thk) Dewas	60x60	3	1.08	39	692	747
60x60 (2cm Thk) Dewas	60x60	2	0.72	34.4	784	564

## Packing Details

Product	Nominal Size (cm)	No. of Tiles/Box	Approx Area/Box (sq.m)	Approx Weight/Box (kgs)	Approx Cartons/20' Container	Approx Area/20' Container (sq.m)
<b>Speciality</b>						
<b>Industrial</b>						
30X30 R (1.2cm Thk)	30x30	8	0.72	20	1384	996
30X30 R (1.5cm Thk)	30x30	6	0.54	18.5	1459	788
20X10 (2cm Thk)	20x10	20	0.4	18	1500	600
30X30 R (2cm Thk)	30x30	5	0.45	20	1350	608
30x30 (1.2 cm thk Tac Tile) Dewas	30x30	8	0.72	15.3	1764	1270
30x30 (1.5 cm thk Tac Tile) Dewas	30x30	6	0.54	14.8	1824	985
30x30 (2.5 cm thk Tac Tile) Dewas	30x30	4	0.36	17.5	1542	555
<b>Anti-Static Series</b>						
60X60R (1cm Thk)	60x60	4	1.44	29.2	924	1331
<b>RST</b>						
30x30cm	30x30	6	0.48	18.4	1467	704
<b>Basic</b>						
<b>Hi-Traffic (Core)</b>						
30x30 (1cm Thk) Dewas	30x30	10	0.90	19.94	1354	1219
30x30 (1cm Thk) Kunigal	30x30	10	0.90	19.45	1388	1249
<b>EDC</b>						
40x40 (Rajkot)	40x40	5	0.80	18.2	1483	1186
40x40 (Kunigal)	40x40	5	0.80	19	1421	1137
30x30 (1cm Thk) (Kunnigal)	30x30	8	0.72	15.8	1708	1230
30x30 (1cm Thk) (Dewas)	30x30	8	0.72	16	1687	1215

**Disclaimer:** Endura MaxGrip tiles have been tested for the latest International R value standard tests for anti slip performance. However as other environmental factors and improper maintenance may affect the performance over the period of time.

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
- Bengal Engineering College, Shibpur, Kolkata - Swimming Pool Deck
- Rabi Tirtha, Kolkata - Museum
- Regent Education and Research Foundation, Kolkata - Paving
- IIT Madras, Chennai, Tamil Nadu
- Christian Medical College, Vellore, Tamil Nadu

## Commercial :

- Nesto Mall, Calicut, Kerala
- Chappan Dukan, Indore, Madhya Pradesh
- DCM, Kota, Rajasthan

## 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 Floors
- Gelndale 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
- 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

## 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 Anandhas, Coimbatore, Tamil Nadu

## 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. Marriot, 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

## Dairy Industries :

- Hatsun Agro Product, Kancheepuram/Salem, Tamil Nadu
- Vijaya Dairy, Hyderabad
- Amul Dairy, Dharuhera, Manesar, Virar
- NDDDB, Anand
- Gokul Dairy, Kolhapur, Vashi
- Mother Dairy, Anand
- Milma Dairy, Wayanad
- Gowardhan Dairy, Parag Milk Foods, Pune, Chittoor
- Kwaliti Milk Foods Ltd, Tamil Nadu
- Milma Dairy Plant, Malappuram, Kerala
- Muralya Milk Products, Trivandrum, Kerala
- Karnataka Milk Federation, Karnataka
- Milky Mist Dairy Foods Pvt Ltd, Perundurai, Tamil Nadu
- Aroma Milk Products, Coimbatore, Tamil Nadu
- Keventers Dairy, Barasat, West Bengal
- Purabi Dairy, Guwahatti, North East
- Amul Dairy Anand, Gujrat
- Amul Dairy Himmatnagar, Gujrat
- Verka, Mohali
- Parag Dairy, Manchar, Maharashtra
- Nature Delight, Baramati, Maharashtra
- Govind Dairy, Phaltan, Maharashtra
- Indapur Dairy, Indapur, Maharashtra
- Narmada Milk, Bhopal, Madhya Pradesh
- Chandra Kamal Dairy, Dewas, Madhya Pradesh
- Alpha Milk Foods, Hathras, Uttar Pradesh
- Mother Dairy, Bhiwandi, Maharashtra
- Washisti Milk and Milk Products Pvt Ltd, Chiplun, Maharashtra

## 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
- Gokaldas Exports, Bhopal, Madhya Pradesh
- Mahadev Spinning Mills Pvt Ltd, Howrah, West Bengal
- Trident, Barnala, Punjab, Chandigarh
- Indorama India Private Limited, Chandigarh
- Dhruv Industries Ltd, Gurugram, Delhi - NCR
- Richa Global, Manesar, Gurugram, Haryana
- Sukhvarsha Project Pvt Ltd, Noida, Delhi - NCR

## 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

## Automobiles :

- 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

## Auto Ancillary :

- Steel strip, Lalru, Punjab
- Micro turner, Baddi, Punjab
- Bhawani Industries, Chakan, Maharashtra
- Enpro Industries, Alandi, Maharashtra
- Munjal Showa Ltd, Gurugram, Delhi - NCR
- Shivam Autotech Ltd, Rohtak, Haryana

## 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
- Celebrity Breweries Pvt. Ltd, Hooghly, West Bengal
- Pepsico Breweries Ltd, Hyderabad, Vijayawada, Andhra Pradesh

## Government Agencies :

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

## Government Projects:

- Chennai T Nagar -Skywalk Bridge, Chennai, Tamil Nadu
- Garrison Engineer (I) CG Military, Chennai, Tamil Nadu
- Ordnance Factory, Tiruchirappalli, Tamil Nadu
- Indian Ordnance Factories, Khadaki, Pune, Maharashtra

## 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

## 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.

## Food & Beverages :

- Tropical Breweries Private Limited, Thervoy Kandigai Sipcot, Tamil Nadu
- Bunge India Pvt Ltd, Nellore, Andhra Pradesh
- E.I.D Parry Ltd., Cuddalore, Tamil Nadu
- JRJ Sea Foods India Pvt Ltd, Kottaiappattinam, Tamil Nadu
- Nithya Amirtham Sweets and Restaurants, Chennai, Tamil Nadu
- Amalgam Foods Limited, Eramalloor, Kerala
- Anand Sweets & Savouries, Jigney Industrial Area, Bangalore, Karnataka
- Dairy Day Ice Creams, Ramanagara District, Karnataka
- Balaram Mullick & Radha Raman Mullick, Kolkata, West Bengal
- Dadu's Sweets & Namkeen, Hyderabad, Telangana
- Bikenarvala Foods Pvt Ltd, Hyderabad, Telangana

- Foods & INNS Limited, Vankal, Valsad, Gujrat
- Adani Wilmar LTD., Hazira, Gujrat
- Pergo Food, Fatehgarh Sahib, Punjab
- Pepsico, Channo, Punjab
- Tasty Bites, Yavat, Maharashtra
- Daund Suger Factory, Daund, Maharashtra
- HUL, Nashik, Maharashtra
- HFL, Lucknow, Maharashtra
- Budweiser, Aurangabad, Maharashtra
- Mount Everest Breweries Ltd. (MEBL), Indore, Madhya Pradesh
- Pratap Snacks, Indore, Madhya Pradesh
- Jai Shree Gayatri Foods, Sehore, Madhya Pradesh
- Bikano Foods, Jaber Airport, Rajasthan
- D'lecta Foods Pvt. Ltd, Khopoli, Maharashtra
- Bveg Foods Pvt Ltd, Sonipat, Haryana
- Bikano Foods Pvt Ltd, Rai Industrial Area, Sonipat, Haryana
- Haldiram, Noida, Delhi - NCR
- Sabharwal Food Industries, Delhi - NCR

### **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
- Annai Aravindh Herbals, Tindivanam, Tamil Nadu
- Sun Pharmaceutical Industries Ltd, Chengalpur, Tamil Nadu
- Malladi Drugs & Pharmaceuticals Ltd, Ranipet, Tamil Nadu
- Panvo Organics Pvt Ltd, Chennai, Tamil Nadu
- Natco Pharma, Chennai, Tamil Nadu
- Biocon, Bangalore, Karnataka

- Mylan Laboratories, Visakhapatnam, Andhra Pradesh
- MSN laboratories, Hyderabad, Telangana
- Lee Pharma Limited, Visakhapatnam, Andhra Pradesh
- Hetero Drugs, Hyderabad, & Visakhapatnam, Telangana & Andhra Pradesh
- Aarti Industries Limited, Dahej, Gujrat
- Cipla, Kurkumbh, Maharashtra
- Arti Industries, Baruch, Gujrat
- Navin Fluorine International Ltd (NFIL), Dewas, Madhya Pradesh
- Mody Chemi Pharma Ltd, Navi Mumbai, Maharashtra
- Zoetis Pharma, Navi Mumbai, Maharashtra
- Sun Pharmaceutical Industries Ltd, Panoli, Gujrat

### **Chemical Plant :**

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

### **Steel/ Chemical/ Cement :**

- Ramco Cements, Sattur, Tamil Nadu
- Deccan Fine Chemicals, Visakhapatnam, Andhra Pradesh
- Denisco Chemicals Pvt. Ltd, Hyderabad, Telangana
- Tata Steel (R&D), Jamshedpur, Jharkhand
- NMDC, Jagdalpur, Chhattisgarh
- BSP, Bhilai, Chhattisgarh
- Grasim Industries Ltd, Bharuch, Gujrat
- Val Organics Pvt Ltd, Sarigam, Gujrat
- KJS Cement Maihar, Katiya Kalan, Madhya Pradesh
- Tirupati Starch & Chemicals Ltd. (TSCL), Indore, Madhya Pradesh
- Ravindra Heraeus Pvt Ltd, Udaipur, Rajasthan
- Vandana Industries, Bhiwadi, Rajasthan
- India Glycols Ltd, Bulandshahr, Uttar Pradesh
- Neeru Menthol Pvt Ltd, Rampur, Uttar Pradesh
- Castrol India Ltd, Patalganga, Maharashtra
- GNFC Bharuch

## Public Sector Undertaking :

- ONGC
- HPCL
- BPCL

## Heavy Industries and Others :

- Hindalco, Sambalpur, Odisha
- Adhunik Alloys and Power Ltd, Jamshedpur, Jharkhand

## Leather Trade :

- Reflexions Narayani Impex Pvt. Ltd; Kolkata

## 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
- Raheja willows – Lokhandwala ( Mumbai)
- National Institute of Water Sports, Panjim, Goa
- Leisure Pool project at Indapur, Maharashtra
- Birsa Munda Hockey Stadium, Rourkela
- IIM Calicut
- Yacht Club , Cochin, Kerala
- Green field Stadium , Trivandrum
- MGM School, Trivandrum
- Parli High School , Palakkad
- Namaha Home stay,Wayanad, Kerala
- Kumarakom Lake Resorts, Kerala
- Hotel Apollo Dimora, Trivandrum, Kerala
- GE army project Jaiselmer
- Kiara Residency Apartment, Gomti nagar, Lucknow
- IIT Kanpur Swimming Pool Tiles
- Blue World Theme Park, Kanpur
- The Heritage School, Kolkata
- Railway Colony Lower Parel & Andheri, Mumbai

- Hindalco Plant - Renukoot, UP
- Dyore Club, Civil Lines - Jaipur
- Palm exotica boutique resort, Shankarapally ,AP/TA
- Delhi public school Hyderabad, AP/TA
- IIT sangareddy, AP/TA
- Tourism plaza Hyderabad, AP/TA
- Sarovar villa project - washroom interior, AP/TA
- Tourism plaza Hyderabad, Telangana
- Aqua sports complex , R.K Beach, visakhapatnam
- My Home Group – Bopanapally Villa Project, Hyderabad

## 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 Archtect - 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
- IIT - Gandhinagar,
- Zydus Cadila Corporate House - Ahmedabad
- Shree Sthanakvasi Jain Chhatralaya - Ahmedabad
- KMF - Karnataka
- Schreiber Dynamix - Baramati
- Orissa Milk Federation - Cuttack
- Ajmer Dairy
- NIF - Kanpur

## RST :

- INS Kattaboman, Tirunelveli, Tamil Nadu
- Jagat Guru Kripalu Chikitshalay, Vrindavan, Mathura, Uttar Pradesh
- Nizam Institute of Medical College, Hyderabad, Telangana

## Tactile :

- Rajiv Gandhi Government General Hospital, Chennai
- Government Stanley Hospital and Medical College, Chennai
- King's Hospital, Chennai
- Chennai Airport, Chennai
- Thiruvalluvar University, Vellore
- Chennai Metro Rail Limited, Chennai
- Smart City Project, Rourkela
- Hyderabad Metro Rail Limited, Hyderabad
- Thakur Infra Projects Ltd, Dronagiri
- K. D. Construction Pvt. Ltd., Nhava Sheva, Uran
- Mumbai Coastal Road (L&T), Mumbai
- India Trade Promotion Organisation(ITPO), Pragati Maidan Delhi
- Central Public Works Department (CPWD), Civil Line, Delhi
- Delhi Metro
- Shiv Nadar School, Faridabad
- Delhi Development Authority (DDA), Dwarka
- PWD Gurgaon, Gurgaon
- Girls & Boys Hostel, Jhajhar Haryana
- Prime Scholars International School, Gurgaon
- Ahmedabad Metro, Ahmedabad
- Vadodara Railway Station, Vadodara
- Huda, Panchkula
- SBI, Chandigarh
- Cochin International Airport, Kochi
- Water Metro Project, Kochi
- Kochi Metro, Kochi
- IIT-Palakkad, Palakkad
- Pune Metro Station
- Nagpur Metro Station
- Tiruchirappalli International Airport, Trichy
- Collectorate Complex, Chengalpattu
- Ariyalur Railway Station, Ariyalur
- Kolkata Metro Rail Corporation, Kolkata
- South-Eastern Railway, Kolkata
- Bengaluru Metro Rail Corporation

## 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., Taloja, Navi 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
- Navel Dock-Yard, Vizag, Andhra Pradesh
- Esko Casting & Electronics Pvt Ltd, Faridabad, Delhi-NCR
- Alan Electronics Systems Pvt. Ltd, Ambernath, Maharashtra
- Bayer India Ltd, Vapi, Gujrat
- Infopower Technologies Ltd, Noida, Delhi-NCR
- Bharat Electronic Ltd (BEL), Bangalore Outskirts, Karnataka
- Bharat Electronic Ltd (BEL), Guwahati, Assam
- Bharat Electronic Ltd (BEL), Jorhut, Assam
- Bharat Electronic Ltd (BEL), Tezpur, Assam
- Bharat Electronic Ltd (BEL), Chabua, Assam
- Bharat Electronic Ltd (BEL), Siliguri, Assam
- Aquasub Engineering Unit II (Defence Work Under Govt Of India), Erode, Tamil Nadu
- Saraogi Builders Ltd - Tanjore Military Airfields, Tanjore, Tamil Nadu
- Electronica - MFRS Of Electro Magnets / Shielding Plates, Vijayawada, Andhra Pradesh

### **Aerospace/Aviation :**

- ISRO, Cochin, Kerala
- Vikram Sarabhai Space Centre, Trivandrum, Kerala
- Tirchy Airport, Tiruchirapally, Tamil Nadu
- Gee Pee Aerospace & Government, Hyderabad, Telangana
- Pune Airport, Pune, Maharashtra
- Rewa Airport, Rewa, Madhya Pradesh

### **Developer :**

- Cheyyar Sez Developers Private Limited, Tindivanam, Tamil Nadu
- Prasad Group, Kolkata, West Bengal

### **Educational institute :**

- Christian Medical College, Vellore, Tamil Nadu
- IIT Madras, Chennai, Tamil Nadu

### **Electronics :**

- Popular Engineering, Chennai, Tamil Nadu
- Salcomp manufacturing india pvt ltd, Chennai, Tamil Nadu
- DELL, Chennai, Tamil Nadu
- Toshiba India, Hyderabad, Telangana

### **Healthcare :**

- Hindustan Latex Limited, Trivandrum, Kerala
- Zydus Cadila Lifescience, Gujrat
- Jivo Wellness Pvt Ltd, Gannaur, Sonipat, Haryana

### **Power :**

- BGR Energy Systems Limited, Ibrahimpatnam, Telangana
- Bharat Heavy Electricals Limited, Chennai, Tamil Nadu
- Kseb Substation, Thottayar, Kerala
- Bakreswar Thermal Power Plant, Birbhum, West Bengal
- Bandel Thermal Power Station, Bandel, West Bengal
- Sagardighi Thermal Power Plant, Sagardihi, West Bengal
- NTPC Limited, Goda District, Tandava, Patratu, Jharkhand

- Adani Power, Mundra, Gujrat
- NTPC, Rawatbhata- Kota, Rajasthan
- Nuclear Plant, Rawatbhata- Kota, Rajasthan
- NTPC, Ghaziabad, Uttar Pradesh
- NTPC, Aurangabad, Bihar

### **Banking :**

- RBI Raipur, Chhattisgarh

### **Refinery :**

- Indian Oil Corporation Ltd., Paradeep, Odisha
- IOCL Corporation, Baroda, Gujrat
- Pachpadra Refinery, Barmer, Rajasthan
- Jamnagar Refinery, Jaipur, Rajasthan

### **Steel Pipe Manufacturing :**

- Electro steel castings ltd, Kalahasthi, Tamil Nadu

### **Others :**

- Gi Agro Technologies Private Limited, Bramasamudram, Tamil Nadu
- Caparo Engineering India Limited, Chennai, Tamil Nadu
- MRF Limited, Trichy, Tamil Nadu
- Thejo Engineering, Gummidipoondi Sipcot, Tamil Nadu
- Exide Industries, Hosur
- Kerala Minerals and Metals, Kollam, Kerala
- Kanan Devan Tea Factory, Munnar, Kerala
- A.V.T Tea Factory, Idukki, Kerala
- VKC Footwares, Wayanad, Kerala
- LG Balakrishnan & Bros Ltd, Coimbatore, Tamil Nadu
- Sri Venkateshwara Vilas, Srivilliputhur, Tamil Nadu
- Tamil Nadu Newsprint & Paper Limited, Manapparai, Tamil Nadu
- Geco Chrome, Coimbatore, Tamil Nadu
- Texmo Industries, Coimbatore, Tamil Nadu
- Caudal Pens Pvt Ltd, Bandel, Hoogali, West Bengal
- Hindustan Unilever Ltd, Kolkata
- Marathon Electric India Ltd, Kolkata, West Bengal
- Bata India, Kolkata, West Bengal
- T Med technology, Mohali, Punjab
- Godrej, Mohali, Punjab
- Ruchira Papers, Chandigarh,
- The Hansel Trading Co., Indore, Madhya Pradesh
- Sakata Ink, Bhiwadi, Rajasthan
- Hawkins Cookers Limited, Thane, Maharashtra
- Ketan Buttonns Pvt Ltd, Rai Industrial Area, Sonipat, Haryana

### **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 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. The 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 Harbor.

### **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 Railway 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.

## END-TO-END Solutions

### JOHNSON TILES

Johnson tiles is the flagship brand of H & R Johnson. It offers a wide range of ceramic wall and floor tiles. Some of the trend-setting innovations we have launched in Johnson Tiles include germ free tiles, anti-skid bathroom tiles, water-repellent Tiles, scratch resistant tiles, 3D digital tiles etc.

What makes this collection unique is its DNA of 3 bases- aesthetics, durability and functionality. It offers tiling solutions available in small and medium formats in multiple finishes and unlimited themes and designs for both walls and floors which can be applied in indoor residential and commercial areas.

### JOHNSON PORSELANO

Johnson Porselano offers Glazed Vitrified Tiles, Slabs and Splits with true to life look, feel and touch.

With the introduction of the patented germ free technology close to a decade ago, this germ free range\* of technically superior and aesthetically appealing tiles help you make hygiene the core of your lifestyle.

It offers tiling solutions available in medium and large formats in multiple finishes and unlimited designs for both walls and floors which can be applied in indoor residential and commercial areas.

### JOHNSON ENDURA

In tune with our legacy of introducing most of the innovations in the Indian tile industry, H & R Johnson (India) launched the Johnson Endura brand to offer highly specialized range of architectural and industrial tiling solutions. Today, Johnson Endura enjoys the position of being India's first brand to offer the widest range of specialised flooring solutions pertaining to residential outdoor, commercial and industrial use.

While the use of conventional or ordinary flooring solutions in highly demanding areas can lead to a multitude of problems like slippages, chipping and breakages, Johnson Endura not only offer heavy duty flooring solutions but can withstand the harsh elements of external climatic conditions, the tough requirements of all kinds of manufacturing and warehousing setups, cladding and high traffic areas. Some of the innovations from Johnson Endura include swimming pools, antistatic tiles, tactiles for visually impaired

### MARBONITE

Johnson Marbonite offers a wide range of Stain free Polished Vitrified Tiles. From the past 2 decades, it has been ruling the polished vitrified tile segment because of its constant ability to innovate and present products which are aesthetically pleasing, functionally superior and far more durable.

The Stain Free technology makes the maintenance of tiles a lot more easier, it also enhances the reflectivity of the tile surface making your space shine bright. Every range under marbonite is finely crafted with its own purpose and uniqueness. Its wide variety of tiles makes it an ideal choice for residential and commercial use.



## Manufacturing Excellence

Johnson has the most modern manufacturing units across strategic locations in India; Madhya Pradesh, Maharashtra, Karnataka, West Bengal, 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.

## Pioneering Innovations

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 & Dewas, 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.



## Green Initiative

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<sub>x</sub>, NO<sub>x</sub> 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. Its commitment to quality, service and innovation is backed by certification from the world's leading accreditation bodies.

### **ISO 9001: 2015**

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

### **ISO 45001: 2018**

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

### **ISO 14001: 2015**

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.

Plant has received Safety award by National Safety Council.



## Awards

H & R Johnson has won awards for its impeccable products and services. H & R Johnson always make sure it remain consistent in delivering top-notch wall tiles, floor tiles, and other products.



### GreenPro:

GreenPro is a product certification given by the Confederation of Indian Industry (CII) which signifies environmentally conscious lifecycle of the production; certification for eco-friendly products that helps customers make an informed choice towards sustainable products. Johnson is proud to announce that all our tile segments – Johnson Tiles, Porselano, Endura and Marbonite are certified as GreenPro



### Superbrand (consumer and industry validated):

Superbrand is an internationally recognised award and is regarded as the world's foremost authority on brand management practices. Johnson is proud to have been bestowed with the title of an Consumer & Industry validated Superbrand for Marble and Quartz, Endura and Smart tiles from Johnson.



### ET Iconic brand:

The Iconic Brand award was conceptualized with an objective of acknowledging and honouring the invaluable contributions made by indigenous brands to various sectors of the economy H & R Johnson has been awarded the 'The Economic Times Iconic brand of the year and The Economics Tiles Architecture & Designs Top 100 Brands' title.



### ET Best Brand:

The Economic Times initiated "ET BEST BRAND" recognising 200 best brands across select categories based on consumer survey methodology and conducted by AC Nielsen. The award reinstates our continued commitment towards consumers offering best products & experiences.



### Brand of the Decade:

Johnson has "Brand of the Decade" indicates the brands who have achieved consistency with brand equity from last 10 years based on consumer survey research and evaluation conducted by BARC Asia. The award is recognition of our continued commitment towards consumers offering best products & experiences.



### Trusted brand:

Consumer based research award

Johnson has been awarded the Reader's Digest Trusted Brand award. This is the 12th year that Johnson has received the Gold award in the tiles category, also received award for Bath fitting category.



### Golden peacock:

Golden Peacock Award for Product Innovation, instituted by the Institute of Directors (IOD) is now regarded as a benchmark of Corporate Excellence worldwide. We are glad to receive this award for our "Germfree" products.



### Greenguard Gold

Greenguard is a third-party chemical emissions standard, helping to reduce indoor air pollution and the risk of chemical exposure, while aiding in the creation of healthier indoor environments. Johnson is proud to announce that our Quartz range of products is awarded with Greenguard Gold award.



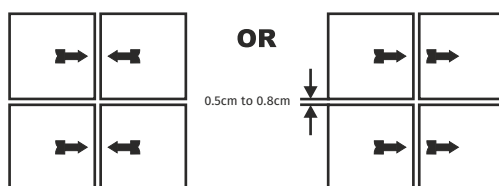
### Griha

Griha council is a joint initiative of Ministry of New and Renewable Energy, GOI and The Energy and Resources Insti-tute of implement Griha. India's national rating system for sustainable habitats.

## Johnson Endura Tile Fixing Instructions\*

1. 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.
2. 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.
3. For fixing Johnson Endura tiles on the floor using sand and cement, follow the instruction given below :
  - a) Use cement and sand mortar in the ratio of 1 : 4. Add some water to create a consistent paste.
  - b) Do not add any further water to the mix once it is completed and use the same within one hour.
  - c) 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.
4. For fixing Johnson Endura tiles on Dado, we recommend the use of 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.
5. 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.
6. 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.
7. Complete the tiles laying process by pressing the cut Johnson Endura tiles firmly into place along the wall / floors.
8. Allow 3 to 4 days for bed curing. After this period, fill the joints with cementitious or epoxy grouts from ARDEX ENDURA .
9. 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 Hydr ofluoric acid and its derivatives should not be used). You can also use tile & stone cleaners from ARDEX ENDURA.
10. Please note that the company does not accept any liability in case of problems arising out of non - adherence to these fixing instructions.
11. It is ideal to provide 0.5 cm to 0.8 cm gap between tiles with the help of spacers.
12. Kindly look for an arrow ( ➡ ) on the back of the tile and follow the laying pattern as shown below.
13. 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.enduratiles.com](http://www.enduratiles.com) & contact company representative directly.

## You Can Also Reach Us At

Region	Branch	Tel.:
East	Kolkata	033-46021880
	Bhubaneshwar	0674 6539836/37/2430240
	Siliguri	9836065812
	Guwahati	8135846661/7575900492
	Ranchi	6202065659 / 8809819387
West	Mumbai	022-40647500
	Thane	022-25867600 / 666
	Pune	020-41301164 / 31
	Aurangabad	8669600748
	Ahmedabad	079-48480010
	Raipur	0771-4919129
	Indore	0731-4007441
	North	Jalandhar
Chandigarh	0172-4697100	
Delhi	011-49526600	

Region	Branch	Tel.:
North	Jaipur	0141-2368329
	Lucknow	0522-2721699
	Varanasi	0542-2222620
	Patna	8862940888
South	Bengalure	080-22234310 / 080-22234330
	Hyderabad	040-29802270 / 71 / 72
	Vijayawada	9666429666
	Vishakhapatnam	0891-2796376
	Tirupati	9121228960
	Kochi	0484-4871277
	Kozhikode	0422-4382698
	Thiruvananthapuram	0471-2720141
	Chennai	044-28544116 / 28541881
	Coimbatore	0422-4382698
	Madurai	0452-4355584 / 4355594
	Trichy	9486718544

## Experience Centers

Location	Address	Tel.:
Kolkatta	HOUSE OF JOHNSON - 83 JBS Haldane Avenue, TOPSIA Trinity towers Kolkata - 700046	033-46021880
Guwahati	HOUSE OF JOHNSON - 1st Floor, Above Royal Riders Honda, Near Rahul Kata, Pub Bragaon, Garchuk, Guwahati - 781035	7575900492
Bhubaneshwar	HOUSE OF JOHNSON - Ray Tower, 1st Floor, N4/237, Indradhanu market, IRC Village, Nayapalli, Bhubaneshwar, Orissa - 751015	0674 6539836/37/2430240
Patna	HOUSE OF JOHNSON - SK Builders and colonizer Pvt.Ltd.,1st Floor, SK Palace, Saguna more, Bihar - 801503.	9702651243
Chandigarh	HOUSE OF JOHNSON - SCO 214, sector14, Panchkula, Haryana - 134109	0172-4637724
Delhi	HOUSE OF JOHNSON - First & Mezzanine Floor, B-1/G-3, Mohan Industrial Estate, Mathura Road, New Delhi - 110094.	11-49526600
Lucknow	HOUSE OF JOHNSON - 1st Floor, Prithvi Ratan Height,Plot No CP-4, Vijayant khand - 3, Gomtinagar Yojna, Lucknow - 226028	0522-2721699
Varanasi	HOUSE OF JOHNSON - Ashakunj, 1st floor, D59/103 D4, Opp Siddharth Complex, Sibra Mehmoorganj Road, Varanasi - 221010	0542-2222620
Aurangabad	House Of Johnson Aurangabad - Gut No 16/44, NH-211, Near Balapur Phata, Near Ramkisan Lawns, Beed Bypass Road Aurangabad 431005	8669600748
Pune	HOUSE OF JOHNSON - Sable House, Poona Snuff Factory, Sr. No 11A, Plot 408/4/5, Satara Road, Gultekadi, Pune - 411037	7350009364
Thane	HOUSE OF JOHNSON - Shop No.5, Gr.Floor, Cosmos Jewels, Near Dmart, Anand Nagar, Ghodbunder Road, Thane West - 400615	8424003247
Mumbai - Andheri	HOUSE OF JOHNSON - 1st flr, Bonanza, Sahar Plaza, Nr Hotel Kohinoor continental, J B Nagar, Andheri Kurla Road, Andheri East, Mumbai - 400059	8108030975
Ahmedabad	HOUSE OF JOHNSON - F 106-107, Shivalik Plaza, IIM Road, Panjrapole Cross Road, Ahmedabad, Gujarat - 380015	079-48480010
Indore	HOUSE OF JOHNSON - Shop No 5, 6, 7 and 8, Upper Ground Floor, Exotica, Shalimar Township, Village Niranjapur, A. B. Road, Indore, Madhya Pradesh - 452001	0731-4007441
Raipur	HOUSE OF JOHNSON - 2nd Floor, MM Silver Plaza, Opp Udyog Bhawan, Ring Road - 1, Raipur, Chattisgarh - 492001	771-4919129
Coimbatore	HOUSE OF JOHNSON - Elysium Towers, Park Gate Rd, No. 21, ATT Colony, Gopalapuram, Coimbatore - 641018	0422-4382698
Chennai	HOUSE OF JOHNSON - 82, 84 & 86 Bascon Maeru, 1st floor, Kodambakkam High Road, Nungambakkam, Chennai - 600034	044-48611632
Kochi	HOUSE OF JOHNSON - Door no. 11/300 f, Next to VTJ Hyundai, NH 47 Kundanoor, Maradu, Kochi, Ernakulam - 682304	0484-4871277
Kozhikode	HOUSE OF JOHNSON - Tilal Tower, Near Nexa Showroom, Kudilthod, Malaparamba bypass, Kozikode, Kerala - 673017	0495-2357505
Thiruvananthapuram	HOUSE OF JOHNSON -1st Floor, Sreedhanya Apex, TC 22/3720 (4) Vellayambalam, Sasthamangalam PO, Thiruvananthapuram, Kerala - 695010	0471-2720141
Bengalure	HOUSE OF JOHNSON - No.39, Rajaram Mohan Roy Road , Opp. Kanteerava indoor Stadium, Bengalure - 560027	080-22234310/080-22234330
Bengalure	HOUSE OF JOHNSON - Dodda Banaswadi, Opp. New Baldwin Residential School, Bengalure-560043	080-41692976 / 41692060
Hyderabad	HOUSE OF JOHNSON - SP Jubilee Crown (3rd Floor) Plot - 1270, Road No.36, Jubilee Hills, Hyderabad - 500033	8897525143

For address and contact numbers of our Johnson Exclusive Showrooms and Authorized Retailers, please visit our website [www.hrjindia.com](http://www.hrjindia.com)





**Toll Free No.:** 1800-210-7484

**WhatsApp No.:** +91 84510 57484

**Email:** tiles.customercare@prismjohnson.in

**For Export Enquires, Email:**

exports.customercare@prismjohnson.in

## **PRISM JOHNSON LIMITED**

### **H & R JOHNSON (INDIA) DIVISION**

#### **Corporate Office:**

"Rahejas", Main Avenue, 3rd Floor, V. P. Road,  
Santacruz (W), Mumbai - 400 054

**Website:** www.hrjohnsonindia.com

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

**Download App**



**Download E-Catalogue**



HRJIndia



@hrjohnsonofficial



Hrjohnsonindia



hrjohnson\_india



h-&-r-johnson-india-prism-johnson-limited



HRJohnsonIndia1