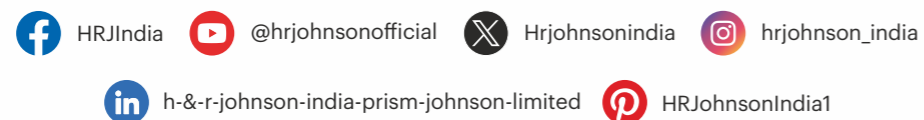
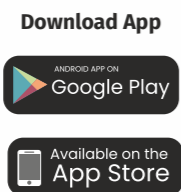




**Toll Free No.:** 1800-210-7484  
**WhatsApp No.:** +91 84510 57484  
**Email:** tiles.customercare@prismjohnson.in  
**For Export Enquires, Email:**  
 exports.customercare@prismjohnson.in

**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.



BRO0823MXE002-CC Cat/Johnson Endura Functional & Speciality Collection/Aug'23



# TILING SOLUTIONS FOR THE MOST DEMANDING ENVIRONMENTS

## Facts about Endura Heavy Duty Industrial Tiles :

Extra tough, non-abrasive, acid/alkali resistant Endura industrial tiles are designed to withstand the extreme demands of industrial manufacturing areas. Indestructible and extremely durable, the compressive strength of Endura tiles is several times higher than that of reinforced concrete. Being acid and alkali resistant (as per IS 4457 and conforming EN/ASTM/DIN & ISO Standards) Endura tiles can withstand the most corrosive of chemicals. Furthermore being anti-skid ensures safety of workers and also minimizes loss of productivity caused by accidents. Easy to clean and maintain Endura tiles are a must for warehouses, food, chemical, petrochemical, pharmaceutical and other similar industries where the flooring is constantly prone to fluid spillage.

Endura industrial tiles are available in 3 convenient sizes – 20x10cm and 30 x 30cm and thicknesses of 1.2cm, 1.5cm and 2cm. Small size enables ease of application, repair and maintenance of floors and makes it ideal for cladding vertical surfaces.



<b>SPECIALITY</b>	<b>00</b>	<b>TECHNICAL SPECIFICATIONS</b>	<b>00</b>
• Industrial	00	• Industrial Tiles	00
• Tactile	00	• Hi-Traffic & Industrial Tiles	00
• Meteor	00	• Meteor Tiles	00
• Antistatic	00	• Tactile	00
• Sandex Plus	00	• Anti-Static Series	00
• Sandex Speciality	00	• Hi-Traffic Sandex Series	00
• Sandex	00	<b>PACKING DETAILS</b>	<b>00</b>
• Coated	00	<b>SELECT CLIENTELE</b>	<b>00</b>
• RST	00	<b>SUCCESS STORIES</b>	<b>00</b>
<b>APPLICATION AREAS</b>	<b>00</b>	<b>END-TO-END SOLUTIONS</b>	<b>00</b>
<b>FREQUENTLY ASKED QUESTIONS</b>	<b>00</b>	<b>MANUFACTURING EXCELLENCE</b>	<b>00</b>
		<b>PIONEERING INNOVATIONS</b>	<b>00</b>
		<b>RESEARCH &amp; DEVELOPMENT</b>	<b>00</b>
		<b>GREEN INITIATIVE</b>	<b>00</b>
		<b>CERTIFICATIONS</b>	<b>00</b>
		<b>AWARDS</b>	<b>00</b>
		<b>TILE FIXING INSTRUCTIONS</b>	<b>00</b>
		<b>CONTACT DETAILS</b>	<b>00</b>

\*Random phases available

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

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

### 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



**INDUSTRIAL**

## PLAIN SERIES

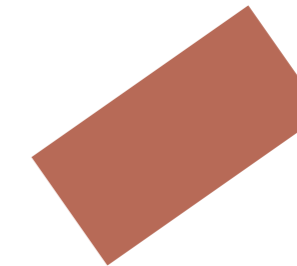
20X10 cm | 2 CM THICK



Grey



Ivory



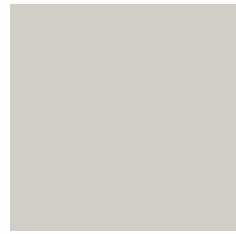
Terracotta





## PLAIN SERIES

30X30 cm | 1.5 CM THICK



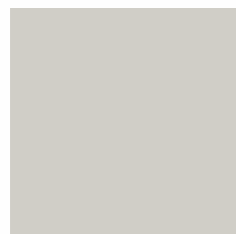
Grey D/K



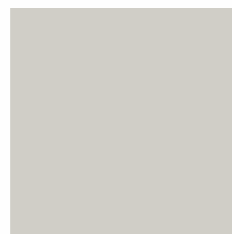
Ivory D/K



Terracotta D/K



Coated Grey Plus D/K



Grey Plus D/K



Silver Grey Plus D/K



Silver Grey Plus Special D

## SPECIALITY SERIES

30X30 cm | 1.5 CM THICK



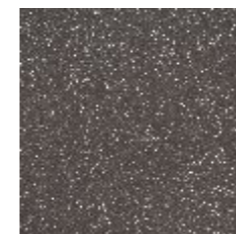
Caranz D



Cavelo D

## PLAIN SERIES

30X30 cm | 1.2 CM THICK



Benaulim D



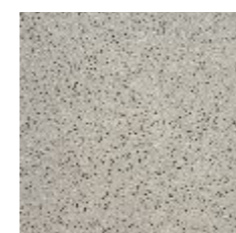
Grey D/K



Grey Plus D/K



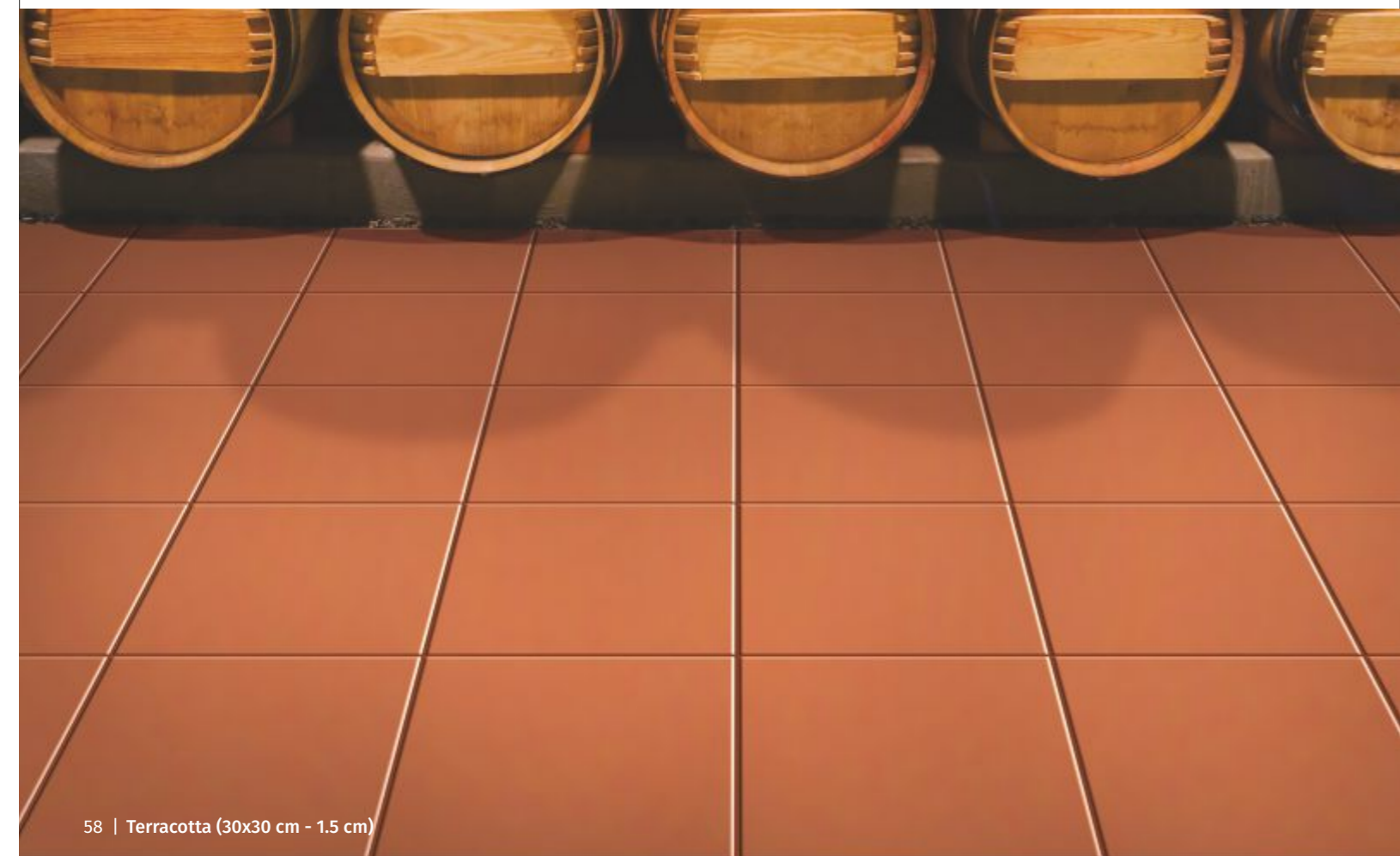
Ivory D/K



Majorda D



Terracotta D/K



## COLOUR SERIES

30X30 cm | 1.2 CM THICK

**INDUSTRIAL**



Coated Black Plus D



Coated Grey Plus D/K



Ivory Plus D



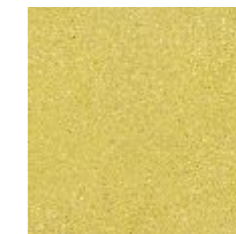
Silver Grey Plus D/K



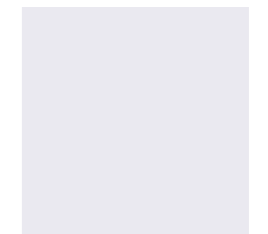
To Blue Plus D



To Green Plus D



Coated Yellow Plus D/K



White Plus D

# TEXTURED SERIES

30X30 cm | 1.2 CM THICK



Checkered Grey D/K



Checkered Ivory D



Checkered Terracotta D

## Benefits of Endura Industrial Tiles

Johnson endura Industrial Tiles	AR Bricks
Johnson Endura tiles conform to IS 4457 : 2007. These are stringent specifications.	AR Bricks conform to IS 4860 specification.
Lowest water absorption (<0.5%). Acids cannot percolate through tile body, thereby leaving the bedding underneath intact for years.	Water absorption 3% to 5%. High porosity and hence acid or chemical percolation possible resulting in corrosion of the bedding material underneath.
Johnson Endura is a vitrified tile body with a compact mass that provides high strength. Thus with the recommended 1.2, 1.5 and 2cm thick tiles, overall structural load can be reduced.	AR bricks are ceramic tiles in nature with high porosity and low strength, requiring the need for a high thickness of 38mm that results in increased structural load.
Mohs hardness of Endura is ≥ 7 making the surface virtually scratch proof. Even metals like hardened steel used in trolley, etc. cannot scratch the tile.	Mohs hardness scale of AR brick is 5 to 6 making it prone to scratches and flaking.
Johnson Endura tiles are manufactured to meet highest quality standards by H & R Johnson (India) in state-of-the-art plants.	AR bricks are manufactured by the unorganized sector.
Johnson Endura Industrial tiles are available in a variety of sizes and thicknesses such as :- 30X30 - 2cm, 20X10 - 2cm, 30X30 - 1.5cm 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 ≥ 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 mm <sup>3</sup> (ISO 13006/EN 176). Retains aesthetics for a long term.	Low abrasion resistance. Leads to high wear & tear on continuous use.
Can withstand point loads.	Cannot take point loads.
Ease of repair and maintenance. Even a single damaged tile can be replaced quickly without affecting surrounding tiles.	Repair and maintenance is difficult. Repairing the affected area gives the floor a patchy incongruent look.
Johnson Endura is maintenance free and is a very durable floor covering.	Epoxy floors have a huge recurring cost for maintenance besides workshop shut down costs and inconvenience.
Johnson Endura Industrial tiles are highly durable, maintenance free, scratch proof, economical and an aesthetic flooring option for industrial shop floors.	Epoxies are aesthetic, but delicate and expensive in the long run
Johnson Endura Industrial Tiles	Kota & Other Natural Stones
Properties are homogeneous across the entire body of tile. Shades are fairly consistent across the tile.	As natural stones are mined, their properties may vary from stone to stone and also within a stone. They are also prone to a high degree of shade variation.
Compact body with low water absorption of < 0.5%.	Very high porosity. Water absorption may vary from 2-4%.
High traction resistance.	Poor traction resistance.
Very high breaking strength. Suitable for heavy loads with hard-wheel trolley movements.	Susceptible to breakage on heavy load (> 1 ton) movement with hard-wheel trolleys.
Very high scratch resistance. Mohs scale >7. Even metals cannot create scratch on tiles.	Prone to scratches. Mohs hardness 4-5.
Highest abrasion resistance amongst all flooring options with abrasion value of <120 mm <sup>3</sup> (ISO 13006/EN 176). Retains aesthetics for a long term.	Low abrasion resistance. Leads to high wear & tear on continuous use.
Use of 12 to 20mm thickness ensures low structural load with high performance.	Use of higher thickness increases weight and structural load.



### Comparison of Kota Stone, Mandana, Epoxy and Endura Industrial Tiles

Technical Features / Flooring Material	Kota Stone	Mandana Stone	Epoxy Flooring	Endura Industrial Tiles
Main Constituents	Limestone or Calcite	Quartzitic Sandstone	Organic Copolymers	Inorganic oxides
Flexural Strength (N/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 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 effectively maintain the matt finish floor.	Helps in maintaining good housekeeping norms.
Low water absorption < 0.5%	Ensures compact body thus preventing stains & percolation of liquid based media.	Helps in maintaining good housekeeping norms.
<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.



## TAC TILE SERIES

30X30 cm | 1.2, 1.5 & 2.5 CM THICK

**HI-TRAFFIC**

### 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-thereby alerting them of impending danger from oncoming vehicles or a change in path gradient.

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



Tac Button D/K  
Metro Yellow\*#



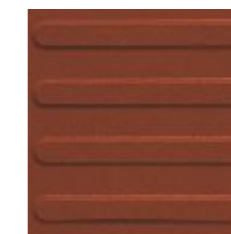
Tac Button D/K  
Terracotta\*



Tac Button D/K  
Yellow\*#



Tac Liner D/K  
Metro Yellow\*#



Tac Liner D/K  
Terracotta\*



Tac Liner D/K  
Yellow\*#

\* Yellow, Terracotta, Ivory & Metro Yellow in 12mm      # Yellow & Metro Yellow in 15mm  
Make to order subject to minimum order quantity & lead time confirmation.

# TAC TILE SERIES

**HI-TRAFFIC**

30X30 cm | 1.2, 1.5 & 2.5 CM THICK



Tac Button Ivory\*



Tac Liner Ivory\*

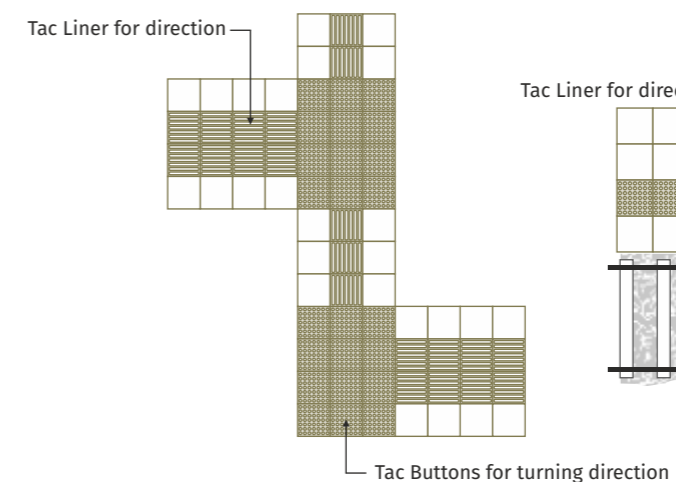
## Endura Tactiles - Benefits & Features

- 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.

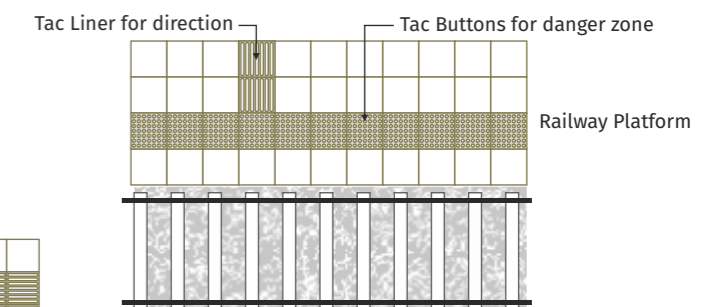
## Technical Characteristics

- 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.

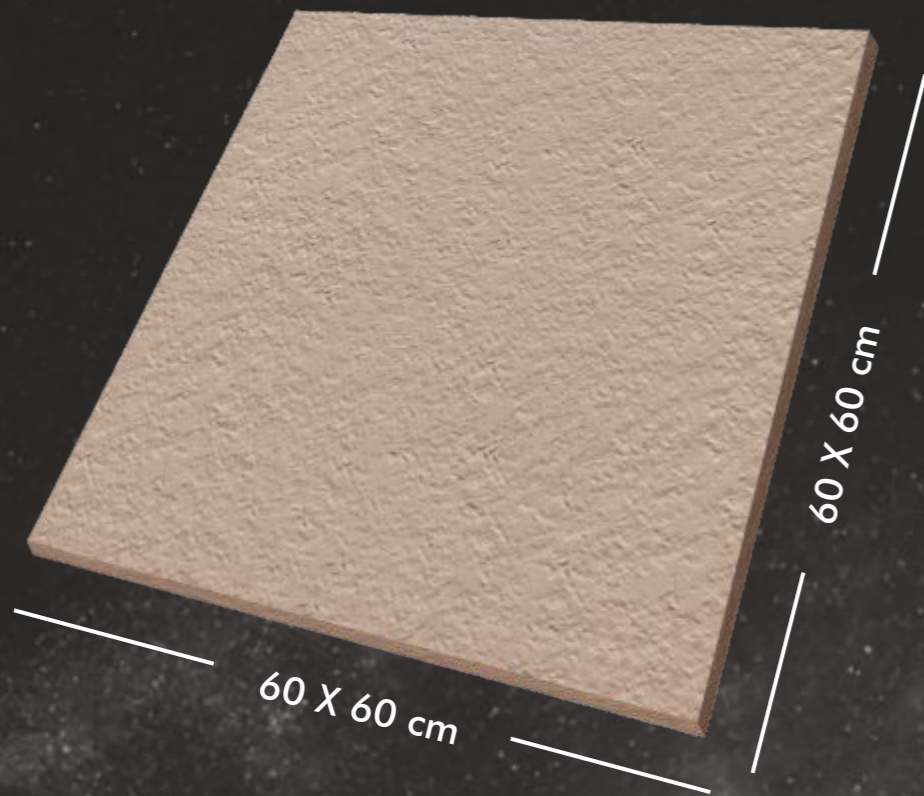
### For Direction & Turning



### Danger Zone



\* Yellow, Terracotta, Ivory & Metro Yellow in 12mm # Yellow & Metro Yellow in 15mm  
Make to order subject to minimum order quantity & lead time confirmation.



**1.5/2 cm**

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.



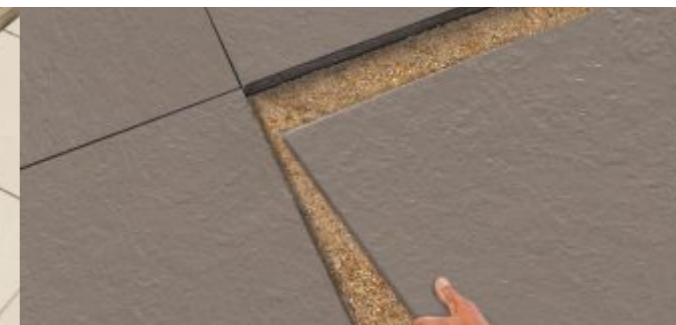
**DRY INSTALLATION GRAVEL**

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.



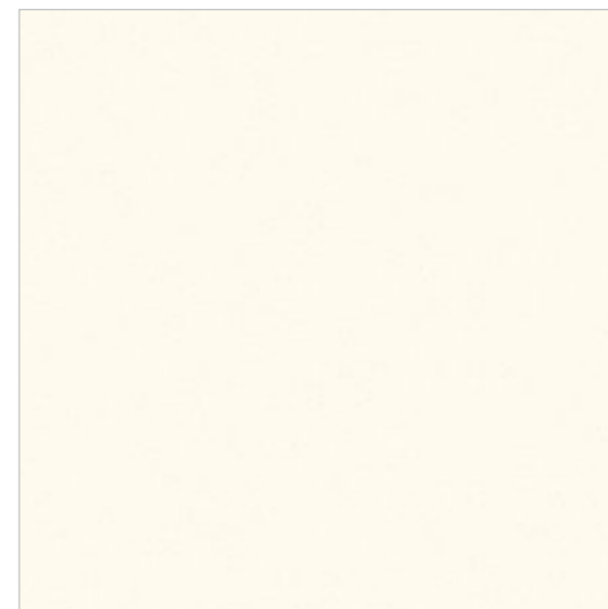
**DRY INSTALLATION GRASS**

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.

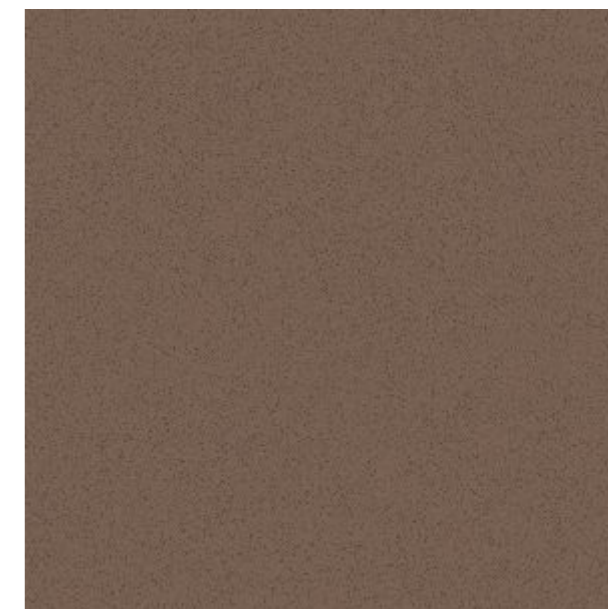
# METEOR SERIES

80X80 cm | 1.5 CM THICK

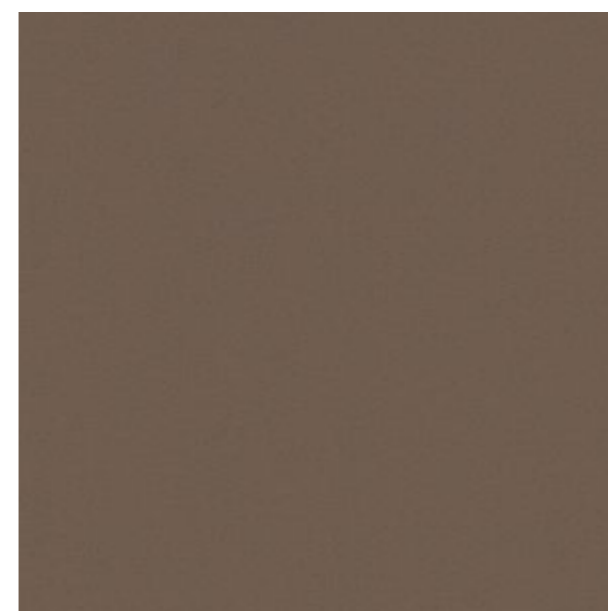
# METEOR



Iris Crema



Palolem



S&P Choco



Vaga



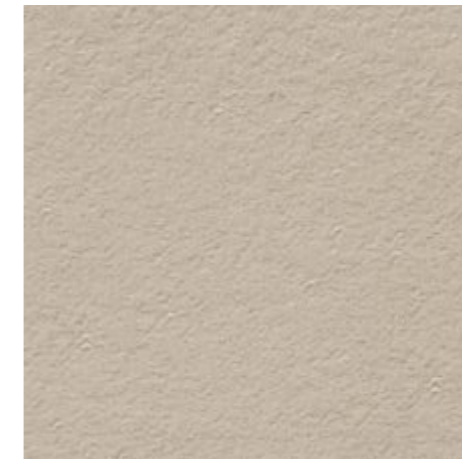
# METEOR SERIES

60X60 cm | 2 CM THICK

# METEOR



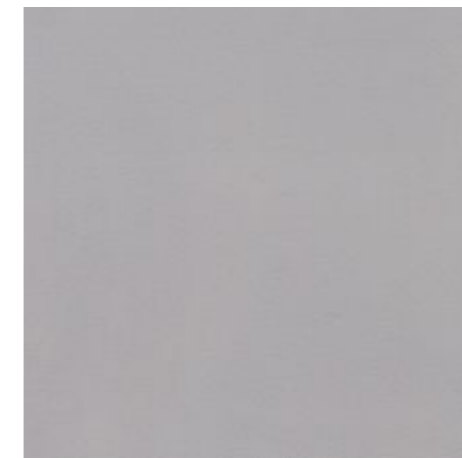
Kreo Ivory



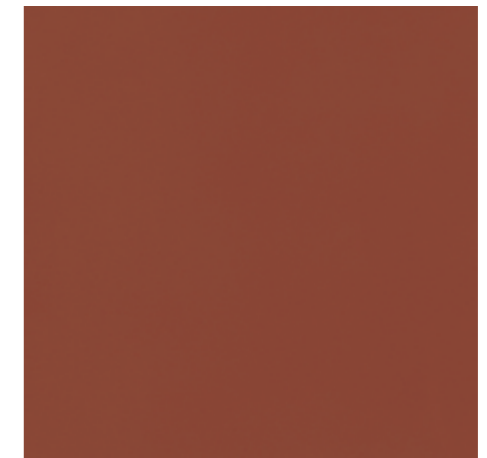
Korneto Ivory



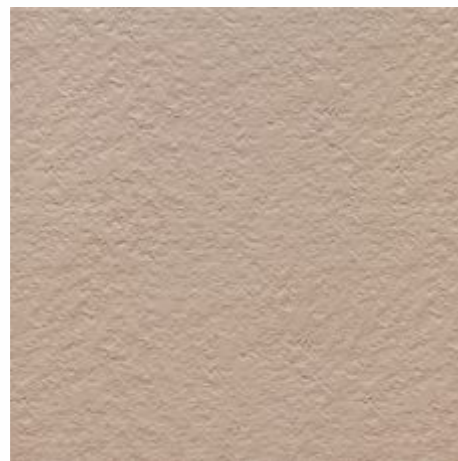
Kreo Beige



Kreo Gris



Kreo Terracotta



Korneto Beige



Korneto Gris

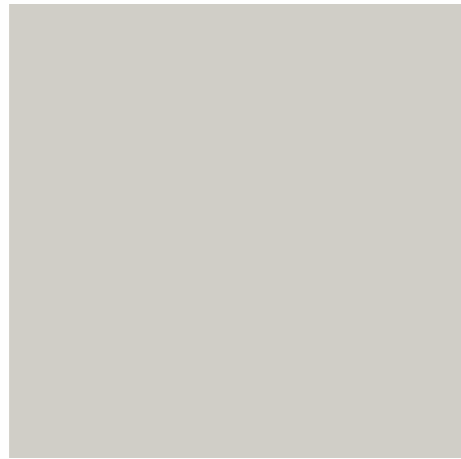


Kreo Ivory



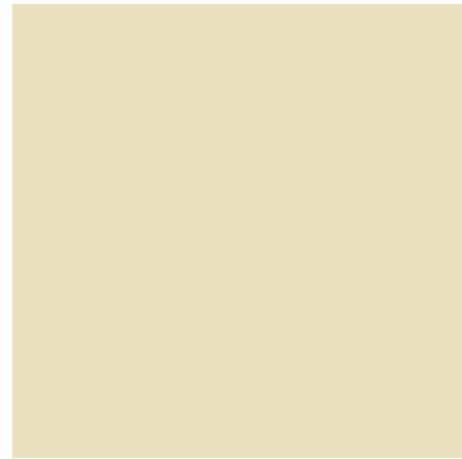
## METEOR SERIES

60X60 cm | 1.5 CM THICK



Coated Grey Plus

D



Ivory

P

## METEOR SERIES

60X60 cm | 1.5 CM THICK

## METEOR



Plain Benaulim

P



Plain Donapaula

P



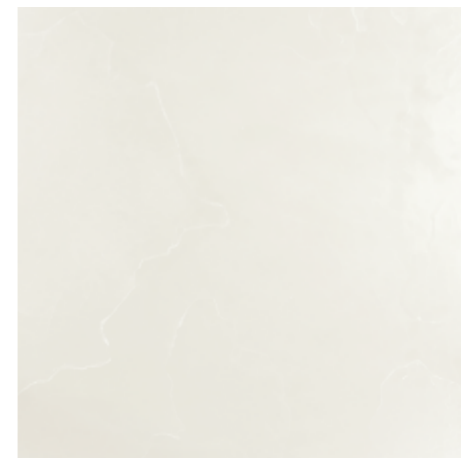
Plain Grey

P



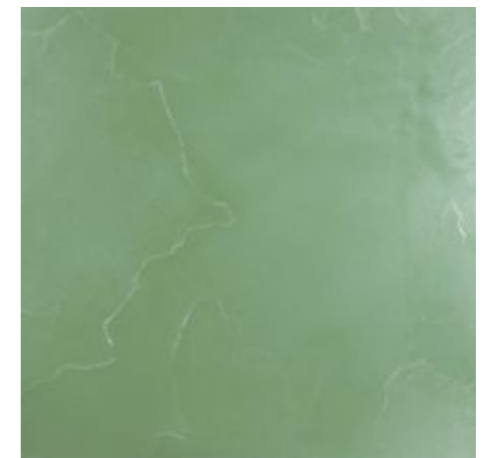
Plain White

P



Slate Bianco

P



Slate Kota green

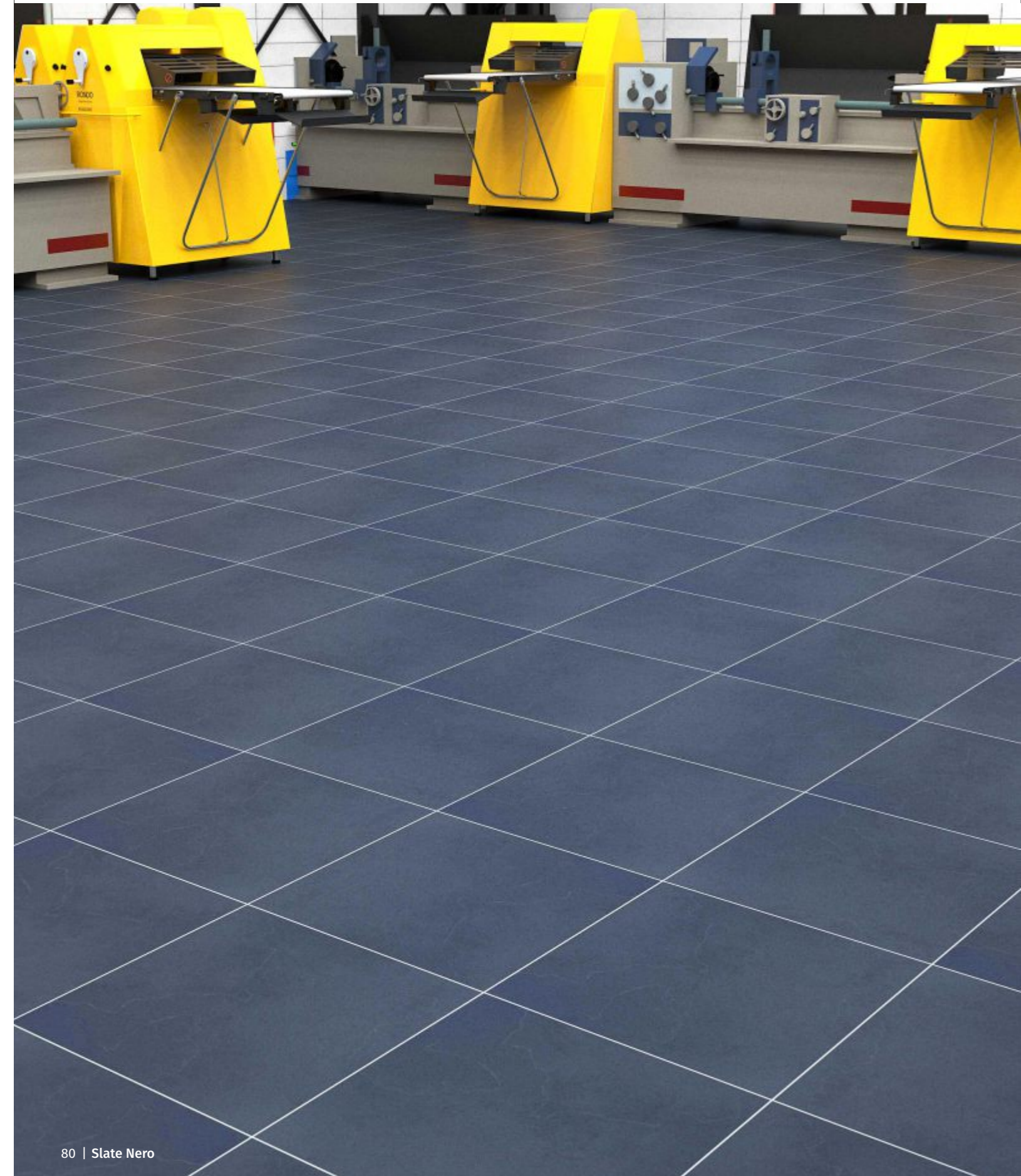
P



# METEOR SERIES

60X60 cm | 1.5 CM THICK

# METEOR



Slate Nero



Triumph Grey



Terracotta





# METEOR SERIES

60X60 cm

# METEOR

Features	Advantages	Benefits
High Abrasion Resistance. Deep abrasion volumeloss <120mm <sup>3</sup>	Johnson Endura Meteor tiles have the highest abrasion resistance value when compared with other traditional floors like concrete tiles, paver blocks, natural stones etc, thus ensuring lowest possible abrasion & wear off.	This helps customer maintain aesthetic value of floor year on year and avoid recurring maintenance costs.
Harsh weather & UV Resistance - Neutral to the Sun's UV effect	No fading of floor colors	Ideal for external flooring.
Easy to Install	Quick & easy fixing in least possible time with less cumbersome process. Three ways: 1. Raised flooring with supports (accessible underneath floor). Can be reused & refitted. 2. On top of gravel (bank gravel i.e. river run, crushed stone/ fine gravel) or compacted soil. Can be reused & refitted. 3. Cement sand mortar / adhesive system.	Quick completion of project.
Acid Alkali Resistant	Any spills or stains can be easily cleaned with commercial acids or alkalis (except HF and their derivatives)	Ideal for flooring in extreme weather conditions. Also helps in getting newer look over a period of time by acid wash on floor affected by stains due to uncontrolled external use.
High MOH Hardness (>6)	MOH is a measure to test surface scratch hardness value on a relative scale from 1 to 10 Higher the value, more the hardness, thus protecting the surface from scratches. MOH value of > 6 ensures these do not get scratched even with coarser sand, stone grits etc thus providing a tough, rigid, floor without scratches especially on continuous use & vehicular traffic.	Enhanced long lasting aesthetic beauty due to scratch free surface .
Higher breaking strength	Endura Meteor tiles can take large loads, high pedestrian traffic much better than stone & concrete tiles in a variety of outdoor / indoor applications without giving away .	Suitable for high load and heavy traffic usage.
Stain resistance	Provides sufficiently good stain resistance property making the surface impervious to dusts, stains and external liquid agents.	Retains aesthetics.
Low water absorption ≤ 0.5%	Ensures compact body thus preventing stains & percolation of liquid based media.	Helps in maintaining good housekeeping norms.



## 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.

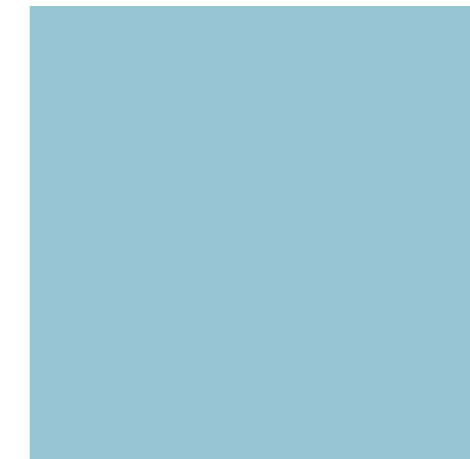
### Application Areas:

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

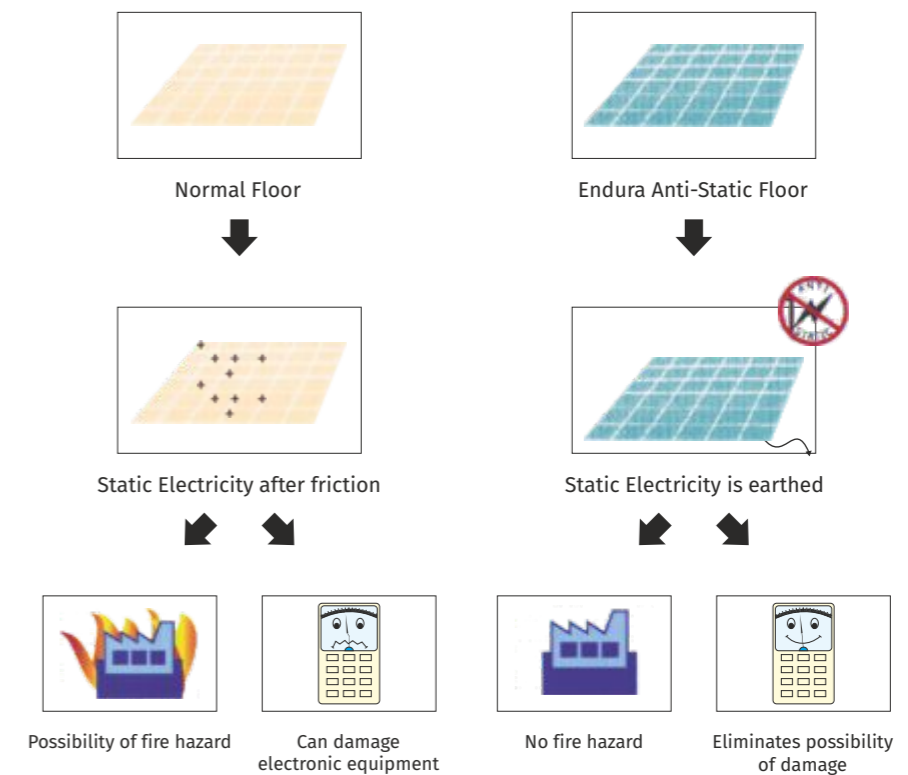
INDUSTRIAL



Asc Blue



## Working of antistatic tiles





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

## Sandex Collection

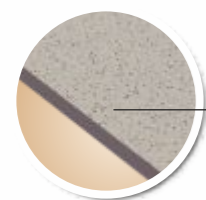
Exterior flooring is prone to wear and tear caused by heavy pedestrian and vehicular traffic. The challenge here is to meet these demands without hampering aesthetics or adding to maintenance costs. The Endura Sandex collection strikes a perfect balance between aesthetics, functionality, and cost. Endura 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

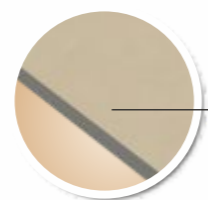
- Full body vitrified tile
- Neutral Matt Finish
- Anti-skid property with high coefficient of friction
- Suitable for high pedestrian and light vehicular traffic
- Salt & Pepper designs in earthen shades
- Scratch resistant
- Tough and durable
- Low recurring or maintenance cost
- Suitable for driveways,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

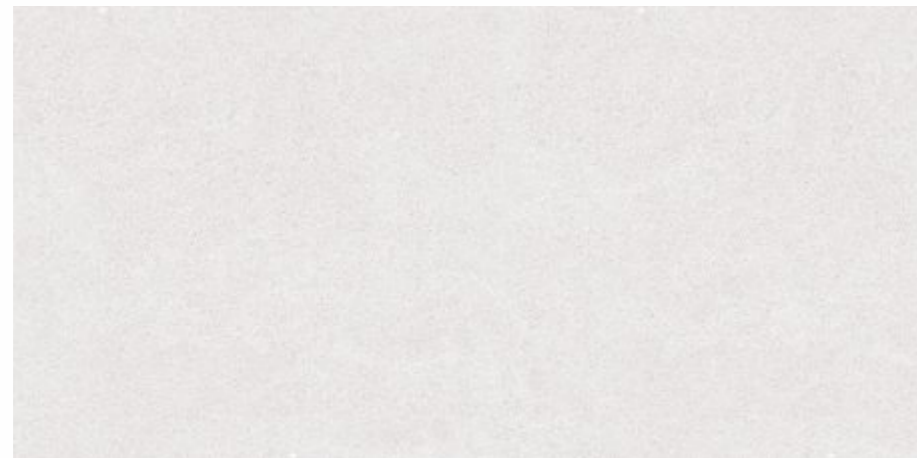


## SANDEX PLUS SERIES

60X120 cm



Adoks Sandune



Adoks Glitter Satin



AU Black Plus



## SANDEX PLUS SERIES

20X120 cm | 1 CM THICK



Adoks Grey



Grey Plus



## SANDEX PLUS SERIES

20X120 cm | 1 CM THICK



Adoks Firewood



# SANDEX PLUS SERIES

60X60 cm | 1 CM THICK

**HI-TRAFFIC**



Adoks Rusto Brown



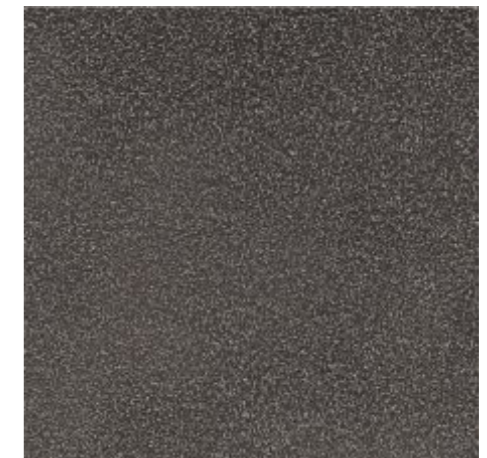
Adoks Grey



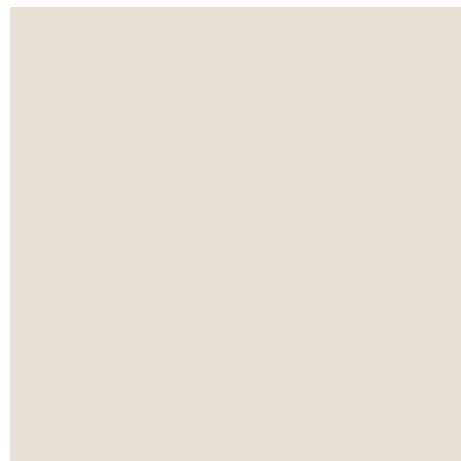
Adoks Rusto Brown\*



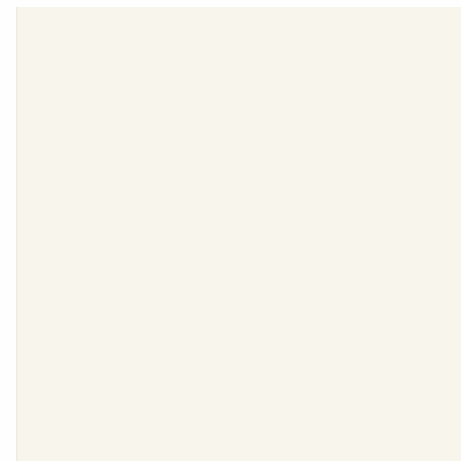
Au Black Plus



Benaulim Plus



Adoks Beige



Adoks Chalk New



Grey Plus



Ivory Plus

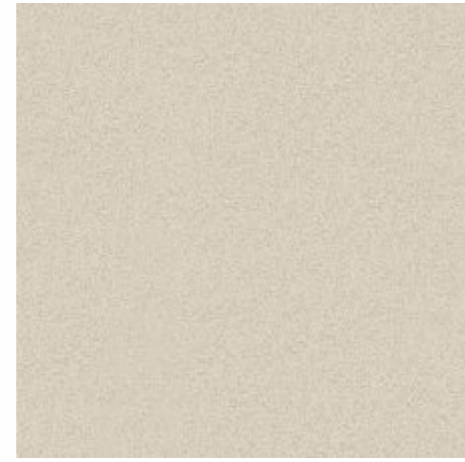


## SANDEX PLUS SERIES

60X60 cm | 1 CM THICK



KTM Grey



Miramar Plus



Terracotta Plus



Triumph Café



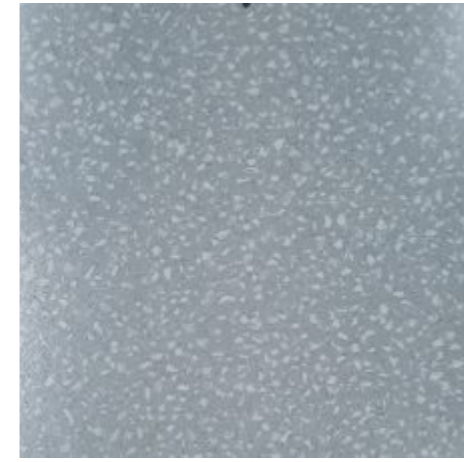
White Plus



## SANDEX SPECIALITY SERIES

60X60 cm | 1 CM THICK

**HI-TRAFFIC**



Adoks Mosaico Calçada



Charcoal Black



Nero Black

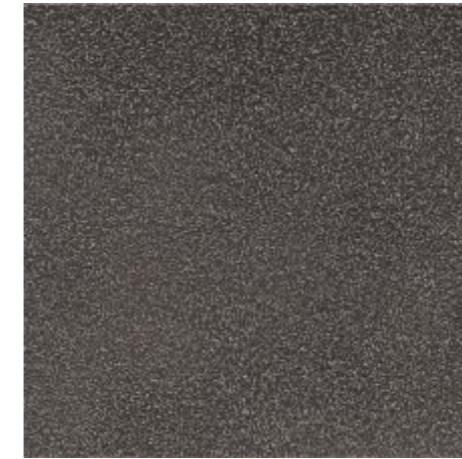




# SANDEX SERIES

60X60 cm | 1 CM THICK

**HI-TRAFFIC**



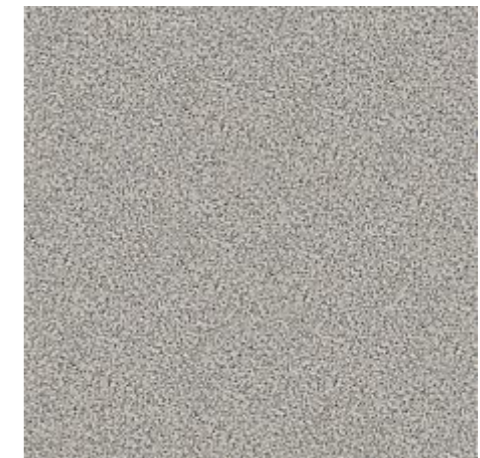
Benaulim



Candolim



Colva



Donapaula



Gmalo



Grey



# SANDEX SERIES

60X60 cm | 1 CM THICK

**HI-TRAFFIC**



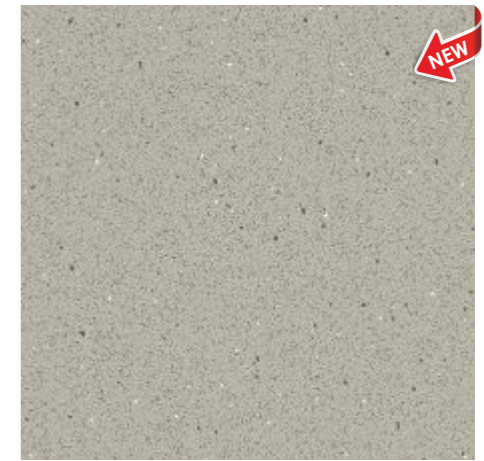
Grey Coated



Ivory



Terracotta



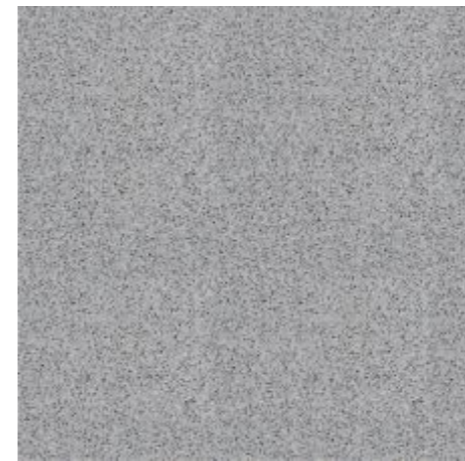
Tempered Grey



Ivory Coated



Majorda



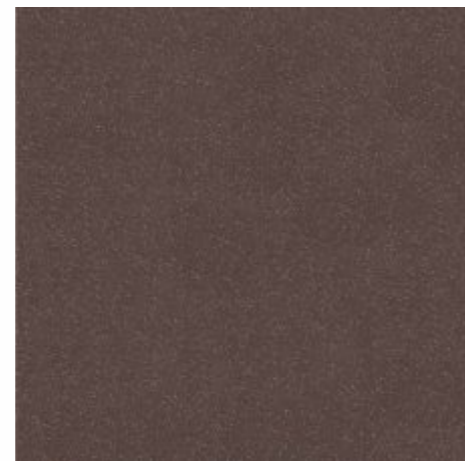
Vaga



Velsoa



Miramar



Palolem



## COLOUR SERIES

30X30 cm | COATED 1 CM THICK

**HI-TRAFFIC**



Coated Black D/K



Coated Grey Plus D/K



Coated White D



Grainflow Light D



Green D



Green Coated K



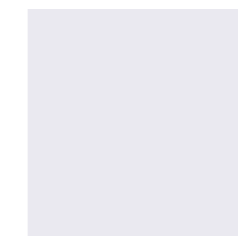
Red D



Super Ivory D



Tata Blue D/K



White Plus D/K



Yellow D/K



### 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).



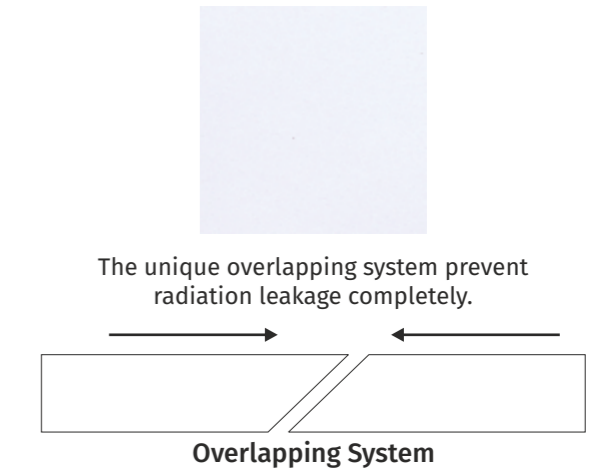
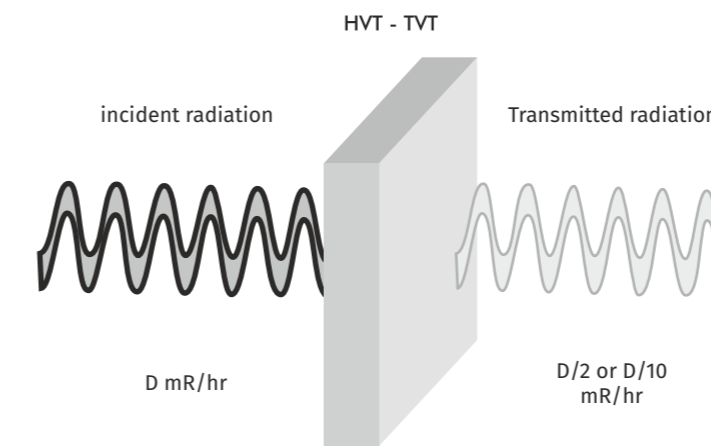
## RADIATION SHIELDING TILES

30X30 cm | 1.2 CM THICK

## RADIATION

### 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



30X30 cm | 1.2 CM THICK

## 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

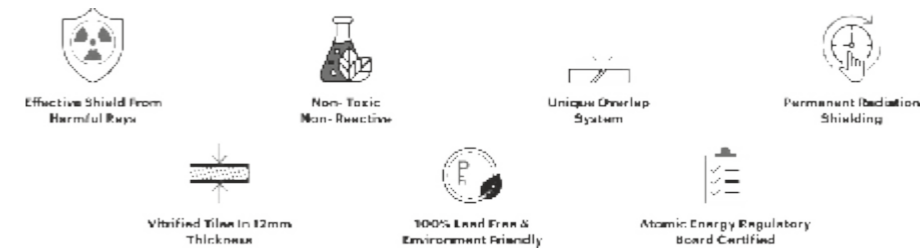
Radiation Shielding Tiles	Carcinogenic Lead Sheet
High thickness of 12 mm.	Low thickness of 1-2mm
Low price	High price
Non toxic	Toxic/Carcinogenic as per IARC
Life of shielding is very high	Life of shielding is less
Easy installation	High skill installation
Non toxic resources	Use of toxic Natural source

## 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.

## Laying Installation

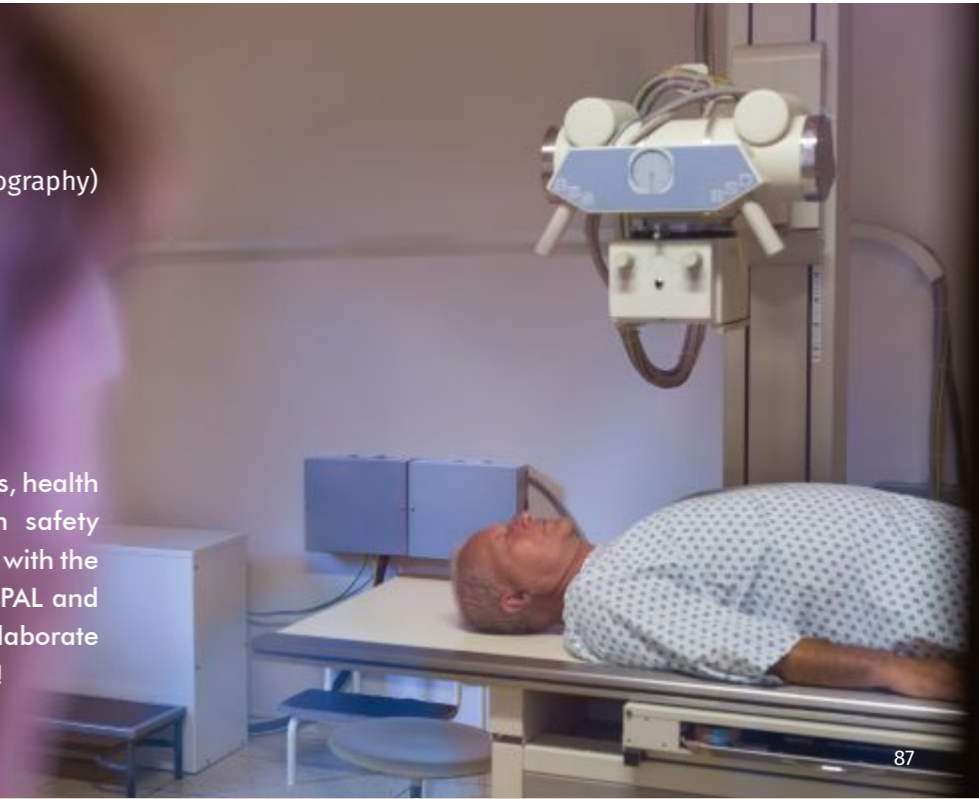
- Read tile fixing instruction before tile laying (available on carton)
- A minimum 6 inch thick brick wall with proper levelled plaster is required for holding high density tiles like RST effectively up to 12 ft height or more.
- The sides of the tile are cut diagonally to overlap the adjacent tile.
- 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!



## 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
- Courtyards
- Public Places
- Swimming Pool Decks
- Gardens
- Path Ways
- PUBLIC PLACES

## Industrial

### 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. What is Endura?**

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

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

A. Endura Pavers are smaller format of Hi-Traffic tiles available in a wide range of 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.

**Q3. 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.

**Q4. 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.

**Q5. 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.

**Q6. 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.

**Q7. 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.

**Q8. 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.

**Q9. 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.

**Q10. 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.

**Q11. 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.

**Q12. 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.

**Q13. 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.

**Q14. 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.

**Q15. 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.

**Q16. 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.

**Q17. 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

**Q18. 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.

**Q19. 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.

**Q20. 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.

**Q21. 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.

**Q22. 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.

### (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%
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%
2	a) Scratch hardness of surface (Moh's scale) - Unglazed tile	-	≥7	≥5	≥7	≥7	≥7
	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>
4	Breaking Strength	≥1300N	>8000N	≥1100N	>3000N	>5500N	>8000N
5	Impact Resistance	Manufacturer to declare	≥0.55	≥0.55	≥0.55	≥0.55	≥0.55
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>
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
# Skid Resistance							
8	a) Skid Resistance - Ramp Test	-	>R9	-	>R9	>R9	>R9
	b) Coefficient of Friction	-	>0.42	-	>0.42	>0.42	>0.42
9	Frost Resistance	-	No damage	Manufacturer to declare	No damage	No damage	No damage
10	Density (gm/cc)	-	>2.2	≥2	>2.2	>2.2	>2.2
11	Moisture Expansion	Manufacturer to declare	≤0.02mm/m	Max0.02mm/m	≤0.02mm/m	≤0.02mm/m	≤0.02mm/m
12	Color Resistance to UV Light	-	No change in color	-	No change in color	No change in color	No change in color
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 %
Resistance to Chemicals							
2	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	ULA/GLA	Manufacturer to declare	ULA/GLA	ULA/GLA	ULA/GLA
	b) Resistance to High concentrations of acids & alkalis	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
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>
2	Thermal Shock Resistance	-	No damage	10 cycle, Min	No damage	No damage	No damage

# 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 & Industrial 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
# Skid Resistance					
8	a) Skid Resistance - Ramp Test	-	-	>R9	DIN 51130
	b) Coefficient of Friction	-	-	>0.42	ISO 10545 -17 / ANSI A 326.3
9	Frost Resistance	-	Manufacturer 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
Resistance to Chemicals					
2	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

## (Meteor Tiles)

S. No.	Test Description	ISO 13006:2018 / EN 14411 Group B1a 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 (Unglazed)	Report abrasion class	<175mm <sup>3</sup>	<120mm <sup>3</sup>	<120mm <sup>3</sup>	ISO 10545- 6 / IS 13630-12
# Skid Resistance						
8	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
Resistance to Chemicals						
2	a) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	Manufacturer to declare	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	
	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
# Skid Resistance							
8	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	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
Resistance to Chemicals							
2	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

## (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
17	# 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
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
21	Resistance to Chemicals			ISO 10545-13 / IS 13630-8
	1) Resistance to Low concentrations of acids & alkalis	Manufacturer to declare	GLA	
	2) Resistance to High concentrations of acids & alkalis	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 & alkalis	Manufacturer to declare	AA/UHA	
	b) Resistance to High concentrations of acids & alkalis	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

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>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
<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

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
- Sinclair's Hotel, Siliguri - Swimming Pool Deck

### Dairy Industries :

- Hatsun Agro Product, Kancheepuram/Salem, Tamil Nadu
- Vijaya Dairy, Hyderabad
- Amul Dairy, Dharuhera, Manesar, Virar
- NDDB, Anand
- Gokul Dairy, Kolhapur, Vashi
- Mother Dairy, Anand
- Milma Dairy, Wayanad
- Gowardhan Dairy, Parag Milk Foods, Pune, Chittoor
- 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

### Auto Mobiles :

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

### 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, Murli
- Ichapur Rifle Factory, Ichapur
- Chittaranjan Locomotive Works, Chittaranjan
- CPWD, Kolkata

### Government :

- 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

#### Public Sector Undertaking :

- ONGC
- HPCL
- BPCL

#### Heavy Industries and Others :

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

#### Leather Trade :

- Reflexions Narayani Impex Pvt. Ltd; Kolkata

#### RST :

- INS Kattaboman, Tirunelveli, Tamil Nadu
- Jagat Guru Kripalu Chikitsalay, 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, Ahemdabad
- 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

#### Johnson Endura Antistatic Tiles :

- Chemstroll Engineering, Goa
- Bilag Industries Ltd. (Bayer Group Company), Vapi
- MES, Vizag (Dolphin Nose Station Base)
- Department of Malaria Health Research Institute, Delhi
- Johnson Matthey India Pvt. Ltd., 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 Buttons 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 machin 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 saety - 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 or 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, 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, Maharashtra, it is approved by the Department of Scientific and Industrial Research, Government of India. Every new product developed here is stringently checked for its quality, right from the raw material stage itself. The clay, the pigments, the minerals, the chemicals, whether sourced locally or internationally, are not used until they meet our exacting standards. With geologists on site, examining the quality of material from the mine itself, we ensure that what you get is fit for today and ready for tomorrow.



## 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.



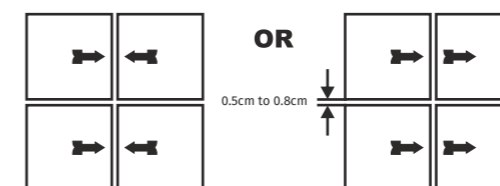
### Griha

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

## Johnson Endura Tile Fixing Instructions\*

- Before fixing the tiles, lay them out in the desired pattern and make sure that they give an acceptable blend of shade, colour & design. Also make sure that the tiles are acceptable to your satisfaction. Please note that certain amount of shade and size variation is inherent in the manufacturing of ceramic products.
- For fixing these tiles, we recommend the use of ARDEX ENDURA tile fixing adhesives. For best results, follow the tile fixing instruction provided along with the adhesives.
- For fixing Johnson Endura tiles on the floor using sand and cement, follow the instruction given below :
  - Use cement and sand mortar in the ratio of 1 : 4. Add some water to create a consistent paste.
  - Do not add any further water to the mix once it is completed and use the same within one hour.
  - Apply a 2cm to 3cm layer of bedding material over an area of 1 square meter at a time on the surface of the area. Apply a fine slurry to the back of the tile to ensure proper and full bedding. Press gently for even adherence at back of the tile.  
DO NOT USE AN IRON HAMMER OR SOME HEAVY MATERIAL TO PRESS THE TILE.
- For fixing Johnson Endura tiles on Dado, we recommend the use of ARDEX ENDURA. Please follow the manufacturer's instructions for the same. We do not recommend the use of sand and cement for fixing on Dado.
- Mark and layout the tiles from the centre of the area to be tiled so that cut tiles if any will be on the outer edge towards the walls.
- The nominal/ work size of the tile is as printed on the carton. It is advisable to maintain a gap of 0.5 cm to 0.8 cm between two tiles to allow for possible expansion as per ISO tolerance norms. This would give the coverage area as mentioned in the grouts.
- Complete the tiles laying process by pressing the cut Johnson Endura tiles firmly into place along the wall / floors.
- Allow 3 to 4 days for bed curing. After this period, fill the joints with cementitious or epoxy grouts from ARDEX ENDURA .
- Fifteen minutes after finishing the grouting process, wipe off excess grout with a damp sponge and polish the tiles with a soft and dry cloth for a clean surface. The tiles can also be cleaned with a mild acid (However Hydr ofluoric acid and its derivatives should not be used). You can also use tile & stone cleaners from ARDEX ENDURA.
- Please note that the company does not accept any liability in case of problems arising out of non - adherence to these fixing instructions.
- It is ideal to provide 0.5 cm to 0.8 cm gap between tiles with the help of spacers.
- Kindly look for an arrow (➡) on the back of the tile and follow the laying pattern as shown below.
- THE COMPANY WILL BEAR NO RESPONSIBILITY AFTER THE TILES ARE FIXED .

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



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

