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**JOHNSON**  
**ENDURA**  
INDUSTRIAL TILING SOLUTIONS

**Stepping  
Stone**

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	Pune	020-41301164/31/61/63
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	Bangalore	080-25446841/42/43/46
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	Vijayawada	0866-2543616/17
	Vishakapatnam	0891-2796376
	Tirupathi	0877-3254151
	Chennai	044-28544116/28541881
	Coimbatore	0422-2540501/2548439
	Salem	0427-2280636/2280637/2280639
	Madurai	0452-4355584/4355594
	Tuticorin	0461-2271558/2278585
	Trichy	0431-2904730/40/50
Ernakulam	0484-4098500/509/510	
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BR00817PXE001-SC- CAT/PEN/ENDURA/STEP-RISER TILES/AUG2017.



**Safety and confidence  
in every step of your way.**



**H & R JOHNSON (INDIA)**  
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Contact branch for Pre laying services available for select products.

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



### Say Goodbye to conventional Staircases

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



### Get the Johnson Endura Stepping Stone Advantage!

The Johnson Endura Stepping Stone range is a revolutionary way to build staircases with step tiles and risers. The result of an unquantifiable amount of time spent researching the very many possibilities in the world of staircases. At the center of this research, we kept people and a few important questions concerning them -

- "Will it be safe enough for senior citizens and children to use?"
- "Are they safe for use by people with physical and visual disabilities?"
- "How long would they last before needing a replacement?"
- "Should durable mean cumbersome installation and frequent maintenance?"
- "Are they easy to install, without any cumbersome cutting and finishing or wastage?"
- "Are they non - combustible and safe during a fire emergency?"



## Here's why it makes more sense to build your Staircases with Endura Stepping Stone

### Safety for All

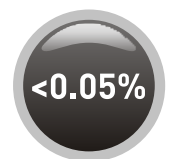
These full-bodied vitrified tiles come with double nosing and tread lines that make them skid-resistant and much more safer than conventional stairs.

### Faster Installation

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

### Long Lasting & Easy on Maintenance

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



less than 0.05%  
Water Absorption



Full  
Bull Nosing



Anti Skid



High Flexural  
Strength



Robust, durable  
tiles than  
conventional options



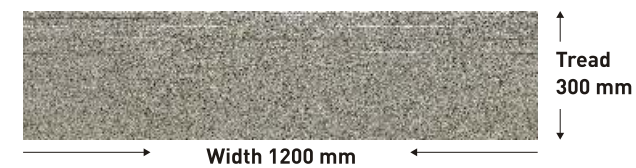
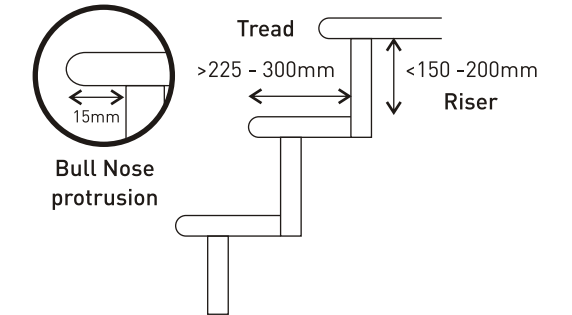
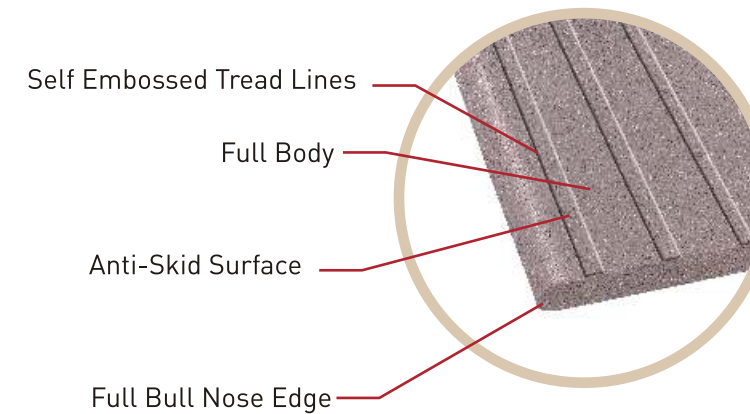
8 Beautiful  
Shades



Faster  
Installation



## India's first double bull nosing fully vitrified Step Tile.



Extensions for wider stairs

Contrast Cut piece



Endura Risers are available through Meteor series in 60 x 120 cm and 1.5 cm thickness. These can be used in full size on landing areas and in cut size as desired for riser use on site depending on the requirement. While the Step tiles are available in a convenient size of 30x120 cm, for stairs requiring higher width, cut - contrast shades can be used on either side to get the wider stairs.

## The Endura Stepping Stone Advantage.

FEATURE	BENEFITS
Fully Body Vitrified Step Tiles & Risers	Highly durable, ideal for heavy traffic and commercial areas.
Ready to install tiles	Easy and speedy installation. Say goodbye to cumbersome cutting and finishing on site.
Embossed Tread Lines	Provide extra grip for higher safety near step edge.
Unique full bull nose edges	Unlike other step tiles, Endura Stepping Stone is India's first double bull nosing tile, which makes the staircase safer and comfortable to step on. Double bull nosing also helps to prevent chipping from sharp edges and it improves the overall aesthetics of the stairs.
15 mm thickness	Provides higher strength and durability as desired in big size slabs. An assurance to replace natural stones in a confident way.
Lowest water absorption of <math><0.05\%</math> along with enhanced stain resistance.	Strongest of dyes - methylene blue can not stain Endura Stepping Stone. Impervious surface ensures ease of cleaning.
Highest abrasion resistance of <math><144\text{ mm}^3</math>	Ensures 10 times superior surface protection against wear and tear over natural stones.
Available in 8 beautiful Salt & Pepper shades.	Suits the building theme, décor and desired contrast.





GMALO STONE

30x120 cm



COLVA STONE

30x120 cm



BENAULIM STONE

30x120 cm



GMALO STONE



VELSOA STONE & PLAIN





AMERICAN WALNUT STONE

30x120 cm



DONAPAULA STONE

30x120 cm



PINK STONE

30x120 cm

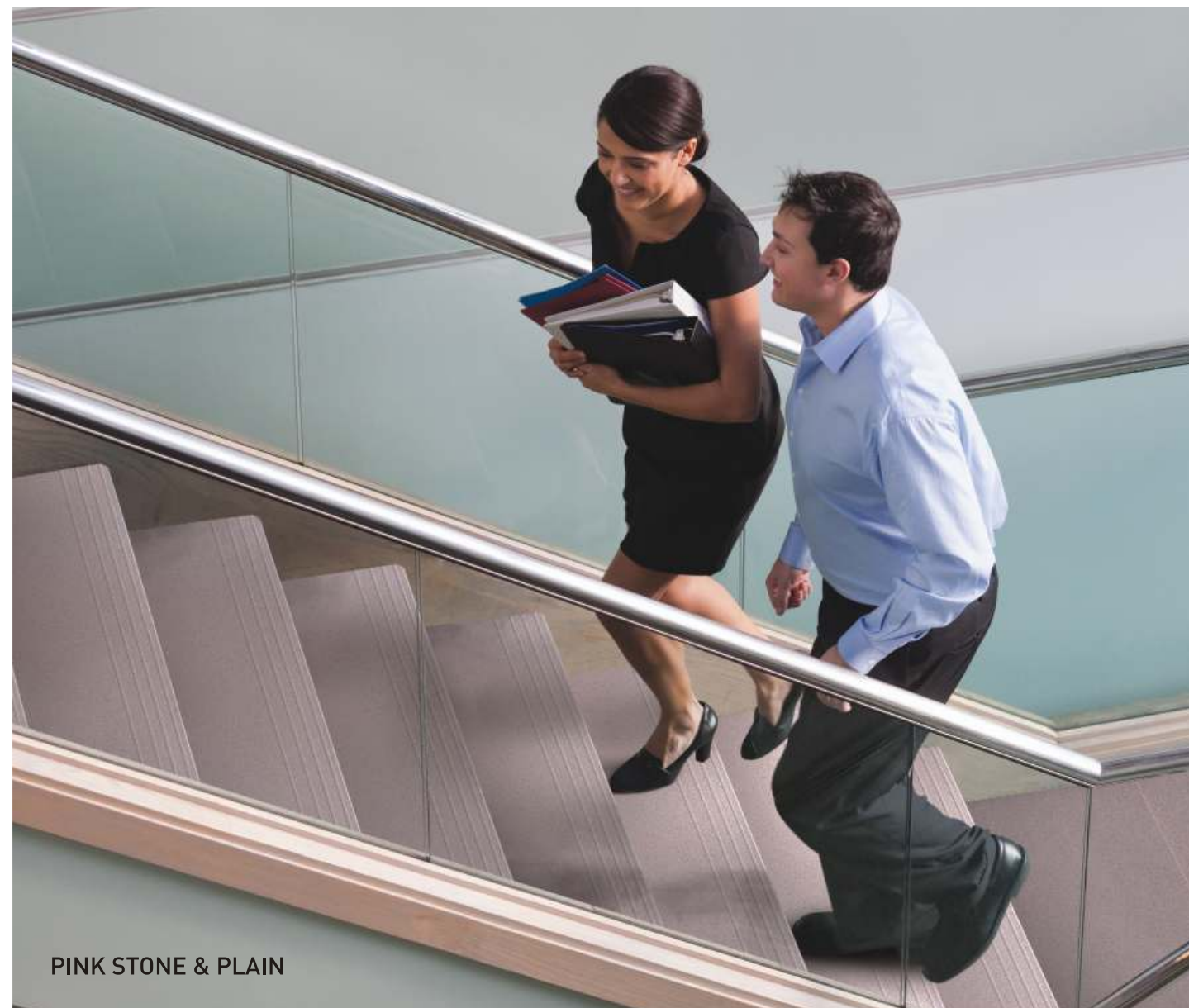


VAGA STONE

30x120 cm



DONAPAULA STONE & PLAIN  
AMERICAN WALNUT STONE



PINK STONE & PLAIN





VAGA STONE & PLAIN



VELSOA STONE

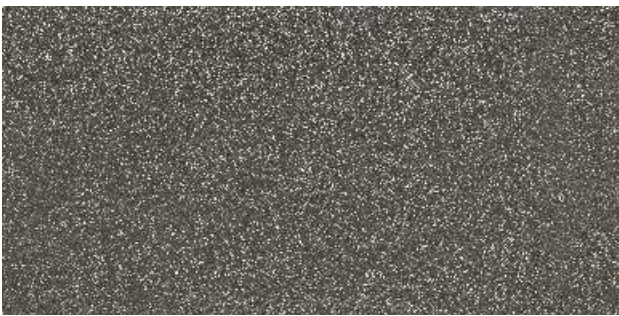
30x120 cm



VELSOA STONE & PLAIN



Riser & Landing Area Tiles Meteor 60 x 120 cm



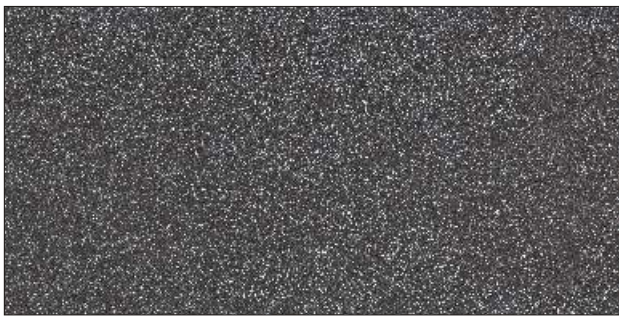
AMERICAN WALNUT PLAIN



VAGA PLAIN



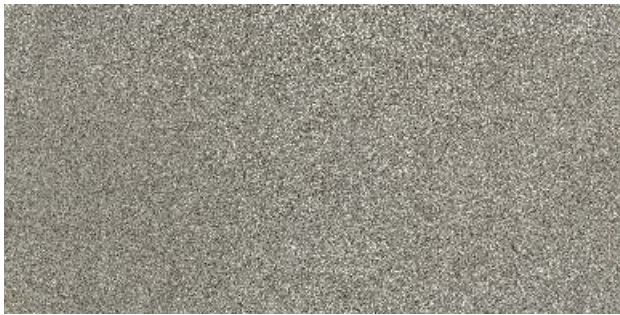
VELSOA PLAIN



BENAULIM PLAIN



COLVA PLAIN



DONAPAUOLA PLAIN



GMALO PLAIN



PINK PLAIN



VAGA STONE & PLAIN



AMERICAN WALNUT STONE & PLAIN



## Frequently Asked Questions

### 1) Why Endura Stepping Stone?

Staircases hitherto have been at mercy of natural stones, which are cumbersome to install, slippery, and also come with a higher installation wage-cost. Endura Stepping Stone is that much-required revolution in the world of staircases, that comes with none of the above mentioned complications. Moreover their convenient size (1200 x 300 x 15 mm) with double nosing and tread lines aptly meet the design requirements for staircases along with Meteor series 1200 x 600 x 15mm in matching colour for risers and landing areas.

### 2) What differentiates Endura Stepping Stone from others?

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

### 3) What are the benefits of full bull nose edges?

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

### 4) What is the purpose of embossed tread lines?

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

### 5) What are the benefits of thicker tiles?

The Endura Stepping Stone is 15mm thick, which means it's stronger - a mandate for large-sized slabs. Thereby, being a safe, confident and assuring replacement to natural stones.

### 6) What are the other benefits of using Endura Stepping Stone?

Easy and speedy installation, low water absorption (<0.05%) with advanced stain resistance technology. Even strongest of dyes - methylene blue - cannot stain Endura Stepping Stone. High abrasion resistance of <144mm<sup>3</sup> provides 10 times superior surface protection over natural stone against regular wear & tear.

### 7) What is the best way to fix Endura Stepping Stone?

Endura Stepping Stone are best fixed using ARDEX ENDURA tile fixing adhesive. The gap between the tiles can be filled with ARDEX ENDURA grouts. ARDEX ENDURA tile fixing adhesives and grouts are available in India and are most compatible with Endura tiles.

### 8) What are the designs available?

Subtle salt & pepper designs, to evenly compliment the theme and decor of the building.

### 9) Does Endura Stepping Stone conform to National Building Codes?

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

### 10) Is Endura Stepping Stone a fire resistant material? Is it suitable for fire exits in the case of an emergency?

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

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

Type of Building	Minimum Width	Minimum Tread	Maximum Riser
Residential buildings	1000 mm	250 mm	190 mm
Residential hotel buildings	1500 mm	300 mm	150 mm
Assembly buildings like auditoria, theatres and cinemas	2000 mm	300 mm	150 mm
Educational building	1500 mm	300 mm	150 mm
Institutional buildings	2000 mm	300 mm	150 mm
All other buildings	1500 mm	300 mm	150 mm
2 storeyed - LIG Urban Areas	600 mm	225 mm	200 mm
3 or more storeyed - LIG Urban Areas	750 mm	250 mm	200 mm

Note:

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

## TECHNICAL SPECIFICATIONS

S. No.	Test Description	Test Standard		Endura Stepping Stone / Endura Meteor 1.5 cm	Test Method
		IS 4457:2007	ISO 13006/EN 14411 Gr. B1a		
<b>Dimensional Properties</b>					
1	Deviation in Length & Width	± 0.75%	± 0.6%	± 0.1%	IS 4457:2007 Annex B / IS 15622:2006 / ISO 10545-2
2	Deviation in Thickness	± 5%	± 5%	± 5%	
3	Straightness of Sides	± 0.5%	± 0.5%	± 0.1%	
4	Rectangularity	± 0.6	± 0.6	± 0.1%	
5	Surface Flatness	± 0.5%	± 0.5%	± 0.2%	
6	Surface Quality		Min 95%	Minimum 95% of the tiles shall be free from visible defects	
<b>Physical Properties</b>					
7	Water Absorption	< 0.5%	< 0.5%	< 0.05%	IS 4457:2007 Annex C / IS 15622:2006 / ISO 10545-3
8	Mohs Hardness		>3	>6	IS 13630 Part 13 / En101
9	Flexural strength (Average MOR)	>35 N/mm <sup>2</sup>	>35 N/mm <sup>2</sup>	>38 N/mm <sup>2</sup>	IS 4457:2007 Annex D / IS 15622:2006 / ISO 10545-4
10	Breaking Strength	>1300N	>1300N	>6000N	
11	Abrasion Resistance/Deep Abrasion	<175 mm <sup>3</sup>		<144 mm <sup>3</sup>	IS 4457:2007 Annex E / IS 15622:2006
12	Skid Resistance	>0.4		>0.6	ASTM C1028-7
13	Density (gm/cc)	>2		>2.2	ASTM C373 - 16
14	Moisture Expansion	NIL		NIL	ISO 10545-10
<b>Chemical Properties</b>					
15	Resistance to household chemicals & swimming pool salts	Resistant	Resistant	Resistant	IS 4457:2007 Annex F / IS 15622:2006 / ISO 10545-13
16	Resistance to Conc. Acid (wt. Loss)	<1.5%		≤ 1%	IS 4457:2007 Annex G
17	Stain Resistance	Resistant	Resistant	Min Class 3	ISO 10545-14
18	Colour Resistance to UV Light		Resistant	Resistant	DIN 51094
19	Frost Resistance		Frost Proof	Frost Proof	ISO 10545-12
<b>Thermal Properties</b>					
20	Thermal Expansion	≤ 9 x 10 <sup>-4</sup> K <sup>-1</sup>	≤ 9 x 10 <sup>-4</sup> K <sup>-1</sup>	≤ 9 x 10 <sup>-4</sup> K <sup>-1</sup>	ISO 10545-8
21	Thermal Shock Resistance	No damage	No damage	No damage	ISO 10545-9

## PACKING DETAILS

Product	Nominal Size (cm)	No. of Tiles / Box	Approx. Area / Box (sqm)	Approx. Weight / Box (Kg)	Approx. Cartons/ 20' Container	Approx. Area/ 20' Container (sqm)	Approx. Boxes/ 16 T Truck	Approx. sqm/ 16 T Truck
300x1200 Step 15mm	30x120	4	1.44	48.5	575	828	330	475
600x1200 Meteor 15mm	60x120	2	1.44	48.5	575	828	330	475