



ENDURA

Industrial Tiling Solutions

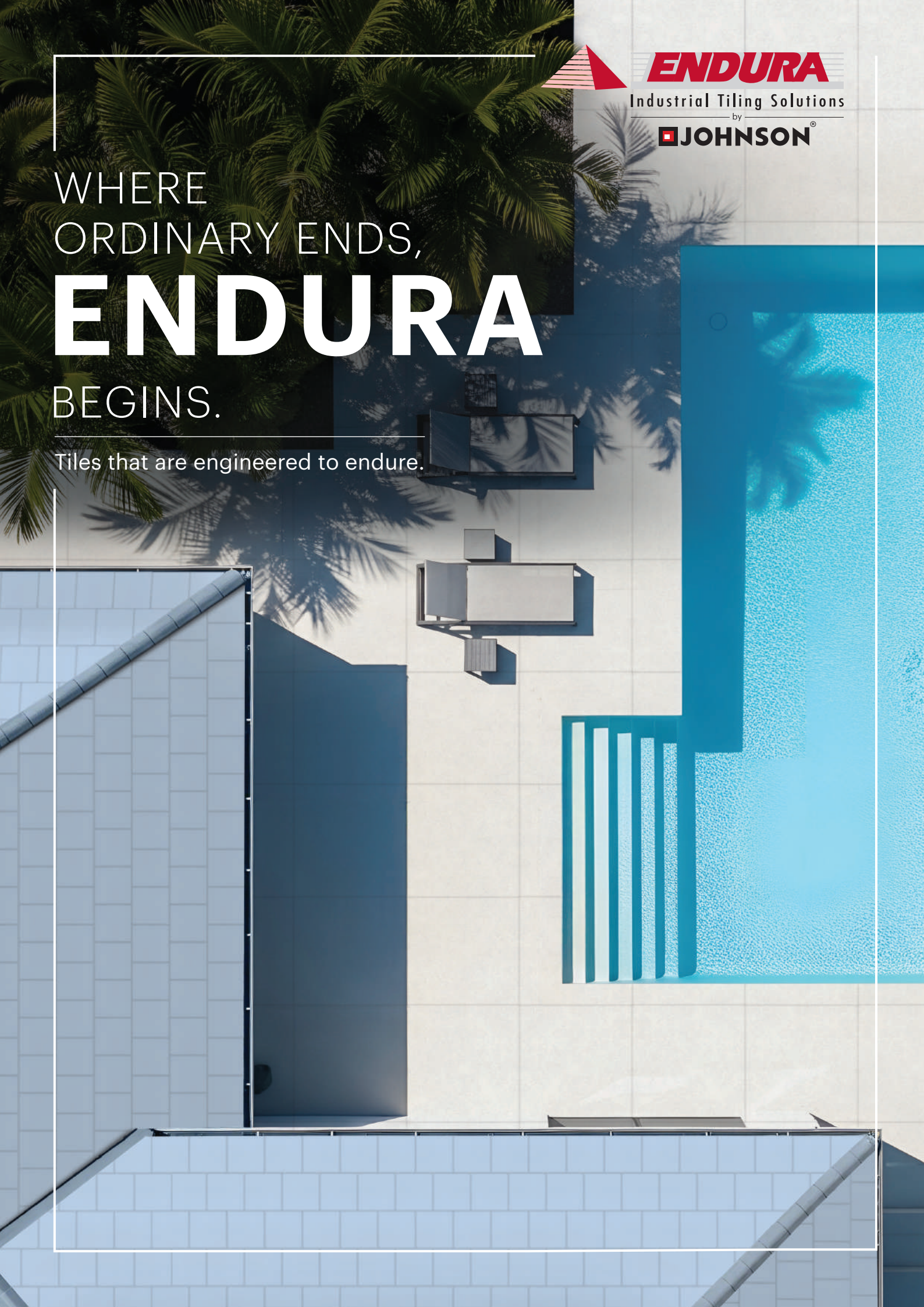
by

JOHNSON[®]

WHERE
ORDINARY ENDS,
ENDURA

BEGINS.

Tiles that are engineered to endure.



INDIA'S TILE EXPERTS SINCE 1958

H & R Johnson (India) has proudly built a 67-year legacy of delivering quality, innovation, and trusted tile solutions across Indian homes. Backed by a pan-India presence, DSIR-recognised R&D, and deep category expertise, we don't just meet industry standards; we consistently raise them.

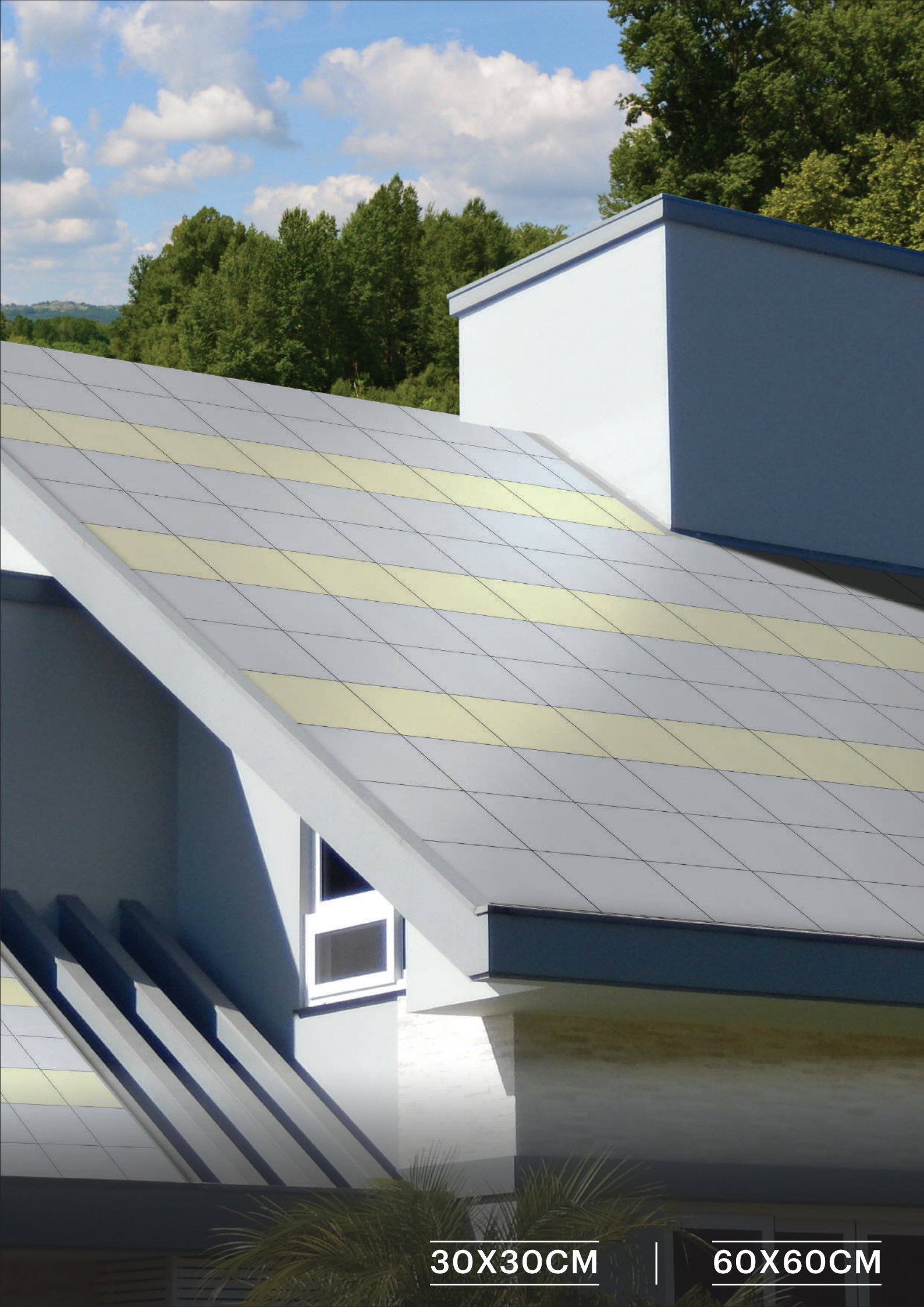
Our commitment to excellence is reflected in the Endura range, which is designed to meet modern demands with smart, functional products.

Endura Maxgrip R-value Anti-Skid Tiles offer exceptional slip resistance for wet bathroom surfaces, keeping you safe and always in style. Our Endura Cool Roof SRI Tiles use advanced glazing technology to reflect sunlight and lower surface temperatures by up to 15°C, helping maintain comfortable interiors through India's intense weather.

At H & R Johnson (India), we blend safety, style, and innovation to create tiles that elevate your living spaces.








30X30CM

60X60CM



TILES THAT ARE
ENGINEERED TO
ENHANCE COMFORT.

ENDURA **COOL ROOF TILES**





COOL BY DESIGN

WHAT MAKES ENDURA COOL ROOF TILES SO EFFECTIVE

Crafted through an ingenious glazing process, Endura Cool Roof Tiles are designed to reduce indoor temperatures naturally by reflecting solar heat and emitting absorbed radiation. This significantly lowers the thermal load on air conditioners, coolers, and other artificial cooling systems.

As a result, you can enjoy greater indoor comfort while reducing your electricity consumption, all while sitting cosily in the cooler comfort of your space.

Whether installed on terraces, balconies, or sun-facing exterior walls, these tiles continue to deliver high performance for years, even under extreme weather exposure.





UNDERSTANDING SRI:

THE SCIENCE BEHIND TILES

Solar Reflectance Index (SRI) is a measure of a surface's ability to reflect solar heat and release absorbed infrared radiation. The higher the SRI, the cooler the surface remains under sunlight.



SRI (Solar Reflectance Index) measures a surface's ability to reflect solar heat and release absorbed heat.



Endura Cool Roof SRI Tiles reflect sunlight and emit heat, helping keep interiors cooler.



As per LEED 2.2 requirements by USGBC, roof surfaces must have a minimum SRI of 78. Endura Tiles exceed this standard with an SRI of 90 in white colour.



TEST REPORT COOL ROOF SRI:

OFFICIAL TEST DATA



BUILDING ENERGY PERFORMANCE LABORATORY

Test Report for Solar Reflectance Index (SRI)



T-2189

Report No: BEPL/RPT/SRI/126

Report Date: 27th March 2014

1. Results of the measurement:

Solar Direct Reflectance

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
Endura White (D)	SRV03/14/1127	0.7397	0.7380	0.7394	0.7390

Emissivity

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
Endura White (D)	SRV03/14/1127	0.896	0.896	0.896	0.896

Solar Reflectance Index (SRI) under different wind conditions

Sample name	Sample ID	Solar Reflectance Index (SRI)		
		Low Wind($h_w=5 \text{ W m}^{-2} \text{ K}^{-1}$)	Medium Wind($h_w=12 \text{ W m}^{-2} \text{ K}^{-1}$)	High Wind($h_w=30 \text{ W m}^{-2} \text{ K}^{-1}$)
Endura White (D)	SRV03/14/1127	91	91	92

Surface Temperature (T_s) under different wind conditions

Sample name	Sample ID	Surface Temperature ($^{\circ}\text{C}$)		
		Low Wind($h_w=5 \text{ W m}^{-2} \text{ K}^{-1}$)	Medium Wind($h_w=12 \text{ W m}^{-2} \text{ K}^{-1}$)	High Wind($h_w=30 \text{ W m}^{-2} \text{ K}^{-1}$)
Endura White (D)	SRV03/14/1127	54.4	47.9	42.5

4. Certificate of Accuracy:

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

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

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

BEPL, Centre for Environmental Planning and Technology, K. L. Campus, Navrangpura, Ahmedabad- 380 009
Phone No: 079-26302470- Estn: 383, 26302740 Fax: +91 79 26302075 Email: ashujoshi@cept.ac.in/bepl@cept.ac.in
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SMART COOLING. SUSTAINABLE LIVING.

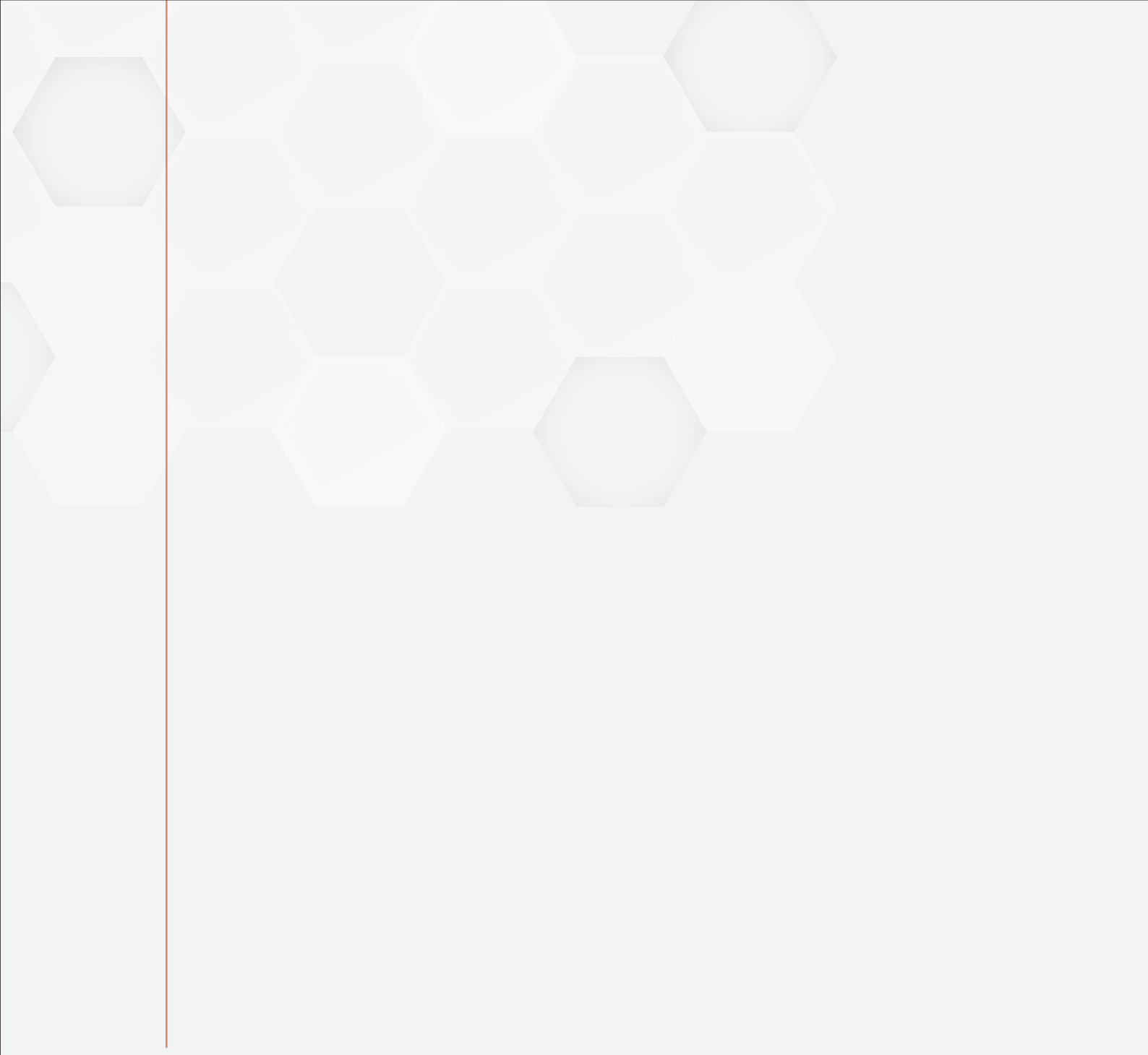
Endura has engineered a breakthrough glazing technology for its Cool Roof SRI Tiles, dramatically enhancing their ability to reflect solar heat and lower building temperatures.

This specialised glaze, made using fine alumino-silicate particles embedded with nano zirconium silicate and zinc oxide admixtures, is fired at extremely high temperatures to create a surface with SRI values exceeding 90 (in white).

The result? Tiles that reflect more sunlight, emit absorbed heat, and help reduce indoor temperatures by up to 15°C, leading to cooler spaces, lower energy bills, and a reduced environmental footprint.

While it's scientifically proven that white surfaces reflect the most heat, Endura also offers these tiles in 5 elegant pastel shades, all with SRI > 78, ensuring style doesn't come at the cost of performance. The satin-matte anti-skid finish adds functional safety for roofs, terraces, walkways, and more.



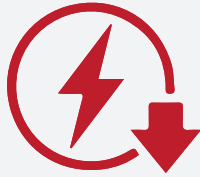


**WHY CHOOSE
ENDURA
COOL ROOF
SRI TILES**



Reduces surface temperature by up to 15°C

Improves indoor comfort naturally



Cuts down electricity consumption

Robust build with water absorption <0.5%



Available in 5 pastel shades + classic white

Anti-skid finish for safer walking surfaces



Reduces the urban heat island effect

Contributes to green building certifications





COMFORT-FIRST COVERAGE

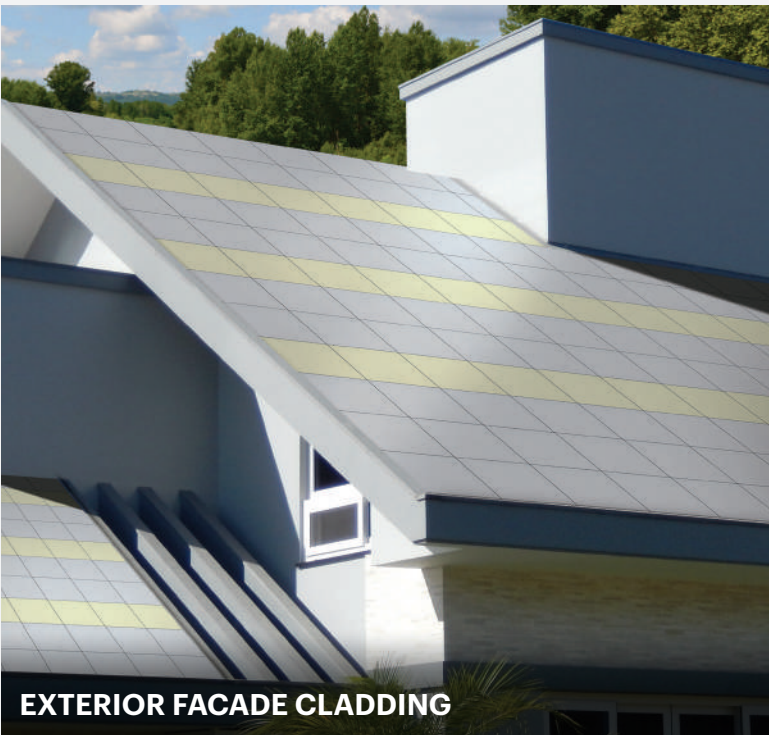
RECOMMENDED AREAS
FOR APPLYING ENDURA
COOL ROOF TILES



TERRACES AND BALCONIES



**BUILDING ROOFTOPS
(LOW AND STEEP SLOPES)**



EXTERIOR FACADE CLADDING



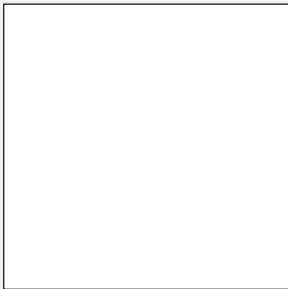
**OUTDOOR PAVEMENTS
AND WALKWAYS**

These tiles are suitable for roof slopes starting from 9.5° (2:12 rise-to-run ratio) and are compliant with IGBC and LEED Solar Reflectance Index (SRI) requirements for both low-slope and steep-slope roofing.

Additionally, when applied to non-roof areas such as pavements, they contribute to Heat Island Effect Reduction (Non-Roof) credits under IGBC/LEED green building certifications.

AVAILABLE SHADES

60X60CM

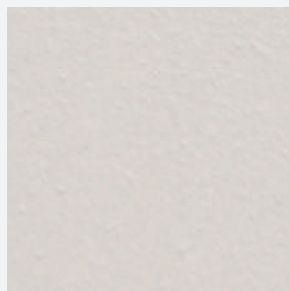


White

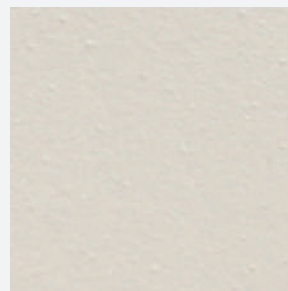
30X30CM



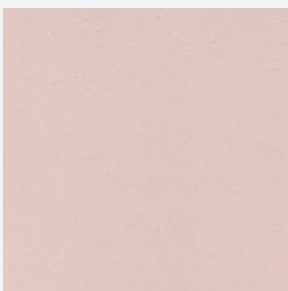
White



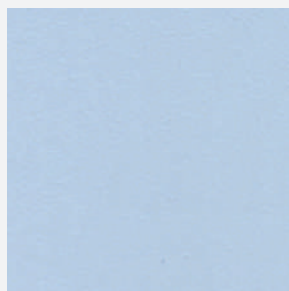
Almond



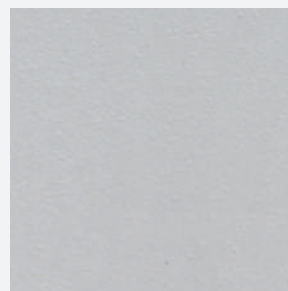
Ivory



Pink



Sky Blue



Light Grey



PACKAGING DETAILS

	SIZE	THICKNESS	TILES/BOX	APPROX AREA / BOX (SQ M)
Coolroof	60x60	9mm	4	1.44
	30x30	8mm	10	0.9
	30x30	10mm	8	0.72
	30x30	20mm	5	0.45

TECHNICAL SPECIFICATION - JOHNSON ENDURA COOL ROOF TILES

Sr. No	Test Description	ISO 13006:2018 / EN 14411 Group Bla Requirement	IS - 15622:2017 Group Blb
A) Dimension Quality		whichever is less applicable. Rectified	Rectified
1	Deviation in Length & Width	± 0.3% or ±1.0mm	±0.1%
2	Deviation in thickness	± 5% or ± 0.5mm	±5%
3	Straightness of sides	± 0.3% or ±0.8mm	±0.1%
4	Rectangularity	± 0.3% or ± 1.5mm	±0.1%
5	Surface flatness	± 0.4% or ±1.8mm	±0.5%
6	Surface Quality	Min 95%	Min 95%
B) Physical Properties			
1	Water Absorption	≤ 0.5%, individual Max 0.6%	0.08%<E≤3
2	Scratch hardness of surface (Moh's scale)		≥5
3	Flexural Strength (Average MOR)	≥ 35 N/mm ² , Individual 32N/mm ² , Min	≥30N/mm ² , Individual 27 min
4	Breaking Strength	≥1300N	≥1100N
5	Impact Resistance	report value	≥ 0.55
6	Crazing Resistance	Report cycle	4 cycle
7	Abrasion Resistance (PEI Rating)	Report abrasion class	Class II, Min
8	Coefficient of Friction		Manufacturer to declare
9	Bulk Density, in (g/cc)		≥2.0
10	Moisture expansion	Manufacturer to declare	Max 0.02 mm/m
11	Frost resistance	Manufacturer to declare	Manufacturer to declare
	Color Resistance to UV light	report result	report result
C) Chemical Properties			
	Resistance to Chemicals		
1	1) Resistance to Low concentrations of acids & alkalies	Manufacturer to declare	Manufacturer to declare
	2) Resistance to High concentrations of acids & alkalies	Manufacturer to declare	Manufacturer to declare
	3) Resistance to household chemicals and swimming pool salts	Min B	AA min
2	Stain resistance	Min Class 3	Class 1 min
D) Thermal Properties			
1	Linear Thermal Expansion	Report value	≤7 x 10 ⁻⁶ K ⁻¹
2	Thermal shock resistance	No damage	10 Cycle . Min
E) Solar Reflectance Index (SRI)		>78	-

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

ENDURA COOL ROOF TILE			Test method
8mm	10mm	20mm	
±0.1%	±0.1%	±0.1%	ISO 10545-2 / IS 13630-1
±4%	±4%	±4%	
±0.1%	±0.1%	±0.1%	
±0.1%	±0.1%	±0.1%	
±0.3%	±0.3%	±0.3%	
Min 95%	Min 95%	Min 95%	
≤ 0.5%	≤ 0.5%	≤ 0.5%	ISO 10545-3 / IS 13630-2
≥6	≥6	≥6	IS 13630 part 13
>35N/mm ²	>35N/mm ²	>35N/mm ²	ISO 10545-4 / IS 13630-6
> 1300 N	> 1800 N	> 8000 N	
≥ 0.55	≥ 0.55	≥ 0.55	ISO 10545-5 / IS 13630 -14
No damage	No damage	No damage	ISO 10545-11 / IS 13630- 9
Min PEI IV	Min PEI IV	Min PEI IV	ISO 10545-7 / IS 13630 - 11
≥0.3	≥0.3	≥0.3	ANSI A 326.3
>2.2	>2.2	>2.2	ASTM C373-16 / IS 13630-2
≤ 0.02 mm/m	≤ 0.02 mm/m	≤ 0.02 mm/m	IS 13630-part 3 /ISO 10545-10
No damage	No damage	No damage	ISO 10545-12 / IS 13630-10
No change in color	No change in color	No change in color	DIN 51094
GLA	GLA	GLA	ISO 10545-13 / IS 13630-8
GHA	GHA	GHA	
B(ISO)/AA (IS)	B(ISO)/AA (IS)	B(ISO)/AA (IS)	
Class 3 (ISO)/Class 1 (IS)	Class 3 (ISO)/Class 1 (IS)	Class 3 (ISO)/Class 1 (IS)	ISO 10545-14 / IS 13630-8
≤7 x 10 ⁻⁶ K ⁻¹	≤7 x 10 ⁻⁶ K ⁻¹	≤7 x 10 ⁻⁶ K ⁻¹	ISO 10545-8 / IS 13630 -4
No damage	No damage	No damage	ISO 10545-9 / IS 13630 -5
>90 (White colour)	>90 (White colour)	>90 (White colour)	ASTM E1980, EN 673, and EN411



30X30CM

60X60CM



THE BETTER THE GRIP,
THE STRONGER
THE TILING SOLUTION.

ENDURA MAXGRIP TILES





REDEFINING LIFESTYLE WITH GRIP THAT LASTS

We've always believed in redefining lifestyles, and with Endura MaxGrip, we stand firmly by it. Designed to offer exceptional slip resistance, this range ensures you stay grounded, literally and safely, in high-traffic or wet environments.

Whether it's a mall corridor, hospital ramp, or a bathroom at home, MaxGrip tiles combine safety, hygiene, durability, and style. Easy to clean and maintain, they are engineered for areas where grip is critical and beauty is still non-negotiable.

WHERE SAFETY MEETS STYLE

High-traffic areas are full of movement and sometimes risks. Wet floors can be more than unpleasant; they can be dangerous. Especially for elderly individuals, slips can lead to serious injuries like traumatic brain injury (TBI).

That's why we created Endura MaxGrip, a smart flooring solution that reduces the risk of slips and falls in both indoor and outdoor environments.

THE SCIENCE OF SLIP RESISTANCE (R-VALUE)

WHAT IS R-VALUE?

Slip resistance in tiles is measured using R Ratings, a classification based on how much grip a surface provides underfoot. The higher the R rating, the greater the slip resistance.



R RATING

SLIP RESISTANCE

- R9** Standard dry areas
- R10** Low-slip areas
- R11** Medium slip resistance
- R11** High slip resistance
- R12** Maximum slip resistance

TESTED TO DELIVER MAXGRIP

A. OIL-WET RAMP SLIP RESISTANCE TEST (DIN 51130)

This test simulates real-life slip conditions by applying oil to a surface and measuring the angle at which a person begins to slip while walking on a ramp. The higher the angle, the better the tile's grip.

Endura MaxGrip tiles are tested and rated up to R12, offering maximum anti-slip protection.

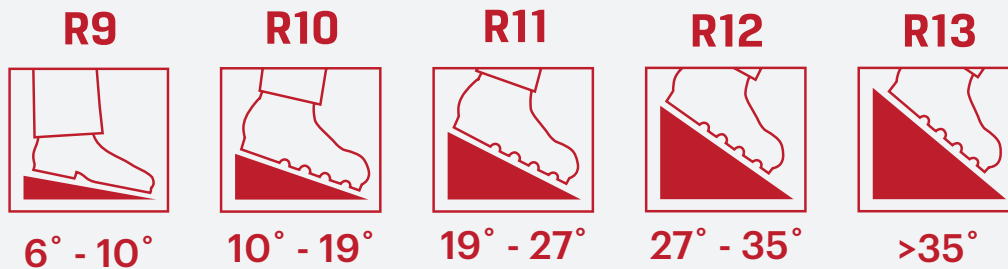
B. WET BAREFOOT SLIP RESISTANCE TEST (DIN 51097 – ABC RATING)

This test evaluates the slip resistance of tiles when walked on barefoot in wet conditions, using soapy water as the contaminant. It simulates real-world usage in areas like bathrooms, pool decks, and spas.

The tile is installed on a ramp and is gradually inclined while a test subject walks barefoot over the surface. The angle at which slipping occurs determines the tile's safety classification, ranging from A to C.

ASSESSMENT GROUPS

(FROM LOWER TO UPPER LIMIT VALUE)



CLASSIFICATION GROUPS	LOWER LIMIT VALUE	UPPER LIMIT VALUE
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12°



18°



- Barefoot hallways (mainly dry)
- Individual and group changing rooms with lockers
- Pool floors in non-swimmer areas, where the water level exceeds 80 cm
- Sauna and relaxation areas (mainly dry)



>18°



24°



- Barefoot hallways, if not classified in A
- Showers
- Area surrounding the disinfectant sprayers
- Pool surrounds
- Pool floors in non-swimmer areas in the tide effect pool
- Lift slab floors
- Paddling pools
- Steps and ladders outside the pool area
- Sauna and relaxation area, provided they are not assigned to A



>24°



- Steps and ladders leading into the water
- Stairways leading to diving boards and water slides
- Foot basins
- Inclined pool borders



MAXGRIP ADVANTAGE

MaxGrip Tiles are the first in India to come with an official R-value rating, delivering unmatched slip resistance for enhanced safety.

MaxGrip meets the highest levels across both, ensuring reliable performance in even the most demanding conditions.

Rated up to R12 for maximum slip resistance



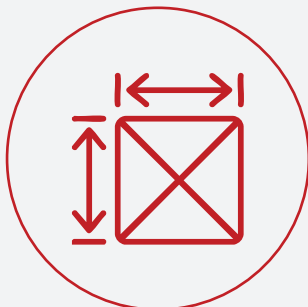
Suitable for both wet and dry conditions

Tested and certified by multiple global standards



Ensures safety for the elderly, children, and high-footfall zones

Easy to clean and maintain



Available in 60x60 cm and 30x30 cm formats

Durable, hygienic, and aesthetically versatile





**OTHER
TESTING
STANDARDS**



BOT-3000E Digital Tribometer:
Measures both static and dynamic coefficients of friction on dry and wet surfaces.



Pendulum Test (PTV):
Simulates foot contact and measures slip potential trusted worldwide for safety evaluation.



FOR EVERY STEP THAT MATTERS

RUN, WALK, HOP, OR SKIP

Endura MaxGrip gives you the confidence
to move freely, wherever you are,
because real safety starts underfoot.



BATHROOMS



GYMNASIUMS



POOL DECK & SHOWER AREA



COMMERCIAL BATHROOM



COMMERCIAL KITCHENS



SLOPES & RAMPS



EDUCATIONAL INSTITUTES



HOSPITALS

AVAILABLE SHADES

60X60CM



Crest Brown Plus



Creaz Cotto Plus



Azorte Beige Plus



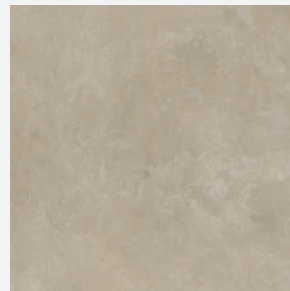
Azorte Beige Decor IV Plus



Creaz Cotto Deco Plus



Vivid Spring Plus



Altona Gris Plus



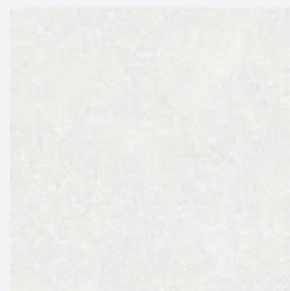
Ezee Bianco Plus



Modrenz Gris Plus



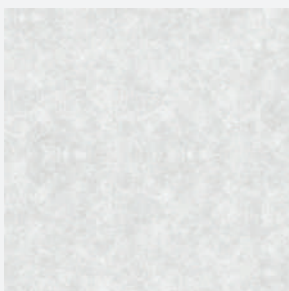
Cloud Nero Plus



Modrenz Smoke Plus



Vivid Cool Grey FPlus



Cloud Grey Plus

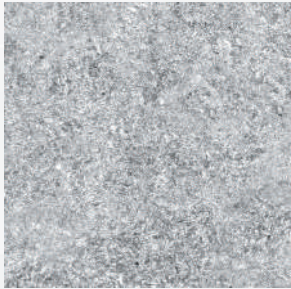


Glance Tarazo Beige Plus

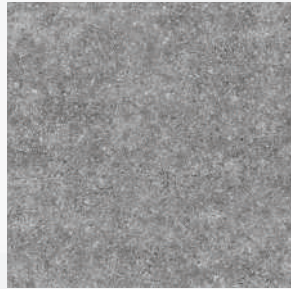


Glance Tarazo White Plus

30X30CM



Max Ash



Max Gris



Max Steel



Max Verde



Max Coto



Max Brick

PACKAGING DETAILS

	SIZE	THICKNESS	TILES/BOX	APPROX AREA / BOX (SQ M)
Maxgrip	30x30 cm - R10	10mm	10	0.9
	60x60 cm - R10	9mm	4	1.44

TECHINICAL SEPCIFICATION -JOHNSON ENDURA MAXGRIP TILES

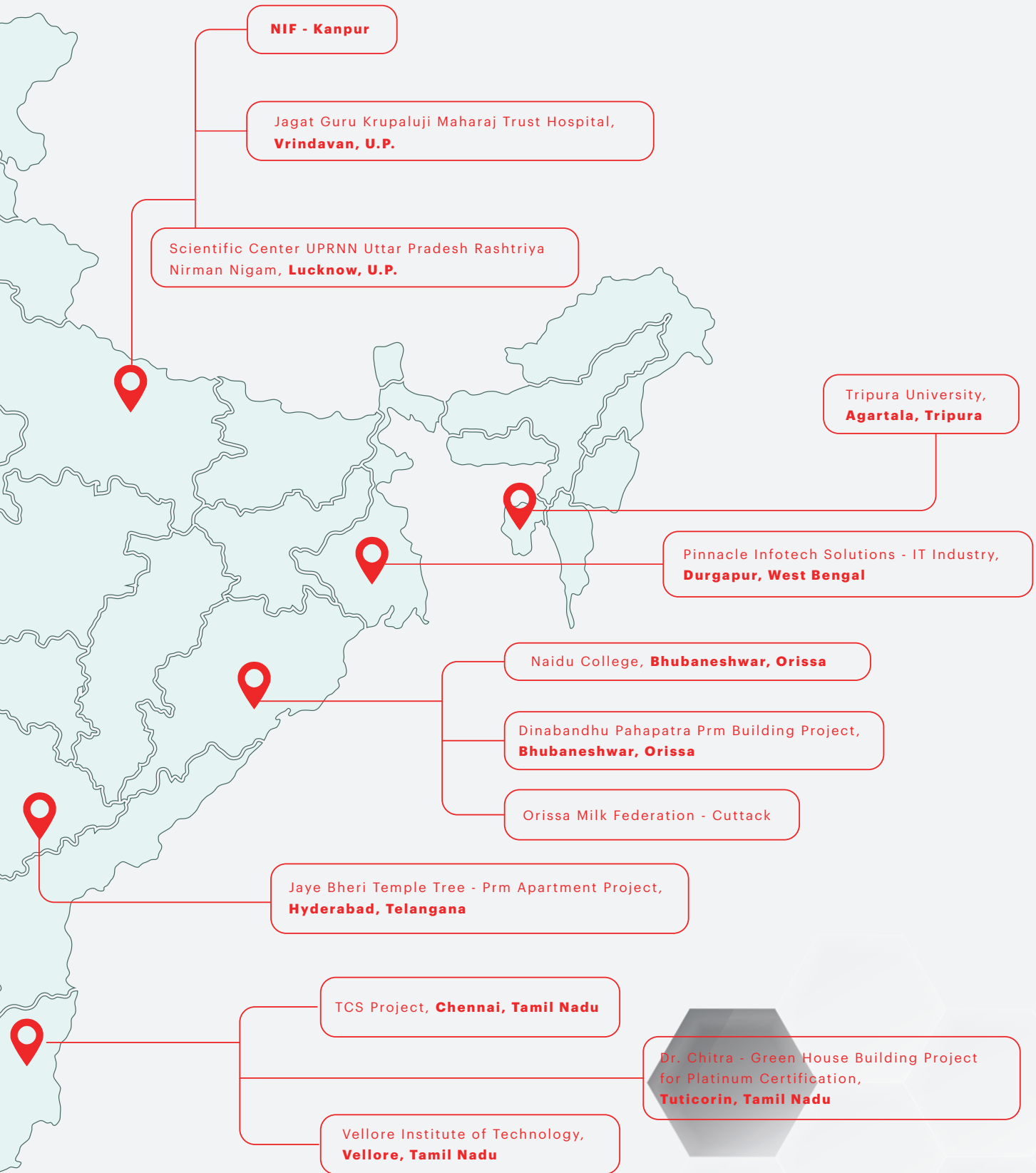
Sr. No	Test Description	IS - 4457:2007	IS - 15622:2017	Endura Maxgrip	Test Method
			Group Blb	30x30 R10	
A) Dimension Quality					
1	Deviation in Length & Width	±0.6%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in thickness	±5%	±5%	±4%	
3	Straightness of sides	±0.2%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	
5	Surface flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
B) Physical Properties					
1	Water Absorption	≤ 0.5%	0.08<E<3.	≤ 0.5%	IS 4457:2007 Annex C /IS 13630-2
2	A) Scratch Hardness of Surface (Moh's scale) - Unglazed tile	-	≥5	≥7	
	B) Scratch Hardness of Surface (Moh's scale) - Glazed tile	-	≥5	≥6	IS 13630 part 13
3	Flexural Strength (Average MOR)	≥ 35 N/mm ²	≥ 30 N/mm ²	≥ 35 N/mm ²	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	≥1800N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance		≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion resistance (Unglazed Tile)	<175mm ³	<175mm ³	<120mm ³	IS 4457:2007 Annex E /IS13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV-V	IS 13630 -11
8	# Anti-Slip Properties	-			
	a) Ramp Test ® Value)	-	-	R 10/R11/R12	DIN 51130
	b) Barefeet on Wet Area (A/B/C) Scale	-	-	A/B/C	DIN 51097
9	Frost Resistance	-	Manufacturer to declare	No damage	IS 13630-10
10	Density, in (gm/cc)	-	≥2	≥2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	Max 0.02 mm/m	Max 0.02 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
C) Chemical Properties					
1	Resistance to Chemicals				
	1) Resistance to Low concentrations of acids 6 alkaliies	Manufacturer to declare	Manufacturer to declare	ULB /GLB	ISO 10545-13
	2) Resistance to High concentrations of acids 6 alkaliies	Manufacturer to declare	Manufacturer to declare	UHB/GHB	
	3) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	UB /GB	UB /GB	
2	Stain resistance		Resistant	Resistant	ISO 10545-14
D) Thermal Properties					
1	Linear Thermal Expansion	-	≤7 x 10 ⁻⁶ K ⁻¹	≤7 x 10 ⁻⁶ K ⁻¹	IS 13630 part 4 / ISO 10545-8
2	Thermal shock resistance	-	10 Cycle,Min	No damage	IS 13630 part 5 /ISO 10545-9

TECHNICAL SPECIFICATION - JOHNSON ENDURA MAXGRIP R10 TILES

Sr. No	Test Description	IS - 4457:2007	IS - 15622:2017	Endura Maxgrip	Test Method
			Group Blb	60x60 R 10	
A) Dimension Quality					
1	Deviation in Length & Width	±0.6%	±0.1%	±0.1%	IS 4457:2007 Annex B / IS 13630-1
2	Deviation in thickness	±5%	±5%	±4%	
3	Straightness of sides	±0.2%	±0.1%	±0.1%	
4	Rectangularity	±0.2%	±0.1%	±0.1%	
5	Surface flatness	±0.3%	±0.5%	±0.3%	
6	Surface Quality	Min 95%	Min 95%	Min 95%	
B) Physical Properties					
1	Water Absorption	≤ 0.5%	0.08<E3.	≤ 0.5%	IS 4457:2007 Annex C /IS 13630-2
2	A) Scratch Hardness of Surface (Moh's scale) - Unglazed tile	-	≥5	≥7	IS 13630 part 13
	B) Scratch Hardness of Surface (Moh's scale) - Glazed tile	-	≥5	≥6	
3	Flexural Strength (Average MOR)	≥ 35 N/mm ²	≥ 30 N/mm ²	≥ 38 N/mm ²	IS 4457:2007 Annex D / IS 13630-6
4	Breaking Strength	≥1300N	≥1100N	≥1800N	IS 4457:2007 Annex D / IS 13630-6
5	Impact Resistance		≥0.55	≥0.55	IS 13630 -14
6	Deep Abrasion resistance (Unglazed Tile)	<175mm ³	<175mm ³	<120mm ³	IS 4457:2007 Annex E /IS13630-12
7	Resistance to Surface Abrasion of Glazed Tiles for Floor Application	-	Class II, Min	Min PEI IV-V	IS 13630 -11
8	# Anti-Slip Properties	-			
	a) Ramp Test [®] Value)	-	-	R 10	DIN 51130
	b) Barefeet on Wet Area (A/B/C) Scale	-	-	A	DIN 51097
9	Frost Resistance	-	Manufacturer to declare	No damage	IS 13630-10
10	Density, in (gm/cc)	-	≥2	≥2.2	IS 13630 part 2
11	Moisture Expansion	Manufacturer to declare	-	≤0.3 mm/m	IS 13630-part 3
12	Color Resistance to UV Light	-	-	No change in color	DIN 51094
C) Chemical Properties					
1	Resistance to Chemicals				ISO 10545-13
	1) Resistance to Low concentrations of acids & alkalies	Manufacturer to declare	Manufacturer to declare	ULB /GLB	
	2) Resistance to High concentrations of acids & alkalies	Manufacturer to declare	Manufacturer to declare	UHB/GHB	
	3) Resistance to household chemicals and swimming pool salts	Manufacturer to declare	UB /GB	UB /GB	
2	Stain resistance		Resistant	Resistant	ISO 10545-14
D) Thermal Properties					
1	Linear Thermal Expansion	-	≤7 x 10 ⁻⁶ K ⁻¹	≤7 x 10 ⁻⁶ K ⁻¹	IS 13630 part 4 / ISO 10545-8
2	Thermal shock resistance	-	10 Cycle,Min	No damage	IS 13630 part 5 /ISO 10545-9

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