

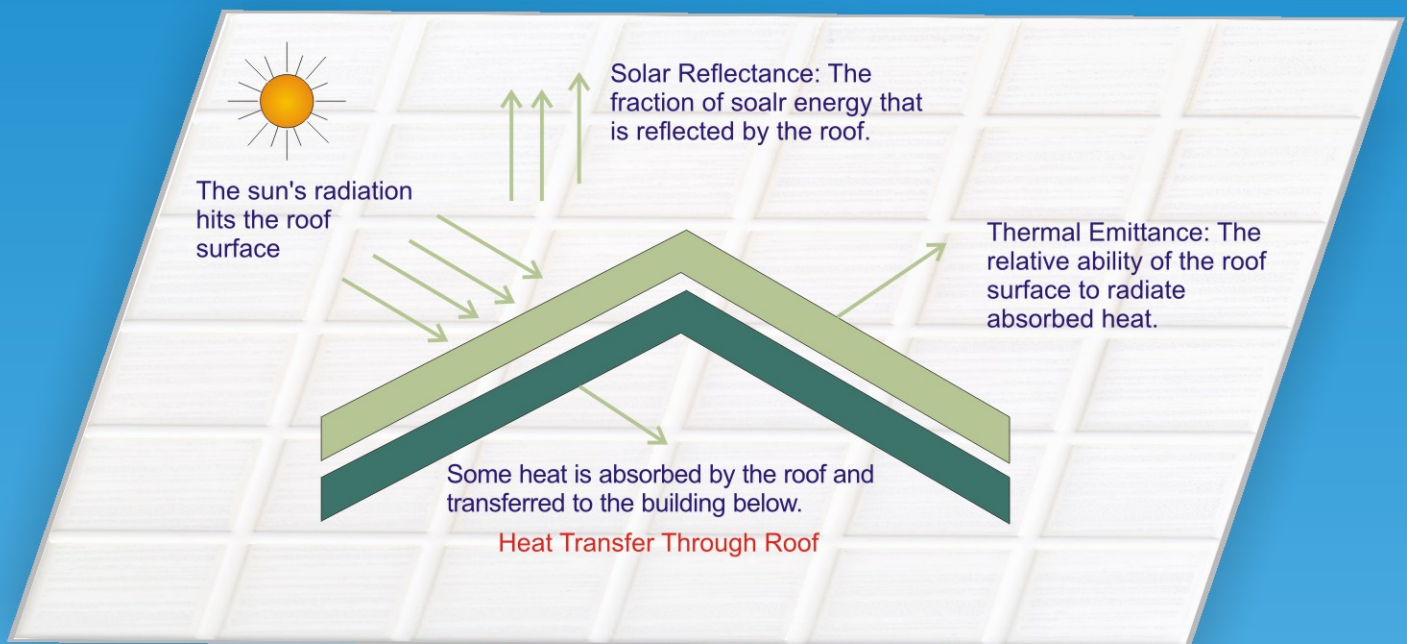
abc Weather Proof S.R.I* Tiles

(Ceramic Cool Tiles from Ceramic Master)

Govt of India design certified ceramic tile : 252175

*Solar Reflectance Index

PERMANENT SOLUTION FOR COOL ROOF AND WATER SEEPAGE THROUGH TERRACE



weatherproof tiles

The First Brand in Ceramic Cool Roof Tiles

www.abc ceramic.in

Cool Roof for Today, Tomorrow & Next Generations

Proprietor	G. Arivazhagan, M.Tech (ceramics) 30 years experience in ceramic industries
First Experiment on cool roof	2003 in own house
Selling	Over 1 million sq ft
Product Norms	ECBC (Energy Conservation Building Code) Bureau of Energy Efficient India
Key Properties	High R value and SRI value
ABC System	Water proofing, R value and SRI value Tailor made as per ECBC norms

With great success of SRI tiles, ABC is launching SRI coat, mortar and insulation hollow tiles to meet out or to exceed ECBC norms of combination characteristics of R value and SRI value. Many mfrs, imitators of ABC tile, suppliers, builders and clients superficially think that SRI tile is sufficient for terrace and by using SRI tile everything on terrace can be achieved. They generally forget an ECBC norm which clearly specifies R value (insulation) for a roof as well as SRI value. When these two values are combined, maximum benefits of cool roof can be achieved on a terrace along with water proofing.

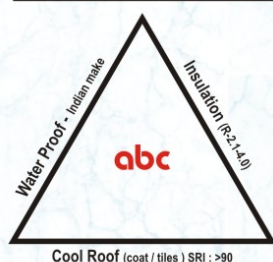
ABC provides various cool roof options suitable from century old buildings to newly constructed one. R-value calculations by IGBC Rating Architect are also provided. R value means insulation, resistance to heat. In other words, degree of weathering course required for a terrace. For more details, refer www.abceramic.in ABC is the first company to provide integrated services like water proofing, insulation (R value) and SRI products. Solar Reflectance Index can be achieved by heat resistant coat as well by ceramic glaze coat. Life of cool coat is single digit years and ceramic glaze coat is building's life time.

This is because ceramic glaze coat is processed at 1200 deg C and obviously much more stronger than either cool coat or white cement cool tiles. Thickness (9 mm or 20 mm) of tile does not play any role in cool roof (SRI value). Reflection is due to the characteristics of surface layer. The efficiency of cool roof is combination of R - value and SRI value

“For a building to be energy efficient, it is very important to prevent heat from entering through the building envelope and most importantly the roof. To achieve this, the roof should have a high R value as well as high Solar Reflective Index is essential.

The high SRI roofing tile and insulating hollow tile from AB Ceramics is an intelligent, cost effective and modern Green Building material, which helps to make the building energy efficient and water proof. The Products and Services from AB Ceramic Services are a great source for terraces to comply with or exceed ECBC norms to avail credits for IGBC Green Homes V2 and IGBC Green New Buildings”

Dhruv Futnani, LEED AP & IGBC AP, Architect & Green Building Consultant.



Business Associate :

ABC WEATHER PROOF S.R.I TILES (Design Regd #252175)

AB Ceramics Roof Tile is suitable for Terrace application and has the advantage of reflecting heat away from the roof, whereby reducing heat ingress in to the interior space and making it an ideal Green Building Material. The glaze coating contains a high % of Zirconium Oxide (9 - 8%). This is for heat resistance and crack resistance. >8% zirconium oxide content in glaze coat will give the best opaque surface which will reflect 95% of the solar heat. The heat entering from roof is reduced and hence indoor temperature is also reduced which results in energy savings on air conditioning loads and reduced indoor temperatures for naturally ventilated spaces.

ABC mortar will help to achieve better insulation and bonding to the terrace.

- ▶ ABC tile is light weight (1.0 to 1.3 kg/sq ft) against 4 to 5 kg/sq ft for conventional weathering course tiles.
- ▶ When these tiles are fixed in terrace, additional water proof is not required except cold joints.
- ▶ The R value of cool tile is negligible and can be improved by using abc system.
- ▶ ABC tile will last till life time of the building.
- ▶ Each tile is made water proof by nano water treatment just before fixing. This process exclusively developed by ABC. Beware of imitators!
- ▶ Porosity (pores) of tile is 32 - 36% by volume: More air space More insulation.

List of corporate clients

1) GAMESA Windmills Pvt Ltd, Gujarat.	30,000 sq.ft
2) SIDCO, Guindy, Chennai.	22,000 sq.ft
3) Indian Railway Institute for Civil Engineers, Pune.	15,000 sq.ft
4) Tamil Nadu Police Housing Corporation Ltd, Chennai.	> 7,00,000 sq.ft
5) ITC, Bangalore.	60,000 sq.ft
6) Shapoorji Pallonji Co., Orissa.	45,000 sq.ft
7) L & T, Hyderabad.	55,000 sq.ft
8) UrbanTree Infrastructures Pvt Ltd, Chennai (CREDAI member).	1,00,000 sq.ft
9) India Build Villas Development Pvt Ltd, Bangalore.	50,000 sq.ft
10) Combined Court Buildings, Tindivanam, PWD (C&M), Villupuram Div.	42,000 sq.ft

ABC S.R.I COOL COAT

AB Ceramics water proof coat is applied below the cool coat. Water proof coat is composed of silenated nano technology material which is patented and exported to more than 40 countries. Life of water proof coat is above 10 years under normal conditions.

COOL COAT is suitable for Terrace application and has the advantage of reflecting heat away from the roof, whereby reducing heat ingress in to the conditioned space and making it an ideal Green Building Material. The heat entering from roof is reduced and hence indoor temperature is also reduced which results in energy savings on air conditioning loads and reduced indoor temperatures for naturally ventilated spaces.

- @ The coat system can be applied in century old buildings as well as new buildings.
- @ It can be applied on pressed clay tiles (new or very old) and concrete surfaces.
- @ The R value of the cool coat is negligible, can be improved by using abc systems.
- @ Under normal conditions and maintenance, expected life is over 3 years.

ABC HOLLOW TILE

The hollow tile is suitable for terrace application and has the advantage of preventing heat ingress into the building by having high thermal resistance by air space and reflectivity by SRI coat or tiles. It is suitable for air-conditioned as well as naturally ventilated spaces. The hollow tile has the advantages of being waterproof & lightweight by replacing the need of brick bat coba treatment over a concrete roof.

The thermal properties along with these advantages of weight reduction, makes these tiles an ideal Green Building material. The clay hollow tile is 8" X 8" and 2" thick in size (200 mm X 200 mm, 50mm thickness) and the space can be hollow or filled with insulating material like lime or vermiculite. As per the calculations below the heat ingress is less than half as compared to a brick bat coba roof and hence the savings.

The Cool Coat further improves the efficiency by reflecting the heat away from the building whereby reducing heat ingress which results in energy savings in air conditioned buildings and cooler indoor temperatures for naturally ventilated buildings. The hollow tile can be reused after building demolition and does not need to be sent to landfill.

HOLLOW TILE + INSULATION + ABC COOL COAT

A hybrid system can be designed to reduce heat ingress through the roof by conduction and radiation is possible by combining the Hollow Clay Tile and High SRI coat /tile from AB Ceramics and insulation fill along with mortar.

HOW WE RECTIFY OLD & VERY OLD TERRACES ?

Most of the terraces are finished with pressed clay tiles or cement mortar. In due course of time, most of the buildings are damaged from moderate to severe conditions. There are hundreds of thousands of buildings from private sectors to Govt sectors. All such old terraces can be converted in to cool roof terraces. A cool roof terrace can save Rs. 10/- Sq.ft / year due to power savings.

How we handle such work?

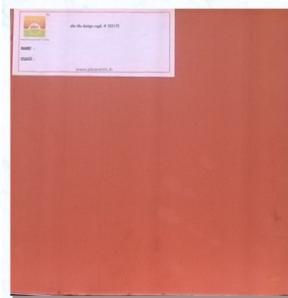
We clean, repair cracks and confirm level for gradients. Then we do water proofing. Depend on client choice, we apply either cool coat enriched with titanium di oxide or fix SRI Cool Tiles. All we do on 'as is where is basis'. No damage to the present terrace or no removal of existing clay tiles. Simply we fix Cool Tiles by using our specially developed paste. This process is effective and weight increase is very less.

Only 2 kg weight per sq ft (tiles + paste). Any terrace can withstand a weight of 2 kg per sq ft. No imitator of abc tile can do this job from their own idea.

ABC HR EXTERIOR COAT

Not only we cover terraces, we also treat building's exterior with heat resistant coat after water proofing.

- * Mfrs. of abc weather proof tiles
- * Water proofing (by using patented nano material)
- * White cool Coat
- * Other ceramic tiles at wholesale rate
- * Terrace work contract
- * Supply of Hydrated Lime
- * Supply of M-sand mortar for terrace



ABC HOLLOW TILE





ORIGINAL

No. 36163

GOVERNMENT OF INDIA
THE PATENT OFFICE
CERTIFICATE OF REGISTRATION OF DESIGN

Design No. 252175
Date 07/03/2013
Reciprocity Date*
Country

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 25-01 in respect of the application of such design to TILE in the name of SAMI ARIVASGAN GOVIND TRADING AS AB CERAMIC SERVICES, NATIONALITY INDIAN, ADDRESS AT 15, POOJA CHAMBERS, TRAJPAR, MORBI 363642, DIST: RAJKOT, GUJARAT, INDIA

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

INTELLECTUAL
PROPERTY INDIA

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PATENTS / DESIGNS / TRADEMARKS
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*The reciprocity date (if any) which has been allowed and the name of the country.
Copyright in the design will subsist for ten years from the date of Registration, and may under the terms of the Act and Rules, be extended for a further period of five years.
This Certificate is not for use in legal proceedings or for obtaining registration abroad

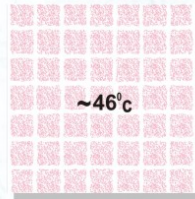
DR. RAJESHKUMAR H. ACHARYA,
H K ACHARYA & COMPANY ADVOCATE, PATENT
& TRADE MARKS ATTORNEY HK AVENUE, 19,
SWASTIK SOCIETY NAVRANGPURA,
AHMEDABAD 380009 INDIA

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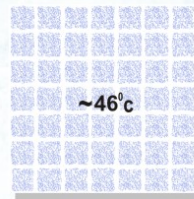
Surface temperature during peak Summer



12"x12" / 10"x10"



10"x10"



10"x10"



Clay Tile
~ 65^o c



Water remains as droplet.
This process exclusively developed by ABC.
Beware of imitators !

Technical Specifications

Sl No.	PROPERTY	ECBC NORMS	abc VALUE	TEST METHOD
1.	Solar Reflectance Index (Average of 5 years)	>78	> 90	ASTM E - 1980
2.	R - Value - Insulation (Degree of weathering course)	2.1 - 3.5	2.1 - 4.0	By calculation of roof assembly
3.	Water Absorption	-	16 - 18%	IS - 2690
4.	Water Absorption (after nano water treatment)	-	< 8%	IS - 2690
5.	Accelerated Weathering Test	-	Passed	IS - 101
6.	Bending Strength	-	> 100 kg / sq.cm	IS - 13630
7.	Scratch Hardness (Moh's)	-	5 - 6	IS - 13630
8.	Resistance to Stain, Acid and Salt vapor	-	Passed	IS - 13630

Note : Sl No. 1 & 2 are mandatory. Other reports are provided as bench mark to compare other cool roof products.

Important key points during tile fixing :

- ❖ Maintain necessary slope as per civil spec or preferably follow ECBC norms (R-value).
- ❖ Soak abc tiles in abc nano water, remove defective tiles. We replace.
- ❖ Add 15% abc plus powder in cement slurry. Use 3 mm spacers. Break joint is ideal.
- ❖ Use nano water for curing all joints.
- ❖ Mix 1 kg grout with water & 100 ml abc nano white and fill 3 mm gap.
- ❖ Get detailed tile fixing guidelines along with Delivery Challan.
- ❖ Shade variations in white color is inherent factor during tile mfg./fixing etc.
- ❖ No aesthetic complaint will be entertained after fixing tiles.



TM

AB CERAMIC SERVICES

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weatherproof tiles

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Information / data provided in this brochure are given in good faith and based on our practical experience. However, customers are requested to make their own evaluation before placing order.