

RAK-SANit
HEALTHCARE SOLUTIONS

Porcelain and Ceramic Tiles



RAK
CERAMICS





STAY SAFE WITH
RAK-SANIT

RAK-Sanit, a safe choice

2020: a new revolution of spaces and ways of living in them begins.

A transformation that makes it easy from the design stage, to include new sanitation measures to be able to create living and working spaces in total freedom and safety.

The R&D laboratories of of RAK Ceramics are always at the forefront of technology and were the first in the world to provide antibacterial solutions for interior design in 2009, thanks to the development of special certified antibacterial glazes.

Today, with the new RAK-Sanit program, RAK Ceramics offers an even wider range of solutions for floors, walls and sanitaryware, made with glazes that inhibit the growth of bacteria, thus reducing the possibility of contagion and contributing to create a healthier environment.

RAK-Sanit is the ideal solution for modern and safer schools, public and private offices, restaurants, hotels, laboratories and for all the spaces where hygiene is of primary importance.



PERMANENT PROTECTION

The methodology of application of this product integrated into the glaze during the production process, gives the pieces permanent protection.



CONSTANT PROTECTION

Continuous antibacterial protection for 24 hours; the technology of these products do not require the presence of light to activate it's biocide properties.



NON TOXIC

The antibacterial glazes are only detrimental to the bacteria. Not for any other living being.



NO AESTHETIC LIMITATIONS

The colors and finishes, matte, gloss, rustic, transparent, opaque, can be selected to suit the aesthetic needs of the pieces. The antibacterial glaze does not limit the development of the colours, finishes and textures of the pieces and can be selected to suit the aesthetic needs.



BAD ODOURS REDUCTION

Reduction of bacterial degradation on the surface of ceramic tiles to reduce odours.



EXTEND THE LIFE OF YOUR CERAMIC TILE

Prevention of the degradation of the surface of the tile produced by bacterias.



MORE EFFECTIVE DISINFECTION

The action of the antibacteria is a perfect complement to the daily cleaning of the tile. Ideal for use in hospitals, nursery schools, supermarkets, etc.



SUITABLE FOR ALL AREAS WHERE HIGH PERFORMANCE OF HYGIENE, CLEANLINESS, SAFETY AND EASE OF MAINTENANCE IS REQUIRED

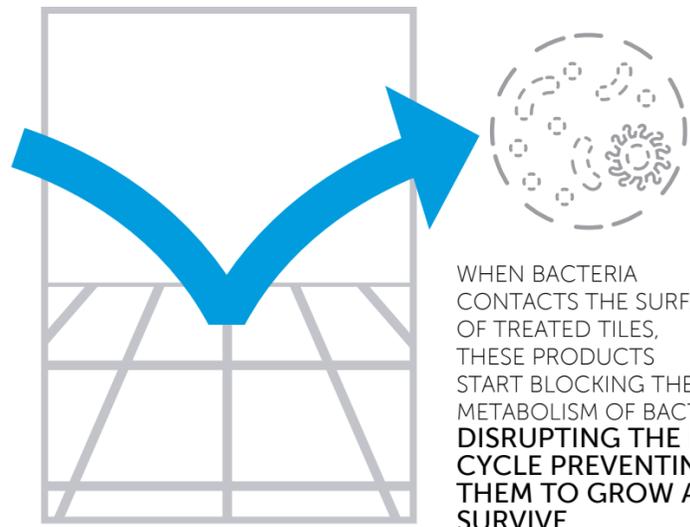
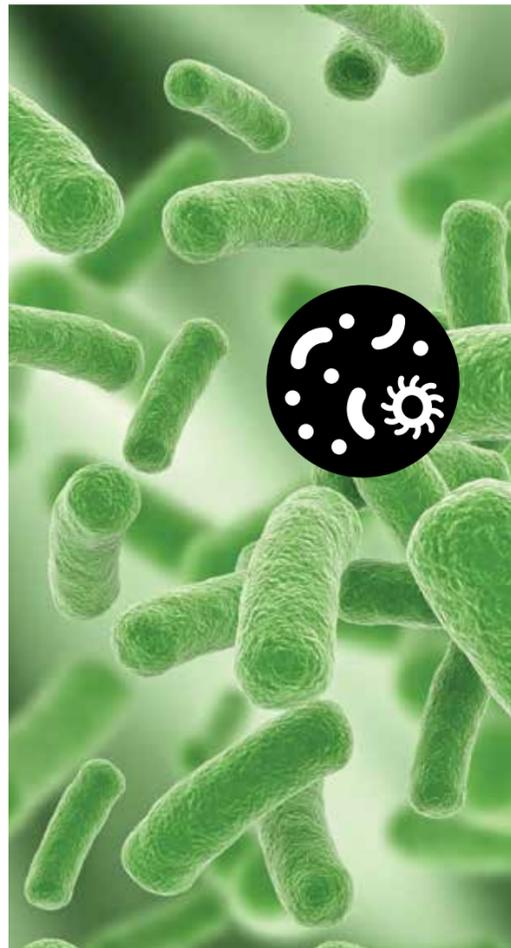
kindergartens, schools, swimming pools and sports facilities, changing rooms, private and commercial kitchens, restaurants, canteens, medical and food industries, etc.



AN INVISIBLE PROTECTION

RAK-Sanit is a complete solution that includes Gres Porcelain and Ceramic tile collections that reduce bacterial contamination and contribute to a healthier living and working environment owing to its antibacterial properties given by silver nitrate compounds.

RAK-Sanit antibacterial collection of wall and floor tiles feature antibacterial technology which is integrated into the tile surface permanently. Once bacteria comes into contact with the tiled surface, the silver ions initiate the elimination cycle. Silver ions in the antibacterial tile surface bind to enzymes, proteins, cell membranes and the DNA of the microbe to damage DNA and block reproduction. This results in the death of the organism.



A DEEP PROTECTION, INCORPORATED IN THE TILE

This specialised glaze is incorporated into the glaze on the tile during the manufacturing process. The firing of the glaze into the tile at high temperatures creates a surface that inhibits the growth of microbes that come in contact with the tile.

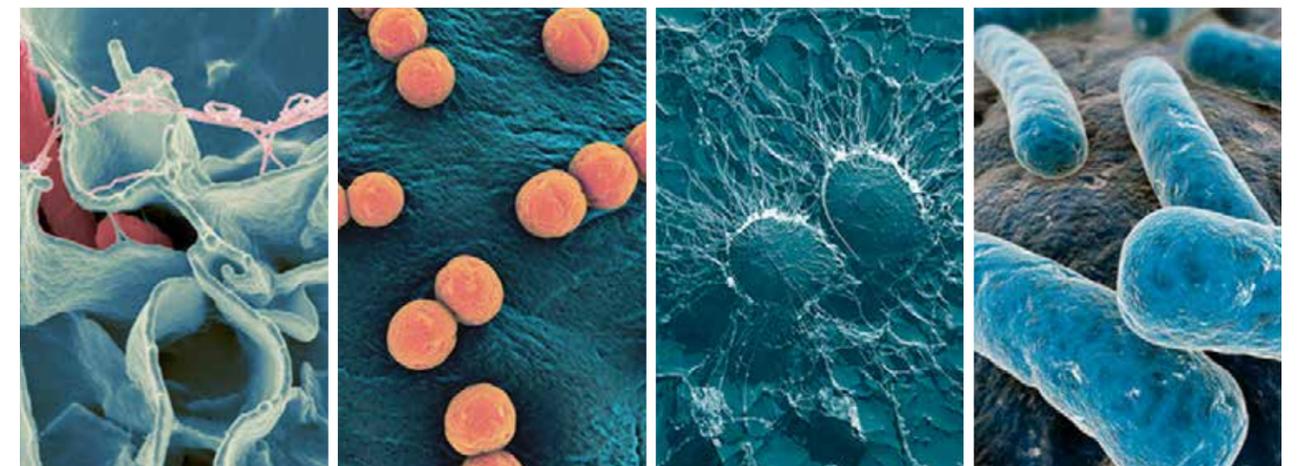
Effective in 8 hours

PROTECTED TILES WITH RAK-SANIT GLAZES



UNPROTECTED TILES WITH REGULAR GLAZES

HIGHLY EFFECTIVE AGAINST UNWANTED PARTNERS



ESCHERICHIA COLI

STAPHYLOCOCCUS AUREUS

LISTERIA MONOCYTOGENES

SALMONELLA

TESTED FOR YOUR HEALTH



Certified effectiveness

RAK-Sanit tiles are tested by CERFRIT Laboratory – USA, according to the **Japanese Standard JIS Z 2801:2000**. This Standard specifies the testing methods to evaluate antibacterial activity and efficacy on bacteria on the surface of the products.

RAK-Sanit tiles are tested by METS Laboratory – UAE, according to the **International Standard ISO 27447:2019**. This Standard specifies the test method for antibacterial activity of semiconducting photocatalytic materials. Test method for the determination of the antibacterial activity of materials that contain a photocatalyst or have photocatalytic films on the surface, by measuring the enumeration of bacteria under irradiation of ultraviolet light.

| Test Microorganism | Test method | Average number of bacteria in NON treated sample (cfu) | Average number of bacteria in a treated sample (cfu) | Reduction of Bacteria Log (Rdn) | Antibacterial Activity % |
|-----------------------|----------------|--|--|---------------------------------|--------------------------|
| Staphylococcus aureus | ISO 27447:2019 | 5.8×10^4 | 5.2×10 | 3.04 | 99.91 |
| Escherichia coli | ISO 27447:2019 | 4.0×10^4 | 4×10 | 3.00 | 99.9 |



8h

99.9%
**Antibacterial
&
Hygiene Glaze**

Bactericide action is very fast and effective with a very strong decrease of bacteria colonies.

More than 99.9% of bacteria are killed.
Antibacterial action tested both in dark and light.



HOTELS, CONFERENCE CENTRES,
RESTAURANTS AND CANTEENS



LABORATORIES AND MEDICAL OFFICES



WELLNESS CENTRES, GYMS,
POOLS, LEISURE CENTRES



SCHOOLS, KINDERGARTEN,
PLAYGROUNDS



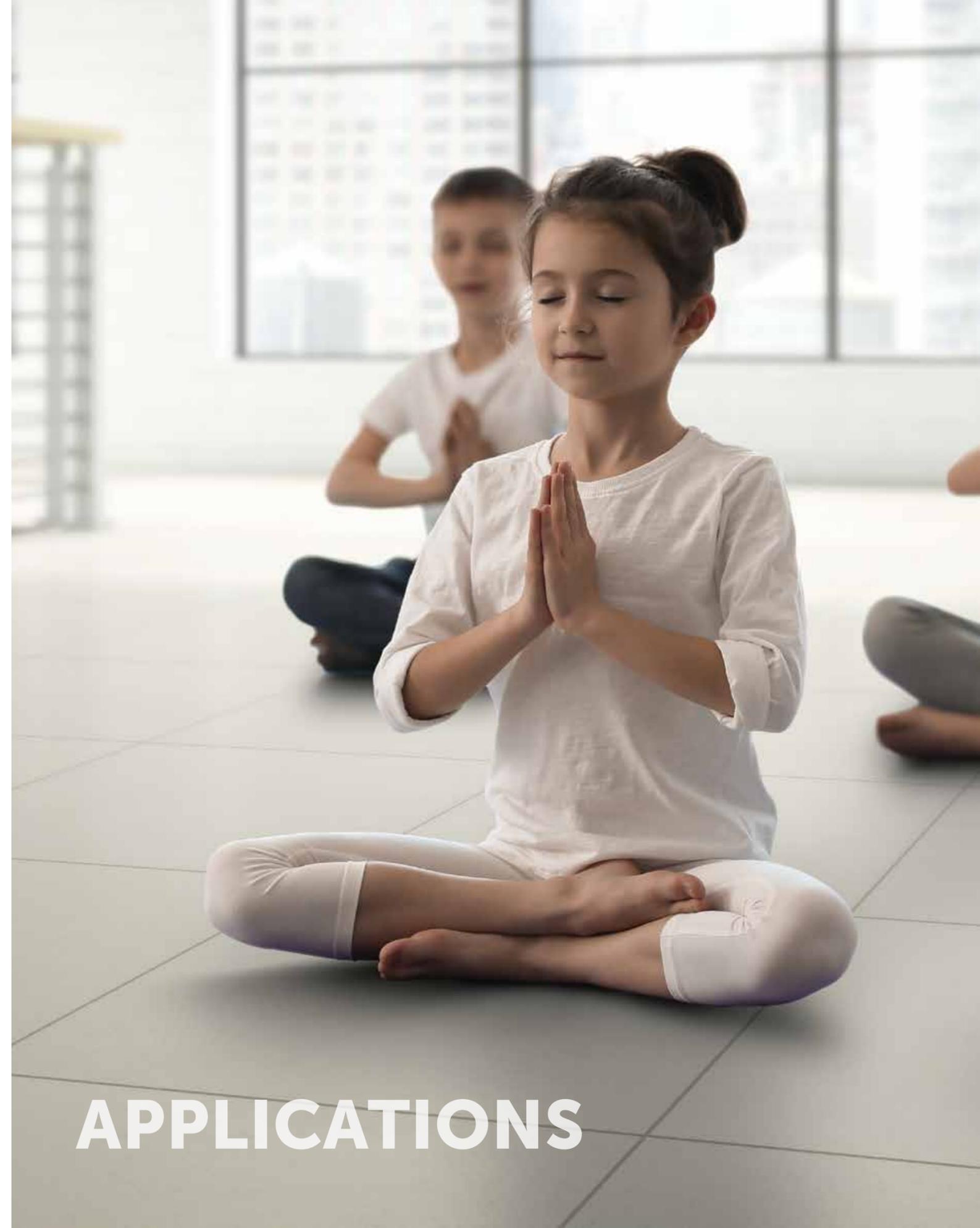
PUBLIC AND PRIVATE OFFICES



PUBLIC BATHROOMS



RESIDENTIAL



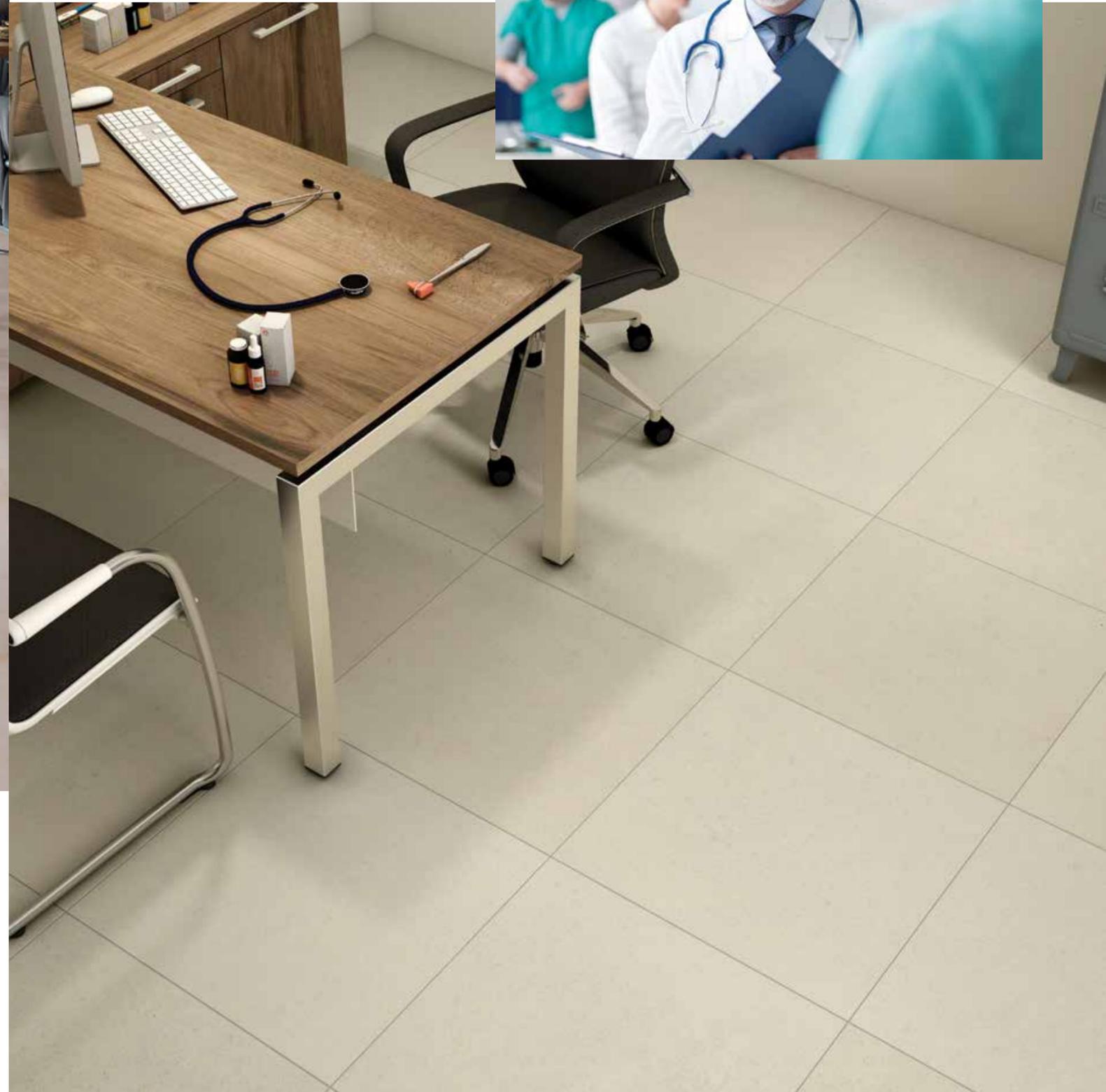
APPLICATIONS



HOTELS, CONFERENCE CENTRES,
RESTAURANTS AND CANTEENS



LABORATORIES AND MEDICAL OFFICES





WELLNESS CENTRES, GYMS,
POOLS, LEISURE CENTRES



SCHOOLS, KINDERGARTEN,
PLAYGROUNDS



PUBLIC BATHROOMS



PUBLIC AND PRIVATE OFFICES



SPECIFYING ANTIBACTERIAL TILES

Specifying the correct floor and surfaces for spaces where hygiene is of primary importance is a complex and important decision making process.

RAK Ceramics is well experienced in this area and its products have been installed in many schools, offices and hotels all over the world.

RAK-Sanit product range has been specifically manufactured to meet the requirements of the highest Health Standards. RAK Ceramics also offers a bespoke service for projects with specific requirements.

PROJECT SPECIFICATION FOR RAK-SANIT SOLUTIONS

Antibacterial Gres Porcelain / Ceramic tiles that reduce bacterial contamination up to 99.9% owing to its antibacterial properties given by silver nitrate compounds (Standard ISO 27447:2019 or JIS Z 2801:2000). Standard antibacterial testing for ISO 22447.

Mandatory Antibacterial activity:

- Active 24h
- Tested both in the dark and in the light
- Effective on the surface
- Permanent, integrated into the product during the firing cycle at temperatures above 1200 degrees centigrade
- Durable over time for the entire life of the ceramic product.

ANTIBACTERIAL GROUTS

We recommend specifying the use of **antibacterial grouts for joints**, available in the market, to ensure safe protection over the entire surface.

For installation, cleaning and maintenance, we recommend following the normal procedures and indications contained in the catalogs and technical manuals of gres porcelain / ceramic tiles. Avoid abrasive products and detergents containing waxes or filming products, do not apply resins, waxes or protective agents.



PROJECTS



Porcelain Tiles

BASIC CONCRETE SANIT

SURFACE SANIT

SIGURT WOOD SANIT

Ceramic Tiles

CREMA MARFIL SANIT

SENSATION SANIT

STATUARIO SANIT



Basic Concrete Sanit



basic concrete sanit beige



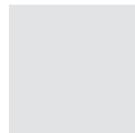
basic concrete sanit grey



basic concrete sanit dark grey

Size

60x60



| Name | Code | Size(CM) |
|--------------------------------|--------------------|----------|
| basic concrete sanit beige | A06GBCCS-BEE.M6XoR | 60x60 |
| basic concrete sanit grey | A06GBCCS-GRY.M6XoR | 60x60 |
| basic concrete sanit dark grey | A06GBCCS-DKG.M6XoR | 60x60 |

Surface Sanit



surface sanit cool grey



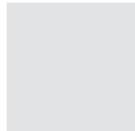
surface sanit sand



surface sanit off white

Size

60x60



| Name | Code | Size(CM) |
|-------------------------|--------------------|----------|
| surface sanit off white | A06GSRFS-OWH.MoXoR | 60x60 |
| surface sanit cool grey | A06GSRFS-CGY.MoXoR | 60x60 |
| surface sanit sand | A06GSRFS-SND.MoXoR | 60x60 |





Sigurt Wood Sanit



sigurt wood sanit african ash



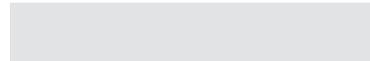
sigurt wood sanit scandinavian oak



sigurt wood sanit siberian grey

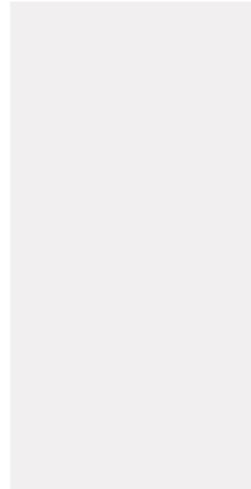
Size

19.5x120



| Name | Code | Size(CM) |
|--------------------------------------|--------------------|----------|
| sigurt wood sanit african ash | A99GSWDS#AFA.M7X5R | 19.5x120 |
| sigurt wood sanit scandinavian oak | A99GSWDS#SAK.M7X5R | 19.5x120 |
| sigurt wood sanit warm siberian grey | A99GSWDS#SGR.M7X5R | 19.5x120 |

Ceramic Tiles Sanit



sensation sanit white



statuario sanit white



cremamarfil sanit beige

Sizes

30x60 20x60



| Name | Code | Size(CM) | Code | Size(CM) | Code | Size(CM) | Code | Size(CM) |
|-------------------------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|
| sensation sanit white | A14RSNST-WHE.MoXoR | 30x60 | A26RSNST-WHE.MoXoU | 20x60 | A14RSNST-WHE.GoXoR | 30x60 | A26RSNST-WHE.GoXoU | 20x60 |
| statuario sanit white | A14RSBCS-WHE.MoXoR | 30x60 | A26RSBCS-WHE.MoXoU | 20x60 | A14RSBCS-WHE.GoXoR | 30x60 | A26RSBCS-WHE.GoXoU | 20x60 |
| cremamarfil sanit beige | A14RCMLS-BEE.MoXoR | 30x60 | A26RCMLS-BEE.MoXoU | 20x60 | A14RCMLS-BEE.GoXoR | 30x60 | A26RCMLS-BEE.GoXoU | 20x60 |



TECHNICAL FEATURES

PORCELAIN TILES (B1a - GL) :

Porcelain tiles are manufactured using pure, selectively imported raw materials mixed using the most advanced extraction and sorting techniques; they are obtained with a production process similar to that of single-fired tiles.

The resulting product is top-quality porcelain tile, obtained by raw materials wet grinding, followed by partial drying by spraying, silo storage to allow homogenization of properties, and pressing with highly efficient hydraulic presses up to specific pressures more than 500 kg/cm². The high pressure combined with high firing temperature exceeding 1200 °C results in highly compact & strong ceramic surface with very low water absorption (lower than 0.1% according to UNI EN ISO 10545-3) and extremely high mechanical resistance (average value exceeding 50 N/mm² according to UNI EN ISO 10545-4).

Thanks to their low porosity, these porcelain tiles are frost-proof and rated as belonging to the B1a GL class according to the European Standard UNI EN 14411 which requires water absorption ≤ 0.5%.

The MoR (modulus of rupture) in accordance with UNI EN ISO 10545-4 results to 50 N/mm² while the required value is 35 N/mm². RAK Ceramics porcelain tiles are available in a wide range of designs, sizes and finishes.

ADVICE ON LAYING

Although our porcelain tiles can be installed using traditional cement mortars, we advise using modern adhesives. While installing on wall, the two-layer spreading system is recommended to perfectly wet the back of the tile.

Quickly dipping each tile in water before installation will remove any dust on the back of the tile for perfect adhesion. Do not wet the tiles if you are using vinyl, acrylic resin adhesives or two-component organic-solvent based adhesive.

It is advisable to incorporate suitable shrinkage - flexion joints (movement/ expansion joints) when installing on large floors: the joints should never be spaced more than 4 - 5 linear meters apart indoors and 3 linear meters apart outdoors. Be careful while using strong coloured grouts as they might leave stains on the surface of the tiles that may be difficult to remove later.

TECHNICAL CHARACTERISTICS - PORCELAIN TILES (B1a - GL)

| Test Description | Standard Test Method | International Standard ISO 13006 | RAK Ceramics Specifications | |
|--|----------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | (Rectified) | (Unrectified) |
|  Length & Width | BS EN ISO 10545-2 | +/- 0.6% | +/- 0.1% | +/- 0.3% |
|  Thickness | BS EN ISO 10545-2 | +/-5.0% | +/- 5.0% | +/- 5.0% |
|  Rectangle Squareness | BS EN ISO 10545-2 | +/- 0.6% | +/- 0.2% | +/- 0.4% |
|  Straightness of sides | BS EN ISO 10545-2 | +/- 0.5% | +/- 0.2% | +/- 0.3% |
|  Surface Flatness | BS EN ISO 10545-2 | +/- 0.5% | +/- 0.3% | +/- 0.3% |
|  Water Absorption | BS EN ISO 10545-3 | <=0.5% | <=0.4% | <=0.4% |
|  Modulus of Rupture | BS EN ISO 10545-4 | >=35 N/mm ² | >=40 N/mm ² | >=40 N/mm ² |
|  Breaking Strength | BS EN ISO 10545-4 | >=1300N | >=1500N | >=1600N |
|  Resistance to surface abrasion | BS EN ISO 10545-6 | Manufacturer to state Abrasion Class | PEI Class 2 -5 | PEI Class 2 -5 |
|  Linear Thermal Expansion | BS EN ISO 10545-8 | <=9x10 ⁻⁶ /°C ¹ | <=7x10 ⁻⁶ /°C ¹ | <=7x10 ⁻⁶ /°C ¹ |
|  Resistance to Thermal Shock | BS EN ISO 10545-9 | No visible defect | No visible defect | No visible defect |
|  Crazing Resistance | BS EN ISO 10545-11 | No crazing | No crazing | No crazing |
|  Frost Resistance | BS EN ISO 10545-12 | No visible damage | No visible damage | No visible damage |
|  Resistance to chemicals | BS EN ISO 10545-13 | No visible defect | No visible defect | No visible defect |
|  Resistance to stains | BS EN ISO 10545-14 | Manufacturer to state class | Stain removed Min.class 4 | Stain removed Min.class 4 |
|  Colour Resistance to UV Light | DIN 51094 | No change in color | No change in color | No change in color |

Note: Shade variation across the batches is inherent to the manufacturing process and the pre-laying colour comparison is recommended

TECHNICAL FEATURES

RED BODY CERAMIC TILES (BIII):

Red body Ceramic tiles are made with finest quality clays and with chamotte (a ceramic raw material with high percentage of silica). These raw materials are submitted to dry grinding and suitably mixed and wet and then pressed with hydraulic presses. Quick-cycle support firing is obtained via roller kilns reaching temperatures of approximately 1100 °C. After biscuit glazing, the vitrified product is sintered in a single-layer roller kiln at approximately 1030 °C. The resulting wall tiles have an average bending strength that is higher than 15/ m² in accordance with the UNI EN ISO10545-4 standard and a water absorption level that is higher than 10 %; they belong to the BIII (GL) group according to the UNI EN 14411 standard. This class of products shows virtually no shrinkage during firing; therefore such dimensional consistency results in extremely easy laying.

ADVICE ON LAYING

Ceramic Red body tiles can be laid using either tile adhesives or cement mortar. Under no circumstances should the tiles be wet before laying when using acrylic or vinyl resin based adhesives or two- component organic solvent based adhesives. When laying large sized tiles it is best to adopt the two layer spreading method and, when the laying surface is very large, to provide for suitable expansion joints which must not be spaced more than 4-5 linear meters apart from one another.

IMPORTANT POINTS TO REMEMBER WHILE LAYING THESE TILES

When laying on wet concrete or plaster, leave to dry for at least one week for each centimetre of thickness.

When laying on brick, never lay on tile adhesive measuring more than 4-5 mm in thickness. For laying on flexible supports (for example plasterboard panels, polymer panels, etc.) which may result in movement of the tiles, we advise laying on tile adhesive measuring no more than 2-3 mm in thickness and to use class C2 or D1 glues. For laying on waterproof brick, which prevents the release of damp, we advise laying on tile adhesive measuring no more than 3 mm in thickness and to use class C2 or D1 glues.

Avoid laying without expansion joints or joints where stress due to expansion is released directly onto the tile.

TECHNICAL CHARACTERISTICS - RED BODY CERAMIC TILES (BIII)

| | Test Description | Standard Test Method | International Standard ISO 13006 | RAK Ceramics Specifications |
|---|--------------------------------|----------------------|--------------------------------------|-----------------------------|
|  | Length & Width | BS EN ISO 10545-2 | +/- 0.5% | +/- 0.3% |
|  | Thickness | BS EN ISO 10545-2 | +/-10% | +/- 5.0% |
|  | Rectangle Squareness | BS EN ISO 10545-2 | +/- 0.5% | +/- 0.4% |
|  | Straightness of sides | BS EN ISO 10545-2 | +/- 0.3% | +/- 0.3% |
|  | Surface Flatness | BS EN ISO 10545-2 | +0.5% / -0.3% | +/- 0.3% |
|  | Water Absorption | BS EN ISO 10545-3 | 10% < E <= 20% | 10% < E <= 18% |
|  | Modulus of Rupture | BS EN ISO 10545-4 | | |
| | Thickness > = 7,5mm | | >=12 N/mm ² | >=16 N/mm ² |
| | Thickness < = 7,5mm | | >=15 N/mm ² | >=16 N/mm ² |
|  | Breaking Strength | BS EN ISO 10545-4 | | |
| | Thickness > = 7,5mm | | >=600N | >=650N |
| | Thickness < = 7,5mm | | >=200N | >=400N |
|  | Resistance to surface abrasion | BS EN ISO 10545-7 | Manufacturer to state Abrasion Class | Class 2 - 4 |
|  | Resistance to Thermal Shock | BS EN ISO 10545-9 | No visible defect | No visible defect |
|  | Crazing Resistance | BS EN ISO 10545-11 | No crazing | No crazing |
|  | Resistance to chemicals | BS EN ISO 10545-13 | No visible effect | No visible effect |
|  | Resistance to stains | BS EN ISO 10545-14 | Manufacturer to state class | Stain removed Min. class 4 |
|  | Scratch Hardness : (Moh's) | EN 101 | - | 4 - 6 |

Note: Shade variation across the batches is inherent to the manufacturing process and the pre-laying colour comparison is recommended

ICONS

TYOLOGY



EDGE



SURFACE STRUCTURE



Tiles with an even and regular surface, free from perceptible projections, lumps, or indentations.



Tiles with an uneven, irregular surface, with a structure perceptible to the eye and touch.

FINISH



Pressed tiles without further work after firing.

SURFACE LOOK

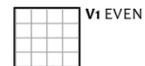


Natural looking surface.

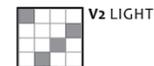


The resulting surface has a medium degree of reflection.

COLOUR VARIATIONS



The least amount of shade variation attainable.



Light to moderate shade variation within each carton.

INDICATIONS FOR USE



SUGGESTED APPLICATIONS



Residential areas, hotel rooms, bathrooms



Indoor public areas subject to medium pedestrian traffic such as restaurants, bars, offices, shops, hotel public areas, convention rooms.

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