

RAKO.



since 1883

Complete **Ceramic** Solution

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**outdoor**

2024



More information about the laying of tiles into lawns, gravel or on supports can be found at [www.rako.eu](http://www.rako.eu)



CZ/021/003



## Exterior system solutions

- public spaces
- paths/walkways
- garden and yard
- driveway and parking place
- swimming pools and surroundings
- terrace and balcony

## Properties of RAKO OUTDOOR files



highly sintered ceramic material with a shard thickness of 20 mm, 30 mm



rectified edge with modified facet



non-slip surface R11/B for higher safety feeling



easy installation with the possibility of removal tiles for possible repairs, servicing, etc.



100% frost resistant material to temperature changes



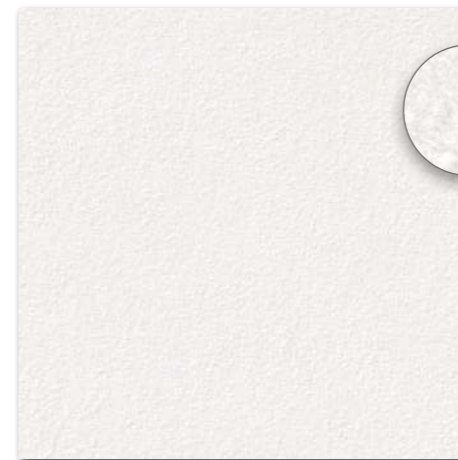
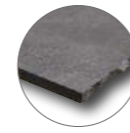
resistance to weathering and chemicals



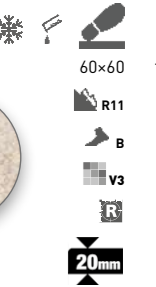
incomparably better cleanability in comparison to concrete tiles, suitable high-pressure cleaning



environmentally friendly product with a low load factor environmental, EPD, LEED, Ecolabel certification



DAR66790  
PEI 5  
matt  
white-grey



DAR66793  
PEI 5  
matt  
light beige



DAR66791  
PEI 4  
matt  
grey



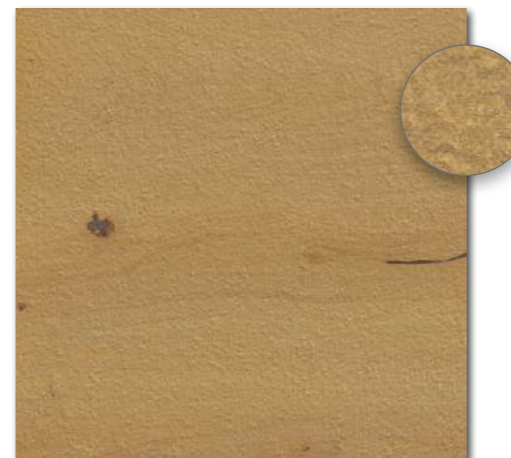
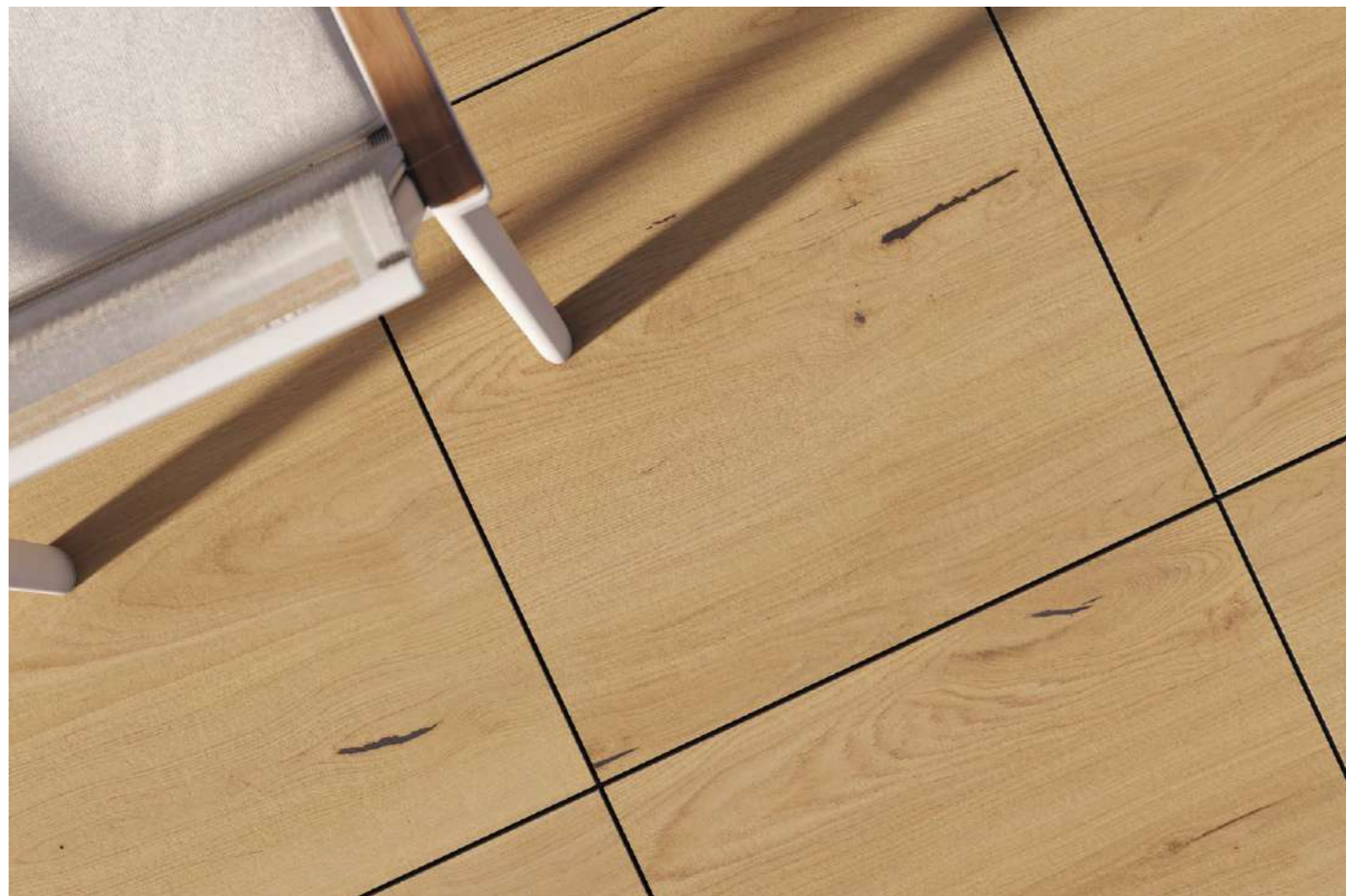
DAR66794  
PEI 4  
matt  
dark beige



DAR66792  
PEI 4  
matt  
black



DCH66790 white-grey  
DCH66791 grey  
DCH66792 black  
DCH66793 light beige  
DCH66794 dark beige  
PEI 4-5  
matt



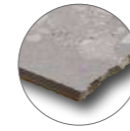
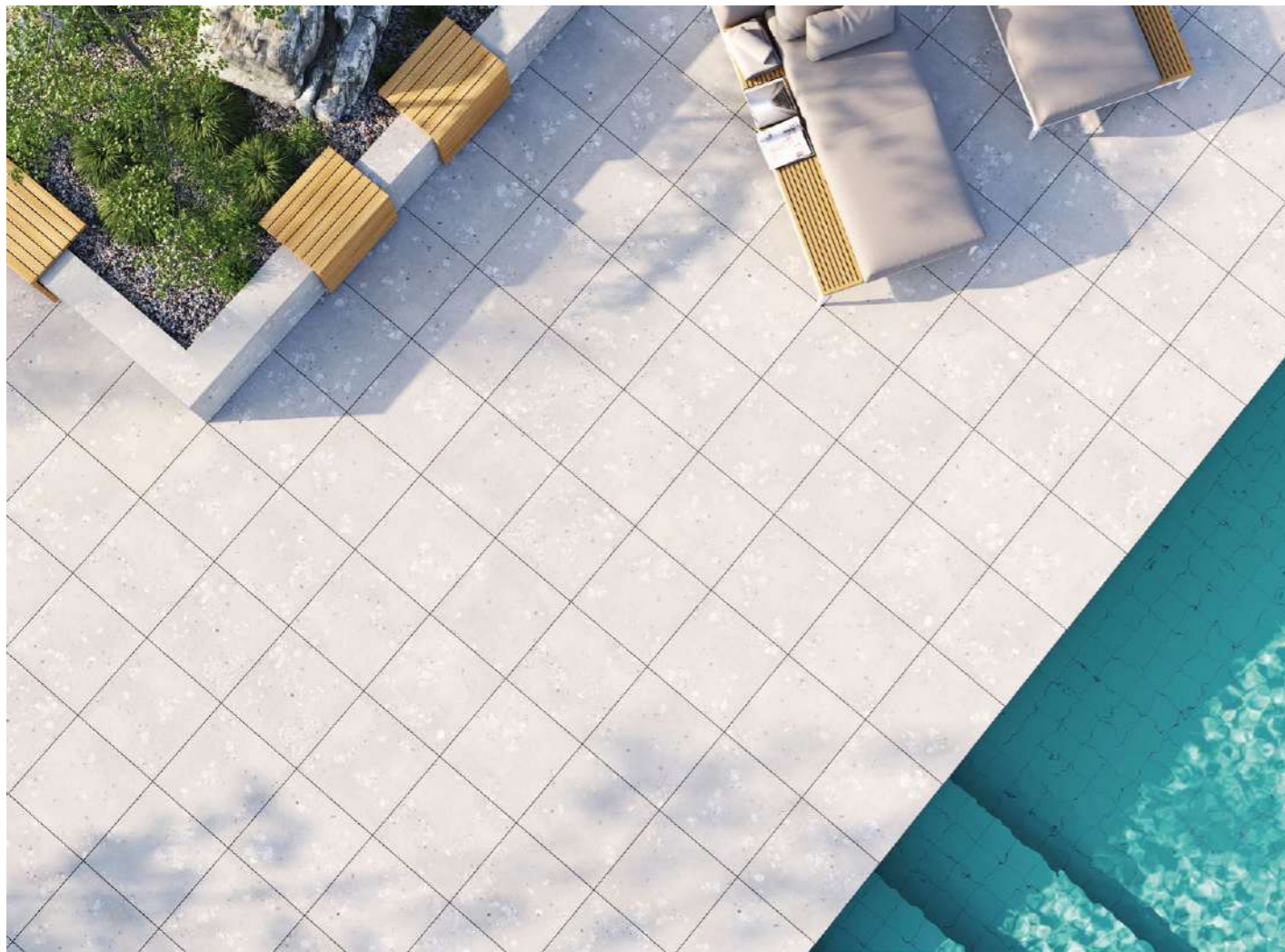
DAR66850  
PEI 5  
matt  
color **ale** | beige



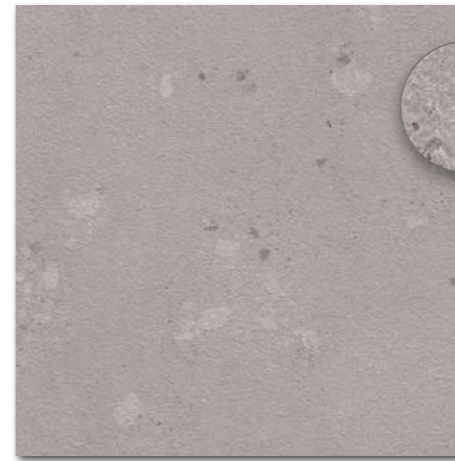
DAR66851  
PEI 4  
matt  
color **cognac** | brown



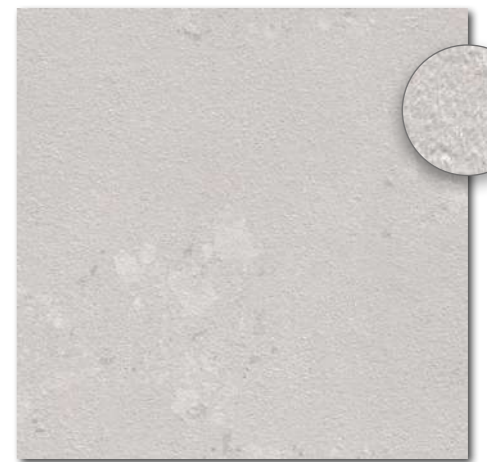
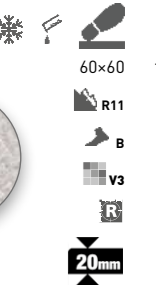
DCH66850 color **ale** | beige  
DCH66851 color **cognac** | brown  
PEI 4-5  
matt



DAR66858  
PEI 5  
matt  
color **dune** | beige



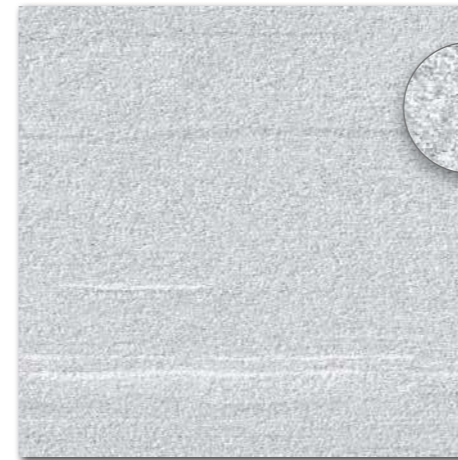
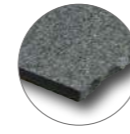
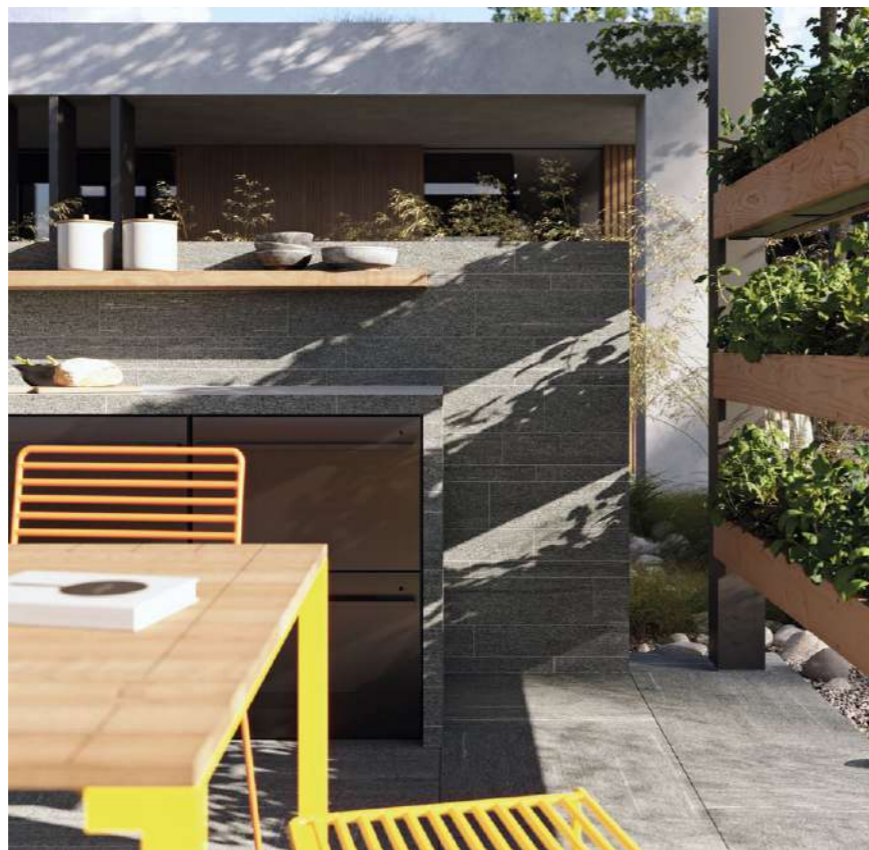
DAR66857  
PEI 4  
matt  
color **ash** | dark grey



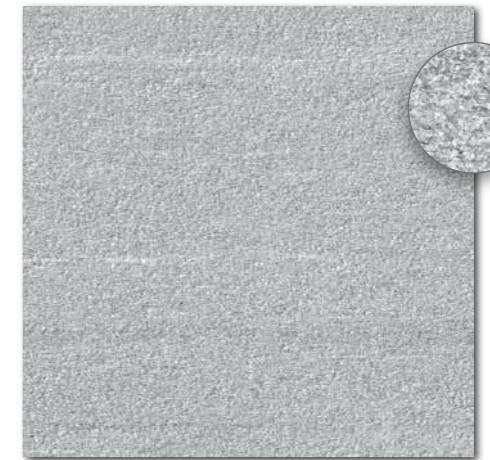
DAR66856  
PEI 5  
matt  
color **cement** | grey



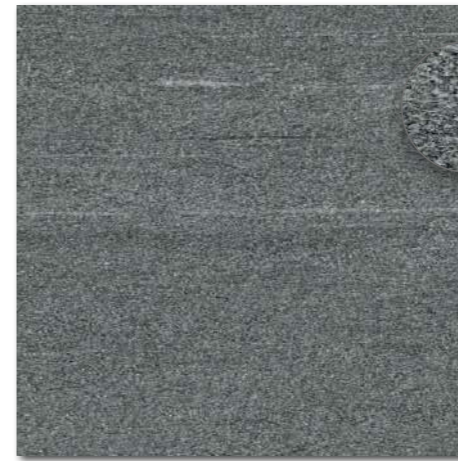
DCH66856 color **cement** | grey  
DCH66857 color **ash** | dark grey  
DCH66858 color **dune** | beige  
PEI 4-5  
matt



DAR66846  
PEI 5  
matt  
color **fog** | grey-white



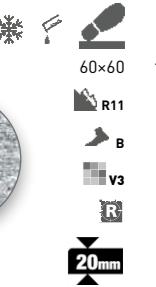
DAR66847  
PEI 4  
matt  
color **natural** | grey

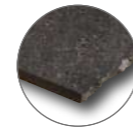


DAR66848  
PEI 4  
matt  
color **pepper** | dark grey



DCH66846 color **fog** | grey-white  
DCH66847 color **natural** | grey  
DCH66848 color **pepper** | dark grey  
PEI 4-5  
matt





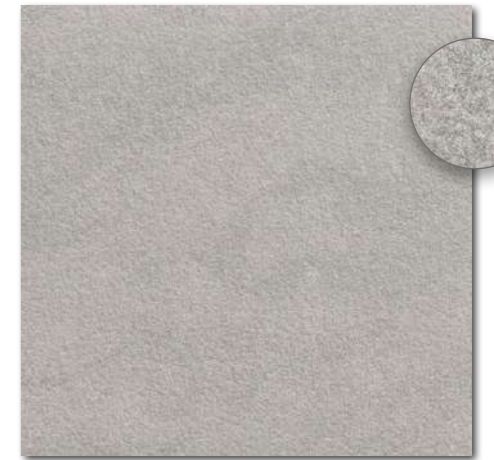
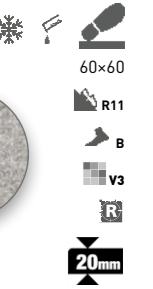
DAR66585  
matt  
ivory



DAR66586  
matt  
beige



DAR66589  
matt  
beige-grey



DAR66587  
matt  
grey

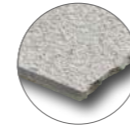


DAR66588  
matt  
black



DCH66585 ivory  
DCH66586 beige  
DCH66587 grey  
DCH66588 black  
DCH66589 beige-grey  
matt





DAR66787  
matt  
beige



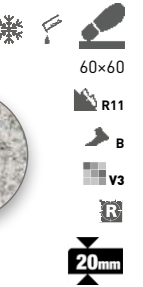
DAR66789  
matt  
black

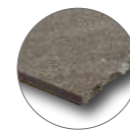
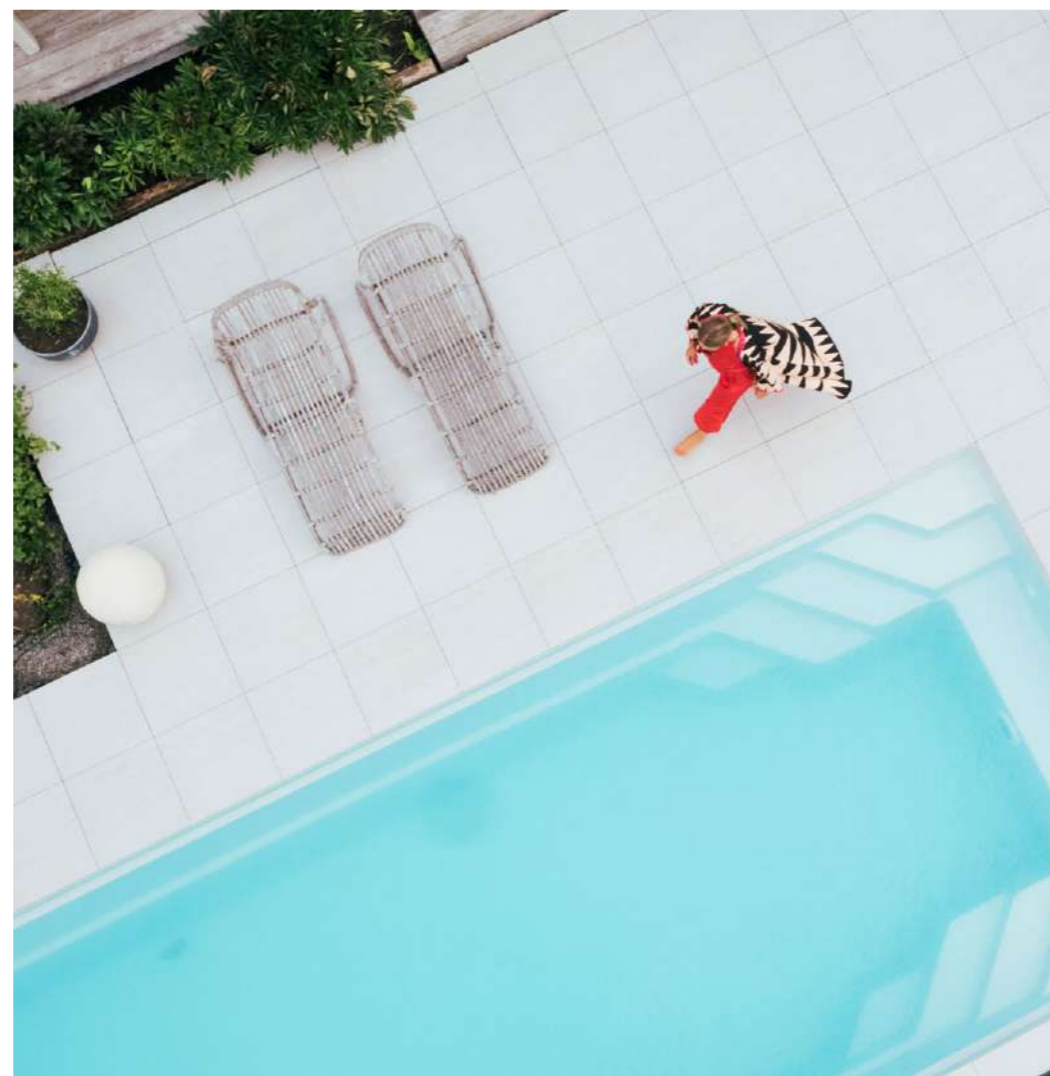


DAR66788  
matt  
light grey



DCH66787 beige  
DCH66788 light grey  
DCH66789 black  
matt





DAR66735  
PEI 5  
matt  
beige

20mm

DAR69735  
PEI 5  
matt

30mm

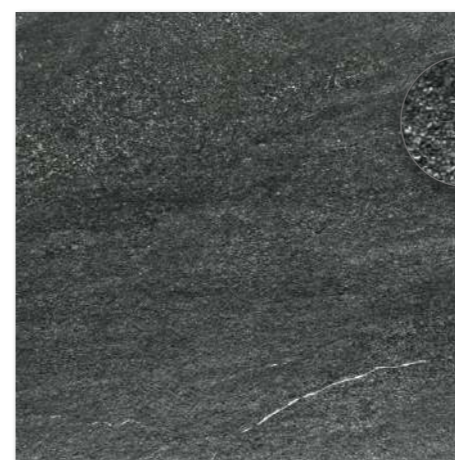


DAR66737  
PEI 5  
matt  
grey

20mm

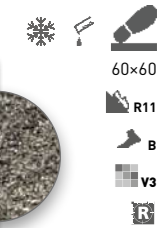
DAR69737  
PEI 5  
matt

30mm



DAR66739  
PEI 4  
matt  
black

20mm



DAR66736  
PEI 4  
matt  
brown

20mm



DAR66738  
PEI 4  
matt  
dark grey

20mm

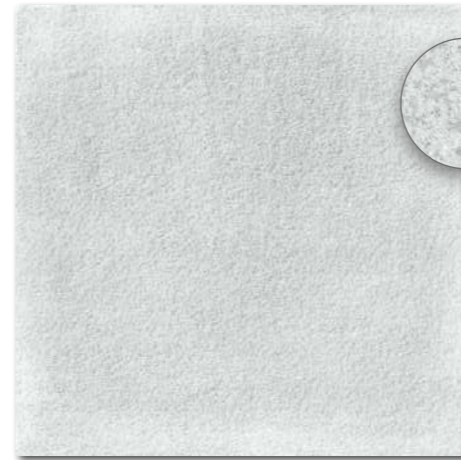
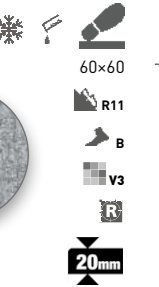
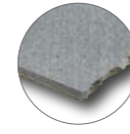
DAR69738  
PEI 4  
matt

30mm

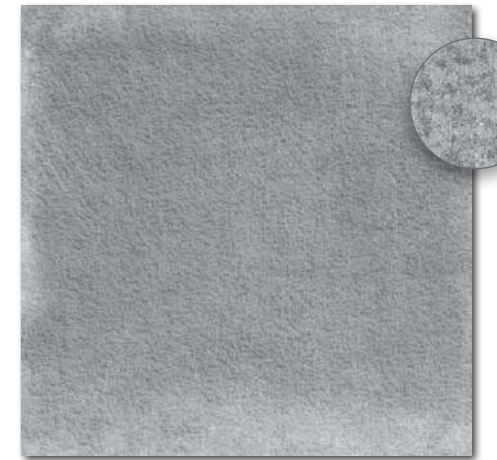


DCH66735 beige  
DCH66736 brown  
DCH66737 grey  
DCH66738 dark grey  
DCH66739 black  
PEI 4-5  
matt

20mm



DAR66741  
PEI 5  
matt  
grey



DAR66742  
PEI 4  
matt  
dark grey



DAR66743  
PEI 5  
matt  
beige



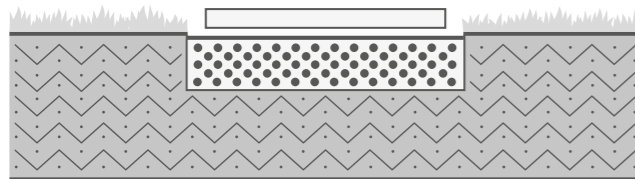
DCH66741 grey  
DCH66742 dark grey  
DCH66743 beige  
PEI 4-5  
matt

## Laying into lawns

Durable solution of areas of gardens, garden paths, or pergolas intended as a final walking floor surface. When laying ceramic tiles into lawns, we use gravel (crushed aggregate), which, unlike sand, does not absorb water or expand during frost.

A gravel layer with a size of 4-8 mm should reach a height of 50 mm. RAKO OUTDOOR floor tiles with a thickness of 2 cm, but their movement is bordered with the surrounding soil and gravel, and seamlessly connects to lawns or pebbles in space.

### Laying into lawn for garden treads



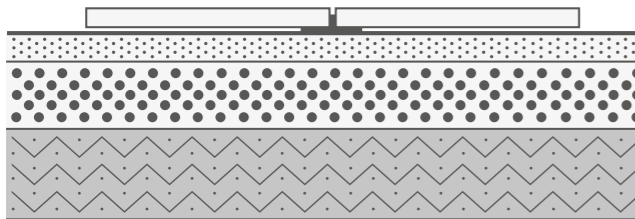
- 20 mm floor tiles | lawn
- 50 mm gravel
- soil

## Laying into gravel

Environmentally-friendly solution of areas intended as final walking floor surfaces of terraces, pavements, pergolas, or parking spaces. Thanks to the permeable base, water is returned into the subsoil and not removed from the landscape through drains and sewers. Before laying, remove the soil.

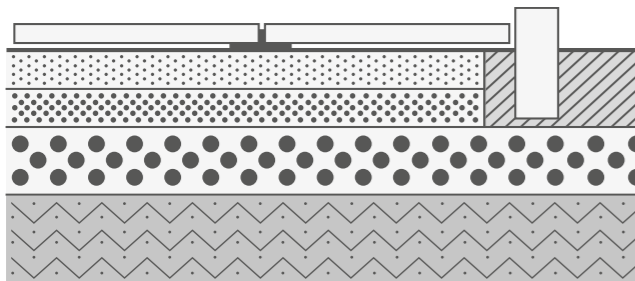
The bottom of the trench should have the required slope of 2% from the facility, and base layers should have the same thickness at all points of the surface. The laying of floor tiles should copy the required slope of 2% so that water and dirt are better drained from the surface.

### Laying into gravel for walking surfaces



- 20 mm floor tiles (defined by 3-4 mm spacers for gravel)
- 50 mm gravel 4-8 mm
- 200 mm compacted gravel 8-16 mm
- compacted soil

### Laying in gravel for parking spaces (up to 3.5 t)



- 20 mm, 30 mm floor tiles (defined by 3-4 mm spacers for gravel)
- 50 mm gravel 4-8 mm
- 50 mm compacted gravel 8-16 mm
- 200 mm compacted gravel 16-32 mm
- compacted soil
- curb (lines the laying and is installed in a 100 mm high concrete bed)

## Laying of RAKO OUTDOOR floor tiles into gravel for final walking surfaces



### 1 | Preparation

You will need coarse gravel with a size of 8-16 mm, finer gravel with a size of 4-8 mm, pebbles, spacers for outdoor use with a width of 3-4 mm, a rubber mallet, spirit level, smoothing beam, and RAKO OUTDOOR tiles with a thickness of 2 cm.



### 2 | First sub-base layer

Remove the soil under the tiles to a depth of 20 cm, with a slope of 2% from the facility, and compact the soil with a vibrating device. Apply gravel with a size of 8-16 mm to a height of 20 cm, and compact it again.



### 3 | Second sub-base layer

In the second layer, apply finer gravel with a size of 4-8 mm to a height of approximately 4-5 cm. The gravel layers should have the same height.



### 4 | Base preparation

Spread the gravel evenly with a smoothing beam, but no additional compaction is required.



### 5 | Tile placement

Place the tiles into gravel and fix them in place with a rubber mallet at a slope of 2% from the facility.



### 6 | Ensuring regular joints between the tiles

Place gravel spacers into the corners to adjust joint of width of 3-4 mm. This will ensure continuous water drainage and evaporation of moisture from the base.



### 7 | Surface

In this manner, lay gradually the tiles on the entire surface, and continuously check the flatness of the tiles using a spirit level. Fix the surface with a rubber mallet, or apply fine gravel to correct the sunken areas, as required.



### 8 | Bordering

Finally, decorate the edges of the tiled surface with pebbles, or grass. You can also use fine silica sand to fill joints.

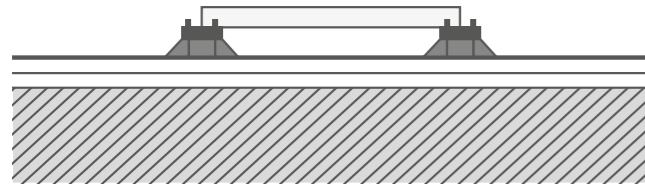
## Laying on pedestals

Laying on pedestals is a dry laying technique, based on the use of a system of supports, the so-called pedestals for terraces, balconies, roofs or public areas.

In case of pedestals, we can either choose adjustable (screwing) or fixed pedestals (layered onto each other). Thanks to adjustable pedestals, we can level-out e.g. slanting terraces into horizontal surfaces. We do not recommend horizontal laying for pedestals with fixed height. For tiling on pedestals, we use the RAKO OUTDOOR tiles with the thickness of 2 cm.

Laying on pedestals is not intended for being loaded with cars, it is only suitable for walking traffic.

Laying on pedestals for walking surfaces on a concrete foundations



- 20 mm tiles
- pedestals
- waterproofing (PVC foil, SBS asphalt strips, final waterproofing screed)
- geotextiles
- concrete

## Laying of RAKO OUTDOOR floor tiles on pedestals



### 1 | Preparation

The laying on adjustable pedestals is a method of tile laying with a thickness of 2 cm and the use of adjustable supports, or so-called "pedestals". Prepare the required number of pedestals, including slope correctors and spacers, rubber washers, stops or skirting clips, RAKO OUTDOOR ceramic tiles with a thickness of 2 cm, a spirit level, and a cutter. PVC waterproofing foil with reinforcing grids (min. thickness of 1.5 mm) is recommended as a base. To reduce the risk of foil puncture, use PVC foil and underlay it with geotextiles. The concrete base plate should have a slope of 2 % from the facility. Installation of the foil should be performed by a professional worker.



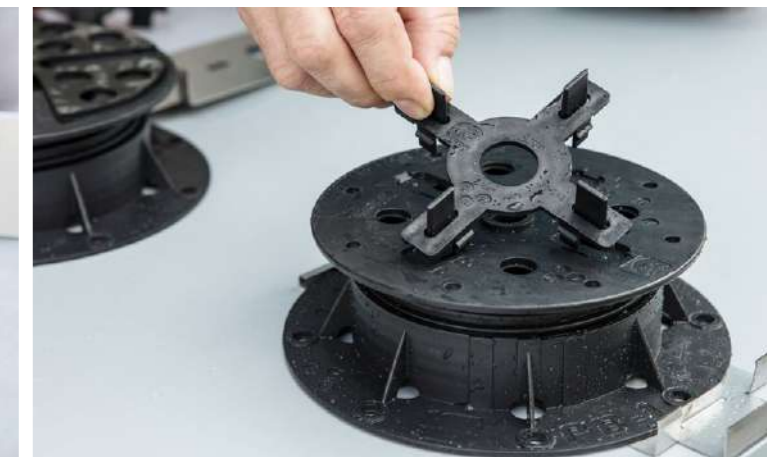
### 2 | Slope adjustment

By turning the slope corrector, adjust the horizontal base under the pedestals. In this manner, the slope of the base is adjusted up to 5 %. As the inclination angle and the direction of slope always differ, each pedestal must be adjusted individually. The supports equipped with telescopic swinging heads are levelled automatically up to a slope of 10 %.



### 3 | Pedestal height adjustment

Place the pedestal into the slope corrector. Adjust the required height of the pedestals by turning according to the determining height of the pedestal at the highest point of the terrace, or balcony.



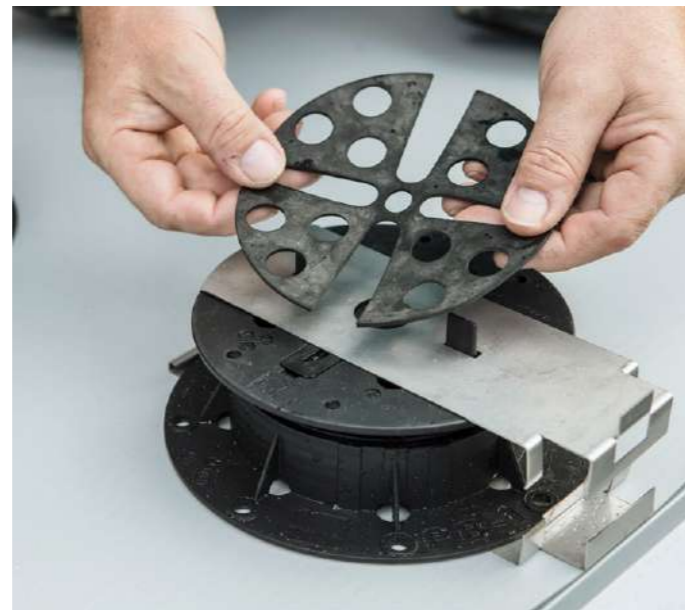
### 4 | Placement of spacers

Place the dilatation spacers on the pedestals, and adjust the number of dilatation spacers by cutting, or breaking out as needed. The spacers define the joint width, which is necessary for water drainage and evaporation. It is recommend to select the space width of 3 mm as a minimum.



### 5 | Creating the leading edge of the balcony, or terrace

If there is not a solid edge around the tiles, such as skirting, wall, etc., use the skirting clips to form the leading edge, and place these clips on the head of the pedestals and under them.



### 6 | Placing the rubber pads on pedestals

Due to the spring and settling action of laid tiles, place rubber pads on the pedestals.



### 7 | Ensuring the regular distance between the pedestals

Before laying, check the distance between the pedestals to a tile format of 60 x 60 cm. In public buildings, we also insert pedestals under the centres of the tiles.



### 8 | Laying of tiles

Place a tile on the pedestals. Handling a 16 kg tile is more difficult than handling tiles of common thickness. After laying, check whether the tile is laid horizontally.



### 9 | Cutting tiles with a thickness of 2 or 3 cm

Only electric cutters with guide rails, or water-cooled stand saws, are able to cut embossed tiles with a thickness of 2 cm.



### 10 | Inserting strips into skirting clips

Insert the cut and ground ceramic strips into the skirting clips, and create the leading edge of the balcony, or terrace.



### 11 | Finishing the leading edge with a water bar

The finished ceramic leading edge of the balcony seamlessly connects to the finishing profile with a water bar.



### 12 | Inserting stops between the wall and tiles

Measure individual finish cuttings to the door and balcony wall. To define laying, the stops are used between the balcony wall and tiles. These stops prevent the PVC foil from being cut through the edge of the tile adjacent to the wall.



### 13 | Final laying

The laying on pedestals is suitable for terraces, balconies, roofs, or public spaces with trouble-free access to drains or waterproofing. The laying on pedestals is not intended for surfaces subject to vehicles driving over them.



**RAKO**<sup>®</sup>

since 1883

**Complete Ceramic Solution**

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2024