Swimming pool construction

- Extensive range of functional trims to create Finnish, Wiesbaden and Berlin pool overflows
- Overflow channels for all systems with a variable channel volume
- Shallow drainage channel for the pool rim area
- Curved and cove base ceramic beading system for inside and outside corners
- Addition of a cove base for wet areas to match the design of the CROSSOVER, MY EARTH and X-PLANE ranges
Swimming pool construction
Swimming pool construction
Impressive technology and versatile design: thanks to the fact that its modular product range is always up to date, V&B Tiles is the competent partner for both the construction and renovation of swimming pools and wellness facilities.

In addition to all the essential channel systems, our range includes a wide variety of supplemental functional trims and strips for swimming pools of all kinds.

As a single-source supplier, we recognise the importance of offering attractive, high-quality tile ranges for the surrounding areas, wellness facilities, catering and food service areas and other functional rooms, too. In particular, this includes the PRO ARCHITECTURA colour and format system, as well as the various vilbostone porcelain stoneware ranges in a wide selection of designs.

We are able to assist architects and engineers in the planning of their projects with the following services:

- Individual technical advice for new construction and renovation projects
- CAD-aided detailed technical and design planning
- Customised tender texts
In order to satisfy the design demands of modern planning, comprehensive technical renovation work that is in keeping with modern standards, and accurate restoration, we offer an extremely wide range of trim systems for the realisation of swimming pools that are technically perfect.

With our system ranges, which not only offer the necessary technical properties, but also attractive designs for all areas of a swimming pool, products from Villeroy & Boch Tiles ensure that architects and planners have full scope for individual design.

In addition to the extensive PRO ARCHITECTURA colour and format system, we recommend our vilbo stoneware ranges, which are sure to impress on both a technical and design level.

The MY EARTH and X-PLANE ranges are of particular note here. Thanks to their natural charm and warm atmosphere they have already made their mark in numerous projects.

For the first time, Villeroy & Boch Tiles is also offering cove base trims to match the popular CROSSOVER, MY EARTH and X-PLANE design ranges. We are one of the first manufacturers to offer architects and planners a way of realising high-quality design concepts in functional areas, such as shower areas, changing facilities and toilets, without having to forego the technical advantages of a cove base.
Swimming pool construction

Hallenfreizeitbad (indoor leisure pool) Karben, Architects: Werk 9 architekten + ingenieure GmbH, Herzbekr-Clarholz and Cologne · Tile range: MY EARTH
Swimming pool construction

Aquapark Bruntál, Czech Republic

„Schwimmoper“ indoor swimming pool in Wuppertal, pbr Planungsbüro Rohling AG · Photo: Ulrich Hoppe
The line of swimming pool ceramics consists of modular trims in a nominal length of 200 mm (197 mm + 3 mm joint) and modular tiles from the PRO ARCHITECTURA range. Modular tiles are based on the basic module “M” (100 mm) and multiples thereof, plus smaller supplementary dimensions, e.g. 50 mm. The modular dimensions of our tiles and functional trims are derived from the factory dimensions plus the joint width. The smaller the tile/functional trim, the smaller the joint can be. The resulting modular dimension will not change.

The small format tiles (10 x 10 cm, 5 x 5 cm and 2.5 x 2.5 cm) are supplied on ready-to-set sheets. The sheets are available with the lattice paper attached on the front or back.

For wet areas is required using tiles with lattice paper on the front only or with glass fibre lattice backing only.

**Lattice paper on front must be specified when placing orders.**

Formats larger than 10 x 10 cm are supplied loose in the box.

All pool dimensions (rough shell and finished), fixtures, recesses for inlet and drains must be coordinated. The rough shell planning is made on the basis of the tile planning. The V&B Fliesen GmbH tile planning service is free of charge.

Please contact your sales agent or the Planning Department directly, at

**Project planning – technology and design**

Tel.: +49 (0) 6864 – 81 3245  
Fax: +49 (0) 6864 – 81 3592  
E-Mail: objektplanung@vb-fliesen.com
The (nominal) length of the functional trims (200 mm) determines a basic linear division for the dimensions of the pool in multiples of 200 mm. As in masonry, this is a break dimension and an additional joint must be included.

- The finished length of the pool is therefore calculated as follows: finished length = n x 200 mm + 3 mm
- The rough shell length is calculated as follows: Rough shell length = finished length + 2 x construction thickness of walls
  The walls are made of plaster, mortar and tiles = generally 25 mm.
  The rough shell length is therefore the finished length + 50 mm.
- The position of the drains:
  position from edge = n x 200 mm + 101.5 mm
- The axial spacing of the drains is:
  centre distance = n x 200 mm
- The pool depth is calculated by:
  depth = height of trim + n x 100 mm + 5 mm
To allow continual and uniform overflow, care must be taken when laying the pool edge that it is perfectly horizontal and level. According to the German “Guidelines for pool construction” deviations in height of +/- 2 mm are acceptable.

Special notes:
Please specify in your order if you require lattice paper on the front side of mosaic tiles.

All system components and trims are made by order for your specific project.

After clarification of technical feasibility, other colours from the PRO ARCHITECTURA range are available on request for an extra charge of 30%.

The following drawings were produced by the company V&B Fliesen GmbH. The user is responsible for verifying the correctness and suitability of the variant concerned. V&B Fliesen GmbH provides no guarantee and shall not be held liable in this connection.
The number of drains depends on the size of the pool, the size of the overflow channels and the water circulation, and has to be calculated by a water-treatment firm. Approx. 2 – 3.5 m can be taken as a general guideline for the centre distance, depending on the overflow system. Drain funnels (available from manufacturers of accessories) should be concreted in to compensate for installation tolerances in the drain piping.

Villeroy & Boch Tiles supplies drain connectors or whispering drains to connect the tiles around the drain to the piping. These should be ordered separately. As shown in the installation instructions, the tiler should attach the short connector under the drain with epoxy resin. The whispering drain is inserted from above and secured with a rubber seal.

Special note:
Outlet connectors and whispering drains must be ordered separately.

Drain dimensions in mm

<table>
<thead>
<tr>
<th>Art.</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>3631</td>
<td>112</td>
<td>80</td>
<td>110</td>
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<tr>
<td>3661</td>
<td>75</td>
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<td>3671</td>
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<td>3601</td>
<td>93</td>
<td>80</td>
<td>110</td>
</tr>
<tr>
<td>3621</td>
<td>48.5</td>
<td>50</td>
<td>66</td>
</tr>
</tbody>
</table>

Art. 3962
Whispering drain Ø 48 mm
Flange Ø 62 mm
Plastic, grey, PN72
Draining volume max. 2.4 m³/h
Price group E137

Art. 3972
Whispering drain Ø 75 mm
Flange Ø 105 mm
Plastic, white, PN72
Draining volume max. 7.2 m³/h
Price group E137

Art. 3963
Whispering drain Ø 48 mm
Flange Ø 62 mm
Brass alloy, PN72
Draining volume max. 2.1 m³/h
Price group E137

Art. 3952
Drain connector
Ø 100 mm
Plastic, yellow, PN71
Price group E52

Connection with whispering drain

Connection with drain connector
PRO ARCHITECTURA

Glazed vitreous EN 14411-B1w - Walls and floors
Glazed porcelain stoneware EN 14411-B1w - Walls and floors

**Neutral Line**

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Color Description</th>
<th>RAL Code</th>
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</thead>
<tbody>
<tr>
<td>PN01</td>
<td>green</td>
<td>190 60 25</td>
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<tr>
<td>PN02</td>
<td>dark green</td>
<td>170 40 20</td>
</tr>
<tr>
<td>PN03</td>
<td>blue</td>
<td>280 50 30</td>
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<tr>
<td>PN04</td>
<td>dark blue</td>
<td>270 30 30</td>
</tr>
<tr>
<td>PN05</td>
<td>white</td>
<td>900 00 00</td>
</tr>
<tr>
<td>PN06</td>
<td>grey 25%</td>
<td>800 85 00</td>
</tr>
<tr>
<td>PN07</td>
<td>grey 50%</td>
<td>900 50 00</td>
</tr>
<tr>
<td>PN08</td>
<td>grey 75%</td>
<td>800 45 00</td>
</tr>
<tr>
<td>PN09</td>
<td>black</td>
<td>900 15 00</td>
</tr>
<tr>
<td>PN10</td>
<td>yellow</td>
<td>900 80 05</td>
</tr>
<tr>
<td>PN11</td>
<td>orange</td>
<td>900 80 05</td>
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<tr>
<td>PN12</td>
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<td>900 50 60</td>
</tr>
<tr>
<td>PN13</td>
<td>dark red</td>
<td>900 40 60</td>
</tr>
</tbody>
</table>

**vilbostone porcelain stoneware EN 14411-B1w - Floor**

**GRANIFLOOR**

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Color Description</th>
<th>RAL Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PN80</td>
<td>white</td>
<td>100 90 05</td>
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<tr>
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<td>000 85 00</td>
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<tr>
<td>PN82</td>
<td>grey 50%</td>
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</tr>
<tr>
<td>PN84</td>
<td>black</td>
<td>000 25 00</td>
</tr>
</tbody>
</table>

Glazed vitreous EN 14411-B1w / Glazed porcelain stoneware EN 14411-B1w - Walls and floors

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Color Description</th>
<th>RAL Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PN13</td>
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<td>PN14</td>
<td>turquoise</td>
<td>000 85 00</td>
</tr>
<tr>
<td>PN15</td>
<td>smaragd</td>
<td>000 65 00</td>
</tr>
<tr>
<td>PN16</td>
<td>jade</td>
<td>000 45 00</td>
</tr>
<tr>
<td>PN17</td>
<td>beryl</td>
<td>000 25 00</td>
</tr>
<tr>
<td>PN18</td>
<td>citrine</td>
<td>000 05 00</td>
</tr>
<tr>
<td>PN19</td>
<td>topaz</td>
<td>000 00 00</td>
</tr>
<tr>
<td>PN20</td>
<td>amber</td>
<td>240 40 05</td>
</tr>
<tr>
<td>PN21</td>
<td>carneol</td>
<td>240 40 05</td>
</tr>
</tbody>
</table>

**vilbostone porcelain stoneware EN 14411-B1w - Floor**

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Color Description</th>
<th>RAL Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PN85</td>
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<tr>
<td>PN87</td>
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<td>000 65 00</td>
</tr>
<tr>
<td>PN88</td>
<td>grey 75%</td>
<td>000 45 00</td>
</tr>
<tr>
<td>PN89</td>
<td>black</td>
<td>000 25 00</td>
</tr>
<tr>
<td>PN90</td>
<td>yellow</td>
<td>000 80 05</td>
</tr>
<tr>
<td>PN91</td>
<td>orange</td>
<td>000 80 05</td>
</tr>
<tr>
<td>PN92</td>
<td>red</td>
<td>000 50 60</td>
</tr>
<tr>
<td>PN93</td>
<td>dark red</td>
<td>000 40 60</td>
</tr>
</tbody>
</table>
Swimming pool construction

OVERVIEW OF PRODUCTS

Finnish overflow system
high-level system

Channel Piece

Stair tread nose & Pool edge

System of colours · Glazed vitreous EN 14411 Bi₆

PN00
white

PN13
aquamarine light

PN04
dark blue

PN12
black

PN55
aquamarine light & dark blue

PN6
aquamarine light & black

PN09
grey 25 %

PN31
topaz light

PN57
white & black

PN58
white & dark blue

PN55
PN6
PN09
PN31

Art. 3010
Grip trough

Art. 3011
Grip trough with outlet

Art. 3012
Inside corner (Mitred pair)

Art. 3013
Outside corner (Mitred pair)

Art. 3014
Grating support angle

Art. 3015
Inside corner (Mitred pair)

Art. 3016
Outside corner (Mitred pair)

Art. 3017
Grating support angle

Art. 3018
Inside corner (Mitred pair)

Art. 3019
Outside corner (Mitred pair)

Art. 3020
Grating support angle

Art. 3021
Inside corner (Mitred pair)

Art. 3022
Outside corner (Mitred pair)

Art. 3023
Grating support angle

Art. 3024
Inside corner (Mitred pair)

Art. 3025
Outside corner (Mitred pair)

Art. 3026
Grating support angle

Art. 3027
Inside corner (Mitred pair)

Art. 3028
Outside corner (Mitred pair)

Art. 3029
Grating support angle

Art. 3030
Inside corner (Mitred pair)

Art. 3031
Outside corner (Mitred pair)

Art. 3032
Grating support angle

Art. 3033
Inside corner (Mitred pair)

Art. 3034
Outside corner (Mitred pair)

Art. 3035
Grating support angle

Art. 3036
Inside corner (Mitred pair)

Art. 3037
Outside corner (Mitred pair)

Art. 3038
Grating support angle

Art. 3039
Inside corner (Mitred pair)

Art. 3040
Outside corner (Mitred pair)

Art. 3041
Grating support angle

Art. 3042
Inside corner (Mitred pair)

Art. 3043
Outside corner (Mitred pair)

Art. 3044
Grating support angle

Art. 3045
Inside corner (Mitred pair)

Art. 3046
Outside corner (Mitred pair)

Art. 3047
Grating support angle

Art. 3048
Inside corner (Mitred pair)

Art. 3049
Outside corner (Mitred pair)

Art. 3050
Edge tile

Art. 3051
Inside corner (Mitred pair)

Art. 3052
Outside corner (Mitred pair)

Art. 3053
Ladder

Art. 3054
Inside corner (Mitred pair)

Art. 3055
Outside corner (Mitred pair)

Art. 3056
Inside corner (Mitred pair)

Art. 3057
Outside corner (Mitred pair)

Art. 3058
Inside corner (Mitred pair)

Art. 3059
Outside corner (Mitred pair)

Art. 3060
Inside corner (Mitred pair)

Art. 3061
Outside corner (Mitred pair)

Art. 3062
Inside corner (Mitred pair)

Art. 3063
Outside corner (Mitred pair)

Art. 3064
Inside corner (Mitred pair)

Art. 3065
Outside corner (Mitred pair)

Art. 3066
Inside corner (Mitred pair)

Art. 3067
Outside corner (Mitred pair)

Art. 3068
Inside corner (Mitred pair)

Art. 3069
Outside corner (Mitred pair)

Art. 3070
Inside corner (Mitred pair)

Art. 3071
Outside corner (Mitred pair)

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Outside corner (Mitred pair)

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Inside corner (Mitred pair)

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Inside corner (Mitred pair)

Art. 3077
Outside corner (Mitred pair)

Art. 3078
Inside corner (Mitred pair)

Art. 3079
Outside corner (Mitred pair)

Art. 3080
Inside corner (Mitred pair)

Art. 3081
Outside corner (Mitred pair)

Art. 3082
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Art. 3083
Outside corner (Mitred pair)

Art. 3084
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Art. 3085
Outside corner (Mitred pair)

Art. 3086
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Outside corner (Mitred pair)

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Outside corner (Mitred pair)

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Outside corner (Mitred pair)

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Inside corner (Mitred pair)

Art. 3093
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Art. 3096
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Art. 3097
Outside corner (Mitred pair)

Art. 3098
Inside corner (Mitred pair)

Art. 3099
Outside corner (Mitred pair)

Art. 3100
Inside corner (Mitred pair)

Art. 3101
Outside corner (Mitred pair)

Art. 3102
Inside corner (Mitred pair)

Art. 3103
Outside corner (Mitred pair)

Art. 3104
Inside corner (Mitred pair)

Art. 3105
Outside corner (Mitred pair)

Art. 3106
Inside corner (Mitred pair)

Art. 3107
Outside corner (Mitred pair)

Art. 3108
Inside corner (Mitred pair)

Art. 3109
Outside corner (Mitred pair)

Art. 3110
Inside corner (Mitred pair)

Art. 3111
Outside corner (Mitred pair)

Art. 3112
Inside corner (Mitred pair)

Art. 3113
Outside corner (Mitred pair)

Art. 3114
Inside corner (Mitred pair)

Art. 3115
Outside corner (Mitred pair)

Art. 3116
Inside corner (Mitred pair)

Art. 3117
Outside corner (Mitred pair)

Art. 3118
Inside corner (Mitred pair)

Art. 3119
Outside corner (Mitred pair)

Art. 3120
Inside corner (Mitred pair)

Art. 3121
Outside corner (Mitred pair)

Art. 3122
Inside corner (Mitred pair)

Art. 3123
Outside corner (Mitred pair)

Art. 3124
Inside corner (Mitred pair)

Art. 3125
Outside corner (Mitred pair)

Art. 3126
Inside corner (Mitred pair)

Art. 3127
Outside corner (Mitred pair)

Art. 3128
Inside corner (Mitred pair)

Art. 3129
Outside corner (Mitred pair)

Art. 3130
Inside corner (Mitred pair)

Art. 3131
Outside corner (Mitred pair)

Art. 3132
Inside corner (Mitred pair)

Art. 3133
Outside corner (Mitred pair)

Art. 3134
Inside corner (Mitred pair)

Art. 3135
Outside corner (Mitred pair)

Art. 3136
Inside corner (Mitred pair)

Art. 3137
Outside corner (Mitred pair)
## Swimming pool construction

### Overview of Products

#### Berlin overflow channel
- High-level system

#### Pool running edge
- Low-level system

#### Curved and cove base ceramic beading

#### Ceramic channel
- In the pool rim

---

**Drain connector & Whispering drain**

<table>
<thead>
<tr>
<th>Drain connector</th>
<th>Whispering drain ø 48 mm</th>
<th>Whispering drain ø 75 mm</th>
<th>Outlet ø 48 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art. 3952</td>
<td>Art. 3962</td>
<td>Art. 3972</td>
<td>Art. 3963</td>
</tr>
</tbody>
</table>
High water level/"Finnish" overflow system

**Colours**

<table>
<thead>
<tr>
<th>Material</th>
<th>vilbostone porcelain stoneware EN 14411-B2a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Pool edge - indoors / outdoors</td>
</tr>
<tr>
<td>Actual size</td>
<td>see diagrams</td>
</tr>
<tr>
<td>Joints approx</td>
<td>3 mm</td>
</tr>
<tr>
<td>Finish</td>
<td>uni-coloured</td>
</tr>
<tr>
<td>Surface</td>
<td>formed, rough</td>
</tr>
</tbody>
</table>

**Matching wall tiles** PRO ARCHITECTURA

**Special points**

- Underwater edges such as steps or the front edge of the "Finnish" system must be accentuated with a stripe of a different colour (PN04, PN12).
- Depending on requirements, the following colour combinations are available:
  - PN55 = PN04 + PN13 (dark blue and aquamarine)
  - PN56 = PN12 + PN13 (black and aquamarine)
  - PN57 = PN00 + PN12 (white and black)
  - PN58 = PN00 + PN04 (white and dark blue)

In Germany, "Finnish" overflow systems are expected to satisfy the following requirements:

- The pool edge must offer something to hold onto (grip).
- The grip must be 15 mm high/deep.
- The grip must be situated within 100 mm of the vertical wall of the pool.
- The rear side of the grip should be as vertical as possible.
- The top of the grip must be accentuated by means of a stripe of contrasting colour measuring at least 2.5 cm across.
- The slope of the washover incline must be max. 10 %, and the surface finish must answer the description of slip resistance category C.

Matching outlets on page 323
Pool edge systems in detail

High water level/“Finnish” overflow system

High water level - overflow channel with moulded trims

Uses (preferable):
Indoor, outdoor, recreation, fun and hotel pools
Pool edge systems in detail

High water level/Large overflow channel “Wiesbaden”

| Art. 3690 | Channel piece | PN00, PN04, PN12, PN13 | PN00 Price group E115 | PN04, PN12, PN13 Price group E118 |
| Art. 3691 | Channel piece with outlet | PN00, PN04, PN12, PN13 | PN00 Price group E130 | PN04, PN12, PN13 Price group E134 |
| Art. 3692 | Channel piece, half length | PN00, PN04, PN12, PN13 | PN00 Price group E103 | PN04, PN12, PN13 Price group E107 |
| Art. 3694 | Inside corner (Mitred pair) | PN00, PN04, PN12, PN13 | PN00 Price group E174 | PN04, PN12, PN13 Price group E175 |
| Art. 3695 | Outside corner (Mitred pair) | PN00, PN04, PN12, PN13 | PN00 Price group E175 | PN04, PN12, PN13 Price group E176 |

Colours

| Material | vilbostone porcelain stoneware EN 14411-BlA |
| Applications | Pool edge - indoors / outdoors |
| Actual size | see diagrams |
| Joints approx | 3 mm |
| Finish | uni-coloured |
| Surface | Glaze |
| Calculation unit | Packing |

Matching wall tiles | PRO ARCHITECTURA |

High water level – overflow channel with moulded trims

Uses (preferable):

Indoor, outdoor, recreation, fun and hotel pools

Matching outlets on page 323
Pool edge systems in detail

High water level/Large overflow channel „Wiesbaden“ with mosaik recess

**Art. 3680**
Channel piece
PN00, PN04, PN12, PN13
PN00 Price group E118
PN04, PN12, PN13 Price group E120

**Art. 3681**
Channel piece with outlet
PN00, PN04, PN12, PN13
PN00 Price group E126
PN04, PN12, PN13 Price group E129

**Art. 3682**
Channel piece, half length
PN00, PN04, PN12, PN13
PN00 Price group E99
PN04, PN12, PN13 Price group E101

**Art. 3685**
Outside corner (Mitred pair)
PN00, PN04, PN12, PN13
PN00 Price group E155
PN04, PN12, PN13 Price group E160

---

**Colours**

---

**Material**
vilbostone porcelain
stoneware EN 14411-Bla

**Applications**
Pool edge - indoors / outdoors

**Actual size**
see diagrams

**Joints approx**
3 mm

**Finish**
uni-coloured

**Surface | Glaze**
formed | matt

**Calculation unit | Packing**
Piece | loose in box

**Matching wall tiles**
PRO ARCHITECTURA

---

High water level – overflow channel with moulded trims

Uses (preferable):
Indoor, outdoor, recreation, fun and hotel pools

Matching outlets on page 323
Pool edge systems in detail

High water level/Small overflow channel "Wiesbaden"

<table>
<thead>
<tr>
<th>Art. 3670</th>
<th>Channel piece</th>
<th>PN00, PN04, PN12, PN13</th>
<th>PN00 Price group E102</th>
<th>PN04, PN12, PN13 Price group E104</th>
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<tbody>
<tr>
<td>Art. 3671</td>
<td>Channel piece with outlet</td>
<td>PN00, PN04, PN12, PN13</td>
<td>PN00 Price group E119</td>
<td>PN04, PN12, PN13 Price group E122</td>
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<td>Art. 3672</td>
<td>Channel piece, half length</td>
<td>PN00, PN04, PN12, PN13</td>
<td>PN00 Price group E92</td>
<td>PN04, PN12, PN13 Price group E92</td>
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<tr>
<td>Art. 3674</td>
<td>Inside corner (Mitred pair)</td>
<td>PN00, PN04, PN12, PN13</td>
<td>PN00 Price group E146</td>
<td>PN04, PN12, PN13 Price group E147</td>
</tr>
<tr>
<td>Art. 3675</td>
<td>Outside corner (Mitred pair)</td>
<td>PN00, PN04, PN12, PN13</td>
<td>PN00 Price group E159</td>
<td>PN04, PN12, PN13 Price group E160</td>
</tr>
</tbody>
</table>

Water level: ± 0.00
Capillary breaking joint filler
Art. 2706 "B"

Uses (preferable):
Indoor, outdoor, recreation, fun and hotel pools

Matching outlets on page 323
Pool edge systems in detail

High water level/Overflow channel “Berlin”

Art. 3540
Pool running edge
PN00, PN04, PN12, PN13
PN00 Price group E109
PN04, PN12, PN13 Price group E112

Art. 3542
Pool running edge, half length
PN00, PN04, PN12, PN13
PN00 Price group E99
PN04, PN12, PN13 Price group E100

Art. 3544
Inside corner
PN00, PN04, PN12, PN13
PN00 Price group E126
PN04, PN12, PN13 Price group E130

Art. 3545
Outside corner
PN00, PN04, PN12, PN13
PN00 Price group E154
PN04, PN12, PN13 Price group E155

Colours

Material vilbostone porcelain stoneware EN 14411-Bla

Applications Pool edge - indoors / outdoors

Actual size see diagrams

Joints approx 3 mm

Finish uni-coloured

Surface | Glaze formed | matt

Calculation unit | Packing Piece | loose in box

Matching wall tiles PRO ARCHITECTURA

High water level – overflow channel with moulded trims

Uses (preferable):
Indoor, outdoor, recreation, fun and hotel pools

Matching outlets on page 323
### Low water level/Large overflow channel “Wiesbaden”

<table>
<thead>
<tr>
<th>Art.</th>
<th>Description</th>
<th>Details</th>
<th>Price group E101</th>
<th>Price group E124</th>
<th>Price group E85</th>
<th>Price group E89</th>
<th>Price group E145</th>
<th>Price group E160</th>
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</thead>
<tbody>
<tr>
<td>3630</td>
<td>Channel piece</td>
<td>PN00, PN04, PN12, PN13</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3631</td>
<td>Channel piece with outlet</td>
<td>PN00, PN04, PN12, PN13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3632</td>
<td>Channel piece, half length</td>
<td>PN00, PN04, PN12, PN13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3634</td>
<td>Inside corner (Mitred pair)</td>
<td>PN00, PN04, PN12, PN13</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3635</td>
<td>Outside corner (Mitred pair)</td>
<td>PN00, PN04, PN12, PN13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Materials
- **Material**: vilbostone porcelain stoneware EN 14411-B1a
- **Applications**: Pool edge - indoors / outdoors
- **Actual size**: see diagrams
- **Joints approx**: 3 mm
- **Finish**: uni-coloured
- **Surface | Glaze**: formed | matt
- **Calculation unit | Packing**: Piece | loose in box
- **Matching wall tiles**: PRO ARCHITECTURA

### Colours

### Swimming pool construction

- **Low water level – overflow channel with moulded trims**
  - Uses (preferable):
    - Indoor, outdoor, recreation, fun and hotel pools

### Matching outlets on page 323
Low water level/Small overflow channel “Wiesbaden”

Art. 3660
Channel piece
PN00, PN04, PN12, PN13
PN00 Price group E98
PN04, PN12, PN13 Price group E99

Art. 3661
Channel piece with outlet
PN00, PN04, PN12, PN13
PN00 Price group E118
PN04, PN12, PN13 Price group E119

Art. 3662
Channel piece, half length
PN00, PN04, PN12, PN13
PN00 Price group E81
PN04, PN12, PN13 Price group E81

Art. 3664
Inside corner (Mitred pair)
PN00, PN04, PN12, PN13
PN00 Price group E141
PN04, PN12, PN13 Price group E145

Art. 3665
Outside corner (Mitred pair)
PN00, PN04, PN12, PN13
PN00 Price group E141
PN04, PN12, PN13 Price group E147

Swimming pool construction

Low water level – overflow channel with moulded trims

Uses (preferable):
Indoor, outdoor, recreation, fun and hotel pools

Matching outlets on page 323
Pool edge systems in detail

Low water level | Pool edge piece

<table>
<thead>
<tr>
<th>Art.</th>
<th>Description</th>
<th>Price group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650</td>
<td>Pool running edge</td>
<td>E106, E113</td>
</tr>
<tr>
<td>3652</td>
<td>Pool running edge, half length</td>
<td>E90, E95</td>
</tr>
<tr>
<td>3654</td>
<td>Inside corner (Mitred pair)</td>
<td>E123, E126</td>
</tr>
<tr>
<td>3655</td>
<td>Outside corner (Mitred pair)</td>
<td>E148, E151</td>
</tr>
</tbody>
</table>

Note:
To ensure swimming pool water of hygienic quality, the water is to be treated and disinfected in accordance with DIN 19643-1 (treatment of water for swimming pools). To prevent fungal attack, the surfacing is to undergo thorough cleaning once annually, replacing the entire filling of water.
High water level/“Finnish” overflow system - Open channel

- The rounded-off pool border is higher than the pool surrounding.
- The water level is approximately 50-60 cm above the pool surrounding.
- The water flows over the pool border, running down the outside and into the overflow channel, which is flush with the pool surrounding. The overflow is executed either as a shallow, open trough or as a grate-covered, tiled channel.
- Small format tiles are preferable.
- With deference to possible erosion, epoxy resin should be used for filling the joints.

High water level/“St. Moritz” system
Special designs

**Therapy pools**

In Germany, the design and construction of medicinal baths is subject to the following basic rules:

- The minimum dimensions for therapy pools are 3 x 4 m.
- The minimum water depth is 0.5 m for children and 0.8 m for adults.
- The maximum water depth is 1.35 m.
- The pool must have an overflow channel running along all its sides. Skimmers are not acceptable for hygienic reasons.
- The slope of the pool’s floor should ideally be constant, and should not exceed 4%.

- As a rule, the therapist’s gallery should run along one side of the pool and have a minimum width of 75 cm and a minimum depth of 80 cm.
- A handrail or ledge must be provided at the edge of the pool (water level).
- The steps must be at least 60 cm wide. The tread is 30 cm with a step height of 0.07 to 0.12 m. A handrail must be attached on both sides.
- The maximum slope for ramps is 15%.
Swimming pool construction

Therapy pools

Water level +0.00

Waterproofing layers:
- Capillary breaking joint filler
- Reaction resin filler
- Watertight concrete
- Bonded waterproofing
- Elastic joint sealant

Special designs

Therapy pools

Capillary breaking joint filler

Bonded waterproofing

Elastic joint sealant

Water level +0.13

±0.00

Water level +0.13

Water level +0.00

Art. 3660

Art. 3201

Art. 3753

Art. 2404 "B"
Pool edge systems in detail - Fixtures

Pool access steps

Art. 3050
Edge tile
PN55, PN56, PN57, PN58
Price group E46

Art. 3051
Edge tile, inside corner
PN55, PN56, PN57, PN58
Price group E113

Art. 3052
Edge tile, outside corner
PN55, PN56, PN57, PN58
Price group E128

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

Special points
Underwater edges such as steps or the front edge of the "Finish" system must be accentuated with a stripe of a different colour (PN04, PN12). Depending on requirements, the following colour combinations are available:
- PN55 = PN04 + PN13 (dark blue and aquamarine)
- PN56 = PN12 + PN13 (black and aquamarine)
- PN57 = PN00 + PN12 (white and black)
- PN58 = PN00 + PN04 (white and dark blue)

Swimming pool construction

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

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- PN55 = PN04 + PN13 (dark blue and aquamarine)
- PN56 = PN12 + PN13 (black and aquamarine)
- PN57 = PN00 + PN12 (white and black)
- PN58 = PN00 + PN04 (white and dark blue)

Water level ±0.00

Top concrete layer

Watertight concrete

Pool edge systems in detail - Fixtures

Pool access steps

Art. 3050
Edge tile
PN55, PN56, PN57, PN58
Price group E46

Art. 3051
Edge tile, inside corner
PN55, PN56, PN57, PN58
Price group E113

Art. 3052
Edge tile, outside corner
PN55, PN56, PN57, PN58
Price group E128

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

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- PN58 = PN00 + PN04 (white and dark blue)

Swimming pool construction

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

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- PN56 = PN12 + PN13 (black and aquamarine)
- PN57 = PN00 + PN12 (white and black)
- PN58 = PN00 + PN04 (white and dark blue)

Water level ±0.00

Top concrete layer

Watertight concrete

Pool edge systems in detail - Fixtures

Pool access steps

Art. 3050
Edge tile
PN55, PN56, PN57, PN58
Price group E46

Art. 3051
Edge tile, inside corner
PN55, PN56, PN57, PN58
Price group E113

Art. 3052
Edge tile, outside corner
PN55, PN56, PN57, PN58
Price group E128

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

Special points
Underwater edges such as steps or the front edge of the "Finish" system must be accentuated with a stripe of a different colour (PN04, PN12). Depending on requirements, the following colour combinations are available:
- PN55 = PN04 + PN13 (dark blue and aquamarine)
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- PN57 = PN00 + PN12 (white and black)
- PN58 = PN00 + PN04 (white and dark blue)

Swimming pool construction

Colours

Material vilbostone porcelain stoneware EN 14411-B1a
Applications Pool edge - indoors / outdoors
Actual size see diagrams
Joints approx 3 mm
Finish uni-coloured
Surface / Glaze formed, rough | matt
Calculation unit | Packing Piece | loose in box
Matching wall tiles PRO ARCHITECTURA

Special points
Underwater edges such as steps or the front edge of the "Finish" system must be accentuated with a stripe of a different colour (PN04, PN12). Depending on requirements, the following colour combinations are available:
- PN55 = PN04 + PN13 (dark blue and aquamarine)
- PN56 = PN12 + PN13 (black and aquamarine)
- PN57 = PN00 + PN12 (white and black)
- PN58 = PN00 + PN04 (white and dark blue)

Water level ±0.00

Top concrete layer

Watertight concrete
Pool edge systems in detail - Fixtures

Curved and cove base ceramic beading

<table>
<thead>
<tr>
<th>Material</th>
<th>vilbostone porcelain stoneware EN 14411-Bla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Pool edge - indoors / outdoors</td>
</tr>
<tr>
<td>Actual size</td>
<td>see diagrams</td>
</tr>
<tr>
<td>Joints approx</td>
<td>3 mm</td>
</tr>
<tr>
<td>Finish</td>
<td>uni-coloured</td>
</tr>
<tr>
<td>Surface</td>
<td>Glaze</td>
</tr>
<tr>
<td>Calculation unit</td>
<td>Packing</td>
</tr>
<tr>
<td>Matching wall tiles</td>
<td>PRO ARCHITECTURA</td>
</tr>
</tbody>
</table>
Pool edge systems in detail - Fixtures

Curved and cove base ceramic beading

Water level ±0.00

Capillary breaking joint filler

Bonded waterproofing

Reaction resin filler

Top concrete layer

Watterlight concrete

Pool edge systems in detail - Fixtures

Curved and cove base ceramic beading
Functional trims for pool surrounding

**Ceramic channel in the pool rim**

| Art. 3620 | Channel piece | PN00, PN09, PN12, PN31 | Price group E37 | R10 | B |
| Art. 3622 | Channel piece, half length | PN00, PN09, PN12, PN31 | Price group E29 | R10 | B |
| Art. 3621 | Channel piece with outlet | PN00, PN09, PN12, PN31 | Price group E94 | R10 | B |
| Art. 3624 | Inside corner/Outside corner | PN00, PN09, PN12, PN31 | Price group E100 | R10 | B |
| Art. 3626 | End piece | PN00, PN09, PN12, PN31 | Price group E81 | R10 | B |

**Colours**

<table>
<thead>
<tr>
<th>Material</th>
<th>Material Type</th>
<th>Applications</th>
<th>Actual size</th>
<th>Joints approx</th>
<th>Finish</th>
<th>Surface</th>
<th>Glaze</th>
<th>Calculation unit</th>
<th>Packing</th>
<th>Recommended floor tile</th>
</tr>
</thead>
<tbody>
<tr>
<td>vilbostone porcelain</td>
<td>stoneware EN 14411-Bla</td>
<td>Pool rim - indoors / outdoors</td>
<td>see diagrams</td>
<td>3 mm</td>
<td>uni</td>
<td>formed</td>
<td>matt</td>
<td>Piece</td>
<td>loose in box</td>
<td>CROSSOVER, MY EARTH, PRO ARCHITECTURA, X-PLANE</td>
</tr>
</tbody>
</table>

**Pool surrounding concrete construction**

**Drainage channel in the pool surrounding**
Swimming pool construction

Thanks to its decades of experience, Villeroy & Boch Tiles is the competent partner for the construction of new and restoration of existing swimming pools. Our company offers you a consultation and planning service that will assist you in all stages of project implementation. Please talk to the Villeroy & Boch tiles sales representatives or to the relevant department directly.

When renovating swimming baths, it is often necessary to install a composite seal directly under the tile covering.
Swimming pool construction

Static systems, movement joints

The pool must be structurally independent of the remaining structure. The structural engineer is responsible for selecting the static system. His decision dictates the arrangement of movement joints around and, where necessary, within the pool.

The following static systems can be used to effect the structural separation of the pool from the remaining structure.

Waterproofing of movement joints for overflow systems

The movement joint is situated in an area which is exposed to high strain through water. The type of waterproofing to be used for the joint depends on the waterproofing of the pool surround.

Nowadays, pool surrounds are usually waterproofed with brushable coatings, so-called alternative waterproofing, in accordance with ZDB leaflet.

Water level ±0.00

Capillary breaking joint filler
Tiles
Thin-bed mortar
Bonded waterproofing
Elastic joint sealant with closed cell rope
Sealing tape
Sloping screed covered with thermal insulation, protective sheet and reinforced screed

Reaction resin filler

Watertight concrete

Surround formed as single span slab

Surround formed as cantilever slab on the pool

Surround formed as cantilever slab on the structure
Swimming pool construction

Pool construction

Pools to be clad with tiles are generally made of reinforced concrete as per DIN 1045 / EN 206.

In some cases, pools made of stainless steel, e.g. on pleasure cruisers, or plastic can also be lined with vitreous tiles.

The following considerations apply exclusively to reinforced waterlight concrete pools.

This can be achieved by:
• using impermeable concrete or
• waterproofing.

After completing the reinforced concrete body of the pool, in order to verify watertightness, the customer is to fill the pool with chlorinated water for test purposes to the level of the rim around the pool (exposed concrete). The outside of freestanding pools should also not be waterproofed until after the leak test.

Marking the water level during the leak test provides an excellently accurate line of reference for positioning the ceramic accessories for the overflow without the need for carrying out special additional measurements.

Pools made of watertight concrete

The pool is constructed using watertight concrete (concrete with a high level of resistance to water penetration) in accordance with DIN 1045 / EN 206 and based on static calculations. The structure must be kept free of cracks. Instructions for constructing pools of watertight concrete are addressed in the information leaflet entitled “Swimming and bathing pools made of reinforced concrete” [“Schwimm- und Badebecken aus Stahlbeton”] published by the German Association for the Recreational and Medicinal Bath Industry [DGfdB].

The following points should be heeded when building the pool:
• Proper composition of aggregates and accordingly a low water/cement ratio.
• For practical reasons, pool floors and walls should be at least 25 cm thick and the upturn behind and/or in front of the drainage channel should be at least 15 cm thick, in the absence of any additional sealing.
• Optimal compaction of freshly poured concrete by means of an immersion vibrator.
• Appropriate aftertreatment of concrete (by keeping it moist)
• Minimum strength category of concrete: C25/30.
• Minimum overlap of reinforcing rods: 50 mm, in special cases, for example such as salt or mineral water up to max. 55 mm.
• For pools intended to be filled with water that is particularly aggressive to concrete, e.g. salt water, the bonding agents used should be selected on the basis of a water analysis.
• It is desirable to pour the floor and walls in a single operation. Should a construction joint between the floor and the walls be necessary, a stop-end joint tape must be inserted.
Swimming pool construction

Pools with composite seal (CS) with ceramic covering

As a technical rule for this type of waterproofing see the leaflet from the ZDB “Ceramic tiles in swimming pool construction - Advice on planning and implementation.” and DIN 18195-7. This standard is to be replaced by DIN 18535 “Waterproofing of tanks and pools”, which is currently in draft form.

Materials used:
- Synthetic mortar mixtures – dry layer thickness min. 2.0 mm
- Reactive resins – dry layer thickness min. 1.0 mm

or the minimum layer thicknesses as specified in the general building inspectorate test certificates of the respective manufacturer must be observed.

Suitable bases
- Concrete in accordance with DIN 1405 / EN 206 and DIN 4227
- Levelling plaster in accordance with DIN 18550, mortar group PIII

Waterproofing

Is to be carried out according to the general building inspectorate test certificates of the respective manufacturer. The thickness of the waterproofing depends on the Material used and on the manufacturers’ specifications.

The waterproofing is applied by filling, smoothing, rolling or spraying onto the cleaned substrate. As a rule, the waterproofing has to be applied in at least two work processes in accordance with the manufacturer’s instructions.

At structure joints and corners wherever movements are to be expected, the waterproofing should be reinforced with bonded fabric or sealing collars.

Pipes are incorporated in the surface waterproofing by means of a gasket or flange.

Floor drains need a wide flange to take the waterproofing.

The dimensional accuracy of the backing should correspond with the finished cladding. Considerable unevenness should be compensated for beforehand with underlay waterproof plaster or levelling screed.

The base material must be free of adherents, debris, dust, binding agents, efflorescence or other contaminants that could impair adhesion.

Concrete surfaces on the pool walls should be sandblasted.

Resulting cracks or the movement of existing cracks should not exceed 0.2 mm unless there is proof that the relevant sealant is able to bridge larger cracks.

Materials used:
- Synthetic mortar mixtures – dry layer thickness min. 2.0 mm
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Swimming pool construction

Pool claddings

In the case of a swimming pool made of impermeable concrete the tiles are attached by means of the bonded cladding principle.

VOB-DIN 18352 “Working with tiles and slabs” applies for bonded cladding in mortar (so-called conventional or thick bed tiling).

DIN 18157 “Tiling ceramic coverings using the thin bed method” applies for thin bed tiling.

DIN 18550 “Plaster” applies for screeds, DIN 18560 Part 3 “The use of screeds – bonded screeds”.

If the backing is as level as the finished cladding is expected to be, the tiles can be fixed directly to the concrete by the thin bed method.

In general, however, it is necessary to compensate for a certain amount of unevenness. This is done by applying an underlay of levelling plaster of mortar group III, preferably pure cement plaster. The limits on flatness deviation pursuant to Table 3, lines 3 and 6 and, where appropriate, line 7, of DIN 18202, ‘Tolerances in building construction’, must be observed. The tiles are laid mainly across the entire surface of the duly prepared substrate using a suitable C2 thin-bed mortar in accordance with DIN-EN 12004.

Most serious damage resulting from the failure of the bond between the tiles and the backing is caused by shear stresses building up in the interface. Shear stress occurs most often when the “young” concrete is tiled before it has finished shrinking.

Minimum age of the concrete in accordance with DIN 1045

In this connection, see: Leaflet 25.01 of the German Association for the Recreational and Medicinal Bath Industry [DGfdB] entitled “Shrinkage and swelling of reinforced concrete ceilings, influence on the bonding behaviour of ceramic coverings” [“Schwinden und Quellen von Stahlbetondecken, Einfluss auf das Verbundverhalten keramischer Bekleidungen”] and Leaflet 25.04, “Swimming and bathing pools made of reinforced concrete” [“Schwimm- und Badebecken aus Stahlbeton”].

Note:

To ensure swimming pool water of hygienic quality, the water is to be treated and disinfected in accordance with DIN 19643-1 (treatment of water for swimming pools). To prevent fungal attack, the surfacing is to undergo thorough cleaning once annually, replacing the entire filling of water.
Technical aspects of application

Ceramic claddings

In principle all types of tiling belong to one of the following groups:
- Bonded claddings
- Floating claddings

Bonded claddings

Bonded claddings are based on the principle of frictional connection, i.e. no movement is possible between the ceramic tiles and the solid base, much like in a reinforced concrete component.

The conventional setting method involves the use of bedding mortar, while the thin bed method in accordance with DIN 18157 relies on an adhesive to effect the bond. To achieve a good bond, the base material must be free of the following:
- residue and debris such as wood, metal, formwork lube or other contaminating layers that could impair adhesion
- cracks or efflorescence
- considerable unevenness
- too smooth a surface.

Movement joints should be positioned at the edges and at existing structural joints.

Floating claddings

A floating cladding is when the cladding is separated from the backing by insulation, foils, oil-impregnated paper or the like in accordance with DIN and/or the ZDB leaflet “Composite seals”.

Unlike bonded claddings, floating claddings should be subdivided by movement joints around the borders of and between individual sections.
Technical aspects of application

Ceramic claddings

Floor and wall claddings in wet rooms

Floor claddings which are classified as having a high exposure to moisture require waterproofing and that the floors slope towards the drains. The slope of the waterproofing layer corresponds to that of the finished tiling. For ceramic tiles a slope of 1,5 % is usually sufficient. In showering rooms the floor in the vicinity of the showers should slope at a 3 % gradient.

In this connection, see: German Association for the Recreational and Medicinal Bath Industry [DGfdB] entitled “Gradients in floor coverings of swimming pools” [“Gefälleausbildung in Bodenbelägen von Schwimmhäusern”].

The waterproofing must extend over movement joints. Permalastic sealing strips should be used in a loop shape for this purpose. (Figure 1)

Drains must be fitted e.g. with at least a 30 mm wide flange and installed with at least 50 mm of overlap by the gasket over the grouting materials and screed in order to integrate these into the surface waterproofing.

For more structural comments on drains and channels, see the ZDB guideline “Instructions on producing drains with composite seals”.

Tiling on cement floors – heated and unheated

In principle, reinforcement of screeds on an insulating layer is not necessary. Reinforcement is advisable in the case of heated screeds. These screeds are to be divided into sections by section boundary joints: in unheated screeds maximum 60 m² in size with a maximum edge length of 8 m. In heated screeds maximum 40 m² in size with a maximum edge length of 6.5 m. (Figure 2)

Compact sections should be created wherever possible, with aspect ratios not exceeding a maximum of 1:2.

Structural joints should be taken on in the same width and in the same location.

The screed sections should also be subdivided at doorways and wall projections. The heating pipes should not cross the section joints in heated screeds where possible. If this should prove necessary, 300 mm long pipe sleeves should be used. (Figure 3)

For more information, please refer to the ZDB leaflet “Tiling on cement floors”.

Pipes and tap fittings that penetrate wall claddings are integrated into the surface waterproofing by means of sealing gaskets.

See also: ZDB leaflets “Composite seals” and “Swimming pool construction”, as well as DIN 18534 “Waterproofing for indoor applications”, which is currently in draft form.