NBK | ARCHITECTURAL TERRACOTTA

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ARCHITECTURAL TERRACOTTA

HunterDouglas
FACADES

ARCHITECTURAL TERRACOTTA

While technology has continuously progressed, the manufacture of clay-based construction materials still centres on the three elements of fire, water and clay – as it has done for millennia. Exploiting all the age-old traditions, skills and workmanship necessary for processing the material clay, Niederrheinische Baukeramik (NBK) has developed the TERRART® terracotta façade system.

TERRART® is a ventilated curtain wall/rainscreen system whose exposed components are made exclusively from terracotta. This was the key requirement imposed on the NBK development team by Renzo Piano for the Potsdamer Platz scheme – the starting point for the presentday TERRART®-system.

The system components are manufactured so as to maximize shape accuracy and guarantee best fit. State-of-the-art drying and firing techniques allow a largely tolerance-free production of units up 190 cm long. The TERRART®-Flex support system – a patented developed within the TERRART® product range – comprises a mere 15 individual components and ensures excellent integration of the system in any classical and contemporary wall construction.

With its "Large", "Mid" and "Shingle" ranges, the versatile TERRART®-system offers architects maximum scope for creativity. Purpose-made project-specific developments provide designers with practically boundless options. The gobal success experienced by the TERRART®-system is documented in this book. Many of the buildings that feature a TERRART® façade are prime examples of forwardlooking architecture.

Enthusiastic architects draw inspira tion from components whose shape, colour and finish may be suitably orchestrated to produce striking façade designs. Satisfied clients can delight in buildings of tremendous aesthetic appeal, while reaping the benefits of one of the most weather resistant construction materials available.

TERRART® has opened up a complete ly new dimension in façade design and received worldwide acclaim. Every new building serves as an impetus for further projects. What all schemes share is exceptional architecture.

Today, the TERRART®-system developed by Niederrheinische Baukeramik is used in all its variants across the globe. The most distinguished of architects have come to appreciate the tremendous creative possibilities offered by this terracotta façade system, which combines traditional craftsmanship with leading-edge manufacturing technology. Its ability to accommodate even the finest design details in terms of shape, colour, texture and glaze paves the way for unique, tailored solutions.

For further information on trends, technical developments and current construction projects please visit our website at:

www.nbk.de

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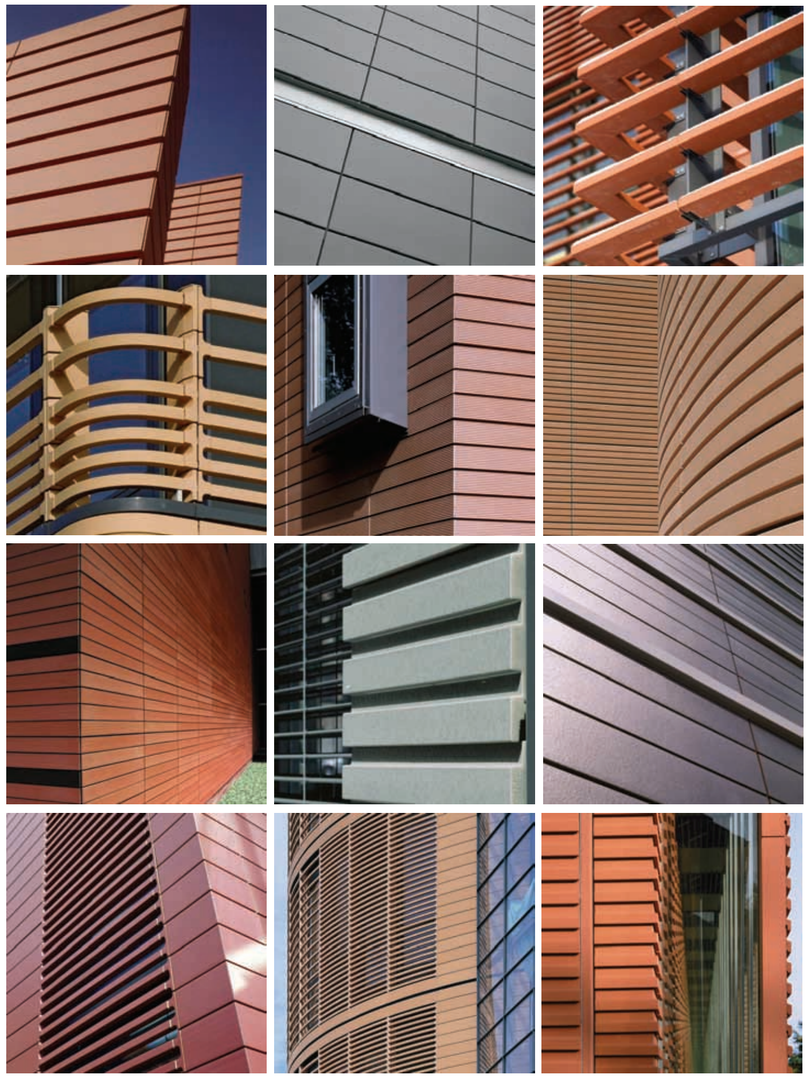
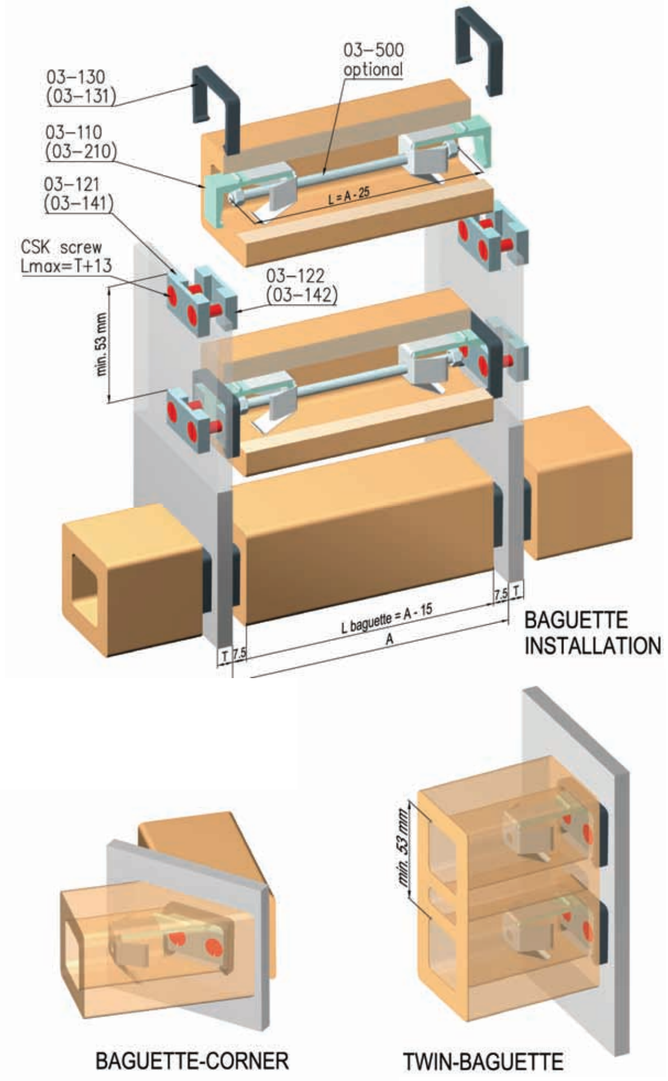
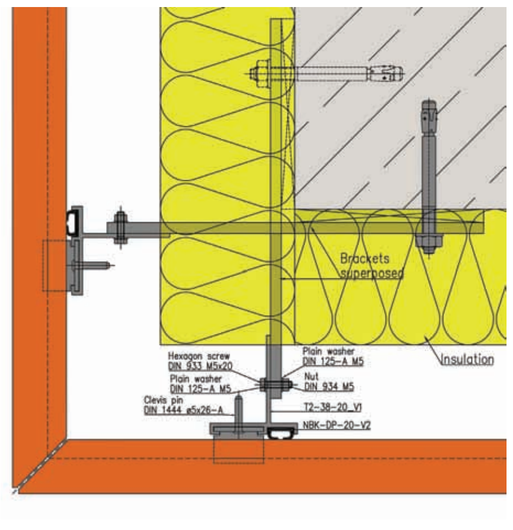
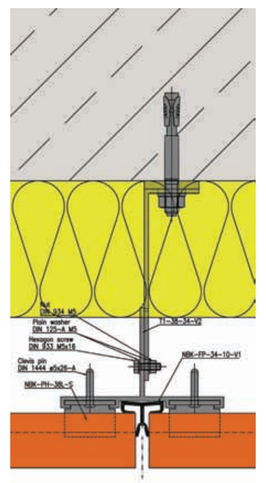



03–130
(03–131)
03–110
(03–210)
03–121
(03–141)
CSK screw
Lmax=T+13
03–500
optional
L = A - 25
03–122
(03–142)
min. 53 mm
L baguette = A - 15
A
T 7.5
7.5 T
BAGUETTE
INSTALLATION
BAGUETTE-CORNER
min. 53 mm
TWIN-BAGUETTE





HORIZONTAL SECTION / OUTSIDE CORNER

The TERRART®-LARGE ceramic elements are always produced individually for each project in the colour and shape desired by the customer.

Length: max. 1,800 mm
The length of the ceramic elements can be adjusted individually to maximum 1,800mm

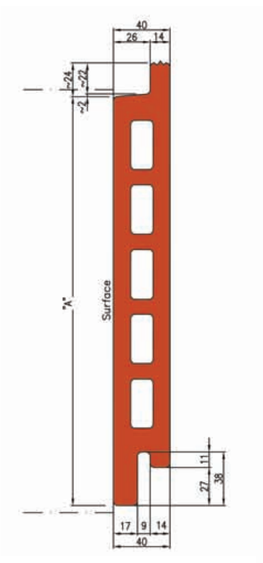
Height: max. 800 mm
The height of the elements can be adjusted to the desired horizontal grid.

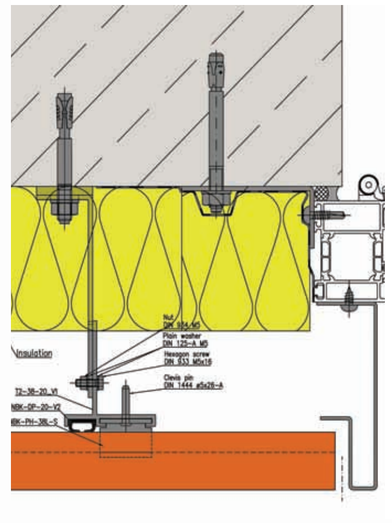
Thickness: approx. 40 mm
Hollow chambers, according to production specifications. For corners, we offer mitre-cut elements. Alternatively, we provide specially designed corner plates with a maximum side length of 250 mm and a maximum height 300 mm.

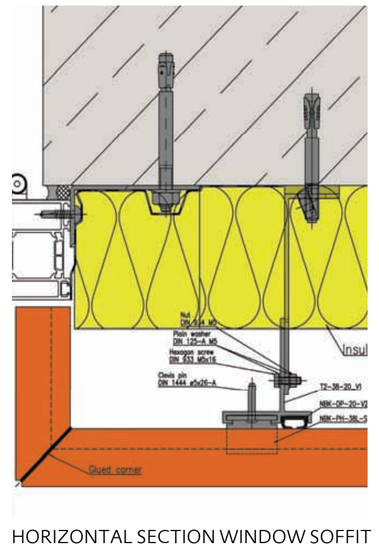
Colours:
For standard colours see our colour table. Other colours are available on request. Glazing according to customer wishes or RAL specifications.

Surface finishes:
Natural, polished, textured, peeled, profiled, glazed.
Curved surfaces can not be polished.
Other surfaces are available on request.

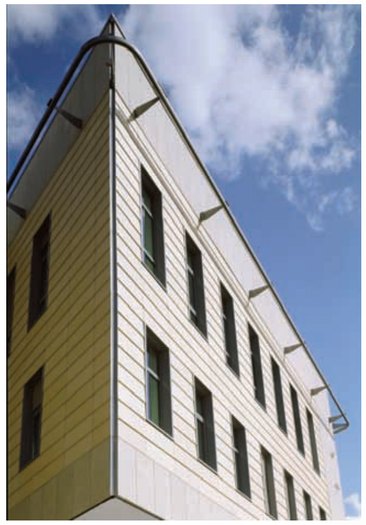
Mass per unit area:
approx. 65 kg / m²

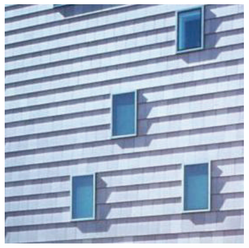


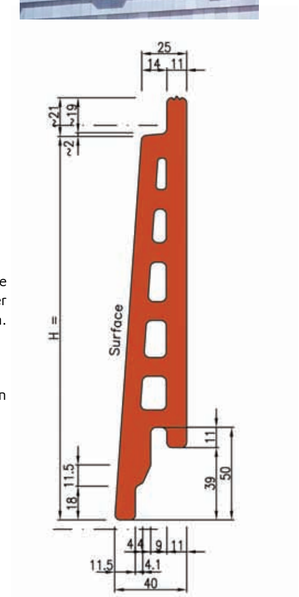




HORIZONTAL SECTION WINDOW SOFFIT







The TERRART®-SHINGLE ceramic elements are always produced individually for each project in the colour and shape desired by the customer.

Length: max. 1,800 mm
The length of the ceramic elements can be adjusted individually to maximum 1,800mm

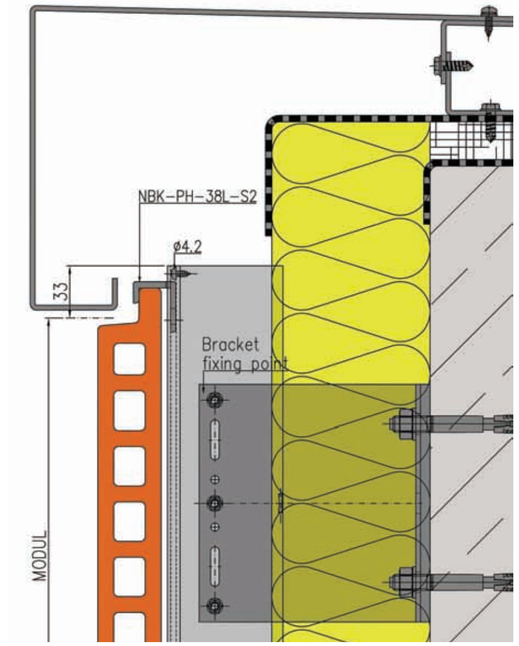
Height: max. 600 mm
The height of the elements can be adjusted to the desired horizontal grid.

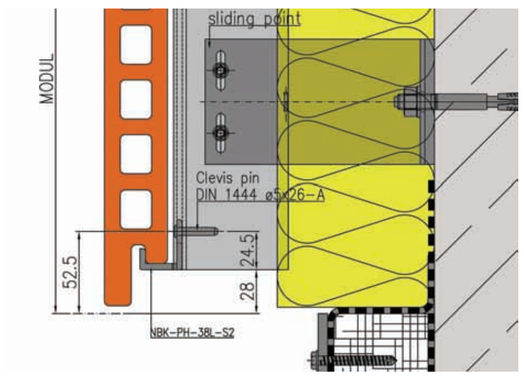
Thickness: approx. 25/40 mm
Hollow chambers, according to production specifications. For corners, we offer mitre-cut elements. Alternatively, we provide specially designed corner plates with a maximum side length of 250 mm and a maximum height 300 mm.

Colours:
For standard colours see our colour table. Other colours are available on request. Glazing according to customer wishes or RAL specifications.

Surface finishes:
Natural, polished, textured, peeled, profiled, glazed.
Curved surfaces can not be polished.
Other surfaces are available on request.

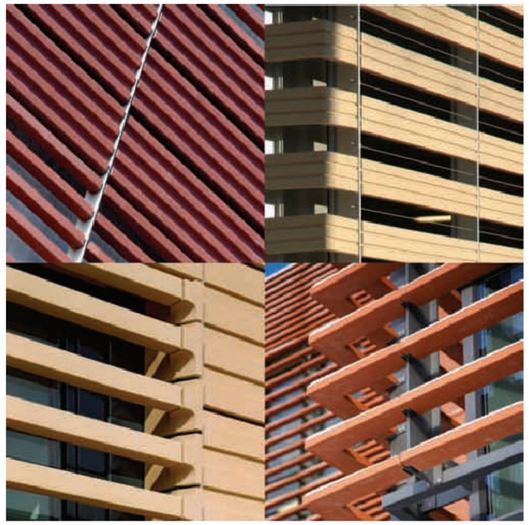
Mass per unit area:
approx. 65 kg / m²





VERTICAL SECTION PARAPET/ BASE

TERR**A**RT®-BAGUETTE



The TERRART®-BAGUETTE ceramic elements are always produced individually for each project in the colour and shape desired by the customer.

Length: max. 1,600 mm
The length of the ceramic elements can be adjusted individually to maximum 1,600mm

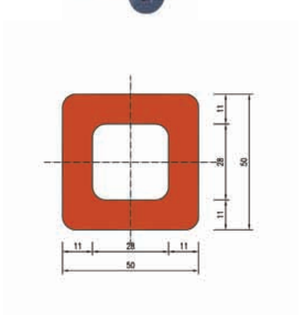
Height:
The TERR**A**RT®-BAGUETTE is a spezial shape element with a minimum diameter of 43 x 43 mm.

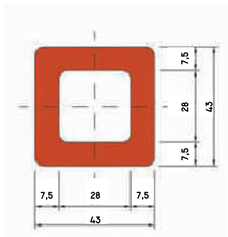
The most commonly used size is
50 x 50 mm
Special shapes and dimensions are available on request.
For corners, we offer mitre-cut BAGUETTE elements.

Colours:
For standard colours see our colour table. Other colours are available on request. Glazing according to customer wishes or RAL specifications.

Surface finishes:
Natural, polished, textured, peeled, profiled, glazed.
Curved surfaces can not be polished.
Other surfaces are available on request.

Mass per unit area:
approx. 3,75 kg / m run for a 50x50mm diameter





TERR**A**RT®-FLEX RAINSCREEN SYSTEM

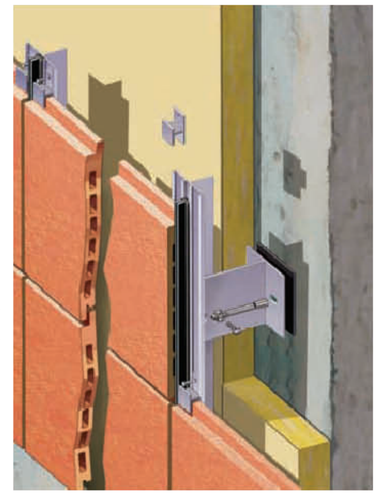
The NBK TERR**A**RT® ceramic clay tile façade system, which is based on the rainscreen principle, is custom designed and engineered.

The vertical joints are backed by a support system which drains rainwater away from the cavities behind. The gaskets, together with balanced air pressure, discourages water from entering the wall cavities.

The tile design allows for air to flow through „open joints“, which helps to balance air pressure in the cavities behind the terracotta cladding elements with that of outside air, hence, the term - pressure equalization.

Driven rainwater will not enter the cavities because of the overlapping joints („protected openings“) and lack of pressure differential.

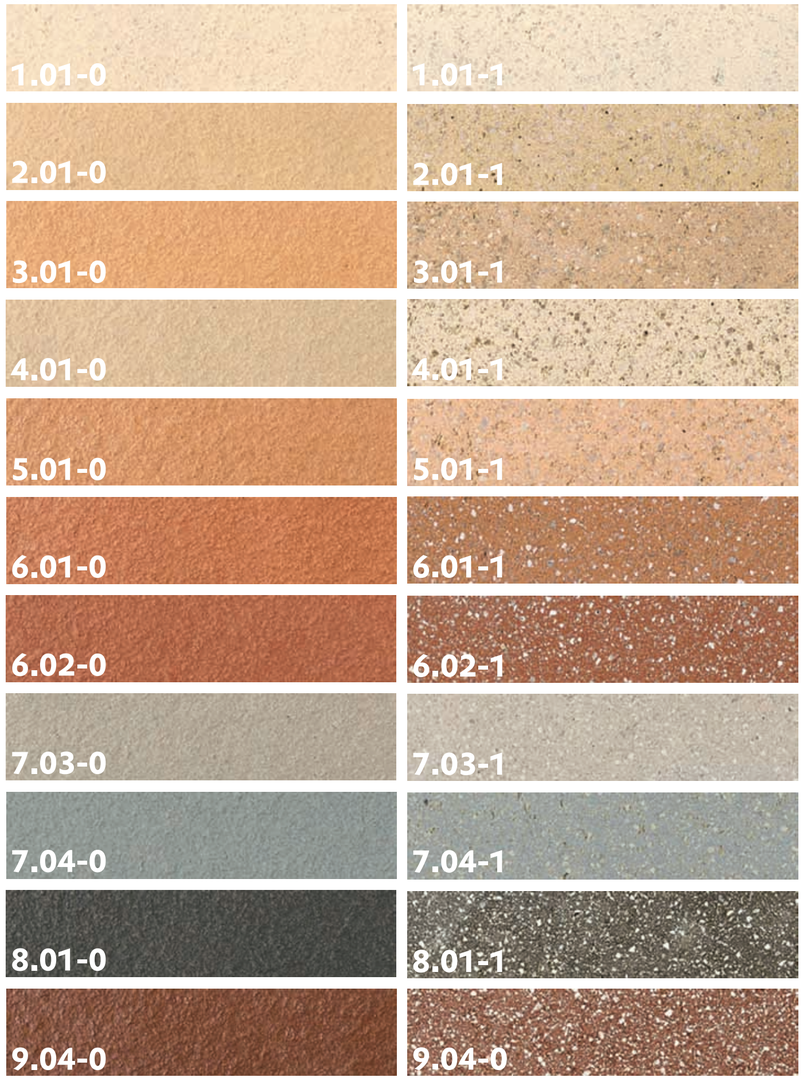
The „back ventilation“ assists in maintaining a dry cavity and negates the build up of hot air, an additional benefit to the TERR**A**RT® rainscreen system.



COLOURS AND SURFACES

natural surface

honed surface

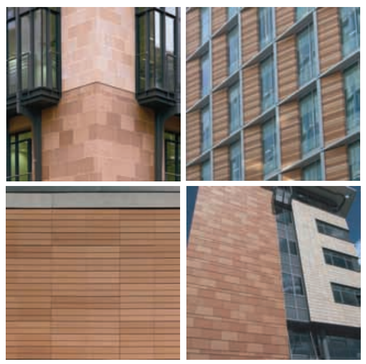


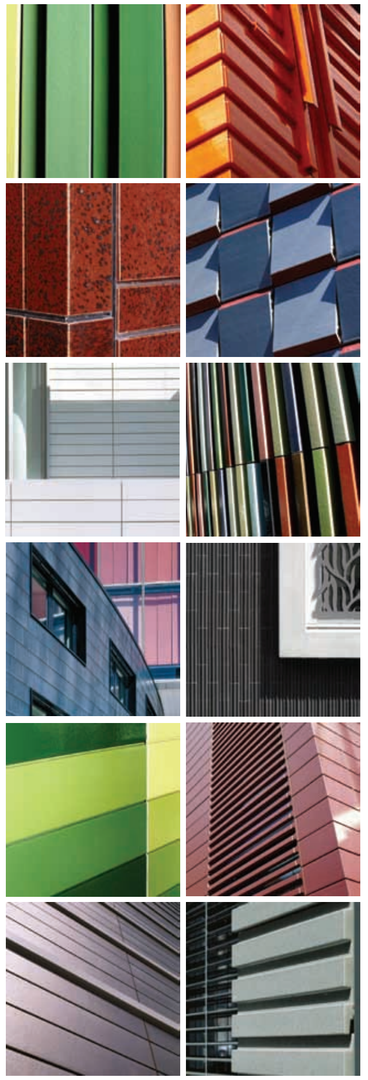
COLOURS AND GLAZES

TERR**A**RT® glazes and honed finishes are being increasingly exploited as a design feature in comtemporary architecture.

NBK's expertise in complicated mixing techniques and traditional firing methods, allows virtually any colour and sorface texture specification to be met to the letter.
This allows our company, in consultation with designers of exclusive product assortments, to make unique buildings.

The colours shown represent only a few of our overall range. Any required shade can be provided upon request.

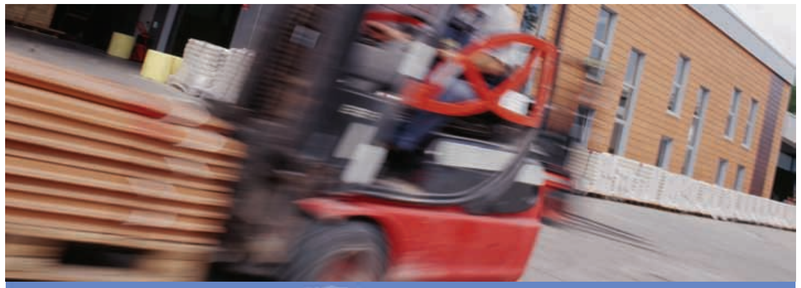


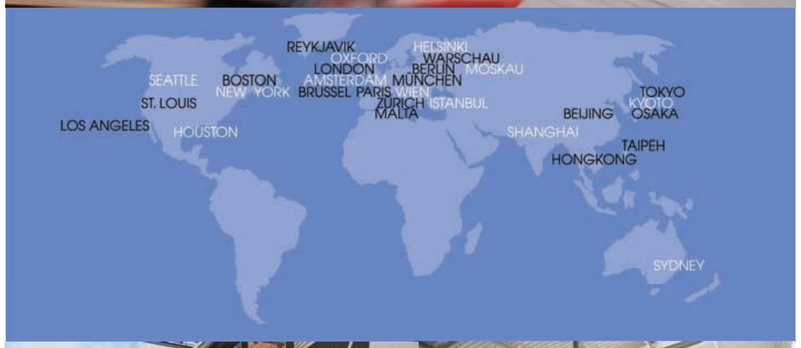


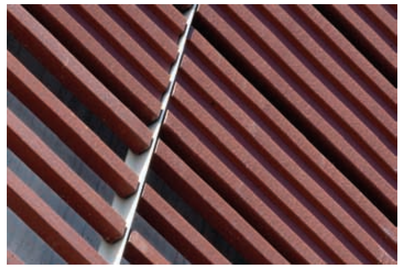
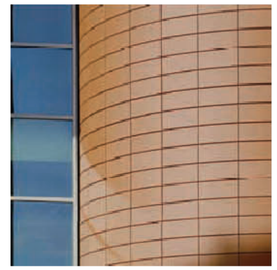
ARCHITECTURAL TERRACOTTA

NBK products are greatly respected around the world. Internationally renowned architects are increasingly exploiting the virtually unlimited options presented by the TERRART® range to realise their exceptional designs.
Façades with the TERRART® elements can be found in numerous countries - in Europe, East Asia and the USA - and thanks especially to NBK's commitment to businesses, the list is getting longer all the time.
The durability, robustness and weather resistance of the perfectly processed material all serve to recommend TERRART® for a use „without frontiers".

For shipping and transport, NBK provides packing of all terracotta elements in custom made heavy duty wooden crates or on pallets. All pieces are carefully packed; fibreboard and styrofoam are used as spacers so that the tiles cannot touch each other. This packing will limit damage during shipping and transport under normal conditions.

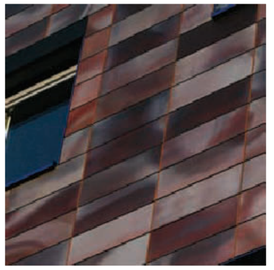


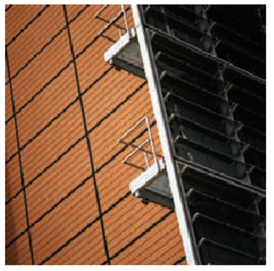
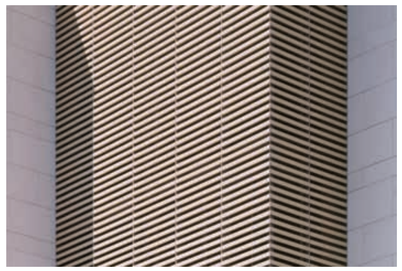


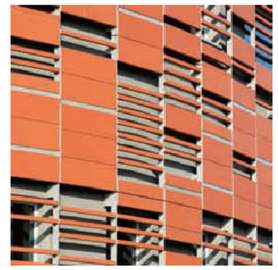
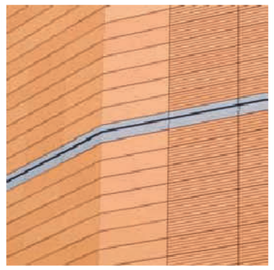






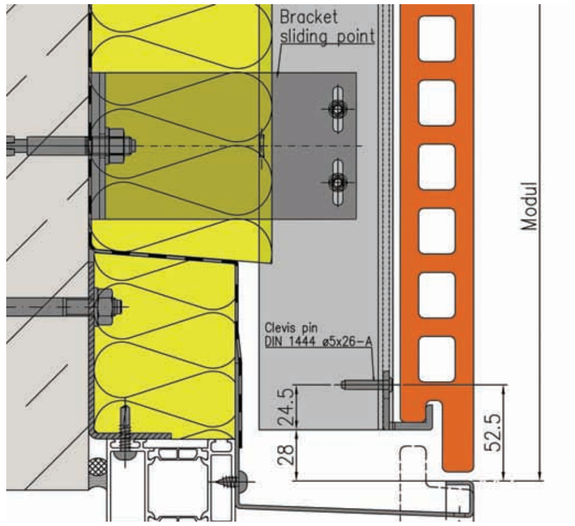


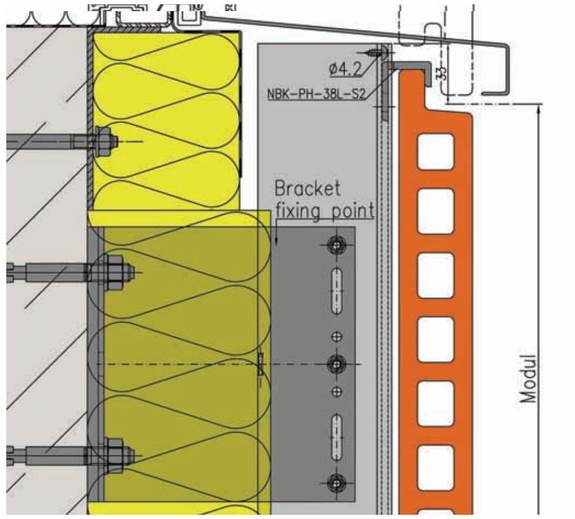


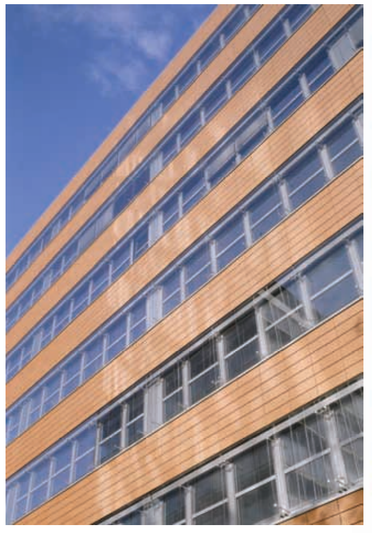



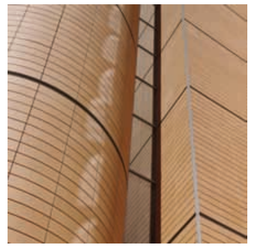

For more information about our projects please visit our website www.nbk.de (see references)





VERTICAL SECTION WINDOW SOFFIT / SILL





The TERRART®-MID ceramic elements are always produced individually for each project in the colour and shape desired by the customer.

Length: max. 1,400 mm
The length of the ceramic elements can be adjusted individually to maximum 1,800mm

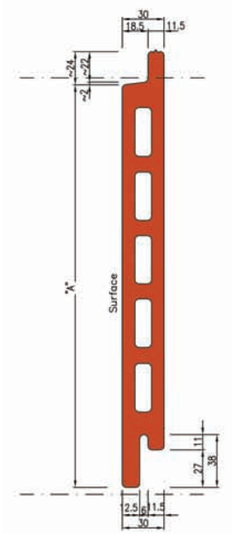
Height: max. 300 mm
The height of the elements can be adjusted to the desired horizontal grid.

Thickness: approx. 30 mm
Hollow chambers, according to production specifications. For corners, we offer mitre-cut elements. Alternatively, we provide specially designed corner plates with a maximum side length of 250 mm and a maximum height 300 mm.

Colours:
For standard colours see our colour table. Other colours are available on request. Glazing according to customer wishes or RAL specifications.

Surface finishes:
Natural, polished, textured, peeled, profiled, glazed.
Curved surfaces can not be polished.
Other surfaces are available on request.

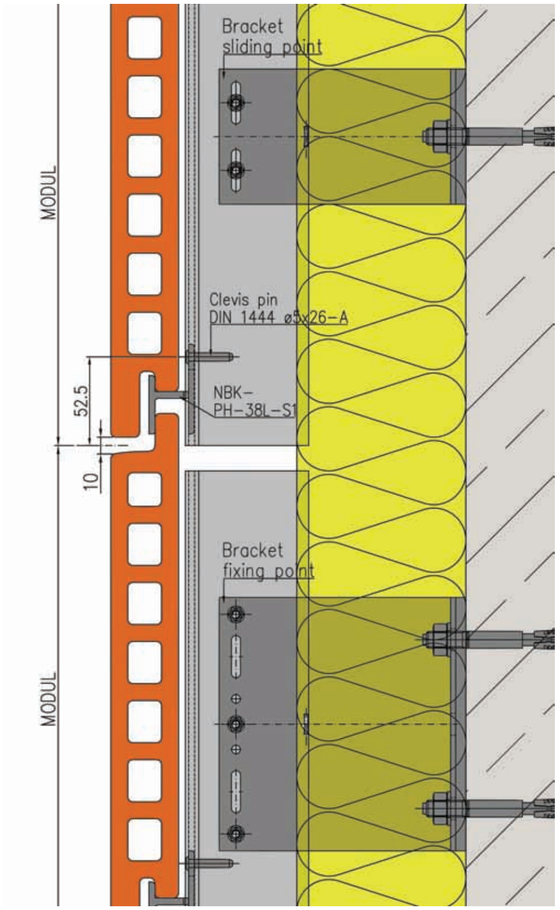
Mass per unit area:
approx. 55 kg / m²



TECHNICAL DETAILS

The following sketches just show a small choice of design principles.

All visible items can be modified and adapted to given demands.



VERTICAL SECTION

The TERRART®-SOLID ceramic elements are always produced individually for each project in the colour and shape desired by the customer.

Length: max. 1,200 mm
The length of the ceramic elements can be adjusted individually to maximum 1,800mm

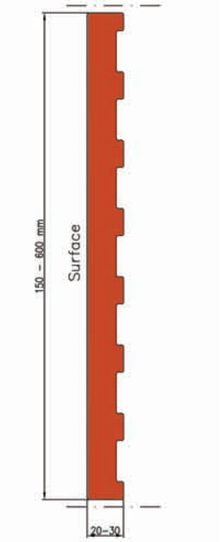
Height: max. 600 mm
The height of the elements can be adjusted to the desired horizontal grid.

Thickness: approx. 20/30 mm
Solid ceramic element, without hollow chambers.
For corners, we offer mitre-cut elements.

Colours:
For standard colours see our colour table. Other colours are available on request. Glazing according to customer wishes or RAL specifications.

Surface finishes:
Natural, polished, textured, peeled, profiled, glazed.
Curved surfaces can not be polished.
Other surfaces are available on request.

Mass per unit area:
approx. 65 kg / m²



TECHNICAL DATA SHEET FOR NATURAL TERRACOTTA TILES

water absorption	**EN ISO 10545 part 12**	
colour:		
1.01-0 AREZZO white		4.5 - 6.0 %
2.01-0 MOLINO light yellow		4.0 - 5.7 %
5.01-0 TORRITA terracotta red		4.3 - 6.3 %
6.01-0 SIENA brick red		4.3 - 6.4 %
bending tensile strength	**EN ISO 10545 part 4**	
colour:	(replaces EN 100)	
1.01-0 AREZZO white		13 - 20 N/mm²
2.01-0 MOLINO light yellow		17 - 24 N/mm²
5.01-0 TORRITA terracotta red		15 - 25 N/mm²
6.01-0 SIENA brick red		14 - 20 N/mm²
raw density		2.09 - 2.16 kg / dm³
linear thermal expansion Δ t = 100°C	**EN ISO 10545 part 8** (replaces EN 103)	< 0.4 mm referring to a length of 1,000 mm
freeze / thaw resistance	**EN ISO 10545 part 12** (100 cycles)	fulfilled
efflorescence and soluble salts	**DIN 105 part 1**	well below the permitted maximum limit
chemical resistance	**DIN 105 part 4**	fulfilled
dimensions and tolerances		
width 400 mm to 1,800 mm	**center in hole direction**	+/- 1.0 mm for cuts
height 150 mm to 800 mm	**opposite to hole direction**	+/- 2.0 mm to 250mm +/- 2.5 mm to 400mm +/- 3.0 mm to 600mm +/- 3.5 mm to 800mm
thickness 30 mm, 33 mm or 40 mm	**EN ISO 10545 part 2** deviation if surface is honed	+/- 1.5 mm
straightness in hole direction	**EN ISO 10545 part 2**	+/- 0.25% of length
diagonal flatness	**EN ISO 10545 part 2**	+/- 0.25% of diagonal
vertical flatness cross to hole direction	**EN ISO 10545 part 2**	+/-1.0% of height
torsion	**EN ISO 10545 part 2**	+/-0.25% of diagonal

Remark: All other formats, dimensions and spezial sizes are available on inquiry basis.
Subject change without notice.

The range of TERR**A**RT® products offers numerous other ceramic variants.

On an individual basis, custom production is possible for a particular property, through to elements with varying radii for the creation of elliptic shapes. Production is carried out according to specifications, also as a hand-made single element if required.

All bonded single elements must additionally be fixed mechanically on the construction site (by the customer) in accordance with DIN 18516 part 3, point 3.2 (both sides in the case of corners, on three sides in the case of U-shaped elements).