BUILD PROJECTS
THAT MAKE
HISTORY.

VELINOR
INTERNATIONAL

Flexural strength is one of the key quality indicators of bricks. Bricks that do not meet standard requirements will not withstand applied stresses and will deteriorate prematurely. According to the standard, the minimum average flexural strength of thin bricks should be no less than 140 kg/cm².

The smoothness and evenness of bricks depend on their warping and bulging. Although high-quality bricks should undergo the sintering phase and fusion, they will inevitably have minor warping and unevenness. However, standards define acceptable limits for first-grade facing bricks as 1 millimeter for bulging and 2 millimeters for warping. Bricks that fall within these limits or are completely smooth will have higher quality.

The amount of load that bricks can withstand is defined by compressive strength. There is generally a direct relationship between compressive strength and flexural strength, and both parameters indicate the resistance of the material against the stresses of the structure or external forces applied to the bricks. It is advisable for the minimum average compressive strength for grade one facade bricks to be 140 kg/cm². Bricks that do not possess this characteristic usually experience issues during the production process or are made from inferior materials or imperfectly fired.

The weight of a brick with dimensions 7 × 3 × 2/4 cm is given in grams.

Thermal conductivity coefficient (k/m/w) is crucial for energy efficiency and the movement towards green buildings in modern construction. The materials used in the surrounding walls significantly affect thermal performance. Materials with lower thermal conductivity coefficients offer higher thermal resistance and reduce energy consumption. Thermal resistance is calculated using the formula R=H/L where R is the thermal resistance, L is the thickness of the material, and H is the thermal conductivity coefficient. The thermal conductivity coefficient of bricks ranges from 6% to 1/2 %, while limestone ranges around 1/3, and silica stones range from 2 to 7.

The porosity present in bricks causes them to absorb surrounding water and moisture in a capillary manner. The higher the porosity, the greater the water absorption will be. High water absorption makes bricks more susceptible to freezing and damage according to severe weather changes. First-grade bricks should have a water absorption rate of less than 18% and more than 6%

Tolerance and dimensional differences in first-grade facing bricks significantly affect the type of execution and designs. Consistency and regularity in brickwork result from the calibration of bricks and reduced dimensional differences. The maximum tolerance for first-grade facing bricks with dimensions of 25 to 35 centimeters should not exceed 6 millimeters or ±3 millimeters. Therefore, the smaller the dimensional differences, the higher the quality of the bricks from this perspective.

# RAW MATERIALS

## Shale industrial clays calcite clay

## Calcareous Clay
### (Agricultural Soils)

Due to limited understanding of certain raw materials, the use of this type of clay has a long historical background. Although in some cases products made from it may meet standard specifications, today it is increasingly difficult to use such materials because of environmental concerns and the depletion of natural resources.



## Industrial Clays

Clay is a hydrated aluminum silicate. From a mineralogical perspective, clay refers to a group of silicate minerals that include clay micas (illite), the kaolinite group, very fine clays, and expandable clays (montmorillonite).
The particle size of clay is less than 2 microns. In the brick-making industry, clay consists of soil with very fine particles that, when mixed with sufficient water, has the ability to be plastic and moldable. In terms of chemical analysis, it mainly consists of silica, alumina (aluminum), and water.

## Shale

It is a type of sedimentary rock that is formed from the deposition of fine-grained sediments. Shales have a layered structure, and the main minerals composing them include quartz, alkali earth carbonates, and clay minerals, with clay being the most significant component. The color of shales is usually gray, but depending on the composition, they can also be found in red, brown, yellow, and green facade
Shales are classified based on the minerals present in them, chemical analysis, or by sandstones. The classification of shales based on their mineral content is as follows:

- Oil shales
- Feldspathic shales
- Micaceous shales
- Siliceous shales

“The production, warehousing, administrative, financial, and welfare sectors at the Velinor International are continuously and systematically playing their roles in providing the best services and contributing to the development of the country’s civil infrastructure. With over 25 years of experience in manufacturing various brick products, Velinor International has successfully launched an automatic brick production line equipped with tunnel kilns and rapid kilns, enhancing its nominal production capacity to 300,000 square meters per year, covering more than 500 types of facades, tiles, and flooring products.



according to the fact that the raw material used was clay, the uncontrolled extraction of this material led to significant environmental issues. The replacement material used to address this problem is shale. Shales are sedimentary rocks that, according to their specific properties, can be processed into a suitable particle size for brick production. When crushed and processed, shales can undergo a production process similar to that of clay, making them a viable alternative for brick manufacturing.

An important point about the use of shales is that, apart from the variety of colors they offer, which allows for more diverse production options, they also enhance the compressive, flexural, and abrasive resistance of bricks. This significant advantage not only extends the durability of the product but also enables the production of larger-sized bricks. One of the major challenges in the brick industry is dimensional tolerance, influenced by factors such as particle size distribution, clay type, drying process, and kiln type. While the use of shales significantly helps in reducing this phenomenon, the drying process is an even more critical factor.

The Velinor International, with its design and construction of modern dryers that blow warm, temperature-controlled air between the bricks, has managed to minimize the impact of the drying phase on dimensional tolerance. Additionally, by utilizing the most advanced kilns designed by Italian companies, the factory performs the firing process using the latest methods in the world, ensuring the highest quality in their products.

# BRICK
## PRODUCTION PROCESS

Brick production has been carried out in a similar manner worldwide for centuries. This process traditionally involved the following steps: preparing the clay, molding, drying the bricks, and finally firing them to produce bricks. After the Great Fire of London in 1666 and the onset of the Industrial Revolution, bricks became recognized as a durable and essential material in construction. This increased demand led to the development and use of machinery for faster and higher-quality brick production.

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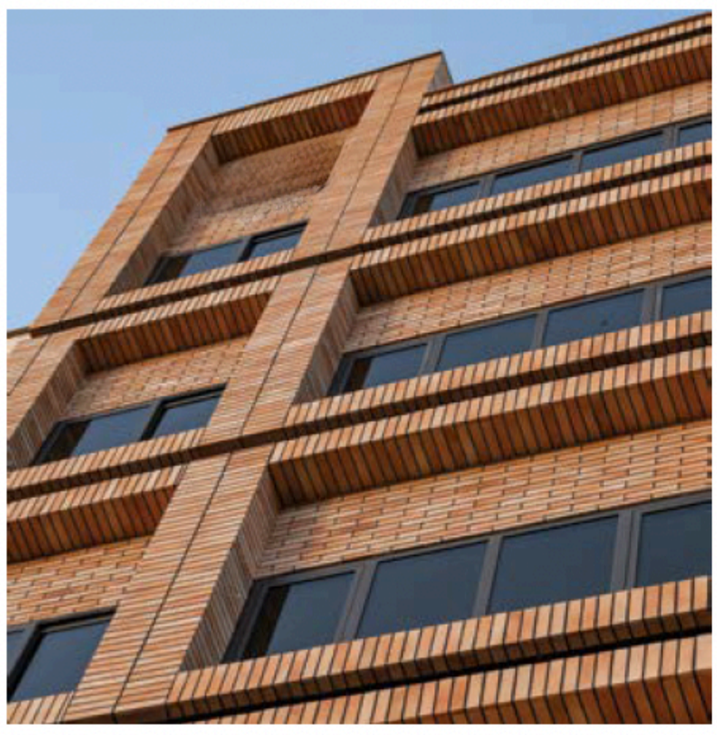

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## N11
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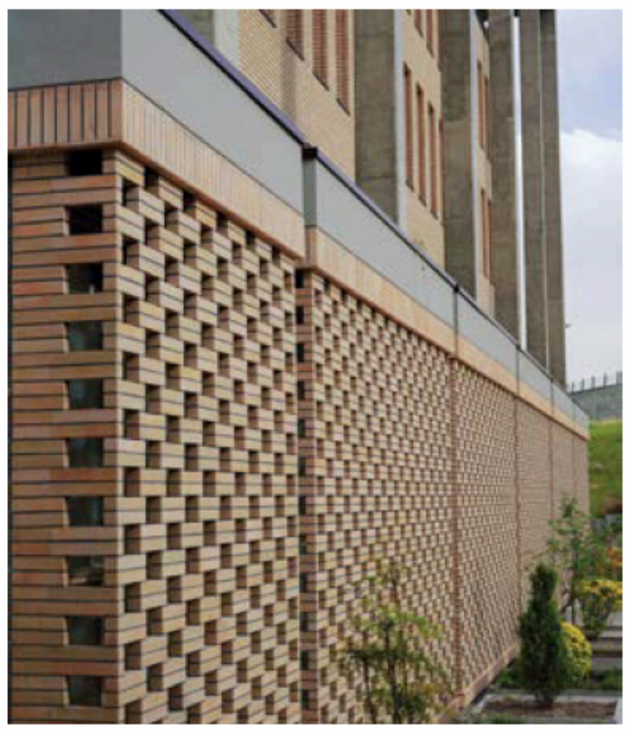
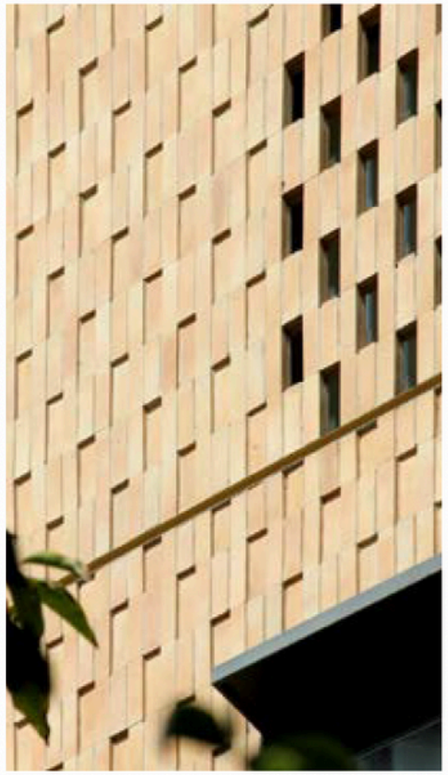




## N11

CODE: NBN7311

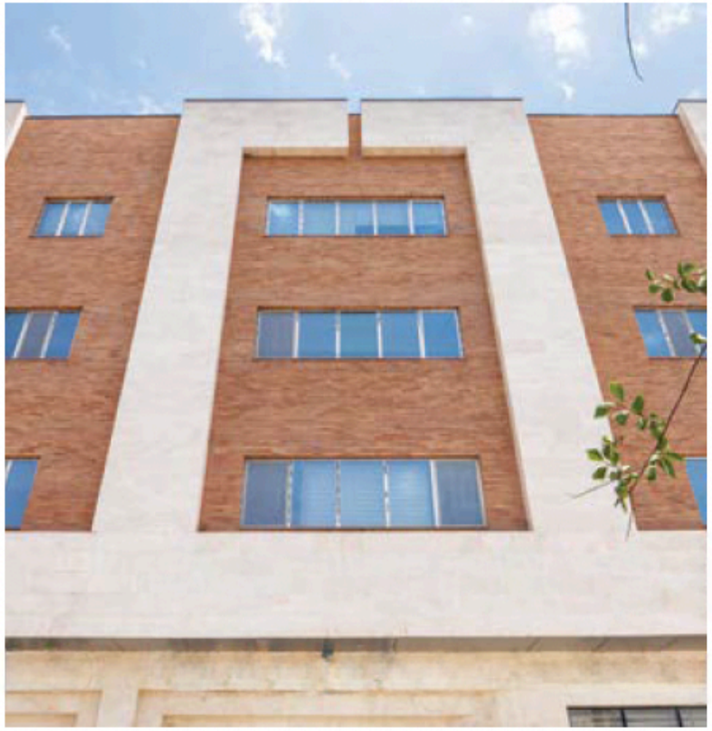
**DIM: 7x31cm**



## N11

CODE: NBN7311

**DIM: 7x31cm - Formic**



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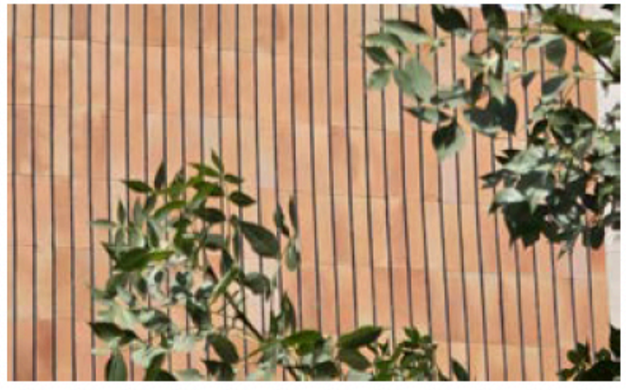
**DIM: 7x31cm**

## N33
CODE: NBN7333
**DIM: 7x31cm**





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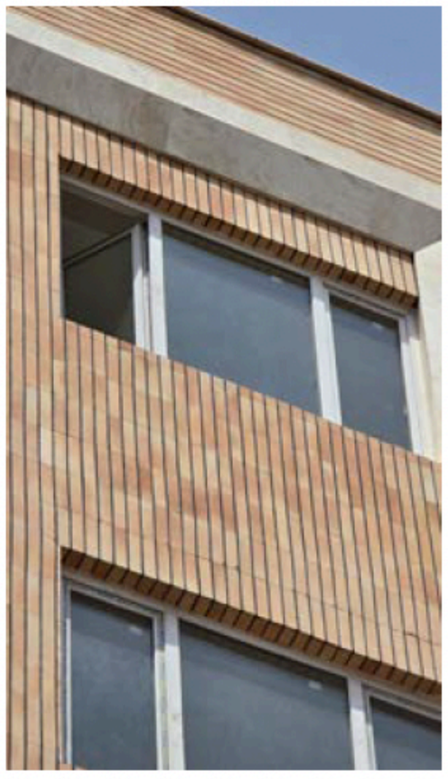


## N33

CODE: NBN7333

DIM: 7x31cm



## RESIDENTIAL BUILDING

## N33 - H11

CODE: NBN7333

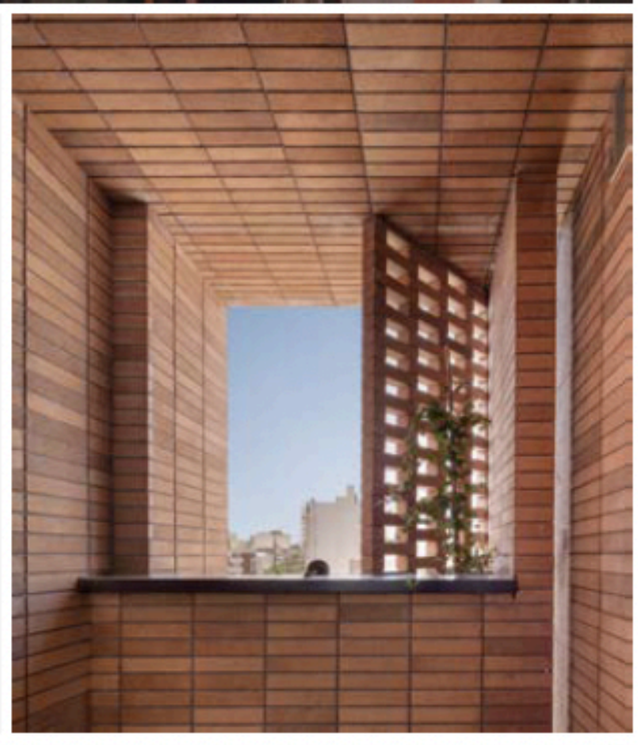
**DIM: 7x31cm - 12x100cm**



## N33

CODE: NBN7333

**DIM: 6.5x26cm**



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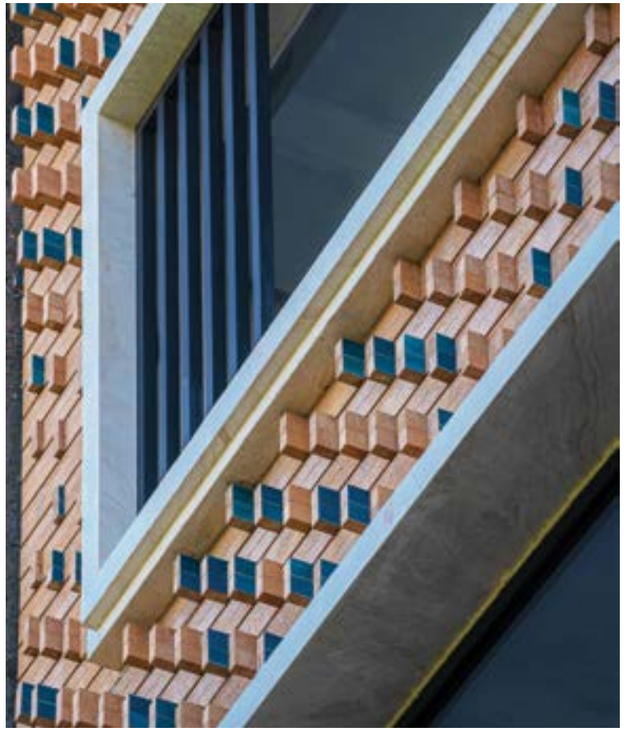

## N55

CODE: NBN7355

DIM: 7x31cm

**N55**
CODE: NBN7355
DIM: 7x31cm

**N55**
CODE: NBN7355
DIM: 7x31cm



**N55**
CODE: NBN7355
DIM: 7x31cm

**N55**
CODE: NBN7355
DIM: 7x31cm

## N55-S13
CODE: NBN7355
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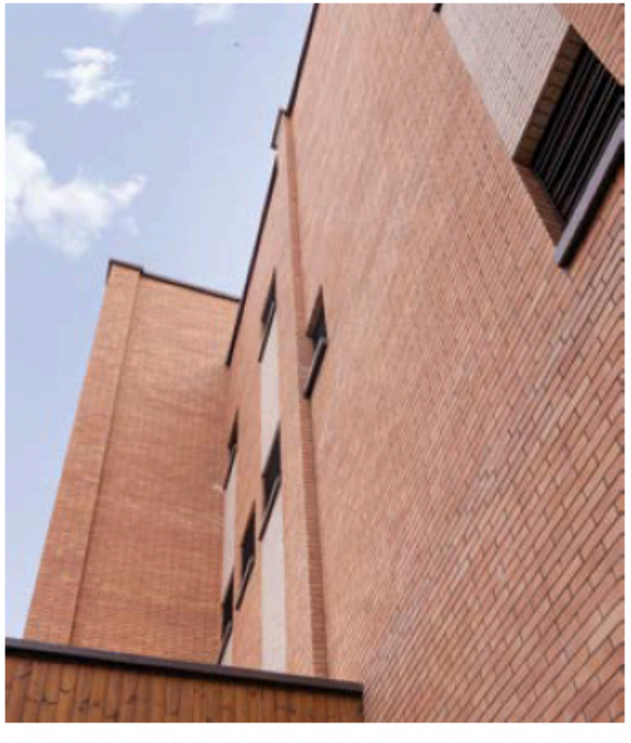

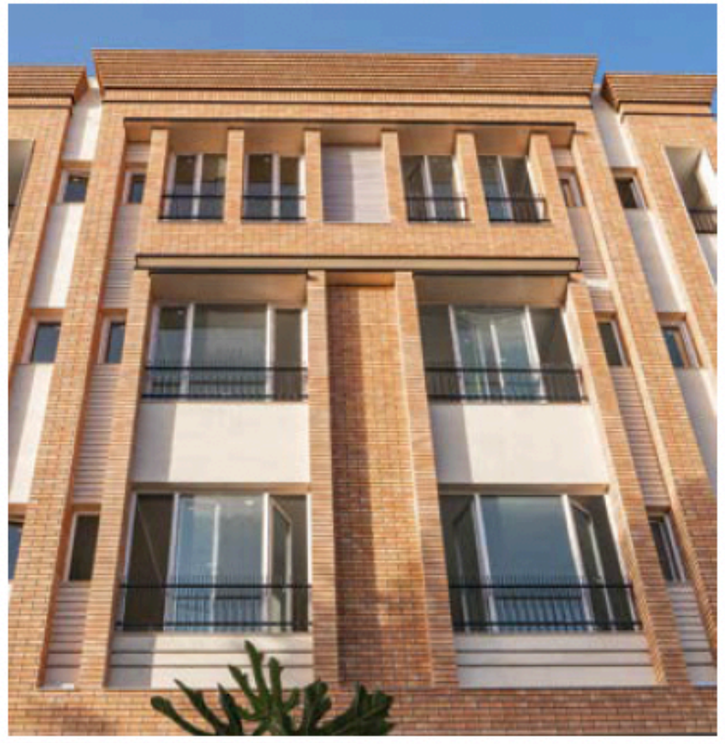

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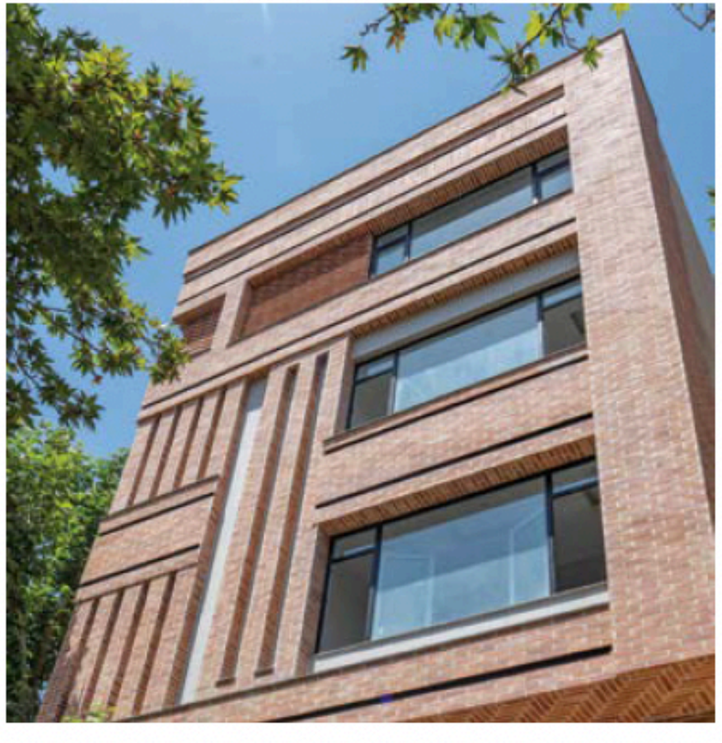


## N55
CODE: NBN7355
**DIM: 7x31cm**

## EN21

CODE: NBEN7321

DIM: 7x31cm



## EN21

CODE: NBEN7321

DIM: 7x31cm

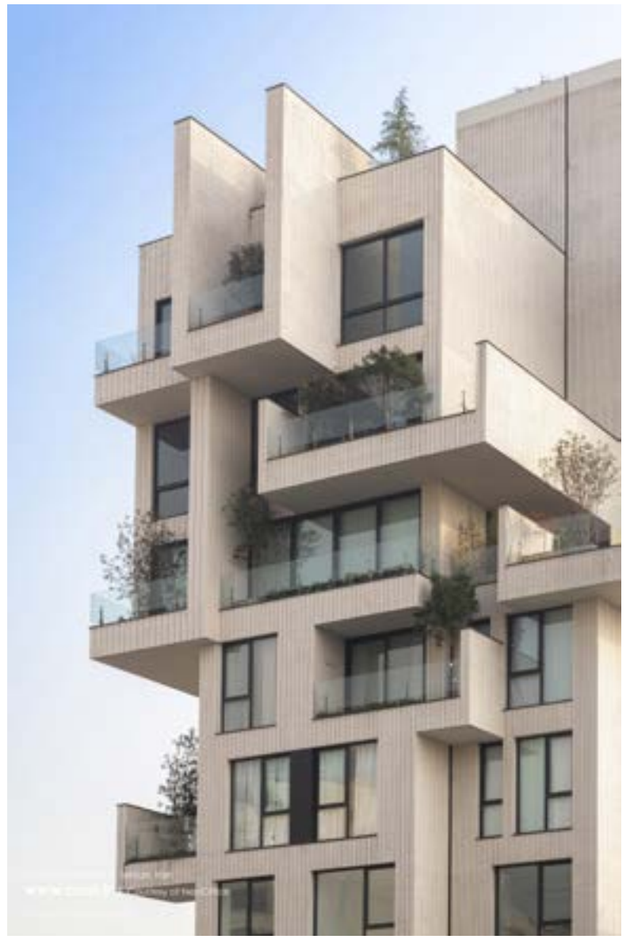
# CEDRUS
## RESIDENTIAL

In the building's facade, brick has been used as the primary construction material, reflecting tectonic intent and aesthetic expression. The bricks create various patterns across each facade strip of the volumes, and through certain lines, they generate diverse intervals and textures that are easily distinguishable.

**TS**

CODE: NBTS732

DIM: 7x31cm





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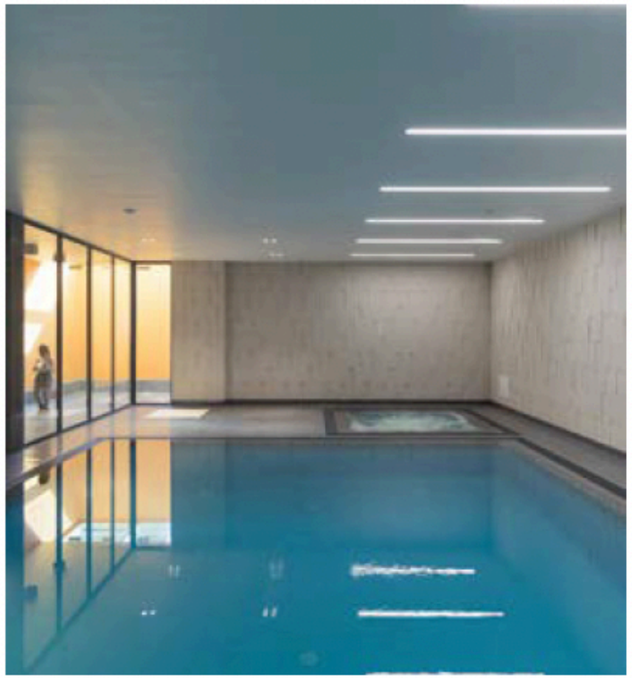
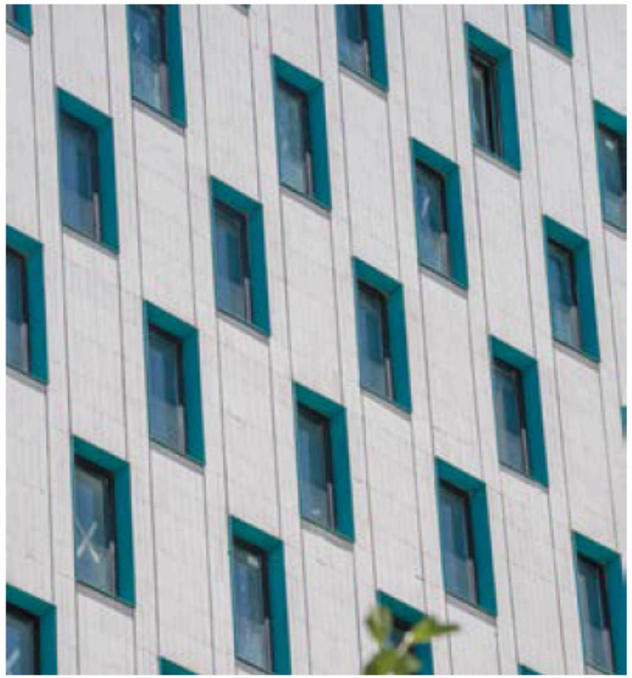


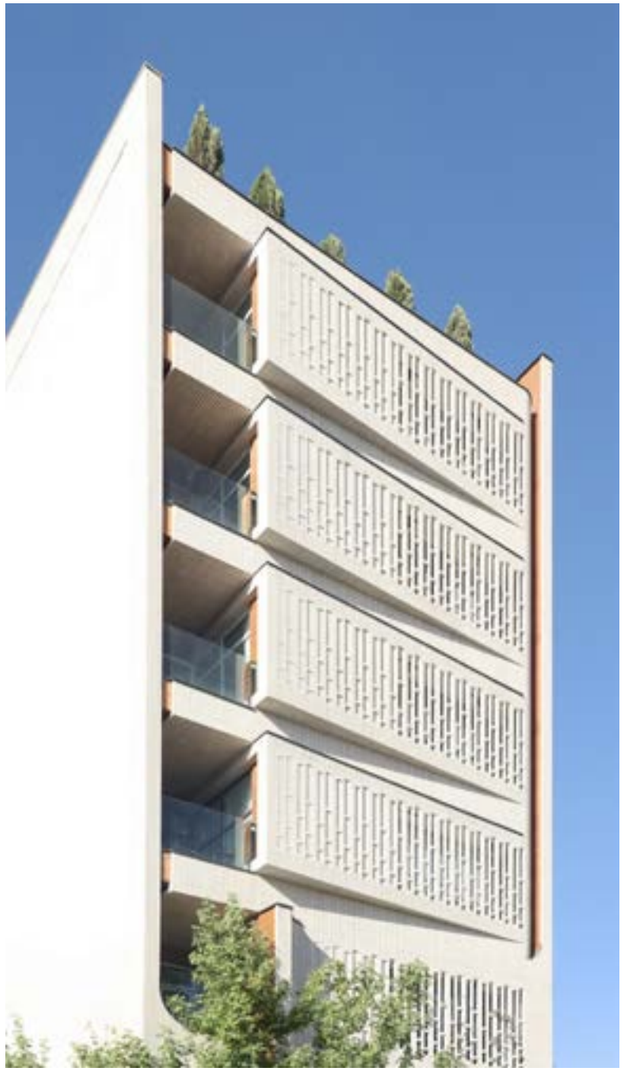


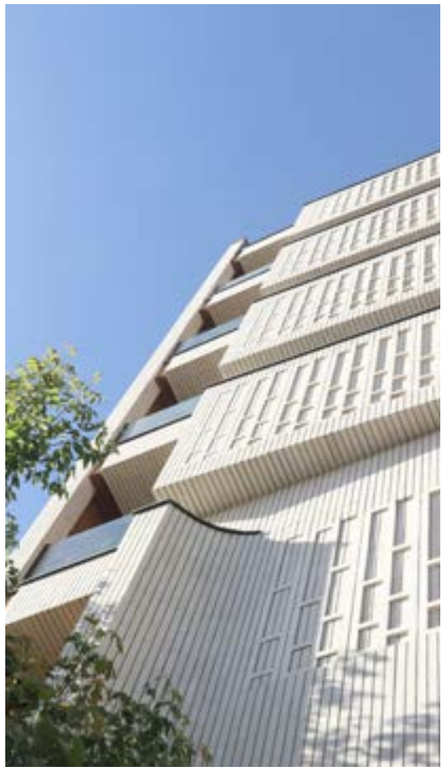
## TS

CODE: NBTS732

**DIM: 7x31cm**







## RESIDENTIAL BUILDING

## S20

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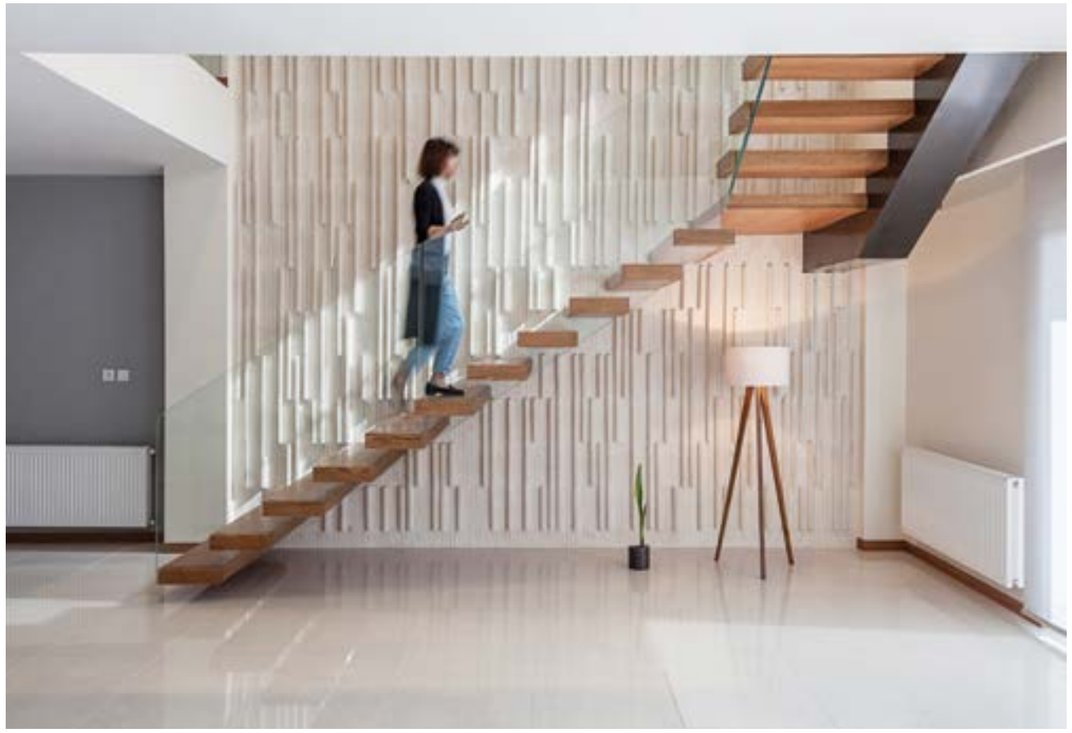
DIM: 7x31cm





## RESIDENTIAL BUILDING

This house is built in front of a green space with pine trees and its design was inspired by the trunk of pine trees.

## S20

CODE: NBS7320

DIM: 7x31cm


## S20

CODE: NBS7320

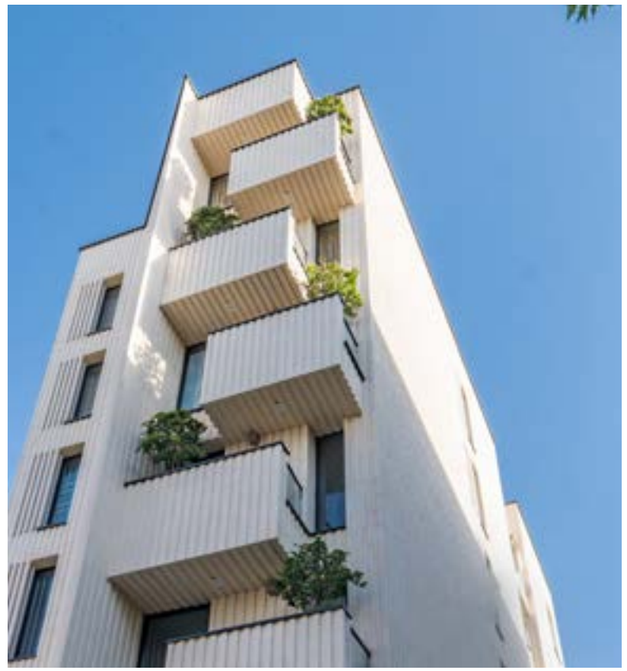
DIM: 7x31cm

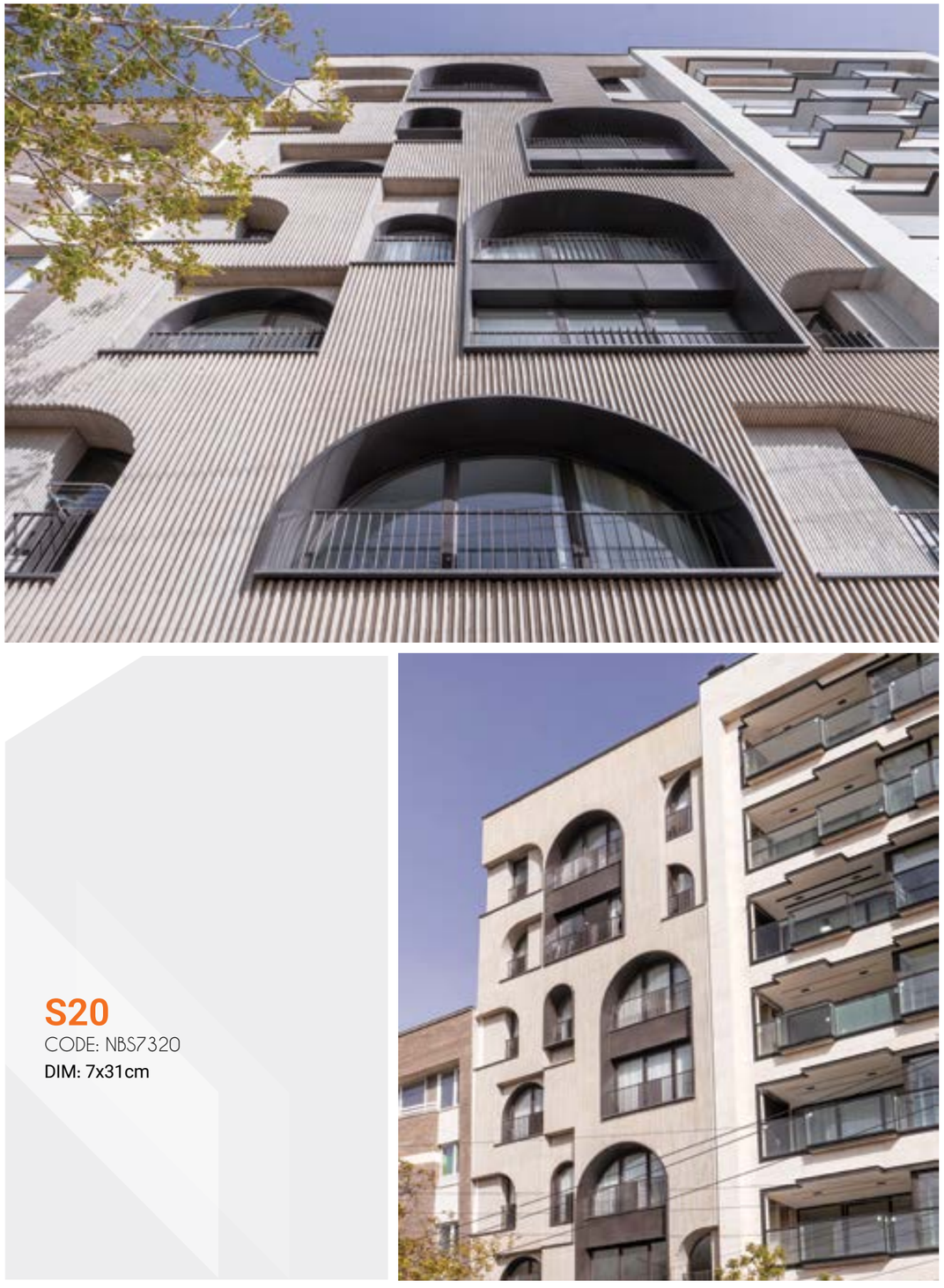


## S20

CODE: NBS7320

DIM: 7x31cm





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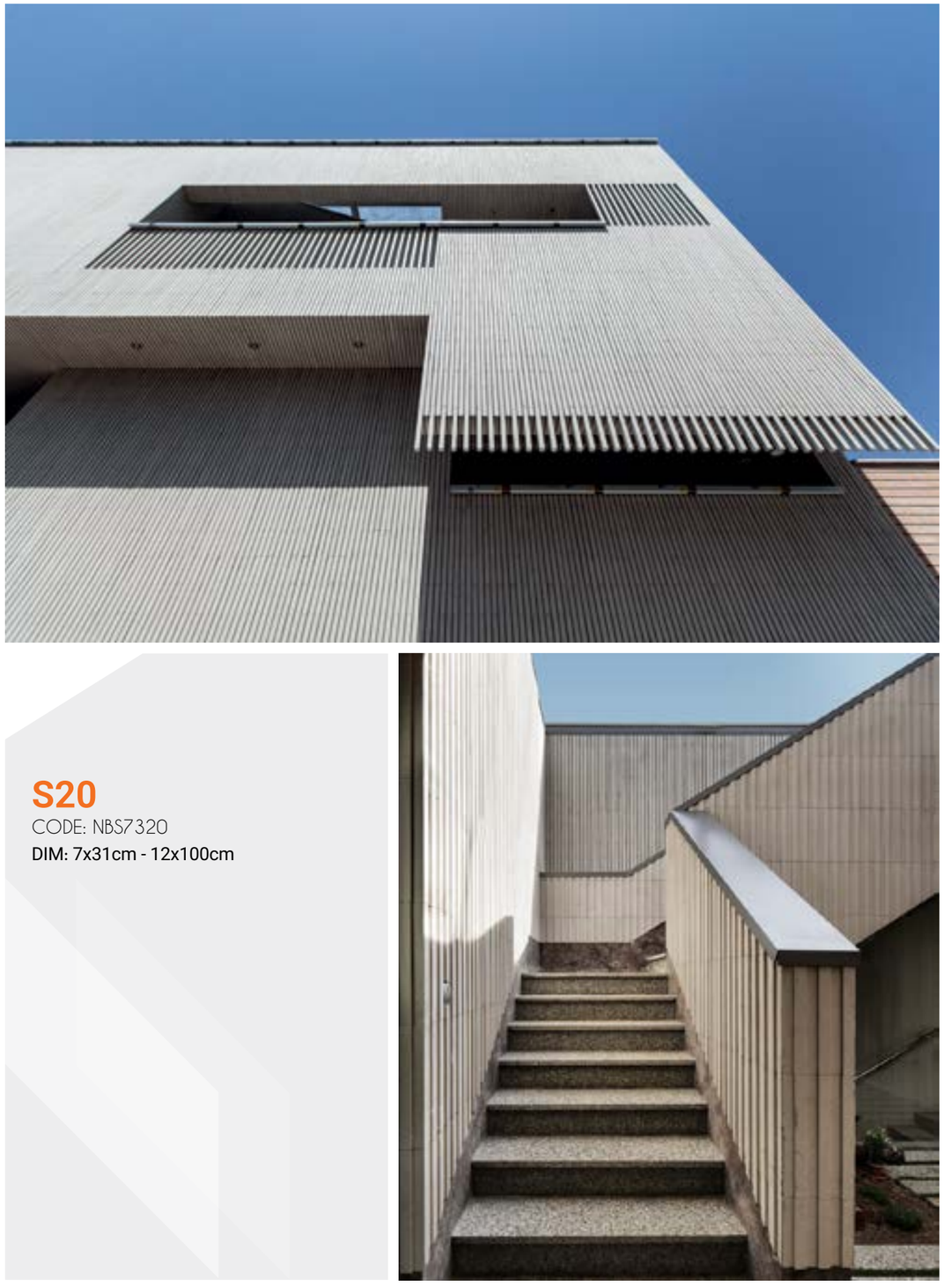
DIM: 7x31cm





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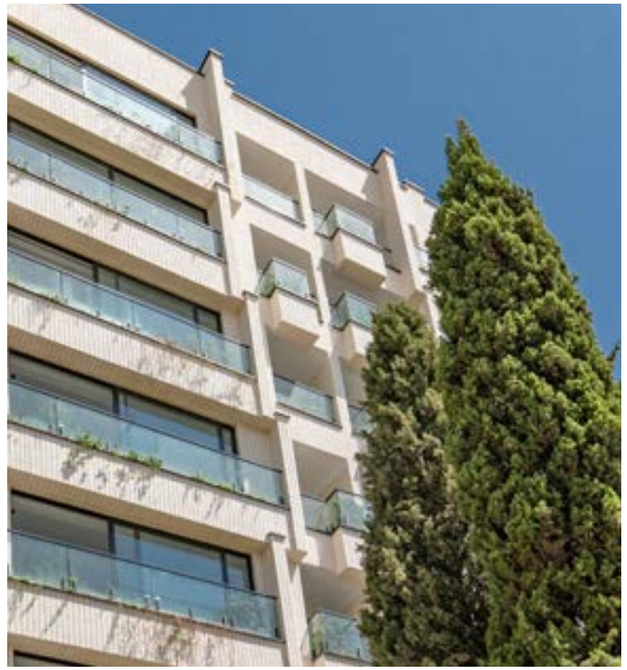
CODE: NBS7320

DIM: 7x31cm - 12x100cm



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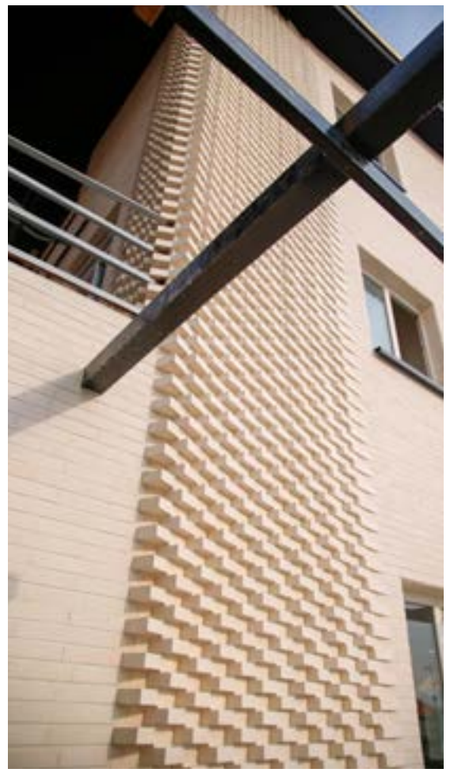
CODE: NBS7320

DIM: 7x31cm





## S20

CODE: NBS7320

DIM: 7x31cm

## RESIDENTIAL BUILDING

**S13**

CODE: NBS7313

DIM: 7x31cm



**S13**

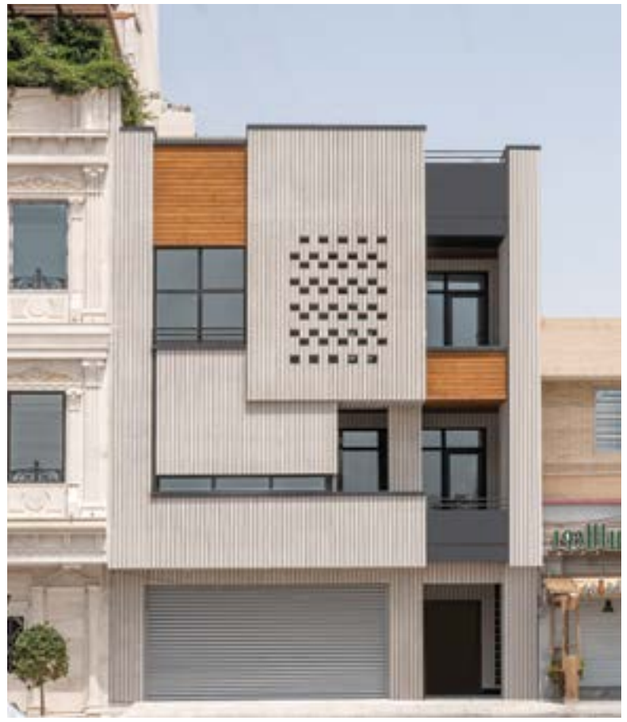
CODE: NBS7313

DIM: 7x31cm

## S13

CODE: NBS7313

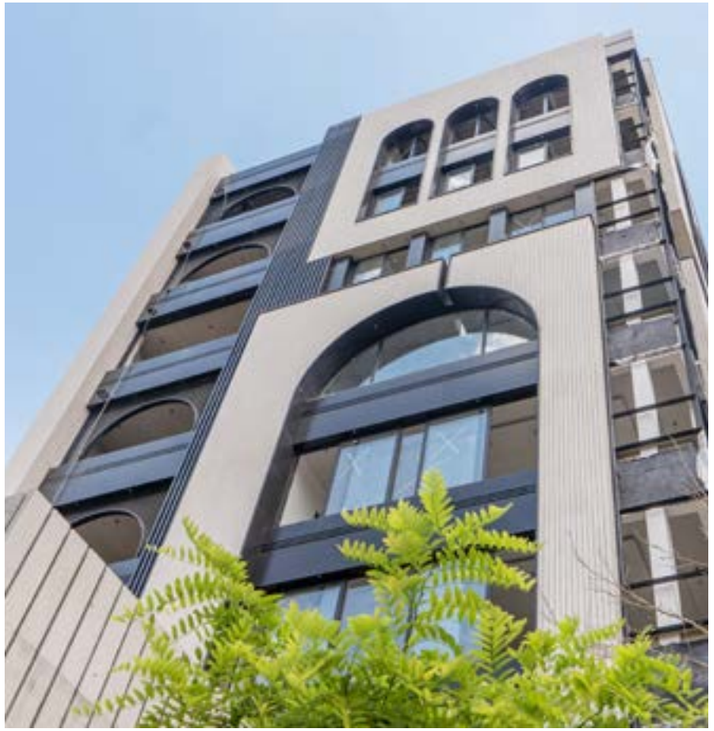
DIM: 7x31cm





**S13**
CODE: NBS7313
DIM: 7x31cm

**S13**
CODE: NBS7313
DIM: 7x31cm



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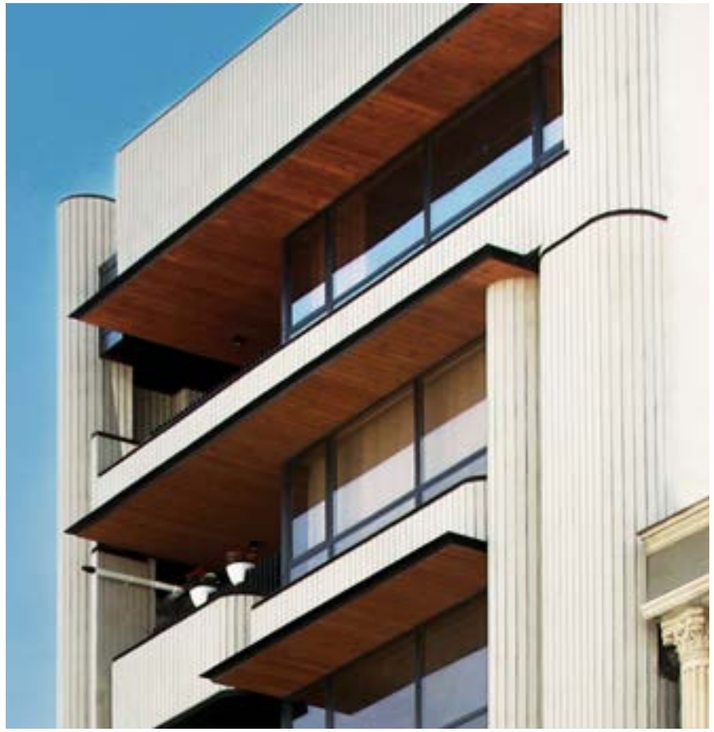

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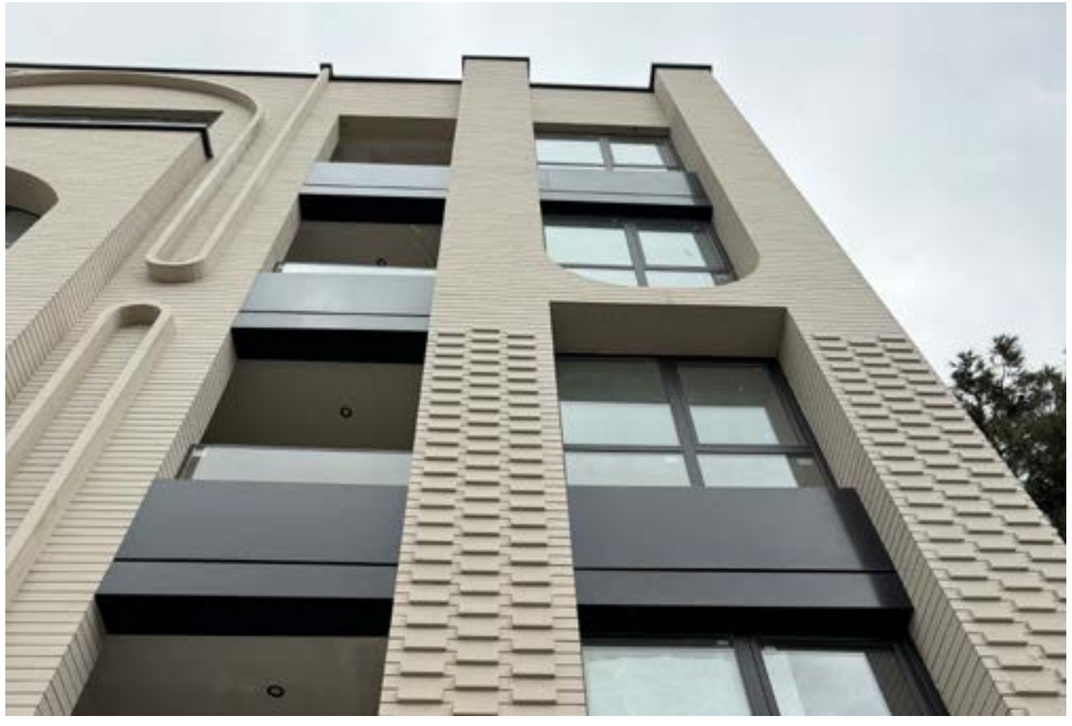

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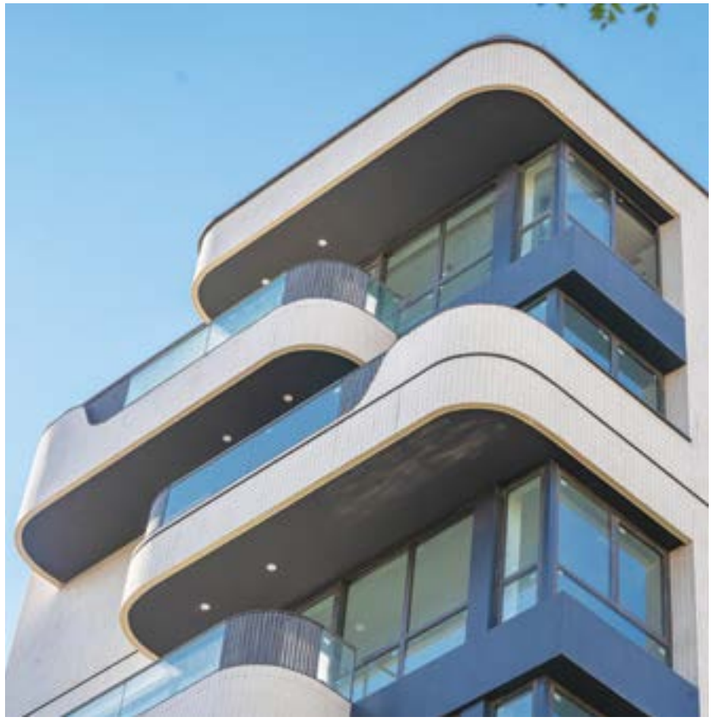


**S13**
CODE: NBS7313
DIM: 7x31cm

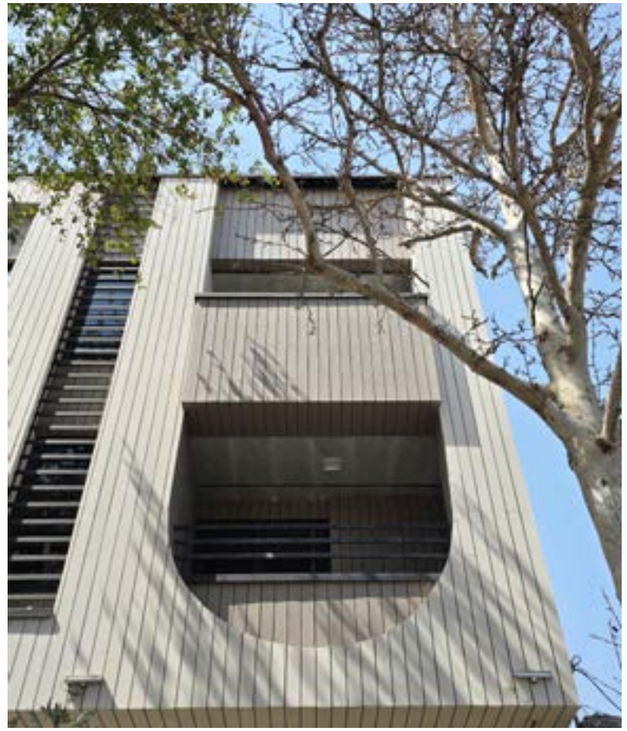
**S13**
CODE: NBS7313
DIM: 8x40cm

## S13
CODE: NBS7313
DIM: 8x40cm

## S13
CODE: NBS7313
DIM: 8x40cm



## S13-S18
CODE: NBS7313
DIM: 12x100cm



## S13

CODE: NBS7313

DIM: 8x40cm



## RESIDENTIAL BUILDING

## S13

CODE: NBS7313

DIM: 7x31cm


## S13

CODE: NBS7313

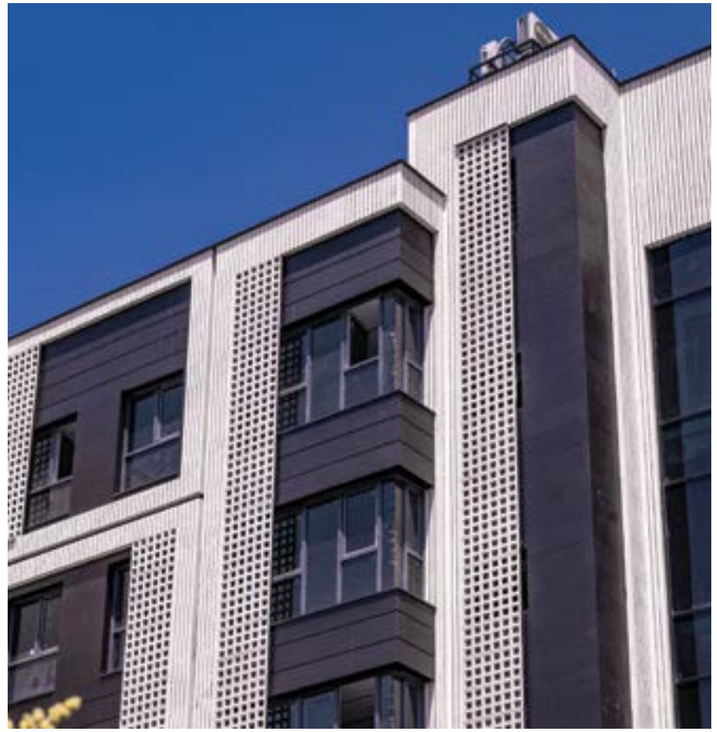
DIM: 7x31cm

## S13

CODE: NBS7313

DIM: 8x40cm

**S13**
CODE: NBS7313
DIM: 7x31cm - 3.5x31cm



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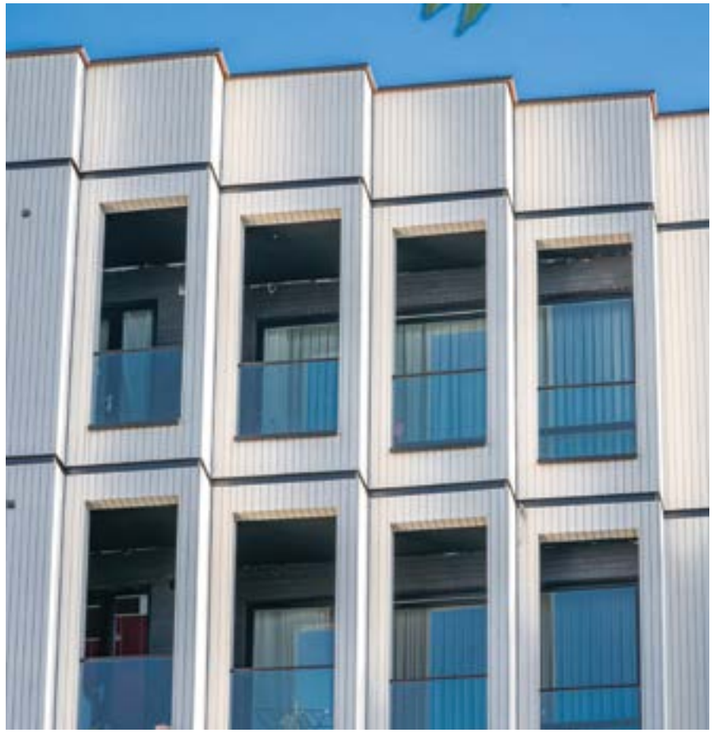
DIM: 7x31cm



**S13**
CODE: NBS7313
DIM: 8x40cm - 12x100cm



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**S13**
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**S13**
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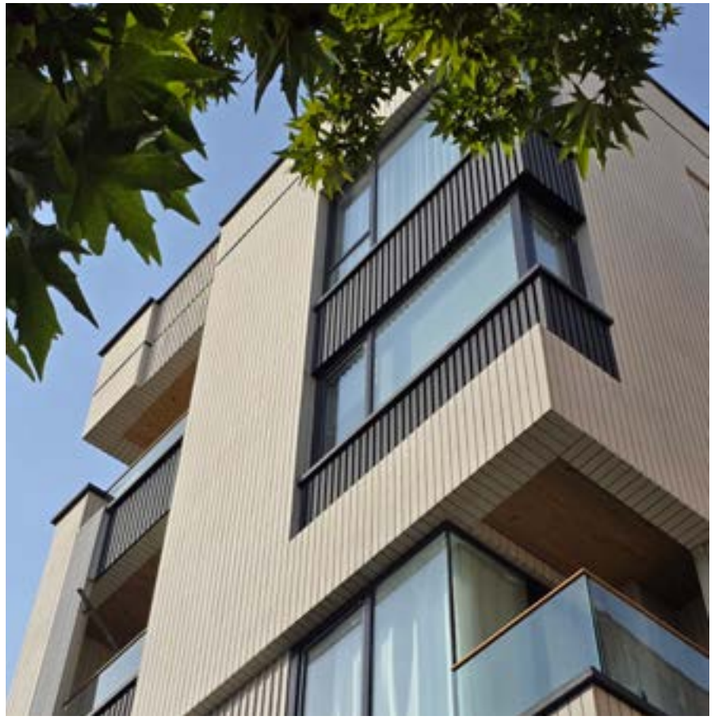

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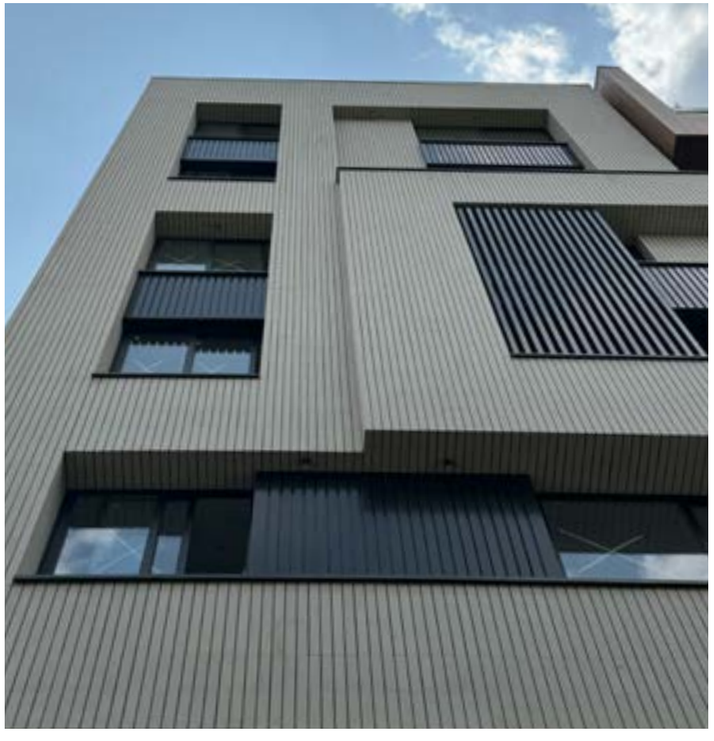

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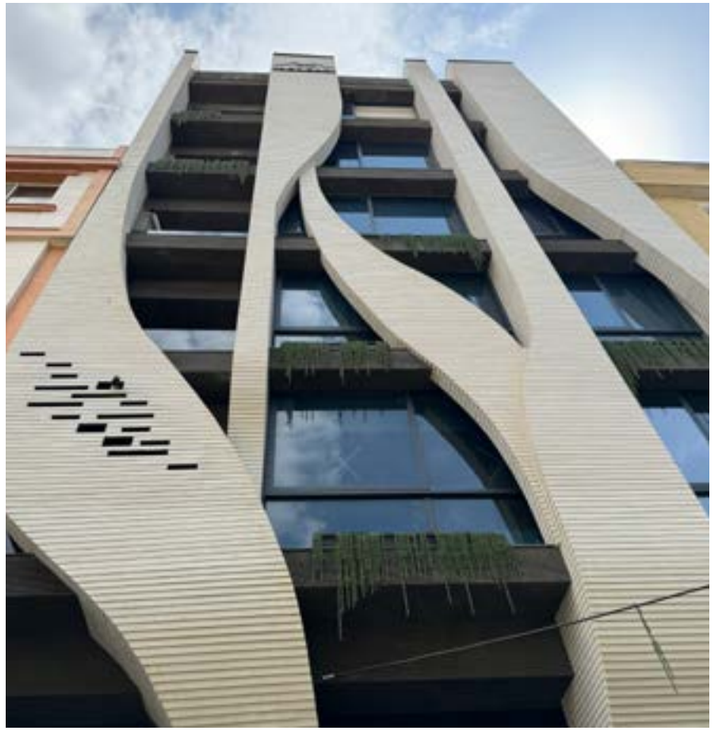

## S13

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## S13

CODE: NBS7313

DIM: 8x40cm

**S13**
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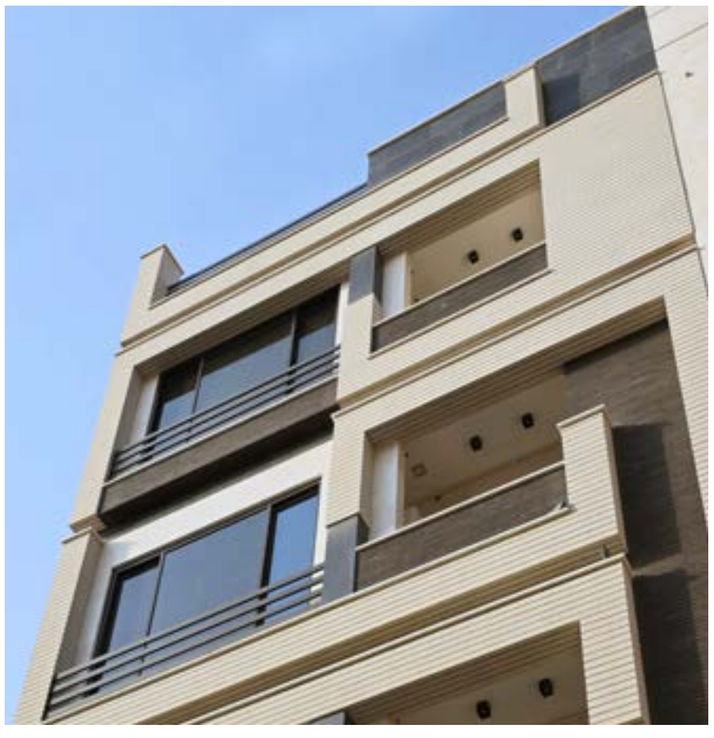

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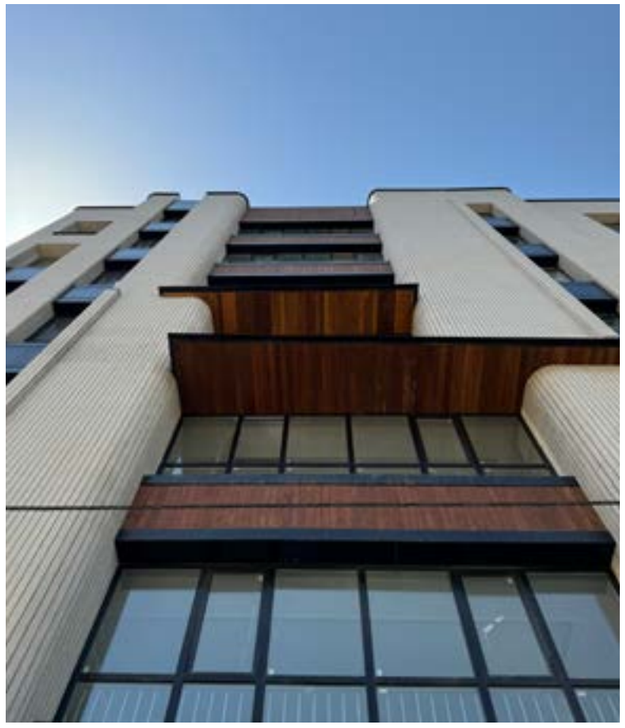
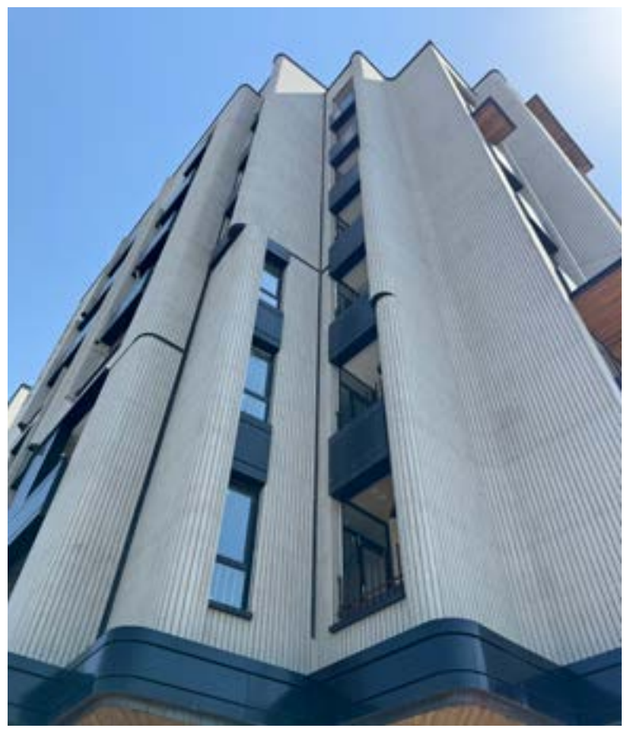




RESIDENTIAL BUILDING

## S12

CODE: NBS7312

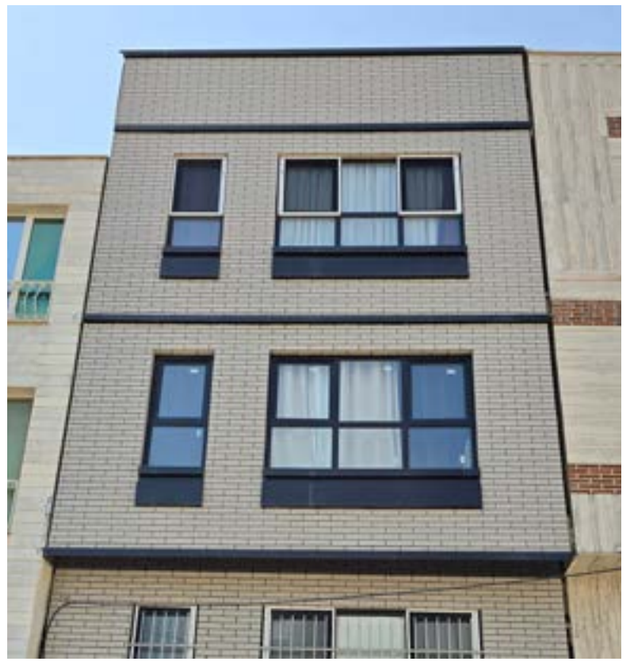
DIM: 6x8cm



## S12-S13

CODE: NBS7312

DIM: 7x31cm



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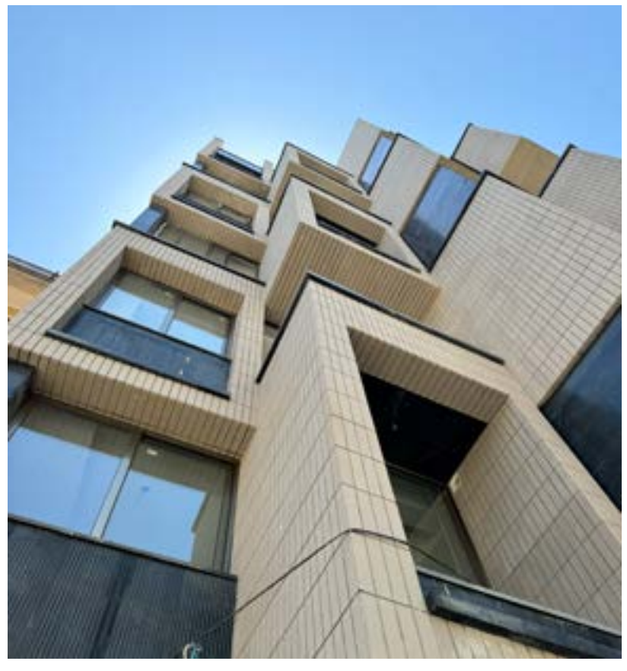


## S12

CODE: NBS7312

DIM: 7x31cm

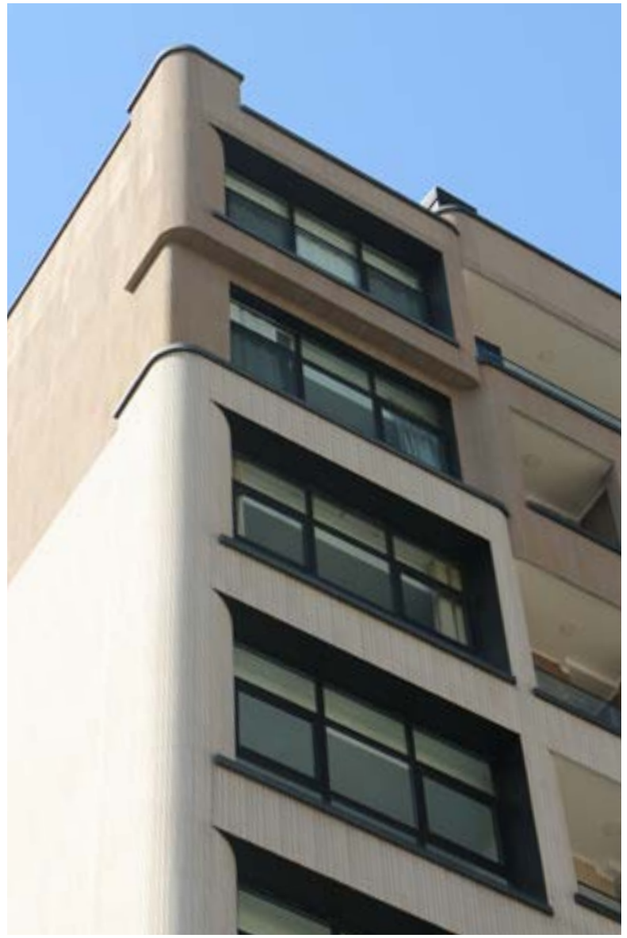
## RESIDENTIAL

In this project, the scenario that is intended for the access of the units is such that each unit has separate access and the privacy of each family is preserved. Also the crowds and noise of other units do not disturb the other units. Also, public spaces such as lobby, conference hall, meeting hall, cinema, cafe and gym are designed to improve and enhance the quality of life in a residential apartment where everyday life is evident.
In the process of faade design, because the structure of the building was built, we faced limitations such as the existence of shear walls in the facade. Despite all the challenges, an attempt has been made to present a design that is most in harmony with its context and using the least materials.
By multiplying a single module throughout the surface, we arrive at a regular structure and network that is at the same time rhythmic and balanced. This rhythm and balance is considered by seeing the material of the modules differently
By releasing a single module throughout the surface, we achieve a regular structure and grid that is rhythmic and balanced at the same time. This rhythm and balance is considered by seeing the material of the modules differently.

## S16-S13

CODE: NBS7316

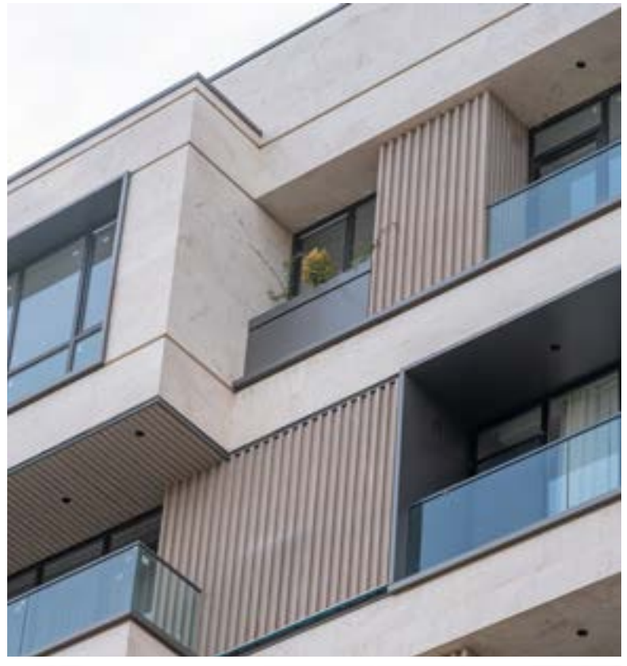
DIM: 20x80cm - 4x80cm



## S16

CODE: NBS7316

DIM: 7x31cm

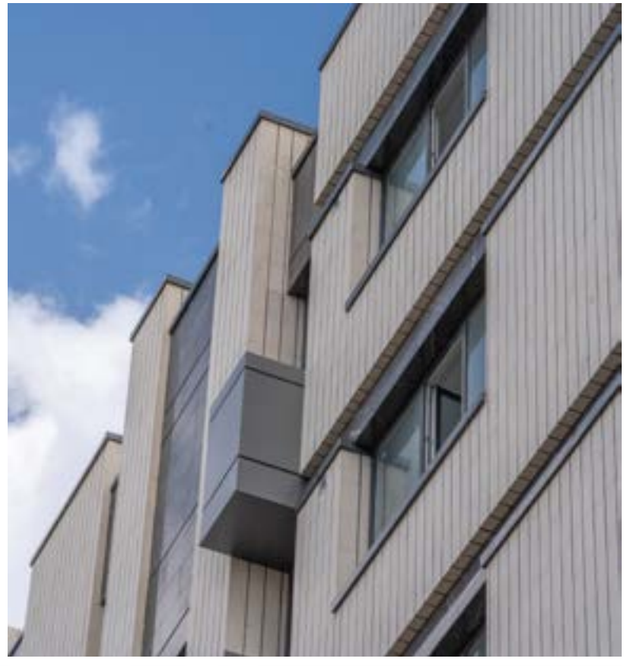




## S16

CODE: NBS7316

DIM: 7x31cm



## S16

CODE: NBS7318

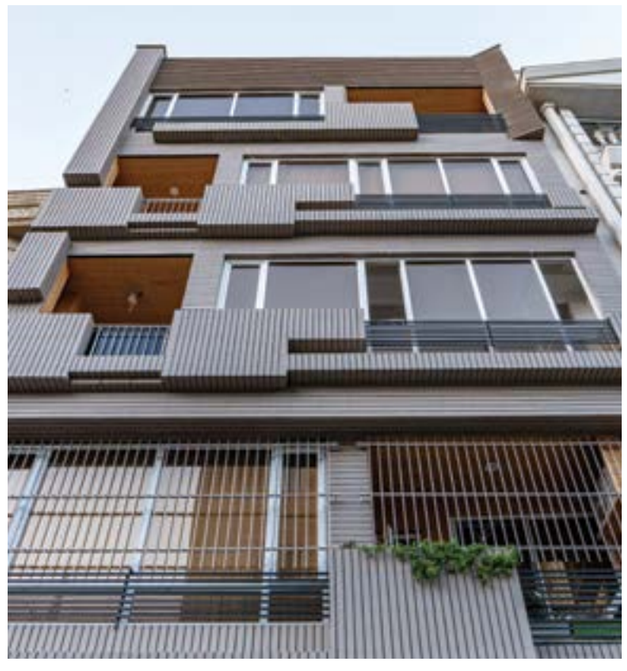
DIM: 8x40cm



## S16

CODE: NBS7316

DIM: 8x40cm



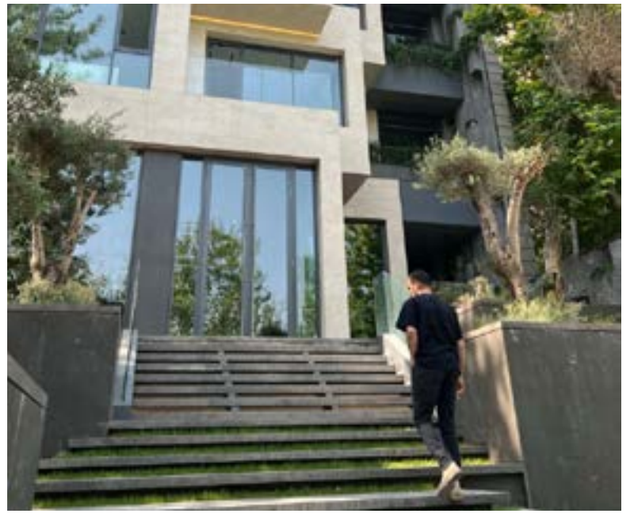
## RESIDENTIAL

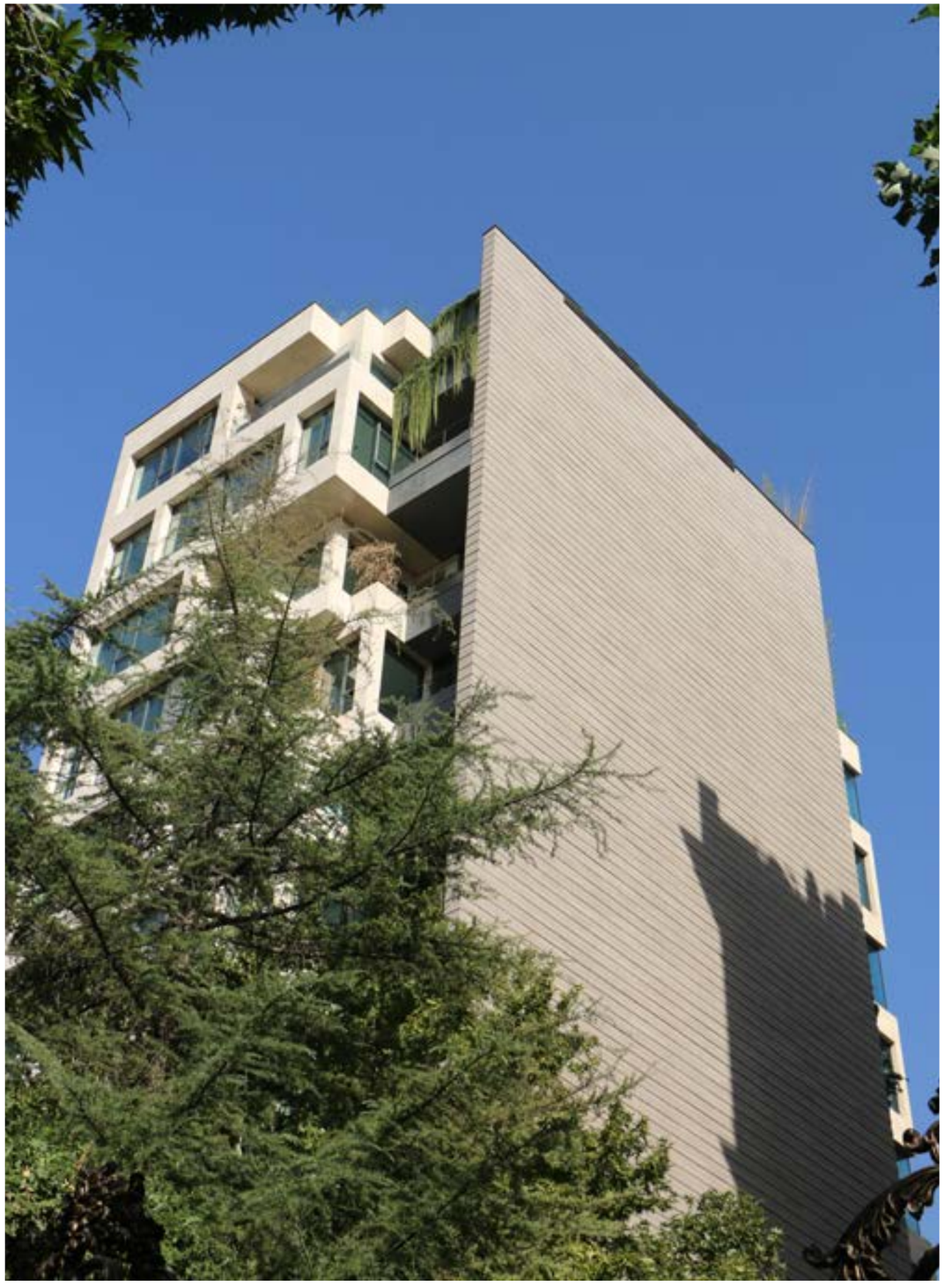
The proposal is derived from the idea of inhabiting the urban skin, or specifically, those undefined intermediate spaces which are neither specifically urban public spaces, nor completely within the private domain. The building exterior is perceived as a habitable, semi-urban space, resulting in a structure that is void of any definite or obvious facade, but rather is a multi-layered, dynamic, and tactile facade system which creates depth and an external to internal spatial hierarchy. A very essential design principle was to enhance the skyscraper living experience beyond a mere good view, to the experience of living in high altitude. The result is a sense of living in elevation but without losing the intimate scale of a suburban home.

## S18

CODE: NBS7318

DIM: 20x80cm



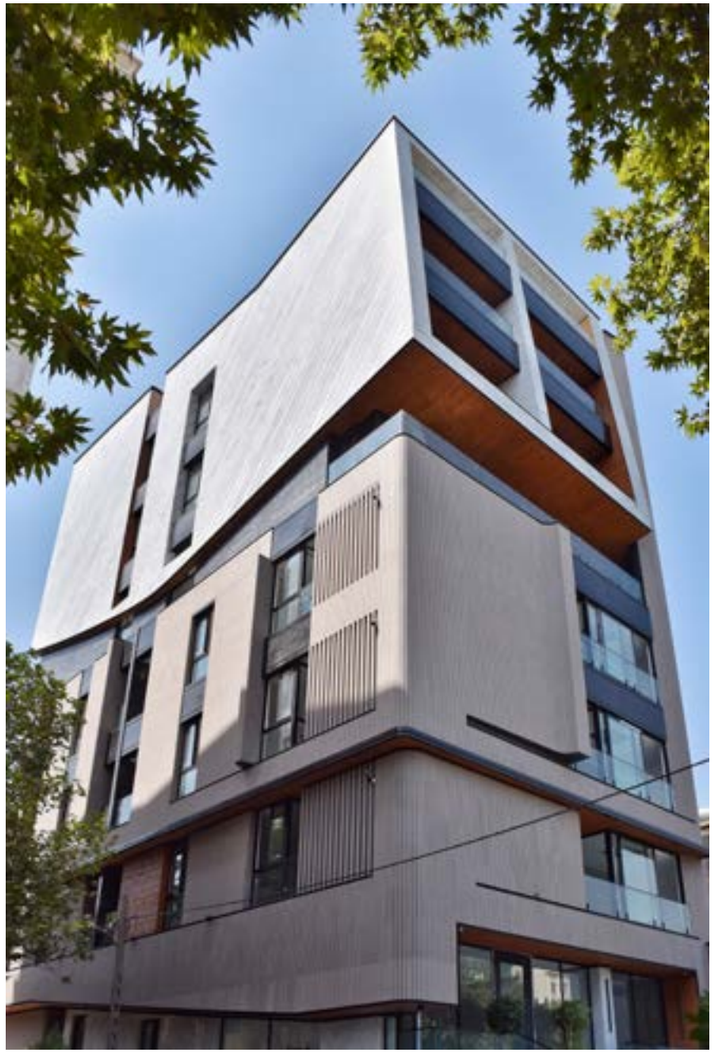


## S18

CODE: NBS7318

DIM: 7x31cm

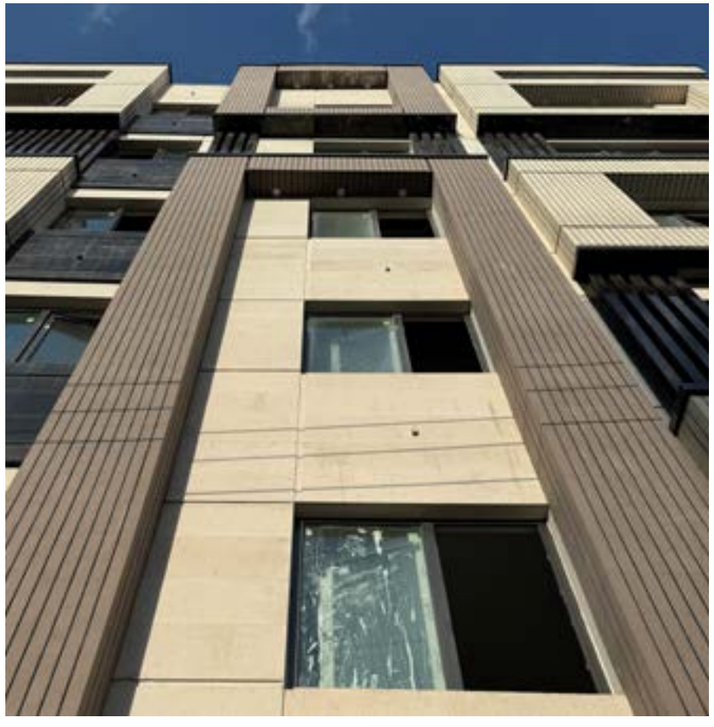




## S18

CODE: NBS7318

DIM: 20x80cm

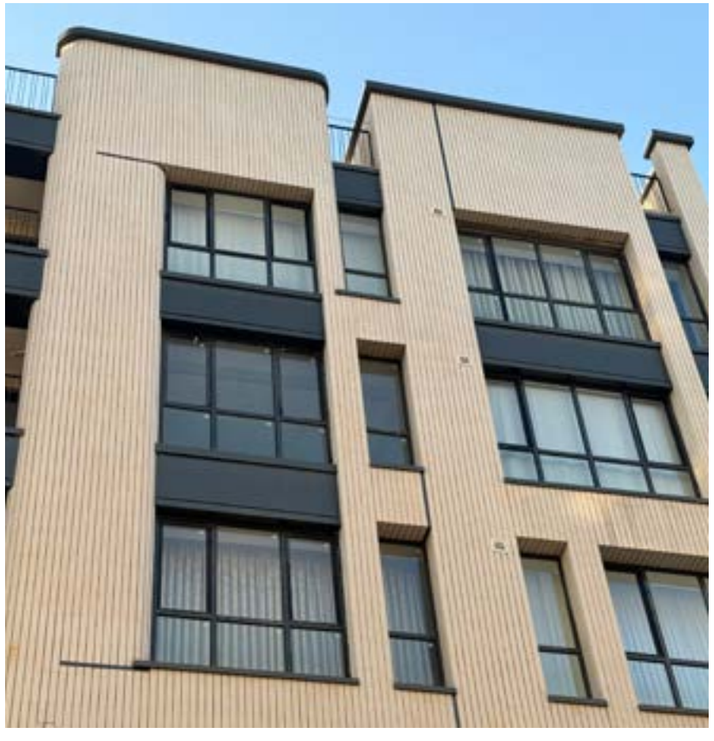


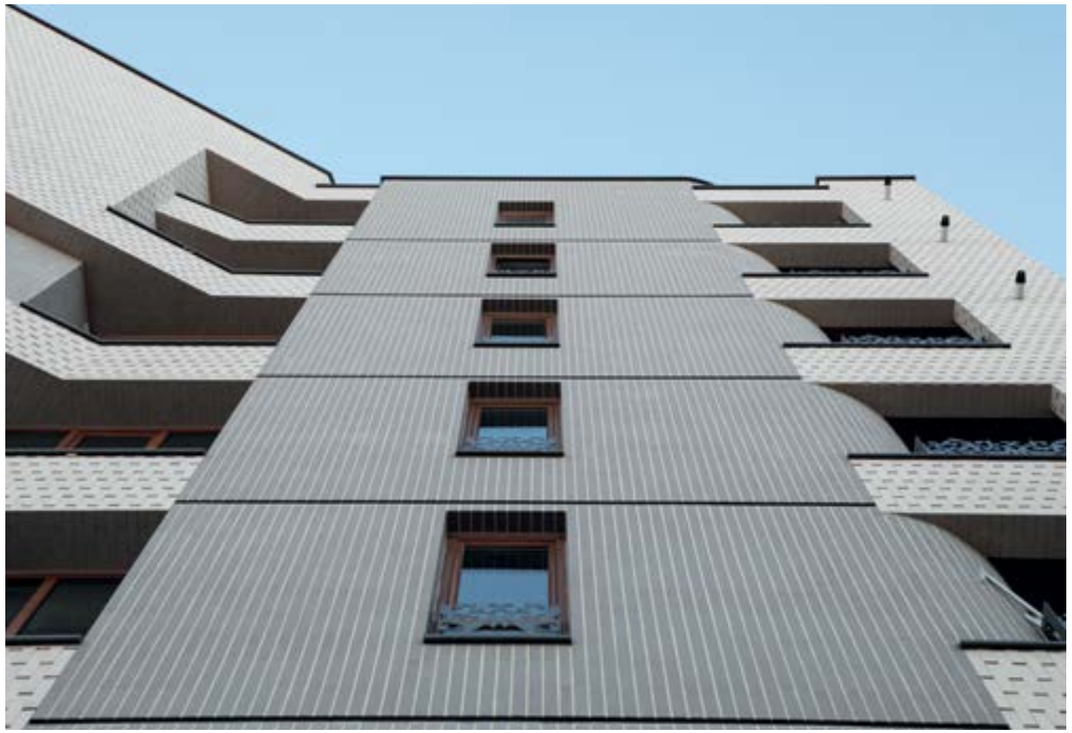
## S18-S20
CODE: NBS7318
DIM: 7x31cm

## S18-S13
CODE: NBS7318
DIM: 12x100cm

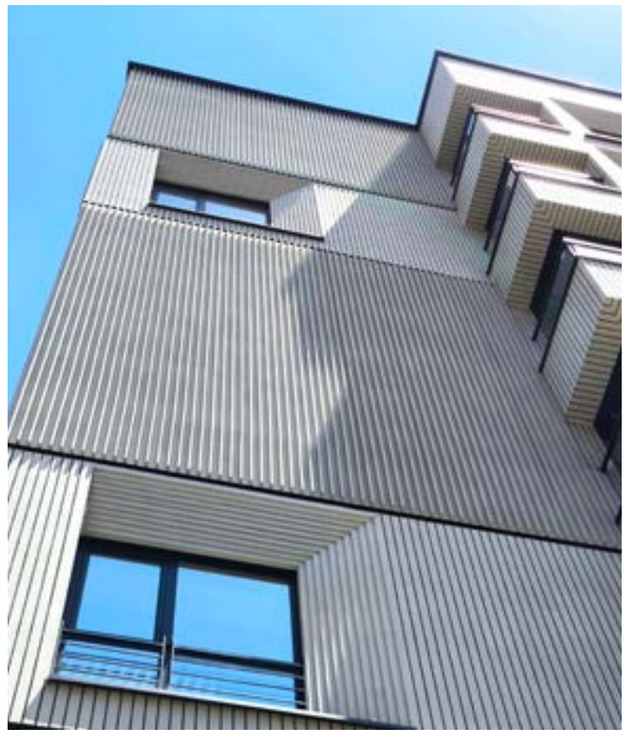
## S18
CODE: NBS7318
DIM: 8x40cm - 12x100cm

## S18
CODE: NBS7318
DIM: 7x31cm - 20x80cm





## S18-S13
CODE: NBS7318



## S28
CODE: NBS7318
DIM: 7x31cm

## H11-S20

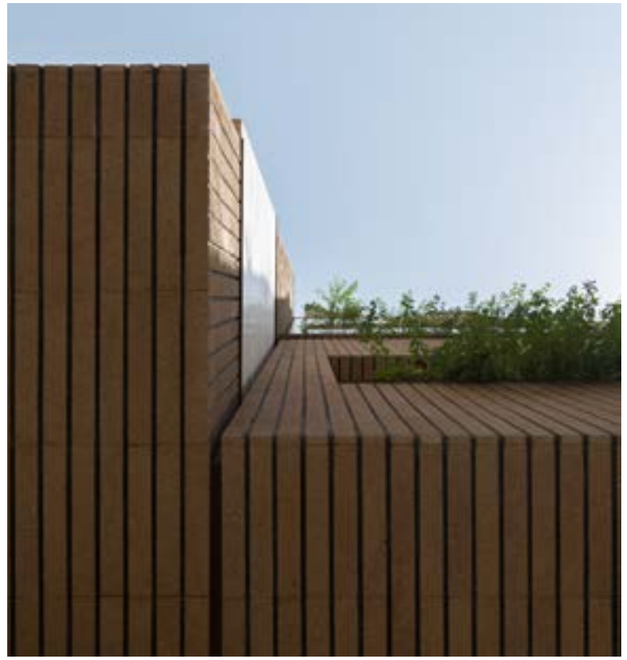
CODE: NBH7311

DIM: 7x31cm

## H11-S25

CODE: NBH7311

DIM: 7x31cm - 12x100cm





## H11

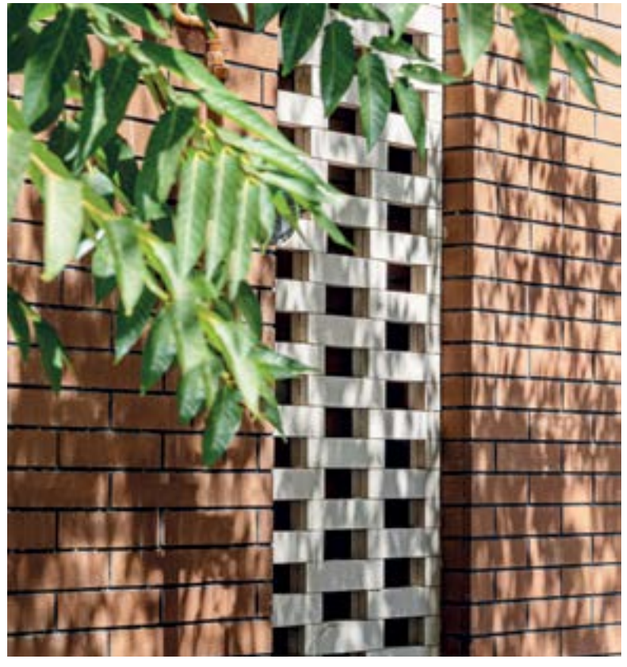
CODE: NBH7311

DIM: 7x31cm

## H11-S12

CODE: NBH7311

DIM: 7x31cm

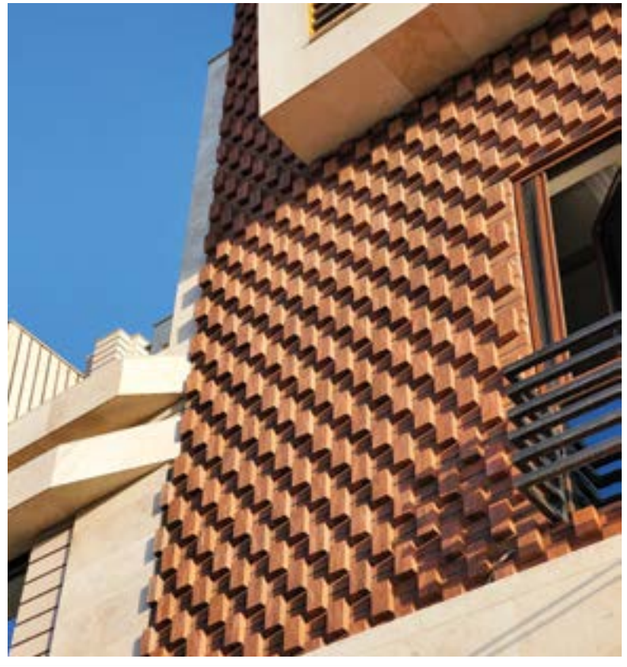




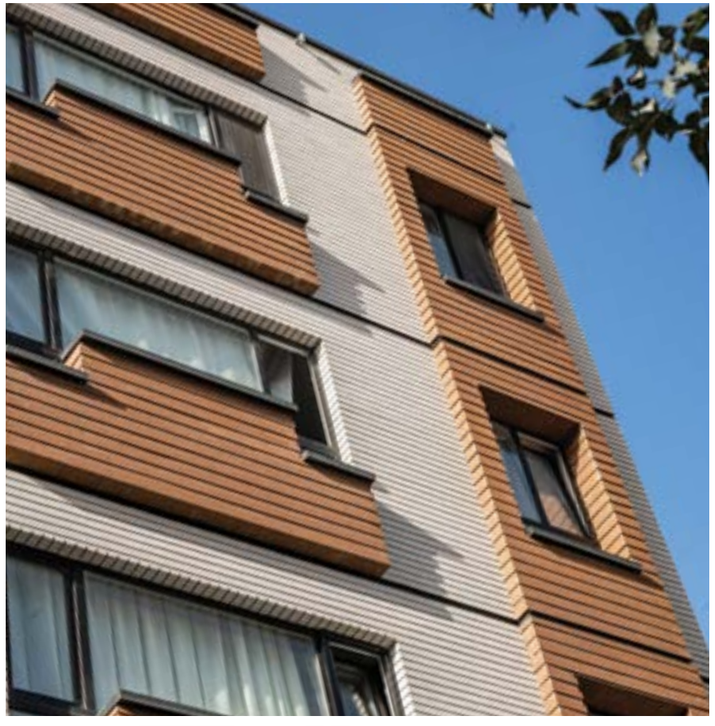
## H11

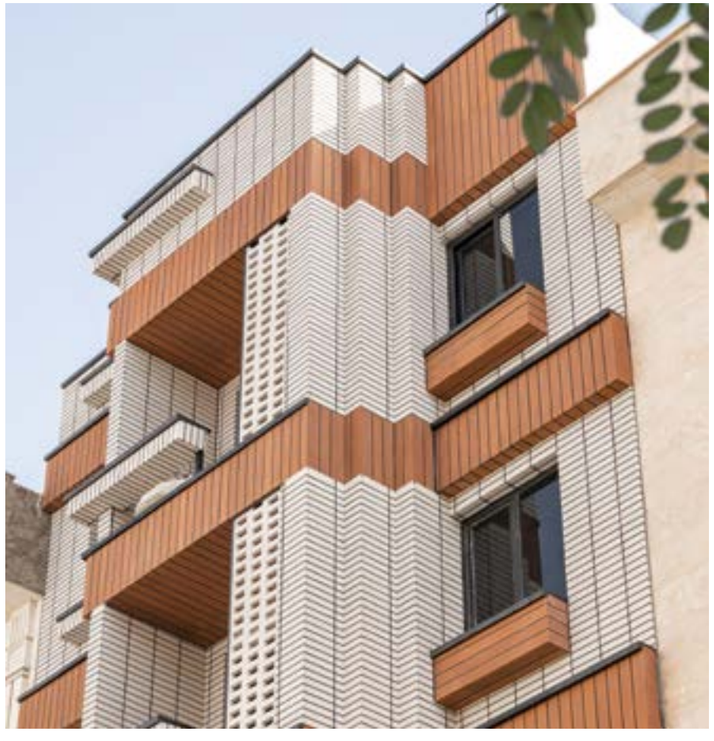
CODE: NBH7311

DIM: 7x31cm - 12x100cm



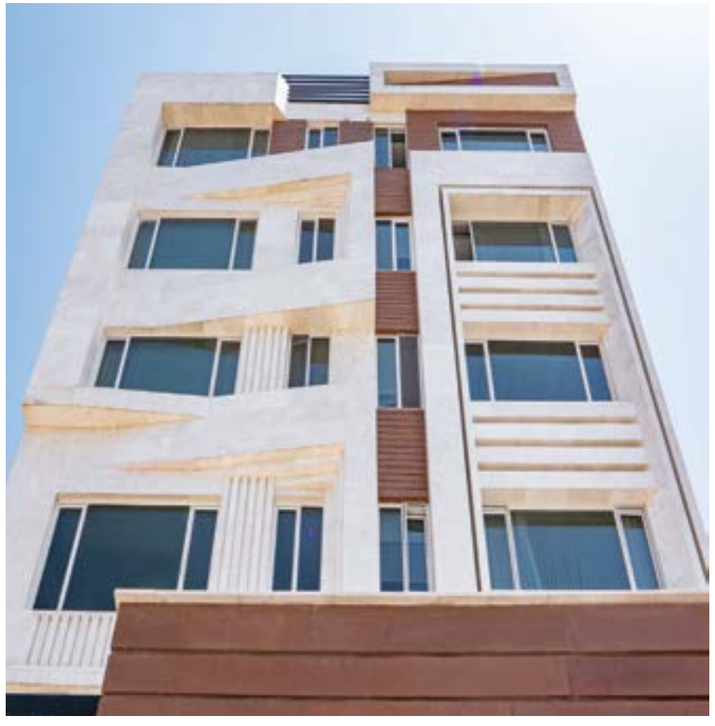
## H11-S13
CODE: NBH7311
DIM: 7x31cm





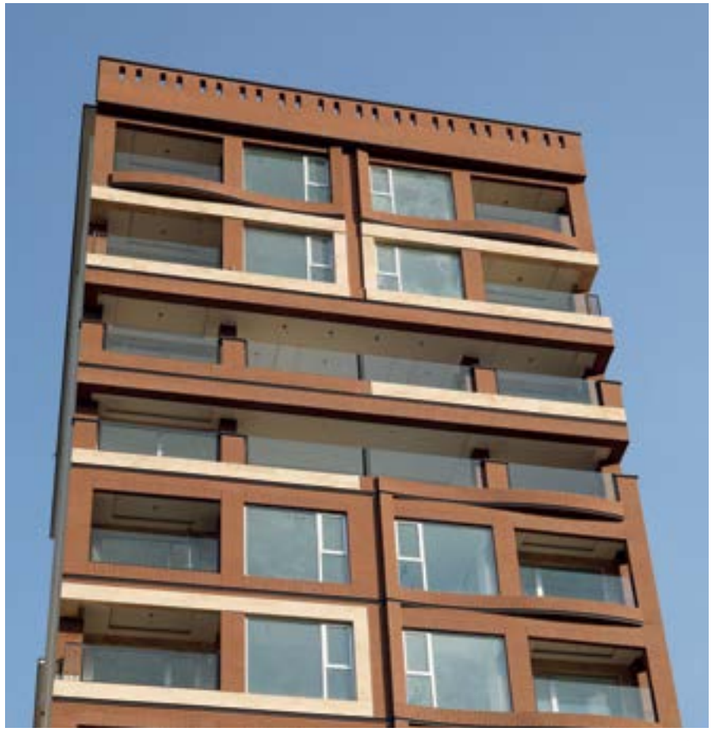
## H11-S13
CODE: NBH7311
DIM: 7x31cm - 12x100cm





## H11-S13
CODE: NBH7311
DIM: 12x100cm

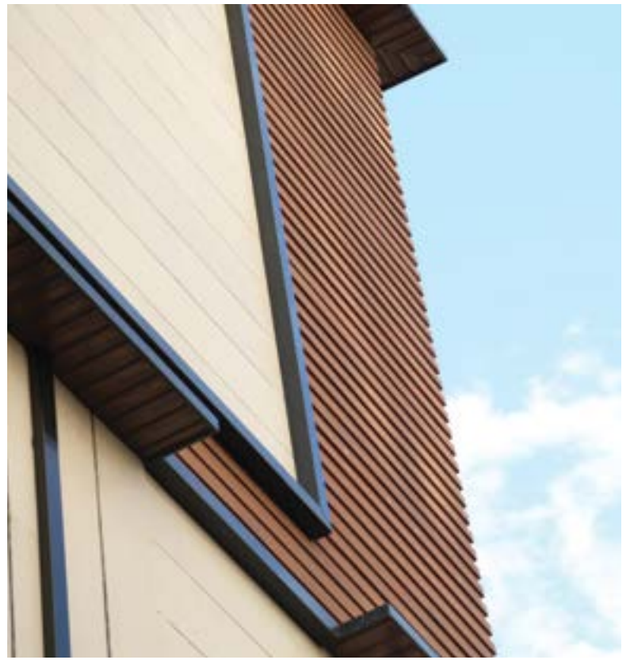
## H11
CODE: NBH7311
DIM: 7x31cm



## H11

CODE: NBH7311

DIM: 7x31cm

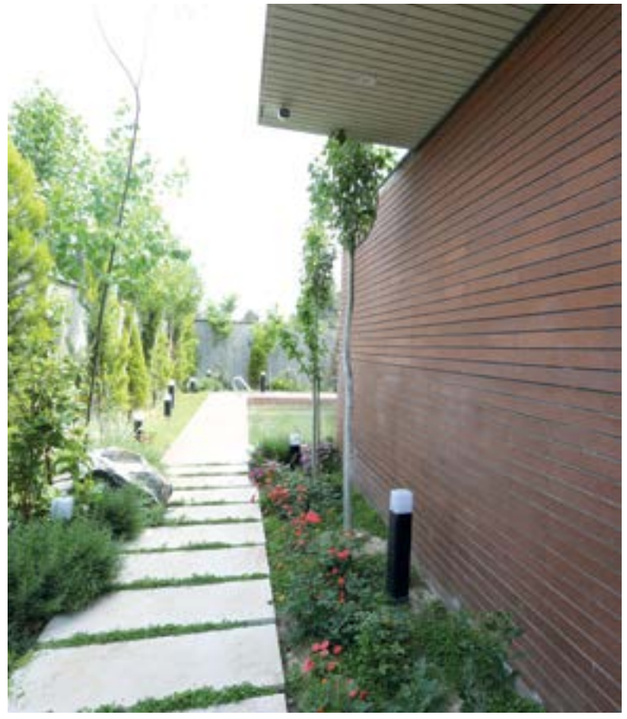


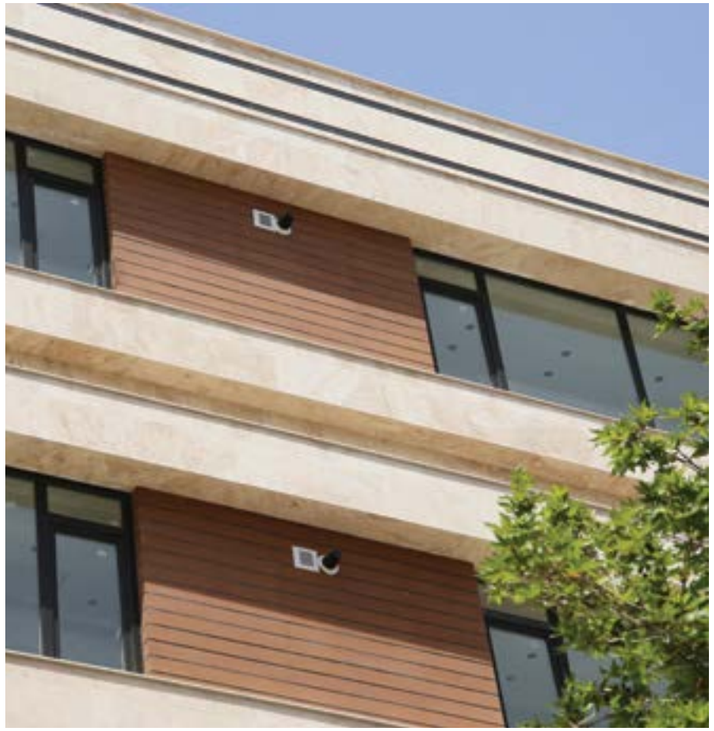


## H11-S13

CODE: NBH7311

DIM: 7x31cm

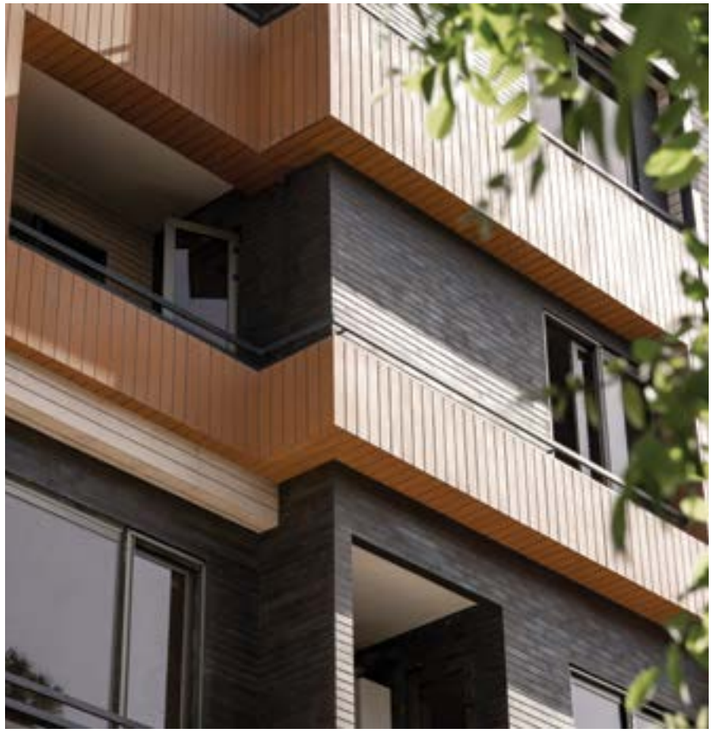




## H11
CODE: NBH7311
DIM: 7x31cm - 12x100cm

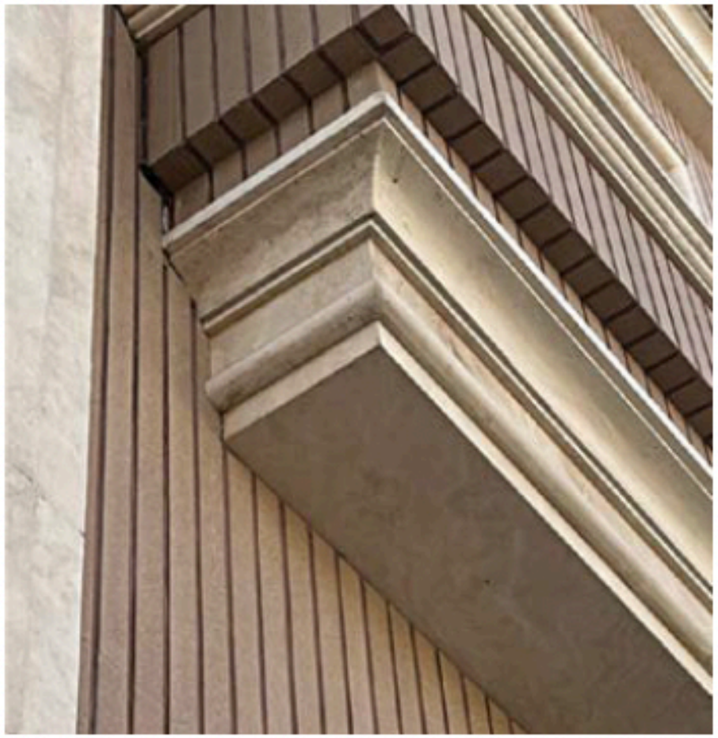
## H11-S13
CODE: NBH7311
DIM: 12x100cm



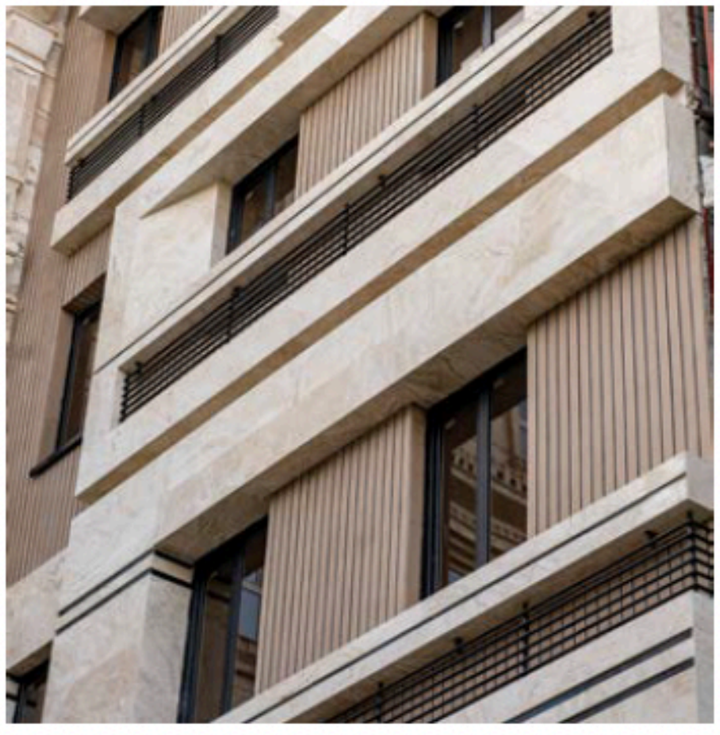


## H11-S13
CODE: NBH7311
DIM: 7x31cm - 12x100cm

## H11
CODE: NBH7311
DIM: 7x31cm - 12x100cm



## H15
CODE: NBH7315
**DIM: 7x31cm**



## H15
CODE: NBH7315
**DIM: 8x40cm**

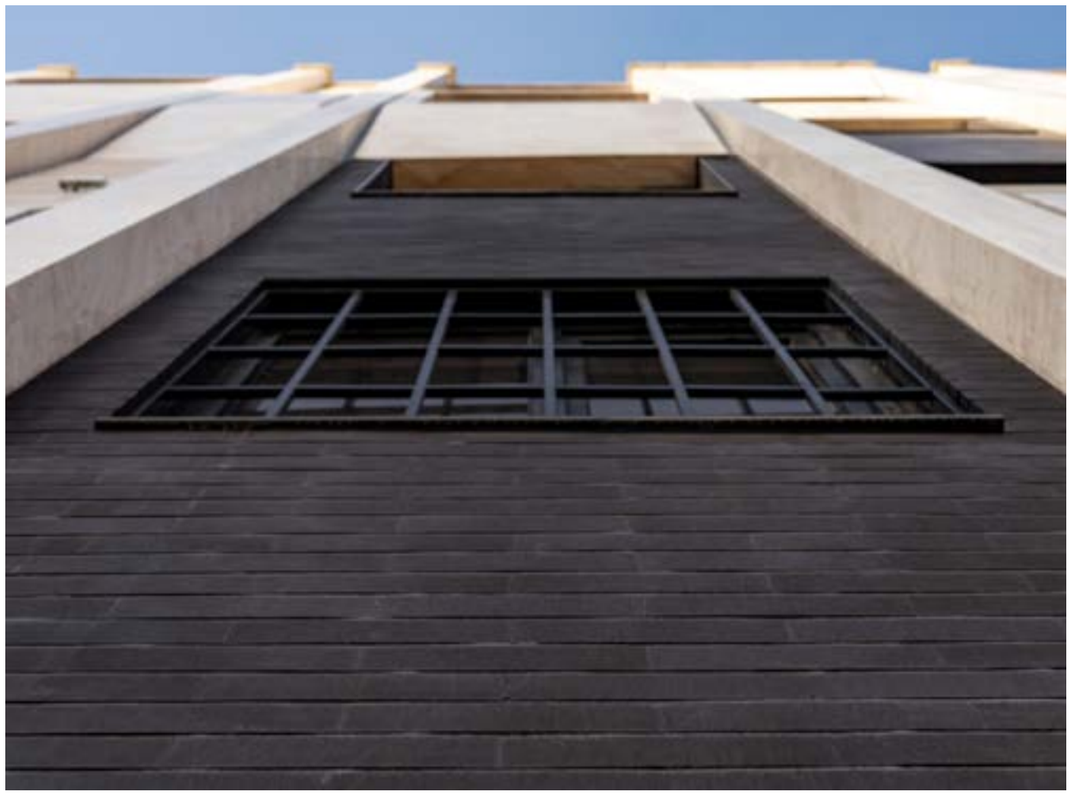


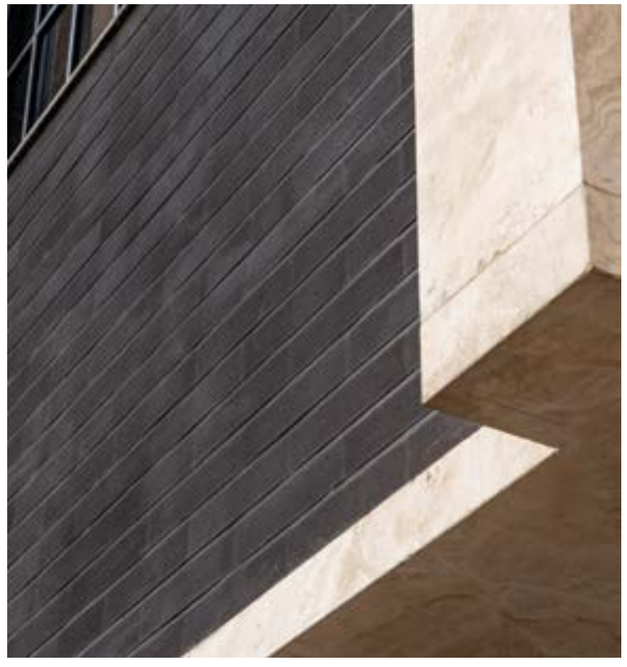
## H15
CODE: NBH7315
**DIM: 12x100cm**

## RF77-H11

CODE: NBRF7377

DIM: 7x31cm





## RF77

CODE: NBRF7377

DIM: 7x31cm

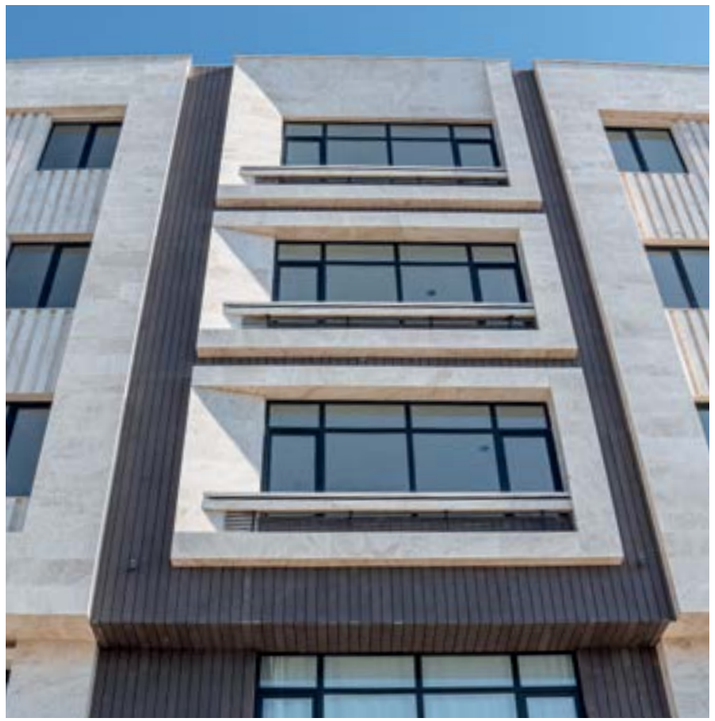


## RF77

CODE: NBRF7377

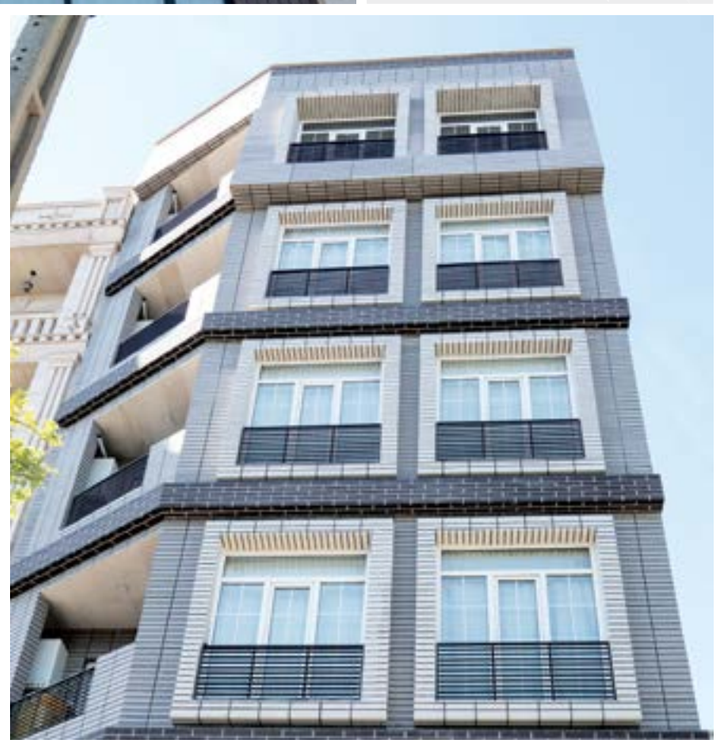
DIM: 12x100cm

## S25-S13
CODE: NBS7325
DIM: 8x40cm



## S25
CODE: NBS7325
DIM: 12x100cm

## RF77-S13-S18
CODE: NBRF7377
DIM: 7x31cm



## F11-S13

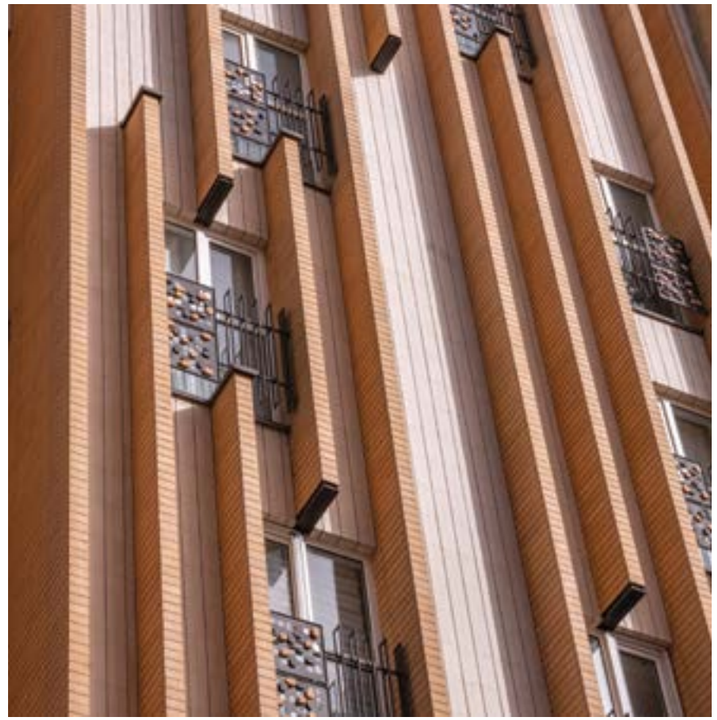
CODE: NBF7311

DIM: 7x31cm



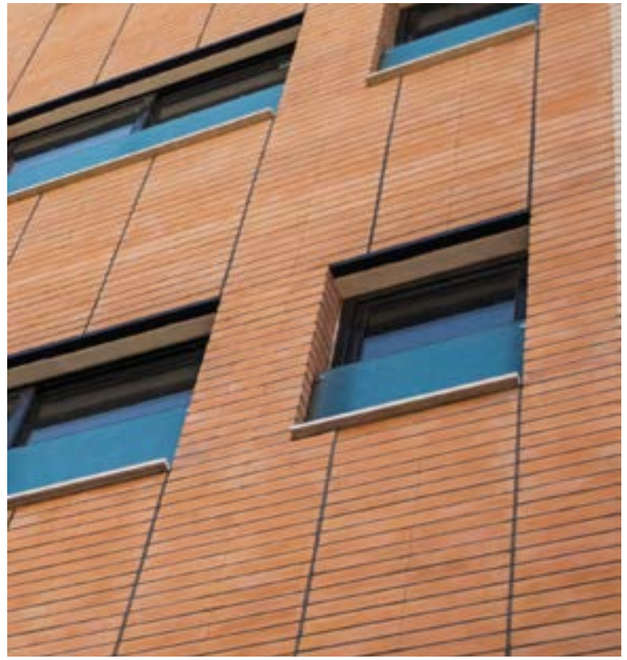
## F11
CODE: NBF7311
DIM: 7x31cm

## F11-S13
CODE: NBF7311
DIM: 7x31cm



## F11-RF66
CODE: NBF7311
DIM: 20x40cm

CODE: NBP7311
DIM: 7x31cm





## F11

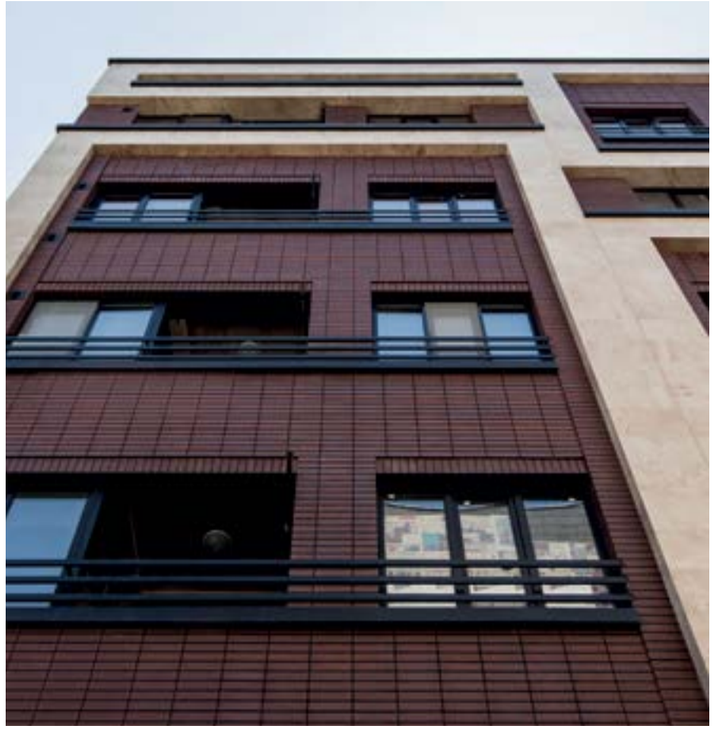
CODE: NBF7311
DIM: 7x31cm

## F11-S13

CODE: NBF7311
DIM: 40x80cm

## FN22
CODE: NBFN7322
DIM: 7x31cm

## FN33
CODE: NBFN7333
DIM: 7x31cm





## FN33
CODE: NBFN7333
DIM: 7x31cm

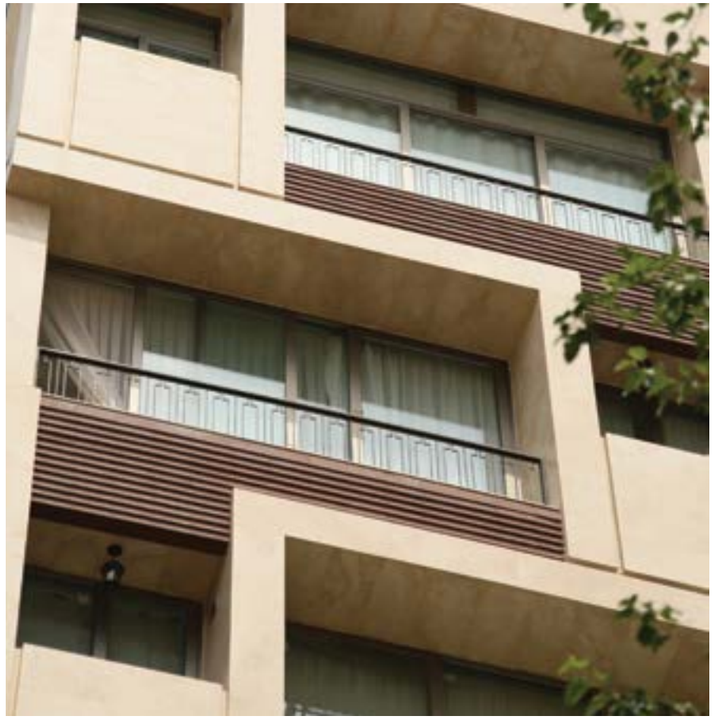
## FN22
CODE: NBFN7322
DIM: 7x31cm

## R12-S13

CODE: NBR7312

DIM: 7x31cm





## R11

CODE: NBR7311

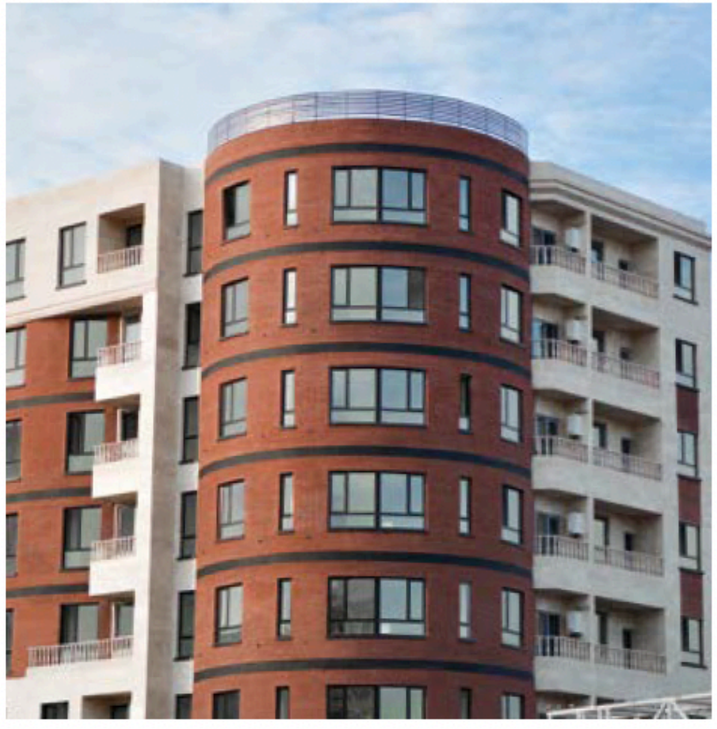
DIM: 7x31cm

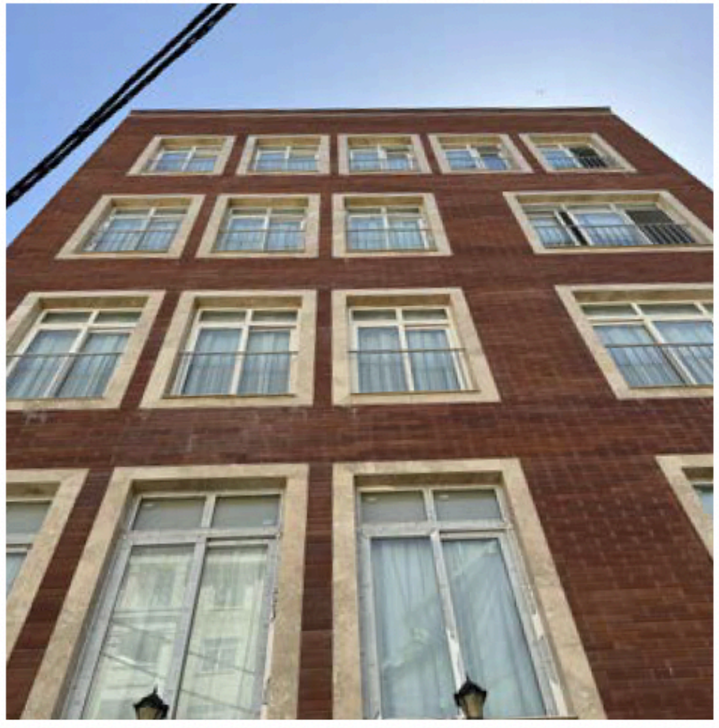
## R11

CODE: NBR7311

DIM: 7x31cm

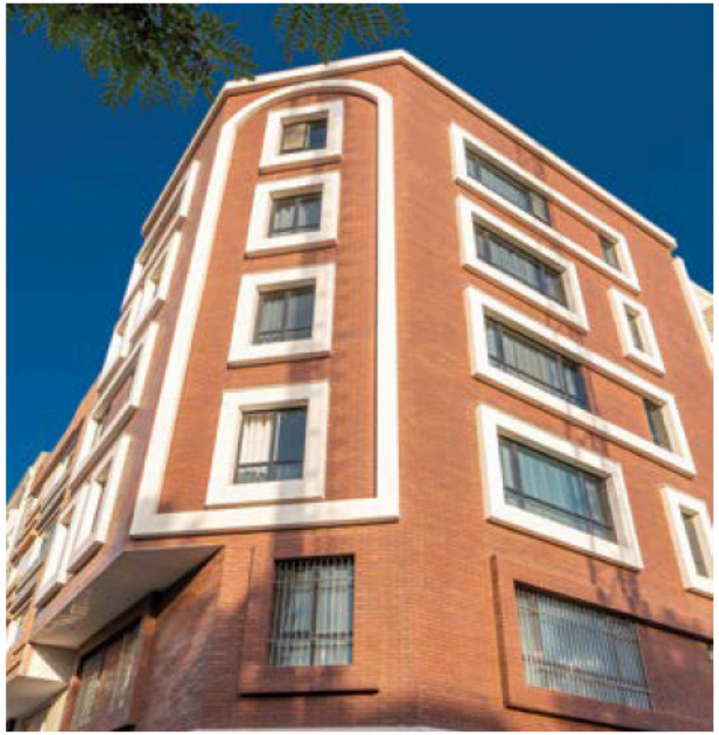
**R33**
CODE: NBR7333
**DIM: 7x31cm**





**R33**
CODE: NBR7333
**DIM: 7x31cm**

**R55-S13**
CODE: NBR7355
**DIM: 7x31cm**



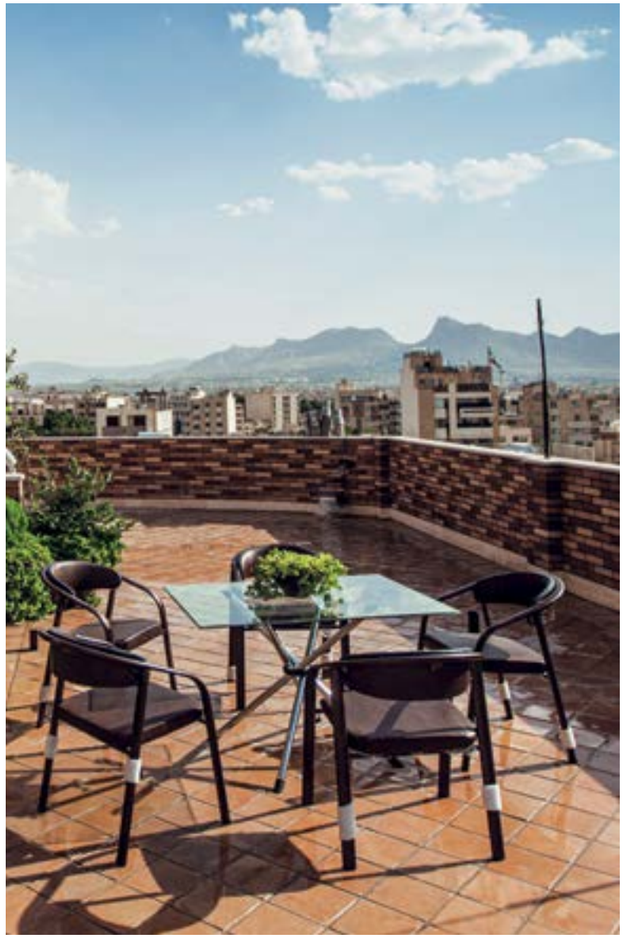
**R33**
CODE: NBR7333
**DIM: 7x31cm**

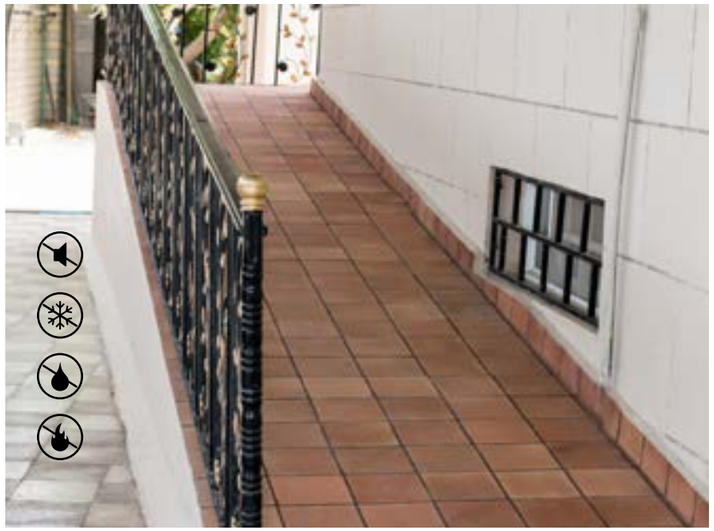
## N11

CODE: NBN7311

DIM: 7x31cm - 20x20cm







When the term ‘flooring’ is mentioned, various and numerous materials are presented to us, including stone, mosaic, asphalt, parquet, ceramics, brick, etc., which are among the widely used flooring options in buildings. The technical and qualitative characteristics of each of these materials will determine their applications. Brick flooring is a product that, through the processes of shaping, drying the clay, and firing at high temperatures, becomes a durable product. The raw material for this product is shale or ore.

**Brick flooring is divided into three categories based on its resistance to abrasion:**

**Brick flooring Type 1:** Designed for areas exposed to severe abrasion or heavy vehicle traffic.

**Brick flooring Type 2:** Used in areas exposed to moderate abrasion, such as sidewalks and streets in public places.

**Brick flooring Type 3:** Suitable for areas with low abrasion, such as residential yards and locations with light traffic.

**Classification based on climatic conditions:**

Frost-resistant: Paving bricks that are exposed to cold climatic conditions and, after being saturated with water, will not experience frost damage.

**Non-frost resistant:**

Paving bricks that are used in moderate to warm climates or in indoor environments, and which, after being saturated with water, do not become susceptible to frost damage. Additionally, these bricks are defined and classified based on their resistance to acids and bases, their insulation properties against cold, heat, and sound, as well as their fire resistance.

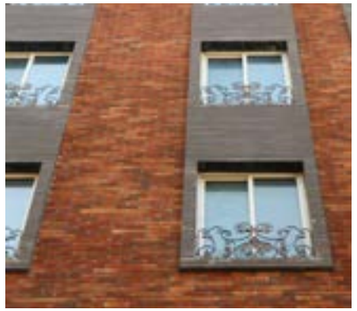
Bricks are made from one of the most abundant natural materials, Shale. This flooring (pavement) is produced using elements of earth, water, and fire, without the addition of any chemical substances, making it environmentally friendly.

Today, paving bricks are widely used on sidewalks, in parks, in courtyards, and on rooftops.

These bricks have a longer lifespan compared to other types of flooring (pavement). Research has shown that maintenance costs for these bricks are 12.5 to 35 percent lower than those for conventional asphalt.

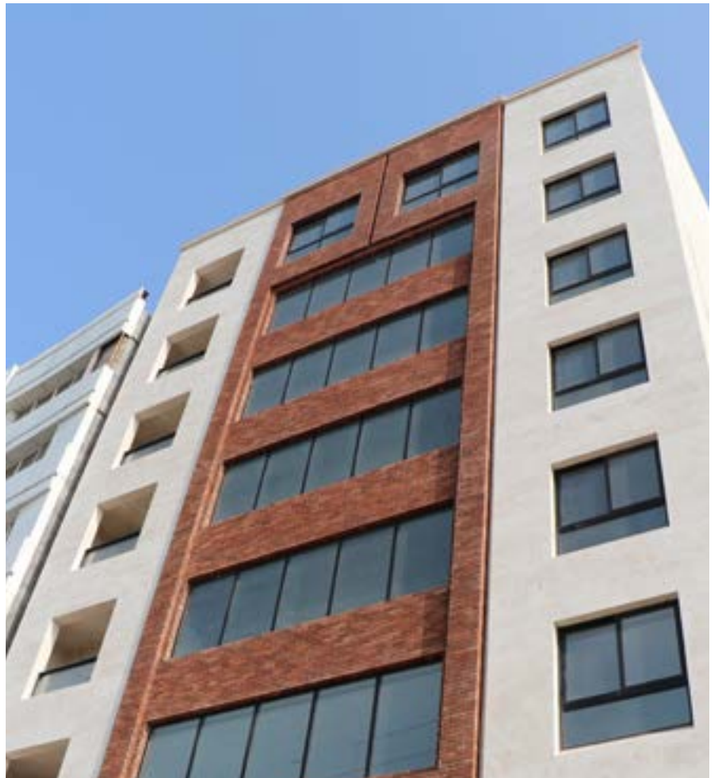
# SHALE FLOORING BRICKS

The Velinor International factory, utilizing high-quality raw materials and advanced technology, has been able to produce flooring bricks( pavement) in various colors and with different applications. The bricks manufactured adhere to industry standard regulations and have been approved by legal authorities. This product has been used in hundreds of projects with diverse applications, including sidewalks, historical buildings, gardens, villas, rooftops, traditional restaurants, and more.



## HM55-S25

DIM: 7x31cm



Many examples of bricks around the world have been around for over 3,000 years. This longevity is a testament to the durability of this material. Over time, the aging process and weathering have given bricks a unique character. according to their ability to evoke a sense of authenticity and nostalgia, bricks hold a special place among architects .The Velinor International, by utilizing ancient texts, has focused on reconstructing traditional brick production methods to offer a modern brick with a timeless appearance spanning thousands of years for enthusiasts.

Today, modern construction demands very high speed and diversity. Given the constraints and varying tastes, traditional construction methods are practically no longer justifiable. However, there are ways to express the spirit of architecture. One such approach is to use traditional materials for facade construction and decorations. These materials are manufactured using modern methods that meet the speed and quality requirements of contemporary architecture, but they retain traditional forms, colors, and appearances.
The Velinor International, leveraging its 70 years of experience in brick manufacturing and using modern production equipment, has developed a series of bricks. These bricks, which are a modern iteration of traditional clay bricks, offer a high variety in form, texture, and color, making them an excellent choice for adding character to modern designs. according to their production with advanced techniques and machinery, the technical issues typically associated with traditional bricks have been resolved in these products.



**“If a person loses their connection with the past, they lose their soul. The same is true for modern architecture, which has lost its connection with the past.”**

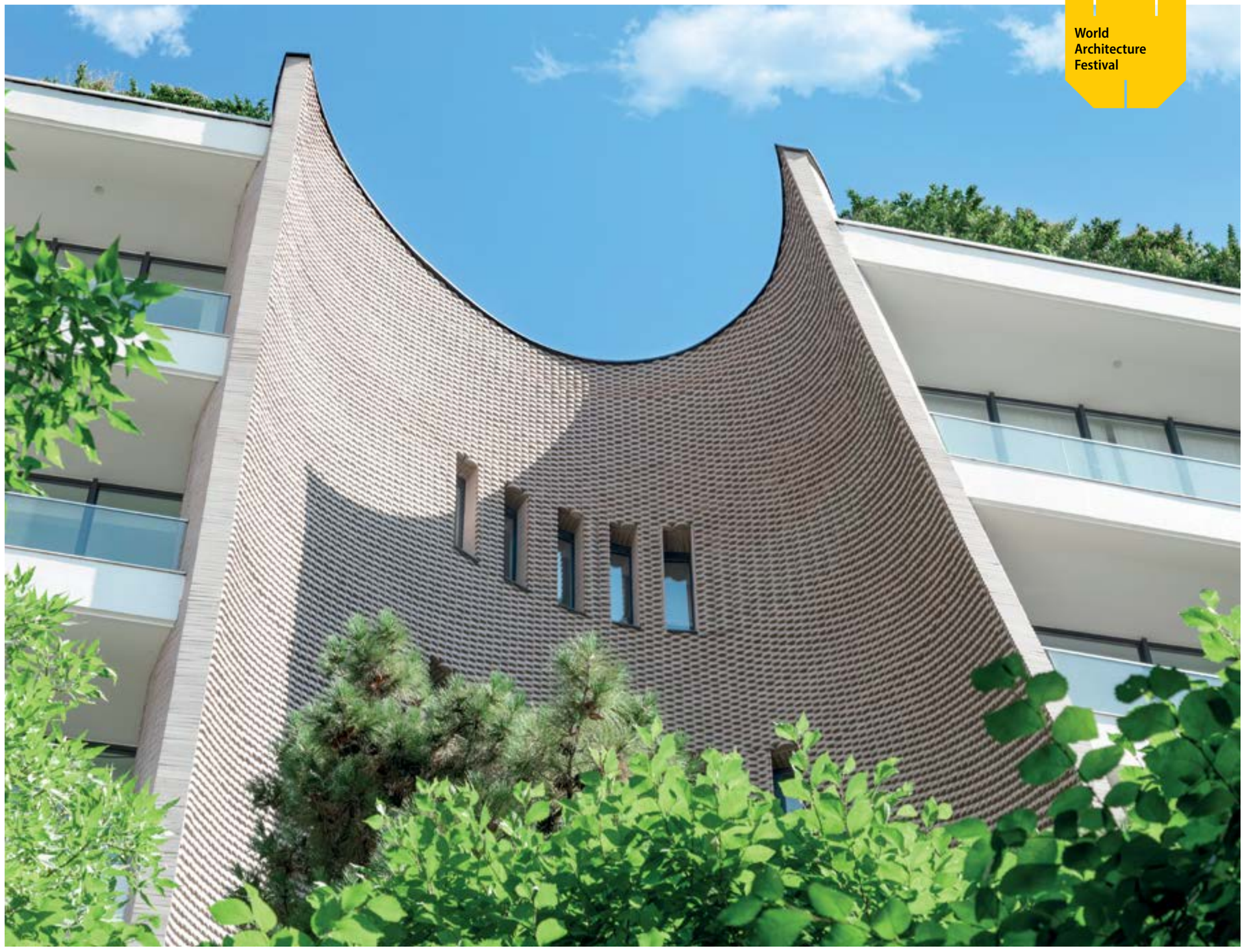
**ANN33**

It can be said that Formic Brick are the oldest type of bricks. These bricks were shaped by hand without the use of molds. Today, any brick that deviates from the cuboid shape is referred to as a Formic Brick. Creating diverse and attractive shapes without altering the structure of the brick involves significant costs and a considerable amount of time. However, with advancements in mold technology and the use of extrusion presses, it has become possible to produce various types of Formic Brick.
The Velinor International, utilizing the most advanced hydraulic and extrusion presses, has provided designers and builders with the capability to access a variety of molds for producing these bricks.

## S16

CODE: NBS7316

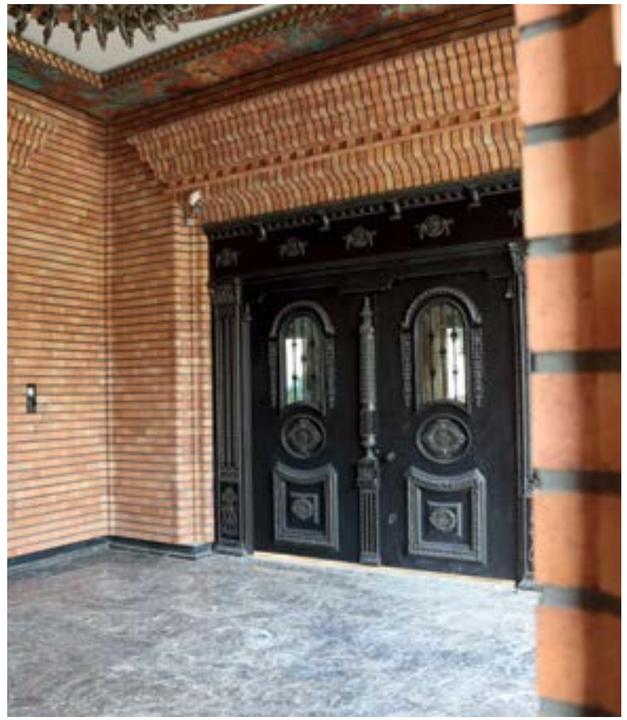
DIM: Arc



## N16

CODE: NBN7316

DIM: 7x31cm - Formic





## S16

CODE: NBS7316

DIM: Arc - 8x40cm

## RSN23

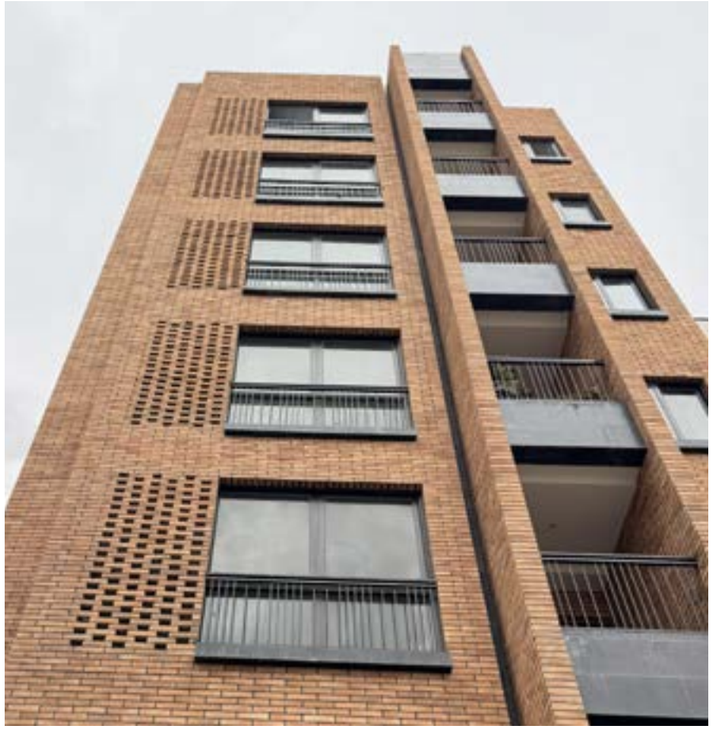
CODE: NBN7323

DIM: 6.5x26cm

## RSN55

CODE: NBN7355

DIM: 7x31cm





# RUSTIC

## BRICK

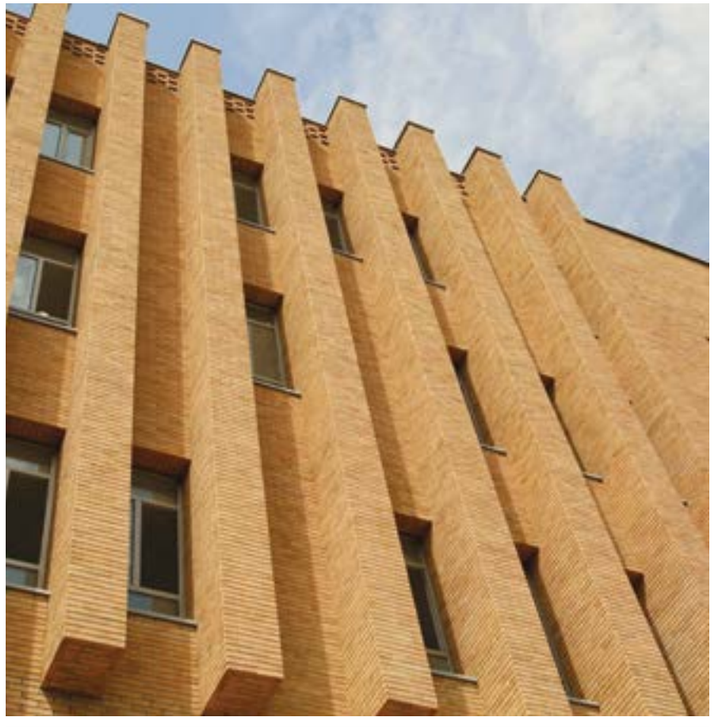
As an ancient material, brick reveals the effects of weathering through surface corrosion, which can be described as the aging patina settling on the brick's surface.
In modern bricks, according to the type of pressing and firing in new kilns, we observe less surface wear. However, with the emergence of post-modern and brutalist styles, there has been increased attention to surface texture. Designers have become more inclined to use bricks with an aged appearance to match these styles.

## RSN23

CODE: NBN7323

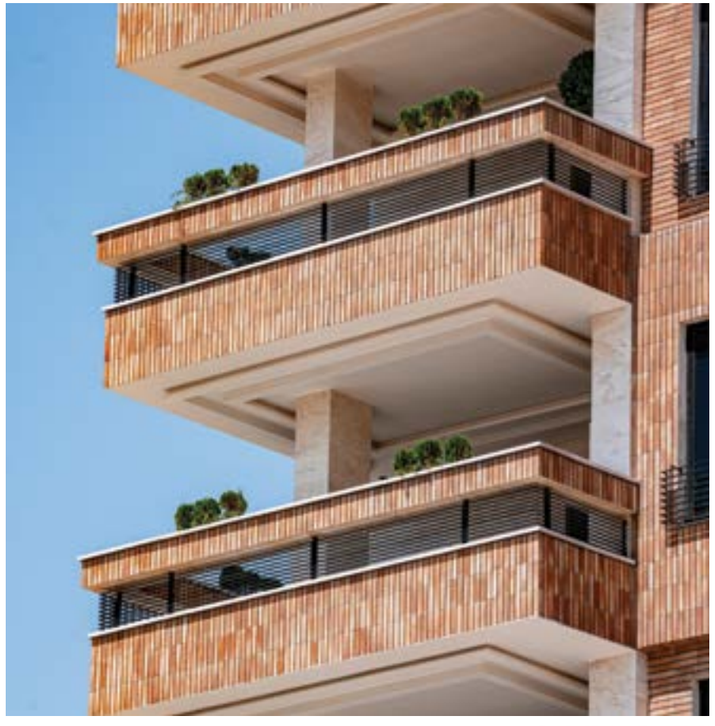
DIM: 6.5x26cm

**RSN55**
CODE: NBN7355
DIM: 26x6.5cm



**RSN55**
CODE: NBN7355
DIM: 26x6.5cm





**RSN55**
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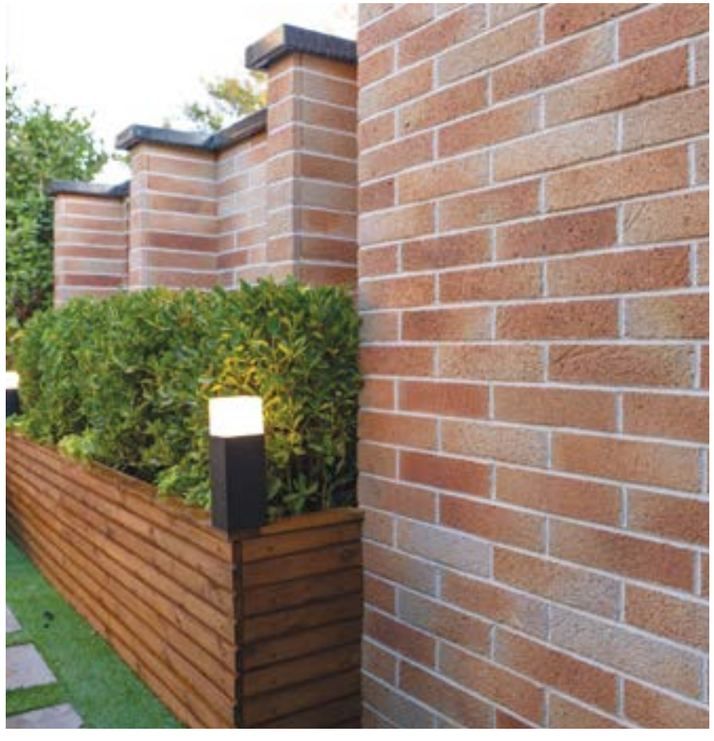


**RSN55**
CODE: NBN7355
DIM: 7x31cm

The project is situated in a location observed from various angles, and each viewpoint affects its different aspects. The spatial geography on all four sides of the project introduces fundamental differences in internal logic (such as lighting and space openings) and external logic (such as placement and orientation within the urban environment).

In the east-west section, the project is adjacent to buildings of similar height and connects to urban walkways. In the north-south section, the project is bordered by a school on one side and, on the other, by a significant slope that descends to lower-rise buildings in the town. As a result, the northern facade of the project is more enclosed with fewer openings, while the southern facade is more open with more openings.

Initially, we intended to design the project with a uniform and homogeneous form. However, due to the unique characteristics of the site and the dual-unit structure of each floor, we arrived at a different outcome. Consequently, the project consists of elements that, despite their independence, complement each other and function in a reciprocal dialogue. This design approach helps the project maintain its villa-like character while ensuring each floor unit remains independent. As a result, no two units are identical, though they all share a similar design language.

In the interior design, a central corridor known as the “void” guides access to the units, while a staircase functioning as a three-dimensional promenade facilitates movement between them. Thus, despite their separation, the various components of the project interact effectively with each other.

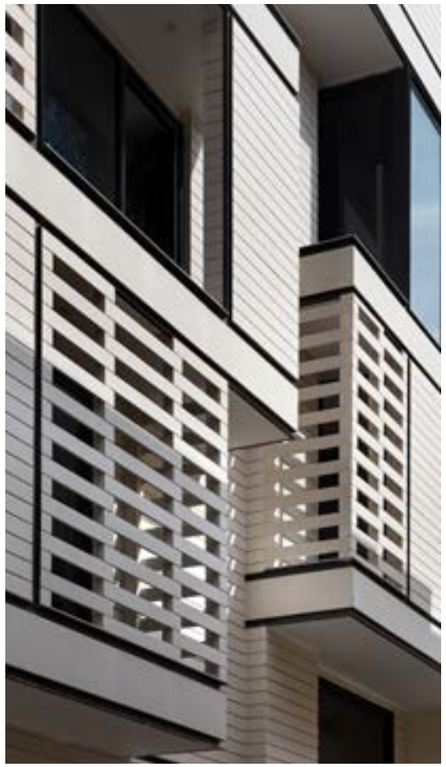
## S13-H15-H16

DIM: 7x31cm

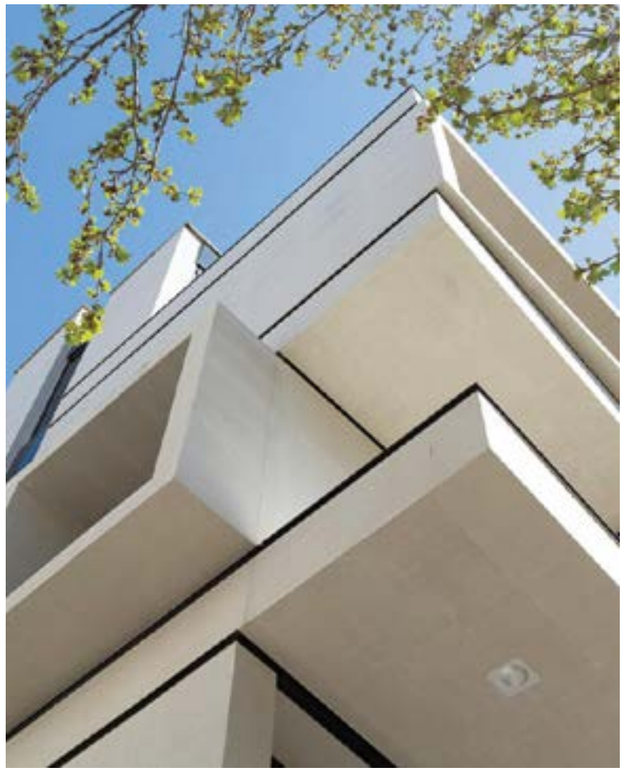
## S13

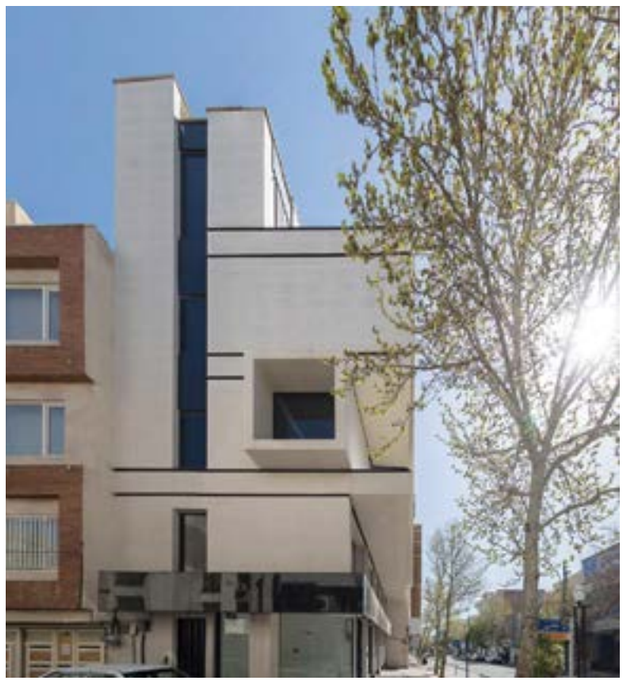
CODE: NBS7313

DIM: 20x80 cm
12x100cm









# TILE

When the concepts of modernism, modular style, and construction speed entered architecture, the initial solution was to increase the dimensions of the building components. Stones were cut into larger dimensions, and dressed stones were used extensively. In the past, large-sized bricks also had their proponents in the construction industry, but these pieces were not suitable for facades that required precision and exact dimensions.

## S13

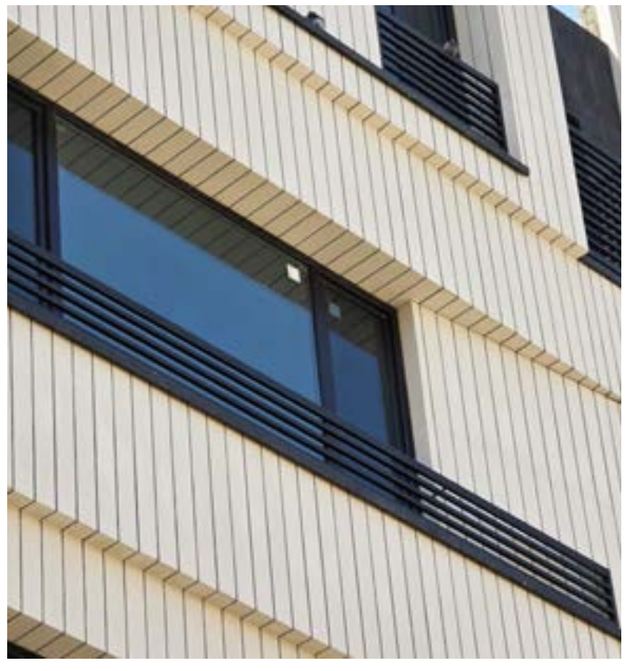
CODE: NBS7313

DIM: 40x80cm - 20x80cm

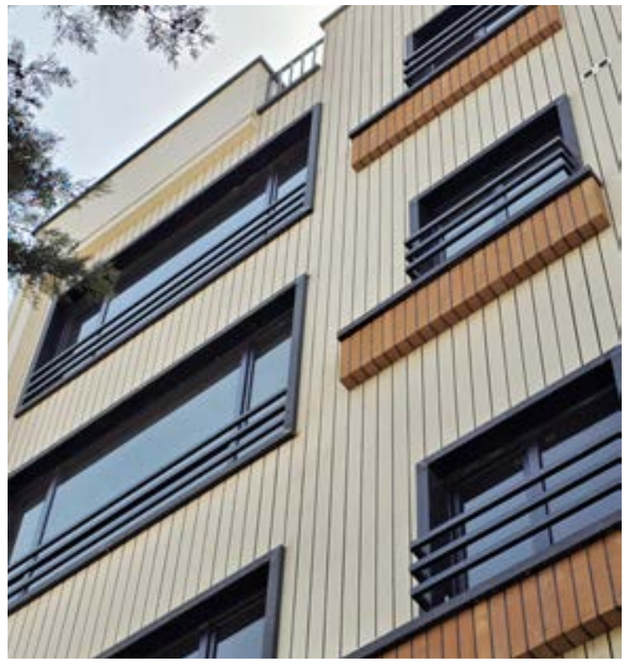
## S13

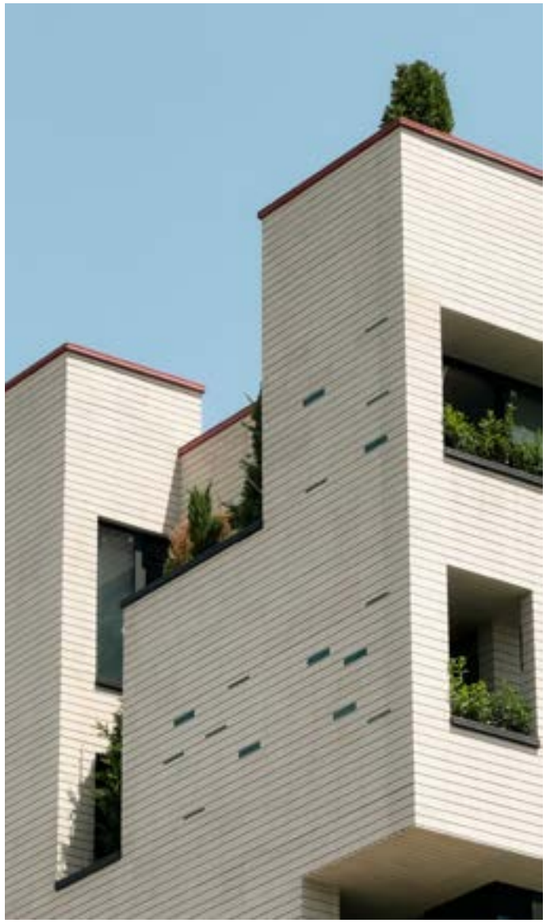
CODE: NBS7313

DIM: 12x100cm









## S13

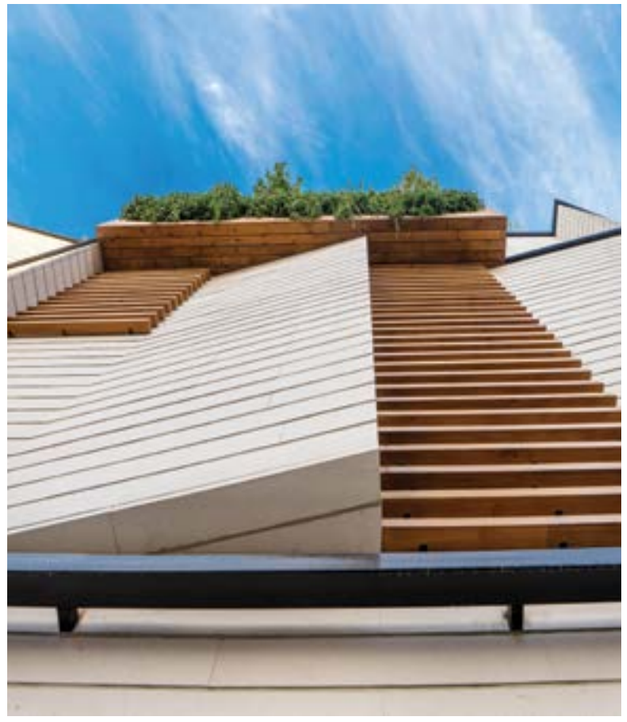
CODE: NBS7313

DIM: 12x100cm

## S13

CODE: NBS7313

DIM: 12x100cm

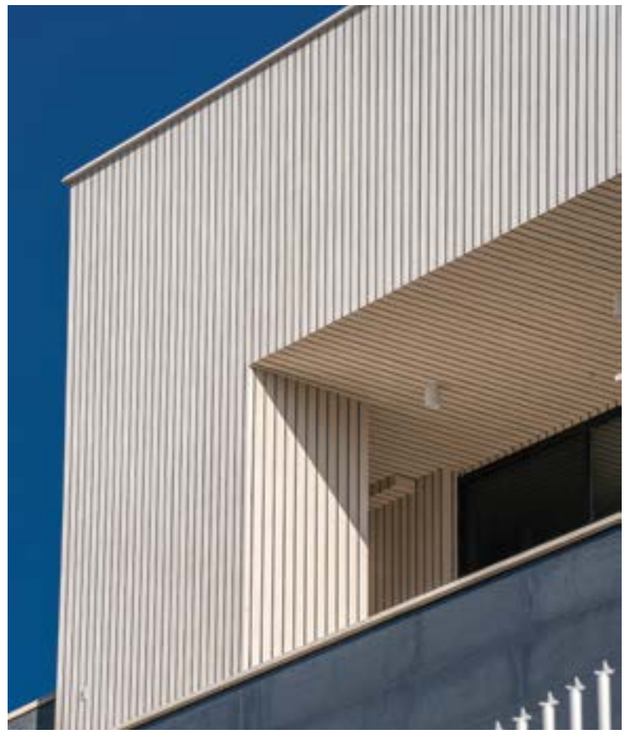


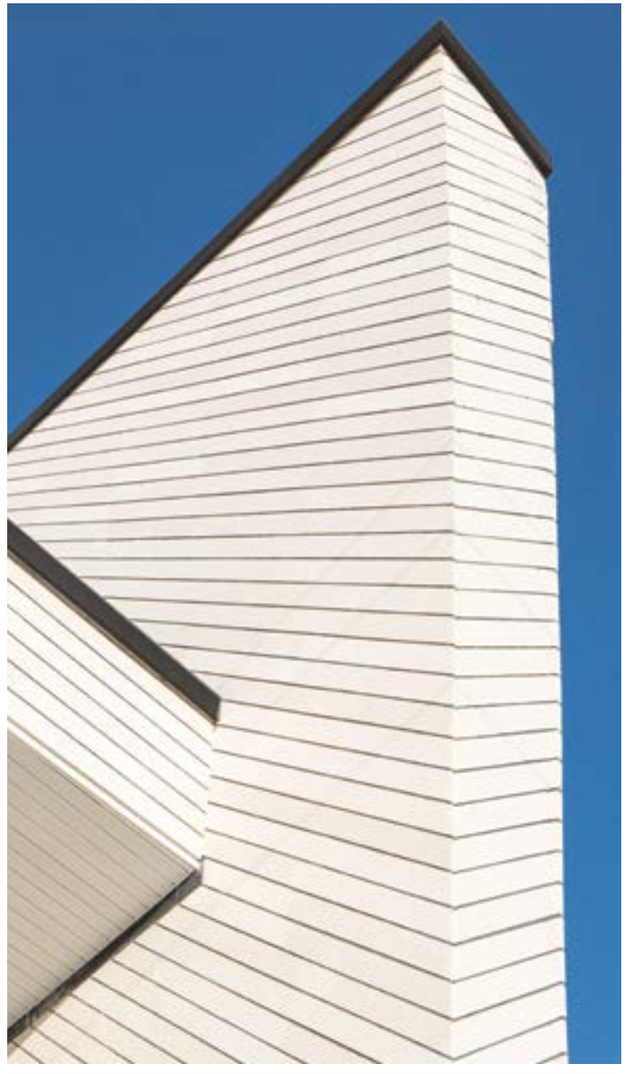


## S13

CODE: NBS7313

DIM: 8x40cm





## S13

CODE: NBS7313

**DIM: 12x100cm**

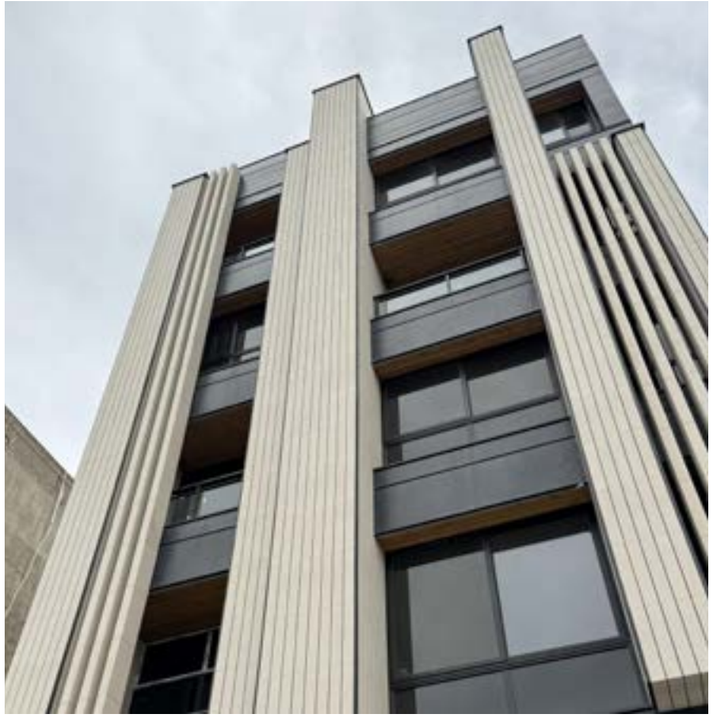


## S18-S13

CODE: NBS7318

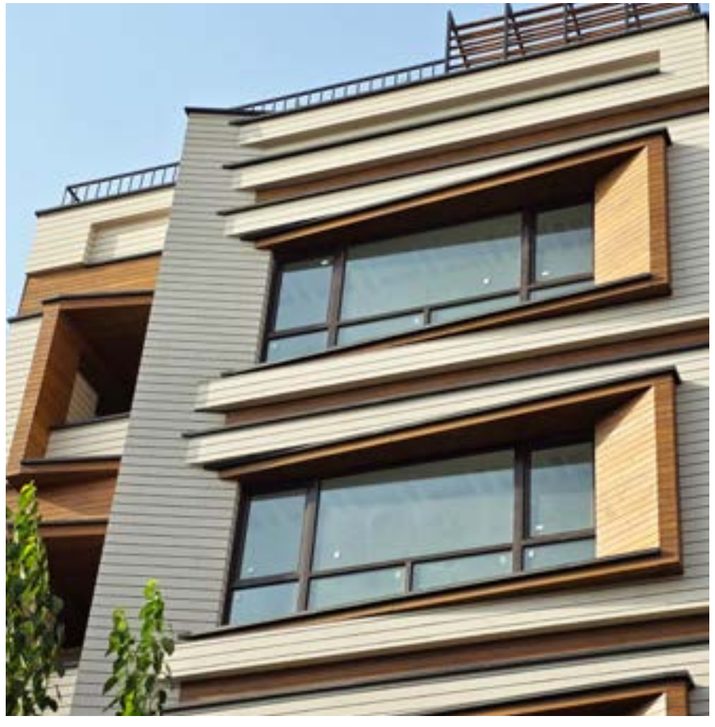
**DIM: 12x100cm**

## S13
CODE: NBS7313
DIM: 12x100cm



## S18
CODE: NBS7318
DIM: 20x80cm





## S13
CODE: NBS7313
DIM: 8x40cm - 12x100cm

## S18
CODE: NBS7318
DIM: 7x31cm - 20x80cm

## S13

CODE: NBS7313

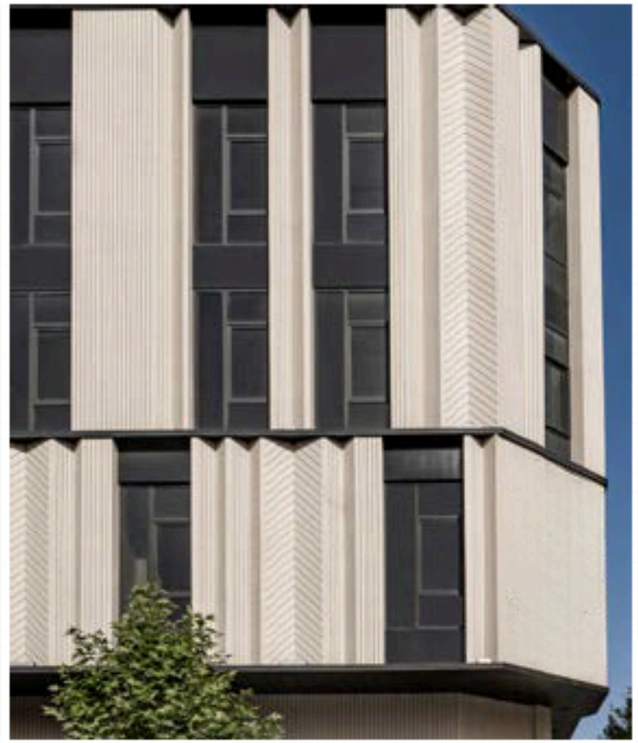
**DIM: 7x31cm - 12x100cm**

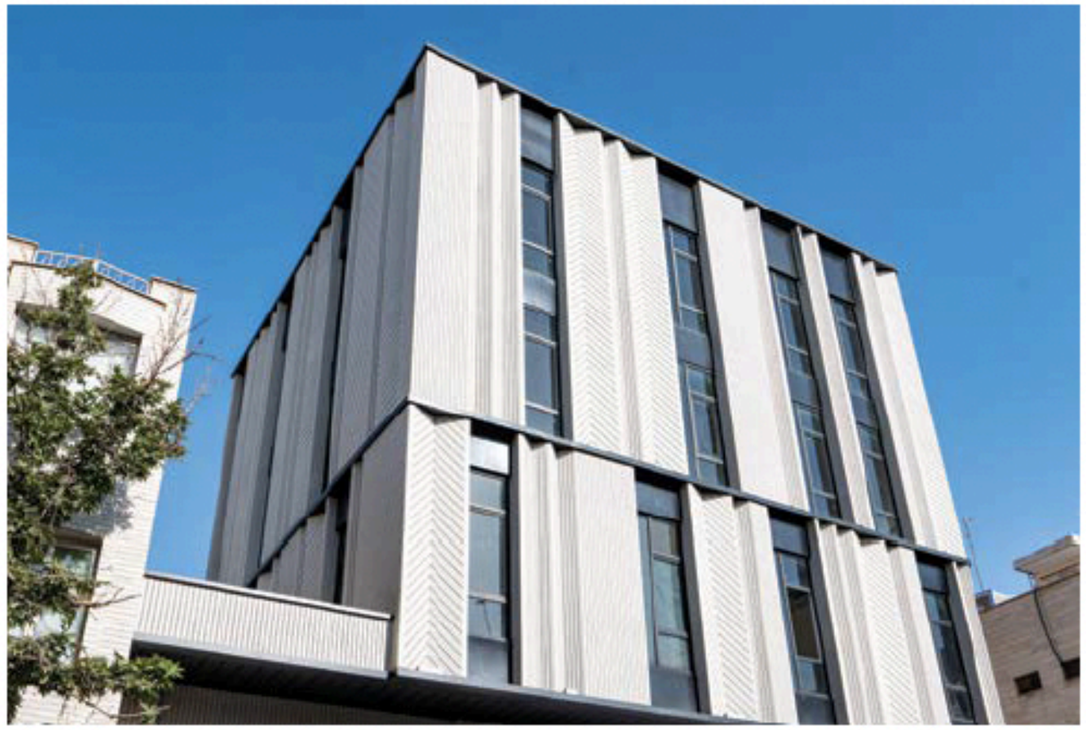
## S13

CODE: NBS7313

**DIM: 8x40cm - 12x100cm**

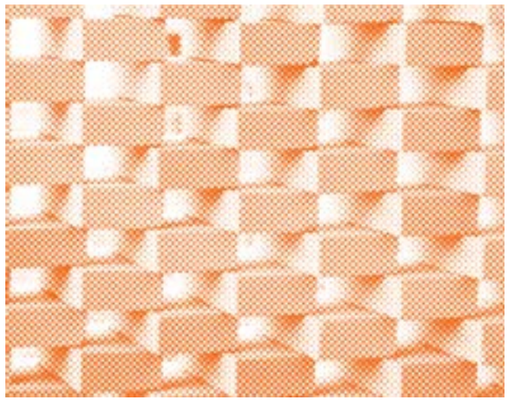






# Brick facade system

For all products manufactured by Velinor International , regardless of color, methods for mortar-free installation have been provided. according to the variety of products and the customer's desired facade designs, a standard solution may not be feasible. Additionally, by national standards and recommended guidelines, a separate technical and calculation booklet should be prepared for each project. Esteemed customers should consider the structural aspects of each design independently, in addition to aesthetic and architectural requirements. In this section presents a set of standard methods.



**Brick Facade Systems**
- Definition & general components
- Advantages of use
- Preparation of components
- Ventilated facade systems:

**1. Terracotta**
1.1. Full Body Terracotta
1.2. Double Layer Terracotta
1.3. Monolayer Terracotta
**2. Brick Panel**
**3. Brick Tile**
**4. Brick Screen**
4.1. Traditional Brick Screen
4.2. Thin Brick Screen
4.3. Free Hand Designing
**5. Brick Louver And Fin**
**6. Restrained Brick Facade**
**7. Pantile**
**8. Comprehensive Resolution:** Facade Unitize & Full Wall



For facades and other implementation methods, please contact the technical support department of Velinor International.

| Velinor installation system | Traditional combined facade | |
|---|---|---|
| -20 to +50 | 0 to +40 | Installation environment temperature |
| 20-40 | 80-100 | Skills required by the installation team |
| ✓ | ✓ | Possibility of combining materials |
| ✓ | ✓ | Possibility of implement complex facades |
| ✓ | ✗ | Possibility to use insulation |
| ✓ | ✗ | Rain wall |
| ✓ | ✗ | Possibility of repairing the facade without destruction |
| ✓ | ✓ | Simultaneous vertical / horizontal installation |
| ✓ | ✗ | Simultaneous installation of stone/wood/glass |
| ✓ | ✗ | Possibility of producing integrated wall |
| ✓ | ✓ | Possibility of brick lining |
| 60% | 0 | Reduce installation time |
| 40% | 0 | Reduce average price |
| ✓ | Unkown | Compatibility with topic 19 |
| ✓ | ✗ | Compliance with instructions 714 |
| ✓ | ✗ | Coinciding to the appendix number 6 Standard 2800 |

# Advantages of Ventilated facade

### No need for maintenance and energy upkeep

The exterior brick facade is sun-resistant and requires no maintenance. It withstands adverse weather conditions with high quality.

### Increase energy efficiency

The rain screen wall makes cooling the building easier during summer and provides better control of heating in winter. Both in terms of thermal comfort and energy savings, energy costs can be reduced by 30 to 40%.

### Value enhancement for the building

The extra initial investment is offset by durability, energy efficiency, and low maintenance costs. Therefore, the Velinor International brick facade is an excellent choice for both new construction and renovation projects. This is the basis of a sustainable future, increasing the thermal comfort of the home while simultaneously reducing energy costs.

### Improved thermal and acoustic insulation

Using insulation is optional, but when combined with the rain screen wall system, it significantly improves the building's thermal and acoustic insulation. This greatly benefits health by reducing stress and fatigue, while also eliminating thermal bridges and reducing environmental pollution.

### Prevention of moisture condensation

Reduces moisture insidethe building and its outside wall. The continuous circulation of air inside the air cavity acts as an additional protective layer and prevents the possible penetration of water through the joints.

### Reduction of structural displacement

It reduces moisture inside and, on the building's, exterior walls. Continuous airflow within the air cavity acts as an additional protective layer, preventing potential water ingress through the joints.

### Increase in facade lifespan

Continuous ventilation inside the air cavity improves the durability of the outer layer by keeping it dry. When natural ventilation is used, the lifespan is further extended.




### Ventilated facade and rainscreen

The brick rainscreen facade consists of an outer brick shell, a ventilated duct, an insulating layer, and an internal vapor barrier shell. In this system, equal pressure (open joints during rain create immediate pressure equalization, balancing the pressure inside the cavity with the outside pressure, so rainwater does not tend to enter the cavity) ensures that most of the water does not pass through the brick shell. Infiltrating droplets are either drained down the facade or evaporated by the constant airflow behind the facade. This convection process causes warm air to rise during the summer, renewing the warm air inside the cavity with cooler air. During winter, when the air inside the cavity is not warm enough to rise, this helps the insulating layer retain the building's internal heat. This chimney effect prevents excessive heating of the facade during summer and helps maintain internal temperatures in winter. Therefore, continuous airflow from outside to inside the cavity is essential to ensure the optimal performance of the rainscreen wall. To ensure proper ventilation of the air duct, it is essential to provide a minimum width of 2.5 centimeters at the narrowest part of the facade. Additionally, the required air gap varies depending on the height of the building.

# Definitions & Components

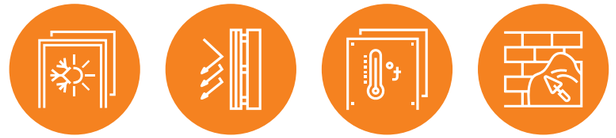
### Facade system

The facade system is a method where, for attaching the facade (bricks, clay, or prefabricated panels, stones, etc.) to the building, no mortar is used.

## Fixed curtain facade

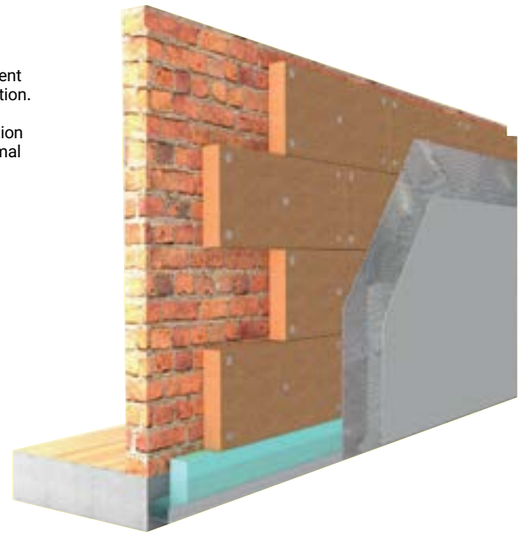
In this type of facade, brick pieces are installed as fixed visible/hidden (without the capability for shape, dimension, or spacing adjustments). The brickwork is selected according to the Velinor International catalog and is factory-produced based on the desired design, then installed on-site within a suitable metal structure.

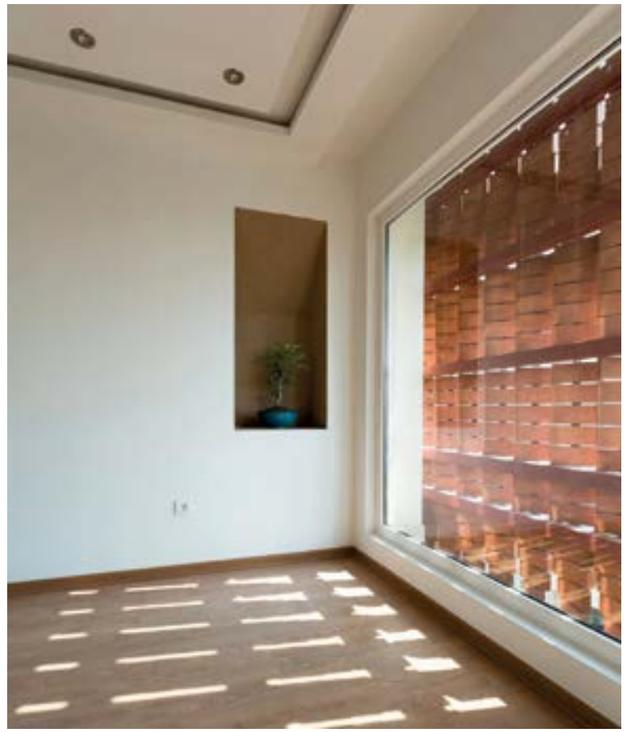


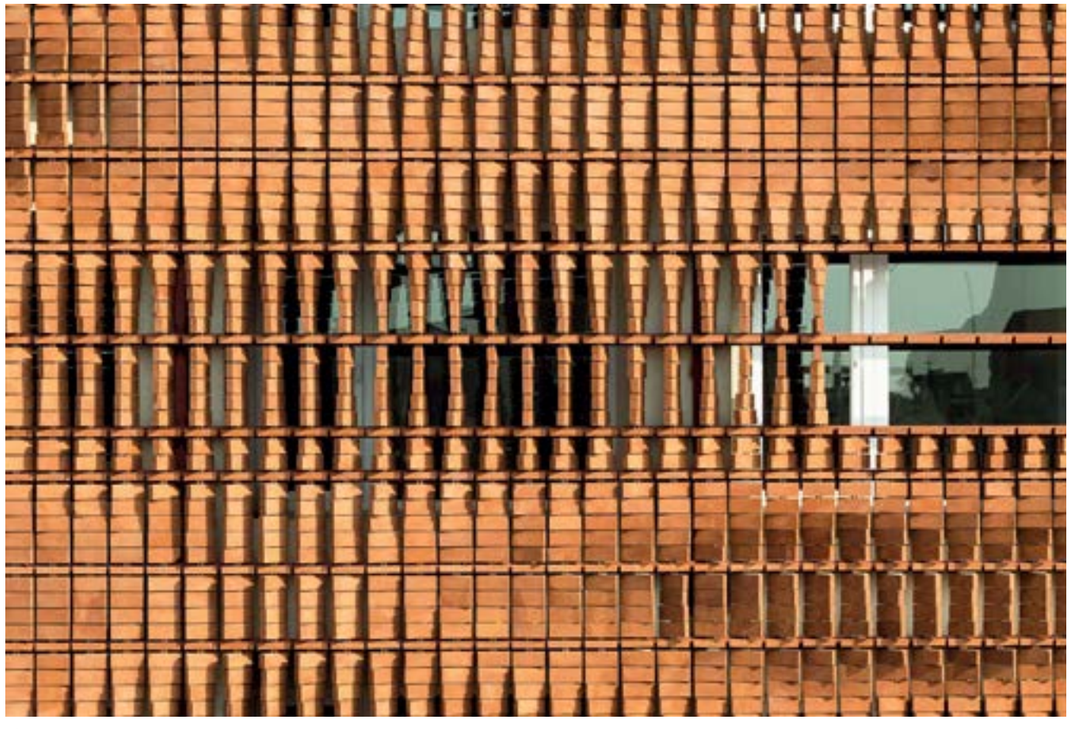



## Acu-therm insulation

The recommended mineral wool, produced with advanced technology and in compliance with national and international standards, provides sound and thermal insulation and is hydrophobic. The fibrous structure of mineral wool offers excellent acoustic properties and sound absorption for this type of insulation. Additionally, its high thermal resistance and non-combustibility, along with minimal smoke emission, classify this type of insulation as fire-resistant. Thus, mineral wool is considered the best thermal and acoustic insulation for the construction industry.







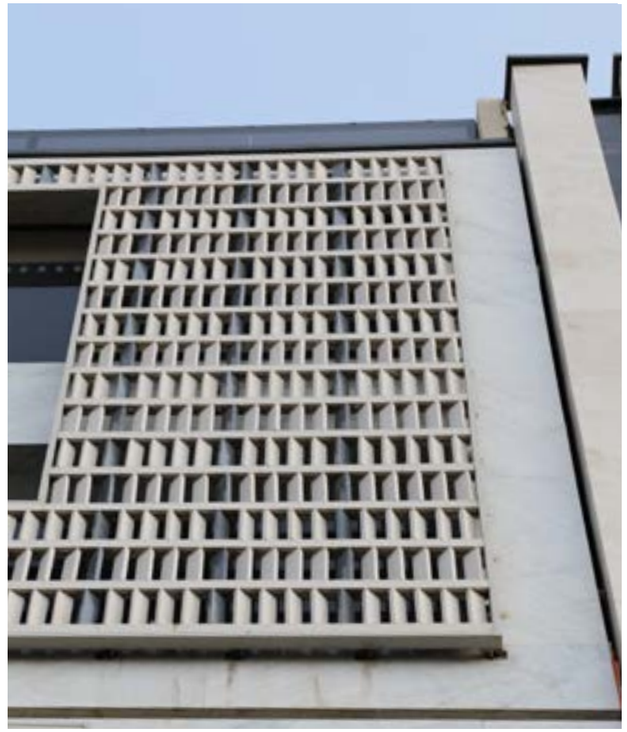
## Movable curtain facade

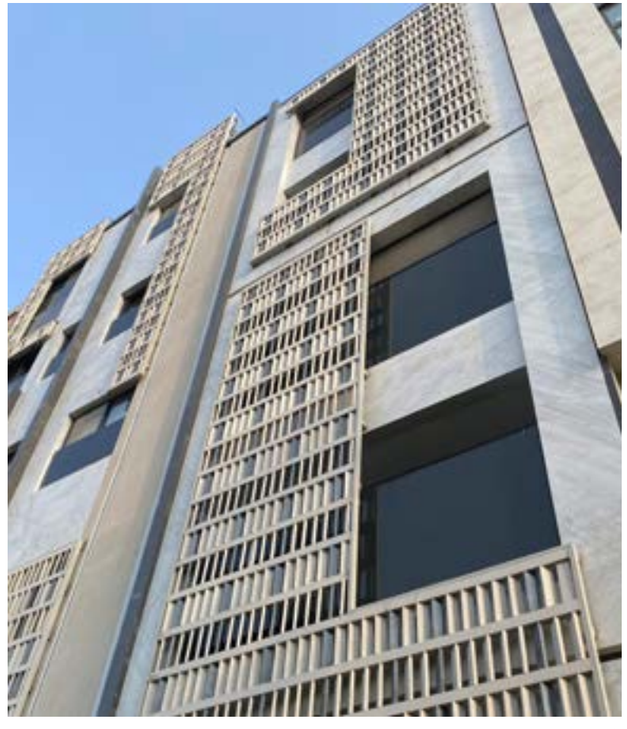
In this type of facade, brick pieces are installed as movable visible/hidden elements, allowing for adjustments in shape, dimension, and spacing, according to the designer's specifications.
The brick frame is selected from the Velimor International catalog. After machining to achieve the desired shapes and dimensions, it is factory-produced within a suitable movable metal structure and installed on-site. Electrification of the movement is available upon request.

# S13

CODE: NBS7313

DIM: 7x31cm





# The advantages of a facade system

| New brick facade | Composie facade (stone,brick,wood) | Parameter / Facade type |
|---|---|---|
| 45-55 | 80-150 | Weight per square meter facade (kg) |
| Naturally supplied | Jointing with mortarl | Facade sealing |
| +10% | 8%-14%<br>Basis | Price classification |
| In accordance with the standard | Good | Wind resistance |
| In accordance with the standard | Unknown | Fire resistance |
| Good | Good | |
| 50 | 30 | Climate stability |
| ✓ | ✗ | Used in high-rise construction |
| Great | Good | Impact resistance |
| Great | Weak | Sound insulation |
| Great in 10 cm diameter | Good in diameter more than 50 cm | Temperature<br>insulation |
| Richter 7/5 | Unknown | Earthquake resistance |
| Square meters 50 | Square meters 15 | (Daily performance speed (group of 3 people |
| No waste | 15% | Waste of used materials |



# Glaze

All products in this catalog can be produced with the designer's chosen enamel. Using an enamel. not only provides variety and the possibility to produce custom colors as desired by the designer but also technically reduces the water absorption rate of the brick surface by up to 0.5%. All traditional and industrial enamels are available for order.


## System Components

The components of a facade system are:
1. Substructure
2. Thermal insulation
3. Connections
4. Ventilation cavity
5. Brick cladding

## Preparation of components for dry installation

### Brick
Depending on the dimensions and shape of the desired brick, grooves, gaps, holes, or edges are created during the production process or afterward for installation. The dimensional requirements for dry installation are stricter than the national standard for bricks, so all bricks must be calibrated within the permissible range before any preparation for dry installation. Calibration and preparation for installation are carried out at the factory according to the execution and workshop plans prepared for each project.

### Acu-therm insulation
According to requirements to reduce energy waste and provide comfort to residents, a layer of mineral wool insulation, produced specifically for Velinor International according to the desired criteria, has been included in all proposed installation methods. The system is also installed to ensure that an air insulation layer is provided to meet standard requirements. Based on the vertical installation distances of the structure, insulation is produced and delivered in appropriate dimensions.

### Infrastructure
Depending on the overall weight of the facade, installation height, and connection method to the building, structural and infrastructure calculations are recommended. In medium and large projects, and for plated structures, special installation conditions are considered to increase the useful life. Infrastructure components can also be produced as complete bolts and nuts.

### Structure connection system
These parts are also produced in the factory and shipped in suitable packaging, in the required quantities according to the order

### Adjustable structure
The installation structure is produced with several profiles. Depending on the dimensions and height of the installation, a specific profile or a combination of profiles is recommended to address design complexity. To minimize errors and ensure compliance with the executive plans and workshop specifications for each project, the structures are cut to appropriate lengths, coded, and delivered in suitable packaging.



### Absence of construction waste and noise
In a facade system, according to the lack of mortar, clear execution plans, and standardized panel dimensions, construction waste and debris are minimal, and the installation is carried out without noise.

### No need for a master craftsmen for installation
The installation of a facade system initially requires engineering studies. Apart from the design and supervisory engineers, the execution personnel can be trained, unskilled workers. Since in this system the facade installation, including mounting of facade panels and rails, follows precise plans, it does not require master craftsmen.

### Ease of execution for high-rise buildings
The implementation of this system in the upper parts of buildings is much faster and easier compared to other facade construction methods. Additionally, this system allows access to different parts of the facade and infrastructure for periodic maintenance, especially in high-rise buildings

### Thermal and acoustic insulation
In a facade system, first, thermal insulation is independently secured to the building's structure using mechanical connections. Then, the metal substructure is attached to the building so that the facade system, maintaining a gap from the thermal insulation, is positioned on the supporting framework. In addition, the cavity between the facade and the insulation acts as an excellent thermal barrier. Therefore, this system plays a significant role in reducing energy loss.

### Earthquake resistance
The facade system in question is resistant to earthquakes up to 7.5 The risk of facade collapse during a severe earthquake is shallow.

### Reduction in construction costs
A: according to the speed of execution and the possibility of concurrent execution of the facade and structure, total project time will be reduced
B: according to the reduced weight of the building facade, the load on the main structure is decreased, leading to savings in the consumption of rebar and concrete or steel for the framework.

### Possibility of repairing and renovating the facades of old buildings
Given the lighter weight and the possibility of installation as an independent facade, there is an opportunity to renovate old facades and benefit from both insulation advantages and aesthetic improvements.

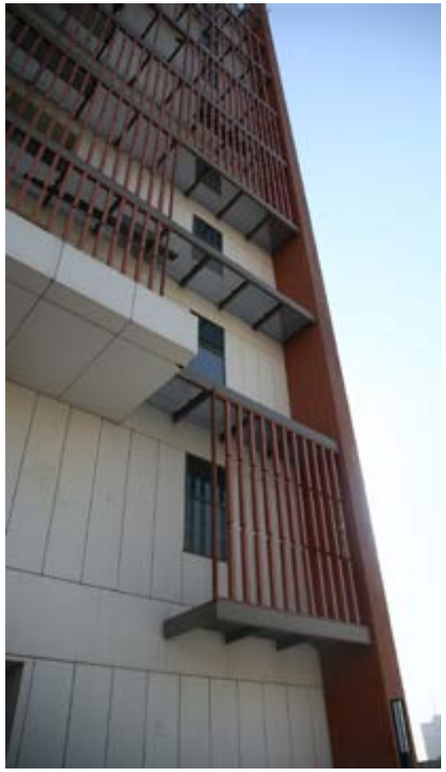
### High installation speed
In a facade system, the use of metal components as templates and patterns for the facade, along with the ability to prepare and cut the facade at the production site and the lack of need for scaffolding, significantly increases the installation speed.

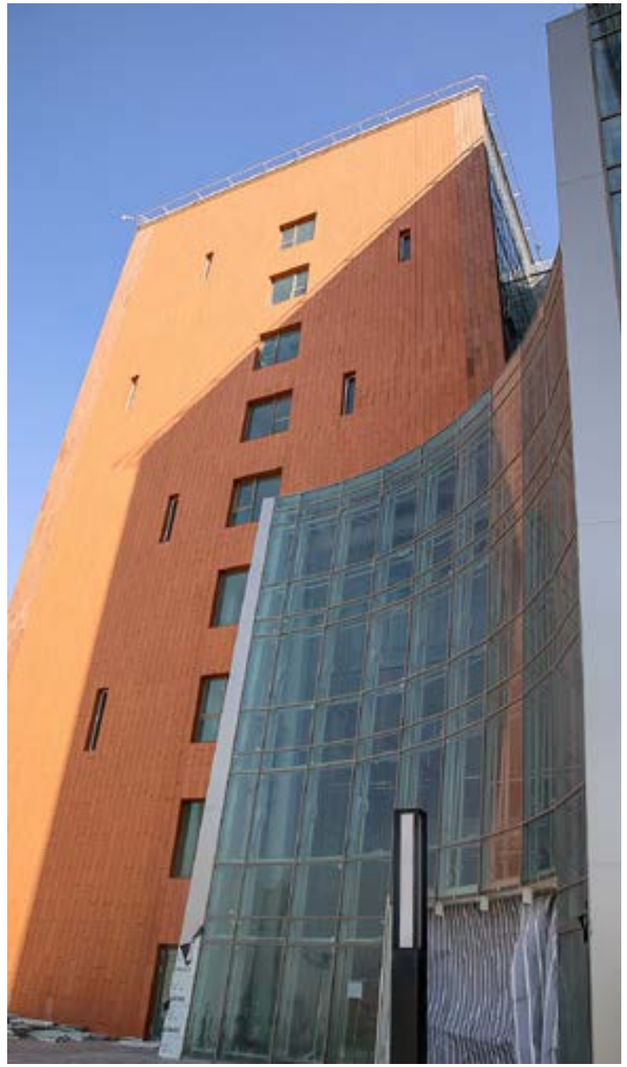
# Terracotta panels 1

**Terracotta panels** are among the most modern yet original facade systems. These large brick elements, with their pottery texture and range of natural colors, create a harmonious blend with traditional architectural elements. The vertical and horizontal lines of the tiles reflect modern architectural styles, and their ability to combine with other materials like stone, wood, and glass contributes to their global popularity. There are no limits to the size, shape, or color of terracotta used for facades, offering architects a wide range of design options. The natural appearance and durability of terracotta ensure that the building retains a fresh look over time.
**Two Layers Terracotta** They are produced as hollow bricks in the 30 kg/m² weight class. The colors differ from those of ordinary bricks, and special dimensions and louver parts can also be ordered.

| Product type | Terracotta |
|---|---|
| Dimensions of Terracotta | 1200*300*25 mm<br>900*350*25 mm |
| The thickness of the brick shell | 25 mm |
| Number of bricks per square meter | Various |
| Water absorption | % 5 > |
| Basic material | Extruder, Shale |
| Installation system | |
| Structural system | IBS:BVH, IBS:BT |







## S13

CODE: NBS7313

DIM: 80x20cm

## Advantages of Monolayer Terracotta

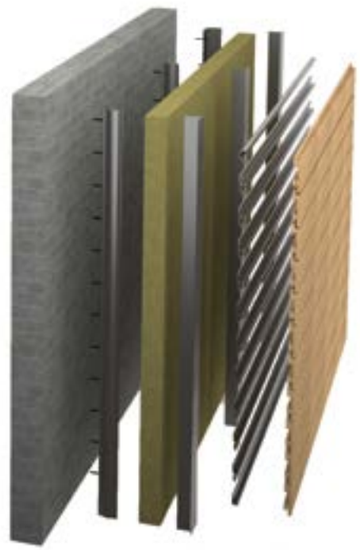
- The most economical brick facade system.
- Allows for vertical and stepped installation.
- Designed to meet the requirements of Topic 19.
- Suitable for mass construction and high-rise projects.
- Ventilated facade with rain wall capability.
- The shape of the bricks and the installation system : ensure easy installation and removal.
- Good thermal insulation: Includes an air layer and Acu-therm insulation layer.
- Rain protection: Impermeable to rain, with moisture removed from the surface by natural ventilation.
- Lightweight facade: Weighs around 35 kg per square meter.
- Installable in all seasons: Brick connections to the subsystem are mechanical and unaffected by weather conditions

### Simple, Economical, Durable

1. Requires no professional training with installation supervision.
2. Retains heat inside the building in winter and prevents outside heat from entering in summer.
3. Resistant to acids, moss, mold, and soil; stains, including graffiti, are easily removed.

**Versatile Protection:**

1. Effectively removes moisture and provides vapor permeability according to the ventilated facade.
2. It effectively removes moisture and provides vapor impermeability according to the facade's ventilation.
3. Provides sound absorption through a porous insulation layer.





**Monolayer terracotta in small dimensions**

| | |
|---|---|
| **Product type** | Brick, Clinker with rain wall capability |
| **Dimensions of the base brick** | 280*85*22 mm<br>560*85*22 mm |
| **The thickness of the brick shell** | 22mm |
| **Number of bricks per square meter** | 38 |
| **Water absorption** | % 5 > |
| **Basic material** | Extruder, Shale |
| **Installation system** | IBS:F6E, IBS:F6 |
| **Structural system** | IBS:BVH, IBS:BT |

**Monolayer terracotta in large dimensions**

| | |
|---|---|
| **Product type** | Brick, Clinker with rain wall capability |
| **Dimensions of the base brick** | 600*200*26 mm<br>700*250*26 mm |
| **The thickness of the brick shell** | 26 mm |
| **Number of bricks per square meter** | 8<br>5 |
| **Water absorption** | % 5 > |
| **Basic material** | Extruder, Shale |
| **Installation system** | IBS:CR, IBS:CR2 |
| **Structural system** | IBS:BVH2, IBS:BT |

## Advantages of Brick Panels

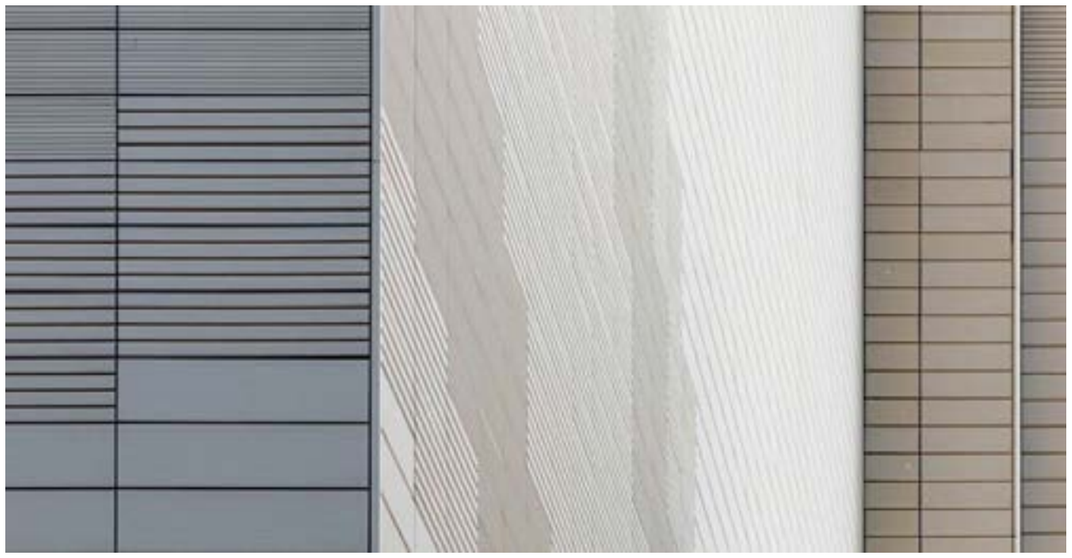
- Use of all color codes of Velinor International
- Lightweight installation structure
- Possibility of mortar jointing or using metal bands
- embedding for two layers of insulation in the system
- Elimination of specialized installation skills and reduction of waste
- Reduction in cost and installation time
- Maintenance of traditional and complex bricklaying patterns and design possibilities
- Horizontal, vertical, and combined installation; jointing of various combinations; and design depth



| Product Type | |
|---|---|
| Dimensions of the base brick | 310*70*21 mm |
| The thickness of the brick shell | 21 mm |
| Number of bricks per square meter | 39 |
| Water absorption | % 8 > |
| Basic material | Shale, dry press |
| Installation System | IBS:F4E, IBS:F4S, IBS:F4 |
| Structural system | IBS:BVH, IBS:BT |

## Brick panel

The system designed for installing small-sized bricks in both traditional and modern layout patterns is based on large-sized panels. In this system, the bricks are factory-installed onto a supporting structure (panel), and then the ready panel, which covers several square meters, is transported to the installation site and mounted onto the underlying framework.
The lightweight installation structure, grout application capability, insulation use, elimination of installer skill requirements, reduction of waste, cost and time savings, and preservation of traditional and complex brick patterns are additional advantages of this installation system

## Brick tile

The economic strategy for facade construction focuses on Velinor tiles. Simple and patterned tiles with base dimensions of 40x20 cm and 80x20 cm, along with complementary artistic glazed tiles of 20x20 cm, meet the needs of modern architecture. Thanks to dimensional compatibility, all three sizes can be used simultaneously, and vertical and horizontal installation combinations simplify the process. The modular design of the installation system not only facilitates ease of installation but also simplifies work at height, increasing the daily installation rate.

| Product type | |
|---|---|
| Dimensions of the base brick | 800*200*25 mm<br>400*200*25 mm<br>200*200*25 mm |
| Thickness of the brick shell | 24 mm |
| Number of bricks per square meter | 6<br>12<br>24 |
| Water absorption | % 5 > |
| Basic material | Shale, dry press |
| Installation System | IBS:F4E, IBS:F4S, IBS:F4 |
| Structural System | IBS:BVH, IBS:BT |

## S20

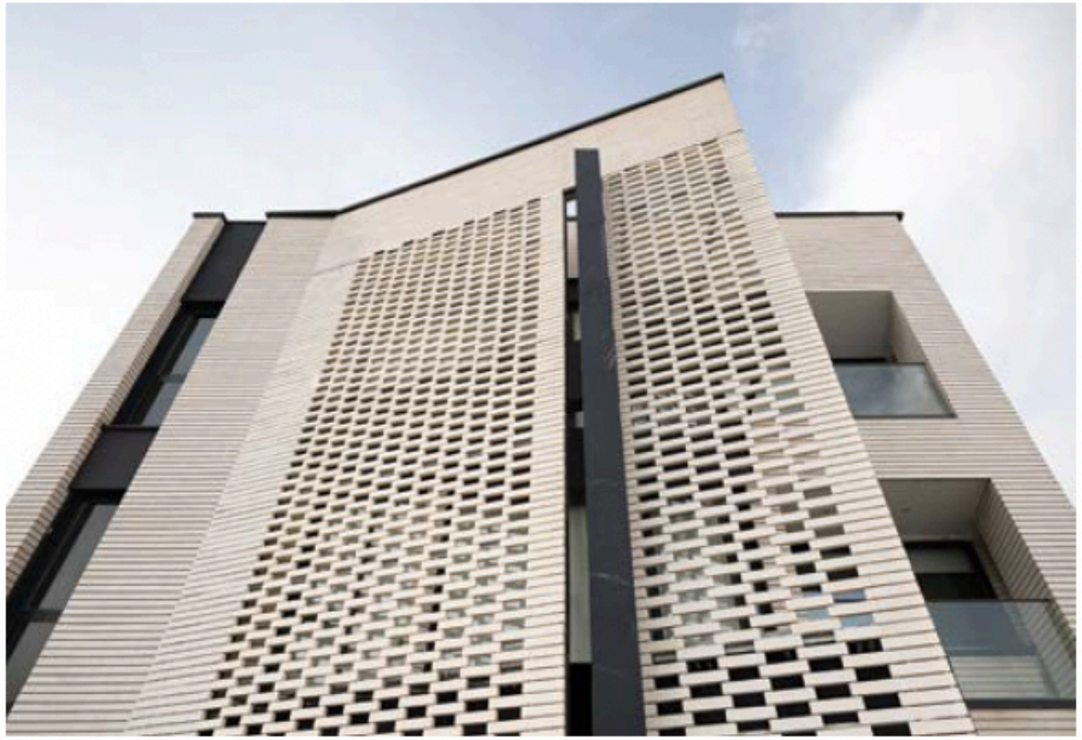
CODE: NBS7320

DIM: 7x31cm

### Brick Screen

To develop usable elements in facade design for beauty and control of sunlight and weather conditions, factory-produced brick curtain facades are offered. Recreating the traditional patterns in modern architecture, along with the need for shading and creating light play inside buildings and the time-consuming nature of traditional execution methods, reveals the necessity for a modern and engineered solution for such patterns. The proposed system is based on traditional brick dimensions and modern execution methods, considering engineering approaches for weight distribution and lateral loads on infrastructure. To reduce the overall weight and create integrated shadows, appropriate openings are incorporated into the brick using the installation method. The possibility of spacing and jointing between layers, the use of long-lasting elastic elements, the concealment of all structural components, and the options for horizontal, vertical, composite, and frame execution are additional advantages of this product and installation method. This facade type can be used both as an independent facade and as a cover and limiter of vision and light for windows and balconies.

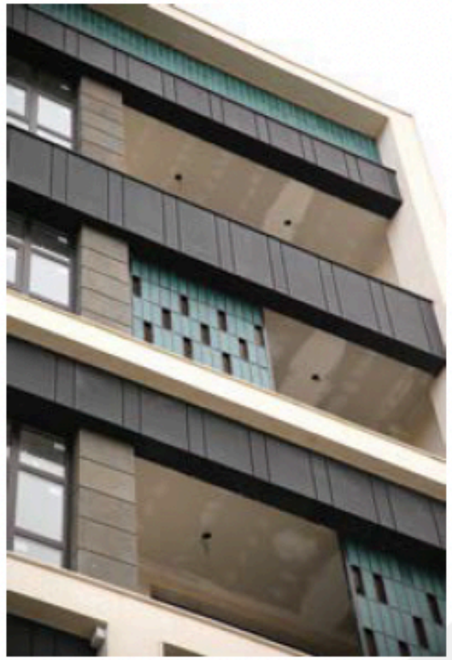
| | |
|---|---|
| **Product type** | Lattice panel |
| **Dimensions of the base brick** | 200*50*50 mm<br>310*70*40 mm<br>400*80*40 mm |
| **Complete system weight (square meter)** | 90 kg |
| **The thickness of the brick shell** | 40 mm |
| **Number of bricks per square meter** | 20-36 |
| **Water absorption** | % 5 > |
| **Basic material** | Shale, dry press |
| **Installation system** | IBS:HC |
| **Structural system** | IBS:BVH |

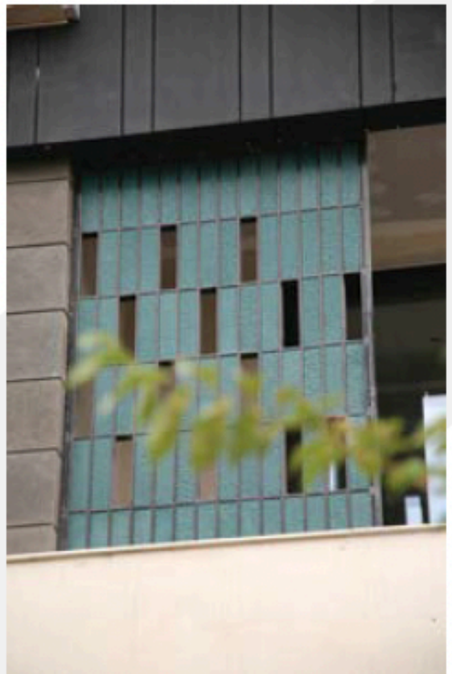


## S20

CODE: NBS7320

**DIM: 7x31cm**





## Thin brick Screen

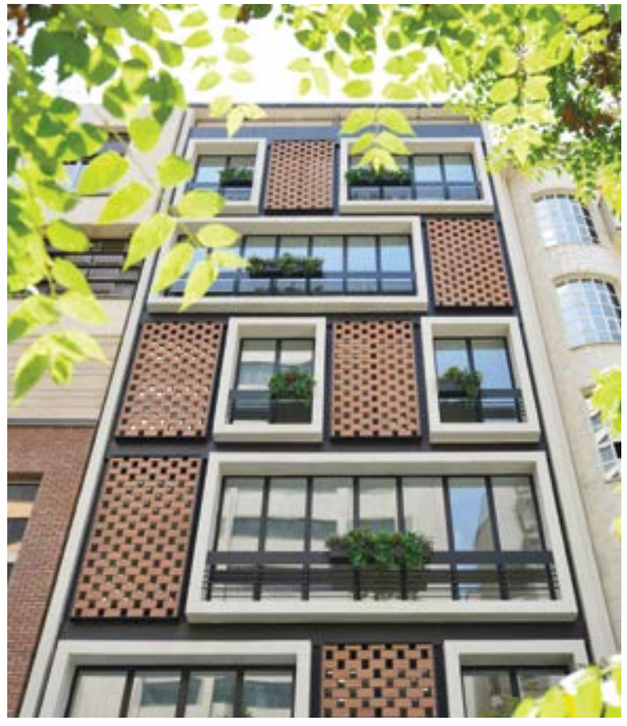
This group of brick facades is designed with light penetration, lightweight properties, and adaptability to complex building architectures. The use of a specific dimensional group and color codes produced by Velinor International allows for the simultaneous use of this system with other brick installation methods and facade integration. Modern brick installation systems often face visual issues according to the use of steel structures designed to withstand force, which are visible and not desirable. The proprietary structure used in this installation method has the least visual disturbance among the proposed installation methods. Additional advantages of this installation method include a double facade, quick installation, combined use of all Velinor International colors, integration of layout patterns, and the ability to empty parts of the facade regularly or randomly.

| | |
|---|---|
| **Product type** | Thin latticed |
| **Dimensions of the base brick** | All dimensions of Velinor brick |
| **Complete system weight (square meter)** | 42 kg |
| **The thickness of the brick shell** | 21 mm |
| **Number of bricks per square meter** | 20-36 |
| **Water absorption** | % 5 > |
| **Basic material** | Shale, dry press |
| **Installation system** | IBS:U1 |
| **Structural system** | IBS:BVH |

## H11

CODE: NBH7311

DIM: 7x31cm

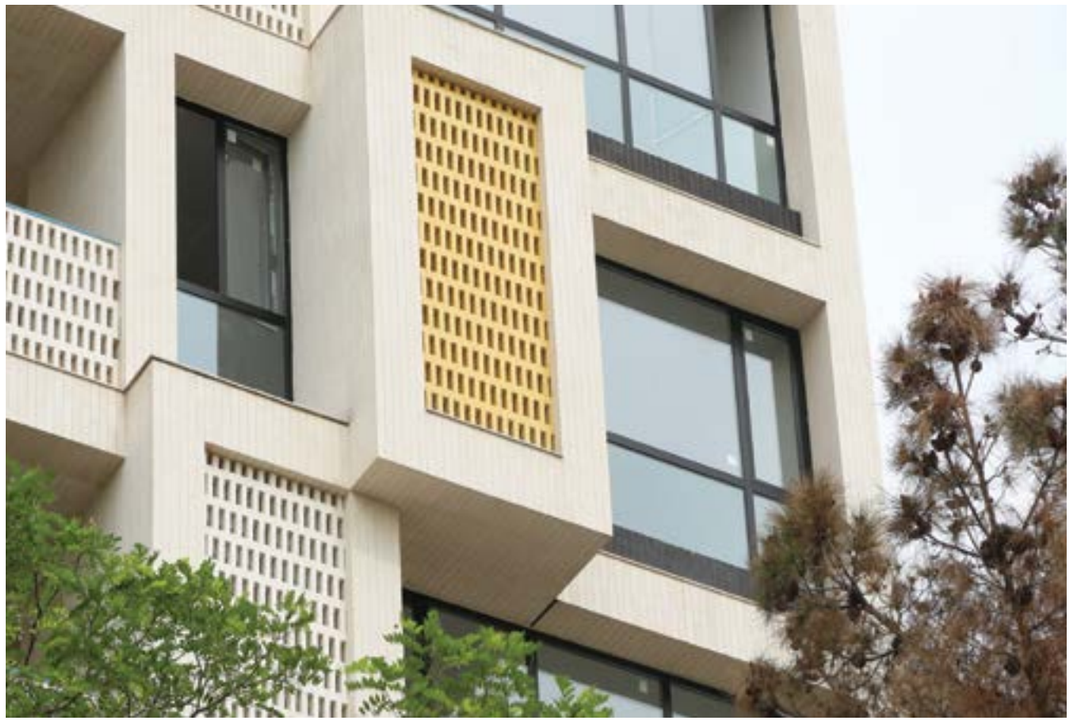




## S20

CODE: NBS7320

DIM: 7x31cm



## F11

CODE: NBF7311

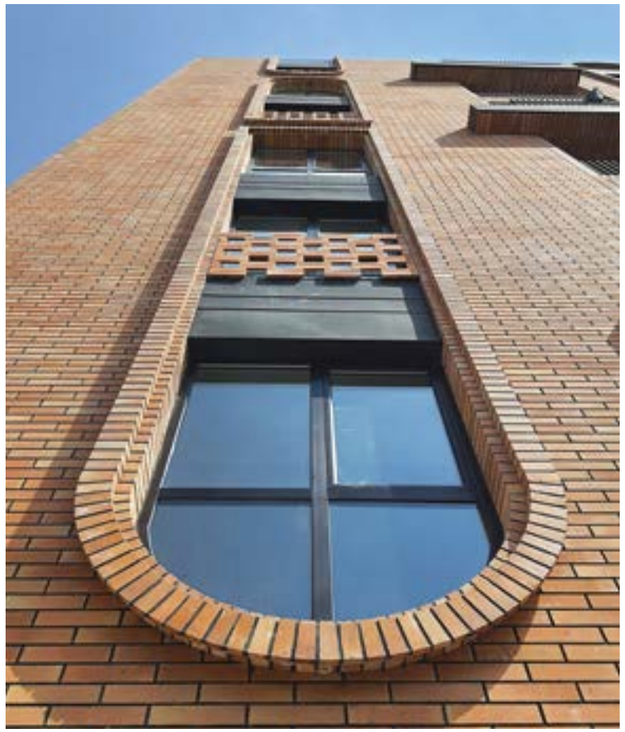
DIM: 7x31cm



## N55

CODE: NBN7355

DIM: 7x31cm



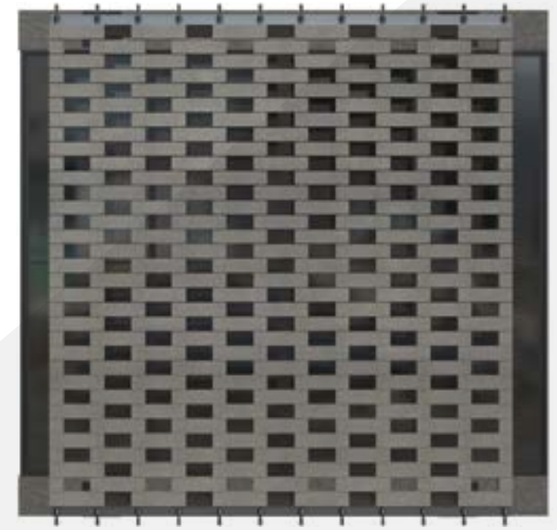


## S13

CODE: NBS7313

DIM: 12x100cm - 8x40cm





### Lattice with Free Hand Designing

This group of curtained brick facades is designed as latticed facades or canopies, with the ability to match the complex architecture of the building. By using a specific dimensional group of Velinor International color codes and allowing simultaneous use with other brick installation methods and facade integrations, there are no restrictions on implementing architectural or technical ideas. Modern brick installation systems often have visual issues according to the use of metal structures designed to withstand force, which makes the installation structures visible. The special structure used in this installation method has the least visual disturbance among the suggested methods. Additional advantages of this method include having a double facade, fast installation, combined use of all Velinor International color codes, integration of arrangement patterns, and the possibility of regularly or randomly emptying parts of the view.

## S13

CODE: NBS7313

DIM: 8x40cm - 8x8cm - 8x10cm



| Product type | |
|---|---|
| Dimensions of the base brick | 310*70*25 mm<br>400*80*25 mm |
| Dimensions of the surface Louver | 50*70 mm<br>50*80 mm<br>60*80 mm<br>50*100 mm<br>50*120 mm |
| Water absorption | % 5 > |
| Basic material | Shale, dry press |
| Installation System | IBS:U2, IBS:U1 |
| Structural system | IBS:BVL |

| Product type | Brick Finn |
|---|---|
| Dimensions of the base brick | 1000*120*25 mm<br>800*200*25 mm |
| Dimensions of the surface Louver | 60*120 mm<br>60*200 mm |
| The thickness of the brick shell | 24 mm |
| Water absorption | % 5 > |
| Basic material | Shale, dry press |
| Installation System | IBS:U2, IBS:U1 |
| Structural system | IBS:BVL |

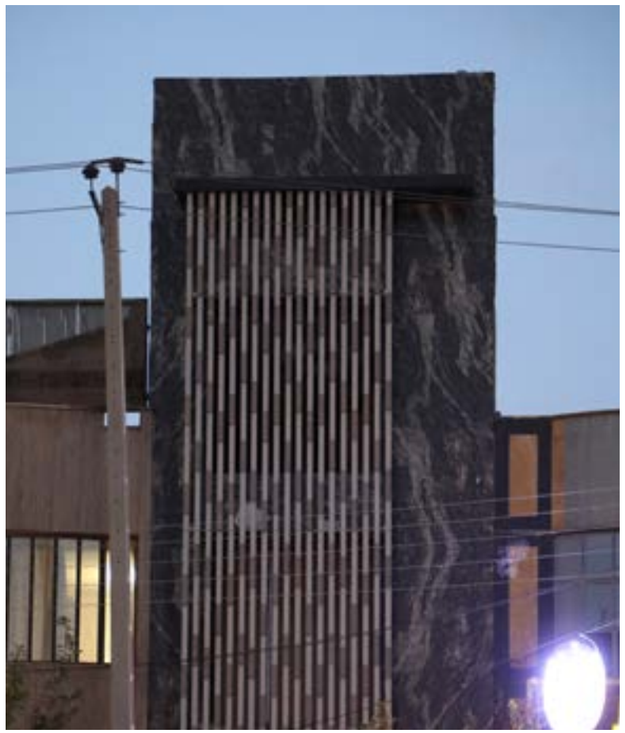
## Louver and Fin

Four-sided rectangular brick elements in various dimensions and lengths, suited to the design, are popular in modern brick architecture. The Velinor International Louvre and Fin families, based on metal shield core technology, allow for vertical, horizontal, and combined installation according to the architectural design. Louvers are produced with a cross-sectional aspect ratio close to square, while fins have a cross-sectional aspect ratio close to rectangular. It is also possible to produce louvres and fins in a single-sided version. The coloring follows Velinor International's color code, making it easy to order and install simultaneously, and to create both wet and dry combinations with other facade components. Necessary parts are also available for connecting to various building structures.


## S13-S18

CODE: NBS7313

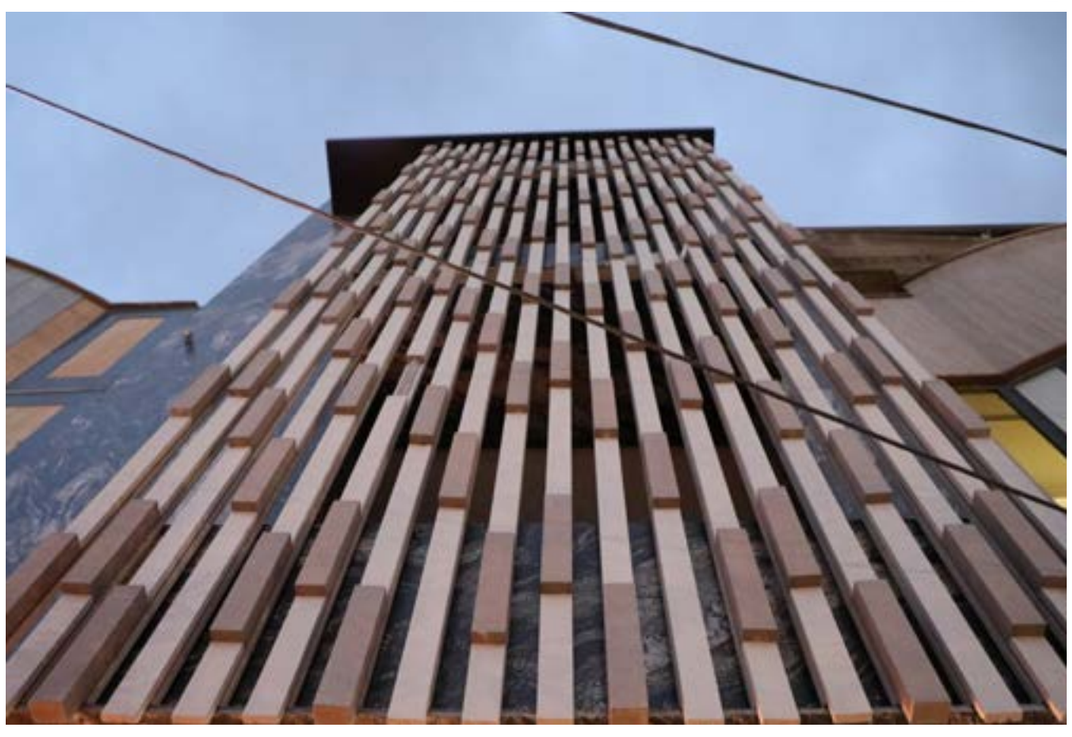
DIM: 40x8cm



## S13

CODE: NBS7313

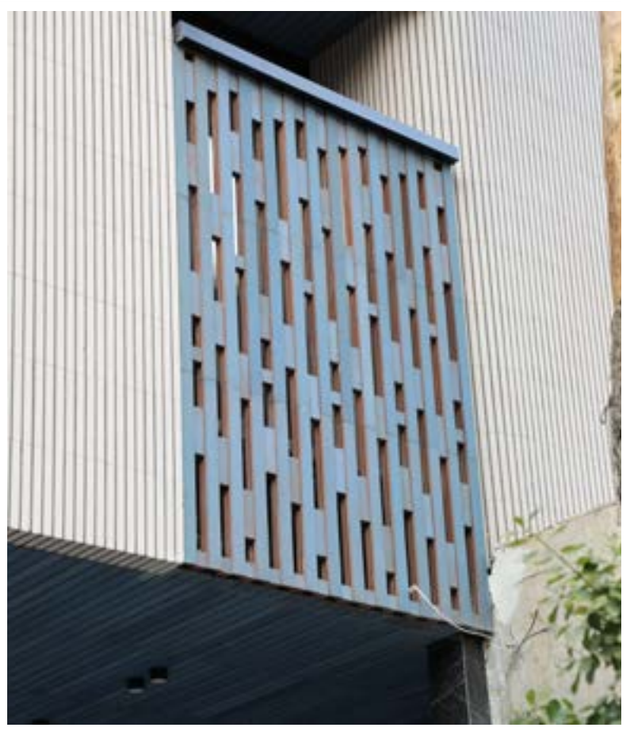
DIM: 7x31cm - 4x31x4cm

## F39

CODE: NBS7313

DIM: 79x6cm





## S20

CODE: NBS7320

DIM: 7x31cm

## Restrained Brick Facade

Brick facades consist of a single-layer brick wall with a maximum thickness of 10 cm. The supporting wall on which the brick facade is installed may be load-bearing or non-load-bearing. In buildings up to three floors (10 meters high), the supporting walls can be load-bearing; otherwise, they are non-load-bearing. Advantages of this bricklaying method include compliance with national regulations, the possibility of using an insulating layer, seismic resistance, and reduced weight compared to traditional mortar application methods.

| **Product type** | Restrained brick and mortar facade |
|---|---|
| **Dimensions of the base brick** | 55*200*100 mm<br>55*400*70 mm |
| **How to control and connect** | Vertical: Gravity support and cement<br><br>Horizontal: Dedicated installation piece |
| **Number of bricks per square meter** | 100 mm<br>70 mm |
| **Water absorption** | % 10 > |
| **Basic material** | Shale, dry press or Extrude |
| **Installation system** | IBS:WT |
| **Structural system** | IBS:BHS |



## Pantile

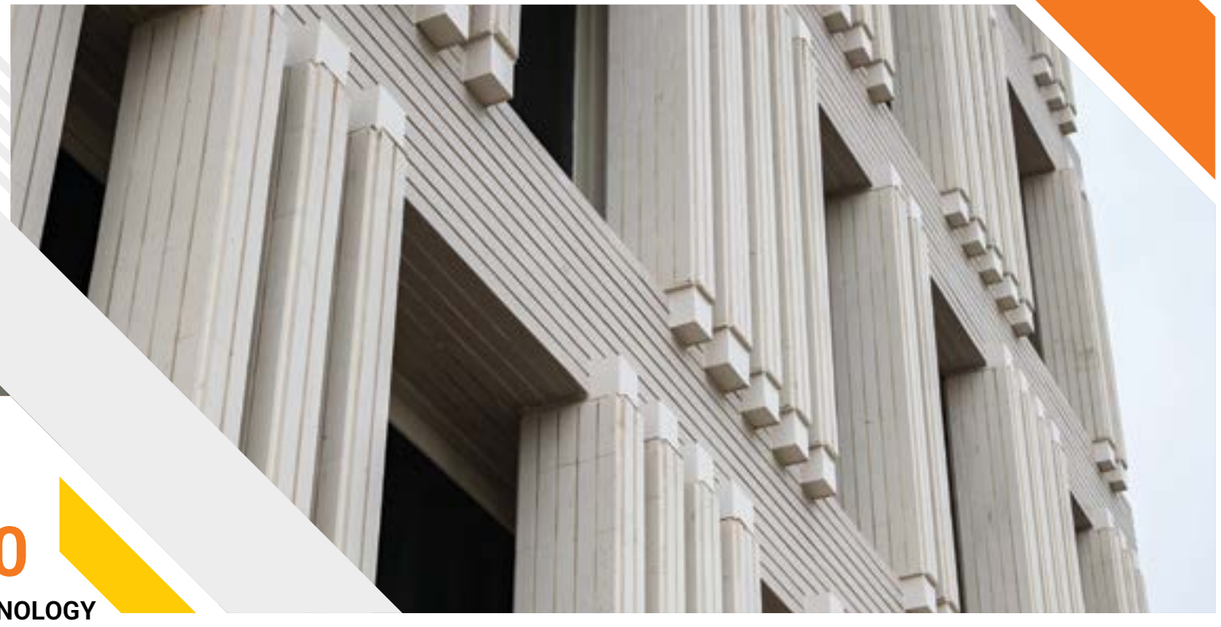
Brick bodies in this class are produced using the extruder method and can be installed as roof or wall coverings. The extruder production method not only reduces water absorption but also makes it possible to manufacture longer pieces compared to traditional pantiles.

| **Product type** | Pantile |
|---|---|
| **Dimensions of the base brick** | 55*200*100 mm<br>55*400*70 mm |
| **How to control and connect** | Exclusive wooden network<br><br>Exclusive metal network |
| **Brick shell thickness** | 8 mm |
| **Water absorption** | % 8 > |
| **Basic material** | Shale, dry press or Extrude |
| **Installation system** | IBS:RT |
| **Structural system** | IBS:BHS |

## Total Solution

For faster completion of large construction and high-rise projects, complete wall solutions with infrastructure and brick facades are provided.
In this implementation method, by reducing the installation steps and integrating the involved structures, an economical solution is proposed both in terms of weight and cost, as well as execution speed.





## GN200

**SWEDISH TECHNOLOGY**

### GN200 tile, ceramic and brick paste - adhesive

The GN200 adhesive is part of the product family from the Velinor International, produced using state-of-the-art European technology. This product is based on mineral resin emulsion and other specific chemical compounds. The percentage of the components that make up this adhesive and its physical and chemical quality will be monitored during the industrial process. It's used for installing various types of bricks, tiles, and ceramics both vertically and horizontally for interior decoration.



”

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## GN100

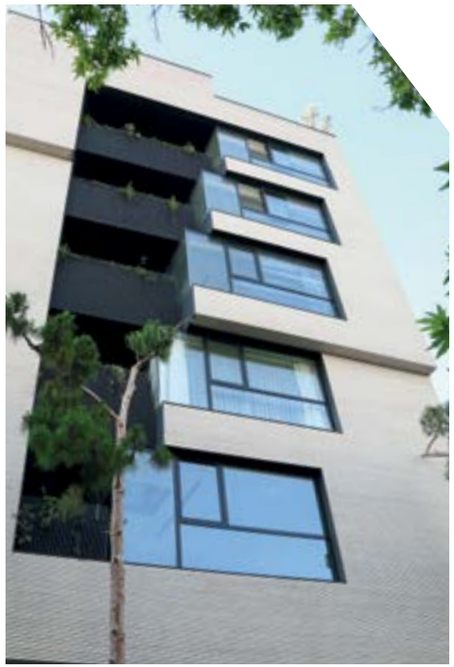
**SWEDISH TECHNOLOGY**

### Porcelain ceramic tile powder adhesive, stone and brick

The powdered adhesive GN100, produced by the The Velinor International, is manufactured using advanced European technology. This product is based on mineral materials and has unique chemical compositions. The percentages of the constituent components, as well as its physical and chemical quality, are controlled during the industrial process, providing unique properties and features for consumers in terms of quality and cost-effectiveness. Currently, these adhesives are produced in two groups, C1 and C2, according to the DIN EN 12004:2007 standard, and are available in six groups. They are also capable of producing customized products for specific application conditions.

# MORTAR JOINTS

## tile, ceramic and brick binding powders



### product introduction

Production of binding powder with PN and PH codes is part of the Velinor International product line, produced using state-of-the-art European technology. The percentage of constituents of the components, as well as its physical and chemical quality, are controlled during the industrial process.

| Name of the product | Weight | Code | Color |
|---|---|---|---|
| White binding powder | 20Kg | PH100 | |
| Bold cream binding powder | 20Kg | PH110 | |
| Silver binding powder | 20Kg | PH120 | |
| Dusty binding powder | 20Kg | PH130 | |
| Cyan binding powder | 20Kg | PH140 | |
| Green binding powder | 20Kg | PH150 | |
| Red binding powder | 20Kg | PH160 | |
| Azure-blue binding powder | 20Kg | PH170 | |
| Brown binding powder | 20Kg | PH180 | |
| Dark brown binding powder | 20Kg | PH185 | |
| Dark red binding powder | 20Kg | PH190 | |
| Silver binding Ash gray binding powder | 20Kg | PH200 | |
| Black binding powder | 20Kg | PH210 | |
| Peru binding powder | 20Kg | PH220 | |
| Gray binding powder | 20Kg | PH300 | |
| Dark gray binding powder | 20Kg | PH310 | |

high-penetration hydrophobic nanocoating for protecting building facades.

**S13**
CODE: NBS7313
DIM: 7x31cm
Execute Project With
**WH100**

# WH100
# WN100

**GERMAN TECHNOLOGY**

## Product introduction

Facade protectors with codes WH100 and WN100 are part of the nanocoating family, sourced from reputable manufacturers of  the European Union . a non-toxic product containing modified alkaline silane, nanotechnology, water-soluble, with very high penetration, which gives an exceptional hydrophobic effect to the entire surface of the building facade. By creating a reaction and penetrating the pores of concrete, cementitious surfaces, stone, brick, and low-absorbent surfaces, this product forms a hydrophobic coating that creates an integrated, impermeable membrane against water. This results in the protection of surfaces against structural and aesthetic damage caused by moisture absorption such as  dandruff, freezing, and the growth of mold mildew, etc.

**The hydrophobic nano covering WN110 enhances the freshness and vitality of your building facade**

# WH100
# WN100

**GERMAN TECHNOLOGY**

## Product instruction

The facade protectant with code WN110 is part of the nano-coating family, with its base materials covering acrylic and silicone resins. Its water-based solvent provides excellent water-repellent properties and a wet appearance to all building facade surfaces. This product creates a hydrophobic coating by reacting with concrete, cement, stone, brick surfaces, and low-absorption surfaces, making an impermeable and waterproof membrane. This nano covering protects surfaces from structural and aesthetic damage caused by moisture absorption, such as dandruff, freeze-thaw damage, mold and fungal growth, etc.

# WN300

## superhydrophobic nanomaterial with high penetration for protecting the facade

### Product description

Facade protector with code WH300 is a part of the nanocoating family, sourced from reputable manufacturers of  the European Union, especially German companies. a non-toxic product containing modified alkaline silane, nanotechnology, water-soluble, with very high penetration, which gives an exceptional hydrophobic effect to the entire surface of the building facade. By creating a reaction and penetrating the pores of concrete, cementitious surfaces, stone, brick, and low-absorbent surfaces, this product forms a hydrophobic coating that creates an integrated, impermeable membrane against water. This results in the protection of surfaces against structural and aesthetic damage caused by moisture absorption such as  dandruff, freezing, and the growth of mold mildew, etc



## Facade cleaner and anti-efflorescence

# Safety tips

- Do not mix cleaning and anti- efflorescence solutions with water under any circumstances.
- Use gloves and a mask when applying this solution. Then, use a brush to apply the product to the cement stains and efflorescence
- It is recommended that you ask for help from specialists and experienced professionals.
- If you plan to use protective face materials, make sure to avoid direct contact with skin and clothing.

# R&D

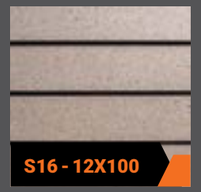
- The ability to identify and supply the best raw materials
- Material preparation system with mechanized equipment
- Forming using two methods: extruder (wet )and hydraulic press (dry)
- The brick-making process with tunnel and roller kilns at optimal temperatures
- Production process control by a quality control expert group at all production stations
- Engineering and design team preparation to provide the best executive solutions
- R&D unit readiness for designing and producing various achievements in different colors and dimensions
- Development of the sales and trade network and positive production for both small and large projects



# Social Responsibility

To fulfill its social responsibility, the Velinor International has decided that half of its employees will be female heads of households and is committed to providing a safe working environment for them.

Velinor International, with its 50 years of experience, has succeeded in providing unique infrastructure and technology to meet any production needs as requested by customers.

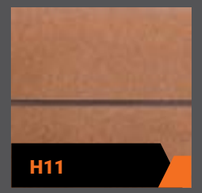

S16 - 12X100


H11


FN33


S13


H12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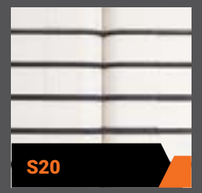
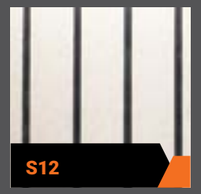

S20


R11 - 12


S16


S13

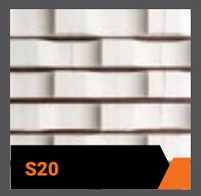

N11


S12


S13


R12 - 20X20


R11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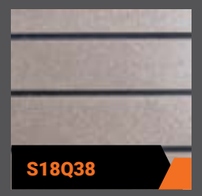
N11


R11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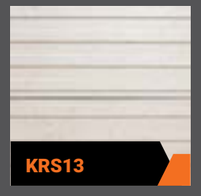
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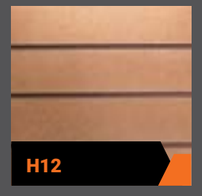
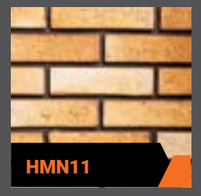

H12


S13


ANN11


RSH


RSN15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HMN55


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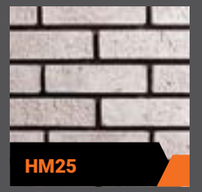
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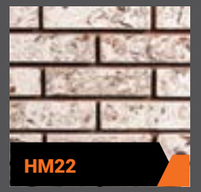
HM EN13

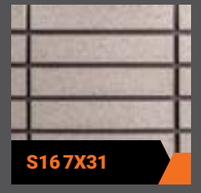

HM22

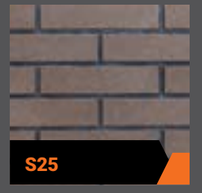

HM29


S18 - 7X31


S13


SF


S16 7X31


S25


S12-S18


N11


N14


N15


N23


N25


N26

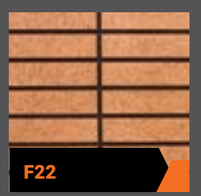

N33


N55


FN33


R11


F11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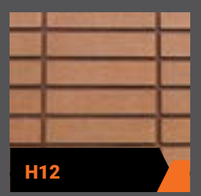
H12

QUALITY INDICATORS

| Brick Serie | Brick Name | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BLACK BRICK. | RF77 | 340 | 200 | 1100 | 1.1 | 1.1 | 1 | 1.5 | 9 |
| | S19 | | | | | | | | |
| | S25 | | | | | | | | |
| ORANGE BRICK. | F11 | 150 | 70 | 960 | 0.8 | 0.8 | 1 | 1.5 | 17 |
| | P | 180 | 65 | 1000 | 0.9 | 0.9 | 1 | 1.5 | 17 |
| RED BRICK. | FN22 | 200 | 1000 | 1100 | 1 | 1 | 1 | 1.5 | 12 |
| | FN23 | 240 | 95 | 1000 | 1 | 1 | 1 | 1.5 | 11 |
| | R11 | 230 | 90 | 1000 | 1.1 | 1.1 | 1 | 1.5 | 9 |
| | R12 | 300 | 102 | 1000 | 1.1 | 1.1 | 1 | 1.5 | 8 |
| | R33 | 250 | 130 | 1050 | 1.1 | 1.1 | 1 | 1.5 | 12 |
| | R55 | 250 | 130 | 1050 | 1.1 | 1.1 | 1 | 1.5 | 12 |
| WHITE BRICK. | TS | 170 | 250 | 1100 | 0.8 | 0.8 | 1 | 1.5 | 12 |
| | S20 | | | | | | | | |
| | S13 | 240 | 60 | 1100 | 1 | 1 | 1 | 1.5 | 9 |
| | S30 | 170 | 81 | 1030 | 1.1 | 1 | 1 | 1.5 | 10 |
| | S17 | 240 | 60 | 1100 | 1 | 1 | 1 | 1.5 | 9 |
| CHAMOTTE BRICK. | N11 | 250 | 66 | 1100 | 1 | 1 | 1 | 1.5 | 9 |
| | N33 | 250 | 78 | 1050 | 1.1 | 1 | 1 | 1.5 | 9 |
| | N55 | 300 | 73 | 1140 | 1.1 | 1 | 1 | 1.5 | 9 |
| GRAY BRICK. | S12 | 170 | 81 | 1030 | 1.1 | 1.1 | 1 | 1.5 | 17 |
| | S16 | 220 | 92 | 1000 | 1.1 | 1.1 | 1 | 1.5 | 11 |
| | S18 | | | | | | | | |
| | S28 | 170 | 250 | 250 | 0.8 | 0.8 | 1 | 1.5 | 12 |
| BROWN BRICK. | H11 | 180 | 45 | 950 | 1.1 | 1.1 | 1 | 1.5 | 12 |
| | H12 | 210 | 51 | 950 | 1.1 | 1.1 | 1 | 1.5 | 11 |
| | H15 | 210 | 51 | 950 | 1.1 | 1.1 | 1 | 1.5 | 11 |
| | Rf44 | 180 | 45 | 950 | 1.1 | 1.1 | 1 | 1.5 | 12 |
| English | EN21 | | | | | | | | |