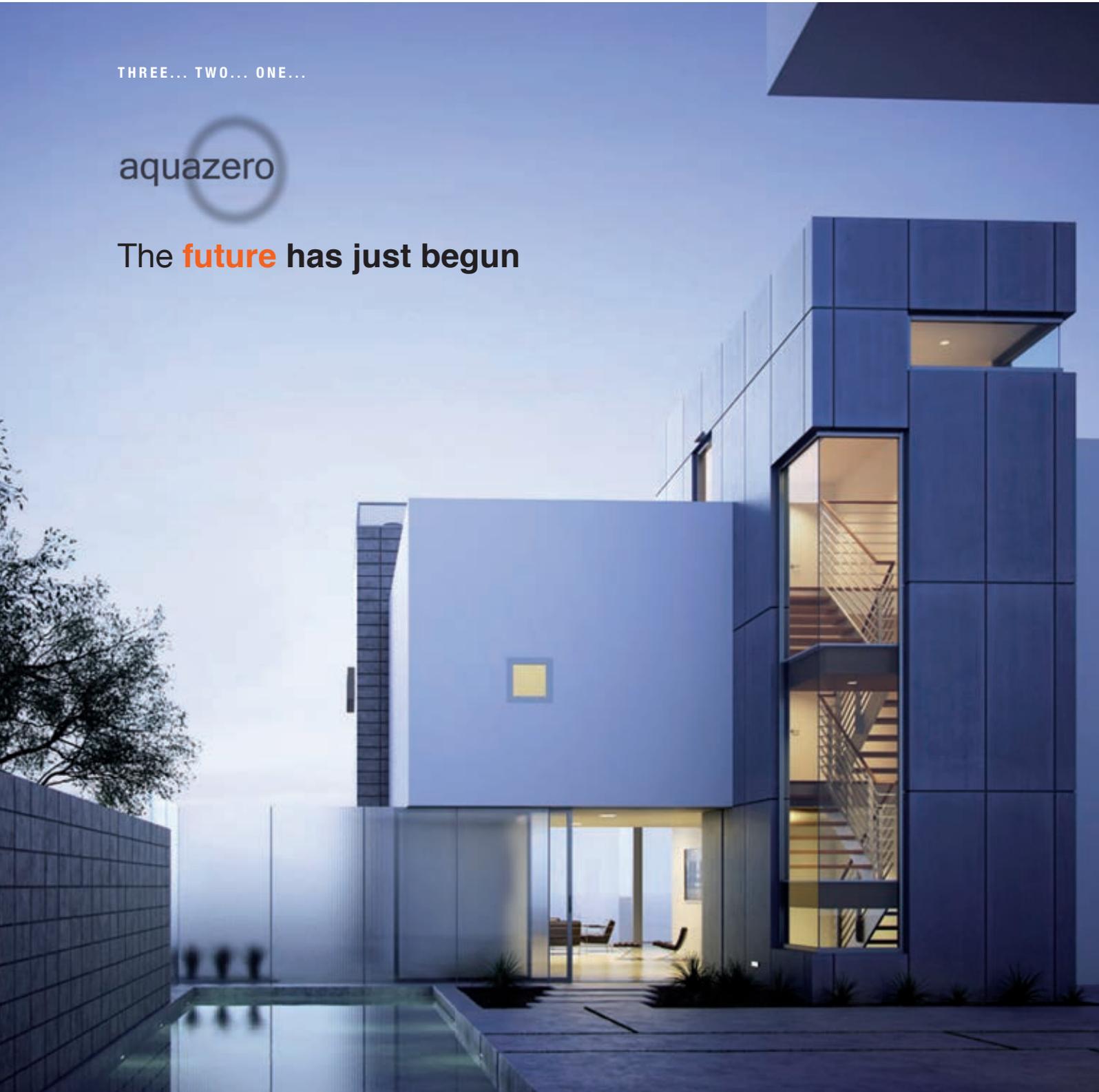
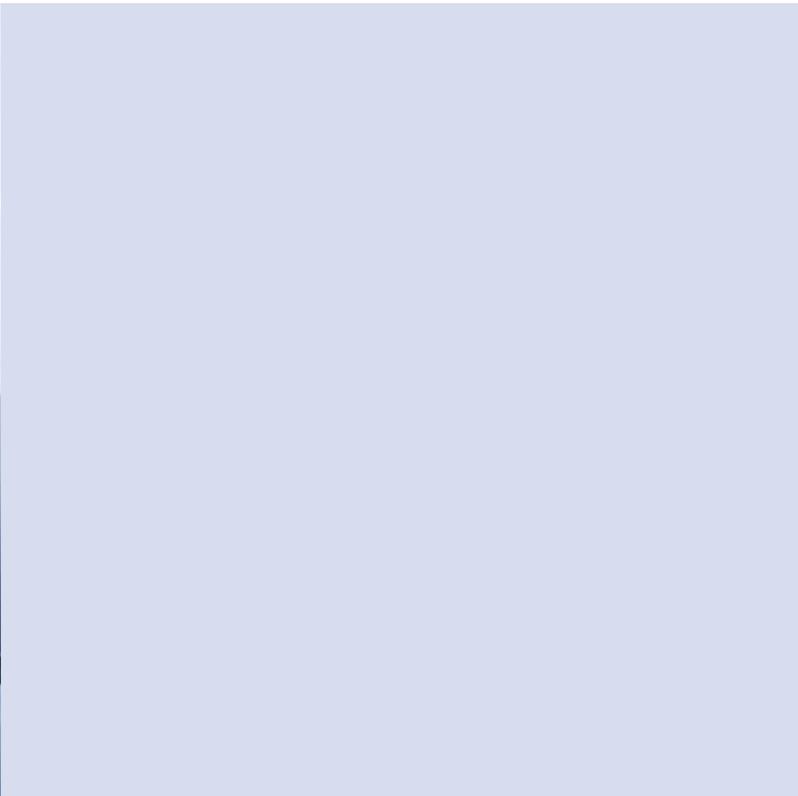


THREE... TWO... ONE...

aquazero

The **future** has just begun







The **future** has just begun

INDEX

Cemtech - The company	2
AQUAZERO - Characteristics	4
Fields of application	5
Outdoor uses	11
Construction systems	14
Examples of use	24
Assembly accessories	26

100%
Italian
technology



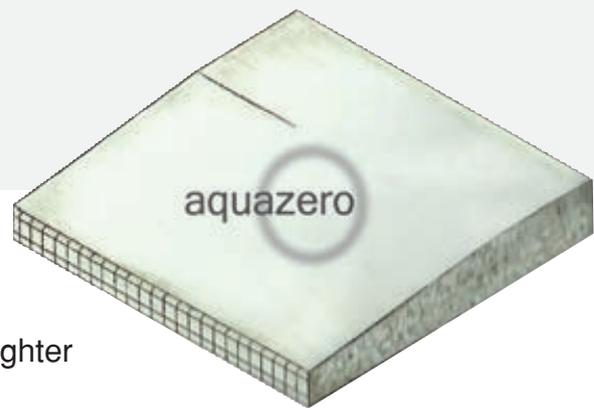
Cemtech is the result of the entrepreneurial capacity, the passion and the know-how that have always characterised Italian entrepreneurs and companies and contributed to their success all over the world, making us proud of a MADE IN ITALY that is a synonym of geniality, quality, style and innovation.

Cemtech is the first production plant of fibre-reinforced slabs in Italy and the most modern in Europe, with a production capacity capable of fulfilling the needs of a global market.



Cemtech relies on the latest production technologies available in the market, which, together with the know-how acquired in over 30 years of experience in the processing of cement and inert materials, make Cemtech stand out in the market for its quality, reliability and competitiveness.

aquazero



AQUAZERO is a **Portland cement** slab, made lighter by the use of inert minerals and fibre-reinforced with fibreglass nets on both sides.

AQUAZERO contains no
~~asbestos • polystyrene • wood • paper or plaster~~

TECHNICAL SHEET

Width	1200 mm	
Length	2000/2400 mm	
Thickness	12.5/0.5 mm	
Weight	14.2 kg/m ² ca	
Fire behaviour classification	EN 13501-1	A1 / A1 _{fl}
Bulk density	UNI EN 12467	1138 kg/m ³
Heat conductivity	UNI EN ISO 8990	0.174W/mK
Verification of the presence of asbestos fibres	UNI EN 12467	Not present
Average bending on dry tests	UNI EN 12467	8.8 N/mm ₂
Average bending on wet tests	UNI EN 12467	8.3 N/mm ₂
Average bending after wet-dry cycles <i>duration 50 cycles</i>	UNI EN 12467	5.2 N/mm ₂
Average bending after immersion in hot water <i>duration of the test: 56 days</i>	UNI EN 12467	5.2 N/mm ₂
Resistance to sun-rain cycles <i>duration 25 cycles superficial</i>	UNI EN 12467	No alterations
Impermeability	UNI EN 12467	Not impermeable

Sturdy

convenient

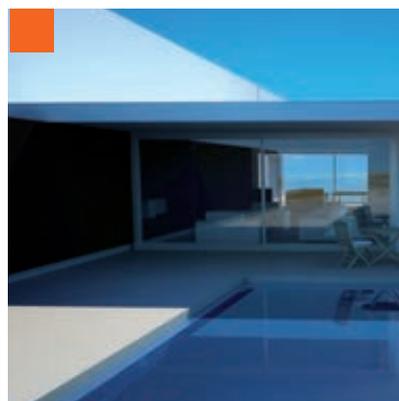
resistant to atmospheric agents

FIELDS OF APPLICATION

The AQUAZERO system can be used in the construction of new buildings or in the restructuring of existing ones, in the following cases:



walls and false ceilings indoors and outdoors in public buildings, residential buildings, industrial plants, commercial buildings, seaside buildings etc.



Partitions, false walls and false ceilings in areas with high humidity levels, such as swimming-pools, spas etc.



Thanks to their **sturdiness**, they can be used inside households in all applications and in all rooms: walls, ceilings, dry floors etc.



Lining of tunnels, pilot schemes, fences, balconies.

versatile

easy to cut and mould

aquazero

ENERGY SAVING

The most recent and very strict regulations regarding heat and acoustic insulation for buildings make it crucial for designers and companies to achieve an integrated project that takes into consideration all the fundamental requisites that a building must meet.

With the construction components designed and produced with the dry system of the AQUAZERO slabs, it is possible to build partitions with very high heat and acoustic insulation levels, unthinkable when traditional materials are used.

The external partitions made with AQUAZERO adapt to the most hostile of climatic conditions, as they offer solidity and resistance to atmospheric agents such as rain, ice, snow, wind, saltiness, humidity, heat.

MODULARITY

Thanks to its modular nature, AQUAZERO makes it possible to rapidly build external and internal walls that are both light and sturdy and that require less time to install. In addition, partitions made with AQUAZERO are much thinner than traditional ones, resulting in a more efficient, better use of space inside



Flexible

light

sturdy



buildings, consequently allowing for more flexibility in terms of project and improving the value of the building itself.

READILY SERVICEABLE

As partitions made with AQUAZERO slabs are easily serviceable, installing any plumbing, electric, domotics, heating, air conditioning system is easy and quick.

At any given moment, during construction or restructuring, it is therefore possible to create or update installations without the need to break or demolish walls, operations that increase the amount of time and money necessary to conclude the works and cause a significant amount of discomfort.

FLEXIBILITY

The flexibility and lightness of the AQUAZERO slabs provide a freedom of ideas, shapes and movement of the construction elements and offers more possibilities in the creation of spaces perfectly adapted to man, indoors and outdoors, giving designers the chance to exercise their creativity.



easy to cut and mould

resistant to fire, convenient

aquazero



DURABILITY

The AQUAZERO systems are extremely sturdy, durable and resistant to atmospheric agents and to several chemicals.

SUSTAINABILITY

Buildings constructed with the AQUAZERO system can be effectively sustainable throughout the useful life of the building:

- During the design phase, the AQUAZERO dry system ensures better heat and acoustic insulation, lighter, thinner components, resulting in more indoor space and, as a consequence, in a better valued building.
- During the construction phase, AQUAZERO ensures shorter installation times for the outer casing, internal partitions, installations and linings; it results in an extremely clean construction site, in shorter setting times, in reduced water and power consumption when compared with traditional techniques. The use of modular, light materials reduces the costs related to their handling and storage. The result is less exploitation of natural resources and less pollution.
- During use, the building can count on a constant and effective saving of energy. All restructuring works, such

Resistant to impact and water
high heat insulation

as expansions, elevations, remaking of parts of façade, redistribution of internal space, modernisation and maintenance of installations, become easier and quicker.

- At the end of the useful life of the building, dismantling all parts is quick and easy thanks to their modularity and lightness and to the integrated system. Almost all elements can be recycled, resulting in less volume occupied by debris.

LIGHTNESS

The use of the AQUAZERO dry system allows for a reduction of partitions of about 70% without renouncing to heat and acoustic insulation, fire protection, sturdiness and durability performances. During restructuring works, elevations, expansions, façade refurbishing, ledges, parapets, screeds and partitions can be built without the need for structural consolidation interventions.

In new buildings, the additional lightness makes it possible, during the design of primary structures, to reduce the dimensions of the supporting structures.



lasting **modular**
quick

aquazero



HANDLING AND STORAGE

AQUAZERO is supplied on wooden pallets in two standard sizes: 1,200 x 2,000 mm, in 96 m² packages and weighing about 1,320 kg, and 1,200 x 2,400 mm, in 86.4 m² packages and weighing about 1,188 kg. The pallets are sealed with straps and corner protections, and protected by a cover when necessary.

Pallets must be loaded and unloaded using the most suitable means, such as forklift trucks and cranes, very carefully so as not to damage the edges and corners of the slabs.

The material must be stored on flat surfaces, covered and protected from atmospheric agents, so that the slabs are dry and intact when ready to install.

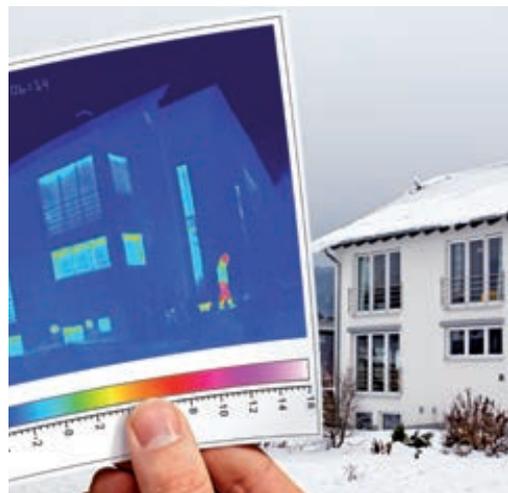
Single slabs must always be handled by two people, in such a manner that one of the edges (and not one of the faces) is always facing forward.



ENVIRONMENTAL CONDITIONS

The material must be stored near the construction site, so that the AQUAZERO slabs are given enough time to adapt to the temperature and humidity of the environment.

During the plastering and levelling of the AQUAZERO slabs and for the next 24 hours, the ambient temperature must not get below 5° C and must not exceed 40° C.



Sturdy

convenient

resistant to atmospheric agents

OUTDOOR USE

aquazero

SUPPORT FRAMEWORK

AQUAZERO slabs may be installed using wooden or metal support framework. Metal profiles must be highly resistant to corrosion. Guides and pillars can be 0.6 to 1.0 mm thick; the distance between pillars may vary from 400 to 600 mm. The metal framework must be dimensioned (thickness and distance between beams) according to the static requirements of the construction site (such as height and loads) and to wind force.

Use regular or double-sided adhesive tape on all the points in which the metal profiles touch hard surfaces such as walls, floors, pillars. Fix the guides to the supporting elements using suitable fixtures and anchorage elements (plugs, anchors etc).



EXPANSION JOINTS

In large outdoor works using AQUAZERO slabs, it is necessary to leave an expansion joint every 7 metres of width of length, to allow for the absorption of structure movements. Expansion joints must also be provided in the following cases: in correspondence with the expansion joints of the building; in correspondence with the space between the floors of the building; whenever different materials are used in the structure of the building. An expansion joint is simply an interruption in the continuity of the metal framework, of AQUAZERO slabs and of their lining.

The expansion joint must be 12.5 mm wide, except in cases in which there are already calculated structural joints.

The expansion joint may be closed using PVC joint covers, easily found in the market.

Sturdy, convenient, versatile, resistant to atmospheric agents, easy to cut and mould.

versatile

easy to cut and mould

WATERPROOF BREATHABLE BARRIER

AQUAZERO slabs are resistant to water and to several atmospheric and chemical agents, but they are not impermeable. Before installing the AQUAZERO slabs, the outer walls must be treated with a waterproof breathable fabric, AQUAZERO BARRIER, to make sure the wall will be impermeable and to protect the insulating materials it contains, as well as the relative metal framework.

The AQUAZERO BARRIER impermeable breathable fabric must be installed horizontally, starting from the bottom, and overlapping the junctions by at least 100 mm, and then fixed with adhesive tape.

POSA DELLE LASTRE

The AQUAZERO slabs must be installed horizontally, transversally to the pillars and to the offset extremity joints. To fix the slabs, use special screws resistant to



corrosion (with treatment for resistance to saline mist).

To screw the slabs in place, start from the centre and proceed towards the edges. The screws must be positioned every 200 mm. The slabs must be installed in such a manner that the lateral edges (not the extremity edges, whose sides must touch each other) are 3-4 mm away from each other. During installation, the slabs can be cut and moulded using a cutter. Cut the slab starting with the fibreglass reinforcement net, then snap the slab and cut the reinforcement net on the opposite side. To obtain cutting surfaces more accurate and clean, it is advisable to use electric tools such as circular saws or other types of saw.

PLASTERING THE JOINTS

To plaster the joints, use AQUAZERO FINISH, making sure the stucco penetrates the 3-4 mm space created in the lateral junctions of the slabs and applying a layer about 3 mm thick, in which the AQUAZERO FIBER TAPE 5

Flexible

light

sturdy

mm reinforcement net must be immersed. The tape is resistant to alkalis, is 250 mm high and weighs 160 g/m².

The net must not overlap the crossings of the slabs.

Prior to levelling the surfaces, wait until the stucco is completely dry.



LEVELLING

To level the wall, use AQUAZERO FINISH, about 5 mm thick, in which the alkali-resistant fibreglass reinforcement net AQUAZERO FIBER TAPE must be immersed. The tape weighs 160 g/m² and must be surmounted by 100 mm on the junctions.

The net must be positioned in such a manner that it remains detached from the surface of the AQUAZERO slabs.

After 24 hours, once the product has set and dried, a second coat of AQUAZERO FINISH levelling may be applied.

POSSIBLE FINISHING OPTIONS

Any type of thermal coating can be applied on AQUAZERO slabs (polystyrene, rock wool, glass wool etc). In this case, only the joints on the AQUAZERO slabs must be treated, but they do not require levelling, as this operation must be carried out on the insulating material, following the instructions of its manufacturer.

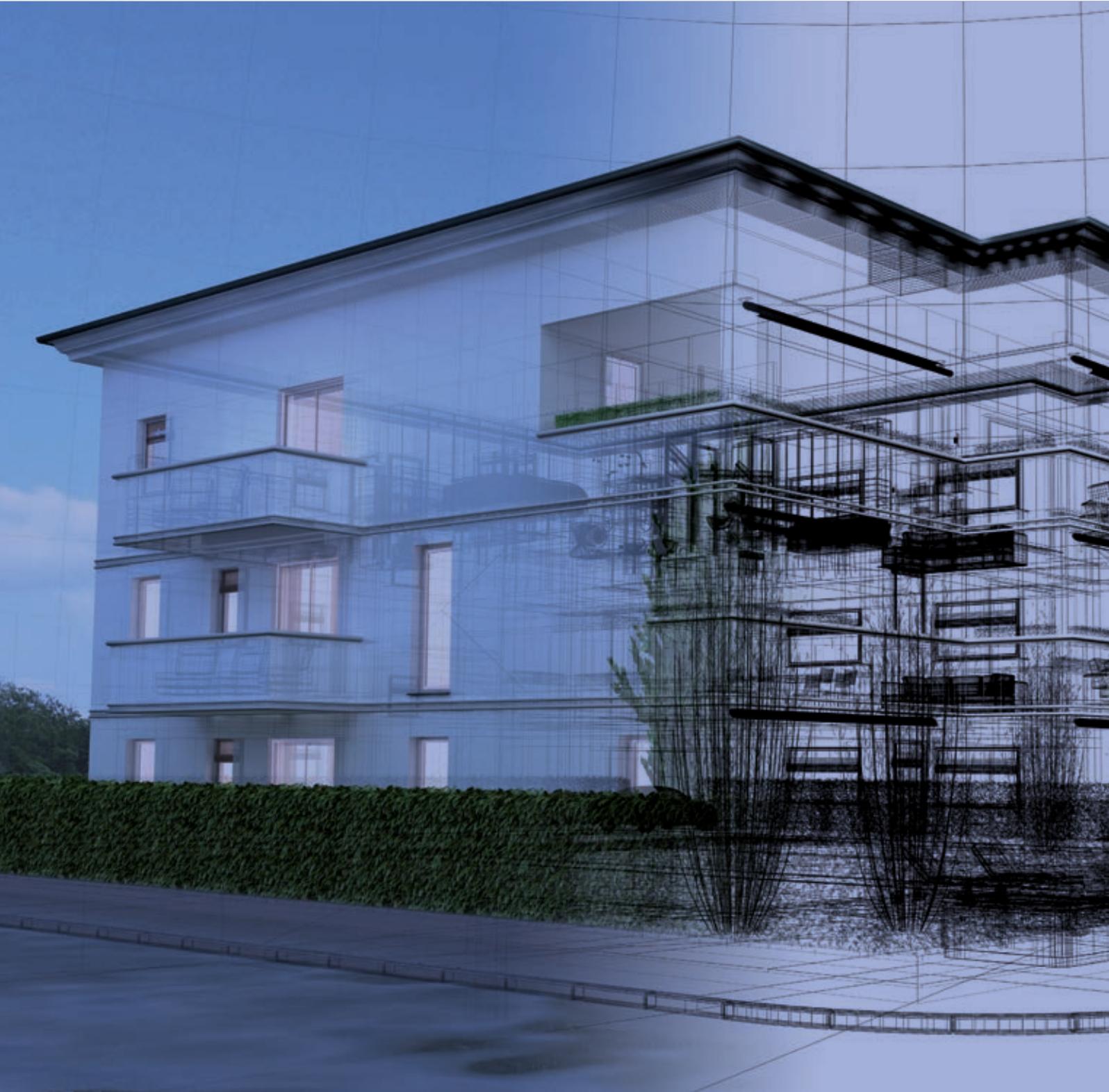
Any type of lining can be glued to AQUAZERO slabs, such as bricks, tiles (indoors and outdoors), or stone, aluminium, glass, rainscreen cladding etc.

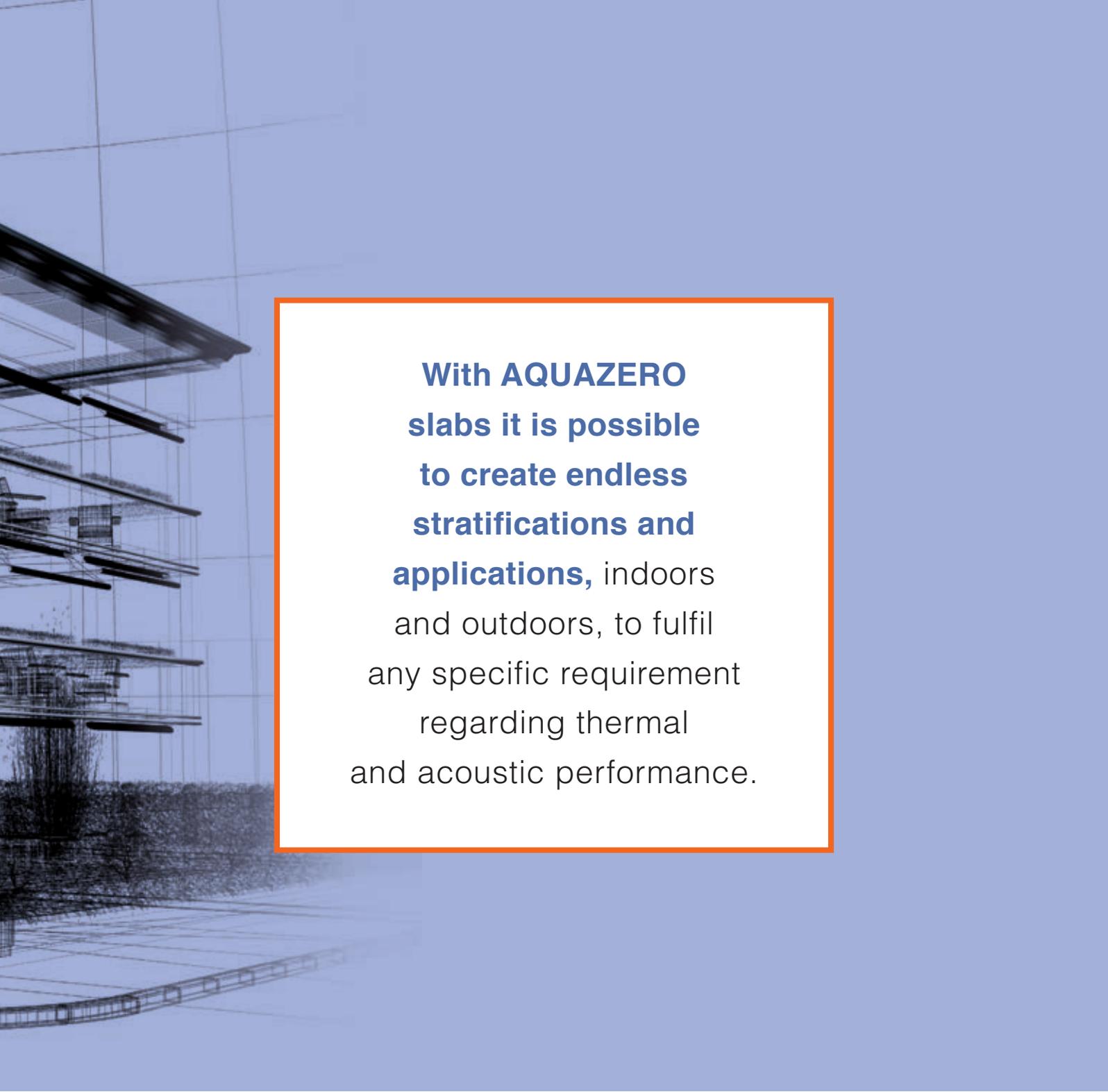


easy to cut and mould

resistant to fire, convenient

CONSTRUCTION SYSTEMS

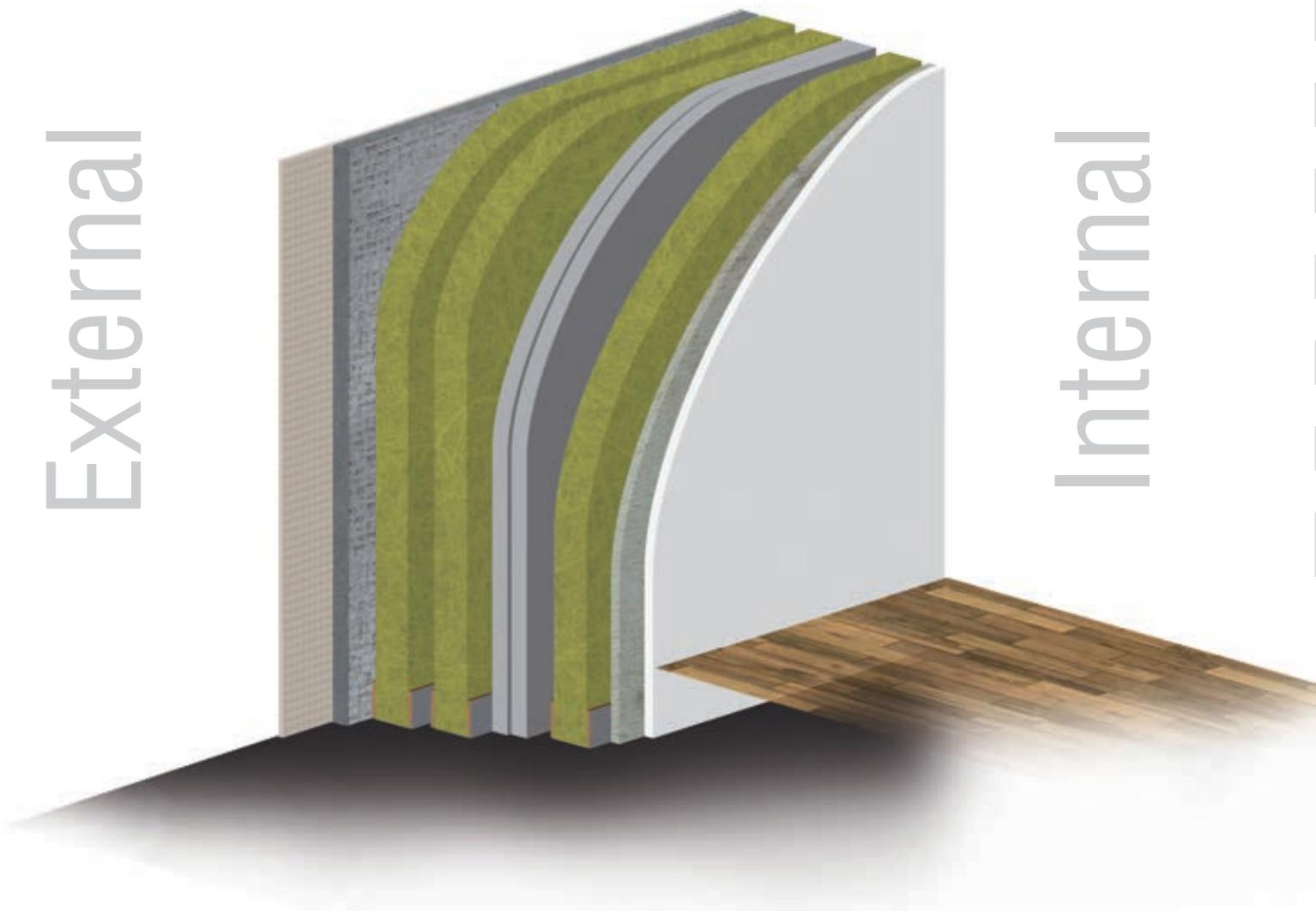




**With AQUAZERO
slabs it is possible
to create endless
stratifications and
applications,** indoors
and outdoors, to fulfil
any specific requirement
regarding thermal
and acoustic performance.

OUTER PERIMETER WALL

External



Internal

Condensation: not present

$U = 0.14 \text{ W/m}^2\text{K}$ - $U_{\text{max}} = 1.23 \text{ W/m}^2\text{K}$

No surface condensation.

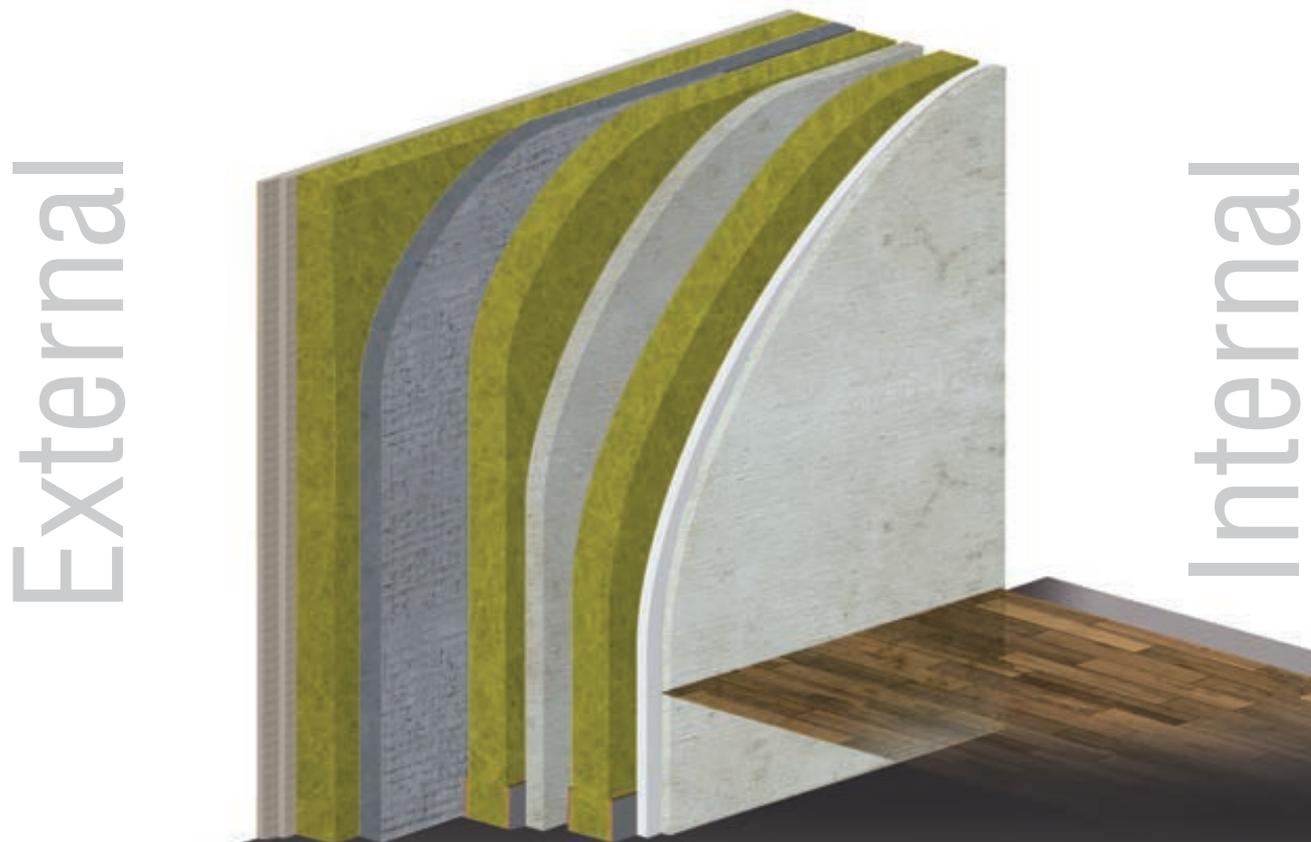
THERMO-PHYSICAL PARAMETERS

Description of the layers		S [m]	λ [W/mK]	R [m ² K/W]	ρ [Kg/m ³]	c [J/kgK]	μ [-]	SD [m]
Outer superficial resistance				0.04				
1	Breathable finishing	0.005	0.7	0.007	1400	1000	10	0.05
2	Aquazero Cement Board	0.0125	0,35	0.036	1150	1000	19	0.238
3	Crawlspace 7 mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
4	Rockwool Hardrock Energy	0.06	0.036	1.667	110	1030	1	0.06
5	Crawlspace 7 mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
6	Crawlspace 5 mm thick	0.005	0.045	0.11	1	1003.2	1	0.005
7	Crawlspace 7 mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
8	Rockwool Hardrock Energy	0.06	0.036	1.667	110	1030	1	0.06
9	Crawlspace 7 mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
10	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
11	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
12	Crawlspace 5 mm thick	0.005	0.045	0.11	1	1003.2	1	0.005
13	Crawlspace 10 mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
14	Rockwool Airrock DD	0.08	0.035	2.286	67	1030	1	0.08
15	Crawlspace 10 mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
16	Fermasound Fibre Plaster with vapour barrier	0.013	0.32	0.041	1150	1100	850000	11100
17	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
Inner superficial resistance				0.13				

Overall thickness	S	0.328	[m]	Overall resistance	R	7.128	[m ² K/W]
Superficial mass	m	81.695	[Kg/m ²]				
Displacement	φ	10h 6'	[h]	Thermal transmittance	U	0.14	[W/m ² K]
Decrease factor	fa	0.227	[-]	Periodical thermal transmittance	Yie	0.0318	[W/m ² K]

Soundproofing power Rw 67.0 Db

OUTER PERIMETER WALL WITH COATING



Condensation: not present

$U = 0.137 \text{ W/m}^2\text{K} - U_{\text{max}} = 1.23 \text{ W/m}^2\text{K}$

No surface condensation.

THERMO-PHYSICAL PARAMETERS

Description of the layers		S [m]	λ [W/mK]	R [m ² K/W]	ρ [Kg/m ³]	c [J/kgK]	μ [-]	SD [m]
Outer superficial resistance				0.04				
1	Breathable finishing	0.003	0.7	0.004	1500	837	5	0.015
2	Breathable finishing	0.005	0.7	0.007	1500	837	15	0.075
3	Rockwool FrontRock Max E	0.06	0.036	1.667	90	1030	1	0.06
4	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
5	Crawlspace 10mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
6	Rockwool Airrock DD	0.08	0.035	2.286	67	1030	1	0.08
7	Crawlspace 10mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
8	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
9	Crawlspace 5mm thick	0.005	0.045	0.11	1	1003.2	1	0.005
10	Crawlspace 10mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
11	Rockwool Airrock DD	0.08	0.035	2.286	67	1030	1	0.08
12	Crawlspace 10mm thick	0.01	0.067	0.15	1	1003.2	1	0.01
13	Fermasound Base Fibre Plaster with vapour barrier	0.013	0.32	0.041	1150	1100	850000	11100
14	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
Inner superficial resistance				0.13				

Overall thickness	S	0.3235	[m]	Overall resistance	R	7.325	[m ² K/W]
Superficial mass	m	67.99	[Kg/m ²]				
Displacement	φ	11h	[h]	Thermal transmittance	U	0.137	[W/m ² K]
Decrease factor	fa	0.225	[-]	Periodical thermal transmittance	Yie	0.0307	[W/m ² K]

Soundproofing power Rw 65.0 Db

PARTITION BETWEEN APARMENTS

Internal



Internal

THERMO-PHYSICAL PARAMETERS

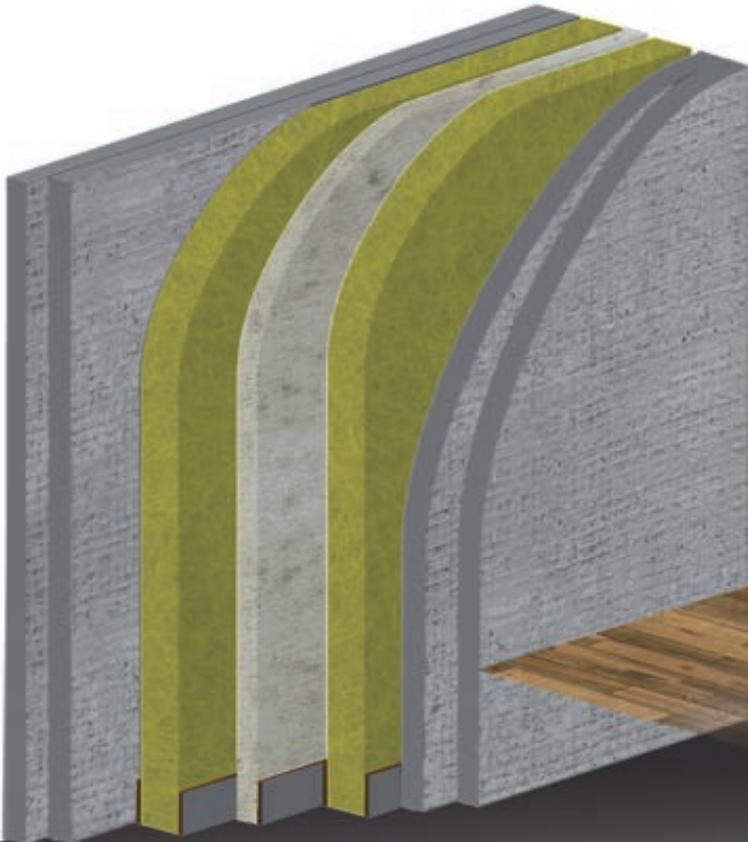
Description of the layers		S [m]	λ [W/mK]	R [m ² K/W]	ρ [Kg/m ³]	c [J/kgK]	μ [-]	SD [m]
Outer superficial resistance				0.04				
1	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
2	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
3	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
4	Rockwool 211	0.06	0.035	1.714	40	1030	1	0.06
5	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
6	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
7	Crawlspace 5mm thick	0.005	0.045	0.11	1	1003.2	1	0.005
8	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
9	Rockwool 211	0.06	0.035	1.714	40	1030	1	0.06
10	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
11	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
12	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
Inner superficial resistance				0.13				

Overall thickness	S	0.2175	[m]	Overall resistance	R	4.514	[m ² K/W]
Superficial mass	m	67.335	[Kg/m ²]				
Displacement	φ	5h 34'	[h]	Thermal transmittance	U	0.222	[W/m ² K]
Decrease factor	fa	0.643	[-]	Periodical thermal transmittance	Yie	0.142	[W/m ² K]

Soundproofing power Rw 64.0 Db

PARTITION BETWEEN APARMENTS

Internal



Internal

THERMO-PHYSICAL PARAMETERS

Description of the layers		S [m]	λ [W/mK]	R [m ² K/W]	ρ [Kg/m ³]	c [J/kgK]	μ [-]	SD [m]
Outer superficial resistance				0.04				
1	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
2	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
3	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
4	Rockwool 211	0.06	0.035	1.714	40	1030	1	0.06
5	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
6	Plasterboard slabs	0.0125	0.21	0.06	900	1000	10	0.125
7	Crawlspace 5mm thick	0.005	0.045	0.11	1	1003.2	1	0.005
8	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
9	Rockwool 211	0.06	0.035	1.714	40	1030	1	0.06
10	Crawlspace 75mm thick	0.0075	0.054	0.139	1	1003.2	1	0.0075
11	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
12	Aquazero Cement Board	0.0125	0.35	0.036	1150	1000	19	0.238
Inner superficial resistance				0.13				

Overall thickness	S	0.2175	[m]	Overall resistance	R	4.467	[m ² K/W]
Superficial mass	m	73.585	[Kg/m ²]				
Displacement	φ	5h 28'	[h]	Thermal transmittance	U	0.224	[W/m ² K]
Decrease factor	fa	0.65	[-]	Periodical thermal transmittance	Yie	0.145	[W/m ² K]

Soundproofing power Rw 66.0 Db

EXAMPLES OF USE

1.



2.



5.a



5.b



3.



4.



5.c



6.

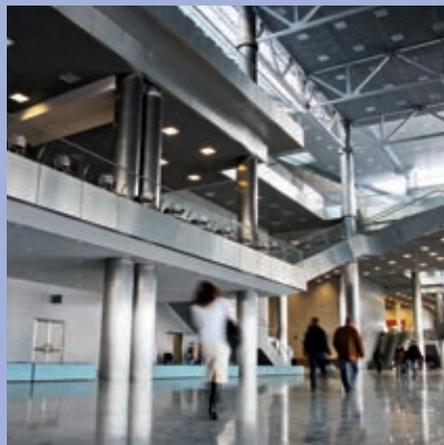


1. Indoor works
2. Construction of bathrooms
3. Swimming-pool installation
4. Construction of porticoes
5. Construction of industrial plants
6. Construction of hotels and tourism-oriented buildings
7. Residential buildings
8. Construction of shopping centres

7.



8.



ASSEMBLY ACCESSORIES



1. Fabric
AQUAZERO BARRIER



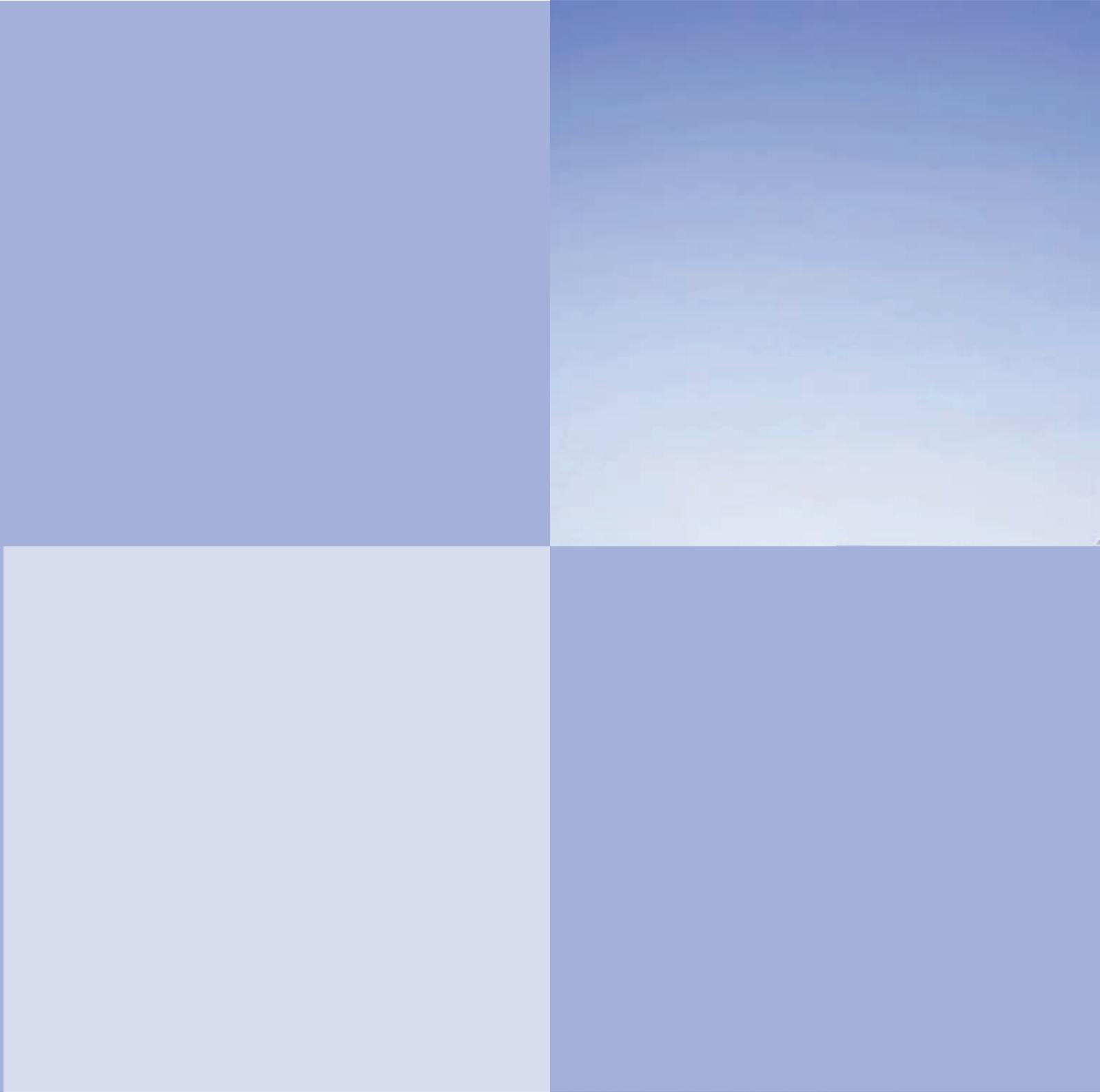
2. Screws
AQUAZERO SCREWS

3. Stucco
AQUAZERO FINISH

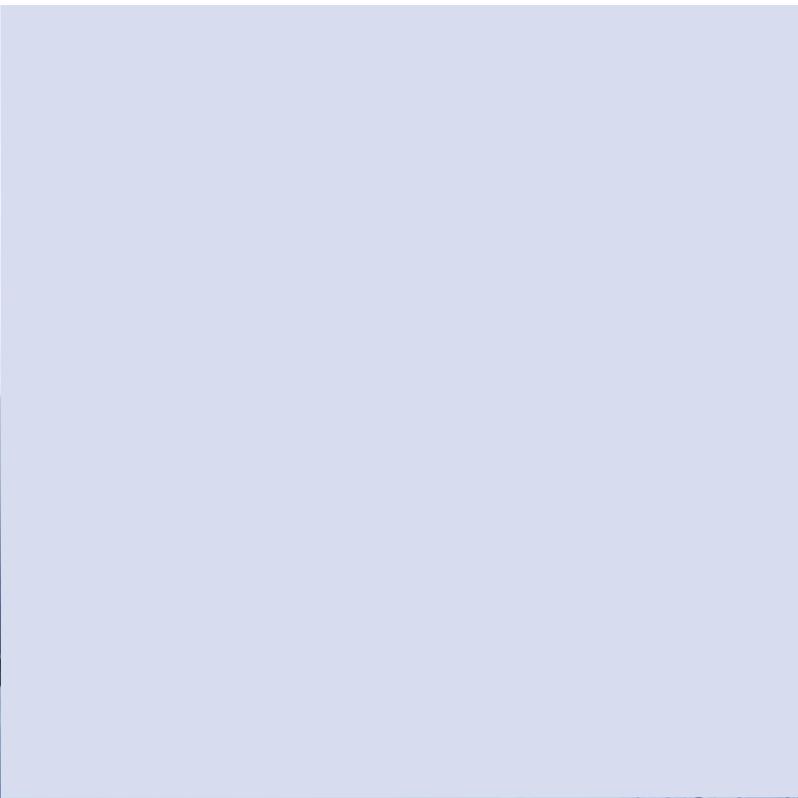
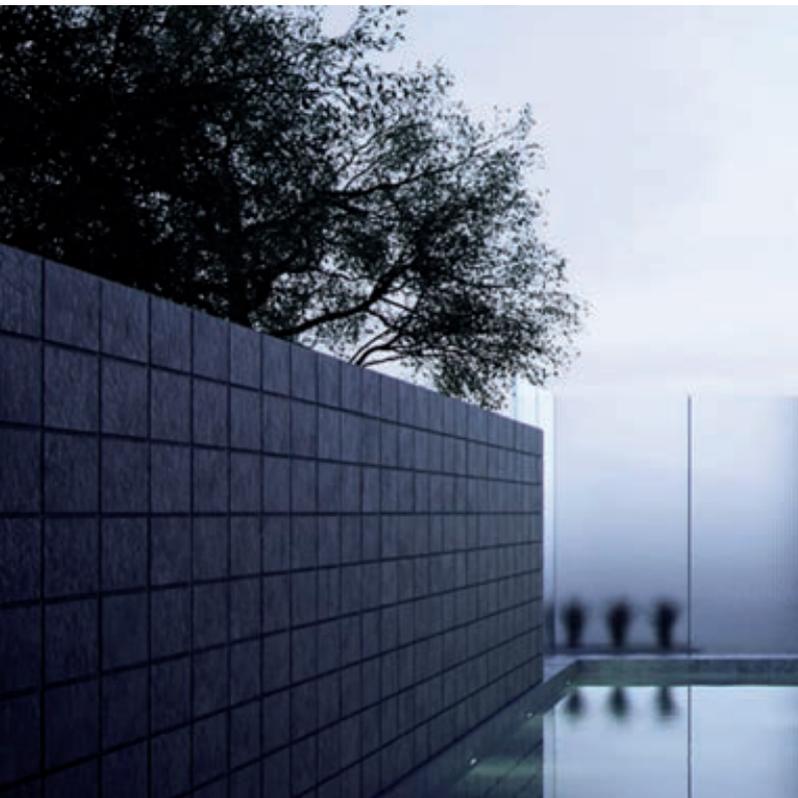


4. Net
AQUAZERO
FIBER TAPE





*In memory
of Antonio Palluzzi*



Cemtech s.r.l.

Via Madonna delle Grazie snc

04015 Priverno (LT) - Italy

Phone: +39 0773 924224

Fax: +39 0773 1533642

www.cemtech.net

info@cemtech.net

aquazero