

VULCANO *Collection*

fiora

TOUCH
YOUR
BATHROOM

Radiators

feeling **SKIN**

SKIN IS OUR OBSESSION ON WHICH WE THINK, FEEL AND WORK. FIORA IS A BATHROOM FURNITURE MAKER BORN WITH A CLEAR VOCATION TO THE SEARCH AND DEVELOPMENT OF NEW CONCEPTS. FIORA WILL NOT SETTLE FOR JUST ANYTHING AND WANTS TO OFFER SINGULARITY.

SKIN, our identity

Our sense is the sense of TOUCH in the broadest sense of the word. We have to touch to be able to feel and we want the objects we use to acquire value through the tactile sensations they give us.

Experimenting with DIVERSITY

Reality sets a path for us. Nature is diverse. We research and take ideas from it that we later apply to products that offer multiple and diverse solutions.

Enjoying QUALITY

We research, work and create without ever losing the reference of QUALITY. Whatever their nature, FIORA products always respond to a high level of quality that exceeds the user's expectations.

Creating COMFORT

All our work must not lose sight of its main goal, which is that its use must improve the everyday life of people. We design to improve life, trying to provide value in each of the objects created.



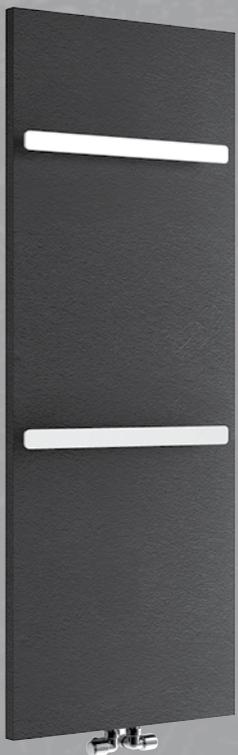


VULCANO
Collection

HEAT that can be seen, felt and touched.

FIORA OFFERS A NEW PRODUCT FOR BOTH DOMESTIC AND COMMERCIAL INSTALLATIONS, RADIATORS, PARTS TO SEE AND TEXTURES TO FEEL. ITS HEATED WATER SYSTEM PROVIDES ENVELOPING, SILENT HEAT THAT CAN BE FELT.

The VULCANO Collection are radiators capable of providing aesthetic value to the room while offering a simple installation system where the internal pipe of the radiator is connected directly to the room's water conduits.



VULCANO, *the textures, the colours.*

SLATE



OFF WHITE



TOTAL WHITE



CREAM



GOLD



SANDSTONE



CEMENT



PYRENEAN STONE



WENGE



GREY



BLACK



SLATE STRIPS



OFF WHITE



TOTAL WHITE



CREAM



GOLD



SANDSTONE



CEMENT



PYRENEAN STONE



WENGE



GREY



BLACK



SEMILLAS



ON WHITE IN



1N CHAMPAGNE IN



2N CREAM IN



3N BRONZE IN



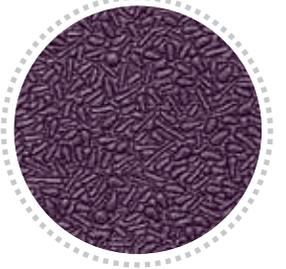
4N ANTHRACITE IN



5N BLACK IN



6N GREY IN



7N PURPLE IN

HILOS



ON WHITE IN



1N CHAMPAGNE IN



2N CREAM IN



3N BRONZE IN



4N ANTHRACITE IN



5N BLACK IN



6N GREY IN



7N PURPLE IN

ROSAS



ON WHITE IN



1N CHAMPAGNE IN



2N CREAM IN



3N BRONZE IN



4N ANTHRACITE IN



5N BLACK IN



6N GREY IN



7N PURPLE IN

Spaces

VULCANO Index

VULCANO RADIATORS HAVE BEEN DESIGNED TO ADAPT TO ALL TYPES OF SPACES AND TO COVER THE HEATING NEEDS THAT EACH ROOM REQUIRES, WITHOUT LOSING AESTHETIC VALUE THANKS TO THE RANGE OF COLOURS AND TEXTURES THAT THE COLLECTION PROPOSES.

Below we will give you a description of some examples of Vulcano products placed in different types of spaces, from hallways and kitchens in homes, to collective installations where the heating requirements are greater, and the number of radiators can be the distinctive element of a room. Come in and see.



BATHROOMS
PAGE.10/21

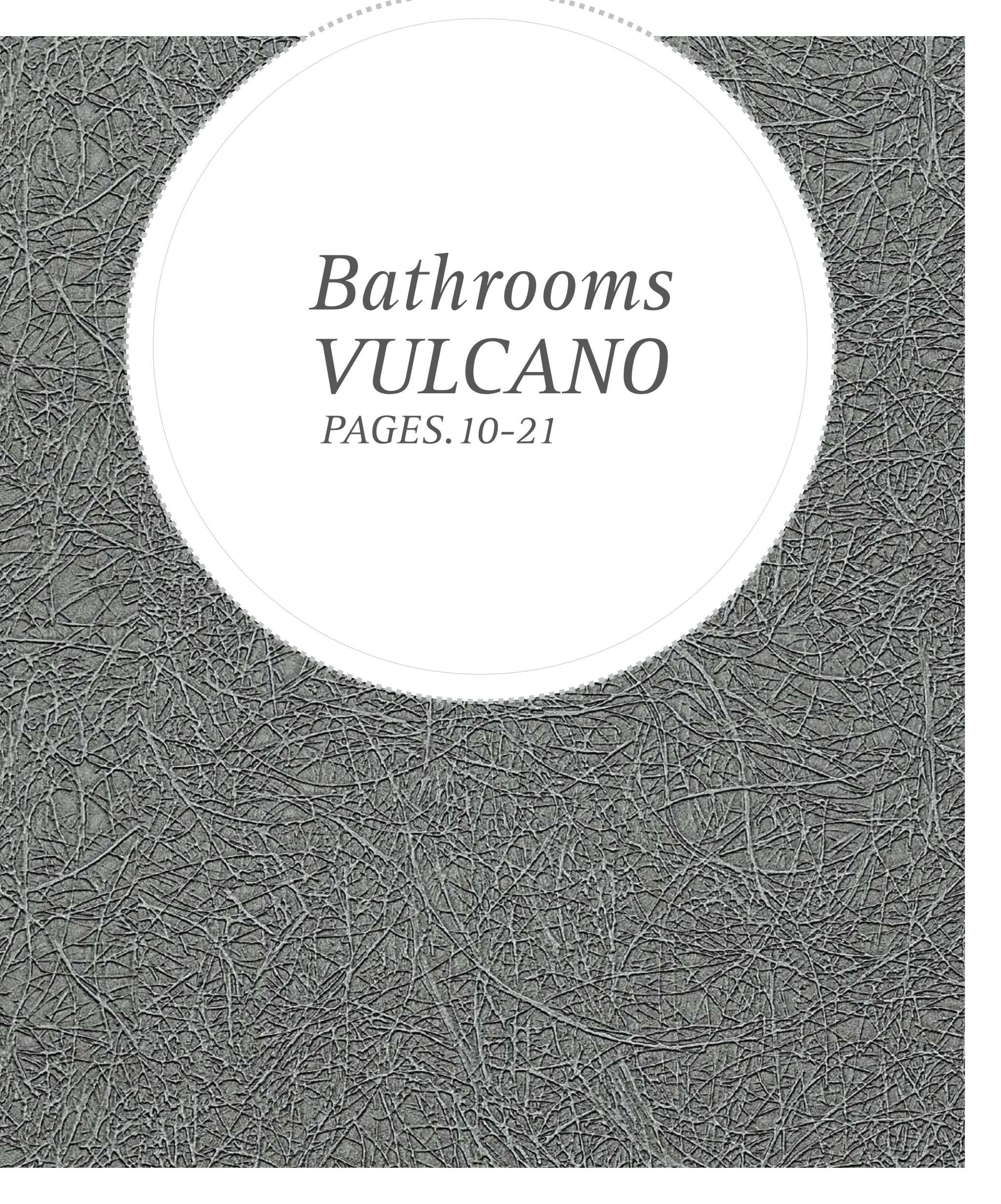
HOME
PAGE.24/33



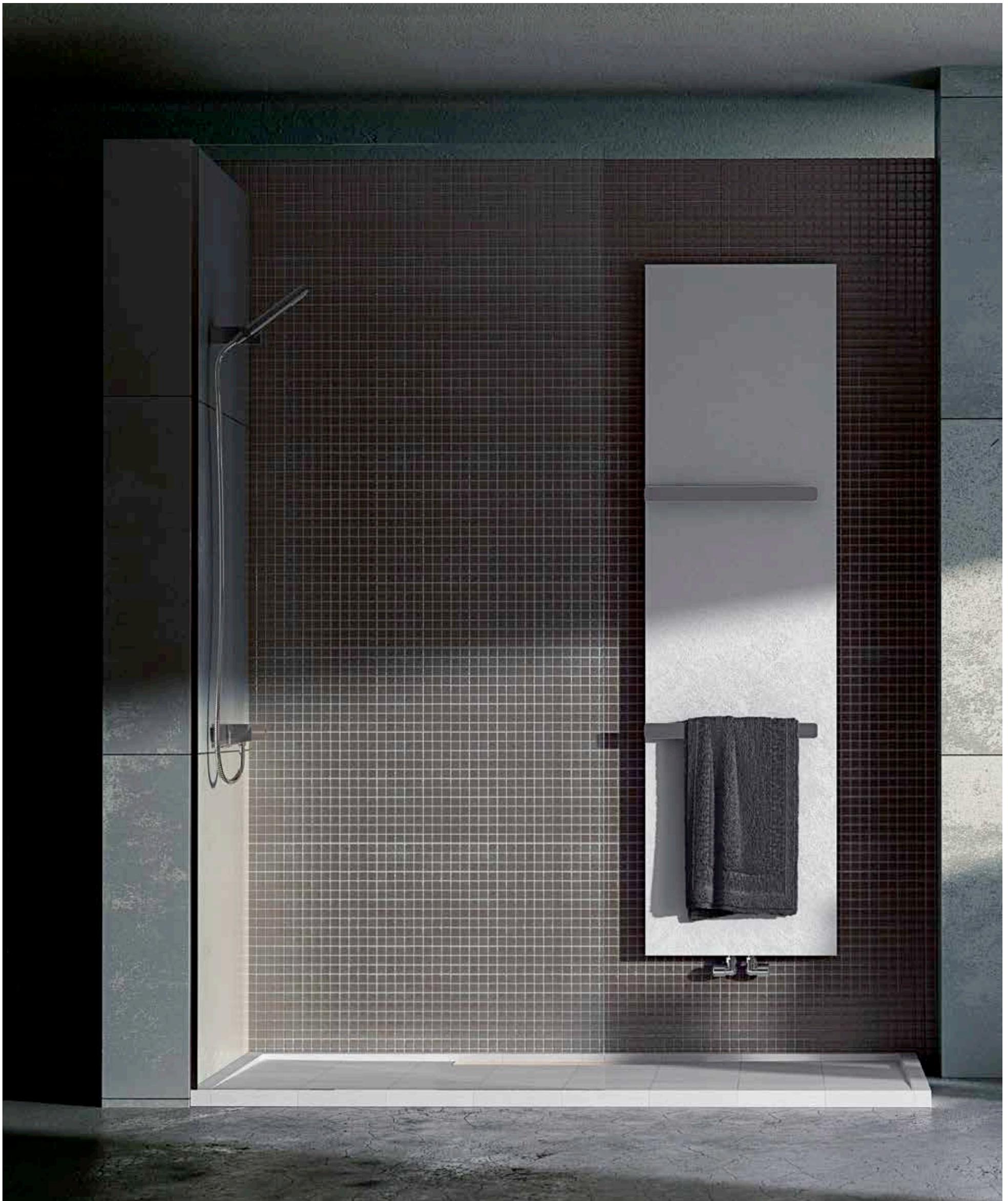
OFFICES
PAGE.42/45

INSTALLATIONS
PAGE.48/51





Bathrooms
VULCANO
PAGES. 10-21



VULCANO Collection

*Possibility of
a towel holder
in bathrooms.*

*Texture
HILOS
WHITE
with towel
holder.*





**VULCANO
Collection**

*Possibility of
a towel holder
in bathrooms.*

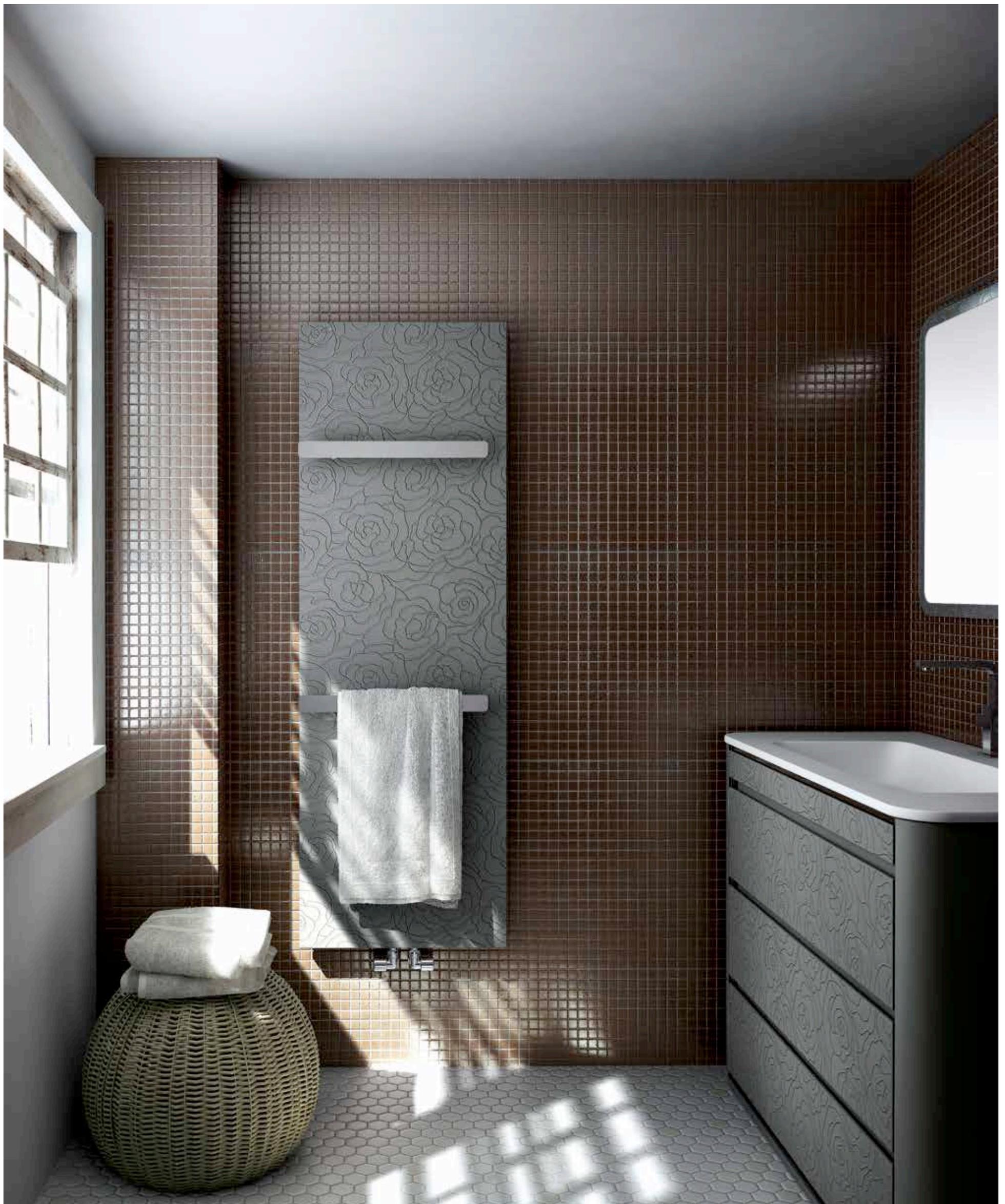
*Texture
SEMILLAS
CHAMPAGNE
with towel
holder.*



VULCANO
Collection

*Possibility of
a towel holder
in bathrooms.*

*Texture
SLATE
TOTAL
WHITE
with towel
holder.*





**VULCANO
Collection**

*Possibility of
a towel holder
in bathrooms.*

*Texture
ROSAS
ANTHRACITE
with towel
holder.*



VULCANO Collection

*Possibility of
a towel holder
in bathrooms.*

*Texture
SLATE
GREY
with towel
holder.*



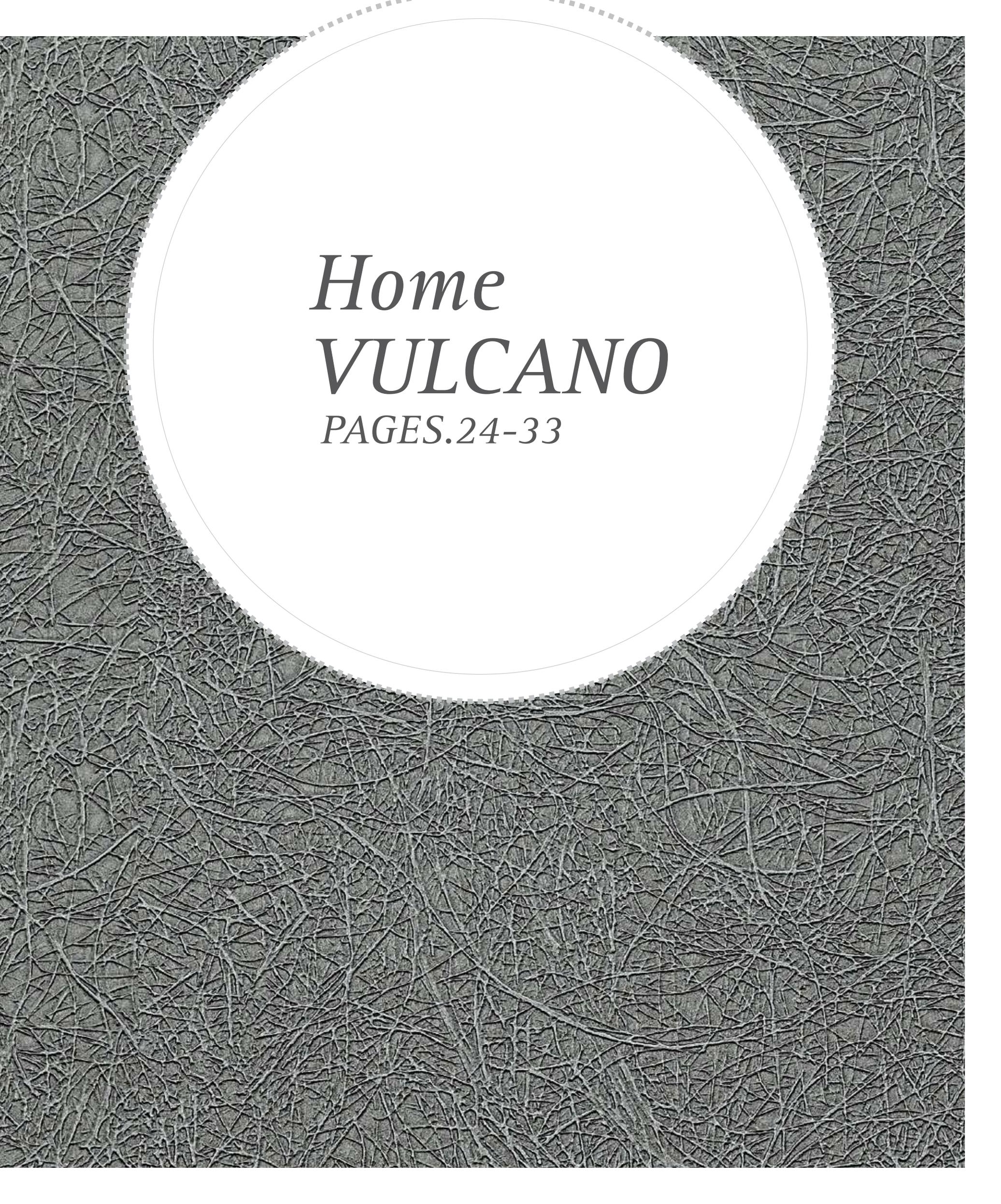


VULCANO
Collection

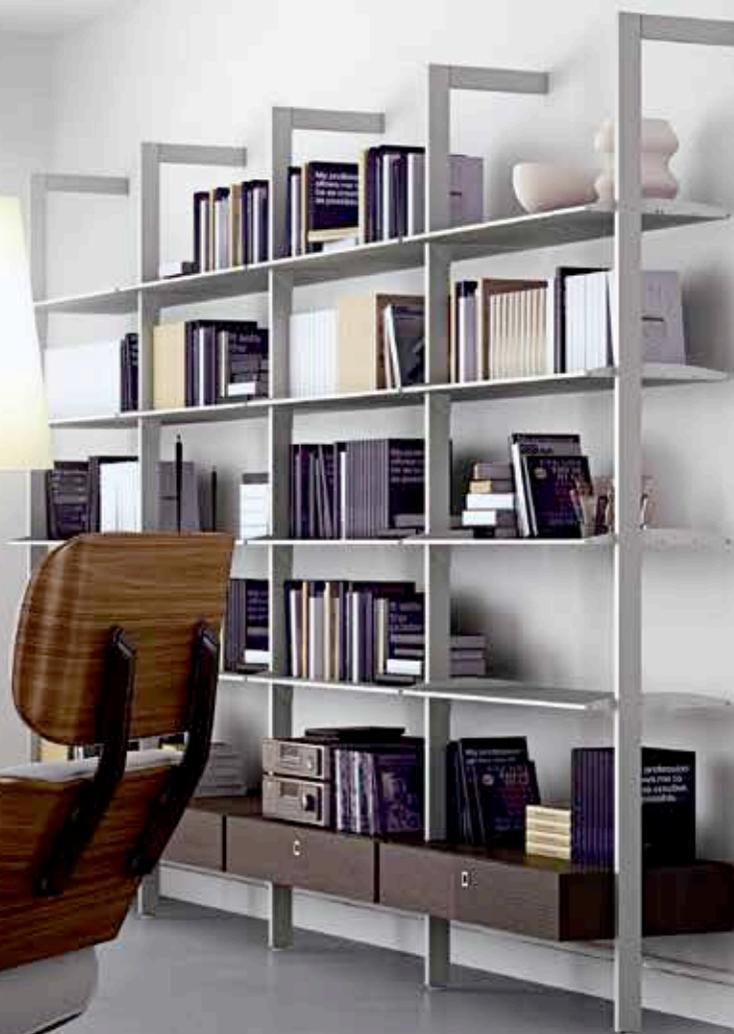
*Possibility of
a towel holder
in bathrooms.*

*Texture
SLATE
STRIPS GREY
with towel
holder.*





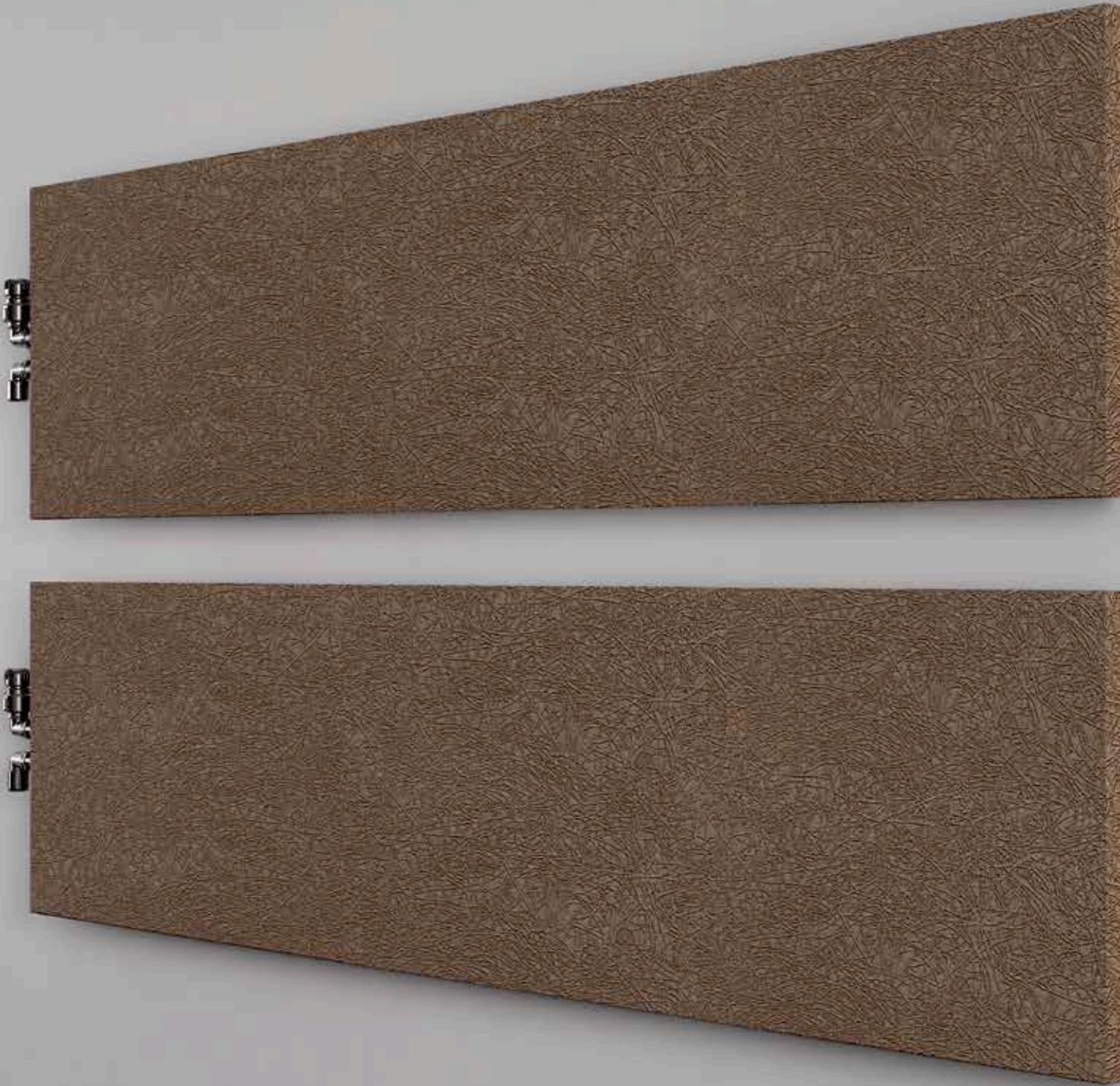
Home
VULCANO
PAGES.24-33



VULCANO
Collection
Possibility of
applying textures and
colours to suit
each room.

Texture
HILOS
Champagne







VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
SEMILLAS
Grey.*

VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
ROSAS
Bronze.*





VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
ROSAS
Anthracite.*



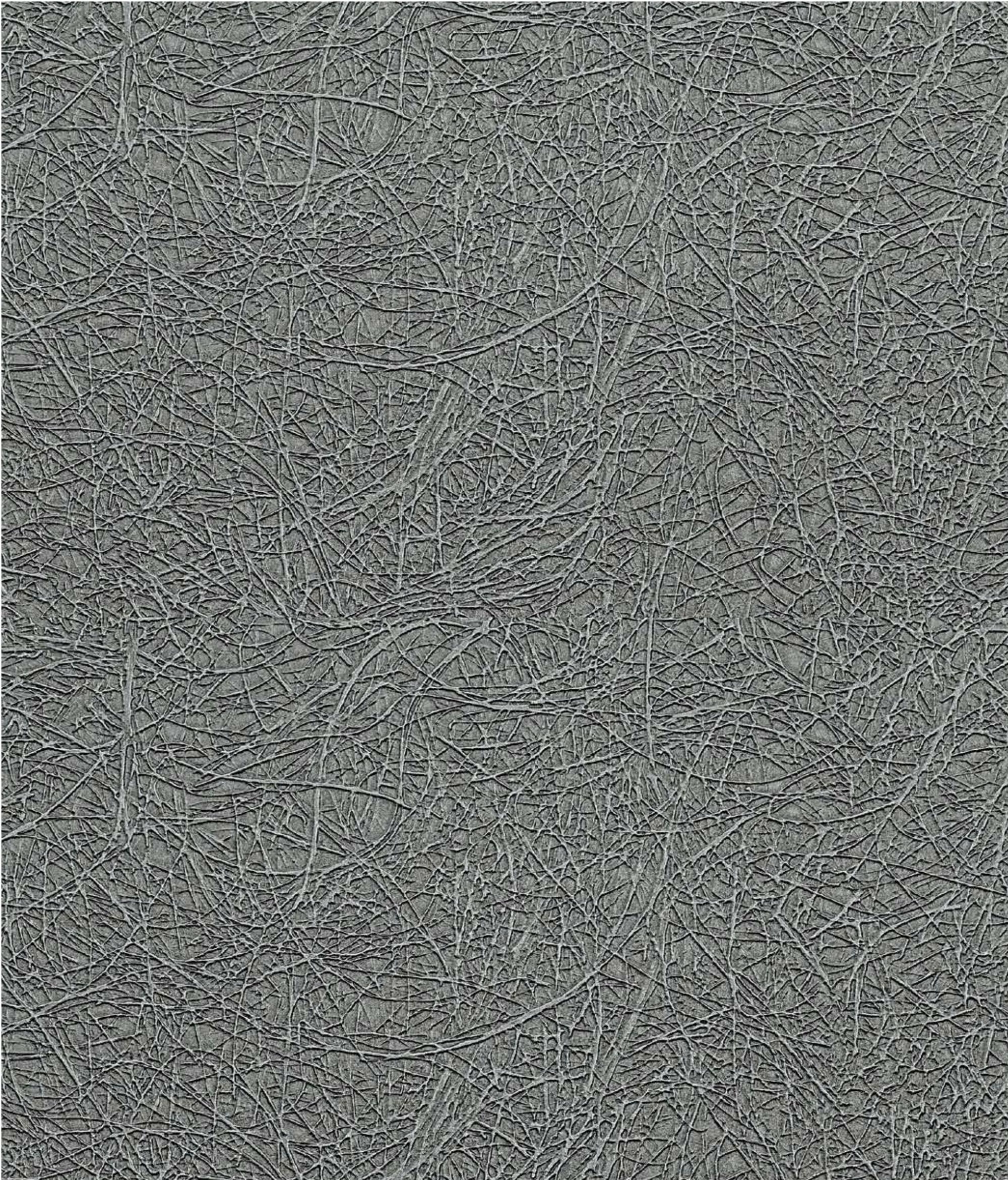


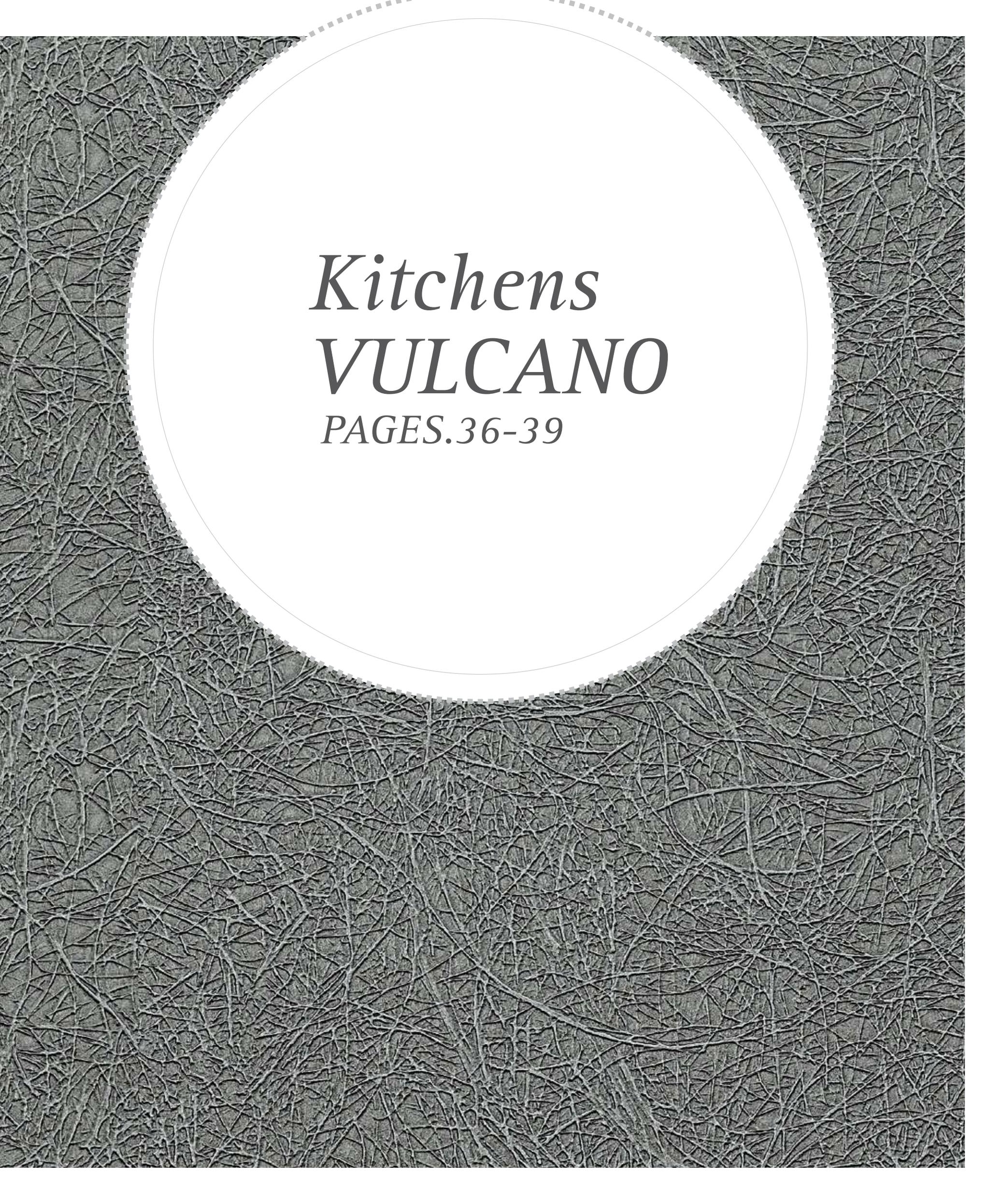


**VULCANO
Collection**

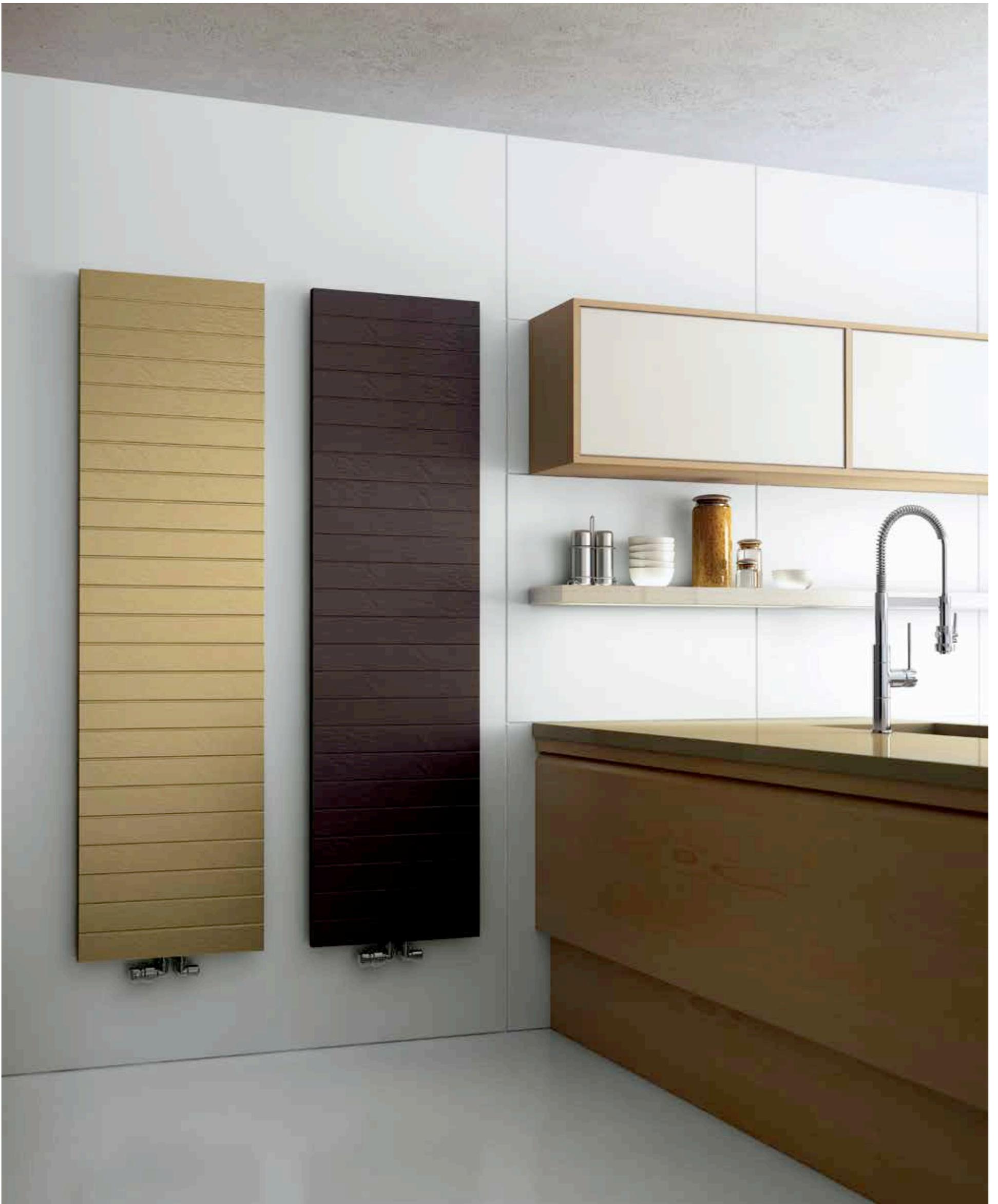
*Possibility of
applying textures and
colours to suit
each room.*

*Texture
SLATE
Black.*





Kitchens
VULCANO
PAGES.36-39

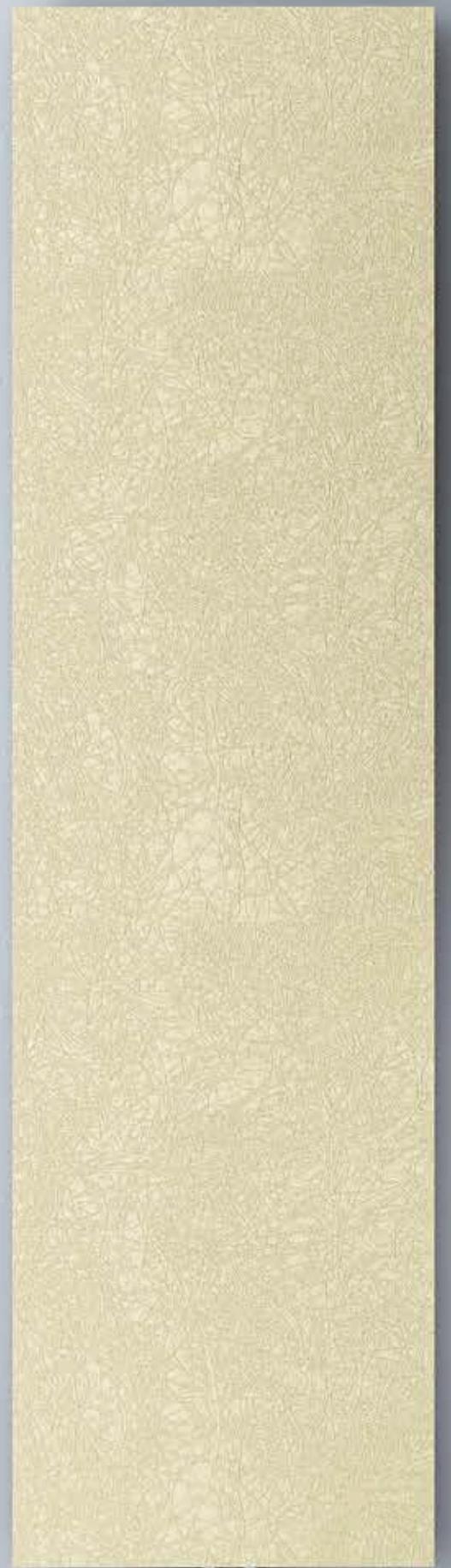




VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

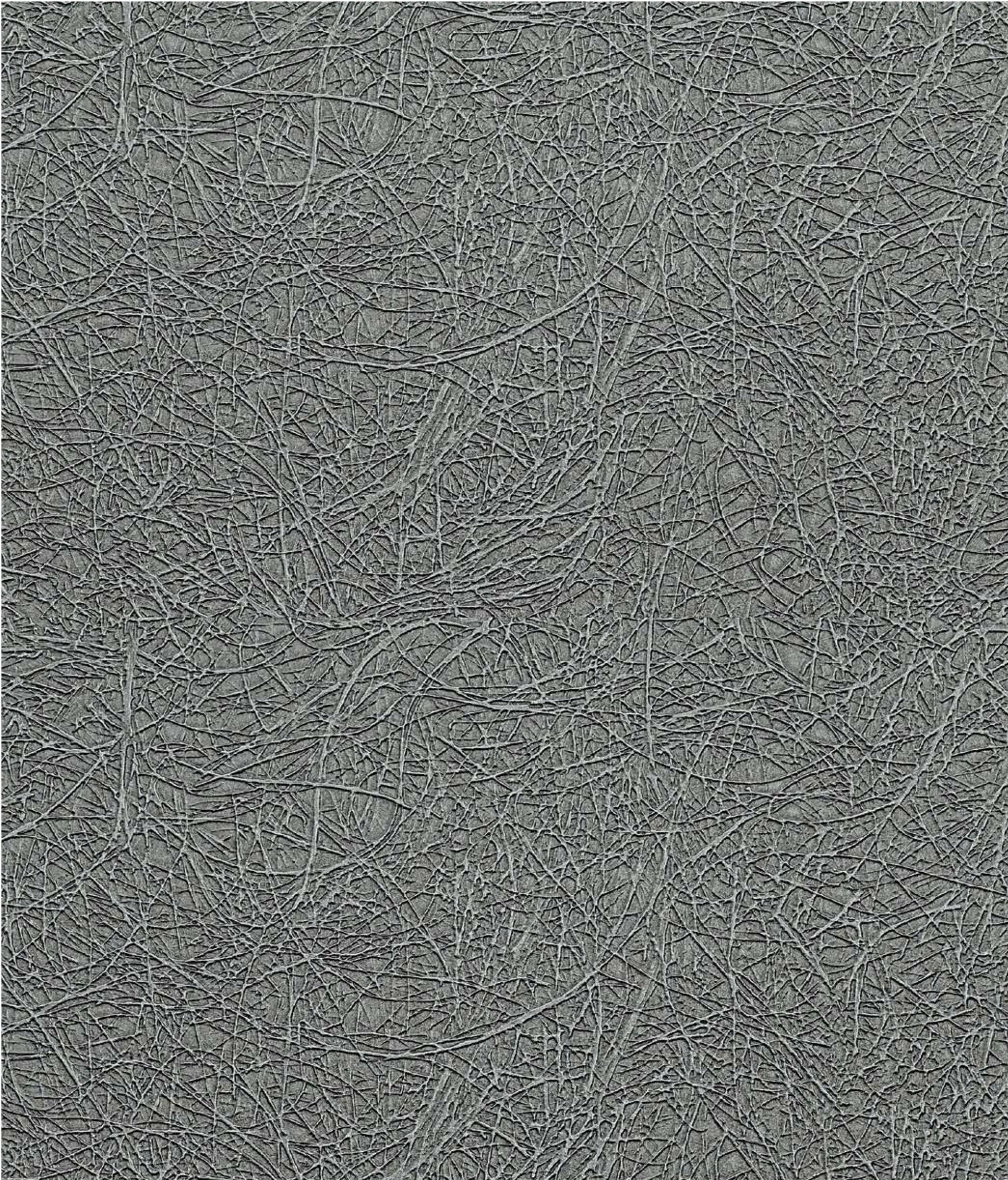
*Texture
SLATE
STRIPS
Gold. Wen-
gé.*

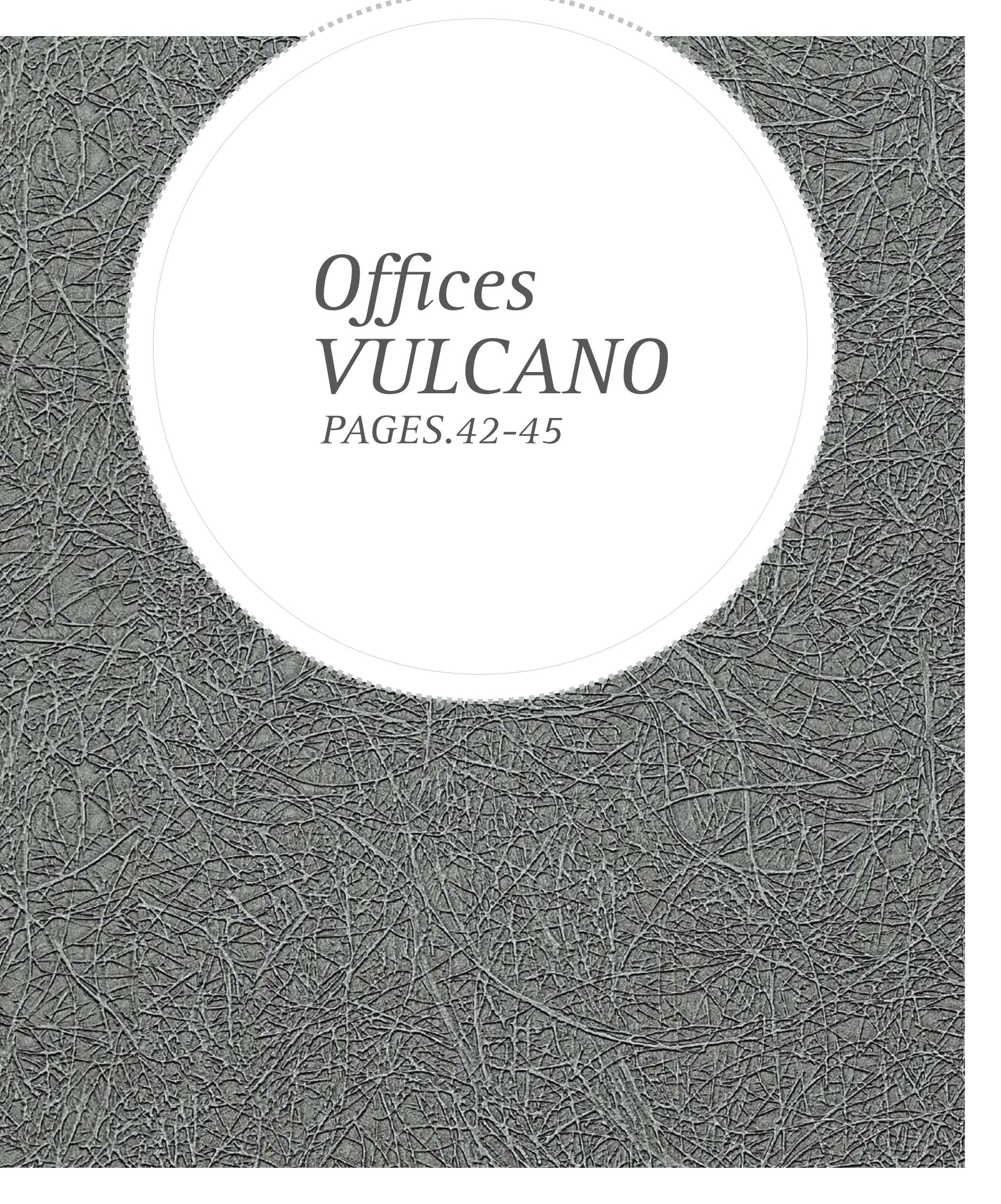


VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
HILOS
Cream.*





Offices
VULCANO
PAGES.42-45



VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
SLATE
Total White.
Grey.
Black.*

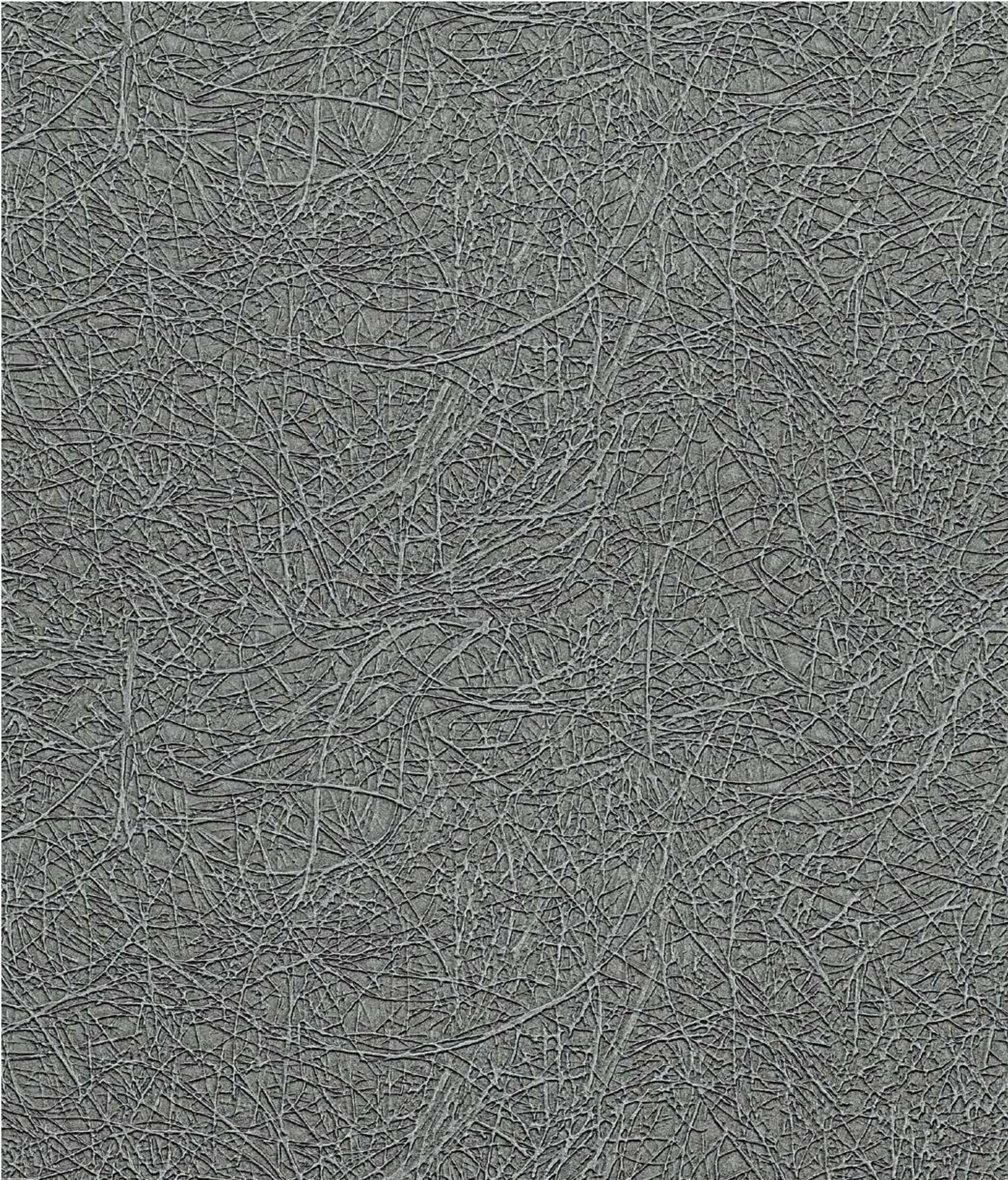


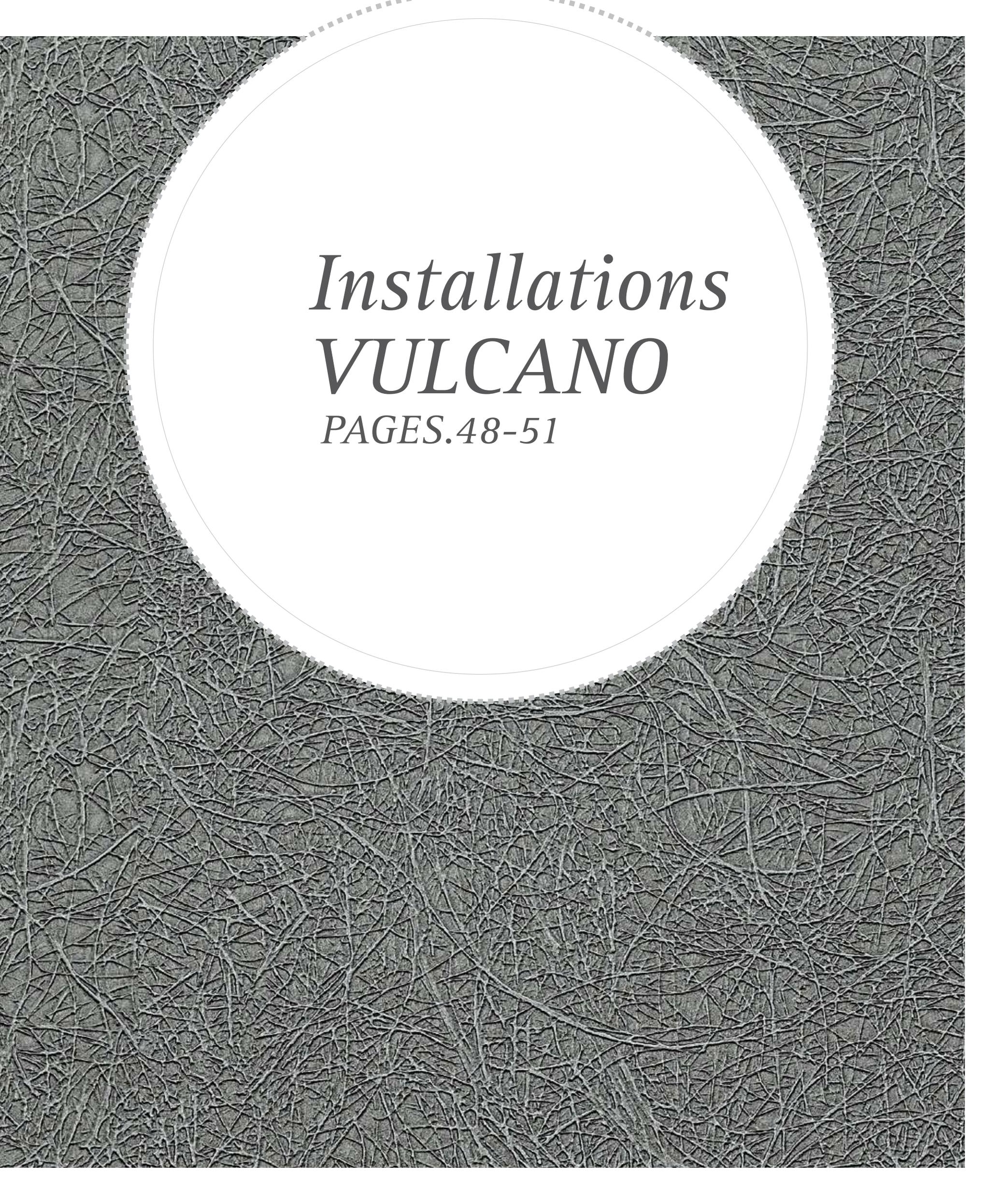
VULCANO Collection

*Possibility of
applying textures and
colours to suit
each room.*

*Texture
SLATE
Black.*







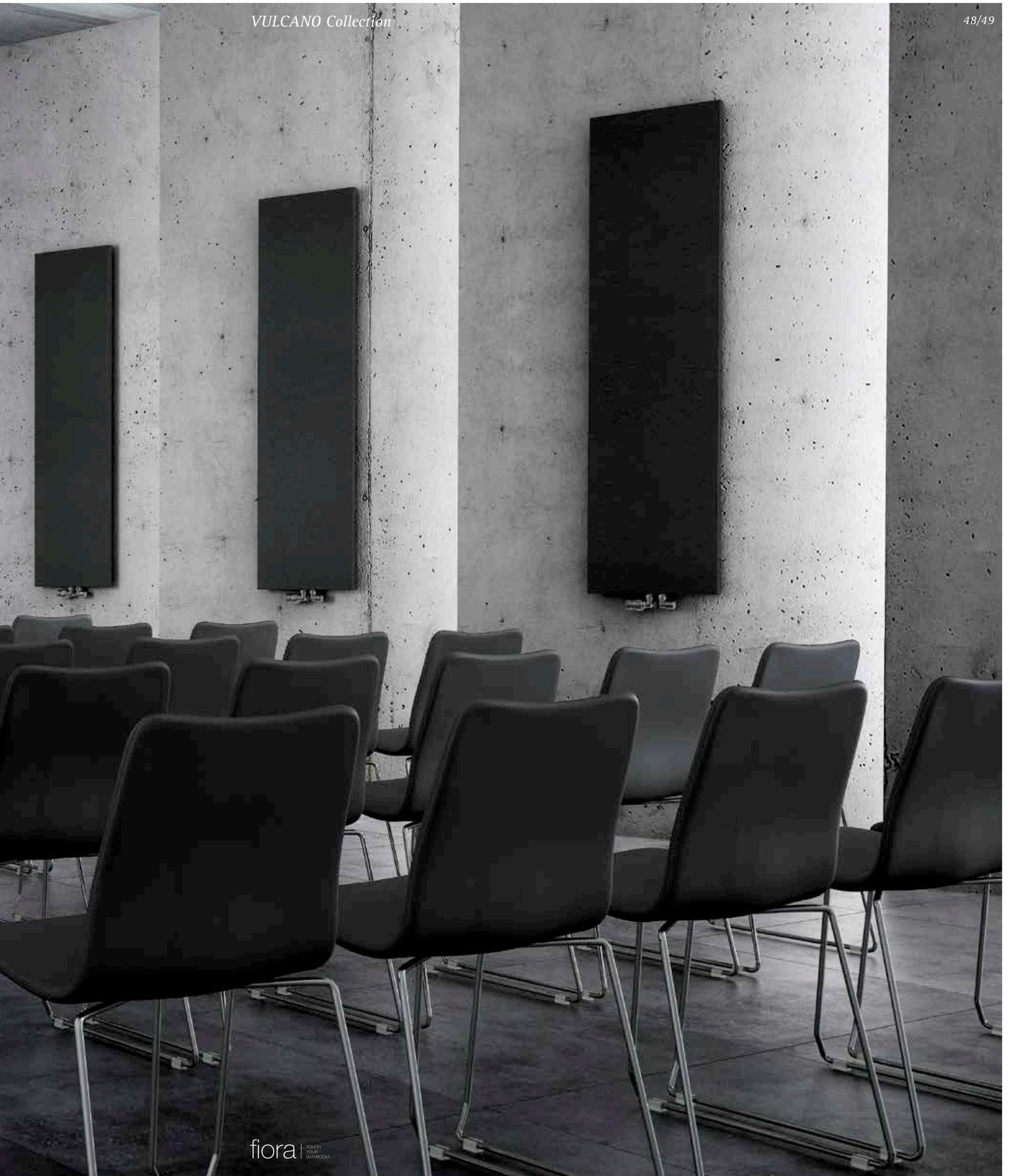
Installations
VULCANO
PAGES.48-51



**VULCANO
Collection**

*Integration in
shared
work installations.*

*Texture
SLATE
Black.*





**VULCANO
Collection**

*Integration into
work environments.*

*Texture
SLATE
Wengé.*



VULCANO Collection

TECHNICAL information

THE VULCANO COLLECTION PROVIDES AESTHETICS AND DESIGN, ACTING DIRECTLY ON THE COMFORT AND WELL-BEING OF PEOPLE, MAINTAINING OR RAISING THE AMBIENT TEMPERATURE WHEREVER IT IS INSTALLED.

The research process at FIORA's R&D&I department has been focused on finding solutions in heat emission based on studying its behaviour in the different rooms where solutions are sought.

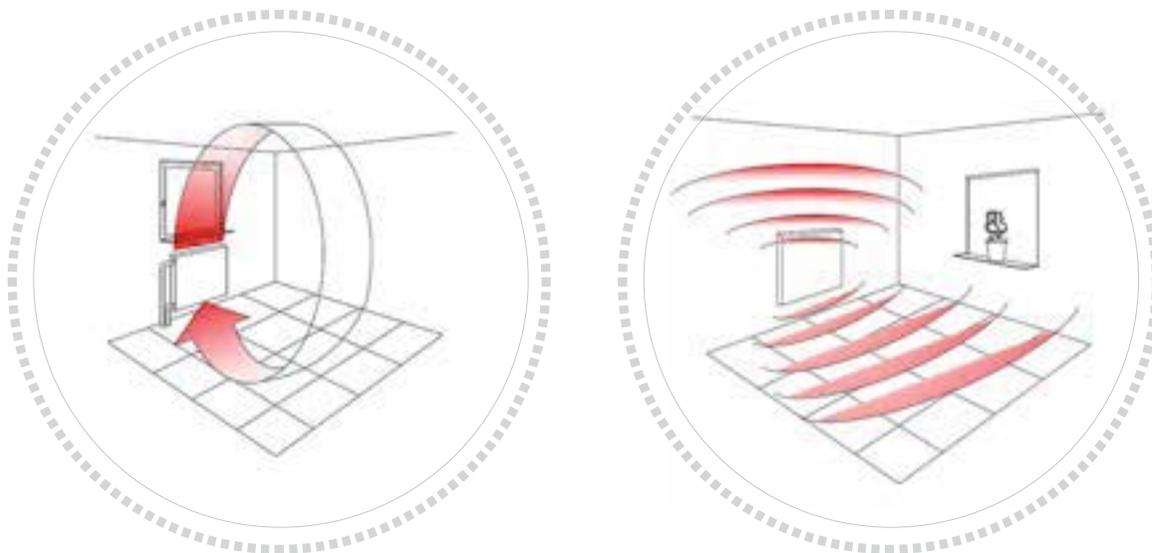
- 01. Heat typology.*
- 02. Technical Characteristics
(dimensions and assembly)*
- 03. Quality, Tests and Certifications.*

Typologies of HEAT

THE RADIATOR IS THE EMITTER OF HEAT WHOSE FUNCTION CONSISTS OF TRANSFERRING HEAT TO THE ROOM IT IS INSTALLED IN, THROUGH RADIATION AND CONVECTION.

- *Radiation: due to the simple fact of having a temperature, a result of the accumulation of thermal energy, a body transmits energy to its surroundings through this method.*
- *Convection: when in contact with a fluid (air), the part of this fluid that is in contact with the radiator changes its density, thus generating a natural current that allows it to flow around the room.*

The operation of a radiator is based on circulating a fluid (water) through its interior at a high temperature, where there is a transfer of heat to the environment during the time it is inside it.



DESCRIPTION

General characteristics of Vulcano radiators

MODEL	LENGTH (mm)	HEIGHT (mm)	DEPTH (mm)	POWER (BTUs)	WEIGHT (Kg)
VU** 120	500	1200	30	455	26.85
VU** 150	500	1500	30	560	31.71
VU** 180	500	1800	30	667	40.56

** The letters that represent the position (V or H) and the texture in which the radiator can be made.

For each one of the sizes there are different surface textures (rosas, semillas, hilos, slate and slate strips), which along with the wide range of colours available, give the radiator a multitude of aesthetic variations that allow us to make the most adequate choice depending on the environment it will be installed in. VULCANO radiators can also be used as a towel holder, if it is installed in the bathroom and is requested.

TECHNICAL Characteristics

SOLID MANUFACTURE

Robust over time and energy savings.

VULCANO radiators are made out of one single piece, which prevents losses of heat through transfer between its parts, as well as contributing to creating a long-lasting solid block. This central block of the radiator is composed of a coil, which is joined to the heat transfer material.

A) DESCRIPTION OF THE COIL.

The coil, which is the radiator element through which the fluid (water) flows, is made in AISI 304 (DIN 1.4301) corrugated and austenitic stainless steel according to the EN 10028-7 standard, which has excellent resistance to oxidation even in the presence of acids such as nitric acid.

The coil forms a circuit inside the radiator according to a specific arrangement that has been calculated and studied so that the whole unit can transmit heat evenly all over its surface.

The inlet and outlet holes of the coil, separated by a 50 mm distance, are located at the bottom of the radiator, and are connected to fittings that will later be used for connecting the wheel valve connection, in the case of the water inlet, and the lockshield valve in the case of the outlet.

B) HEAT TRANSFER MATERIAL.

The material used for the heat transfer is SILEXPOL (Inv. patent No. 504.370). It is a highly resistant material composed of a homogenous mixture of silicas and quartzes conglomerated with a polymer. It is, in short, a product that visually barely gets stained, with a density of 1,900 Kg. /m³ and an absorption coefficient of 0.01 %. Its impact resistance is similar to the average of natural stone, providing in addition good resistance to flexion, which prevents breakages, as certified by the tests described below, carried out by an accredited laboratory. Below are the most important characteristics and values obtained from the different tests they are subjected to:

- *Determination of water absorption: Correct. (UNE 127020:1999 EX)*
- *Determination of frost resistance: Not prone to frost. (UNE 67028:1997 EX)*
- *Determination of shock resistance: Not produced. (UNE 22179:1985)*
- *Determination of linear thermal expansion (heat): 0,000008 mm./°C. (UNE-EN ISO 10545-8:1994)*
- *Determination of linear thermal expansion (cold): -000002 mm. /°C. (UNE-EN ISO 10545-8:1994)*
- *Determination of adherence to base support: Correct. (UNE-EN 1015-12:2000)*
- *Determination of surface scratch resistance: > 7 (Mohs Scale). (UNE 67101/1M:1992)*

C) OTHER PARTS OF THE RADIATOR.

The radiators are completed with the fittings necessary for their assembly.

TECHNICAL Characteristics

GENERAL DIMENSIONS

Adaptation to spaces and shapes.

The radiators are presented in three different sizes and, as has been explained above, they can be placed in both a horizontal and vertical position. Below are the general dimensions of the VULCANO range.



*Radiators
HOME*



DOUBLE TAP

The REGULATION and OPENING system allows you to maintain the temperature of the rooms without excessive heating expenses.

The inlet and outlet size of the radiators is, in all cases, 3/4".

*Radiators
BATHROOM*



FLAT TOWEL HOLDER

For bathrooms, there is the possibility of the radiator with a flat towel holder, 2 towel holders on each radiator, except on those measuring 1200 mm which only have one towel holder at the top.

ASSEMBLY

Simple assembly system.

The radiators are placed suspended from any wall, with a simple but effective anchoring system that is composed of two elements: metal plates joined to the radiator like a hanger and which are arranged differently depending on whether it is to be placed horizontally or vertically, and the wall supports, which the previous parts attach to, and which can be screwed to all kinds of walls.

The radiators are sent with the connectors installed to just install the wheel valve and lockshield valve and connect them to the general heating network.

The special design of the coil means that the fluid travels through the internal circuit and exits the outlet hole completely. This prevents air from being trapped inside the circuit as the water is always in circulation; for this reason, VULCANO radiators do not need a bleed valve.



QUALITY, tests and certifications.

THE RADIATORS ARE A PRODUCT THAT CONFORM TO THE UNE EN 442 STANDARD. THIS STANDARD IS INCLUDED IN DIRECTIVE 89/106/CEE WHERE THE INFORMATION AND DOCUMENTATION TO BE PROVIDED IN ORDER TO VERIFY COMPLIANCE WITH CE MARKING IS INDICATED. IT CONSISTS OF:



- Accreditation of the existence of an on-site production monitoring system by FIORA BATH COLLECTIONS, S.L.
- The fulfilment and conformity of the initial-type tests included in the UNE EN 442 standard carried out by a notified body.

ON-SITE PRODUCTION MONITORING

A continuous revision that guarantees quality

FIORA BATH COLLECTIONS, S.L. has on-site production monitoring based on the continuous internal monitoring of the manufacture of radiators documented with procedures, monitoring guidelines, instructions, measures for production monitoring, etc., in addition to maintaining, at all times, the traceability of each one of the units manufactured.

INITIAL-TYPE TESTS

Durability, pressure, reaction to fire, thermal power.

The verification of compliance with the minimum requirements, as well as the definition of the characteristics of the radiator has been carried out by means of the tests described below, carried out by an accredited laboratory.



DURABILITY TESTS.

These tests verify the efficacy of the superficial layer that is in contact with the air, to do this the following tests are carried out:

- Resistance to humidity: After the test, there is no visual appreciation of any symptom of superficial corrosion, therefore it MEETS the requirements of the UNE EN ISO 6270-1:2002 standard.
- Cross scratching: it can be appreciated visually that it corresponds to the 0 classification of table 1 of the ISO 2409:1992 standard, meaning that it MEETS the minimum requirements

PRESSURE TESTS.



The leakage and pressure resistance tests have been carried out on it following the indications included in the UNE EN 442-1 standard and its annex, having established a maximum service pressure of the radiators at 6 bar.

The test pressures it must withstand are:

- 7.8 bar for the leakage test
- 10.1 bar for the pressure resistance test.

In both cases, the result of the test has been SATISFACTORY

REACTION TO FIRE TEST.

After an initial test, it is verified that our radiators are classified within the Euroclass system as indicated in standard UNE EN 13501, as type B.

The objects classified as type B must undergo two tests as indicated in standard UNE EN 13501-1:2007:

- Inflammability test. With a single flame source following the indications of the UNE EN ISO 11925-2:2002 standard. Where the inflammability of a product exposed to a small flame and small burning drops is evaluated.
- Thermal attack caused by a single burning element following the indications of the UNE EN 13823 standard. Where the potential contribution of the product to the development of a fire is evaluated.

After the tests carried out, the final classification of our radiators is:

B s3 d0 where:

B: Combustible product with a very limited contribution to fires;

s3: produces high opacity in smoke

d0: no falling of burning drops or particles



TEST TO DETERMINE THERMAL POWER.

With this test, the characteristics of the radiators are determined. The indications included in UNE EN 442-2 and its respective annexes will be followed, using the weighing method.

The results obtained with the test correspond to a $\Delta T = 50 \text{ }^\circ\text{C}$. To know the power (\emptyset) under another ΔT at which the radiator could be operating, the following characteristic equation will be used: $\emptyset = Km \Delta T^n$.

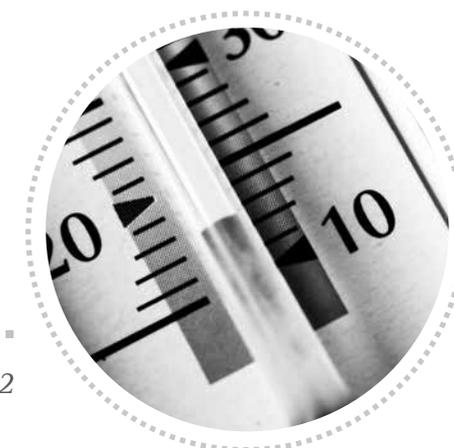
Results obtained from the constants of the characteristic equation of each model and their corresponding thermal power are:

MODEL	K_m	n	POWER
VU** 120	3.9754	1.21217	1552 BTUs
VU** 150	4.57960	1.22863	1910 BTUs
VU** 180	5.68384	1.21820	2267 BTUs

In order to calculate the power of radiators of the same characteristics where only the length varies, the range regression equation will be used, defined by: $\emptyset = K \cdot H^b \cdot \Delta T (c_0 + c_1 \cdot H)$

Where the values obtained after the test are:

K	b	c_1	c_0
3.39424	0.82614	0.02070	1.18861



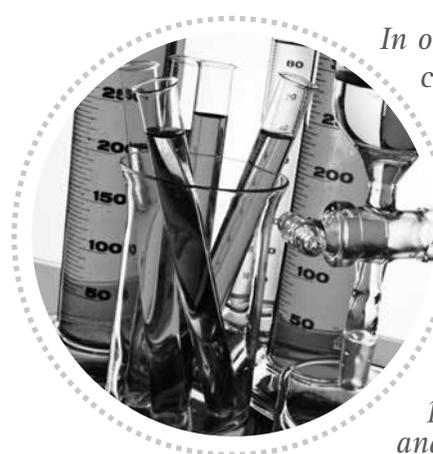
** The letters that represent the position (V or H) and the texture in which the radiator can be made.

Where H is the length of the radiator ranging between 1200 and 1800 mm

QUALITY, tests and certifications.

PRODUCT EFFECT TESTS

Study on the reaction to everyday products.



In our everyday life we use many products that, at one moment or another, can come into contact with the products that FIORA® makes. For this reason our R&D&I Department subjects all our materials to different tests to determine the level of incidence, the durability and the resistance of our materials when faced with the possible effects of these products that are part of our lives.

These tests are always conceived and carried out from a practical point of view, using real products that we can find in any supermarket. However, the application conditions on the FIORA® article are much more severe than what would happen within normal conditions of use.

Below are the results obtained on real samples. The typology of the test was always the same, as the product in the table was applied, during the time indicated, covering the other part of the test tube and later comparing both surfaces. In all cases, once the time indicated had elapsed, the product was eliminated and the test tube was cleaned using water and a general cleaning product.

The classification used corresponds to the following codes:

- A: Without important visible changes.
- B: Slight change of colour.
- C: Moderate change in colour.
- D: Important change in colour.
- E: Layer etched.

TESTED PRODUCT	EXPOSURE TIME	RADIATOR SURFACE DEGRADATION
Wine vinegar	8h	A
Bleach	1h	A
Window cleaner	8h	A
Iodine	1min	B
General cleaner (<5% anionic surfactants)	8h	A
Grease remover (<5% anionic surfactants and polycarboxylates and 5%-15% non-ionic surfactants)	1min	A
Limescale remover	8h	A
Hair dye (medium colour)	1min	B
Hair dye (dark colour)	1min	D
Vegetable oil for consumption	8h	A

TESTED PRODUCT	EXPOSURE TIME	RADIATOR SURFACE DEGRADATION
Makeup remover liquid	8h	A
Acetone	1min	A
Alcohol 96°	8h	A
Hydrogen peroxide	8h	A
Merbromin	1min	B
Organic solvent	1min	A
Fruit juice	8h	A
Coffee	8h	A
Red wine	8h	A
Lipstick	8h	A
Ammonia	8h	A
Ink	8h	A
Permanent marker	8h	A
Biro	8h	A
Pencil	8h	A

SUMMARY

A new product for everyday use.

VULCANO radiators represent a new product designed for everyday use, providing an aesthetic touch that is superior to conventional radiators.

Finally, a brief summary of the features, strengths and weaknesses of the radiator:

- It is a designer radiator that breaks away from the form and aesthetics of conventional radiators.*
- We offer different surface textures and colours that allow you to choose the most adequate option for each situation.*
- It complies with the requirements established by the UNE EN 442 standard*
- The radiator is easier and quicker to clean.*
- It is a very heavy radiator, sensitive to breakages or detached material from falls or strong impacts.*
- It can be installed, upon prior request, horizontally or vertically, making it very versatile when decorating spaces.*
- Thanks to its design it does not allow air to be trapped inside, preventing it from losing calorific power and performance.*

It is a FIORA® product, therefore it is manufactured with the quality that is our hallmark and is made to last, offering our Customer Service that will offer you advice at all times.

QUALITY, tests and certifications.

CE MARKING

Products according to the regulations.



The entire range of VULCANO radiators have CE marking according to Directive 89/106/CEE on Construction Products and to the UNE EN 442-1:1996/A1:2004 standard. Below are the labels for each model, as well as the corresponding EC Declaration.

Radiators by MODELS



Fiora Bath Collections, S.L.
Ctra. de Logroño, km 23.600
26300 Nájera (La Rioja) ESPAÑA.
T (+34) 941 41 00 01 F (+34) 941 41 01 06 W www.fiora.es

MODEL: V 120 50 12

EN 442-1

Maximum service pressure: 600kPa
Thermal power: 455W
Characteristic equation: $\delta = 3,96754 \cdot \Delta T^{1,21217}$
Reaction to fire class. B s3 d0



Fiora Bath Collections, S.L.
Ctra. de Logroño, km 23.600
26300 Nájera (La Rioja) ESPAÑA.
T (+34) 941 41 00 01 F (+34) 941 41 01 06 W www.fiora.es

MODEL: V 150 50 12

EN 442-1

Maximum service pressure: 600kPa
Thermal power: 560W
Characteristic equation: $\delta = 4,57960 \cdot \Delta T^{1,22863}$
Reaction to fire class. B s3 d0



Fiora Bath Collections, S.L.
Ctra. de Logroño, km 23.600
26300 Nájera (La Rioja) ESPAÑA.
T (+34) 941 41 00 01 F (+34) 941 41 01 06 W www.fiora.es

MODEL: V 180 50 12

EN 442-1

Maximum service pressure: 600kPa
Thermal power: 667W
Characteristic equation: $\delta = 5,68384 \cdot \Delta T^{1,21820}$
Reaction to fire class. B s3 d0

OPTIONS

44 OPTIONS OF COLOURS IN 5 DIFFERENT TEXTURES FOR COUNTLESS SPACES.

The sizing possibilities of the VULCANO Collection are complemented with the broad diversity of textures and colours capable of providing a solution to easily blend into household spaces or installations. A new way of understanding objects.

SEMILLAS



0N WHITE IN

1N CHAMPAGNE IN

2N CREAM IN

3N BRONZE IN

4N ANTHRACITE IN

5N BLACK IN

6N GREY IN

7N PURPLE IN

HILOS



0N WHITE IN

1N CHAMPAGNE IN

2N CREAM IN

3N BRONZE IN

4N ANTHRACITE IN

5N BLACK IN

6N GREY IN

7N PURPLE IN

ROSAS



0N WHITE IN

1N CHAMPAGNE IN

2N CREAM IN

3N BRONZE IN

4N ANTHRACITE IN

5N BLACK IN

6N GREY IN

7N PURPLE IN

SLATE



OFF WHITE TOTAL WHITE CREAM GOLD SANDSTONE CEMENT PYRENEAN STONE WENGE GREY BLACK

*SLATE
Strips*



OFF WHITE TOTAL WHITE CREAM GOLD SANDSTONE CEMENT PYRENEAN STONE WENGE GREY BLACK

VULCANO DISPLAY STANDS

see, touch and understand

A DISPLAY STAND FOR SHOWING REAL AND INFORMATIVE CONTENT

Fiora has created this display stand in order to showcase the new VULCANO product. A 3-sided totem on which three 120 x 50 cm. radiator models are placed, one of them with a towel holder and the three of them with the opening and closing valves. At a visual level, the viewer can take in at a glance the wide range of colours and textures, and the spaces that this product is applicable to.

INFORMATIVE VISUAL CONTENT
for the 3 sides of the Totem. RANGE
of colours and textures and the
spaces that the product is applied to.

3 RADIATORS

MEASUREMENT 120X50 cm

- Slate strips
- Hilos White
- Semillas Bronze

WITH TOWEL HOLDER

TOTEM STRUCTURE

Built in a quadrangular
format of 160x60 cm



SIDE 1



SIDE 2



IN SHOWROOM

Designed as an aesthetic and attractive complement that acquires relevance in the installations it is installed in.

TEXTURES informative panel to explain the textures in which the entire collection of VULCANO radiators is made.

COLOURS. A presentation of the complete range of textures and colours that will be useful, in particular, to offer an idea of how extensive it is.

SPACES. At a glance we can see the suitability of the application of VULCANO radiators to different types of habitat.

fiora : TOUCH
YOUR
BATHROOM

THANKS

*To the office, household and kitchen
furniture brands whose products have been used in some photographs:*

*BIOK
ONDARRETA
CARRÉ FURNITURE S.A.
EVAI
LINO ALONSO*

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