# INSTALLATION VALID FOR ECODRY120/80 DRY120/80



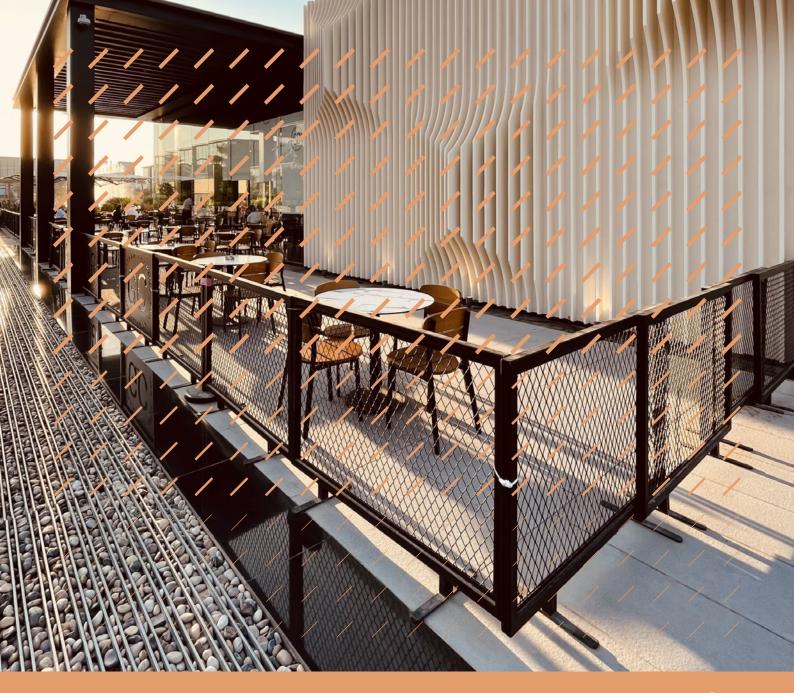


# 1 INSTALLATION GUIDE ECODRY120 - DRY120

Waterproofing and uncoupling solutions under protection of outdoor spaces and walkable and non-walkable flat roofs: **covers/terraces**.

# 2 INSTALLATION GUIDE ECODRY80/50 - DRY80/50

Waterproofing and uncoupling solutions under protection of outdoor spaces and walkable and non-walkable flat roofs: **covers/ terraces**.



responsible waterproofing

INSTALLATION GUIDE
WATERPROOFING SYSTEM
ECODRY120 MEMBRANE

**VALID GUIDE FOR SYSTEM DRY 20** 

revestech®

ECODRY120: Eco-responsible multilayer membrane for waterproofing and uncoupling under protection of outdoor spaces and flat roofs, both walkable and non-walkable, such as terraces, rooftops, balconies, and patios. Suitable for vapor compensation on substrates with a residual moisture ≤5%. It is composed of a high-performance thermoplastic polyolefin polymeric membrane CPE (EVA-based Circular Polymer), resulting from the transformation and treatment of raw materials from the circular economy, and extruded onto polyester and polypropylene fibers.

#### 1. Preparation of the support.

Check the stability and general conditions of the supports. The surface must be uniform and smooth, without any irregularities or protrusions that could pose a risk of puncture or breakage. It must be clean and dry, free of dust and any other loose material that could affect the proper adhesion of the membrane. Check that the appropriate slopes are met at all points and the correct sizing of the expansion joints.

See more information in <u>Attachment 1. Correct preparation of the support.</u>



#### 2. Mark.

Measure and mark exactly the place where the membrane will be attached with the help of a chalk line. Keep in mind that the **ECODRY120** membrane is packed.

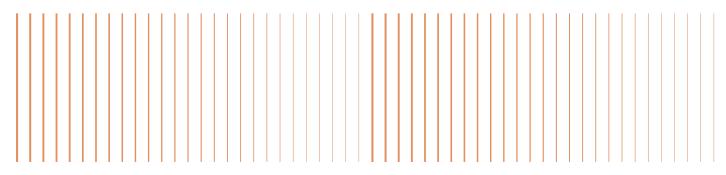


#### 3. Restructuring of the membrane.

Once the surface to be waterproofed has been marked out, transfer the measurements to the membrane and make any necessary cuts. Cutting the necessary pieces to accommodate pillars, duct passages, etc.







#### 4. Laying the membrane

The choice of adhesive used to fix the membrane will depend on the type of substrate and the type of covering that is to be waterproofed.

See more information in <u>Attachment 2. Solutions for different</u> types of roofs.

In general, most supports accept a cementitious adhesive of the C2 S1/S2 type. Properly consult with the project manager or the material manufacturer. Apply a thin layer with a  $6\times 6mm$  notched trowel, in small sections to prevent it from drying and always combing in a direction perpendicular to the arrangement of the membrane. Never install the membrane over the semi-set cement adhesive. Keep in mind that due to different sun exposure conditions, the setting time of the cement may be altered, so this should be considered when mixing and deciding its consistency.

It is important to follow the preparation instructions and application that informs the cement manufacturer, taking into account that the surface should be slightly moistened before applying the adhesive. Never form puddles of water; if there are any, they should be allowed to dry properly.

NOTE: In the case of rehabilitation, apply the cement adhesive directly onto the old pavement, taking the precautions mentioned earlier in Point 1 and Attachment 1, and considering, if necessary, the application of a primer layer to facilitate the adhesion of the cement adhesive to the old substrate.



5. Spread the **ECODRY120** membrane over the adhesive always in the direction of the slope from the water collection points upwards or from the vertical walls, according to the layout of the roof. Arrange the crowded membranes and then seal the joints with **ECODRY BAND** and special **SEALPLUS** adhesive.

In the encounters with vertical surfaces, raise the membrane a minimum of 20cm above the level of roof protection.

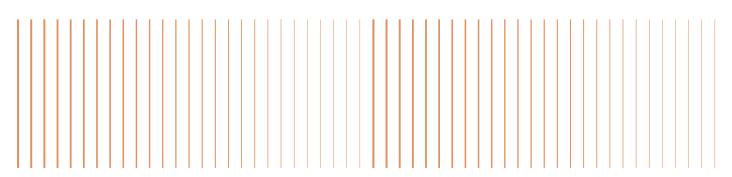
See attachment 3. Solutions for singular points.

6. Check that the membrane is well adhered and proceed to completely remove any air that may have been generated, pressing with the help of a plastic trowel. Apply moderate pressure to avoid affecting the surface polyester of the membrane and make movements from the center towards the sides. It is important to wait a reasonable amount of time before arranging the joints between membranes, to allow the cement adhesive to dry completely and for any water vapor that may remain from the adhesive's own setting to dissipate.

**ATTENTION**: once installed, it should be checked that the membrane is completely adhered to the support across its entire surface.







#### 7. Sealing of the joints.

Perform sealing on joints with **SEALPLUS** adhesive. Due to the fluidity of the adhesive, it is recommended to use a smooth spatula to ensure good coverage over the entire surface of the joint.

For the execution of details in corners and edges, we recommend the use of pre-molded pieces for this purpose. As well as in encounters with vertical elements and in evacuation elements. <u>See Appendix 3. Solutions for singular points.</u>

<u>Leak test.</u> Once the complete installation of the waterproofing system is finished, and after waiting a reasonable amount of time for the proper drying of the **SEALPLUS** joint sealant, a leak test should be conducted. (Consult document on leak tests on the website).

- 10. Placement of the finish. Lay the pavement with the appropriate
- **8. Band and double sealing**. To achieve a proper bond between membranes, a double seal will be performed.

Applying a thin layer of **SEALPLUS** adhesive to the sides where the membranes meet, with a width of 13 cm.

The **ECODRY BAND** will be applied, ensuring it is well adhered, and then the joints with the membrane will be sealed.







9. In the same way, we will seal joints and corners. We recommend using the reinforcements for interior and exterior corners **ECODRY CORNERIN** and **ECODRY CORNEROUT**. This way we will achieve a completely airtight system.







cement adhesive according to the finish to be used. For finishes with ceramic, we recommend a cementitious adhesive of type C2 S1/S2, and when using large format pieces, the cementitious adhesive should be fast-setting to allow for proper drying of the mortar and strength of the piece. In accordance with the standard UNE EN 12004-1:2017: Adhesives for ceramic tiles. Part 1: Requirements, assessment and verification of performance consistency, classification and marking.

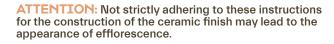
#### Follow the manufacturer's specifications carefully.

Spread the cement adhesive over the substrate in thin layers with a notched trowel, and on the back of the piece if double gluing is necessary for large ceramic pieces.

Place the pieces on the fresh product, move until full contact is achieved, and provide small taps with the help of a rubber mallet or a vibrator for ceramic tiles. In this way, we ensure the complete elimination of air.

#### Check the level at all times to maintain the necessary slope.

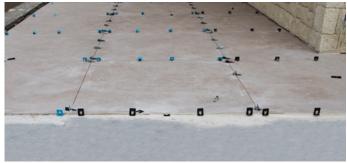
Ensure the proper construction of expansion joints and connection joints between pieces. <u>See Appendix 4. Expansion and contraction joints.</u>

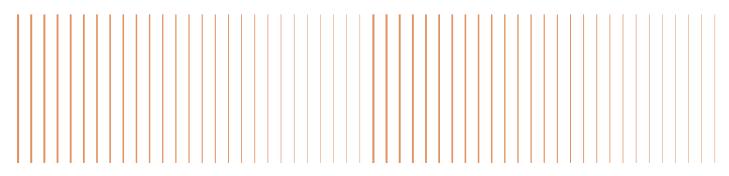












#### **ATTACHMENT 1.**

#### Correct preparation of the support.

According to the current Regulations, "CEC" Catalog of Construction Elements (Recognized Documents of the "CTE") and Standard UNE 104416:2009: "Synthetic materials. Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes, the resistant support of the roof must be adequately conditioned to receive the waterproofing.

Check the stability and general conditions of the supports. The surface must be uniform and smooth, with a roughness of less than or equal to 2 mm, and it must not have irregularities or protrusions that could pose a risk of puncturing or breaking.

A preventive check of the residual moisture of the substrate must be carried out using a hygrometer. The maximum allowable value of residual moisture must be equal to or less than 5%. The support must have a minimum compressive strength of 25 MPa (N/mm²) and must not present any type of cracks.

It must be dry, clean, intact, stable, flat, and without roughness. Imperfections must be corrected beforehand using suitable materials for each task.

Any trace of oil, grease, efflorescence, loose old pavement, old paint, or lime layers must be properly removed before applying the membrane. Immediately after cleaning, the supports should be dusted using an appropriate industrial vacuum cleaner.

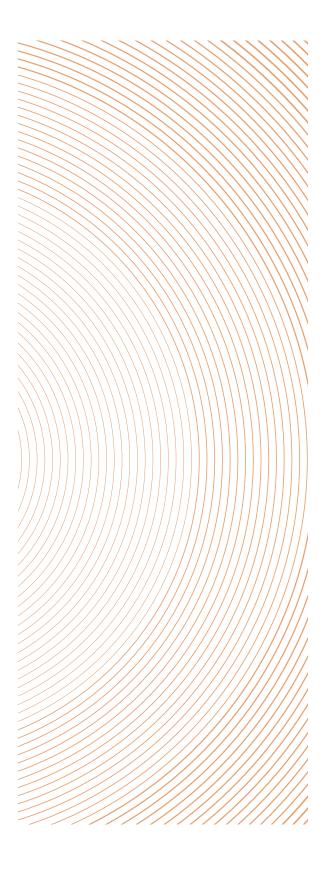
Under rehabilitation. Existing pavements.

In the case of ceramic finishes. Evaluate the state of adhesion to the substrate of the old pavement by means of small taps. Every loose and/ or partially chipped tile must be removed and the gaps restored using specific cement mortars. If the joints of the pieces of the old finish are missing or found to be in a state of degradation, it is advisable to redo them by reapplying the joint filler between pieces.

In the case of old waterproofing with bituminous membranes. Check the state of deterioration of the old membrane and remove any deteriorated, sclerosed, or clearly detached parts.

Check that there are no water stagnations under the old waterproofing. Any trace of water still present on the roof slab must be removed to prevent the possible appearance of condensation on the underside of the roof, once the new waterproofing work is completed.

For the cleaning of old ceramic or stone pavements, it is not advisable to perform pressure washing, as it would add water to the adjacent substrate. Instead, it is advisable to polish and remove any encrustations, dirt, chemical residues, or construction materials. In this way, we make the surface slightly rough and absorbent, to improve and increase the adhesion of the membrane. Immediately after polishing, remove the dust from the substrates using an appropriate industrial vacuum cleaner. In the case of some substrates, it may be advisable to use a primer layer to improve the grip of the cement adhesive. Before proceeding with the application of the membrane, it is necessary to verify the degree of moisture present in the existing substrate using a Hygrometer.



#### **ATTACHMENT 2.**

#### Solutions for different types of roofing.

In accordance with current regulations and depending on the characteristics of the work, the **ECODRY120** waterproofing system allows for waterproofing on different types of roofs, whether they are walkable or not.

For all cases, the waterproofing system with **ECODRY120** membranes is designed for installation under protection. In accordance with the CTE, the finishing material used:

- It must be weather-resistant according to the expected environmental conditions and must have sufficient weight to counteract wind suction.
- It must have a shape and dimensions compatible with the required slope.

In no case should the pieces be placed without a joint, and the minimum joint thickness must be respected, according to the manufacturer's instructions, for each type of finish.

• The slope of the roof will be between 1 and 5%.

#### WALKABLE FLAT ROOFS FOR PEDESTRIANS.

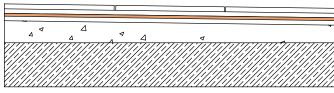
#### **Fixed flooring. Tubeless**

Walkable flat roof for pedestrians, with fixed paving of ceramic finishes adhered with mortars, natural stone set with mortar, concrete, filtering mortar, asphalt conglomerate, or other materials with similar characteristics. Both in conventional roofing and inverted roofing.

The waterproofing system with ECODRY120 membranes, along with its range of accessories, constitutes a highly compatible system, both for new construction and for rehabilitation.

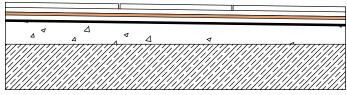
• Flat roofs WITH thermal insulation constructed in a conventional or inverted manner. The waterproofing system with ECODRY120 membranes is fully chemically compatible with thermal insulations, allowing its installation with fewer auxiliary layers.

• Flat roofs WITHOUT thermal insulation. The ECODRY120 waterproofing membranes will serve both as a waterproofing layer and as a vapor barrier in case there is a risk of condensation on the roof.



- Pavement.
- Cementitious adhesive.
   ECODRY120 Membrane
- 4. Cementitious adhesive.5. Formation of slopes.
- 6. Sturdy support.
- · Renovation of old waterproofing.

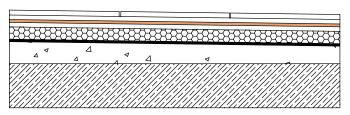
See Attachment 1. Correct preparation of the support.



- Pavement.
- ntitious adhesive.
- . ECODRY120 Membrane
- 4. Cementitious adhesive.5. Old waterproofing.
- 6. Formation of slopes
- 7. Durable support.

• Rehabilitation of roofs without any type of waterproofing system. The **ECODRY120** membranes allow for installation directly over the old pavement.

See Attachment 1. Correct preparation of the support.

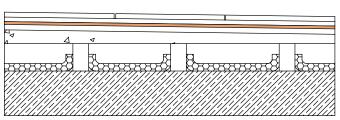


- Pavement.
- CONVENTIONAL nentitious adhesive.
- ECODRY120 Membrane
- Compression layer. Cement adhesive.
- Thermal insulator.
- 6. Vapor barrier. Formation of slopes.
- 8. Durable support.

- Compression layer. Cement adhesive.
- Thermal insulator.
- ECODRY120 Membrane
- Cementitious adhesive. Formation of slopes.
- Durable support.

- Pavement.
- nentitious adhesive.
- 3. ECODRY120 Membrane
- 4. Cementitious adhesive.
- 5 Old cover

#### Fixed flooring. With inner tube



Pavement.

**INVERTED** 

- ementitious adhesive.
- ECODRY120 Membrane
- 4. Cementitious adhesive.
- 5. Formation of slopes 6 Air chamber
- 7. Thermal insulator.
- 8. Sturdy support.

#### Floating floors.

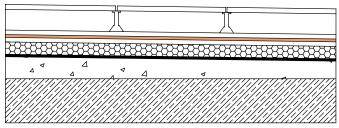
The floating floor can consist of pieces supported on supports, loose tiles with incorporated thermal insulation, or other materials with similar characteristics. Conventional or Inverted.

In the case of covers with an air chamber, the supports used must be resistant to the bending stresses to which they will be subjected, and they must be designed and manufactured for this purpose.

The **ECODRY120** membrane waterproofing system perfectly adapts to this type of roofing solutions and allows its installation directly on the concrete used for slope formation.

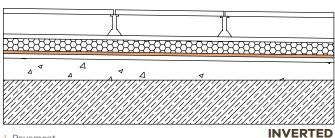
On the **ECODRY120** membrane, a protective layer must be placed, which will also serve as support to distribute the loads. It must comply with the necessary slope to serve as a runoff plane and meet the basic requirements in accordance with the UNE 104416 standard. The pieces supported on stands must be arranged horizontally and must be placed with an open joint.

#### Floating floor with air chamber

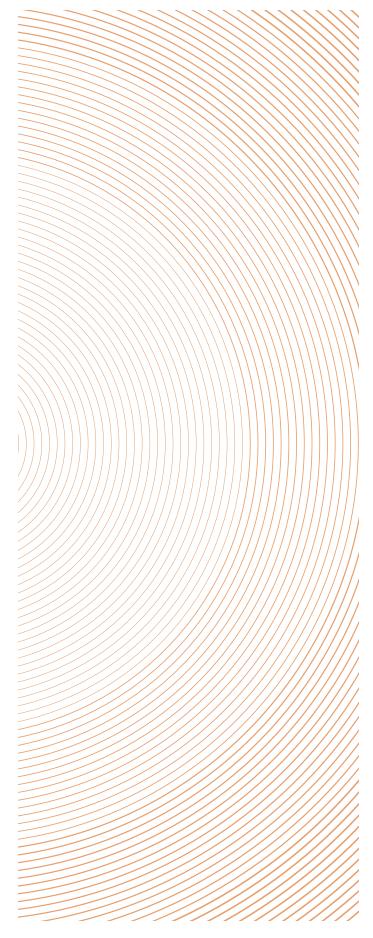


CONVENTIONAL

- 1. Pavement.
- 2. Air chamber. 3. Adjustable supports.
- Runoff layer.
- 5. ECODRY120 Membrane.
- 6. Compression layer. Cement adhesive.7. Thermal insulator.
- 8 Vapor barrier
- 9. Formation of slopes.
- 10. Durable support.



- 1. Pavement.
- 2. Air chamber.
- 3. Adjustable supports.
- 4. Runoff layer.
- Thermal insulator.
- 6. ECODRY120 Membrane.
- Cementitious adhesive.
- 8. Formation of slopes.
- 9. Sturdy support.



#### **NON-TRAFFICABLE FLAT ROOFS**

Non-trafficable roofs are defined as those that do not allow for the circulation of people, but are only accessible for the purposes of maintenance and conservation of the roof itself, the drainage elements. or installations on it. Accessible only to personnel specialized for such functions.

Corridors and work areas must be provided with a protective layer of a suitable material for walkable surfaces in order to facilitate transit for maintenance operations and prevent the deterioration of the system.

#### **Protected with gravel**

The waterproofing system with **ECODRY120** membranes is perfectly suitable for installation on non-trafficable flat roofs over a firm support and protected with gravel. Keep in mind that an auxiliary rot-proof antipuncture layer must always be installed before placing the gravel.

In accordance with the current regulations, the following conditions must be met:

- The gravel can be loose or bound with mortar.
- Loose gravel can only be used on roofs with a slope of less than 5%. When the roof does not have the appropriate slope, it must be constructed with a sloped concrete layer and a leveling layer with 1/6 cement mortar, 2 cm thick.
- The gravel must be clean and free of foreign substances. Its size must be between 16 and 32 mm and it must form a layer with a thickness of at least 5 cm.

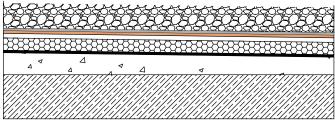
#### Landscaped.

Non-accessible flat roofs with gardens, whether protected with artificial grass or natural vegetation. They are coverings that facilitate the drainage of rainwater by reducing the amount of runoff and providing great benefits to the environment and the building's users. Regarding energy efficiency, green roofs act as an excellent thermal insulator, which significantly reduces the amount of energy needed to climatize indoor spaces.

The waterproofing system with **ECODRY120** membranes is perfectly compatible with this type of protection, so it does not require many additional layers.

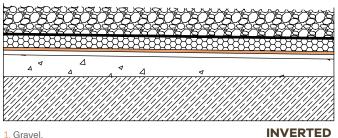
In accordance with the current regulations and "CTE," roofs protected with natural vegetation must meet the following conditions:

\*The slope of the roof is between 1 and 5%. Immediately below the natural vegetation protection, a special nodular draining membrane for natural grass will be arranged, which can be directly supported on the waterproofing system formed by the **ECODRY120** membranes.



CONVENTIONAL

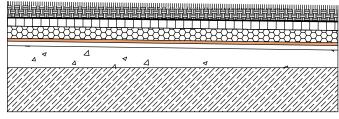
- Protection geotextile.
- ECODRY120 Membrane.
- . Compression layer. Cement adhesive.
- Thermal insulator.
- 6. Vapor barrier.
- Formation of slopes.
- 8. Durable support.



- 1 Gravel
- Protection geotextile
- Thermal insulator.
- ECODRY120 Membrane.
- Cementitious adhesive.
- Formation of slopes. 7. Durable support.

- - CONVENTIONAL

- 1. Natural grass.
- 2. Filtering layer.
- 3. Drainage layer. Nodular membrane.
- 4. Cementitious adhesive.
- 5. ECODRY120 Membrane.
- 6. Compression layer. Cement adhesive.
- 7. Thermal insulator
- 8 Vapor barrier
- 9. Formation of slopes.
- 10. Durable support.



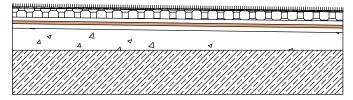
- 1. Natural grass
- 2. Filtering layer
- 3. Drainage layer. Nodular membrane 4. Thermal insulator
- 5. ECODRY120 Membrane.
- 6. Cementitious adhesive.
- 7. Formation of slopes.
- 8. Durable support.

# VISUAL INSTALLATION GUIDE

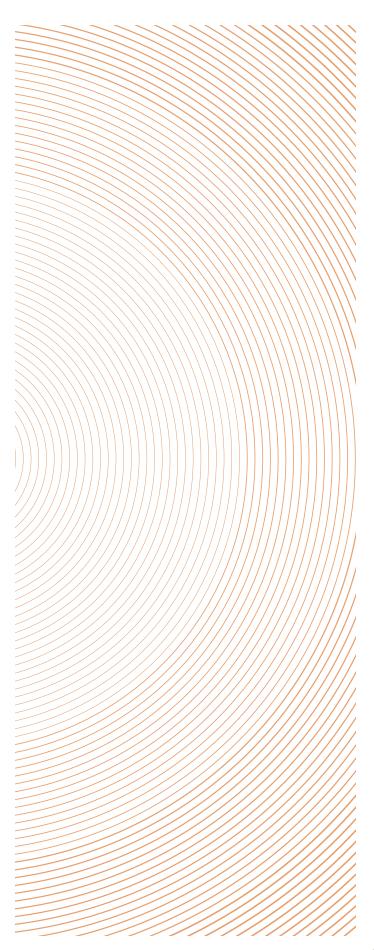
# **ECODRY120**

In the case of green roofs with artificial grass protection, a drainage layer for artificial grass will be placed directly on the waterproofing system with **ECODRY120** membranes.

The artificial grass protection layer will be adhered with **SEALPLUS** adhesive, previously placing the special Joint joining bands between its seams for this purpose.



- 1. Artificial grass.
- 2. Drainage layer.
- 3. Cementitious adhesive.4. ECODRY120 Membrane.
- 5. Cementitious adhesive.
- 6. Formation of slopes.
- 7. Durable support.



#### **APPENDIX 3.**

#### Solutions for singular points.

On the decks, there are certain areas and specific points for which special requirements are established. In accordance with the basic requirements of the "CTE" and according to Standard UNE 104416:2009. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes

Among these points are included:

#### **ENCOUNTER WITH A VERTICAL WALL**

#### **Preparation of the perimeter**

The perimeter of the junction between the roof and vertical walls must be prepared in advance, so that proper execution of the waterproofing is allowed up to the height indicated according to the basic requirements of the CTE.

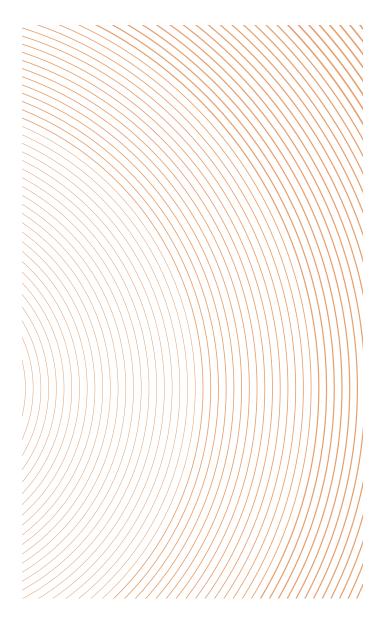
In order to prevent rainwater or water sliding down the wall from seeping through the top edge of the waterproofing, this edge must be finished in one of the following ways:

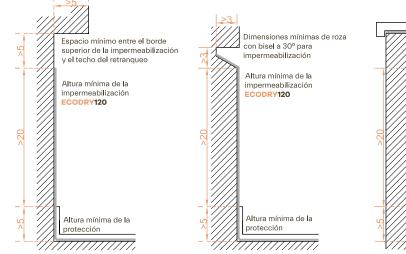
\*By means of a setback whose depth with respect to the external surface of the vertical wall must be greater than 5 cm and whose height above the roof protection must be greater than 20 cm.

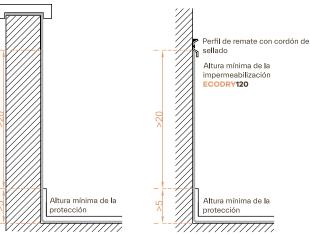
Make a groove of at least 3×3 cm, capable of receiving the waterproofing, beveled to form approximately a 30° angle with the horizontal.

Extend the membrane flashing to the gable or end of the wall, creating a horizontal waterproofing and cover with a wall cap or coping stones. It can be a good solution when we have a low vertical wall.

By means of a stainless steel profile, which serves as a base for a sealing bead between the profile and the wall. If there is no tab at the bottom, the edge must be rounded to prevent the membrane from being damaged. It can be a good solution when we have a vertical concrete wall or prefabricated panels where it is not convenient to make setbacks.





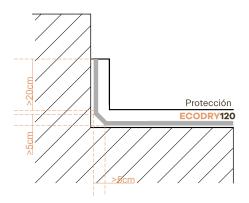


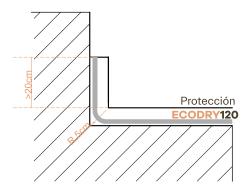
#### Waterproofing

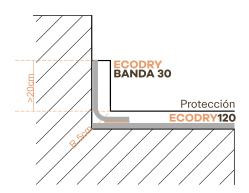
In accordance with the current regulations, the waterproofing system must meet certain basic requirements:

\*It must extend at least 20 cm above the cover protection.

The junction between the cover and the parameter must be rounded with a curvature radius of approximately 5 cm or chamfered with an analogous measure according to the system used.







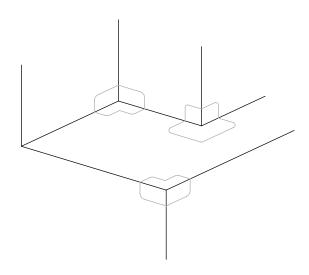
The waterproofing system with **ECODRY120** membranes and its accessories are ideal for the treatment of these joints, ensuring complete watertightness. The couplings and accessories of the **ECO**DRY line are specially designed for this purpose.





#### **Corners and nooks**

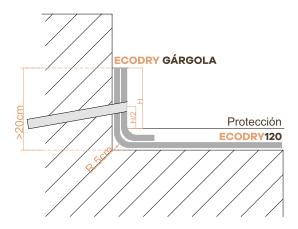
On a deck, the corners and edges are usually more complicated points to resolve and waterproof correctly. According to the basic requirements of the CTE DB HS, prefabricated protection elements or those made in situ must be arranged in corners and edges up to a minimum distance of 10 cm from the vertex formed by the three planes.



#### **Overflow meeting**

In accordance with the basic requirements of the "CTE" and the UNE 104416:2009 Standard. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes, there are flat roofs that, depending on their characteristics and dimensions, must incorporate overflow outlets.

The **ECODRY120** waterproofing system meets these requirements by incorporating a prefabricated piece that perfectly resolves the junction, ensuring its watertightness.



#### Meeting of the deck with a drain or channel.

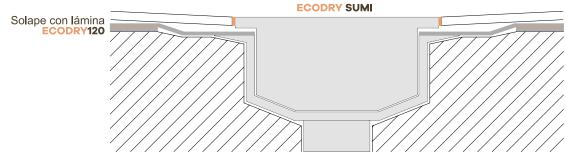
According to the requirements of the CTE and current regulations, the drains or channels used as water evacuation points on roofs must be made of materials compatible with the type of waterproofing used and meet a series of requirements.

Regarding the design of the cover and implementation:

\*The drains must be 1 m away from the corners and 50 cm from the walls. On low-slope roofs, a recess should be made in the support around the drains. The recess must have dimensions suitable for the reinforcement pieces and an approximate depth of about 6 to 8mm.

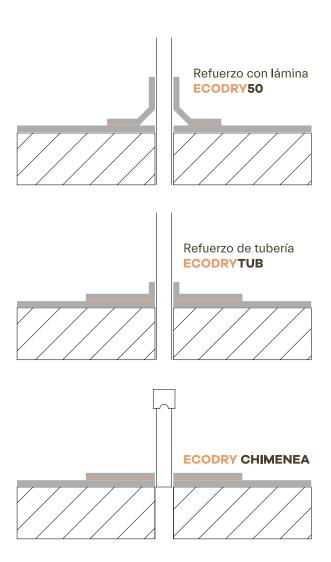
The **ECODRY SUMI** drains with **ECODRY** membrane thermosealed around their entire perimeter are specially designed based on these requirements and facilitating their installation. Together with the **ECODRY120** membranes, they guarantee a completely watertight system.

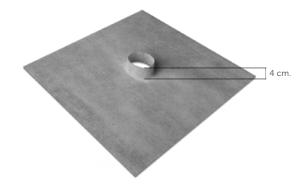


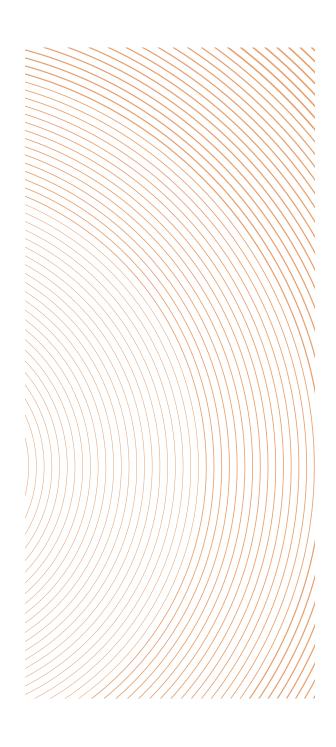


#### **Passing elements**

Many times we can find on roofs the passage of elements that can be pipes, vents, etc. The **ECODRY120** waterproofing system incorporates the **ECODRY TUB**, a reinforcement designed for each particular case as it comes in different sizes and diameters. Its installation is carried out by overlapping the **ECODRY120** waterproofing membranes using **SEALPLUS** adhesive sealant at all joints and finishes, as indicated.









#### **Anchoring of elements**

When an element or machinery is to be anchored on the deck, they must be supported on a vertical wall above the waterproofing finish or on a base supported on the horizontal part of the deck.

#### **Openings**

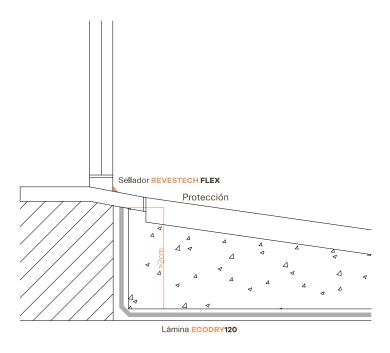
The thresholds of doors, the sills of windows or duct passages must meet a series of requirements according to the current UNE 104416:2009 Standard. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic sheets and basic requirements of the CTE.

They must be carried out:

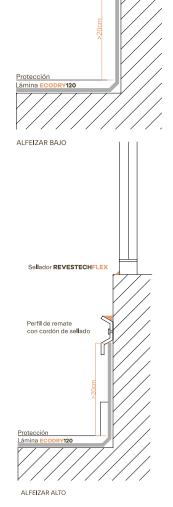
Providing a height difference of at least 20 cm above the roof protection, protected with a waterproofing material that covers it and rises along the sides of the opening to a height of at least 15 cm above said height difference.

If, due to the use of the cover, it is not possible to place a step in front:

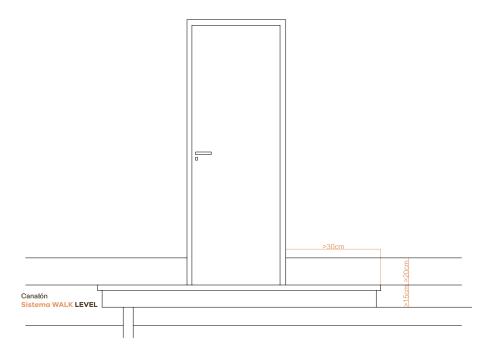
A setback of at least 1 meter from the vertical face must be provided, serving as a covered walkway. The ground up to the access must have a 10% slope outward and must be treated like the roof, except in cases of access in balconies that freely drain water without parapets, where the minimum slope is 1%.



A drain in the form of a gutter integrated into the eaves must be placed in front of the door, extending a minimum of 30 cm on both sides of the jambs, with a depth greater than 15 cm and a width greater than 30 cm.



Sellador REVESTECHFLEX



#### **ATTACHMENT 4.**

#### Expansion and contraction joints.

Expansion joints must be provided on every flat roof. These must affect the different layers of the covering, starting from the element that serves as a resistant support.

In general terms, according to the basic requirements of the CTE and the current regulations (UNE 138002:2023 - "General rules for the execution of ceramic tile cladding by adhesion").

The distance between adjacent joints must be a maximum of 15 m, they must have blunt edges, with an angle of approximately 45°, and the width of the joint must be greater than 3 cm.

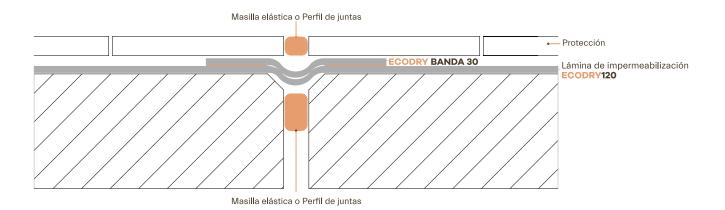
When the protective layer is made of fixed flooring, the joints must be arranged to coincide with the structural expansion joints, on the exterior and interior perimeter of the roof, and at the intersections with vertical walls or penetrating elements.

They must also be placed at a maximum of 5 m apart on non-ventilated roofs and 7.5 m on ventilated roofs. So that the panels between joints maintain the 1:1.5 ratio.

The constructive treatment of the joint must be carried out by placing a sealant over a filler inserted inside it. The sealing must be flush with the surface of the roof's finish layer.

**ATTENTION:** Not strictly adhering to these instructions for the construction of the ceramic finish may lead to the appearance of efflorescence.





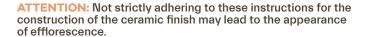
#### Joints between finishing pieces

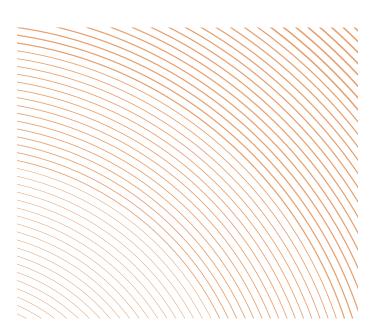
The pieces should not be placed edge to edge. The placement joints are the physical separation between adjacent tiles, necessary to compensate for the dimensional deviations of the pieces themselves and to fulfill functions of stress absorption and vapor diffusion from the lower layers.

These joints between pieces must be made with a product intended for them and, for their installation, follow the manufacturer's instructions.

Wait a reasonable amount of time before installing the joint, considering the drying time of the cement adhesive to prevent efflorescence and to allow the water vapor from the cement drying to escape before installing the joint.

In rehabilitations, the correct construction of expansion and contraction joints and their good condition must be verified. If necessary, it will be corrected or replaced before installing the waterproofing system. In the same way, the good condition of the joints between finishing pieces must be checked if they will serve as support for the new waterproofing.



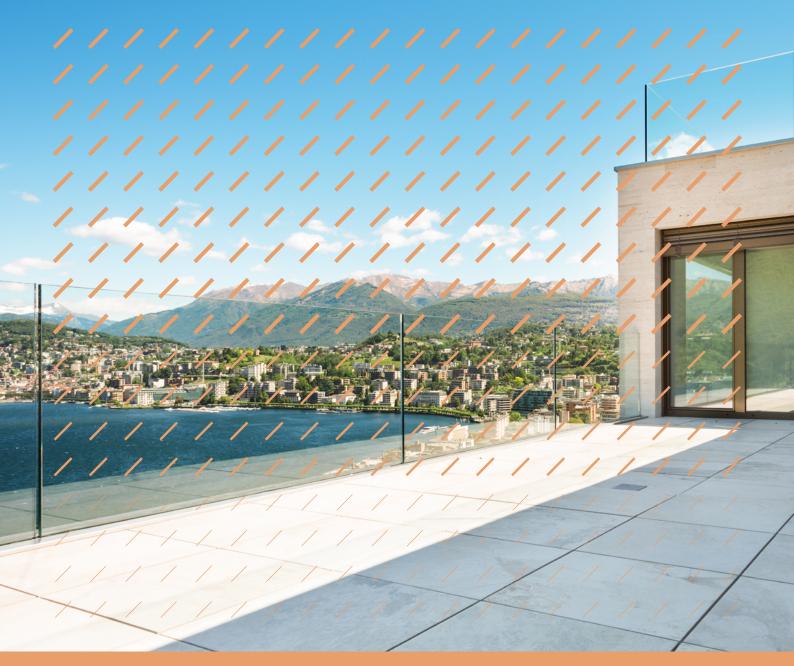


| Maintenance and conservation  | Periodicity |
|---|-------------|
| Verification of the state of conservation of singular points              | 3 years     |
| Verification of the status of conservation of the protection or roof      | 3 years     |
| Verification of cleanliness status of the drainage and evacuation network | 1 year      |
| Cleaning of the inspection chambers                                       | 1 year      |
| Verification of the possible existence<br>leaks from cracks and fissures  | 1 year      |

## WARNING: DO NOT LEAVE THE MEMBRANES EXPOSED.

If the installation of the roof finish is delayed, the membrane must always be protected. already installed. In this way, the good condition of the upper polyester is ensured, which then It will serve for the adhesion of the cementitious adhesive.

Technical Department Manager



responsible waterproofing

INSTALLATION GUIDE
WATERPROOFING SYSTEM WITH
ECODRY80 MEMBRANES (any size of cover)
AND ECODRY50 (only covers up to 50 m²)

VALID GUIDE FOR SYSTEM DRY 10 AND DRY 50 (only covers up to 15 m²).

# **INSTALLATION GUIDE**

# **ECODRY50/80**

**ECODRY50**: Eco-responsible membrane for waterproofing under pavement of small walkable flat roofs (balconies and terraces up to 50 m²) and bathrooms, walls, and floors in interior wet areas. It is composed of a high-performance thermoplastic polyolefin polymeric membrane CPE (EVA-based Circular Polymer), resulting from the transformation and treatment of raw materials from the circular economy, and extruded onto polyester fibers.

**ECODRY80**: Eco-responsible membrane for waterproofing under protection of outdoor spaces and flat walkable and non-walkable roofs (terraces, rooftops, balconies, patios, and green roofs). It is composed of a high-performance thermoplastic polyolefin polymeric membrane CPE (EVA-based Circular Polymer), resulting from the transformation and treatment of raw materials from the circular economy, and extruded onto polyester fibers.

1. **Preparation of the support**. Check the stability and general conditions of the supports. The surface must be uniform and smooth, without any irregularities or protrusions that could pose a risk of puncture or breakage. It must be clean and dry, free of dust and any other loose material that could affect the proper adhesion of the membrane. Check that the appropriate slopes are met at all points and the correct sizing of the expansion joints.

See expanded information in <u>attachment 1. Correct preparation</u> of the support.



#### 2. Mark.

Measure and mark exactly the place where the membrane will be attached with the help of a chalk line. Keep in mind that the **ECODRY50/80** membranes overlap each other by at least 10 cm.



#### 3. Repositioning of the membrane.

Once the surface to be waterproofed has been marked out, transfer the measurements to the membrane and make any necessary cuts. Cutting the necessary pieces to accommodate pillars, duct passages, etc.





#### 4. Laying the membrane.

The choice of adhesive used to fix the membrane will depend on the type of substrate and the type of covering that is to be waterproofed.

See expanded information in <u>Appendix 2</u>. <u>Solutions for different types of roofs</u>.

In general, most supports accept a cementitious adhesive of the C2 S1/S2 type. Properly consult with the project manager or the material manufacturer. Apply a thin layer with a  $6\times 6mm$  notched trowel, in small sections to prevent it from drying and always combing in a direction perpendicular to the arrangement of the membrane. Never install the membrane over the semi-set cement adhesive. Keep in mind that due to different sun exposure conditions, the setting time of the cement may be altered, so this should be considered when mixing and deciding its consistency.

It is important to follow the preparation instructions and application that informs the cement manufacturer, taking into account that the surface should be slightly moistened before applying the adhesive. Never form puddles of water; if there are any, they should be allowed to dry properly.

**NOTE:** In the case of rehabilitation, apply the cement adhesive directly onto the old pavement, taking the precautions mentioned earlier in Point 1 and attachment 1, and considering, if necessary, the application of a primer layer to facilitate the adhesion of the cement adhesive to the old substrate.



In the encounters with vertical surfaces, raise the membrane a minimum of 20cm above the level of roof protection.

See attachment 3. Solutions for singular points.

6. Ensure that the membrane is well adhered and proceed to completely remove any air that may have been generated, pressing with the help of a plastic trowel. Apply moderate pressure to avoid affecting the surface polyester of the membrane and make movements from the center towards the sides. It is important to wait a reasonable amount of time before arranging the joints between membranes, to allow the cement adhesive to dry completely and for any water vapor that may remain from the adhesive's own setting to dissipate.

**ATTENTION:** once installed, it should be checked that the membrane is fully adhered to the support across its entire surface.







#### 7. Sealing of the joints.

Perform sealing on joints with **SEALPLUS** adhesive. Due to the fluidity of the adhesive, it is advisable to use a smooth spatula to ensure good coverage over the entire surface of the joint.

For the execution of details in corners and edges, we recommend the use of pre-molded pieces for this purpose. As well as in encounters with vertical elements and in evacuation elements. See attachment 3. Solutions for singular points.

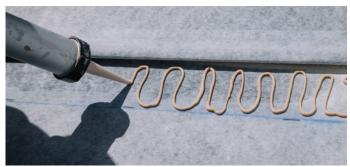
<u>Leak test.</u> Once the complete installation of the waterproofing system is finished, and having waited a reasonable amount of time for the proper drying of the **SEALPLUS** joint sealant, a watertightness test should be conducted. (Consult document on leak tests on the website).

10. Placement of the finish. Lay the pavement with the appropriate

#### 8. Double sealing.

To achieve a proper bond between membranes, a double seal will be performed.

Applying a thin layer of **SEALPLUS** adhesive by applying a first coat between membranes in the 10 cm overlap area. After finishing the joint on top with **SEALPLUS** adhesive.





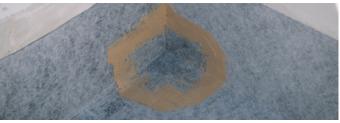












cement adhesive according to the finish to be used. For ceramic finishes, we recommend a cementitious adhesive of type C2 S1/S2, and when using large format pieces, the cementitious adhesive should be fast-setting to allow for proper drying of the mortar and strength of the piece. In accordance with the standard UNE EN 12004–1:2017: Adhesives for ceramic tiles. Part 1: Requirements, assessment and verification of performance consistency, classification and marking.

Follow the manufacturer's specifications carefully.

Spread the cement adhesive over the substrate in thin layers with a notched trowel, and on the back of the piece if double gluing is necessary for large ceramic pieces.

Place the pieces on the fresh product, move until full contact is achieved, and provide small taps with the help of a rubber mallet or a vibrator for ceramic tiles. In this way, we ensure the complete elimination of air.

Check the level at all times to not lose the necessary slope.

Ensure the proper construction of expansion joints and connection joints between pieces. <u>See Appendix 4. Expansion and contraction joints.</u>









#### **ATTACHMENT 1.**

#### Correct preparation of the support.

According to the current Regulations, "CEC" Catalog of Construction Elements (Recognized Documents of the "CTE") and Standard UNE 104416:2009: "Synthetic materials. Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes, the resistant support of the roof must be adequately conditioned to receive the waterproofing.

Check the stability and general conditions of the supports. The surface must be uniform and smooth, with a roughness less than or equal to 2 mm, and it must not have irregularities or protrusions that could pose a risk of puncturing or breaking.

A preventive check of the residual moisture of the substrate must be carried out using a hygrometer. The maximum allowable value of residual moisture must be equal to or less than 3%. The support must have a minimum compression resistance of 25 MPa(N/mm²) and should not present any type of cracks.

It must be dry, clean, intact, stable, flat, and without roughness. Imperfections must be corrected beforehand using suitable materials for each task.

Any trace of oil, grease, efflorescence, loose old pavement, old paint, or lime layers must be properly removed before applying the membrane. Immediately after cleaning, the supports should be dusted using an appropriate industrial vacuum cleaner.

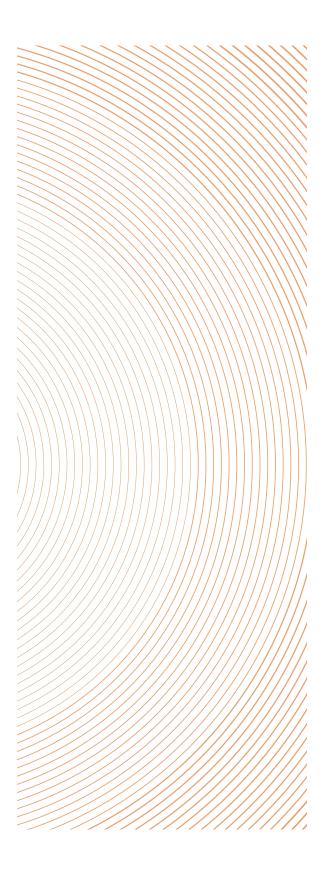
Under rehabilitation. Existing pavements.

In the case of ceramic finishes. Evaluate the adhesion state of the old pavement to the substrate by means of small taps. Every loose and/ or partially chipped tile must be removed and the gaps restored using specific cement mortars. If the joints of the pieces of the old finish are missing or found to be in a state of degradation, it is advisable to redo them by reapplying the joint filler between pieces.

In the case of old waterproofing with bituminous membranes. Check the state of deterioration of the old membrane and remove any deteriorated, sclerosed, or clearly detached parts.

Check that there are no water stagnations under the old waterproofing. Any trace of water still present on the roof slab must be removed to prevent the possible appearance of condensation on the underside of the roof, once the new waterproofing work is completed.

For the cleaning of old ceramic or stone pavements, it is not advisable to perform pressure washing, as it would add water to the adjacent substrate. Instead, it is advisable to polish and remove any encrustation, dirt, chemical residues, or construction materials. In this way, we make the surface slightly rough and absorbent, to improve and increase the adhesion of the membrane. Immediately after polishing, remove the dust from the substrates using an appropriate industrial vacuum cleaner. In the case of some substrates, it may be advisable to use a primer layer to improve the grip of the cement adhesive. Before proceeding with the application of the membrane, it is necessary to verify the degree of moisture present in the existing substrate using a Hygrometer.



#### **ATTACHMENT 2.**

#### Solutions for different types of roofing.

In accordance with current regulations and according to the characteristics of the work, the **ECODRY50/80** waterproofing system allows for waterproofing on different types of roofs, whether they are walkable or not.

For all cases, the waterproofing system with ECODRY50/80 membranes is designed for installation under protection. In accordance with the CTE, the finishing material used:

- It must be weather-resistant according to the expected environmental conditions and must have sufficient weight to counteract wind suction.
- It must have a shape and dimensions compatible with the necessary slope.

In no case should the pieces be placed without a joint, and the minimum joint thickness must be respected, according to the manufacturer's instructions, for each type of finish.

• The slope of the roof will be between 1 and 5%.

#### WALKABLE FLAT PEDESTRIAN ROOFS.

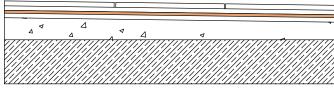
#### **Fixed flooring. Without inner tube**

Walkable flat roof for pedestrians, with fixed paving of ceramic finishes adhered with mortars, natural stone set with mortar, concrete, filtering mortar, asphalt conglomerate, or other materials with similar characteristics. Both in conventional roofing and inverted roofing.

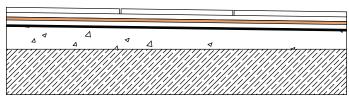
The waterproofing system with ECODRY50/80 membranes, along with its range of accessories, constitutes a highly compatible system, both for new construction and for renovation.

• Flat roofs WITH thermal insulation constructed in a conventional or inverted manner. The waterproofing system with ECODRY50/80 membranes is fully chemically compatible with thermal insulations, allowing for its installation with fewer auxiliary layers.

• Flat roofs WITHOUT thermal insulation. The ECODRY50/80 waterproofing membranes will serve both as a waterproofing layer and as a vapor barrier in case there is a risk of condensation on the roof.

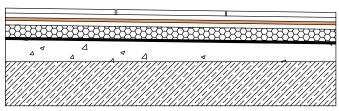


- Pavement.
- Cementitious adhesive.
- 3. ECODRY50/80 membrane
- 4. Cementitious adhesive.
- 5. Slope formation.
- 6. Sturdy support.
- · Renovation of old waterproofing. See attachment 1. Correct preparation of the support.



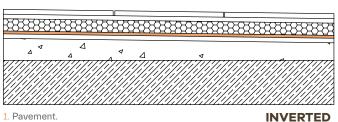
- Pavement.
- Cementitious adhesive.
- 3. ECODRY50/80 membrane
- 4. Cementitious adhesive
- 5. Old waterproofing. 6. Formation of slopes
- 7. Durable support.
- Rehabilitation of roofs without any type of waterproofing system. The ECODRY50/80 membranes allow for their installation directly on the old pavement.

See attachment 1. Correct preparation of the support.

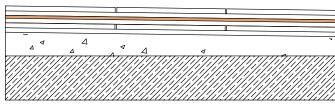


Pavement.

- CONVENTIONAL
- ementitious adhesive. ECODRY50/80 membrane
- 4. Compression layer. Cement adhesive.
- 5. Thermal insulator.
- 6. Vapor barrier.
- Formation of slopes.
- 8. Durable support.

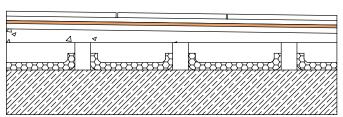


- Compression layer. Cement adhesive.
- Thermal insulator.
- ECODRY50/80 membrane
- Cementitious adhesive.
- 6. Slope formation.
- 7. Durable support.



- Pavement.
- 2. Cementitious adhesive.
- 3. ECODRY50/80 membrane Cementitious adhesive.
- 5. Old cover.

#### Fixed flooring. With inner tube



- Pavement.
- Cementitious adhesive.
- 3. ECODRY50/80 membrane
- 4. Cementitious adhesive.
- 5. Slope formation
- 6. Air chamber.
- 7. Thermal insulator.
- 8. Sturdy support.

#### Floating floors.

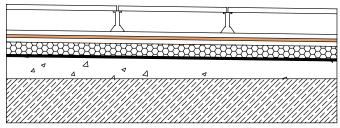
The floating floor can consist of pieces supported on supports, loose tiles with incorporated thermal insulation, or other materials with similar characteristics. Conventional or Inverted.

In the case of covers with an air chamber, the supports used must be resistant to the bending stresses to which they will be subjected, and they must be designed and manufactured for this purpose.

The waterproofing system with ECODRY50/80 membranes perfectly adapts to this type of roofing solutions and allows its installation directly on the concrete used for slope formation.

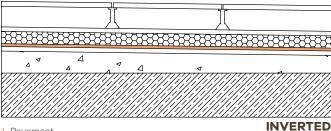
On the ECODRY50/80 membrane, a protective layer must be placed, which will also serve as support to distribute the loads. It must comply with the necessary slope to serve as a runoff plane and meet the basic requirements in accordance with the UNE 104416 standard. The pieces supported on stands must be arranged horizontally and must be placed with an open joint.

#### Floating floor with air chamber

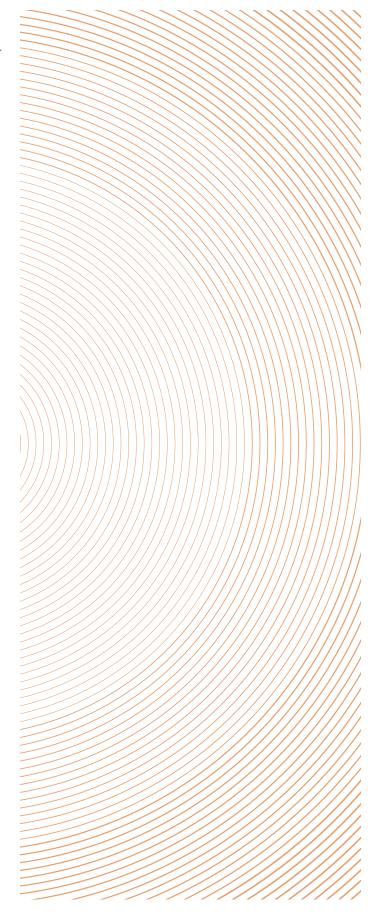


#### CONVENTIONAL

- 1. Pavement.
- 2. Air chamber. Adjustable supports.
- 4. Runoff layer.
- 5. ECODRY**50/80** membrane.
- 6. Compression layer. Cementitious adhesive.
- Thermal insulator.
- 8. Vapor barrier.
- 9. Formation of slopes.
- 10. Durable support.



- 1. Pavement.
- 2. Air chamber.
- 3. Adjustable supports.
- 4. Runoff layer.
- 5. Thermal insulator.
- 6. ECODRY50/80 membrane.
- Cementitious adhesive.
- 8. Formation of slopes.
- 9. Durable support.



#### **NON-WALKABLE ROOFS**

Non-walkable roofs are defined as those that do not allow for the circulation of people, but are only accessible for the purposes of maintenance and conservation of the roof itself, the drainage elements. or installations on it. Accessible only to personnel specialized for such functions.

Corridors and work areas must be provided with a protective layer of a suitable material for walkable surfaces in order to facilitate transit for maintenance operations and prevent the deterioration of the system.

#### **Protected with gravel**

The waterproofing system with ECODRY50/80 membranes is perfectly suitable for installation on non-trafficable flat roofs over a firm support and protected with gravel. Keep in mind that an auxiliary rot-proof puncture-resistant layer must always be installed before placing the gravel.

In accordance with the current regulations, the following conditions must be met:

- The gravel can be loose or bound with mortar.
- Loose gravel can only be used on roofs with a slope of less than 5%. When the roof does not have the appropriate slope, it must be constructed with a sloped concrete layer and a leveling layer with 1/6 cement mortar, 2 cm thick.
- The gravel must be clean and free of foreign substances. Its size must be between 16 and 32 mm and it must form a layer with a thickness of at least 5 cm.

#### Landscaped.

Non-walkable flat roofs with gardens, whether protected with artificial grass or natural vegetation. They are coverings that facilitate the drainage of rainwater by reducing the amount of runoff and providing great benefits to the environment and the building's users. Regarding energy efficiency, green roofs act as an excellent thermal insulator, which significantly reduces the amount of energy needed to climate control indoor spaces.

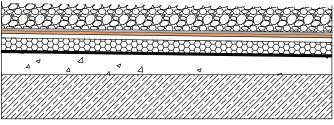
#### Natural grass (only ECODRY80 membrane)

The waterproofing system with **ECODRY80** membranes is perfectly compatible with this type of protection as it is certified as a material resistant to root penetration according to the UNE-CEN/TS 14416 EX

In accordance with the current regulations and "CTE." roofs protected with natural vegetation must meet the following conditions:

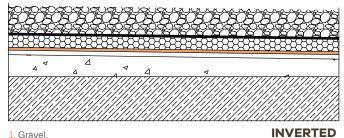
The slope of the roof is between 1 and 5%.

Immediately below the natural vegetation protection, a special nodular draining membrane for natural grass will be arranged, which can be directly supported on the waterproofing system formed by the **ECODRY80** membranes.

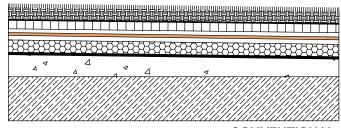


CONVENTIONAL

- Gravel
- 2. Protection geotextile.
- 3. ECODRY50/80 membrane.
- 4. Compression layer. Cement adhesive
- . Thermal insulator.
- Vapor barrier.
- Formation of slopes.
- 8. Sturdy support.

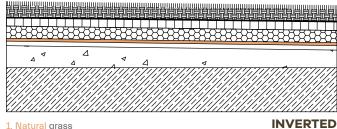


- 1. Gravel
- Protection geotextile.
- Thermal insulator.
- FCODRY50/80 membrane
- Cementitious adhesive.
- Formation of slopes.
- 7. Durable support.



CONVENTIONAL

- Natural grass.
- 2. Filtering layer.
- 3. Drainage laver, Nodular membrane.
- 4. Cementitious adhesive.
- 5. ECODRY80 membrane.
- 6. Compression layer. Cement adhesive.
- Thermal insulator.
- 8. Vapor barrier.
- 9. Formation of slopes.
- 10. Durable support.

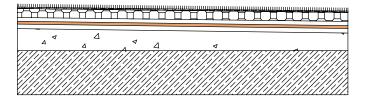


- 1. Natural grass
- 2. Filtering layer
- 3. Drainage layer. Nodular membrane
- 4. Thermal insulator
- 5. ECODRY80 membrane.
- 6. Cementitious adhesive.
- 7. Formation of slopes.
- 8. Durable support

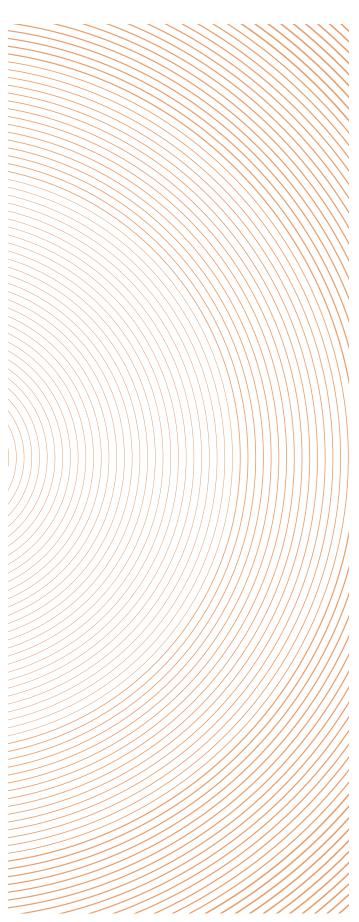
#### **Artificial grass**

In the case of green roofs with artificial grass protection, directly on the waterproofing system with ECODRY50/80 membranes, a drainage layer for artificial grass will be provided.

The artificial grass protection layer will be adhered with **SEALPLUS** adhesive, with the Joint joining bands specially designed for this purpose placed between its seams beforehand.



- Artificial grass.
   Drainage layer.
- 3. Cementitious adhesive.
- 4. ECODRY**50/80** membrane.5. Cementitious adhesive.
- 6. Formation of slopes.
- 7. Durable support.



#### **ATTACHMENT 3.**

#### Solutions for singular points.

On the decks, there are certain areas and specific points for which special requirements are established. In accordance with the basic requirements of the "CTE" and according to Standard UNE 104416:2009. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes

Among these points are included:

#### **ENCOUNTER WITH A VERTICAL WALL**

#### **Preparation of the perimeter**

The perimeter of the junction between the roof and vertical walls must be prepared in advance, so that proper waterproofing can be executed up to the height indicated according to the basic requirements of the CTE.

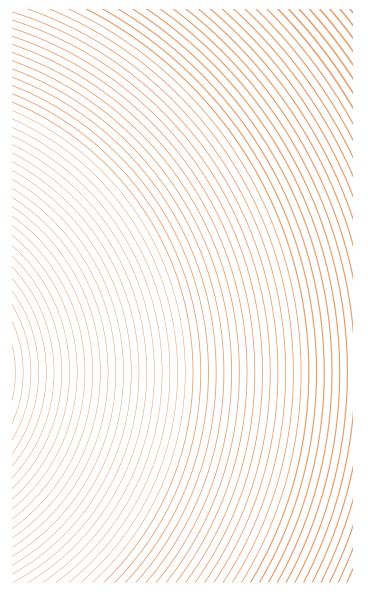
In order to prevent rainwater or water sliding down the wall from seeping through the top edge of the waterproofing, this edge must be finished in one of the following ways:

\*By means of a setback whose depth with respect to the external surface of the vertical wall must be greater than 5 cm and whose height above the roof protection must be greater than 20 cm.

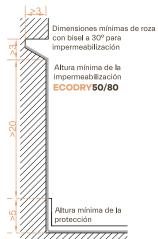
Make a groove of at least 3×3 cm, capable of receiving the waterproofing, beveled to form approximately a 30° angle with the horizontal.

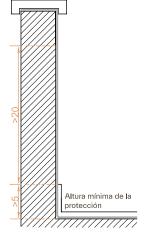
Extend the membrane's rise to the gable or end of the wall, creating a horizontal waterproofing and cover with a wall cap or coping stones. It can be a good solution when we have a low vertical wall.

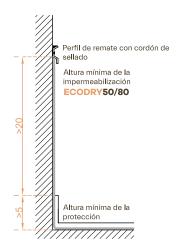
Through a stainless metal profile, which serves as a base for a sealing cord between the profile and the wall. If there is no tab at the bottom, the edge should be rounded to prevent the membrane from being damaged. It can be a good solution when we have a vertical concrete wall or prefabricated panels where it is not convenient to make setbacks.









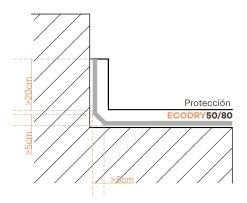


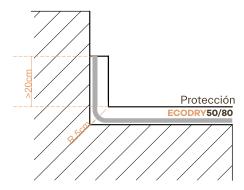
#### Waterproofing

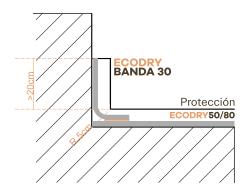
In accordance with the current regulations, the waterproofing system must meet certain basic requirements:

\*It must extend at least 20 cm above the cover protection.

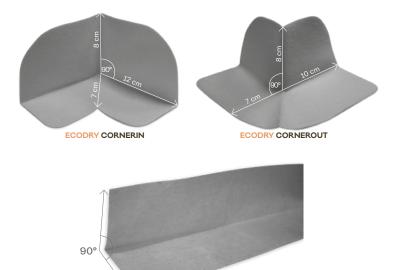
The junction between the cover and the parameter must be rounded with a curvature radius of approximately 5 cm or chamfered with an analogous measure according to the system used.





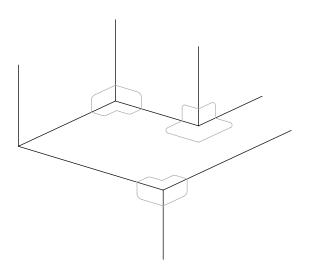


The waterproofing system with **ECODRY50/80 membranes** and its accessories are ideal for the treatment of these joints, ensuring complete watertightness. The couplings and accessories of the **ECODRY** line are specially designed for this purpose.



## Corners and nooks

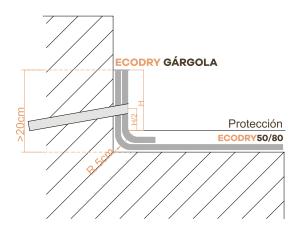
On a deck, the corners and edges are usually more complicated points to resolve and waterproof correctly. According to the basic requirements of the CTE DB HS, prefabricated protection elements or those made in situ must be arranged in corners and edges up to a minimum distance of 10 cm from the vertex formed by the three planes.



#### **Meeting with overflow**

In compliance with the basic requirements of the "CTE" and the UNE 104416:2009 Standard. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes; there are flat roofs that, depending on their characteristics and dimensions, must incorporate overflow outlets.

The **ECODRY50/80** waterproofing system meets these requirements by incorporating a prefabricated piece that perfectly resolves the junction, ensuring its watertightness.



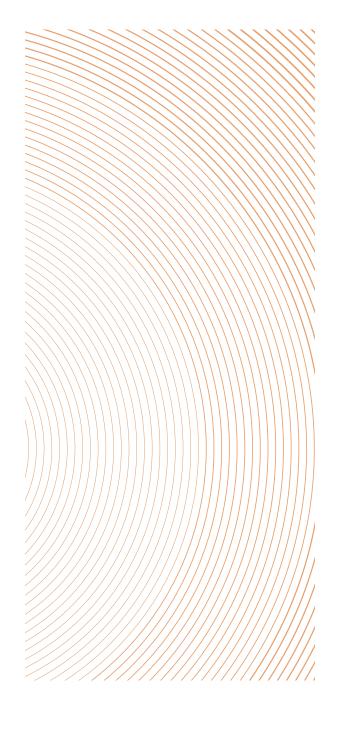
#### Encounter with a sinkhole or channel.

According to the requirements of the CTE and current regulations, the drains or channels used as water evacuation points on roofs must be made of materials compatible with the type of waterproofing used and meet a series of requirements.

Regarding the design of the cover and implementation:

\*The drains must be 1 meter away from the corners and 50 cm from the walls. On low-slope roofs, a recess should be made in the support around the drains. The recess must have dimensions suitable for the reinforcement pieces and an approximate depth of about 6 to 8 mm.

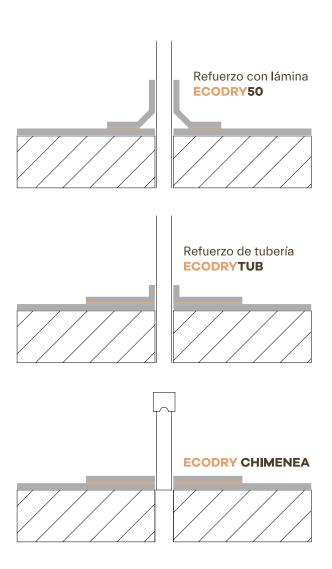
The **ECODRY SUMI** drains with **ECODRY** membrane thermosealed around their entire perimeter are specially designed based on these requirements and facilitating their installation. In conjunction with the **ECODRY50/80** membranes, they guarantee a completely watertight system.

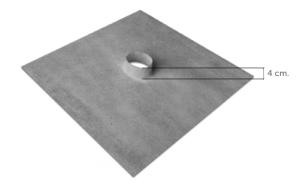


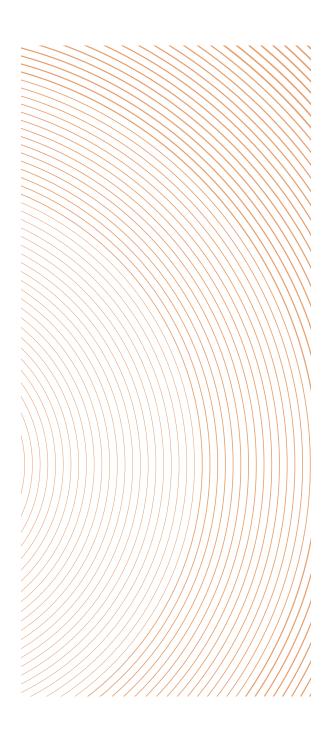


#### **Passing elements**

Many times we can find on roofs the passage of elements that can be pipes, vents, etc. The **ECODRY50/80** waterproofing system incorporates the **ECODRY TUB**, a reinforcement designed for each particular case as it comes in different sizes and diameters. Its installation is carried out by overlapping the **ECODRY50/80** waterproofing membranes using **SEALPLUS** sealing adhesive at all joints and finishes, as indicated.









#### **Anchoring of elements**

When an element or machinery is to be anchored on the deck, they must be supported on a vertical wall above the waterproofing finish or on a base supported on the horizontal part of the deck.

#### **Openings**

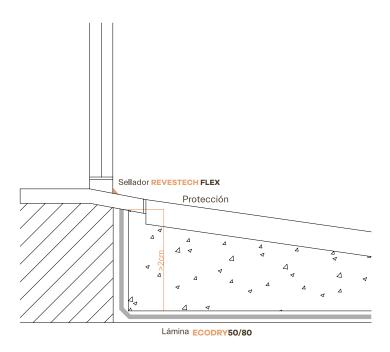
The thresholds of doors, the sills of windows or duct passages must meet a series of requirements according to the current UNE 104416:2009 Standard. "Synthetic materials." Waterproofing systems for roofs made with waterproof membranes formed with flexible synthetic membranes and basic requirements of the CTE.

They must be carried out:

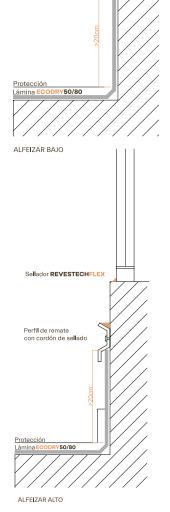
Providing a height difference of at least 20 cm above the roof protection, protected with a waterproofing material that covers it and rises along the sides of the opening to a height of at least 15 cm above said height difference.

If, due to the use of the cover, it is not possible to place a step in front:

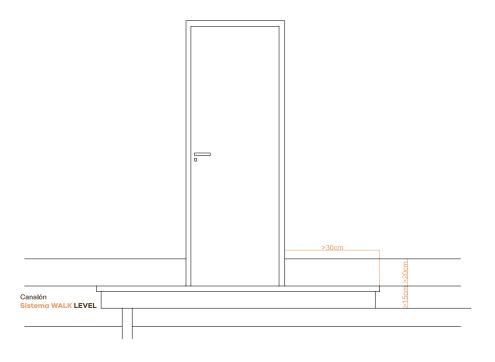
A setback of at least 1 meter from the vertical face must be provided, serving as a covered walkway. The ground up to the access must have a 10% slope outward and must be treated like the roof, except in cases of access to balconies that freely drain water without parapets, where the minimum slope is 1%.



A drain in the form of a gutter integrated into the eaves, with a depth greater than 15 cm and a width greater than 30 cm, must be placed in front of the door, extending a minimum of 30 cm on both sides of the jambs



Sellador REVESTECHFLEX



#### **ATTACHMENT 4.**

#### Expansion and contraction joints.

Expansion joints must be provided on every flat roof. These must affect the different layers of the covering, starting from the element that serves as a resistant support.

In general terms, according to the basic requirements of the CTE and the current regulations (UNE 138002:2023 - "General rules for the execution of ceramic tile cladding by adhesion").

The distance between contiguous joints must be a maximum of 15 m, they must have blunt edges, with an angle of approximately  $45^{\circ}$ , and the width of the joint must be greater than 3 cm.

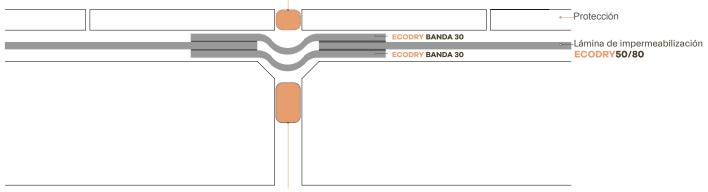
When the protective layer is made of fixed flooring, the joints must be arranged to coincide with the structural expansion joints, on the exterior and interior perimeter of the roof and at the intersections with vertical walls or penetrating elements.

They must also be placed at a maximum of 5 m apart on non-ventilated roofs and 7.5 m on ventilated roofs. So that the panels between joints maintain the 1:1.5 ratio.

The constructive treatment of the joint must be carried out by placing a sealant over a filler inserted inside it. The sealing must be flush with the surface of the roof's finish layer.







Masilla elástica o Perfil de juntas

# INSTALLATION GUIDE **ECODRY50/80**

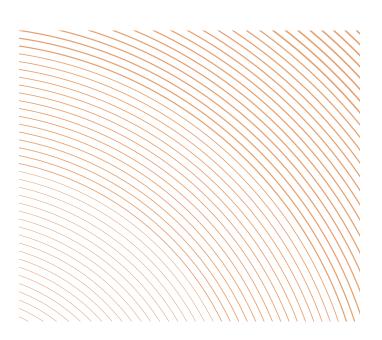
#### Joints between finishing pieces

The pieces should not be placed edge to edge. Expansion joints are the physical separation between adjacent tiles, necessary to compensate for the dimensional deviations of the pieces themselves and to fulfill functions of stress absorption and vapor diffusion from the lower layers.

These joints between pieces must be made with a product intended for them and, for their installation, follow the manufacturer's instructions.

Wait a reasonable amount of time before installing the joint, considering the drying time of the cement adhesive to prevent efflorescence and to allow the water vapor from the cement drying to escape before installing the joint.

In rehabilitations, the correct construction of expansion and contraction joints and their good condition must be verified. If necessary, it will be corrected or replaced before installing the waterproofing system. In the same way, the good condition of the joints between finishing pieces must be checked if they will serve as support for the new waterproofing.



| Maintenance and conservation  | Periodicity |
|---|-------------|
| Verification of the state of conservation of singular points              | 3 years     |
| Verification of the status of conservation of the protection or roof      | 3 years     |
| Verification of cleanliness status of the drainage and evacuation network | 1 year      |
| Cleaning of the inspection chambers                                       | 1 year      |
| Verification of the possible existence leaks through fissures and cracks  | 1 year      |

#### WARNING: DO NOT LEAVE THE MEMBRANES EXPOSED.

If the installation of the roof finish is delayed, the membrane must always be protected. already installed. In this way, the good condition of the upper polyester is ensured, which then It will serve for the adhesion of the cementitious adhesive.

Technical Department Manager