INSTALLATION INSTRUCTIONS

MASTER COPPO SHINGLE

Flexible bituminous shingle, with a glass fibre carrier and coloured ceramic-coated basalt grains as finishing – Fig. 1.
The shingle is made of two full-height layers glued together, the decorative upper part and the strip. The shingle is characterised by self-adhesive lateral strips and a self-adhesive back along the lower part of the tabs.

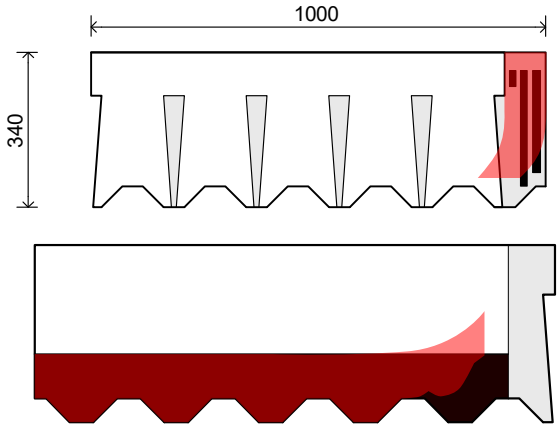


Fig. 1 *- Master Coppo shingle dimensions*

1. GENERAL RECOMMANDATIONS

- Stock pallets in a dry, covered and ventilated area.
- Avoid exposing the pallets to the direct sunlight or bad weather for long periods. Do not leave the pallets exposed to temperatures that are too high (>40°C) or too low (<5°C).
- Do not stack pallets on top of each other to avoid sticking of shingles inside the bundle.
- Use only shingles of the same production batch for one roof. Small colour differences between shingles are not to be considered a fault.
- Shingles must be installed on a flat, rigid, continuous, and coplanar surface which will remain so over the time.
- Shingles must be applied on pitched roofs with a slope between 5° and 85°.
- The shingles installation method depends on the slope and length of the pitches, as well as on the substrate type - see paragraph 2.
- For nail installation of the shingles, use hot dipped galvanized nails with wide head (≥9,5mm), improved adherence and minimum 30mm length (40mm for the ridge elements), which has anyway to be evaluated depending on the substrate to ensure fastening.
- For torch installation, do not proceed on windy or particularly moisty days. Do not step on the membrane that has just been torched, to avoid footprint phenomena.
- Shingles must have a minimum temperature of 5° C to be applied.
- Under low outside temperatures, wind or wet conditions, warm the self-adhesive points of the shingles to improve adhesion and if it is necessary, apply the bitumen mastic Bitustick under the tabs.
- At the end of the day, the roofer must always check the good adhesion of the tabs and of the shingles.

2. INSTALLATION METHOD

The installation method of bituminous shingles depends on several factors: type of substrate, length and slope of pitch and type of membrane used. In particular:

- Installation surfaces made with wood panels (plywood or OSB) and similar are defined as nailable substrates.
- Installation surfaces made of concrete, fibrocement and similar are defined as non-nailable substrates.

For standard pitches with a maximum length of 7m, the following applies (summarised in Tab. 1):

- In the case of low roofing slopes (between 5° and 19°) or non-nailable substrate, bituminous shingles must be torch-applied on the Safety R-Evolution T membrane or on the Safety EPP polymer bitumen membrane with APP or APAO compound, which will ensure the waterproofing of the roof.
- In the case of low roofing slopes (between 5° and 19°) and nailable substrate, is available the Safety R-Evolution N membrane, self-adhesive and self-sealing for nail installation.
- For higher slopes (between 19° and 85°) and a nailable substrate, bituminous shingles can be applied with the nail installation technique, but it is mandatory to use the Startbar underlayer membrane. The number of nails per shingle to be used is specified in Tab. 1, based on the slope of the pitches.

TYPE OF SUBSTRATE	PITCH LENGTH	RANGE OF PITCH SLOPE	INSTALLATION METHOD	TYPE OF MEMBRANE
NOT NAILABLE	≤ 7m	5° - 19° (9%-35%)	BY TORCH	Safety R-Evolution T / Safety EPP membrane
NAILABLE	≤ 7m	5° - 19° (9%-35%)	BY TORCH	Safety R-Evolution T / Safety EPP membrane
			BY NAILS (6/shingle)	Safety R-Evolution N membrane
		19° - 60° (35%-173%)	BY NAILS (6/shingle)	Startbar underlayer membrane
		60° - 85° (173%-1100%)	BY NAILS (11/shingle)	Startbar underlayer membrane

Tab. 1 - *Shingle installation method vs pitch slope*

NOTES:

- In case of pitch slopes greater than 19° and non-nailable substrate, it is advisable to contact the technical office for further information.
- For pitches between 7 and 10m in length and a nailable substrate, the minimum pitch slope goes up from 19° to 22°. For these roof lengths and a pitch greater than 22°, it is recommended to use the mixed installation technique. The first few meters should be waterproofed with a bituminous membrane and the shingles should be fixed using a torch-on method. For the remaining 7 metres, it is possible to use an underlay and fix the shingles with nails.

- In case of areas classified as windy or snowy, for constructions with complex geometry (e.g. presence of windows, variations in slope or inclination), situated at altitudes above 1000m or buildings of great height, for pitches longer than 10m, it is advisable to contact the technical office for further information regarding the bituminous shingles fastening and their method of installation.

3. PRELIMINARY OPERATIONS

- Before installing the bituminous shingles, install the gutters or the drips and fix them properly to the substrate through tie-rods – Fig. 2.

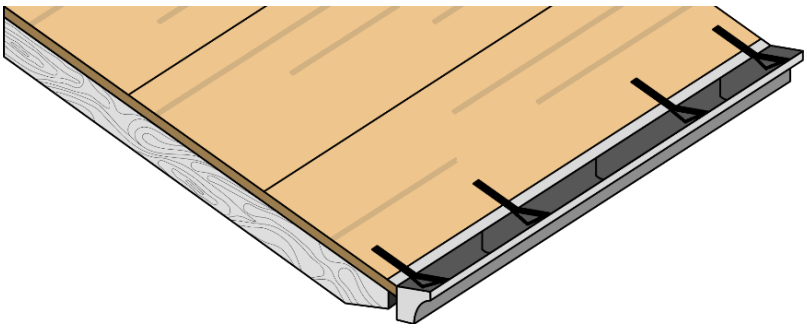


Fig. 2 *- Gutter installation*

- Apply the most appropriate membrane/underlayer according to the shingles installation method (paragraph 2) and ensure an appropriate flap in the gutter / over the drip.

4. TRACING OF THE ROOF

Once the membrane or the underlayer has been installed on the roof, before shingles installation, the pitch must be traced:

- Trace a straight ***x*** (orthogonal to the line of maximum slope) 33 cm from the eaves line, so that the shingle protrudes 1 cm from it;
- Trace a reference line 16 cm from the eaves line and parallel to ***x***, only in the case of torch installation.
- Locate a point A on line ***x*** and mark points B and C equidistant from A (example 150 cm);
- Starting from B and C, by using a string as a compass, identify the meeting point D, as close as possible to the ridge.
- Join A with D and identify the line ***y***;
- Draw a line ***z***, parallel to line ***y*** distant 18,2 cm;
- Draw horizontal lines parallel to ***x***, each one distant 24.5 cm from the previous, until you reach the ridge - see Fig. 3.

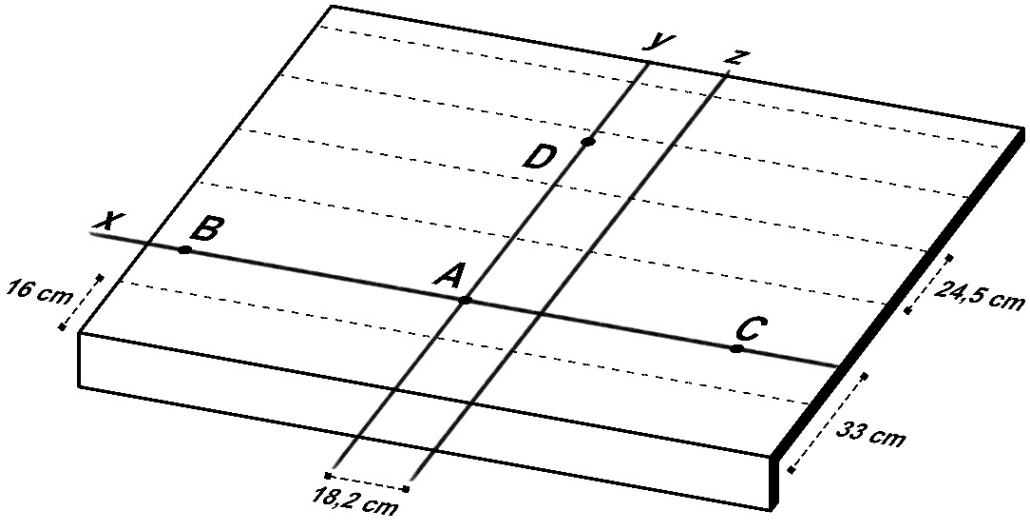


Fig. 3 *- Tracing of the pitch [cm]*

5. NAIL INSTALLATION OF THE SHINGLE

For the nail installation of the shingles, proceed as follows:

- Install the lateral flashing above the membrane/underlayer membrane applied to the roof. Apply a Bitustick bead to the external side of the lateral flashings. Proceed with the shingles installation, as described below, on the lateral flashing leaving a space of about 3cm between the end of the shingles and the edge of the lateral flashing – Fig. 4. Do not use nails less than 25 cm from the flashings.

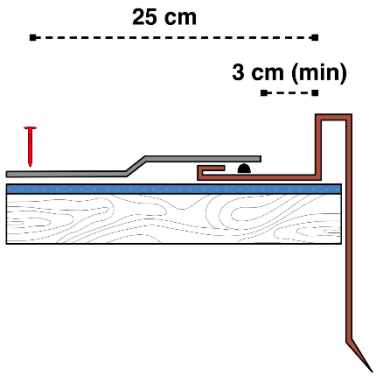


Fig. 4 *– Lateral flashing detail*

- As the starting line, use the Start Line SA: a self-adhesive bituminous membrane strip with slate chips on the surface, 33 cm in height, from which the protective backing film should be removed prior to installation - Fig. 5;

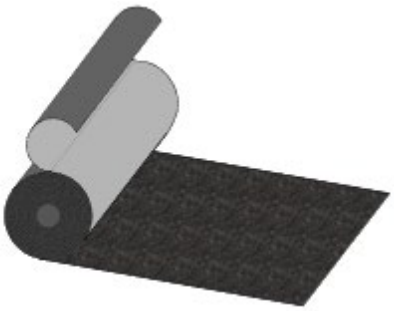


Fig. 5 *– Start Line SA*

- Then, proceed with the installation of the shingles of the starting row: align the lateral edge of the Start Line SA on the vertical ***y*** and the upper edge on the horizontal ***x***. Remove the protective backing film and fix the Start Line SA with nails placed at the upper ends. – Fig. 6. Position and nail the Start Line SA adjacent to each other, until all the pitches are completed

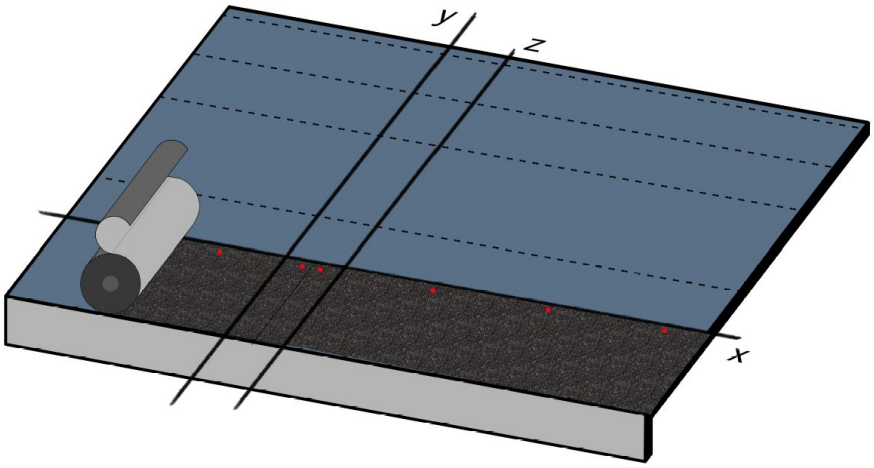


Fig. 6 – *Shingles installation*

- Proceed with the installation of the first row of shingles: align the lateral edge of the first shingle on the vertical ***z*** and the upper edge on the horizontal ***x*** – Fig. 6. Nail the shingle to the substrate by placing 4 nails per shingle, between the two white lines, as per Fig. 11 a). In the event of pitched slopes between 60° and 85°, place 2 additional nails close to the second and third nail, for a total of 6 nails per shingle, as per Fig. 11 b).
- Proceed with the installation of the first shingle: remove the protective film from the side and the back of the shingles. Align the right edge of the first shingle with the vertical ***y*** and the upper edge with the horizontal ***x*** – Fig. 6. Nail the shingle to the substrate by placing 5 nails per shingle, as shown in Fig. 7. The sixth nail (indicated by the green cross in Fig. 7) will be fixed later.

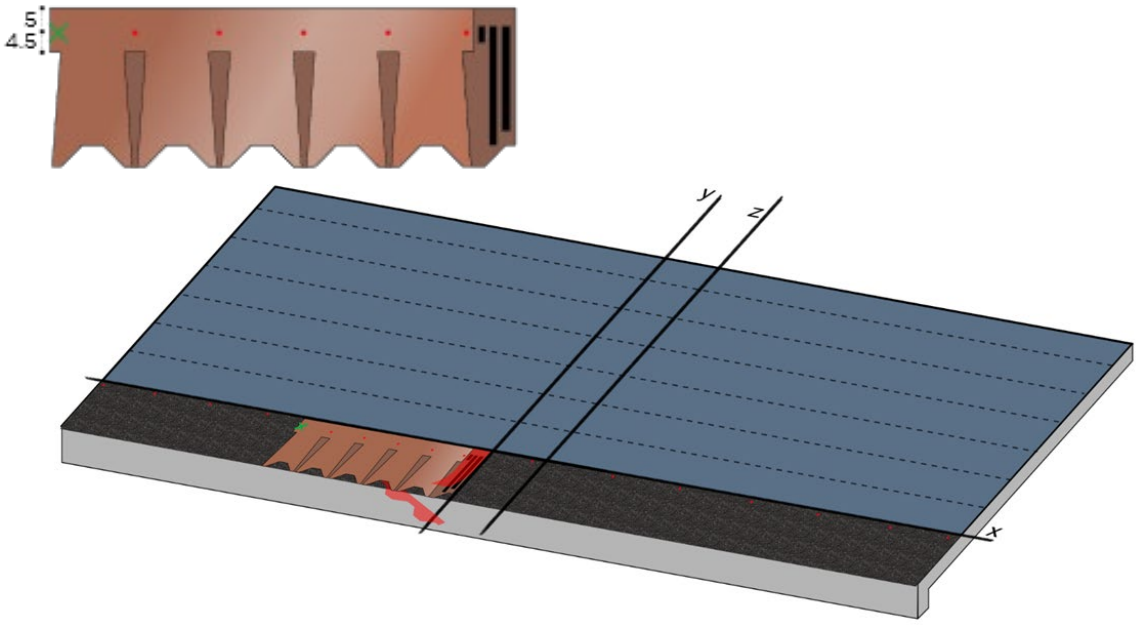
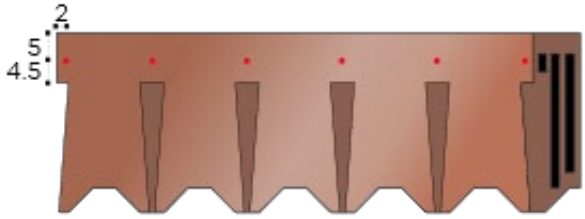


Fig. 7 – *Installation of the first Master Coppo shingle*

- Proceed with the installation of the second shingle towards the right: remove the protective films from the side and back of the shingle and overlap it with the lateral edge of the first shingle already installed. Nail the shingle with 6 nails, as shown in Fig. 8.



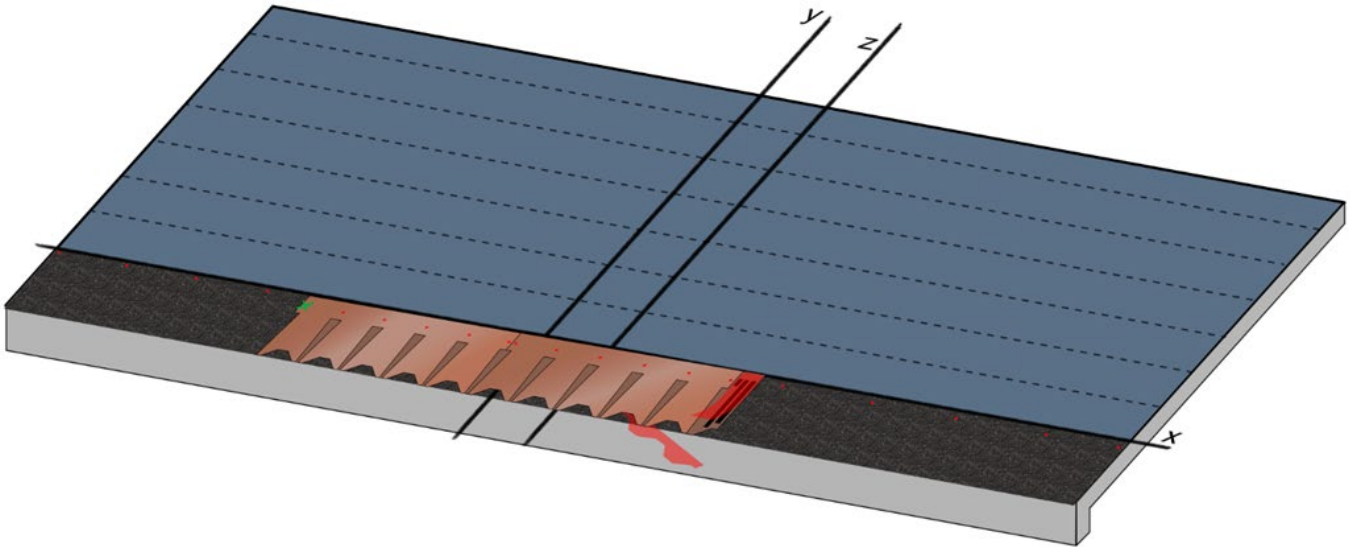


Fig. 8 *– Installation of the second Master Coppo shingle*

- Proceed with the installation of the shingles in the same manner, moving towards the right until the edge of the pitch. Cut the Master Coppo shingle at the right edge of the pitch. Fig. 9.

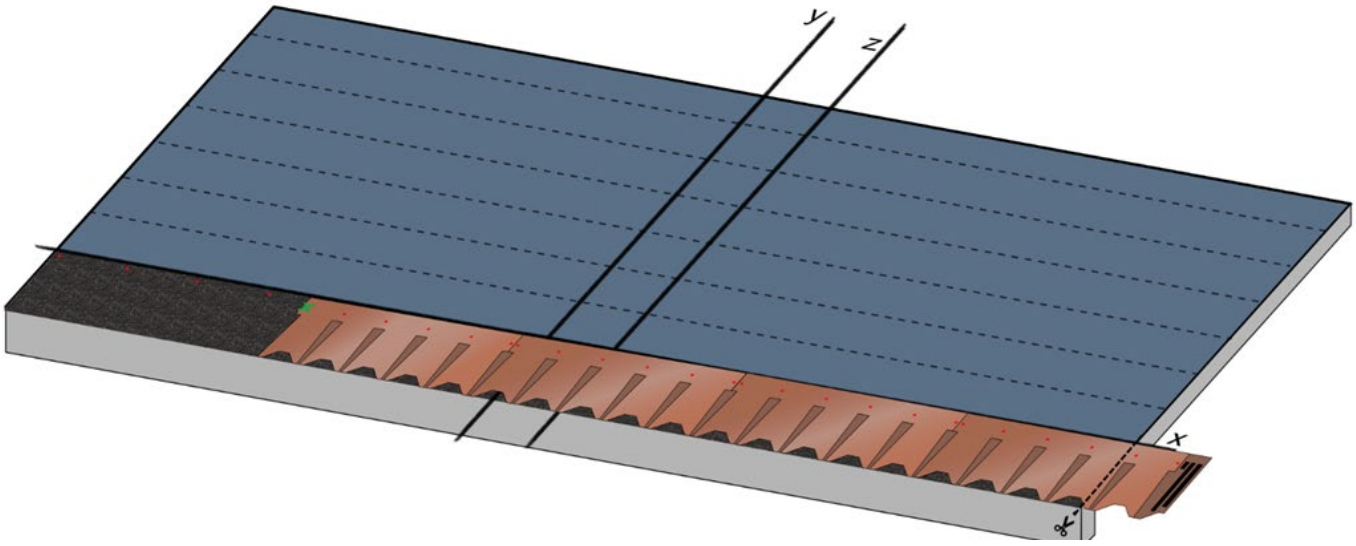


Fig. 9 *– Installation of the first row of Master Coppo shingle*

- Install the remaining shingles of the first row, moving towards the left: remove the protective films, lift the left edge of the first installed shingle, slide the new shingle underneath, and proceed to fix both the new and the old shingle with 6 nails, as shown in Fig. 11 a).

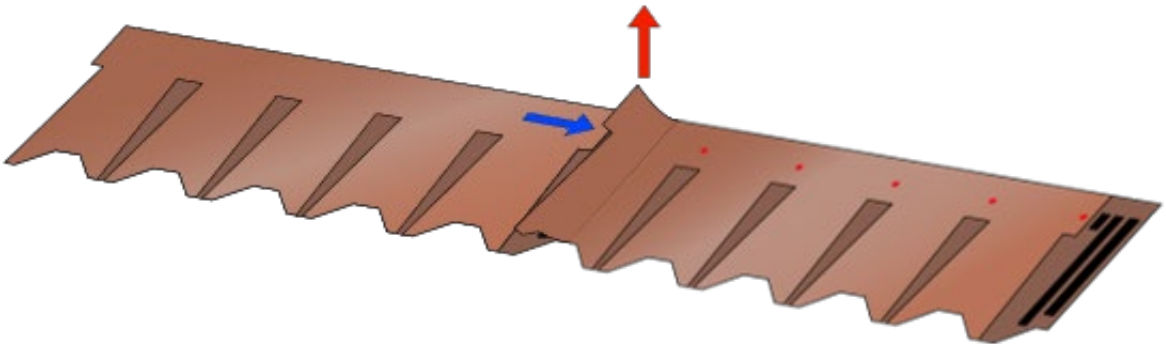


Fig. 10 *– Installation of the second part of the first row of Master Coppo shingle*

- In the case of roof slopes between 60° and 85°, position 5 additional nails, for a total of 11 nails per shingle, as shown in Fig. 11 b).

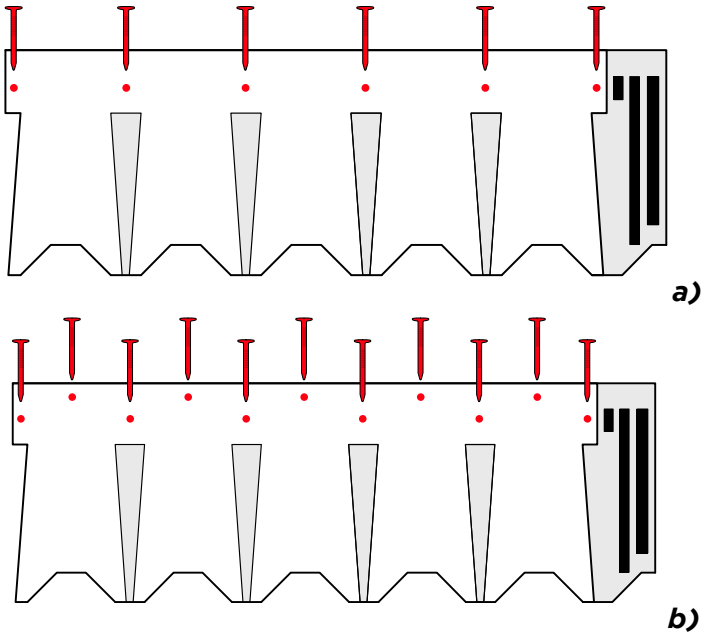


Fig. 11 *– Shingle nailing* ***a)*** *slopes <60°;* ***b)*** *slopes >60°*

- Position and fix all the shingles of the first row, moving towards the left until the edge of the pitch, and cut the last shingle to match the excess.
- Proceed with the installation of the second row of shingles: align the right edge of the first shingle of the second row with the vertical line ***z***, and align the upper edge of the shingle with the horizontal line, 24.5 cm away from ***x*** Fig. 12. As before, fix the shingle with 5 nails. Proceed with the installation of the shingles towards the right, until the edge of the pitch, and cut off the excess part; then proceed with the installation of the shingles towards the left, ensuring to fix the first shingle with an additional nail once it is inserted under the new shingle. Fig. 10.

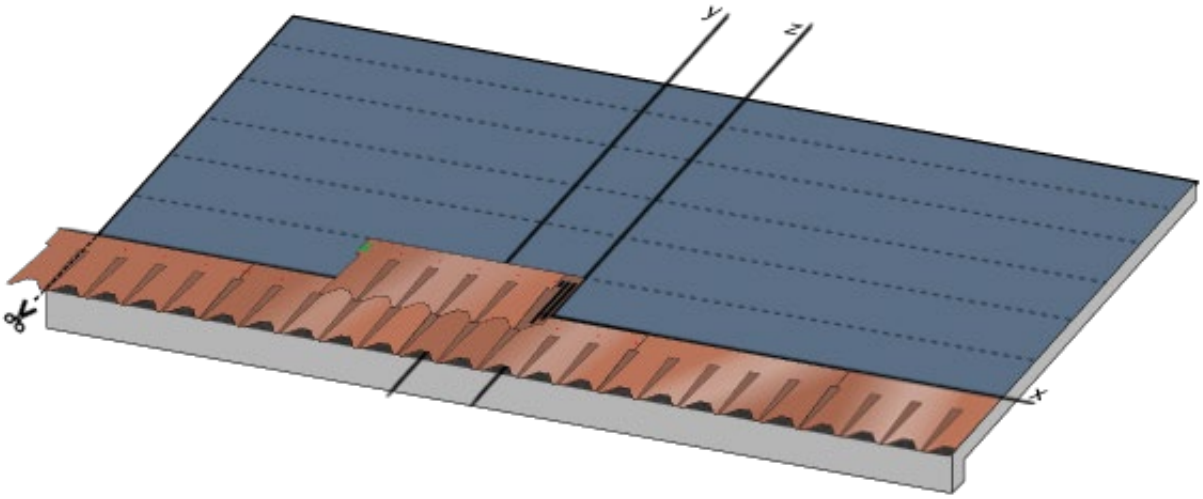


Fig. 12 *– Installation of the second row of Master Coppo shingle*

- Repeat the installation procedure of the shingles row by row, until the pitch is fully covered up to the ridge.
- If the top part of the Master Coppo shingle extends beyond the ridge line, cut the excess part of the shingle along the ridge line. - Fig. 13.

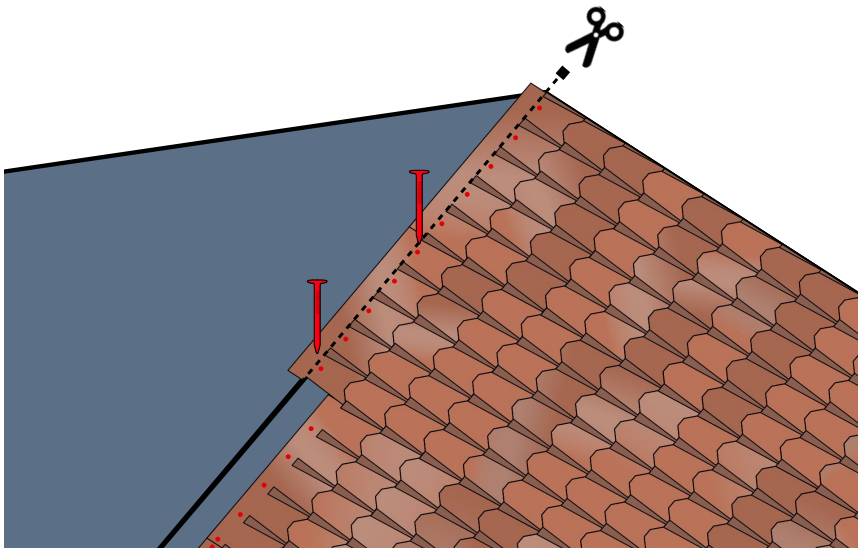


Fig. 13 – *Shingles installation at the ridge*

- Repeat the same steps for the other pitch.
- For the execution of the ridge, take the Colmo Coppo box and remove the Top Roll Colmo SA and the ridge components, which are already cut and shaped, contained within it - Fig. 14.

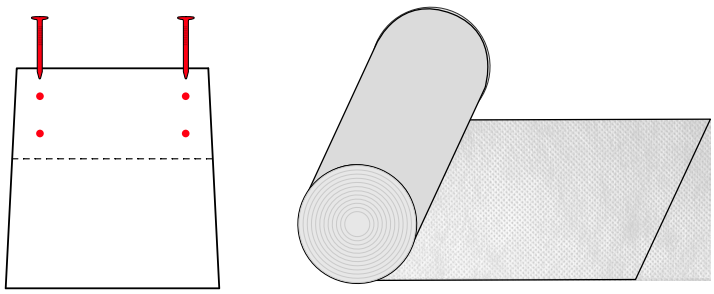


Fig. 14 *– Colmo Coppo box contents*

- Place the Top Roll SA along the centre of the ridge line, removing the protective film from the underside of the roll that covers the butyl tape. This will waterproof the ridge itself where the Master Coppo shingles are cut. Remove the protective film from the back of the ridge components. Fix the ridge components onto the Top Roll Colmo SA with 4 nails, each at least 40mm in length, two nails for each side of the pitch. - Fig. 14.
- Leave an exposed part of 20 cm between one ridge component and the next - Fig. 15.

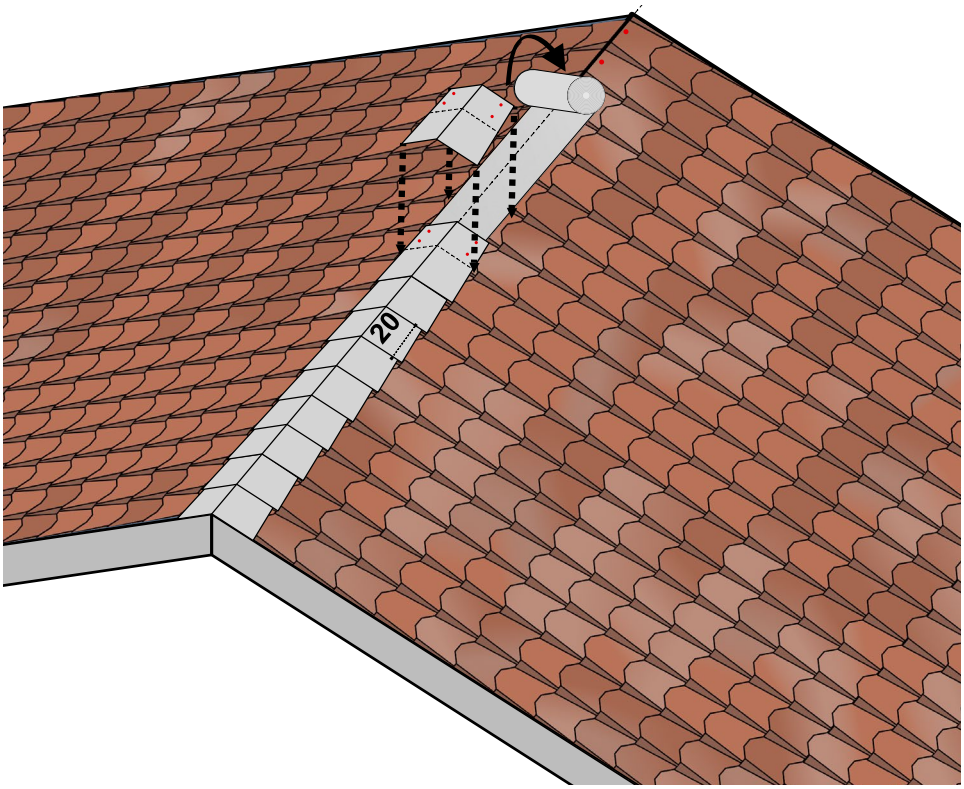


Fig. 15 – *Top Roll and ridge elements installation*

- Follow the same instructions also for the shingle installation at the hips.
- As for the valleys, the first option is to create them with a double layer of bituminous membrane. In this case, lay a strip of bituminous membrane (such as Safety EPP) with a thickness of at least 3mm on the valley, and on top, a bituminous membrane with a granulated surface (such as Safety EAP), with a thickness of at least 4mm. The Safet EPP should have a width of approximately 100cm to ensure the waterproofing of the valley, the membrane with granulated surface can have lower width (but at least 60cm). Next, install the Start Line SA and the shingles of the first pitch up to the valley line, cutting them 3 cm and parallel to the valley line. Fix the shingles and Start Line SA with nails at least 30mm long, placed approximately 40 cm from the valley line, and with Bitustick, applied in two parallel rows, at intervals of no more than 40 cm from the valley line – Fig. 16. It is also advisable to cut the upper edge of the shingle across the valley line, to direct the descending water along the valley axis – Fig. 16.
- Repeat the same procedure for the second pitch. In the end, a channel should be created between the shingles along the valley line, where water will preferentially flow. - Fig. 16

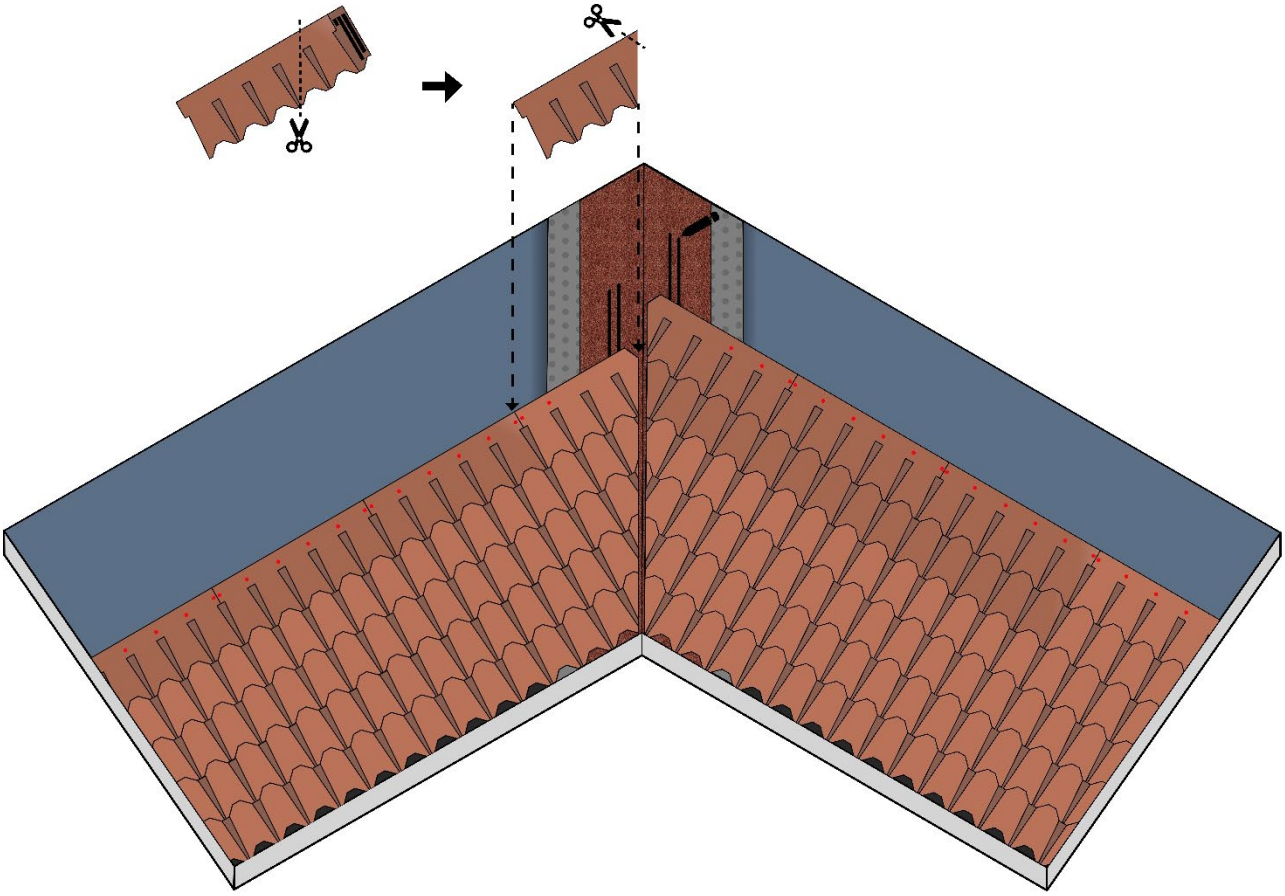


Fig. 16 *– Installation of Master Coppo on the valley with the granulated membrane*

- The second option for the valleys is similar but involves using a metal valley instead of the second layer of granulated bituminous membrane, with a profile like Fig. 17. In this case as well, the Master Coppo shingles will be cut approximately 3 cm from the valley line and nailed down, up to 40 cm from the valley line, with Bitustick applied over the metal valley. It is always advisable to cut the upper edge of the shingle across the valley line, to direct the descending water along the valley axis.

Fig. 17 *– Metal valley flashing profile*

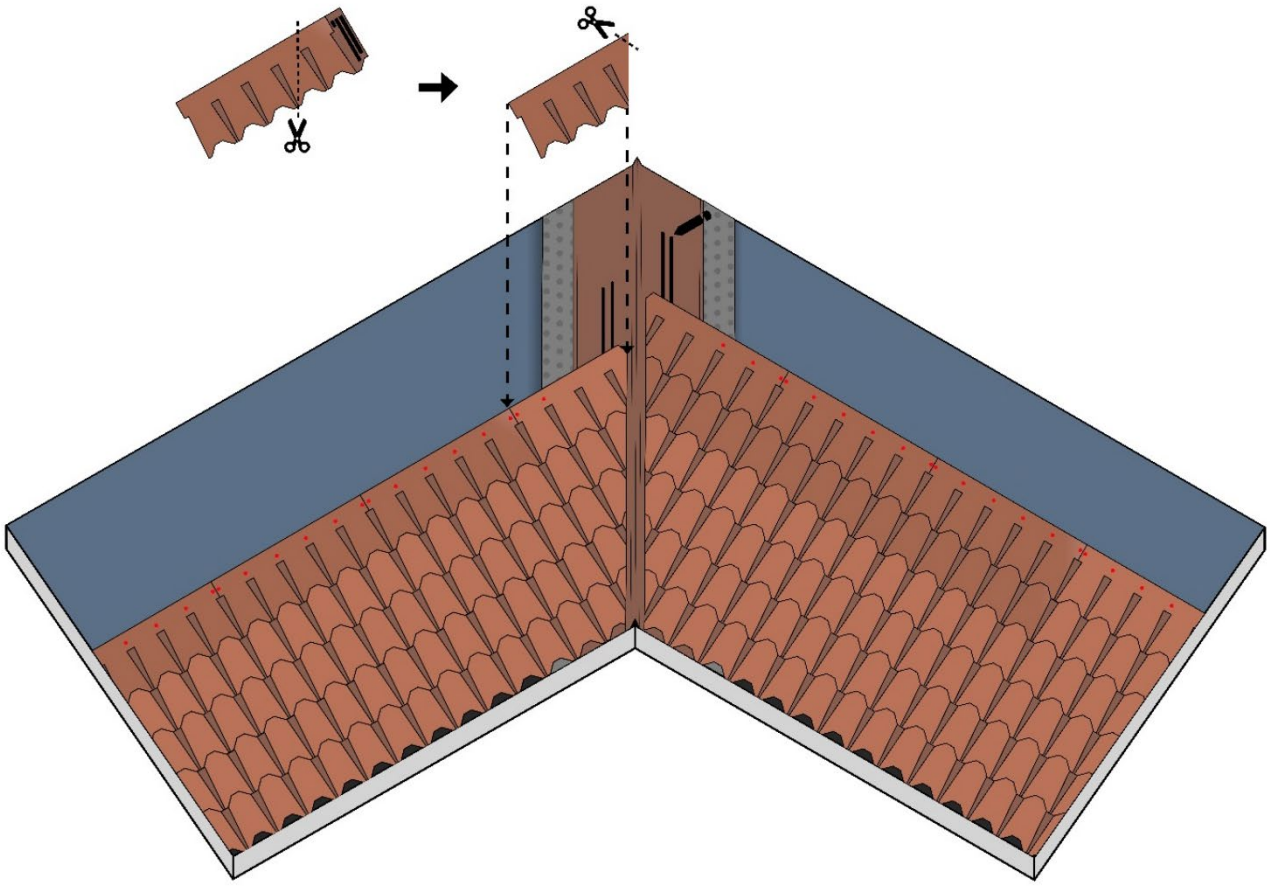


Fig. 18 *– Installation of Master Coppo on the valley with the metal flashing.*

6. TORCH INSTALLATION OF THE SHINGLE

For the torch installation of the shingles, proceed as follows:

- Install the lateral flashings above the membrane applied to the roof. Apply a band of bituminous membrane, about 25 cm wide, to overlap the flashing. Proceed with the normal installation of the shingles by torch, as will be described below, above the lateral flashing. Leave a space of about 3cm between the end of the shingles and the edge of the lateral flashing. - Fig. 19.

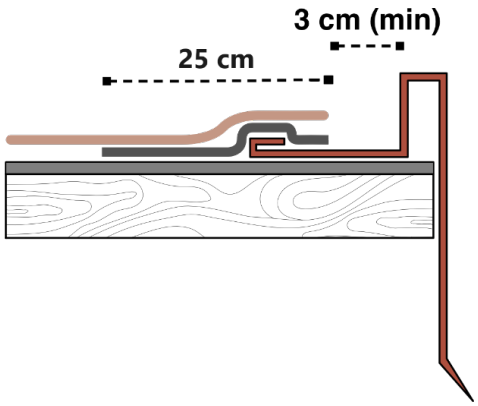


Fig. 19 *– Lateral flashing detail*

- As the starting row, use the Start Line SA cut at half height, or a 17 cm height self-adhesive bituminous membrane strip with a granule coated surface.
- Lay the starting row on top of the already installed bituminous membrane, aligning the upper edge with the horizontal line marked 16 cm from the eaves line – Fig. 20.

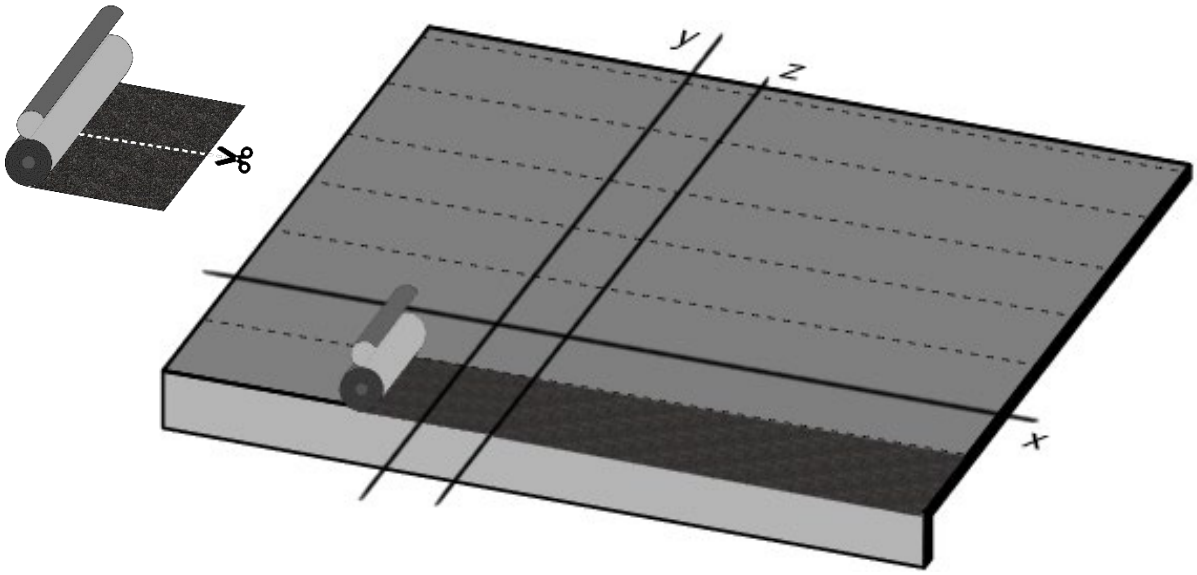


Fig. 20 – *Installation of the starting row*

- Proceed with the torch installation of the first row of Master Coppo shingles. For the torch installation of the Master Coppo, it is necessary to start from the left edge of the pitch, cutting the first shingle on the left - Fig. 24. Remove the protective film from the side and back of the shingle's underlayment; align the left edge of the first shingle with the edge of the pitch and the upper edge with the horizontal ***x*** - Fig. 21.

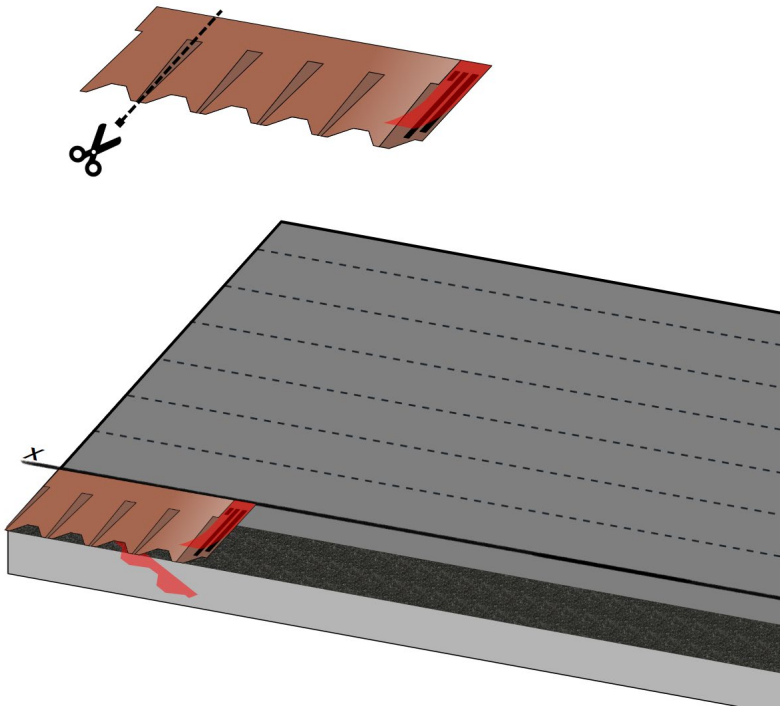


Fig. 21 – *Torch installation of the first Master Coppo shingle*

- Fix the shingle to the underlying membrane using the torch flame, lifting the upper edge of the shingle with a suitable tool. Direct the flame towards the membrane to melt only the membrane. The back of the shingle will only be heated. Then lower the Canadian shingle and press it down (for example, by applying pressure with a foot) to aid the bonding of the bitumen between the two elements: the shingle and the membrane. The self-adhesive backing of the Master Coppo underlayment will secure the first shingle to the underlying starting line - Fig. 22.

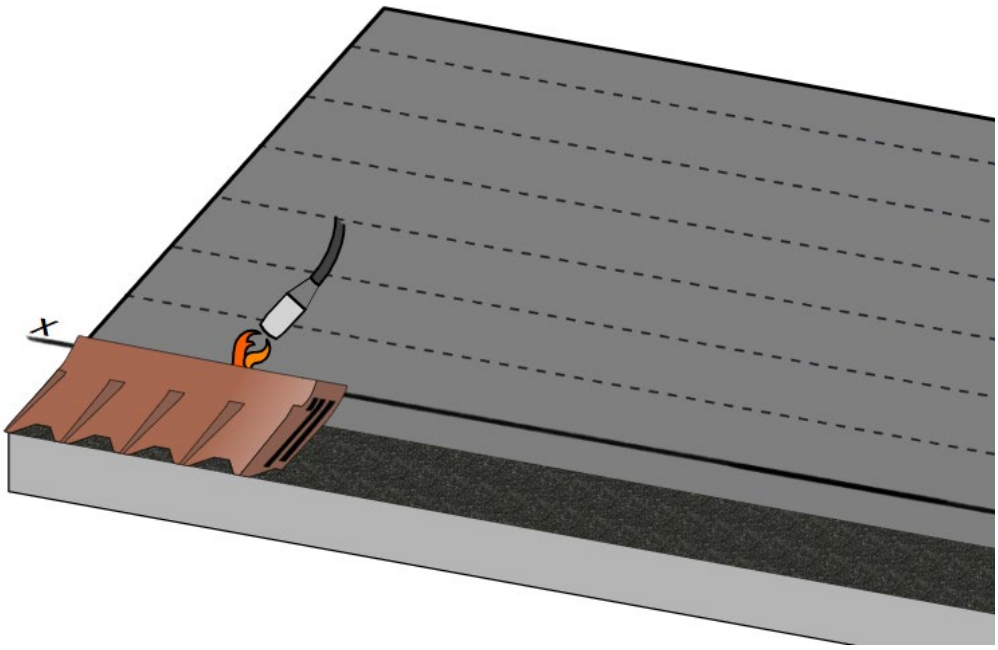


Fig. 22 – *Installation of the first Master Coppo shingle by torch*

- Proceed with the installation of the second Master Coppo shingle: overlap the second Master Coppo shingle with the lateral edge of the first shingle already installed and proceed to fix it with the torch according to the previous instructions - Fig. 23.

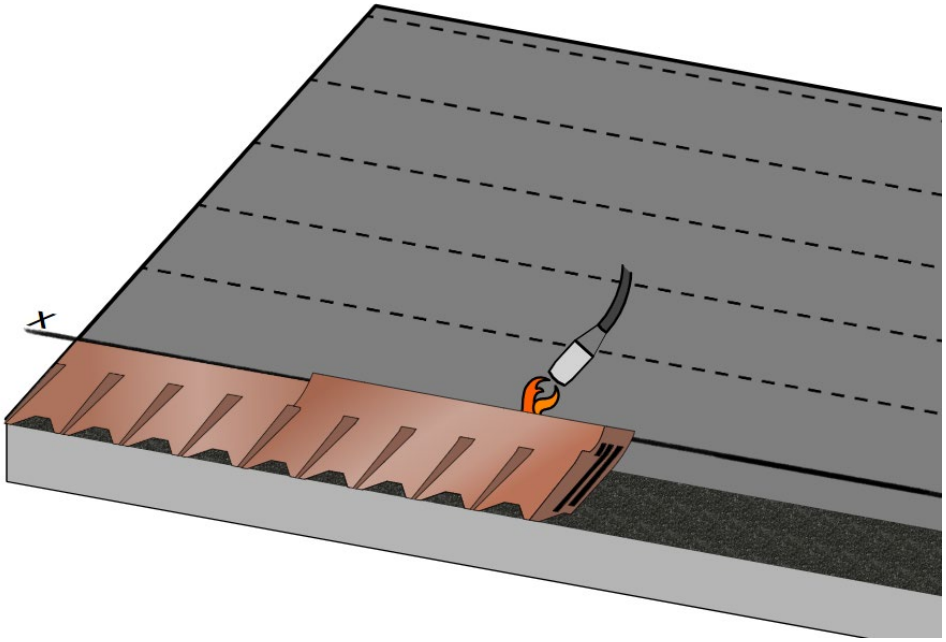


Fig. 23 – *Installation of the second Master Coppo shingle by torch*

- Proceed with the installation of the second row of Master Coppo shingles. Cut two shingle elements from the first shingle of the second row – Fig. 24. Align the left edge of the shingle with the left edge of the pitch and the upper edge of the shingle with the horizontal line, 24.5 cm from ***x*** - Fig. 24.
- Fix the shingles using the torch flame as previously described. Proceed with the installation of all the shingles in the row.

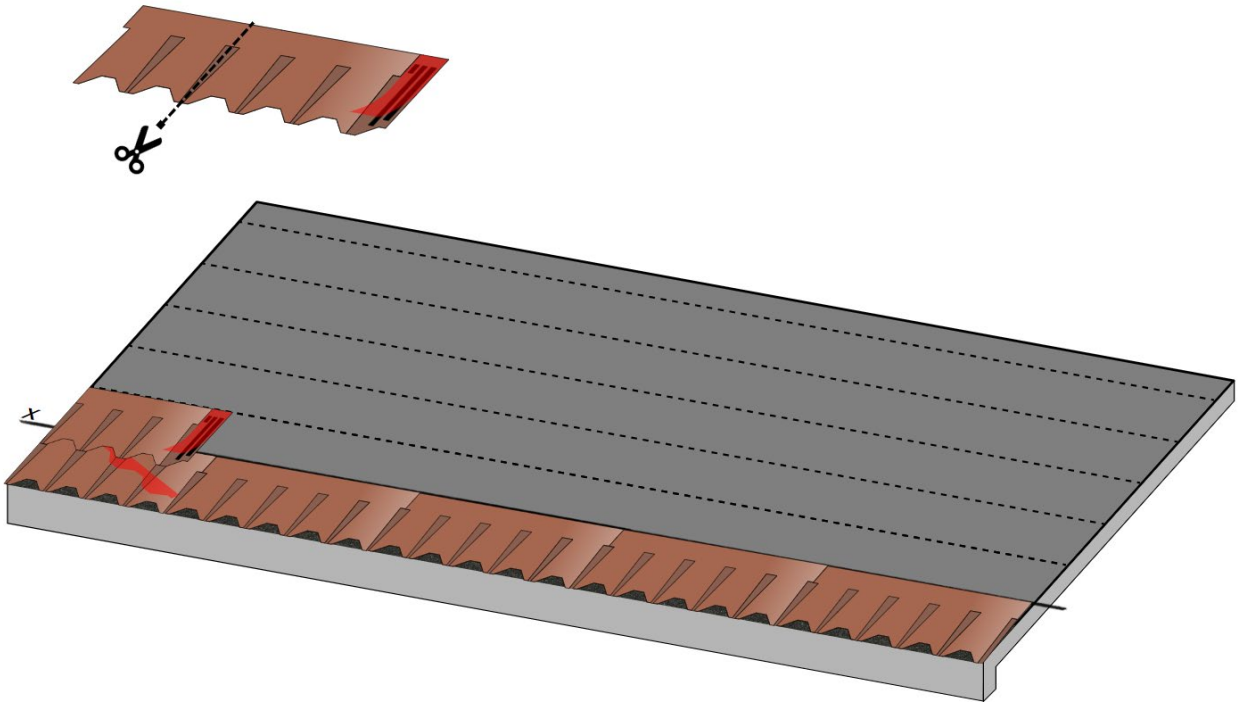


Fig. 24 – *Installation of the second row of Master Coppo by torch*

- Repeat the installation procedure of the shingles row by row, until the full coverage of the pitch. Leave the last few centimeters of the bituminous membrane exposed, cutting the top part of the last row of shingles Fig. 26.

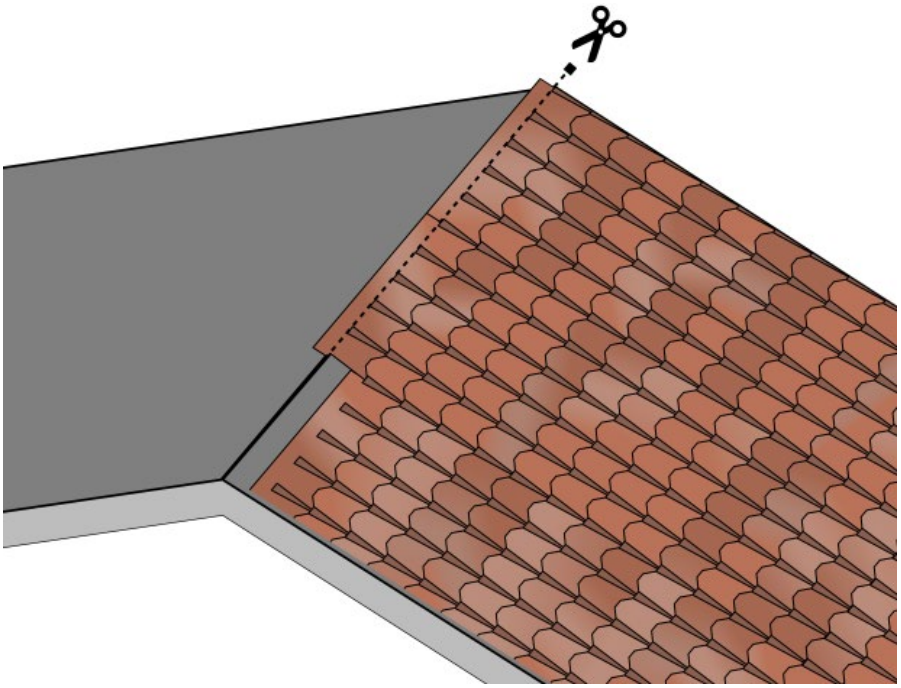


Fig. 25 – *Shingles installation until the ridge*

- Repeat the installation procedure of the shingles up to the ridge on the other pitch as well.
- For the execution of the ridge, take the Colmo Coppo box and remove the ridge components, which are already cut and shaped, contained within it – Fig. 14. Note that, in this case, the Top Roll Colmo SA roll will not be used. Instead, apply a strip of bituminous membrane Safety EPP with a torch on the ridge – Fig. 26. Install the prepared ridge components, fixing them to the underlying membrane with the torch flame, always heating the membrane and not the shingle component.
  Proceed with the installation of the other ridge components in sequence, leaving an exposed section of 20 cm between one component and the next, as shown in Fig. 26.

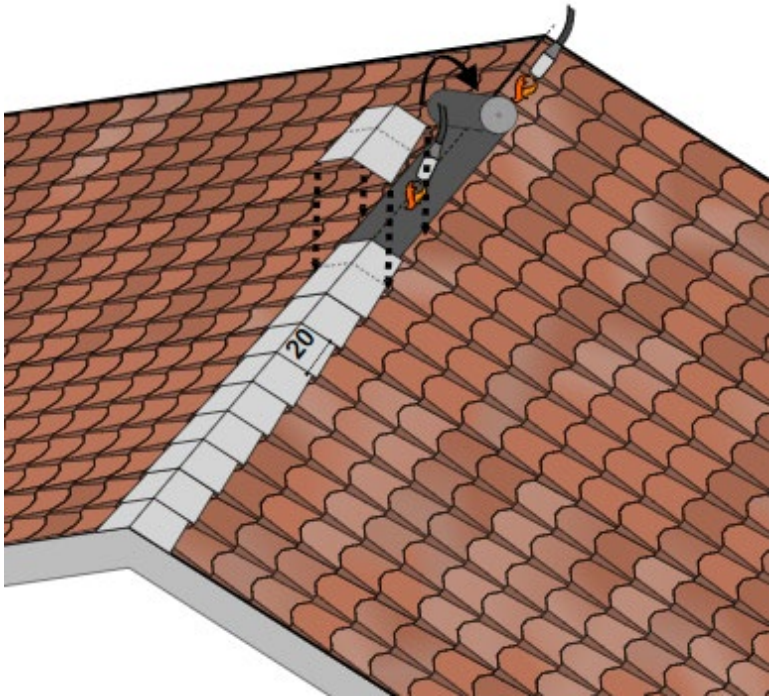


Fig. 26 – *Ridge elements installation by torch*

- Follow the same instructions for the installation of the hips.
- Regarding the valleys, the first option is to create them with a double layer of bituminous membrane. In this case, lay a strip of bituminous membrane (such as Safety EPP) with a thickness of at least 3mm and a width of 100 cm over the valley to ensure its waterproofing. Above this, always place a bituminous membrane with a granulated surface (such as Safety EAP), with a thickness of at least 4mm and approximately 60 cm in width, centred along the valley. Then, lay the Start Line SA and the shingles of the first pitch, up to the valley line, cutting them 3 cm and parallel to the valley line. Fix the shingles using the torch flame over the Safety EPP, always heating the membrane and not the shingle element, and use two strips of Bitustick over the Safety EAP – Fig. 27. It is also advisable to cut the upper edge of the shingle across the valley line, to direct the descending water along the valley axis.
  Repeat the same procedure for the second pitch. In the end, a channel should form between the shingles along the valley line, where water will preferentially flow - Fig. 27

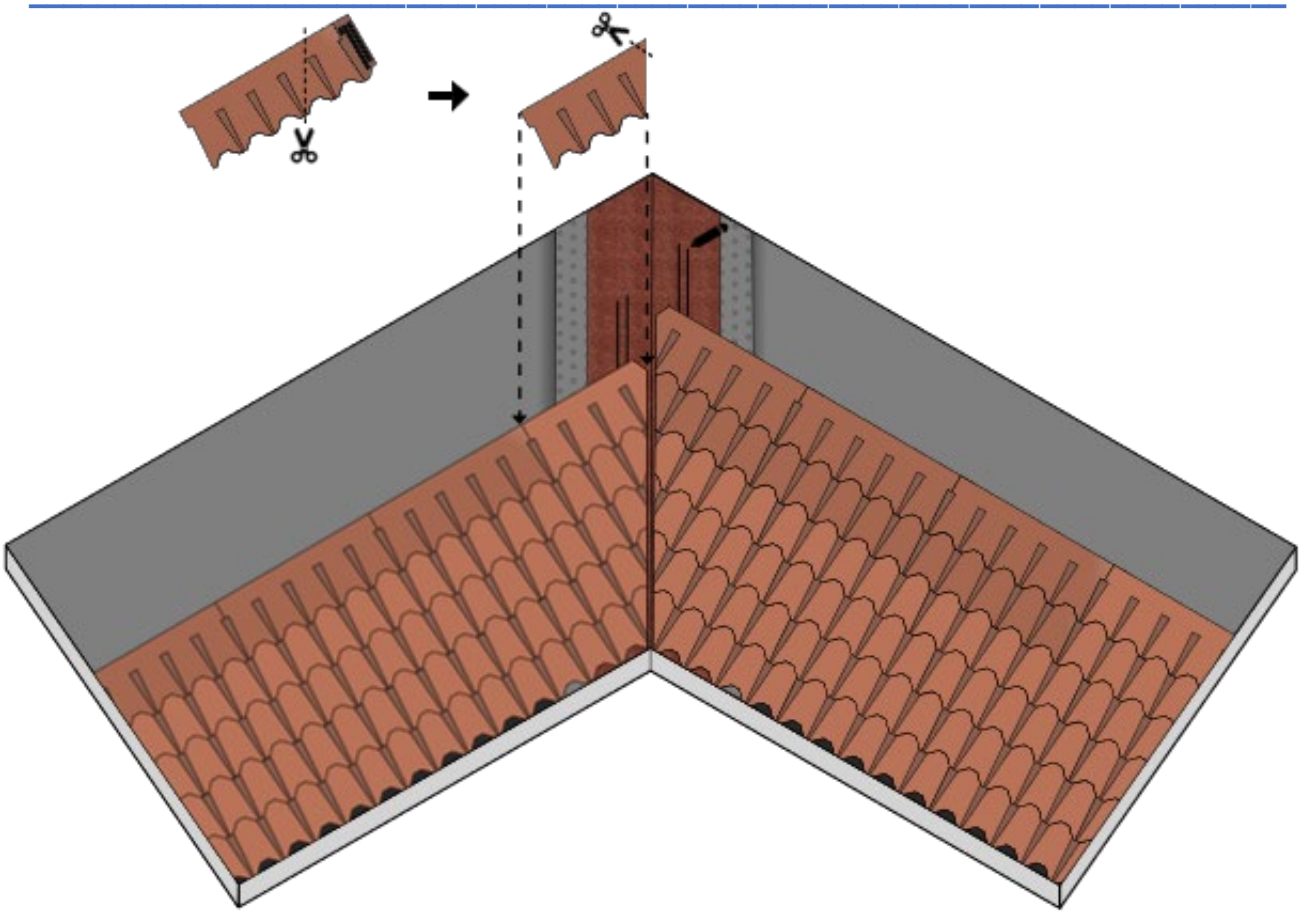


Fig. 27 *– Shingles installation by torch at the valley – option 1*

- The second option for the valleys is similar but involves using a metal valley instead of the second layer of granulated bituminous membrane, with a profile like Fig. 17. In this case, the starting line and the Master Coppo shingles will be cut approximately 3 cm from the valley line. The shingles will be fixed with the torch flame over the Safety EPP, always heating the membrane and not the shingle element, and with two strips of Bitustick over the metal valley – Fig. 28. It is also advisable to cut the upper edge of the shingle across the valley line to direct the descending water along the valley axis – Fig. 28.
- Once the installation is complete, always check the adhesion between the shingles and the underlying membrane, as well as between the shingles themselves, ensuring that the self-adhesive backing of the shingles has properly adhered.

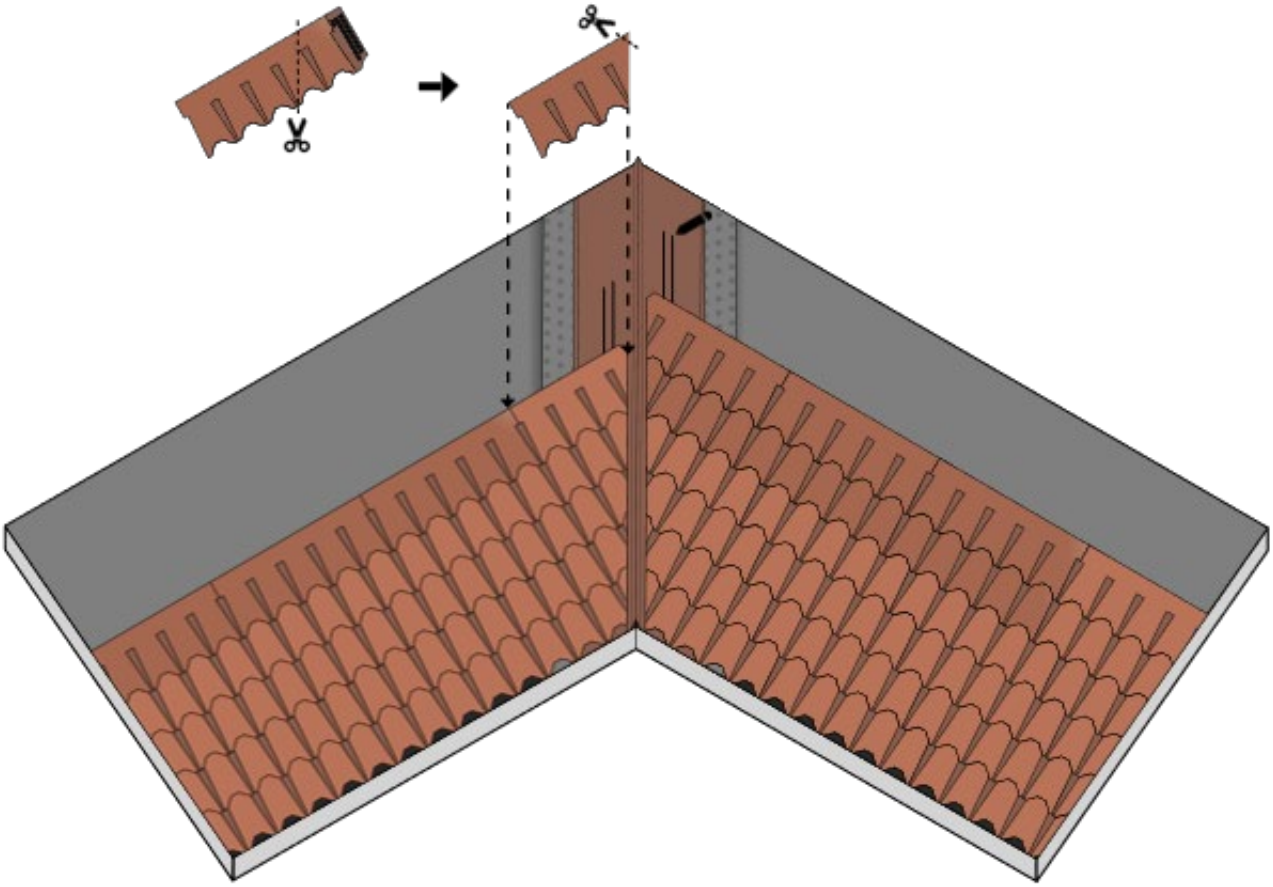


Fig. 28 *– Shingles installation by torch at the valley – option 2*

7. FINISHES AND INSTALLATION DETAILS

All finishes for flashings, valleys, chimneys, snow stops, etc. can be performed with aluminium or other compatible metals. For their installation refer to the specific installation instructions.

The Master Coppo shingle model is equipped with self-adhesive part in the lower back tabs that softens with the heat at 30°C and thus allows the gluing of the shingles to the previous rows. If necessary, you can force their activation with a heat gun. It is important to verify the adhesion of the tabs and of the shingles, once the roof installation is completed.