



**SPANISH  
ROOF TILES**

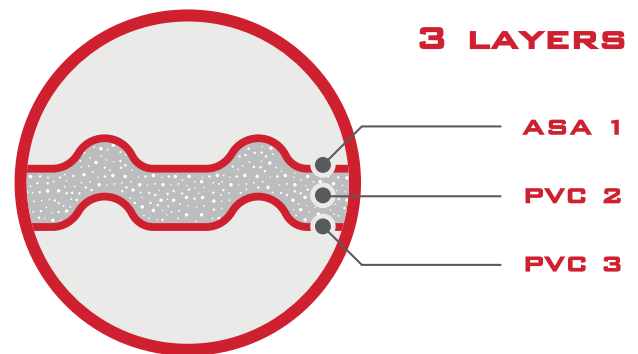
  
**PANA  
ROOF**

# SPANISH ROOF TILES



LIGHTWEIGHT 6 KG/M<sup>2</sup>, ACOUSTIC AND THERMAL INSULATION 40%, 100 KG LOADING CAPACITY WITH DOLLYS AT 60 • 90 CMS AWAY FROM EACH OTHER, PROVEN WITH FIRE, WATER, HUMIDITY AND CORROSION. CERTIFIED BY ISO9001 AND ISO14001.

## CHEMICAL COMPOSITION



## AVAILABLE COLOURS



GREY BLUE

INDIGO BLUE

TERRACOTTA

GREEN

LIGHT GREY

BROWN

## RECOMMENDED USES



RESIDENTIAL



COMMERCIAL



GARAGES



OUTDOOR FARMS

## QUALITY CONTROLS

| QUALITY CONTROL                 | ASSESSED METHOD | TRIAL CONDITIONS   |                        | RESULT              |                 |
|---------------------------------|-----------------|--|------------------------|---------------------|-----------------|
| UV EXPOSURE                     | ASTM-G154-12    | PHASE 1, LAMP TYPE UV-340  |                        | E*AB=0,50           |                 |
|                                 | ASTM-D2244-11   | EXPOSURE TIME: 200 HOURS   |                        |                     |                 |
| TRACTION RESISTANCE             | ASTM-D638-10    | TRIAL VELOCITY: 50MM/MIN   |                        | 28 MPA              |                 |
| FLEXION RESISTANCE              | ASTM-D790-10    | TRIAL VELOCITY: 1,30MM/MIN;<br>LIGHT: 48MM   |                        | 50 MPA              |                 |
|                                 | PROCEDURE A     |  |                        |                     |                 |
| IMPACT RESISTANCE               | ASTM-D5420-10   | GEOMETRY GE  |                        | ENERGY BREAKING     | TYPE OF FAILURE |
|                                 |                 |  |                        | 3,000 JOULES        | A               |
| THERMAL CONDUCTIVITY            | ASTM-C518-10    | AVERAGE TEMPERATURE  | DIFFERENCE TEMPERATURE | 0,325 [W/(MK)]      |                 |
|                                 |                 | 25,48°C  | 9,36°C                 |                     |                 |
| FLAMMABILITY                    | UL 94-2013      | SAMPLE DIMENSIONS:   |                        | V-0                 |                 |
|                                 |                 | 129,00 MM X 12,50 MM X 3,00 MM   |                        |                     |                 |
| EXTREME TEMPERATURE PERFORMANCE | -               | EXPOSURE TO EXTREME TEMPERATURES FOR 6 CONSECUTIVE HOURS UNTIL NOTICE CHANGES OF APPEARANCE. |                        | MINIMUM             | MAXIMUM         |
|                                 |                 |  |                        | -36°C               | 60°C            |
| CHEMICAL RESISTANCE             | -               | IMMERSION IN ETHANOL SOLUTION AT 70% (V/V) TO 23C FOR 2 HOURS                                |                        | NO APPARENT CHANGES |                 |
|                                 |                 | IMMERSION IN NaOH SOLUTION AT 10% (M/M) TO 23C FOR 2 HOURS                                   |                        |                     |                 |
|                                 |                 | IMMERSION IN SATURATED SOLUTION OF NaCl TO 23C FOR 2 HOURS                                   |                        |                     |                 |

## TECHNICAL SPECIFICATIONS

| PRODUCT   | DESCRIPTION                                   | WEIGHT              | LENGTH / WIDTH    | FEATURES   |
|---|---|---------------------|-------------------|--|
|    | <b>PANA ROOF®<br/>SPANISH</b>                 | 6 KG/M <sup>2</sup> | 18.68' X 41"      | ASA/PVC 3MM THICK SYNTHETIC ROOF TILE.   |
|    | <b>PANA ROOF®<br/>TRANSLUCENT<br/>SPANISH</b> | 3 KG/M <sup>2</sup> | 18.68' X 41"      | 2 MM UPVC ROOF TILE.   |
|  | <b>MAIN<br/>RIDGE</b>                         | 4 KG/ML             | 1.05 M. X 0.47 M. | RIDGE-SHAPED TOOL USED TO COVE EDGES OF <b>PANA ROOF®</b> TILES TO TWO OR MORE WATERS, AT ITS HIGHEST POINT. ANGULAR RANGE OF USE: 100 TO 145 DEGREES. |
|  | <b>3 WATERS<br/>UNION</b>                     | 4 KG/ML             | -                 | UNION-SHAPED TOOL USED FOR 3 WATERS ROOFS. ANGULAR RANGE OF USE: 80 TO 120 DEGREES.  |
|  | <b>SIDE<br/>RIDGE</b>                         | 4 KG/ML             | 1.05 M. X 0.37 M. | RIDGE-SHAPED TOOL USED TO COVE EDGES OF <b>PANA ROOF®</b> TILES TO TWO OR MORE WATERS, AT ITS HIGHEST POINT. ANGULAR RANGE OF USE: 100 TO 145 DEGREES. |
|  | <b>SIDE RIDGE<br/>END GAP</b>                 | 1 KG/PIECE          | 40 / 10 CM.       | ELEMENT USED TO COVER THE ENDS OF THE SIDE RIDGES.   |

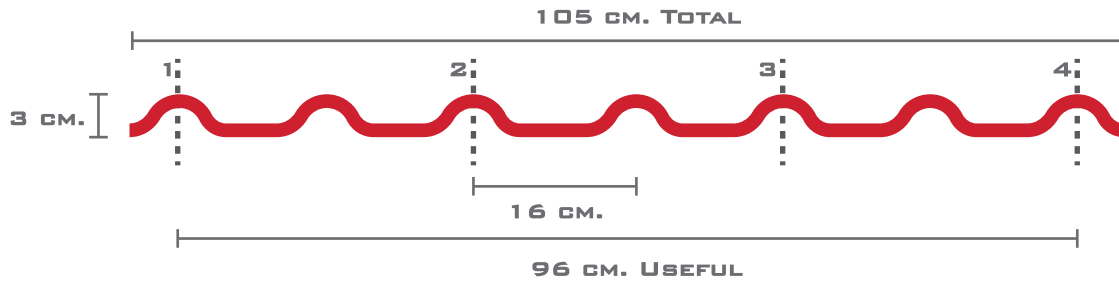
## TECHNICAL SPECIFICATIONS

| PRODUCT   | DESCRIPTION                   | WEIGHT      | LENGTH / WIDTH    | FEATURES   |
|---|-------------------------------|-------------|-------------------|--|
|    | <b>GABLE FLASHING</b>         | -           | 1.08 M. X 0.23 M. | TOOL THAT ALLOWS THE CORRECT UNION BETWEEN THE CEILING AND A WALL IN A HORIZONTAL WAY.   |
|    | <b>U-FORM CHANNEL</b>         | -           | 2.1 M.            | TOOL THAT ALLOWS JOINING 2 ROOF DROPS INTERNALLY.  |
|  | <b>VERTICAL WALL FLASHING</b> | -           | 1.05 M.           | TOOL THAT ALLOWS THE CORRECT UNION BETWEEN THE CEILING AND A VERTICAL WALL.              |
|  | <b>4 WATERS UNION</b>         | 1 KG/PIECE  | 0.60 M.           | UNION-SHAPED ACCESSORY USED FOR 4 WATERS ROOFS. ANGULAR RANGE OF USE: 80 TO 120 DEGREES. |
|  | <b>TERMINAL RIDGE</b>         | -           | 1.05 M.           | ACCESSORY USED TO SEAL TILE RIDGES WHEN THERE IS NO WALL DOWN.                           |
|  | <b>MAIN RIDGE END CAP</b>     | 1 KG/PIECE. | -                 | ELEMENT USED TO COVER THE ENDS OF THE MAIN RIDGES.                                       |

## TECHNICAL SPECIFICATIONS

| PRODUCT   | DESCRIPTION                | WEIGHT        | LENGTH / WIDTH                        | FEATURES   |
|---|----------------------------|---------------|---------------------------------------|--|
|    | <b>IMPACT WEATHERBOARD</b> | -             | 1.05 ML.                              | ELEMENT USED TO DECORATE THE FRONT OF THE CEILING  |
|    | <b>EAVE BOARD</b>          | -             | 1.2 ML.                               | ACCESSORY THAT ALLOWS TO CLOSE THE SIDE SPACES OF THE ROOF.  |
|  | <b>U RIDGE</b>             | -             | -                                     | ACCESSORY USED TO JOIN RIDGE TILES.  |
|  | <b>T RIDGE</b>             | -             | -                                     | ACCESSORY USED TO JOIN RIDGE TILES.  |
|  | <b>BIRDS COVER</b>         | -             | -                                     | METAL ACCESSORY TO BE USED UNDER THE INITIAL FRONT PART OF THE TILE TO PREVENT THE PASSAGE OF ANIMALS. |
|  | <b>UPVC SCREWS KIT</b>     | 0.10 KG/PIECE | 2.5" LENGTH<br>3" LENGTH<br>4" LENGTH | TOOL WHICH ALLOWS SECURING OF ROOF TILES AND ACCESSORIES.  |

## ROOF TILES DIMENSIONS (TOTAL AND USEFUL)



## DIMENSIONS TABLE

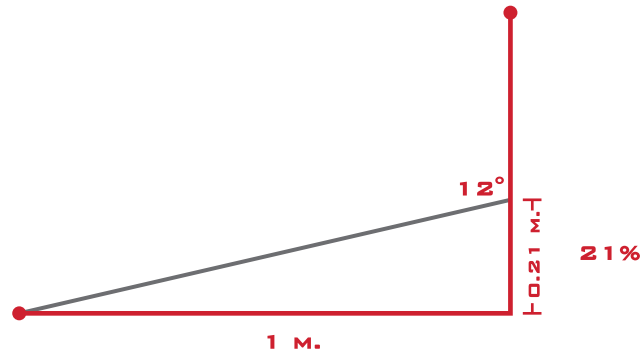
| SPANISH ROOF TILE |       |       |      |             |             |                              |                               |             |         |
|-------------------|-------|-------|------|-------------|-------------|------------------------------|-------------------------------|-------------|---------|
| LENGTH            |       | WIDTH |      | OVERLAY (M) |             | TOTAL AREA (M <sup>2</sup> ) | USEFUL AREA (M <sup>2</sup> ) | WEIGHT (KG) | CALIBER |
| FT                | MTS   | IN    | MTS  | LONG        | TRANSVERSAL |                              |                               |             |         |
| 18.68'            | 5.694 | 41"   | 1.05 | 0.09        | 0.22        | 5.92                         | 5.20                          | 36.5        | 3 MM    |

## USEFUL AREA OF THE ROOF TILE



## MINIMUM INCLINATION OF ROOF TILE

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## TABLE OF REQUIRED SCREWS

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| ROOF TILE | SCREWS |
|-----------|--------|
| 18.68'    | 16     |

## DISTANCE BETWEEN DOLLYS

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ROOF TILE  
18.68' - 5.694 M.





## INSTALLATION EQUIPMENT AND TOOLS

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BEFORE STARTING THE  
INSTALLATION, MAKE SURE TO HAVE  
EVERY REQUIRED EQUIPMENT AND  
TOOL AT YOUR DISPOSAL.

**VENTILATION OF THE TILE IS VERY  
IMPORTANT. THERMAL INSULATION  
SHOULD NOT BE USED UNDER  
THE TILE.**

### **REQUIREMENTS SAFETY EQUIPMENTS**

MAKE SURE TO MAKE USE OF  
REQUIRED PERSONAL SAFETY  
EQUIPMENTS FOR THIS TASK.

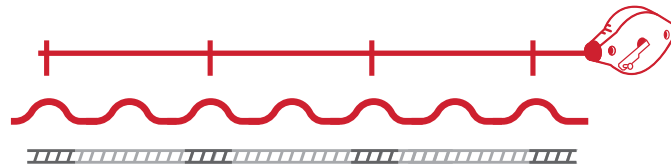
LADDER AND/OR SCAFFOLD  
  
WOODEN PLANKS OR DOLLYS  
  
DIE 3/8 FOR SCREW  
  
DRILL  
  
HAND GRINDER (FLEXIBLE)  
  
MEASURING TAPE  
  
DRAWING PEN  
  
ASSEMBLED SCREWS KIT

HELMET  
  
GLOVES  
  
PROTECTIVE SUNGLASSES  
  
SAFETY HARNESS  
  
ROPES

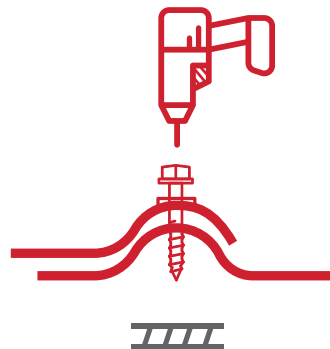


## INSTALLATION INSTRUCTIONS

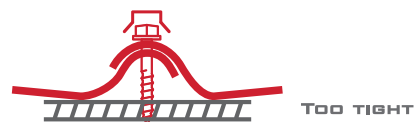
1. ONCE FIRST ROOF TILE SPOT IS DEFINED, USE MEASURING TAPE TO SET WHERE **PANA ROOF®** SELF-TAPPING SCREWS WILL GO. AS LONG AS POSSIBLE, HAVE SCREWS PLACED OVER THE RIDGES OF CORRUGATIONS. CONSIDER THAT EVERY INTERSPERSED DOLLY NEEDS AT LEAST FOUR (4) SCREWS.



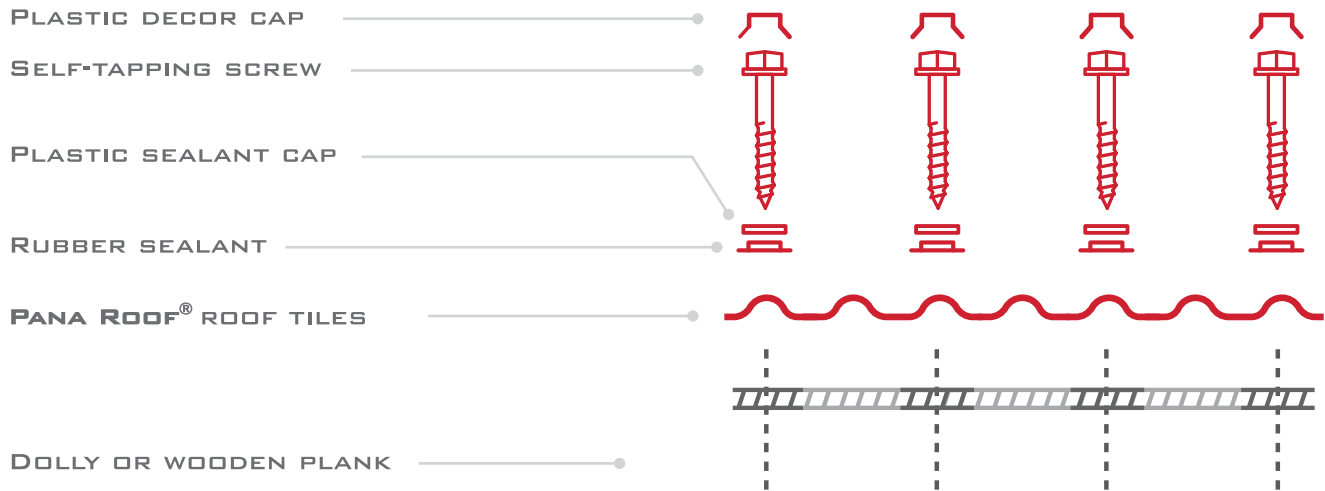
2. DRILL WITH THE DRILL THROUGH HOLE OF RUBBER SEALANT, UNTIL COMPLETE PIERCING OF 2 ROOF TILES AND DOLLY. THE DIAMETER OF THE DRILL HOLES SHOULD BE 2 MM LARGER THAN THE SCREWS.



3. ONCE THE SCREW IS INSTALLED, COVER THE SCREW HEAD WITH THE DECORATIVE PLASTIC COVER PROVIDED. IT IS RECOMMENDED TO TIGHTEN THE SCREWS BEFORE FINISHING THE INSTALLATION. THE SCREWS SHOULD NOT BE TOO TIGHT OR TOO LOOSE.



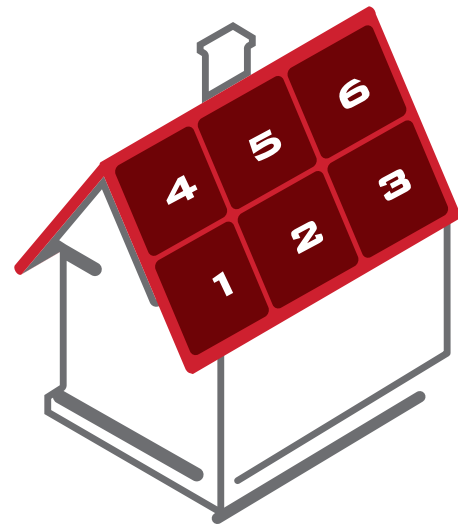
## INSTALLATION DRAWING



PLACE DOLLIES 60 - 90 CMS AWAY FROM EACH OTHER ACCORDING TO VARIABLE LOADS

## INSTRUCTIONS FOR INSTALLATION OF ROOF TILES

WHEN **PANA ROOF®** TILES ARE ABOUT TO BE PLACED ON REAR WATER SIDE OF HOUSE, THIS TASK MUST BE DONE FROM LEFT TO RIGHT, IDEALLY KEEPING THE SAME INSTALLATION ORDER OF **PANA ROOF®** TILES AS ON FRONT WATER SIDE OF HOUSE.





# PANA★ROOF

PANA ROOF® RESERVES THE RIGHT TO MODIFY THIS DOCUMENT AT ANY MOMENT WITHOUT PREVIOUS NOTICE, FOR THE SAKE OF DEVELOPING AND CONTINUOUSLY IMPROVING ITS PRODUCTS.

**FREE COUNSELING: (507) 393 8844 / 393 8845**



**WWW.PANAROOF.COM**