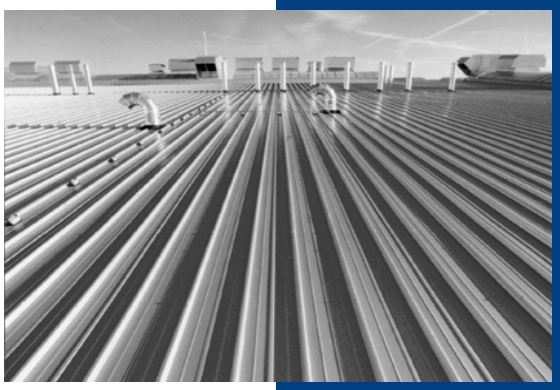


TECHNICAL HANDBOOK

ROOF-PANELS

POLYURETHANE OR ROCK WOOL
SELF-SUPPORTING INSULATING
METAL PANEL

meTecno

ENG

TECHNICAL MANUAL

This document has been drawn up to help you in using the following panels.

G4
HIPERTEC ROOF
HIPERTEC ROOF SOUND
ROCKSTEEL ROOF
FIREMET ROOF

Before using the products, we suggest to take some of your time to carefully read the present manual to refresh your technical and operative knowledge.

This manual is divided into several sections, which are identified by a number. Each section is subdivided into numbered chapters.

For any information or suggestion, please send your mail to:

METECNO GROUP sales conditions apply to all aspects that are not covered by the present technical manual.

1. GENERALS

1.1 COMPOSITION AND USE

All the roof panels from Metecno are composite panels, formed by two metal sheets linked by a layer of insulating material, which can be manufactured upon request:

- with polyurethane foam (Fig.1a)
  G4
- with mineralwool (Fig.1b)
  Hipertec ROOF
  Hipertec ROOF SOUND
  Rocksteel ROOF
- with combined insulation (Fig.1a)
  FIREMET ROOF

We advice for Metecno roof-panels in general a **slope** **5°**, if you use a smaller slope, please contact us before.
! Please attend also your local specifications !

1.2 STANDARD SIZE

Panels are manufactured in 1000 mm wide modules, their length depends
on the specific design requirements and the feasibility of the manufacturing factory. Please request for that.

G4 / FIREMET ROOF

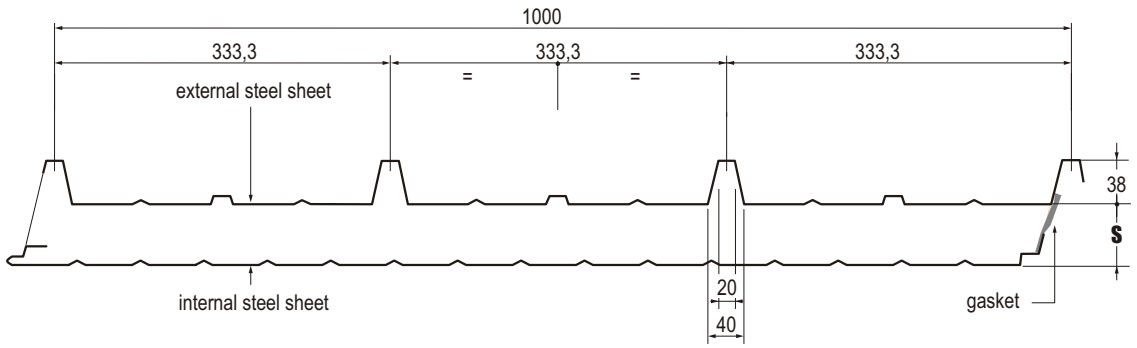
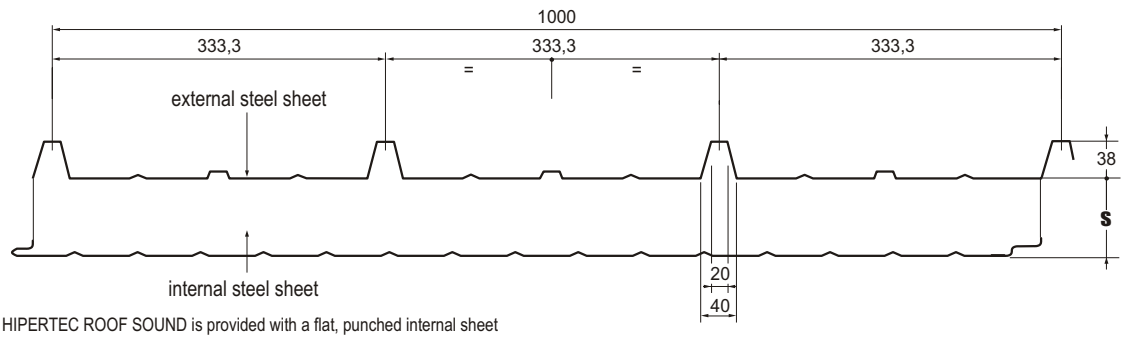


Fig. 1a

HIPERTEC ROOF / HIPERTEC ROOF SOUND * / ROCKSTEEL ROOF



* HIPERTEC ROOF SOUND is provided with a flat, punched internal sheet

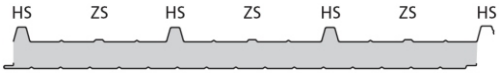
Fig. 1b

1.3 FASTENERS

For installation of G4-panels (PUR-foam) fixing is possible in the high (HS) or in the low corrugation (ZS) (Fig.2a).

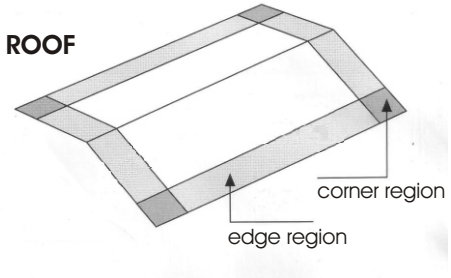
For Hipertec-panels (mineralwool) fixing is allowed only in the high corrugation (HS) (Fig.2b).

We advice in general fixing in the high corrugation (HS) with a cap for both panel types. The fixing should be made equable. It is necessary to use more screws in the edge of the building, in case of a high wind suction, then fix also the panel in the low corrugation (ZS).



HS = high corrugation ; ZS = low corrugation

The number of screws depends of the static calculation. The structural engineer defines the number of screws in the main area and on the edges of the building. For roof panels a minimum of 3 screws per meter at the panel end is necessary for constructive fixing.



1.4 FASTENERS ALONGSIDE THE PANEL

The fret along the panel side is to fix in a minimum distance of 500mm with self-tapping stainless steel screws. The screws should be combined with washers with a vulcanised EPDM gasket. (Fig.2c)

e.g.
EJOT Super-Saphir JT3 2H-5,5 / 25-E16
SFS Spedec SXL 2-S14-5,5 / 22

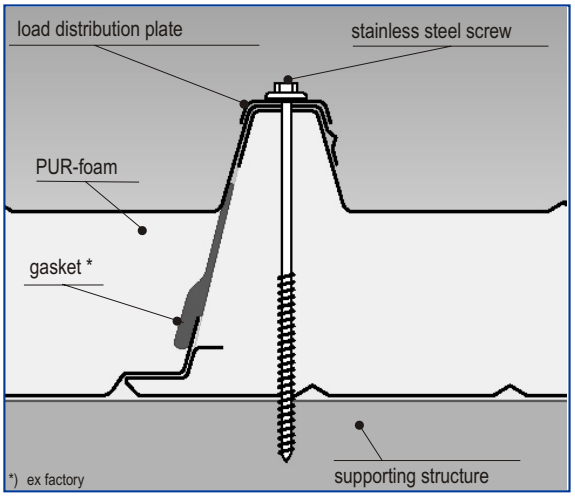


Fig. 2a

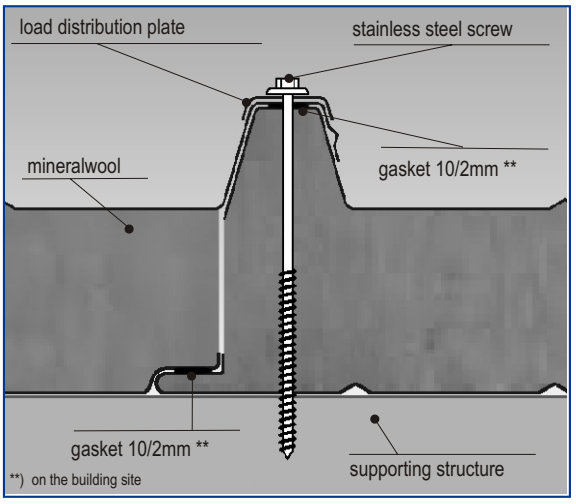


Fig. 2b

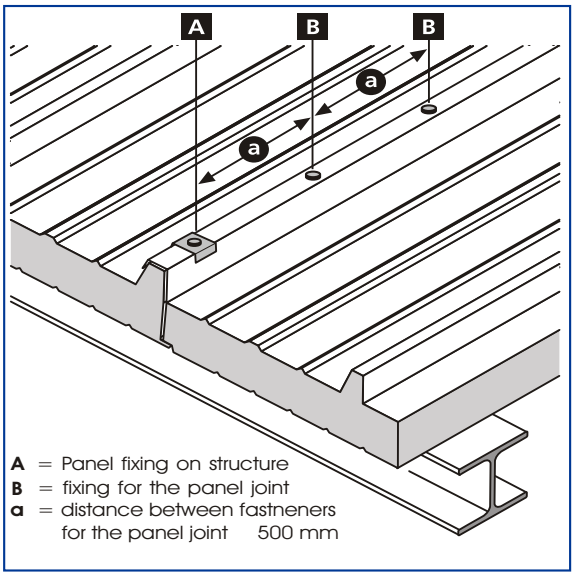


Fig. 2c

1.5 SCREWS FOR THE DIFFERENT PANEL TYPES

For fixing it is necessary to use certified stainless steel screws with washers.(material 1.4301) You can choose between self-cutting or self-drilling screws.

The following table shows the length of **self-tapping screws** in accordance to the different panel thicknesses.

visible fixing - with self-tapping screws*

panel type	core thickness [mm]	steel construction (t > 1,5mm)		wooden construction (t > 50mm)	
		screw located on the high corrugation (HS) length [mm]	screw located on the low corrugation (ZS) length [mm]	screw located on the high corrugation (HS) length [mm]	screw located on the low corrugation (ZS) length [mm]
PUR-panels (G4, FIREMET roof)					
	30/68	90	55	130	95
	40/78	100	65	140	105
	50/88	110	75	150	115
	60/98	120	85	160	125
	80/118	140	105	180	145
	100/138	160	125	200	165
Mineralwool-panels (Hipertec roof; Hipertec roof SOUND, Rocksteel roof)					
	60/98	120	85	160	125
	80/118	140	105	180	145
	100/138	160	125	200	165
	120/158	180	145	220	185
	150/188	210	175	250	215

washers with diameter of 16 or 19mm

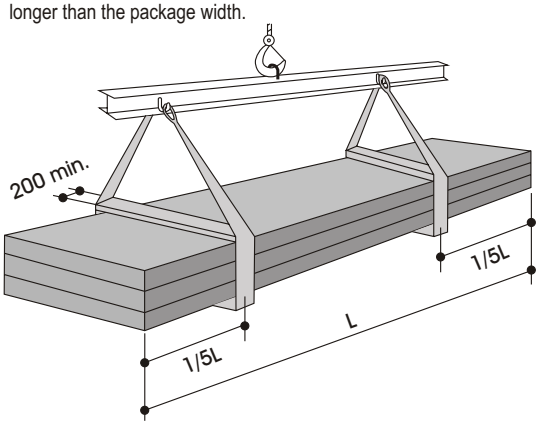
* recommended minimal length of the screw
The length of the screw depends on the steel thickness of
the support construction and difference between varios screw suppliers
If you use **self-drilling screws**, please contact the screw supplier before.

2. HANDLING AND STORAGE

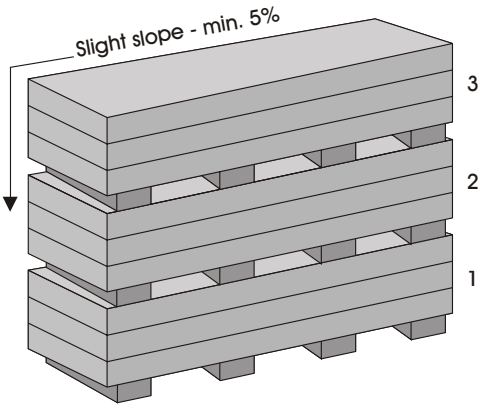
Package handling and storage is a very delicate phase, in which panels can get damaged. For this reason, a label with the following instructions is applied to each package:

WARNING !
Carefully follow these
handling and storage instructions

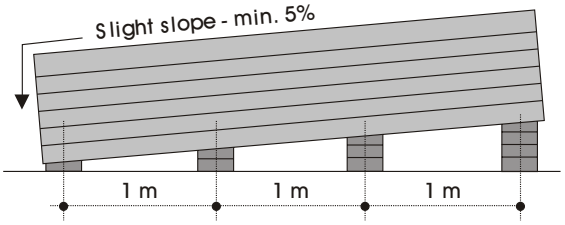
Sling the package by using a rocker arm and min. 200 mm-wide nylon belts. Insert min. 200 mm-wide wooden boards between the package and the belts. The wooden boards will have to be approximately 2 cm longer than the package width.



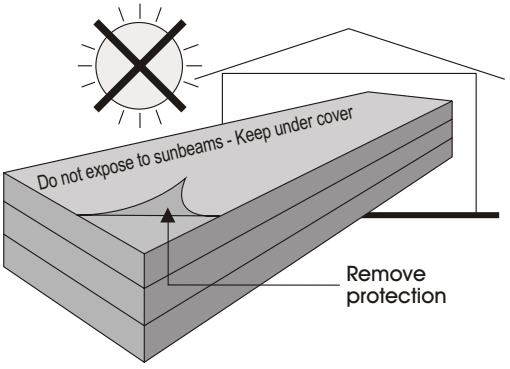
Do not store more than three packages one on top of another, and place spacers or boards between them.



Place the package on a flat and rigid surface, and position 50 mm-thick and 200 mm- wide polystyrene spacers or wooden boards at max. 1 m intervals. Panels will have to be stored slightly sloping in order to help possible condensation flow and to prevent backwater.



Store packages under cover; if this is impossible, protect them with rainproof membranes. Make sure that the goods are appropriately aerated. Any protective film should be not exposed to direct sunbeams and, in any case, should be removed within 45 days after the date when the panels are prepared.



NOTE: The extendable polyethylene forming the external wrap of this package is not suitable for a long exposition outdoor, since sunbeams change its properties.

When panels have to be moved one by one due to building yard needs, they should be always carried as shown in the illustration.

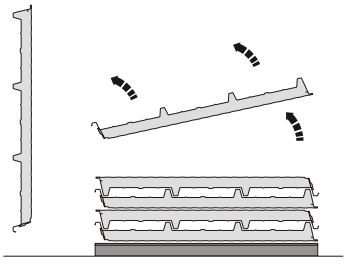


Fig. 5

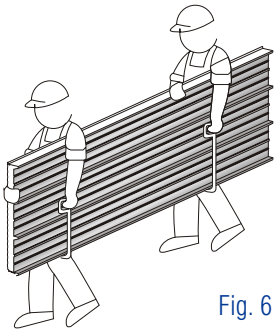
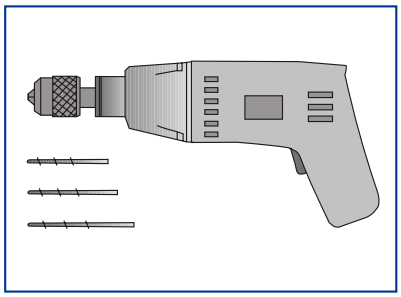
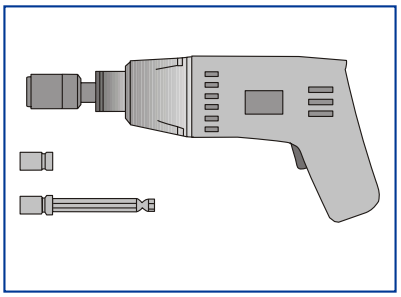


Fig. 6

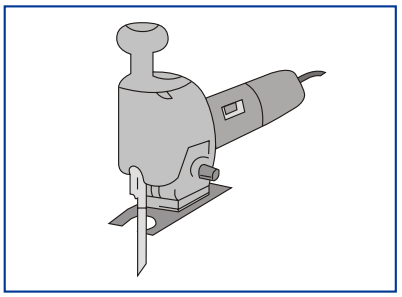
3. ASSEMBLY TOOLS



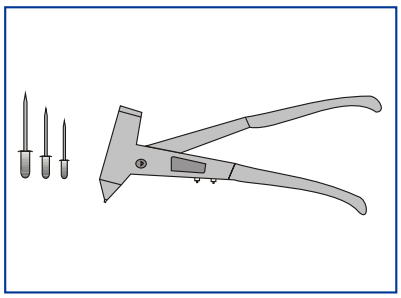
PORTABLE DRILLING MACHINE
Portable drilling machine
with max. 8-mm diameter spindle
and relevant helical drills.



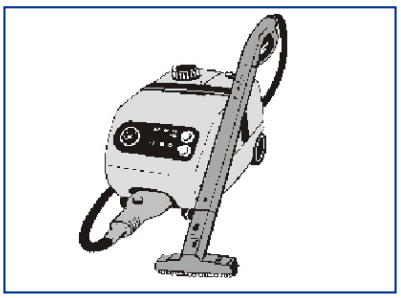
ELECTRIC SCREW-DRIVER
Reversible electric screw-driver
with relevant bushes.



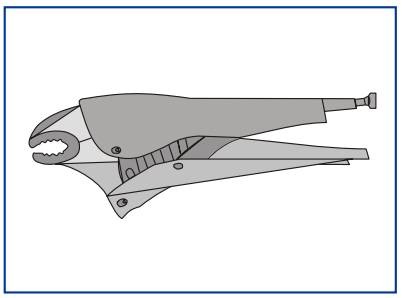
HACK SAWING MACHINE



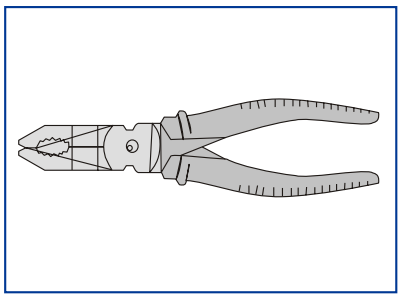
RIVETING MACHINE
Riveting machine for 2.5-5 mm diameter
rivets and relevant rivets.



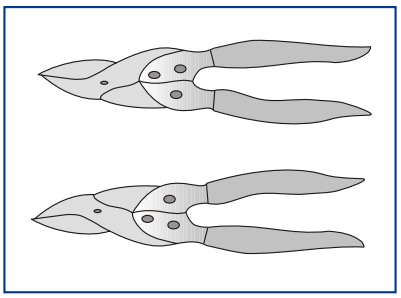
VACUUM CLEANER



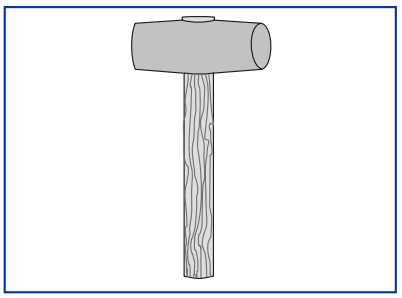
RELEASE PINCERS



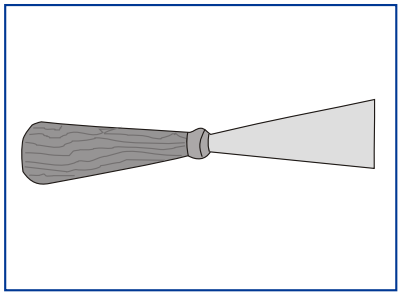
PLIERS



HAND LEVER SHEARS (right and left)



SLEDGE HAMMER



SCRAPER OR SPATULE

SPIRIT LEVEL

4. ASSEMBLY INSTRUCTIONS

4.1 ROOFINGS

4.1.1 PRELIMINARIES

a) check that the panels have been stored in the way indicated in chapter 2.
b) check that the purlins are positioned in accordance with the project designs and that they are not deformed.
c) install the appropriate anti-accident protections on the roof in accordance with current regulations for working at height (parapets and protective nets)
d) check that all workers operating at height are equipped with all the personal safety equipment laid down in the regulations.
e) prepare the power supply lines to the tools in accordance with the current regulations.

4.1.2 LFTING THE PANELS

At the time to installation, the panels are lifted by means of a crane which must have equalisiers of an appropriate length, so that the pack is supported at two points at a distance apart equal to three-fifths of the length of the pack. (Fig.7)

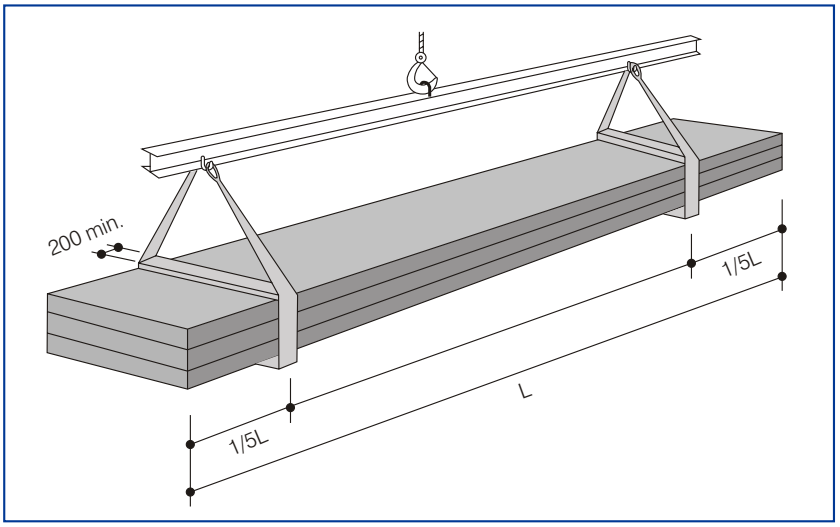


Fig. 7

Only nylon or jute straps must be used for the sling. Steel straps must be never used. Protective strips of wood should be inserted between the pack and the straps to avoid crushing the edges of the panels.
A guide rope should also be used to avoid the pack swinging about during lifting to the roof.

When the packs have been lifted, they should be placed on purlins in proximity to the trusses. Do not place more than one row of packs on each truss, particulary if the purlins are made of cold-rolled sheets. (Do not place the packs on projecting portions).
Depending on the slope of the roof, make sure that the packs cannot slip by preparing appropriate barriers and make sure that they cannot be blown away by the wind.

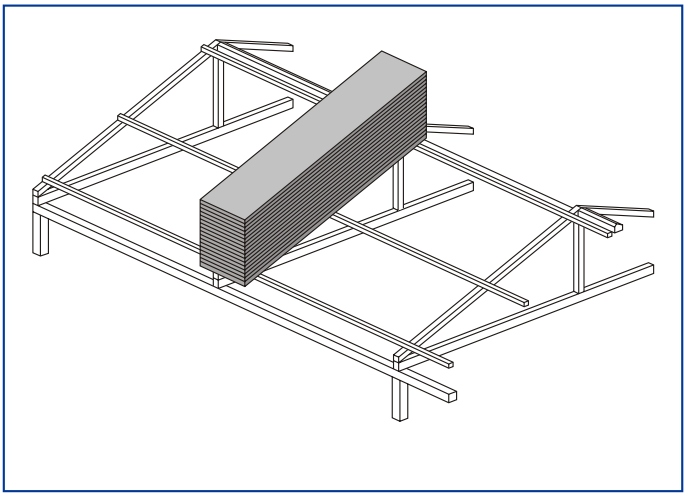


Fig. 7a

We advice, as alternate to transport the panels per hand, to use special lifting clamps or a vacuum lifter to hoisting the panels on-site and to the top of the building. These special assembling clamps are connected with ropes on a truss and this one is fixed on the cran rope.

In the following pictures (Fig.8) show the lifting of panels from the ground to the load-bearing structure.

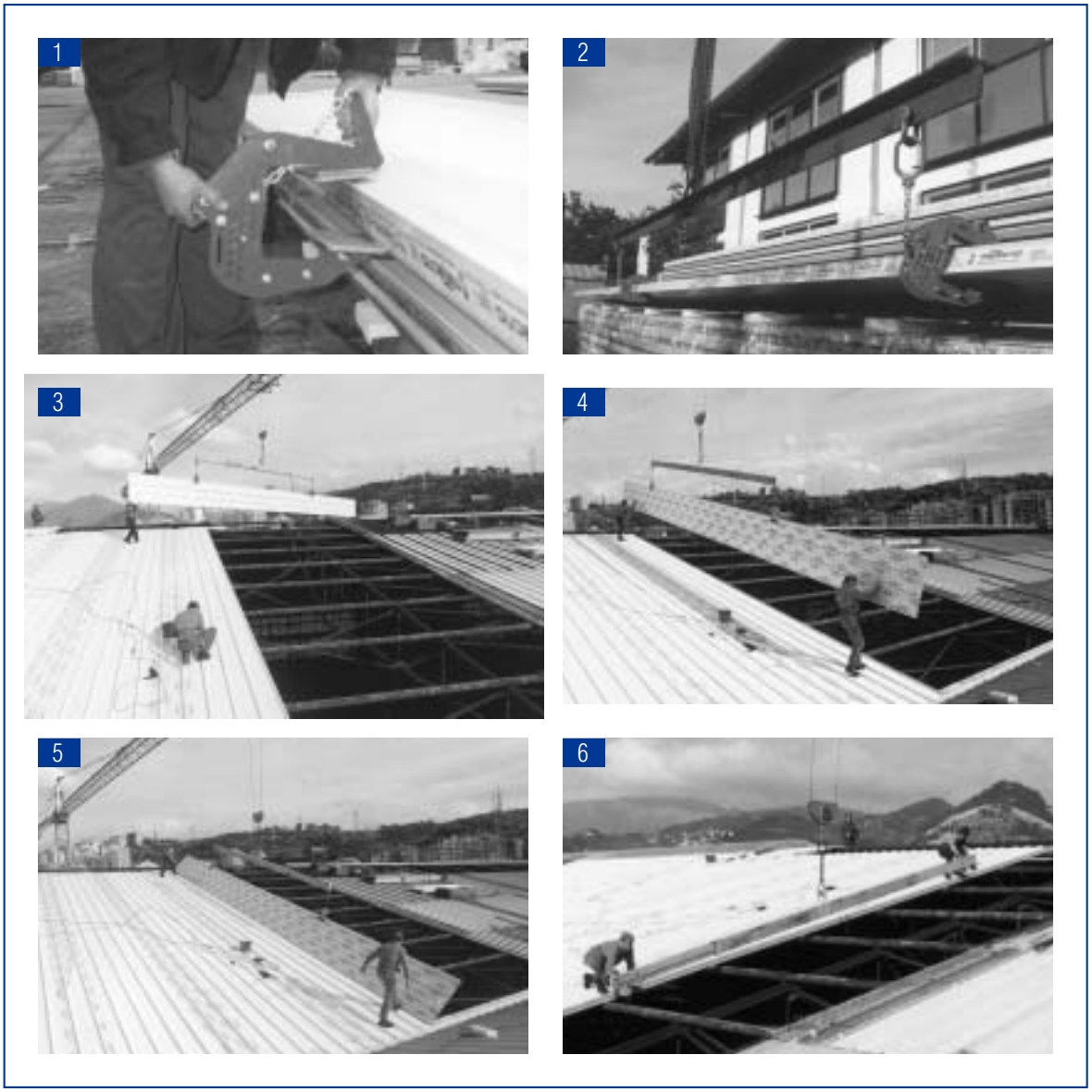


Fig. 8

4.1.3 PREPARATION OF THE PANELS

The protective film of polyethylene must be completely removed before the panels are installed. Check carefully that there are no traces of adhesive from the film remaing on the surface of the panel. Use a mixture of detergent and water to remove any residue which is found.

If incisions have been made to prepare the panels for overlapping on the pitch of the roof or the projection of the eaves, remove the polyurethane before proceeding to install them.

If, after the panels are examined on-site, traces of escaped polyurethane are found, the installers will remove any excess material.

4.1.4 ASSEMBLY OF THE PANELS

4.1.4. When all the operations described in points 4.1.1, 4.1.2 an 4.1.3 have been carried out, the installation of flashings, ridge-elements, gutter and all the necessary gaskets below the panels can be started. (Fig.9)

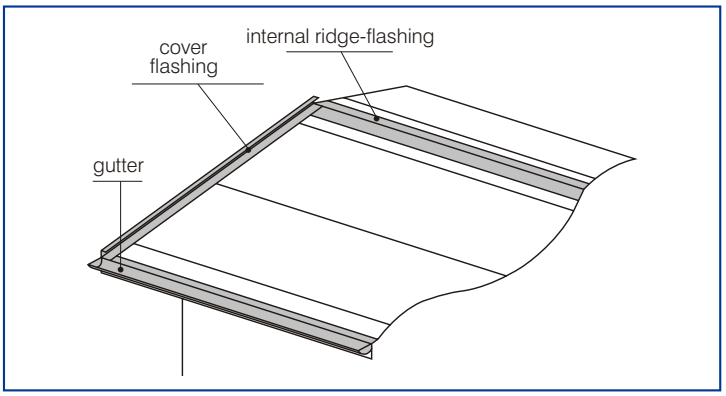


Fig. 9

A contain kerb must be laid along the ridge of the roof and the perimeter of the external sides of the roof. The determination of the assembling direction is regarding the main direction of the weather. (Fig.10a)

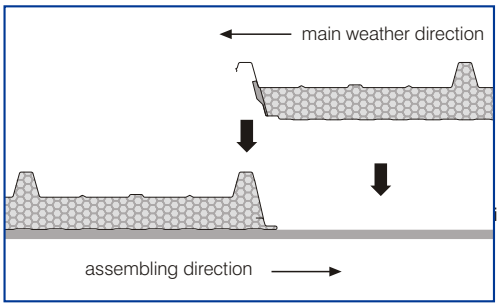


Fig. 10a

4.1.4.2 Place the first panel in position and fix it into place, making sure that it is correctly aligned with underlying purlins (Fig.10)

4.1.4.3 For the first panel carry out the fixing downstream of the first fret for each underlying purlin (Fig.11).

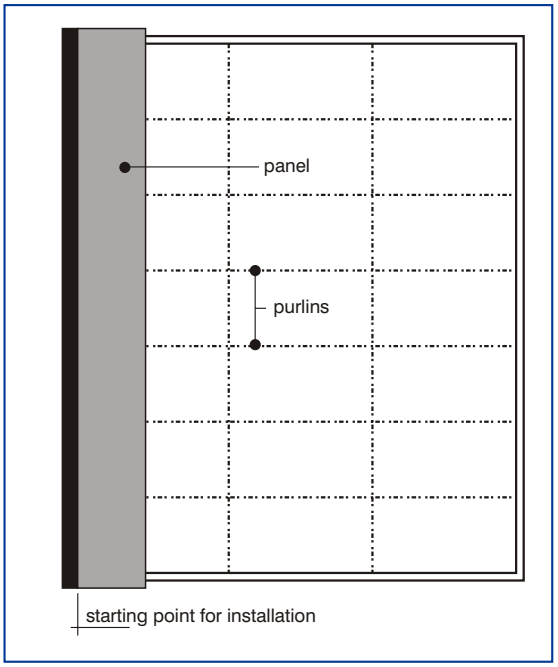


Fig. 10

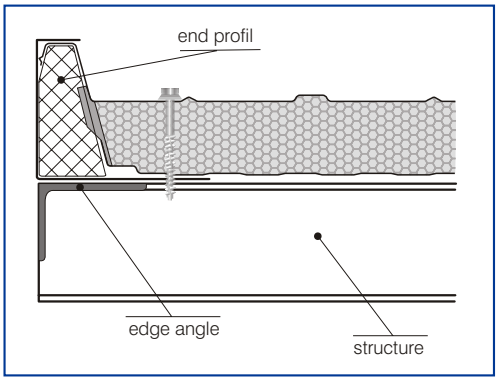


Fig. 11

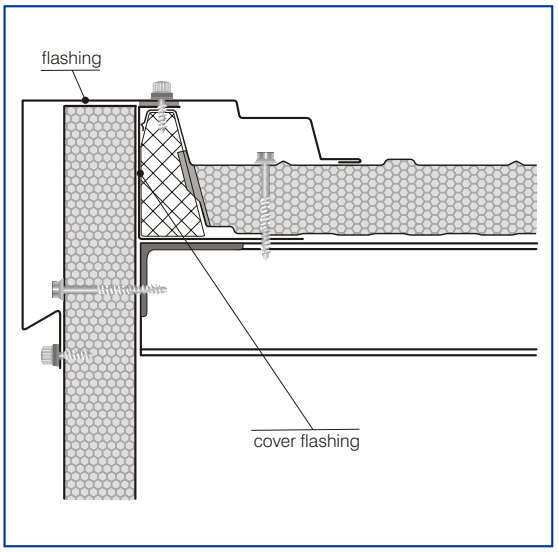


Fig. 11a

4.1.4.4 Check that the instructions in point 4.1.4.3 have been carried out before installing the second panel.

4.1.4.5 The second panel is installed by overlapping the raised fret over that of the first panel and fix them together as described below. (Fig.12).

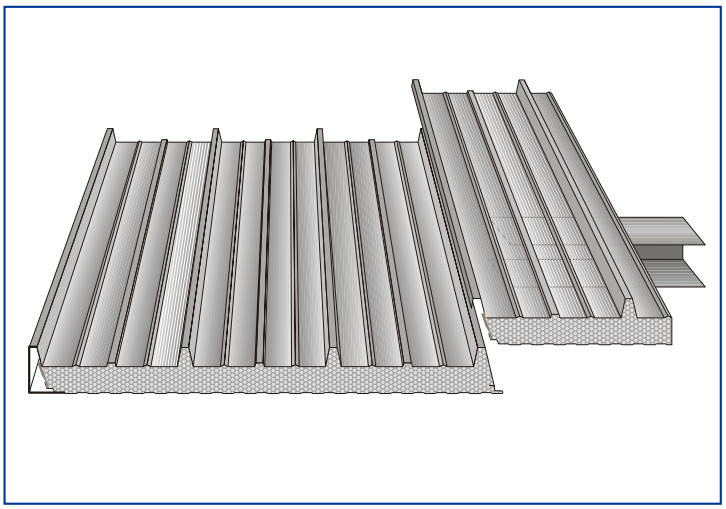


Fig. 12

Drill the hole for the screw which must be perpendicular to the surface of the panel and in the centre of the fret. To make sure that the hole is correctly centred, use a cap as a template. (Fig.13). The length of the screw depends on the thickness of the foam in the panel.

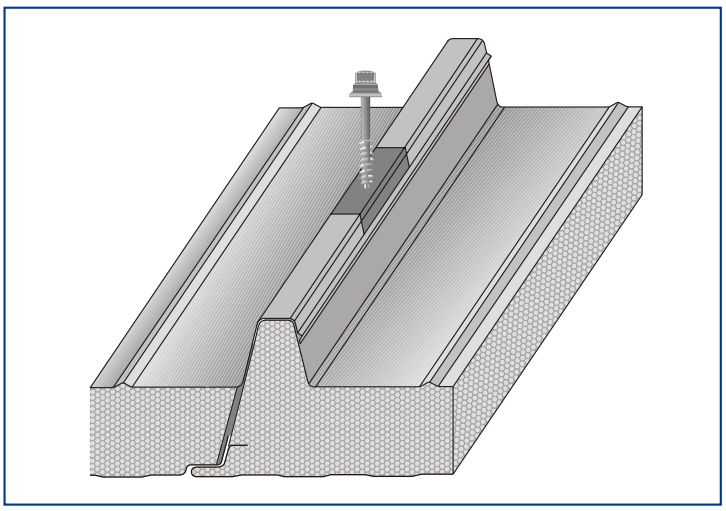


Fig. 13

4.1.4.6 Verify that the overlapping is perfect by checking that the external surfaces of the two panels are in contact an levelled (Fig.14). After the cutting, drilling and fixing operations have been completed, use the vacuum cleaner to suck up all the metal shavings.

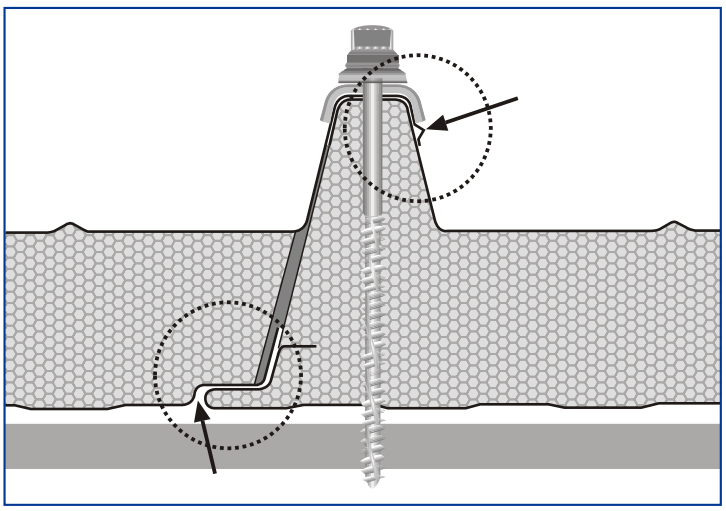
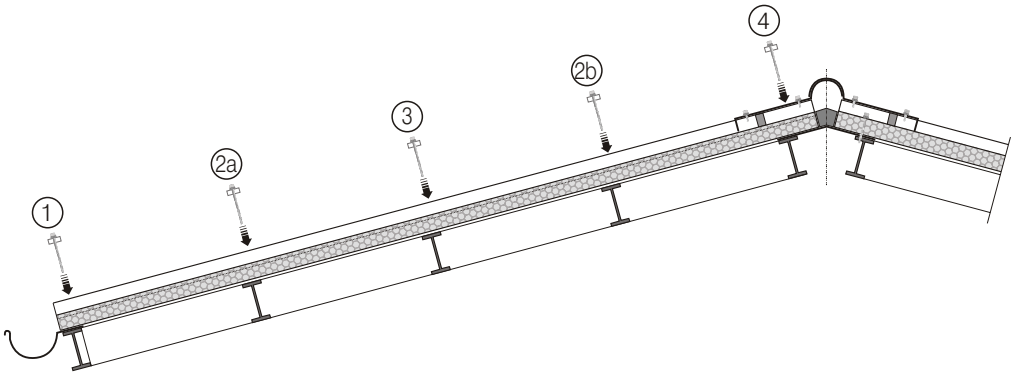
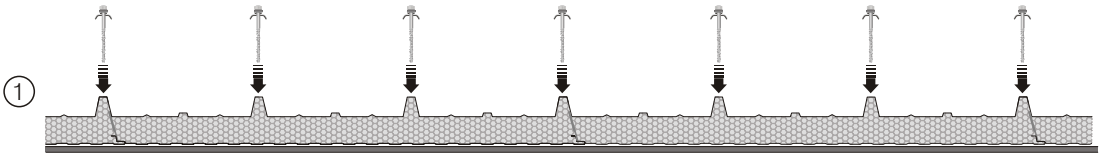


Fig.14

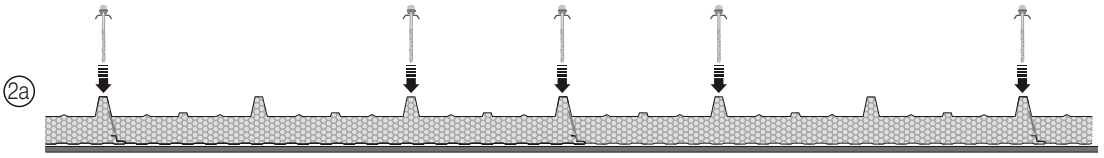
4.1.4.7 For a better clarification, the fixing-methode is described below:

1. fixing at the end of the roof-edge: one screw per high-corrugation
2. internal fixing: one screw on the edgeways high-corrugations and in the following one screw in converse on one of the both remaining internal high corrugations.
3. fixing on the endlapping: one screw per high-corrugation
4. fixing on the ridge: one screw on every low-corrugation

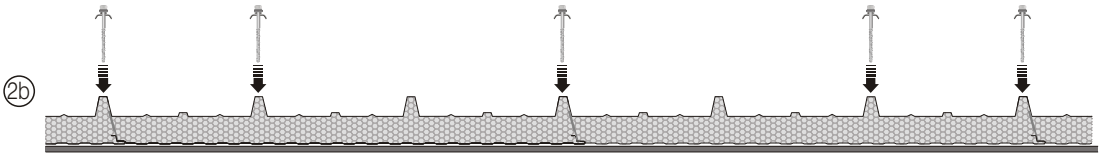




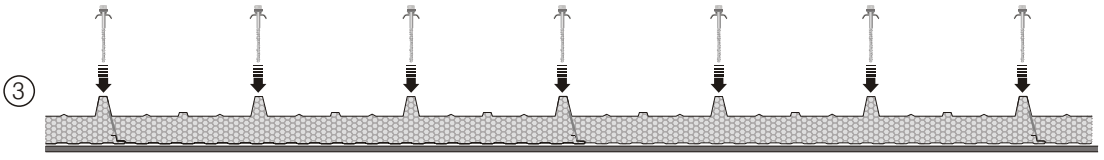
fixing at the end of the roof edge



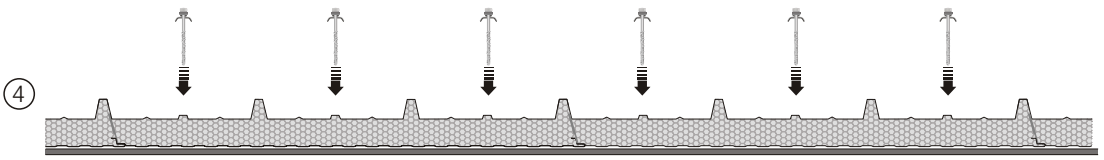
internal fixing



internal fixing



fixing on the endlapping



fixing on the ridge

The structural engineer will indicate the number of fixings to be employed, as a function of local wind conditions, the topography of the ground and the center-to-center of the purlins, since the function of the fixing is to react against the depressions caused by the wind.

4.1.4.8 To ensure a uniform effect of the roof panels, the overlapped panels are connected together by a further stitching screw, diam. 6,3x20 plus cap and washer, between one purlin and the next. (Fig.15).

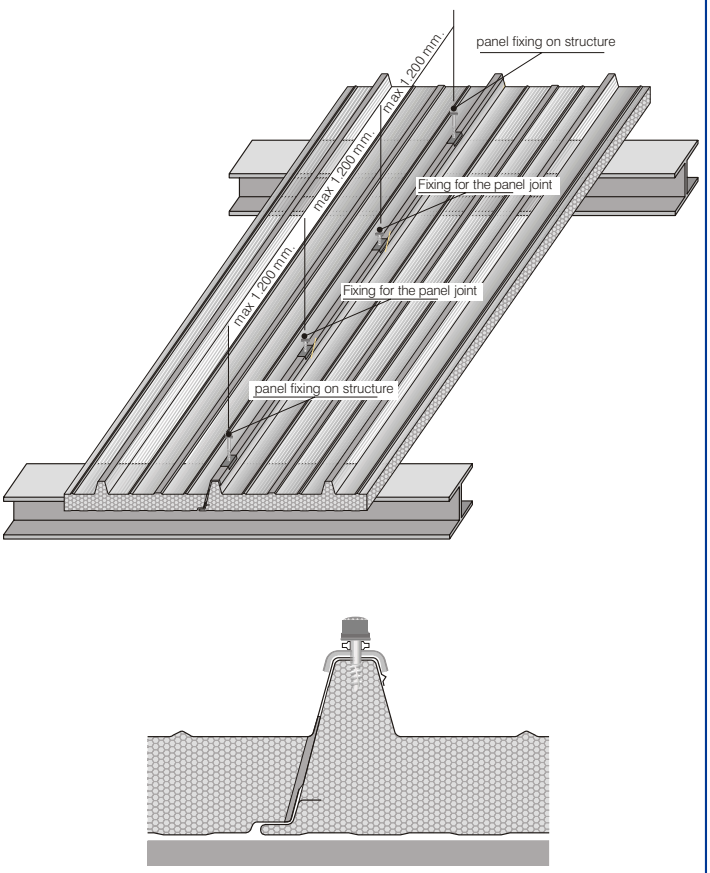


Fig. 15

4.1.4.9 Proceed to install the subsequent panels in the same way until the whole roof is covered.

4.1.4.10 When the pitch is of a length to require the use of more than one panel, the panel are installed in strips (Fig.16)

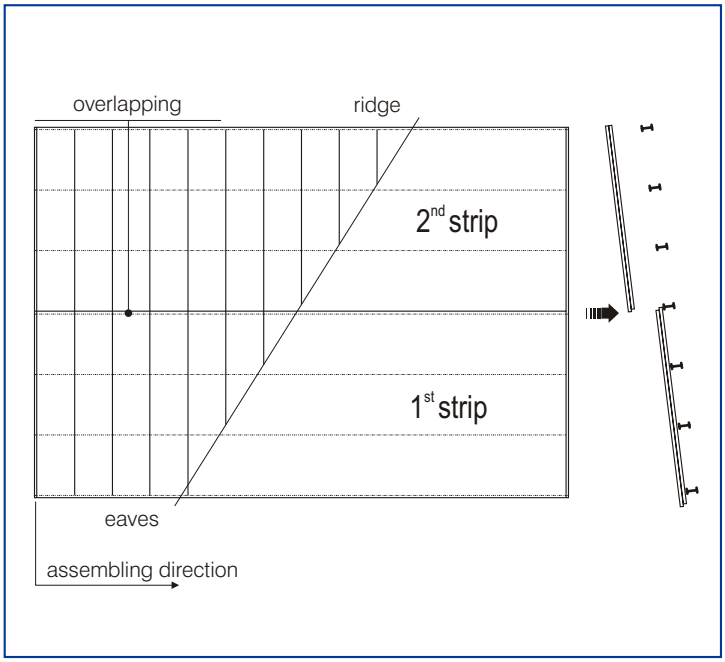


Fig. 16

4.1.4.11 Carry out all the operations referred to in point 4.1.1, 4.1.2, 4.1.3 and proceed to install the panels, starting from the first strip and working from left to right, as indicated in points 4.1.4.1, 4.1.4.8

4.1.4.12 When the first strip of panels has been installed, proceed with the second strip, overlapping the panels in the way shown in (Ffig.17) .

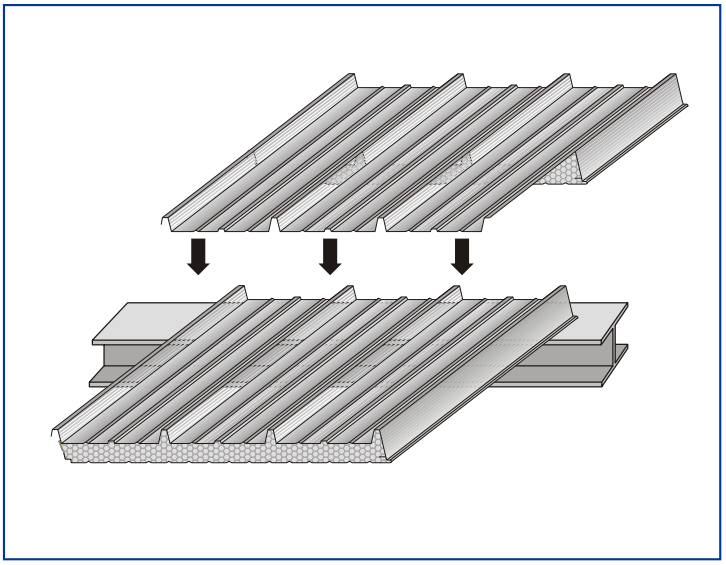


Fig. 17

4.1.4.13 The panels are prepared for this overlap either:

IN THE WORKSHOP: by appling a film of polyurethene to the inside of the fretted sheet so that the foam does not stick to the sheet in the part which forms the top of the overlap and by making an incision in the bottom sheet in the position indicated by the architect.
ON-SITE: by manually removing the incised part of the underlying sheet together with the foam thus making the panel ready for the overlap (Fig.18).

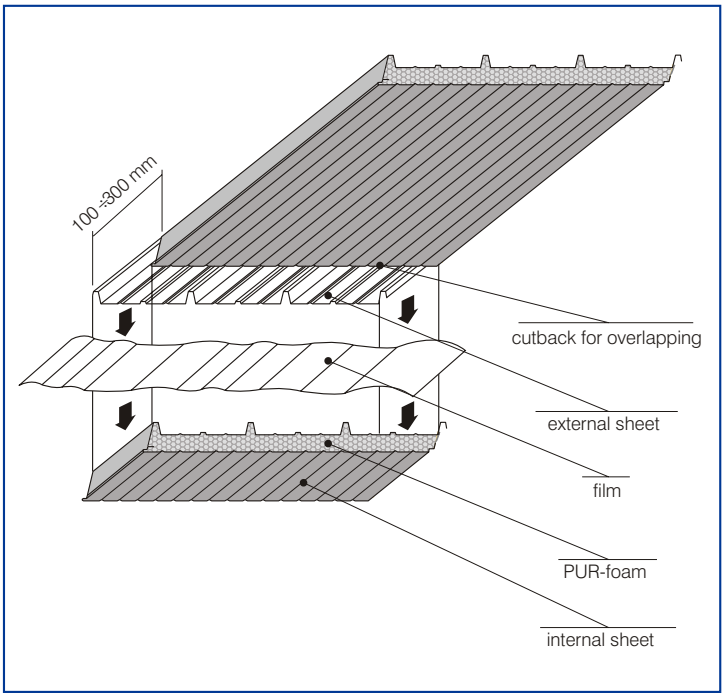


Fig. 18

In the case of projecting eaves, the separating film of polyethylene does not need to be prepared on-site.The operator on-site just has to remove the bottom sheet incised in the workshop and use a spatula to remove the foam in the section involved.

4.1.4.14 When the panels have been overlapped, they must be fixed to the underlying purlins, placing one screw for each overlapped fret as indicated in point 4.1.4.7.

4.1.4.15 Verify that the overlapping is perfect by checking that the external surfaces of the panels are in contact and levelled.

4.1.1.16 The overlap of the panels varies from a minimum of 100mm to a maximum of 300mm. The length of the overlap is determined as a function of the pitch of the roof. To improve the weather proofing of the overlap, it is advisable to insert one ore two strips of sealing putty between the sheets downstream of the fixing (Fig.19).

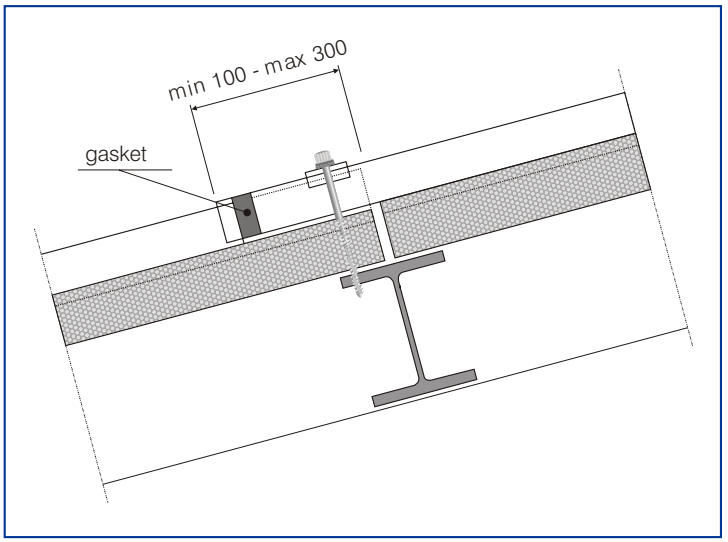


Fig. 19

4.1.4.17 Proceed to install the subsequent panels in the same way.

4.1.4.18 When the roof of a building has two or more pitches always remember that the panel has ist own laying direction. It has a “hand”, when the overlap cut is being prepared.It is “left-handed” or “jutty side B” if the fret which overlapps (empty) is on the left looking from the eaves to the roof ridge and, in the case, the panels are installed from left to right.

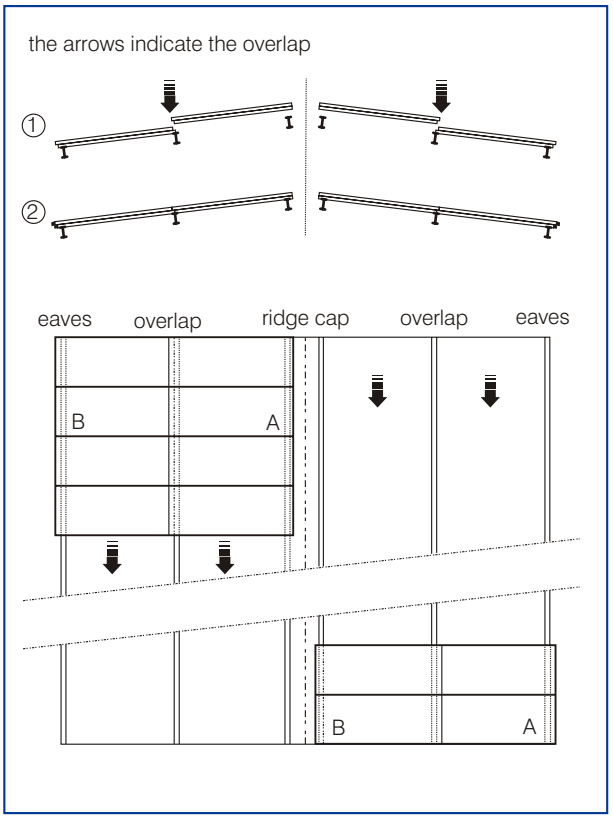


Fig. 20

It is advisable to overlap the panels in a way which will combat the effects of atmospheric agents (prevailing winds) Consequently, if one pitch of the roof has “left-handed or jutty side A panels, starting from the same headpiece (Fig.21) Always remember to indicate on the cutting bill ”panels length....” with type A or B.

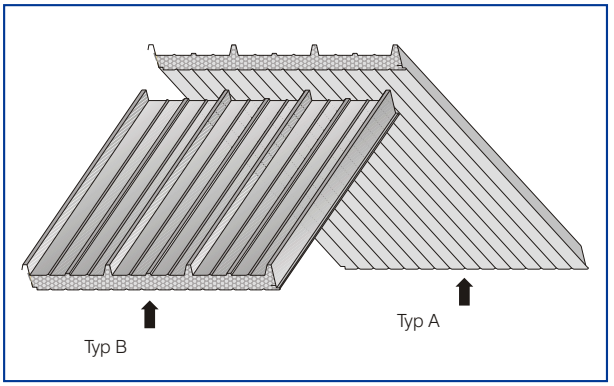
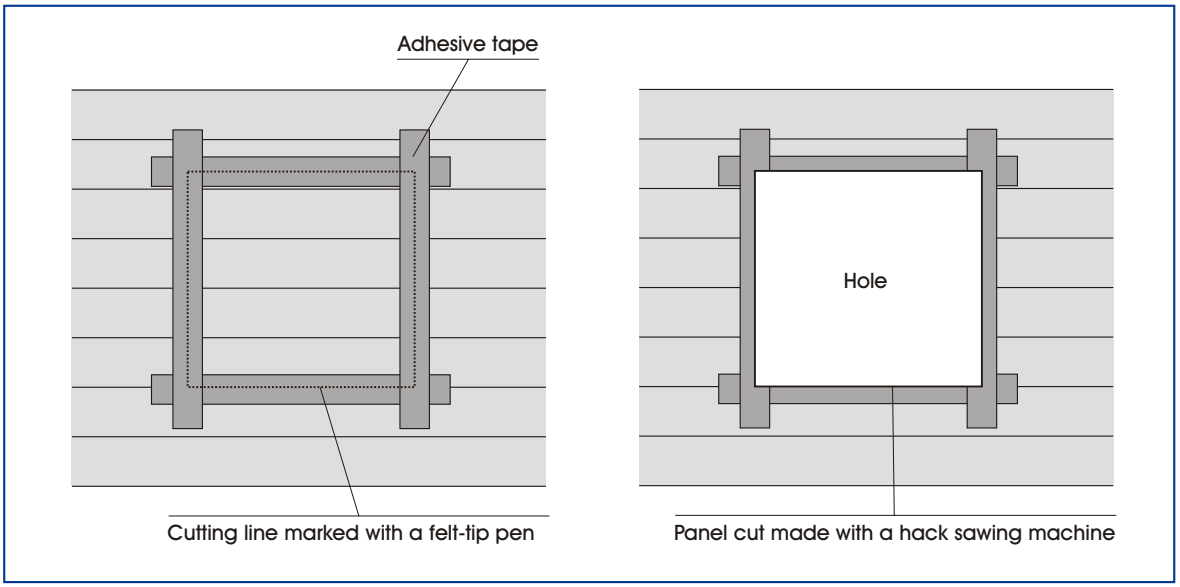


Fig. 21

6. CUTTING PANELS

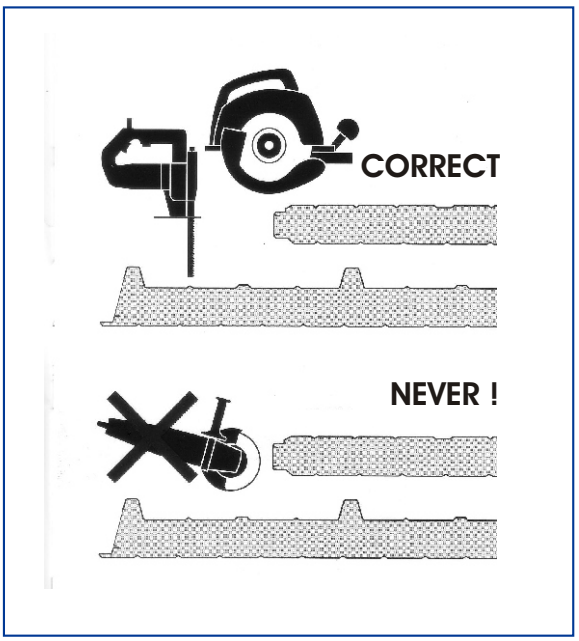
6.1 If panels need to be cut to make openings or passages, proceed as follows:

- Protect the surface to be cut with adhesive tape.
- Draw the cut to be made on the tape using a felt-tip pen.
- Clean the surface from the shavings formed during the cutting, because they can cause corrosion over time.
- Remove the adhesive tape.



6.2 Cutting at the building site

- for cutting use a hack sawing machine or a hand-held circular saw
- the use of a parting of grinder is not permitted

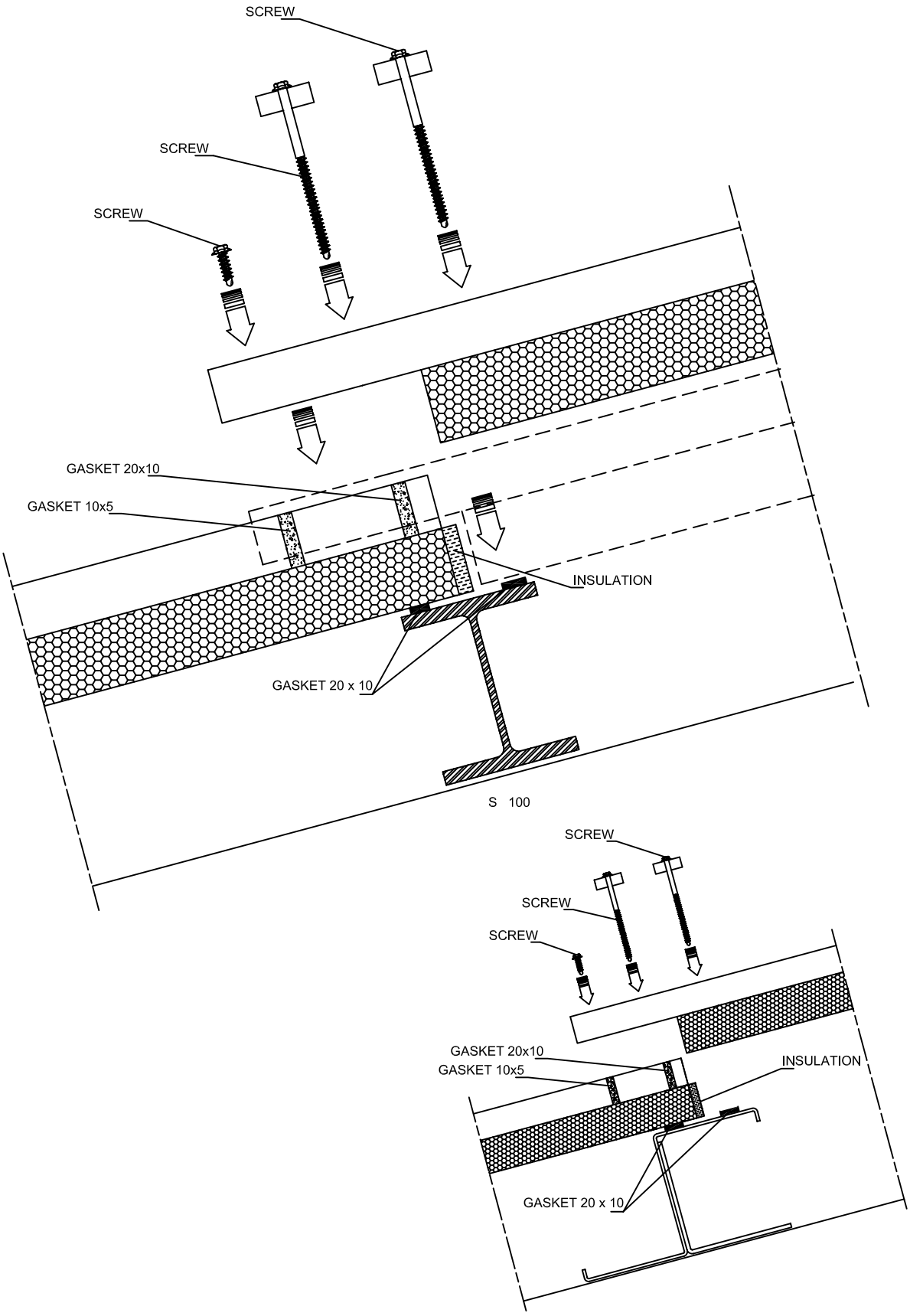


7. CONSTRUCTION DETAILS

Some construction details relevant to the individual points of a wall formed by Metecno® roof-panels are enclosed to the present document.

NO. 12 DRAWINGS
(annexed to the present manual)

meTecno	Roof details		
	Application:	*R*	*End lap*
	Installation:		



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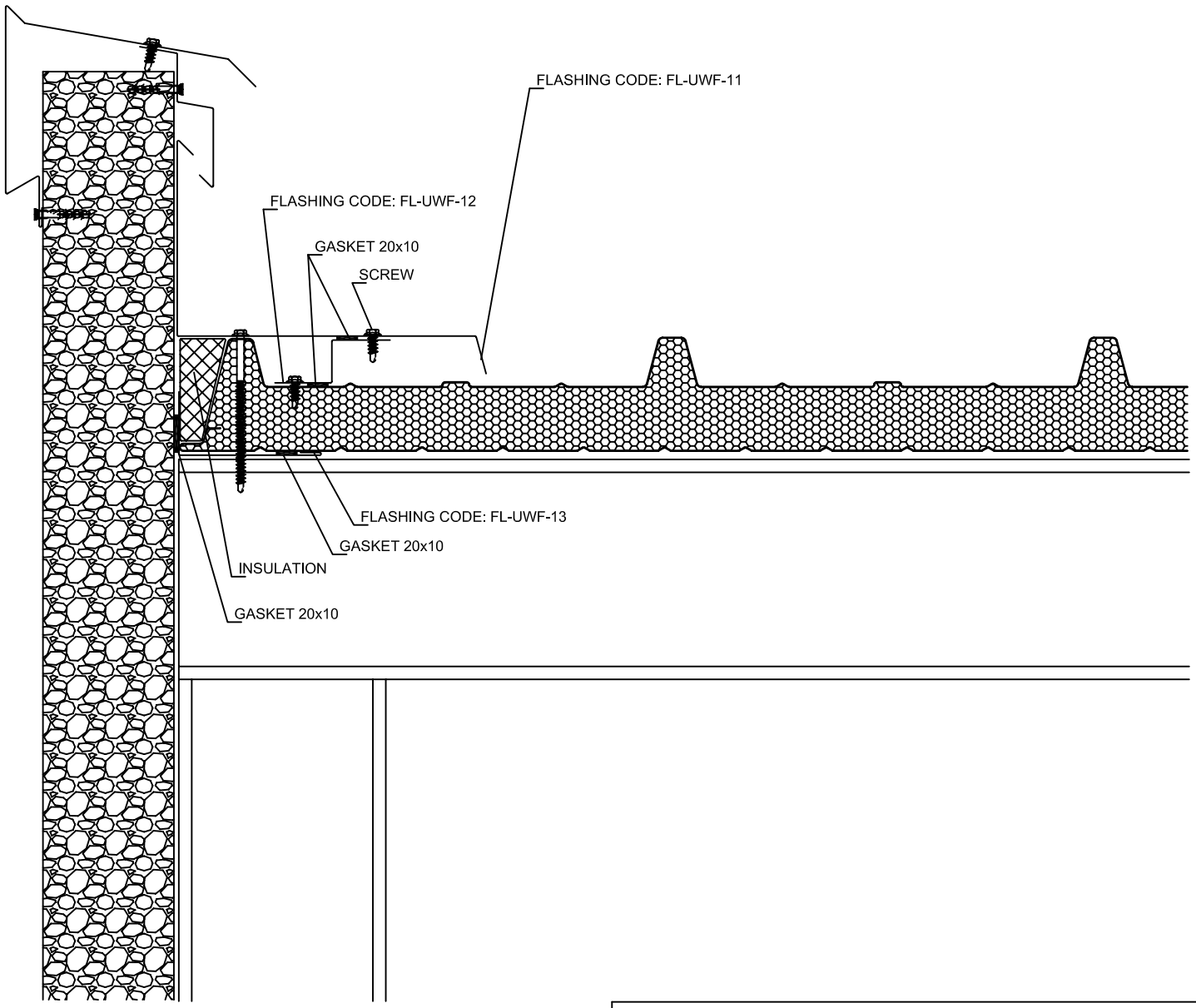
	C		DATE 06-06-2002	
	B		AUTHOR	
	A	SCREW TYPE 18. 03. 03	CHECK	

meTecno

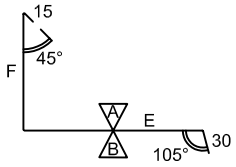
Roof details

Application:	R	Upper wall finish
Installation:		

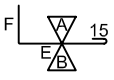


Flashing No.	FL-UWF-12
Panel thickness (S)	ALL
E	45
F	33
Width (mm)	122

Flashing No.	FL-UWF-11
Panel thickness (S)	ALL
E	215
F	147
Width (mm)	407



Flashing No.	FL-UWF-13
Panel thickness (S)	ALL
E	110
F	49
Width (mm)	174



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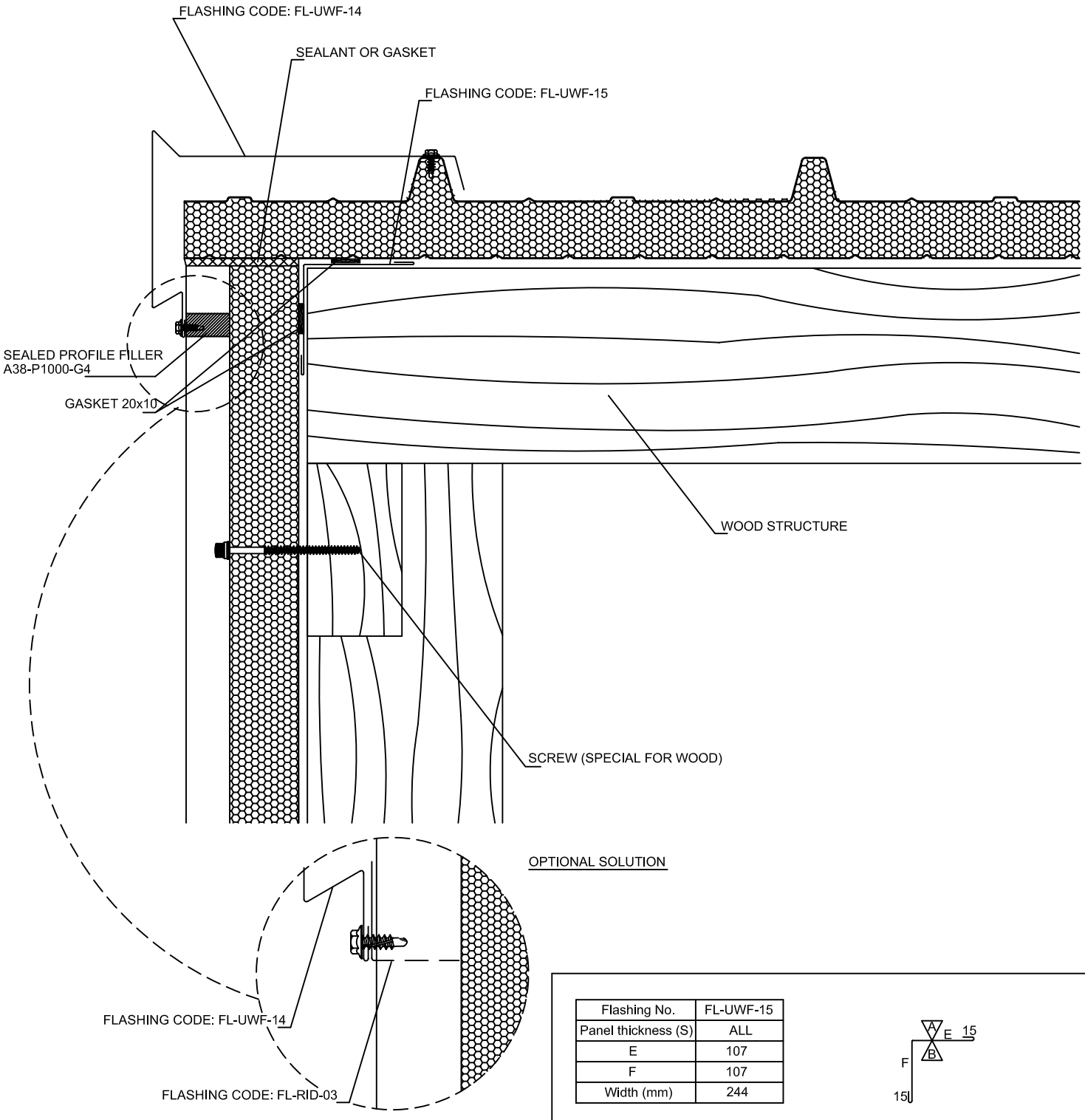
	C		DATE	06-06-2002
	B		AUTHOR	
	A	SCREW TYPE	CHECK	18. 03. 03

02.02.01/A

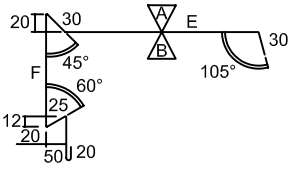
Roof details

Application:	*R*	*Upper wall finish*
Installation:		



Flashing No.	FL-UWF-15
Panel thickness (S)	ALL
E	107
F	107
Width (mm)	244

Flashing No.	FL-UWF-14
Panel thickness (S)	ALL
E	234
F	221
Width (mm)	610



Flashing No.	FL-RID-03
Panel thickness (S)	ALL
E	46
F	35
Width (mm)	81

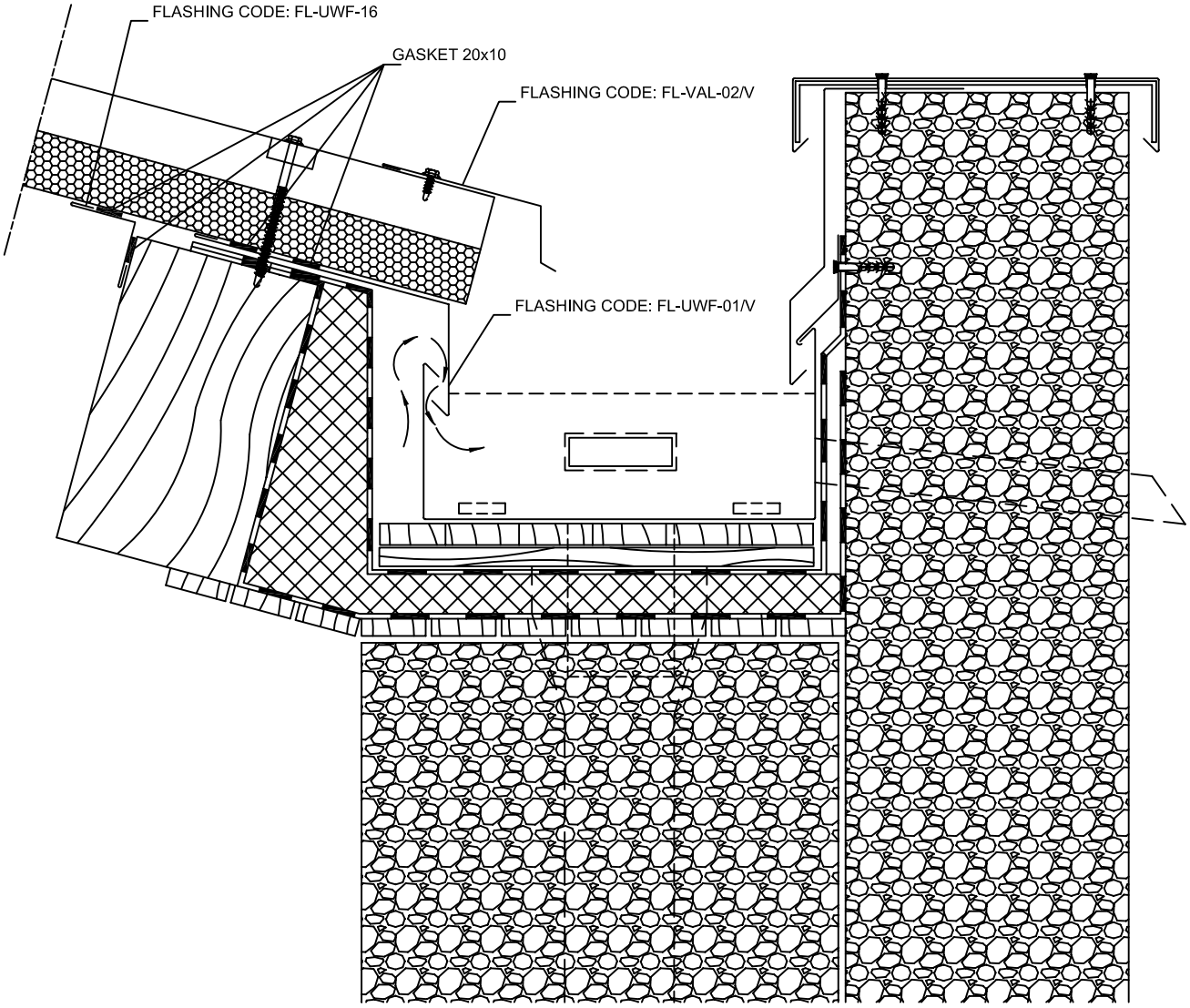
M O D	D		SCALE	1/2 -1/4
	C		DATE	06-06-2002
	B		AUTHOR	
	A	SCREW TYPE 18. 03. 03	CHECK	

02.02.02/A

meTecno

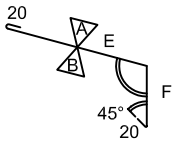
Roof details

Application:	*R*	*Upper wall finish*
Installation:		



Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	185
F	80
α°	Varies with project
Width (mm)	305

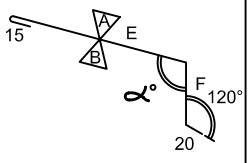
α° Varies with roof slope



Flashing No.	FL-UWF-16
Panel thickness (S)	ALL
E	85
F	85
Width (mm)	206

Flashing No.	FL-VAL-02/V						
Panel thickness (S)	30	40	50	60	70	80	100
E	125	125	130	130	130	160	140
F	43	43	79	79	79	110	130
α°	Varies with project						
Width (mm)	203	203	244	244	244	305	305

α° Varies with roof slope



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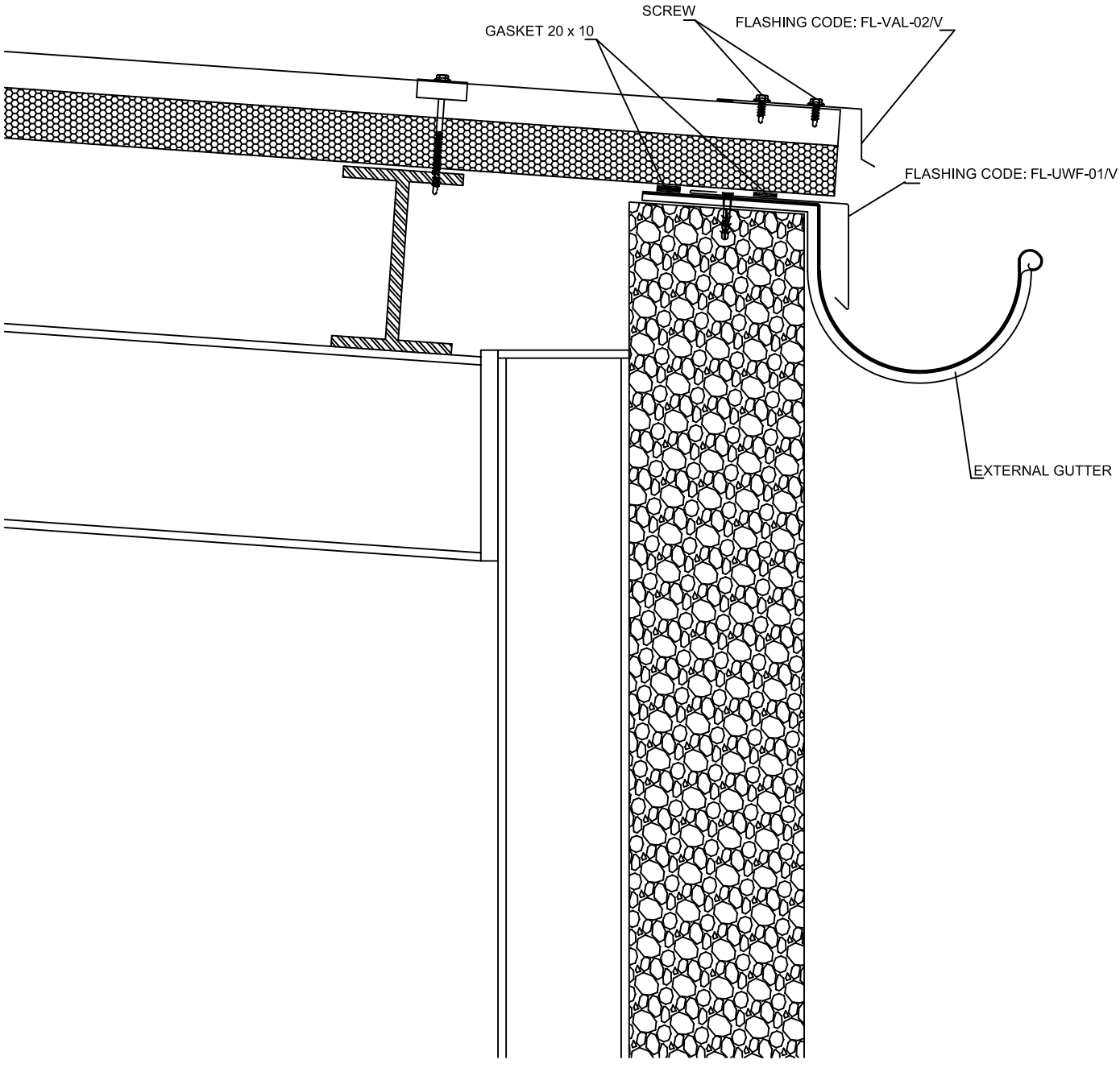
	C		DATE 06-06-2002
	B		AUTHOR
	A SCREW TYPE	18. 03. 03	CHECK

02.02.03/A

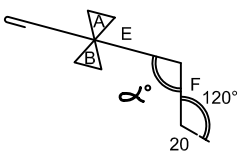
Roof details

Application:	R	Upper wall finish
Installation:		



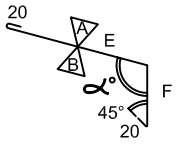
Flashing No.	FL-VAL-02/V						
Panel thickness (S)	30	40	50	60	70	80	100
E	125	125	130	130	130	160	140
F	43	43	79	79	79	110	130
α°	Varies with project						
Width (mm)	203	203	244	244	244	305	305

α° Varies with roof slope



Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	124
F	80
α°	Varies with project
Width (mm)	244

α° Varies with roof slope

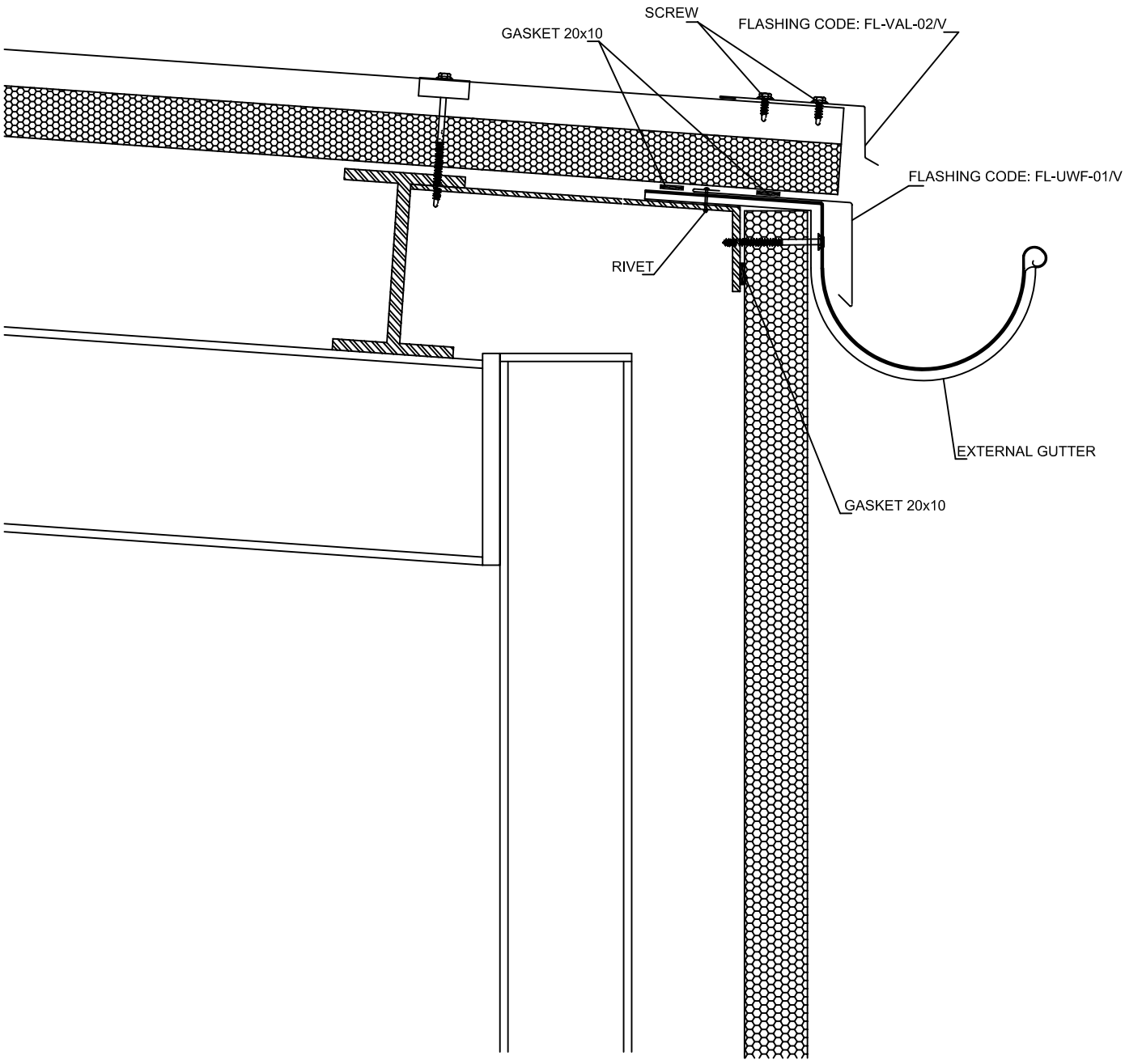


M O D	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A FLASHING FL-UWF-01/V DIMENSION AND SCREW TYPE 18.03.03	CHECK	

02.02.04/A

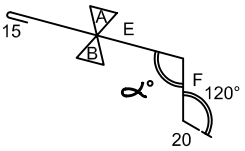
Roof details

Application:	*R*	*Upper wall finish*
Installation:		



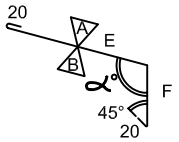
Flashing No.	FL-VAL-02/V						
Panel thickness (S)	30	40	50	60	70	80	100
E	125	125	130	130	130	160	140
F	43	43	79	79	79	110	130
α°	Varies with project						
Width (mm)	203	203	244	244	244	305	305

α° Varies with roof slope



Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	124
F	80
α°	Varies with project
Width (mm)	244

α° Varies with roof slope



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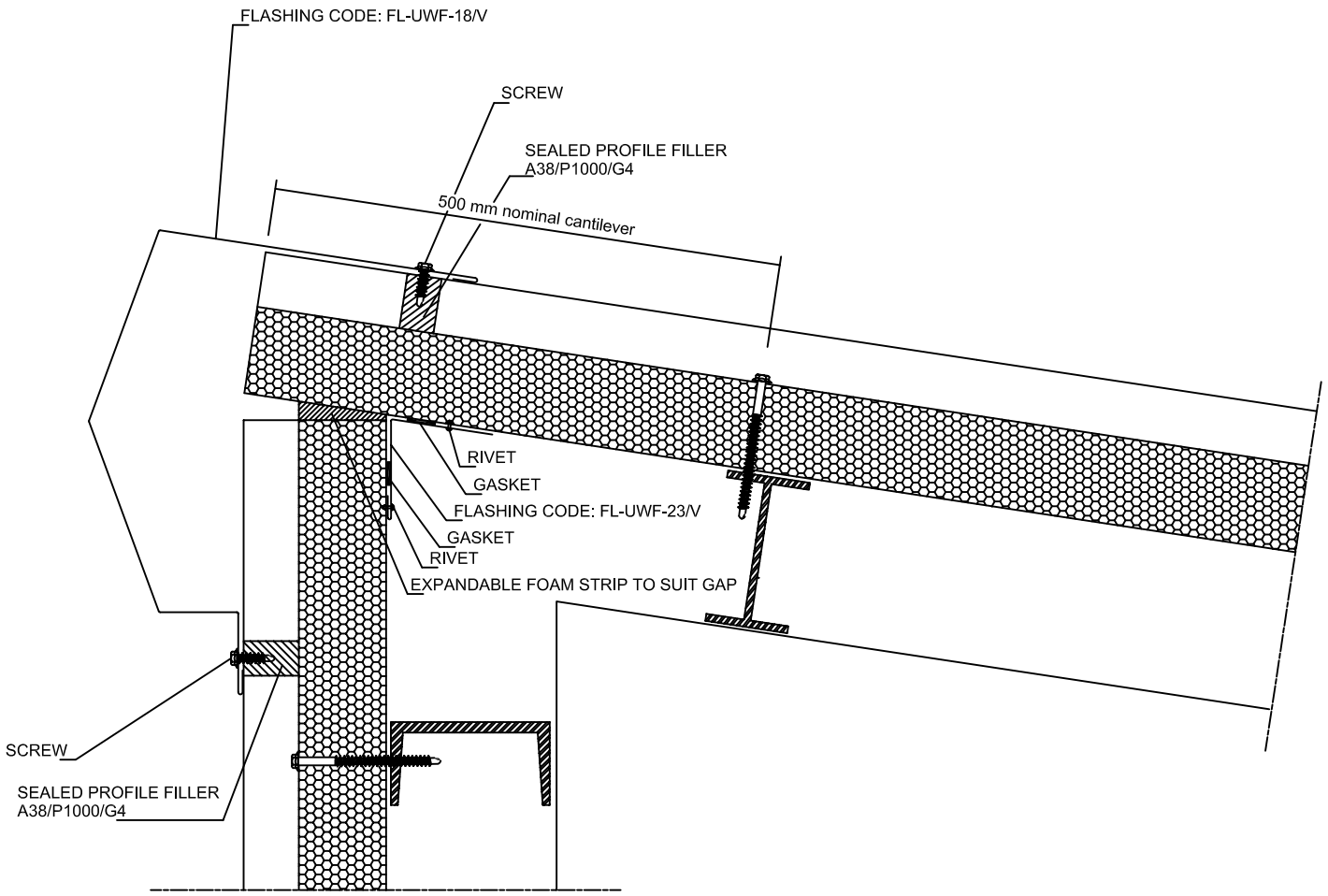
	C	DATE	06-06-2002
	B	AUTHOR	
	A FLASHING FL-UWF-01/V DIMENSION AND SCREW TYPE 18.03.03	CHECK	

02.02.05/A

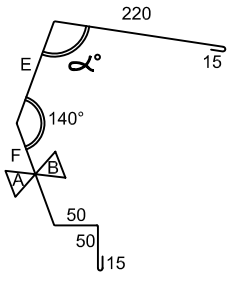
Roof details

Application:	R	Upper wall finish
Installation:		



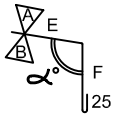
Flashing No.	FL-UWF-18/V
Panel thickness (S)	ALL
E	140
F	140
α°	Varies with project
Width (mm)	610

α° Varies with roof slope



Flashing No.	FL-UWF-23/V
Panel thickness (S)	ALL
E	98
F	85
α°	Varies with roof slope
Width (mm)	203

α° Varies with roof slope



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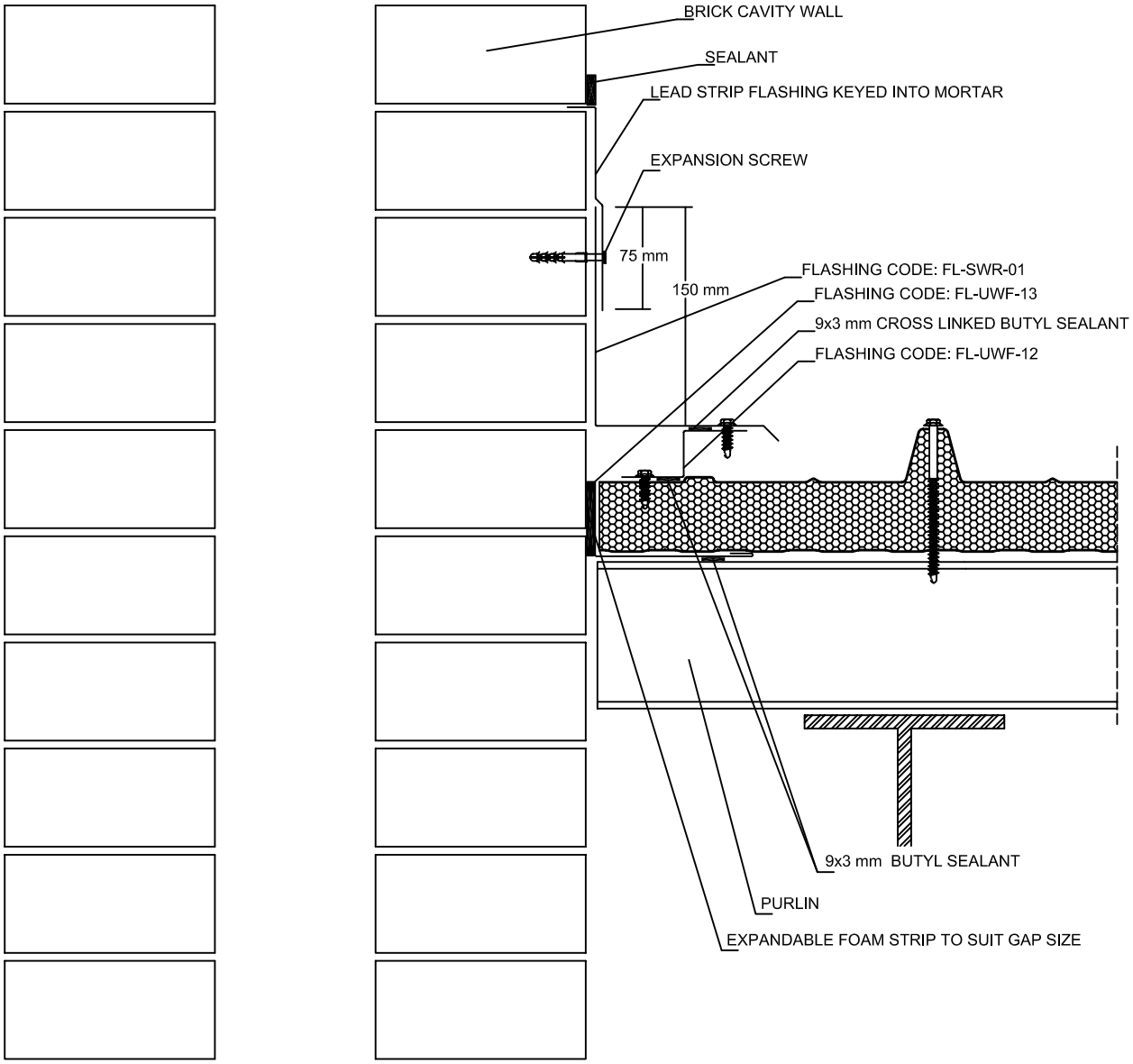
	B	AUTHOR	
	A INTRODUCTION OF FLASHING FL-UWF-23/V AND SCREW TYPE 18.03.03	CHECK	

02.02.07/A

meTecno

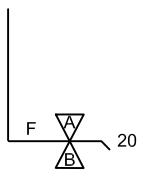
Roof details

Application:	*R*	*Special wall/roof junction*
Installation:		

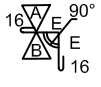


Flashing No.	FL-UWF-12
Panel thickness (S)	ALL
E	45
F	33
Width (mm)	122

Flashing No.	FL-SWR-01
Panel thickness (S)	ALL
E	150
F	135
Width (mm)	305



Flashing No.	FL-UWF-16
Panel thickness (S)	ALL
E	85
F	85
Width (mm)	206



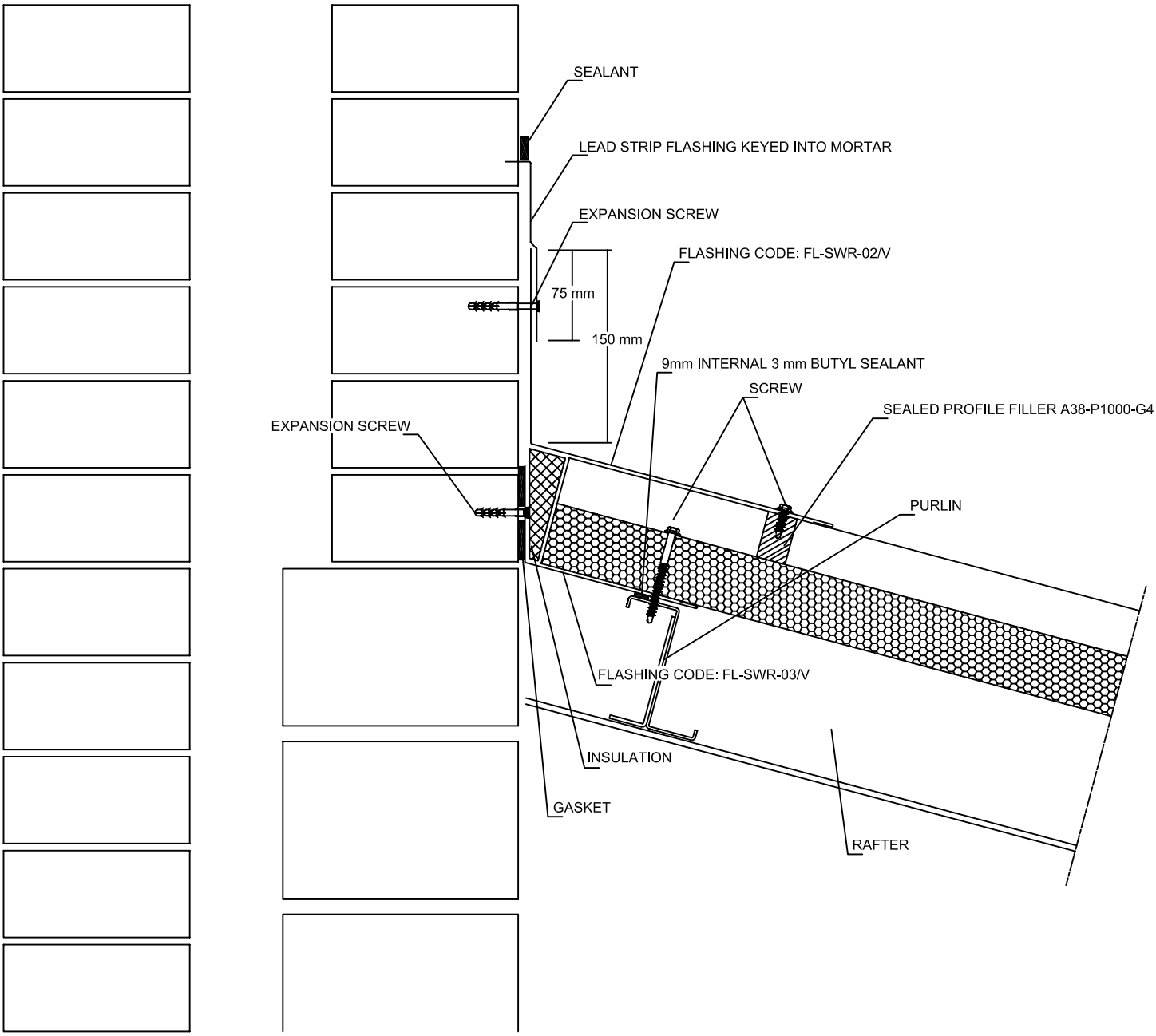
MOD	D		SCALE 1/2 -1/4
	C		DATE 06-06-2002
	B		AUTHOR
	A	EXPANSION SCREW POSITION AND SCREW TYPE 18.03.03	CHECK

02.09.01/A

meTecno

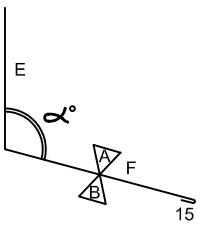
Roof details

Application:	*R*	*Special wall/roof junction*
Installation:		



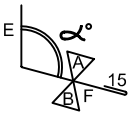
Flashing No.	FL-SWR-02/V
Panel thickness (S)	ALL
E	150
F	241
$\alpha°$	Varies with project
Width (mm)	406

$\alpha°$ Varies with roof slope



Flashing No.	FL-SWR-03/V						
Panel thickness (S)	30	40	50	60	70	80	100
E	60	70	80	90	100	110	130
F	129	119	149	139	129	119	160
$\alpha°$	Varies with project						
Width (mm)	204	204	244	244	244	244	305

$\alpha°$ Varies with roof slope



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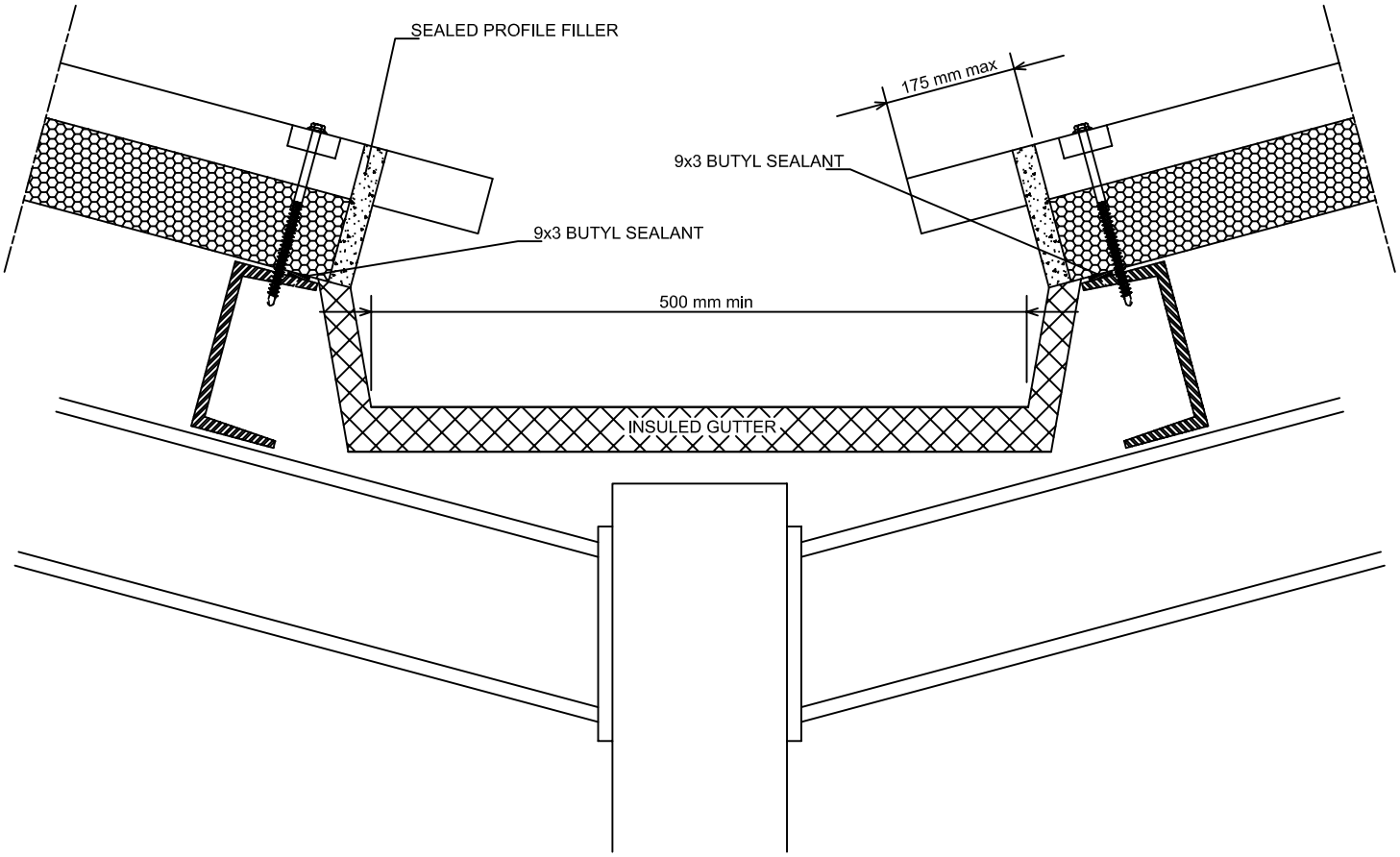
	B	AUTHOR	
	A EXPANSION SCREW POSITION AND SCREW TYPE 18.03.03	CHECK	

02.09.02/A

meTecno	Roof details		
	Application:	*R*	*Valley*
	Installation:		



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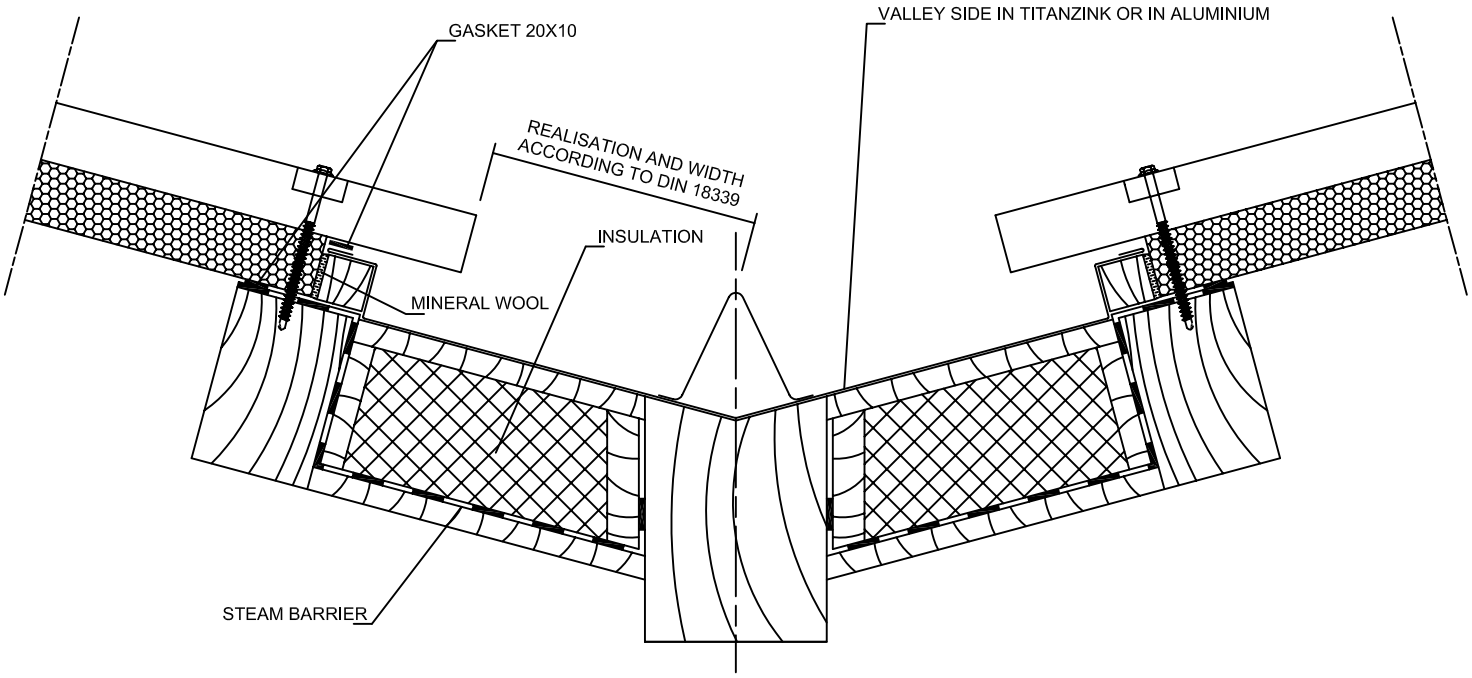
	B		AUTHOR	
	A	SCREW TYPE 18. 03. 03	CHECK	

02.10.01/A

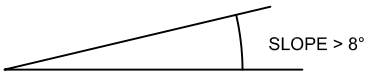
meTecno

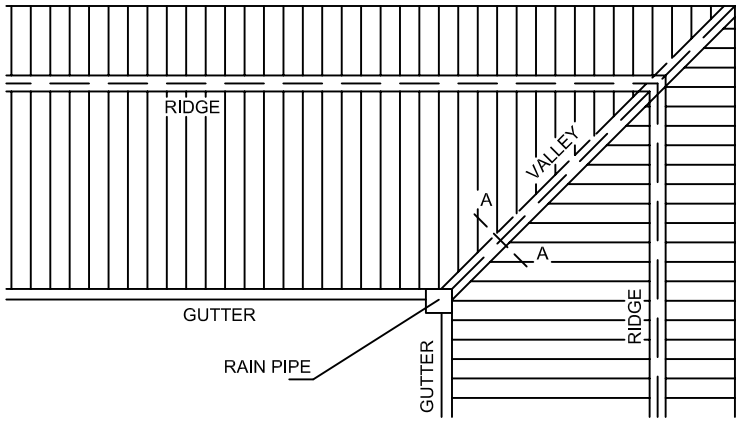
Roof details

Application:	*R*	*Valley*
Installation:		



SECTION A-A





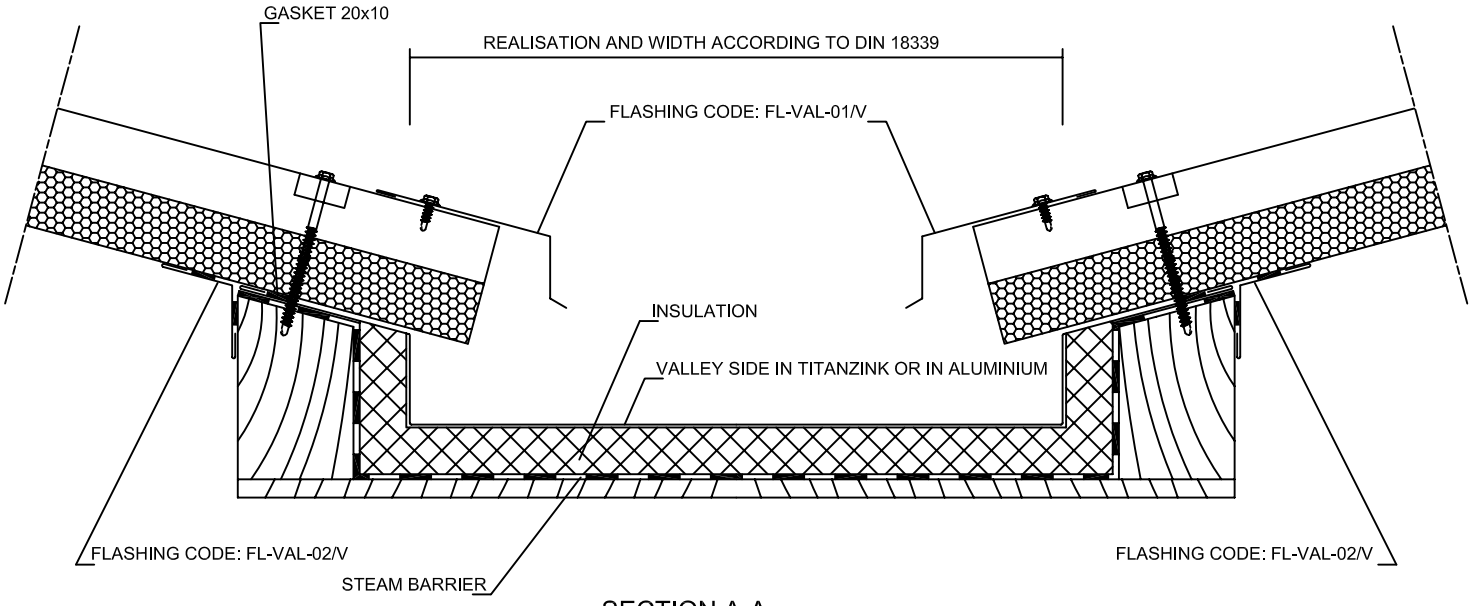
MOD				
	D		SCALE	1/2 -1/4
	C		DATE	06-06-2002
	B		AUTHOR	
	A	FLASHING FL-VAL-01/V CANCELED 18.03.03	CHECK	

02.10.02/A

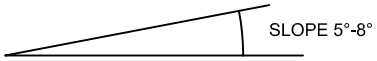
meTecno

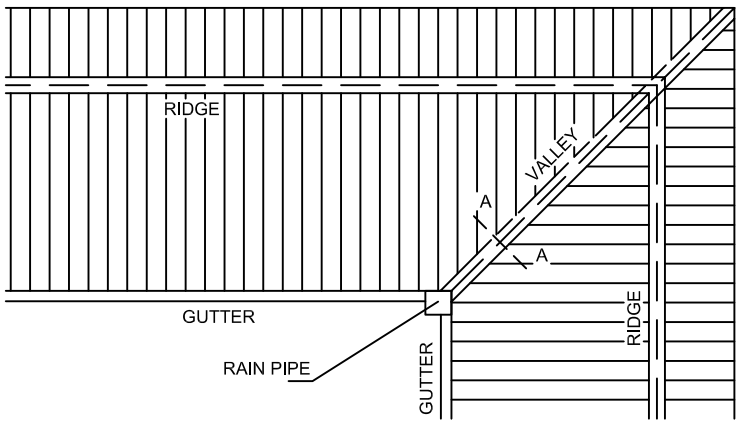
Roof details

Application:	*R*	*Valley*
Installation:		



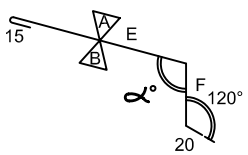
SECTION A-A





Flashing No.	FL-VAL-01/V						
Panel thickness (S)	30	40	50	60	70	80	100
E	125	125	130	130	130	160	140
F	43	43	79	79	79	110	130
$\alpha°$	Varies with project						
Width (mm)	203	203	244	244	244	305	305

$\alpha°$ Varies with roof slope



Flashing No.	FL-VAL-02/V
Panel thickness (S)	ALL
E	45
F	45
$\alpha°$	Varies with project
Width (mm)	120

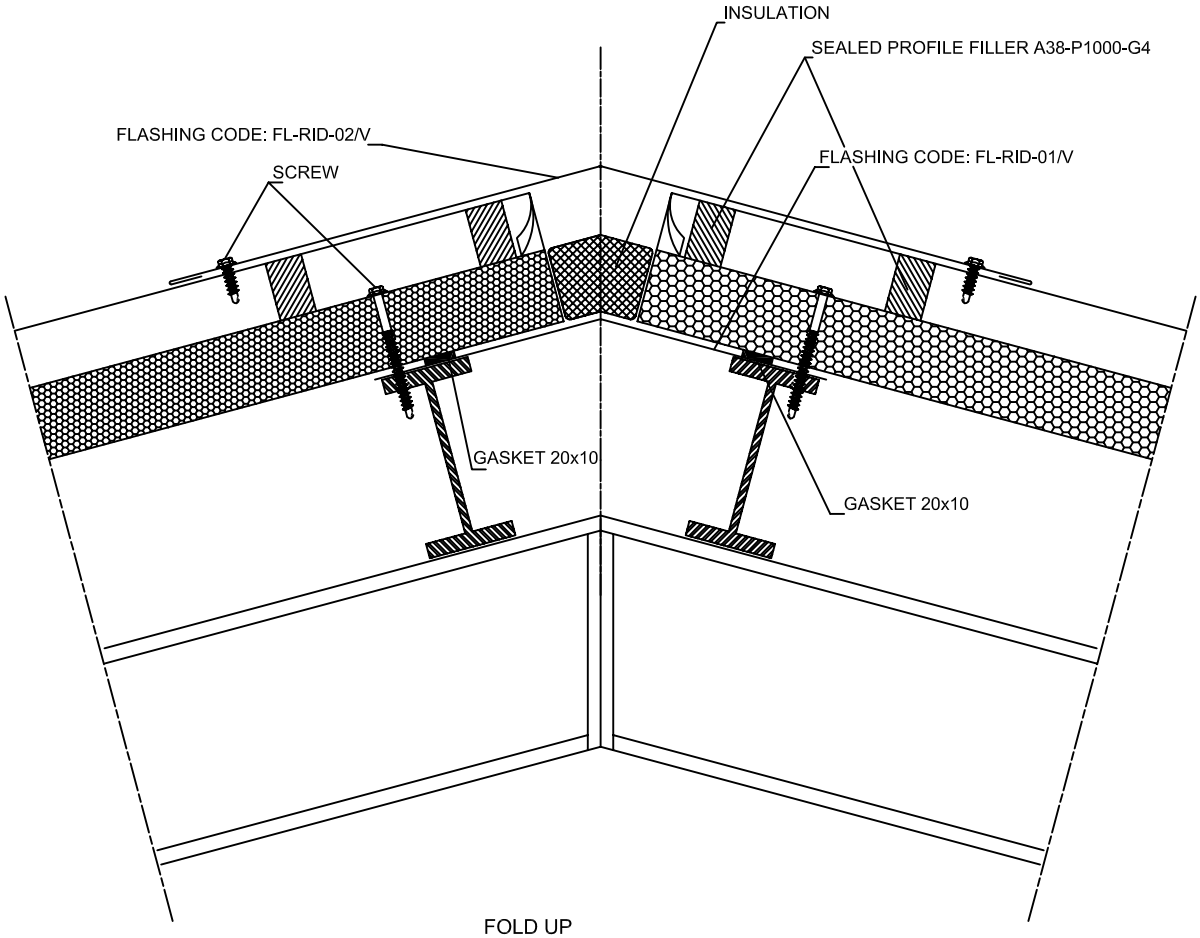
$\alpha°$ Varies with roof slope

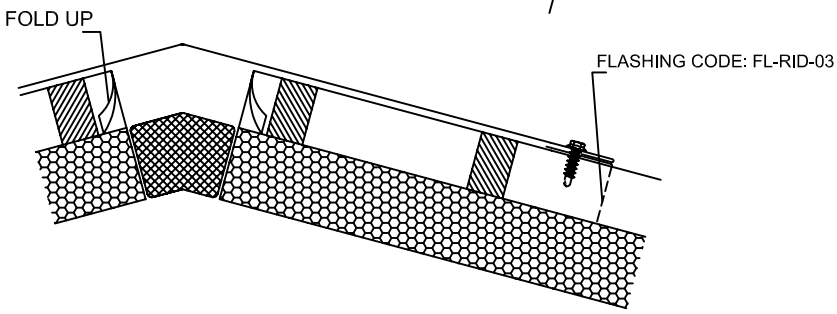
MOD			
	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A FLASHING FL-VAL-01/V CANCELED 18.03.032	CHECK	

02.10.03/A

Roof details

Application:	R	Ridge
Installation:		





SEALED PROFILE FILLER A38-P1000-G4	
ROOF SLOPE ⩽ 10°	2 pc.
ROOF SLOPE > 10°	1 pc.

Flashing No.	FL-RID-01/V
Panel thickness (S)	ALL
E	153
F	153
α°	Varies with project
Width (mm)	306

α° Varies with roof slope

Flashing No.	FL-RID-02/V
Panel thickness (S)	ALL
E	285
F	285
α°	Varies with project
Width (mm)	610

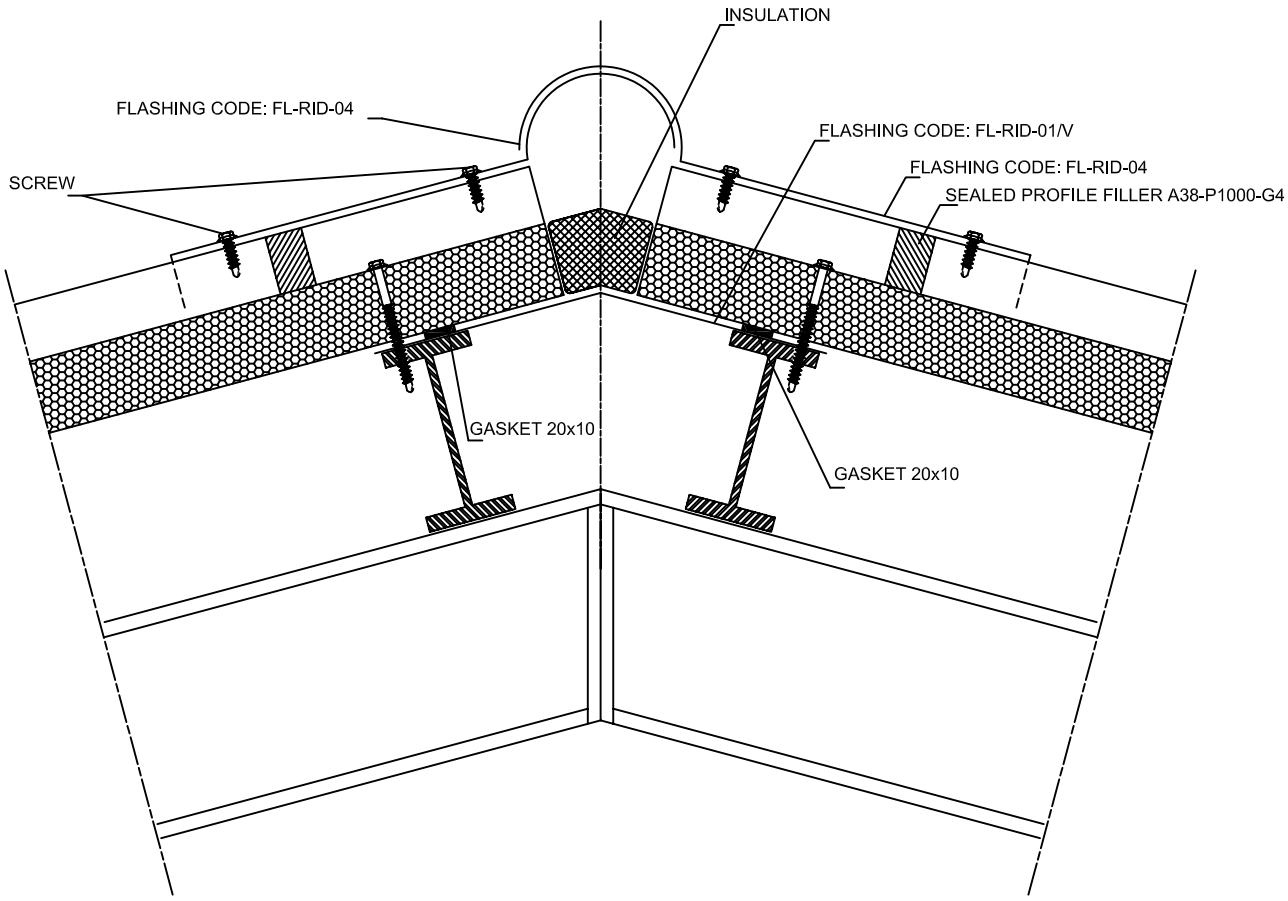
α° Varies with roof slope

Flashing No.	FL-RID-03
Panel thickness (S)	ALL
E	46
F	35
Width (mm)	81

MOD				
	D		SCALE	1/2-1/4
	C		DATE	06-06-2002
	B		AUTHOR	
	A SCREW TYPE	18. 03. 03	CHECK	

02.11.01/A

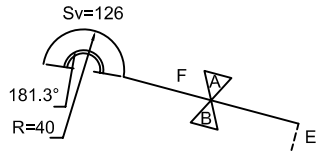
meTecno	Roof details	
	Application: R	*Ridge*
	Installation:	



Flashing No.	FL-RID-01/V
Panel thickness (S)	ALL
E	153
F	153
α°	Varies with project
Width (mm)	306

α° Varies with roof slope

Flashing No.	FL-RID-04
Panel thickness (S)	ALL
E	35
F	245
Width (mm)	406

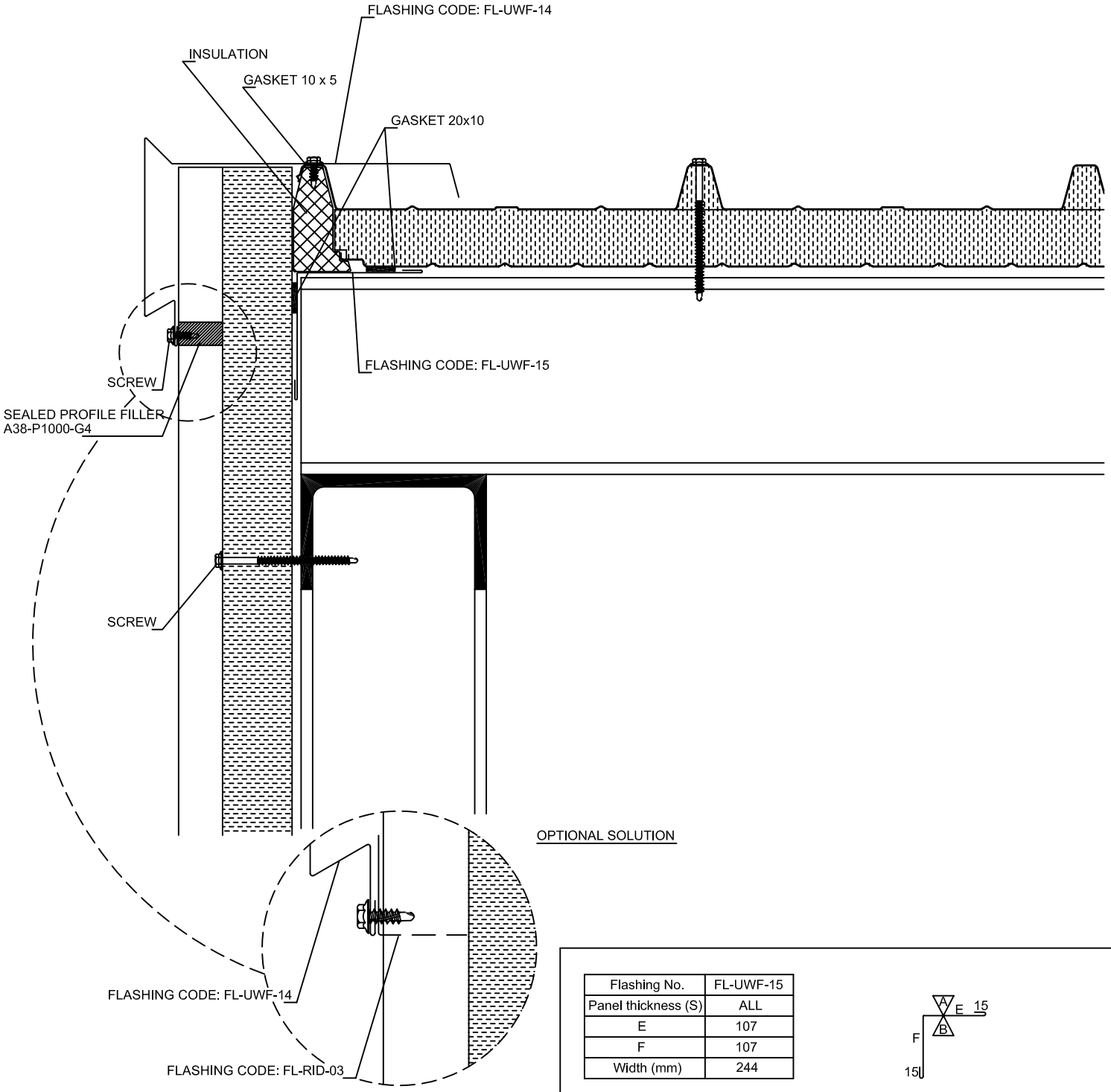


M O D	D		SCALE 1/2-1/4
	C		DATE 06-06-2002
	B		AUTHOR
	A SCREW TYPE	18. 03. 03	CHECK

02.11.02/A

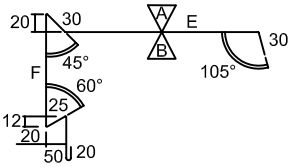
Roof details (Hipertec)

Application:	*R*	*Upper wall finish*
Installation:		



Flashing No.	FL-UWF-15
Panel thickness (S)	ALL
E	107
F	107
Width (mm)	244

Flashing No.	FL-UWF-14
Panel thickness (S)	ALL
E	234
F	221
Width (mm)	610



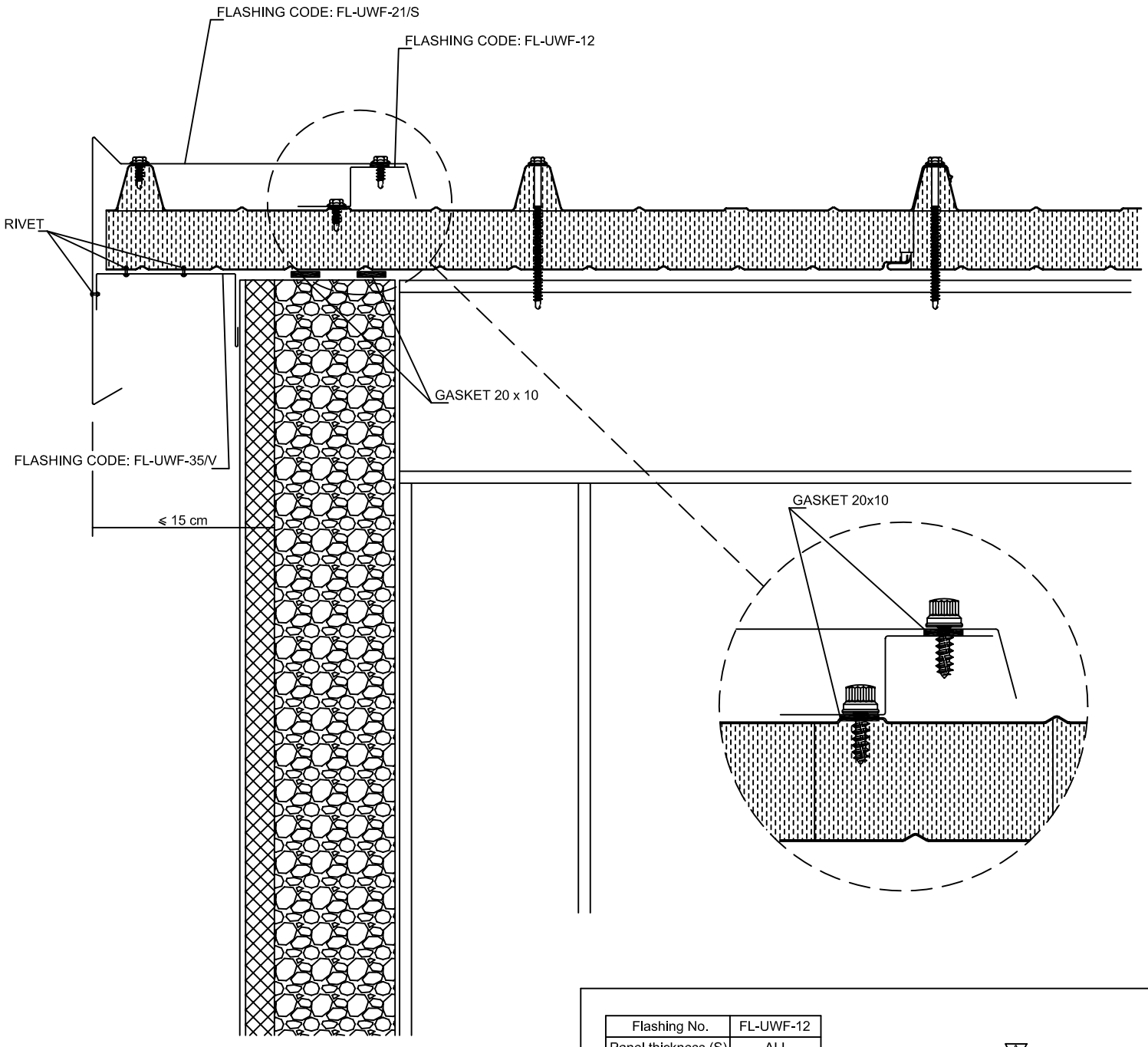
Flashing No.	FL-RID-03
Panel thickness (S)	ALL
E	46
F	35
Width (mm)	81

MOD				
	D		SCALE	1/2 -1/4
	C		DATE	06-06-2002
	B		AUTHOR	
	A	SCREW TYPE	CHECK	26. 03. 03

07.02.03/A

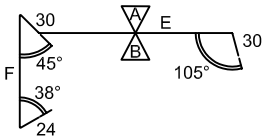
Roof details (Hipertec)

Application:	*R*	*Upper wall finish*
Installation:		



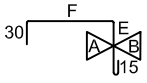
Flashing No.	FL-UWF-12
Panel thickness (S)	ALL
E	45
F	33
Width (mm)	122

Flashing No.	FL-UWF-21/S			
Panel thickness (S)	50	80	100	120
E	137	137	300	300
F	185	185	226	226
Width (mm)	406	406	610	610



Flashing No.	FL-UWF-35/V
Panel thickness (S)	ALL
E	50
F	Varies with project
Width (mm)	Varies with project *

* multiple of 1220 mm

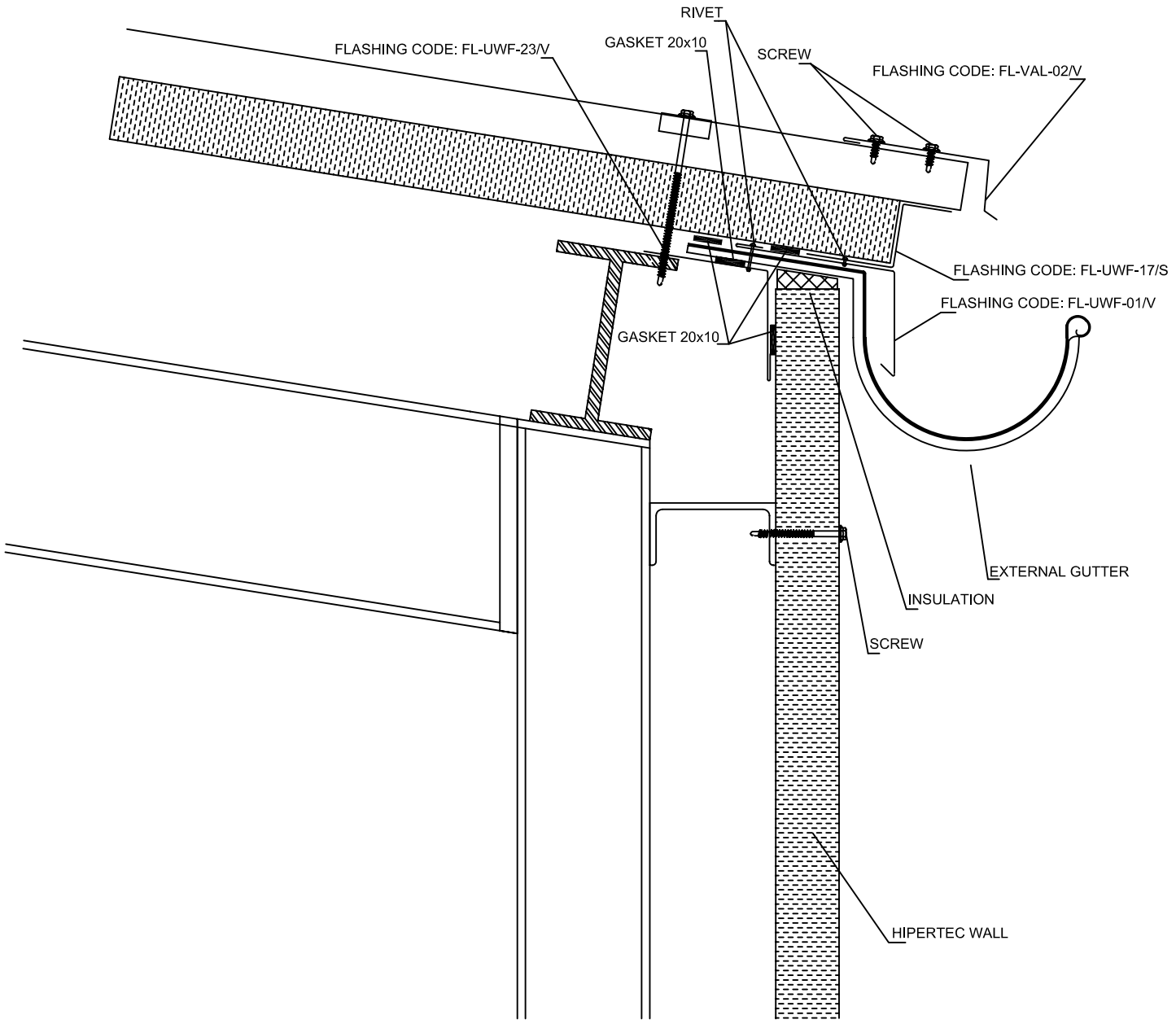


MOD			
	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A SCREW TYPE AND ELIMINATED FL-UWF-22/S + NUOVA LATT 26. 03. 03	CHECK	

07.02.04/A

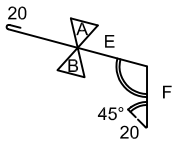
Roof details (Hipertec)

Application:	*R*	*Upper wall finish*
Installation:		

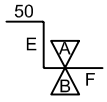


Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	185
F	80
α°	Varies with project
Width (mm)	305

α° Varies with roof slope

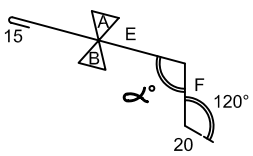


Flashing No.	FL-UWF-17/S			
Panel thickness (S)	50	80	100	120
E	50	80	100	120
F	75	74	94	74
Width (mm)	175	204	244	244



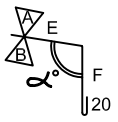
Flashing No.	FL-VAL-02/V			
Panel thickness (S)	50	80	100	120
E	130	160	140	120
F	79	110	130	150
α°	Varies with project			
Width (mm)	244	305	305	305

α° Varies with roof slope



Flashing No.	FL-UWF-23/V
Panel thickness (S)	ALL
E	98
F	85
α°	Varies with project
Width (mm)	203

α° Varies with roof slope

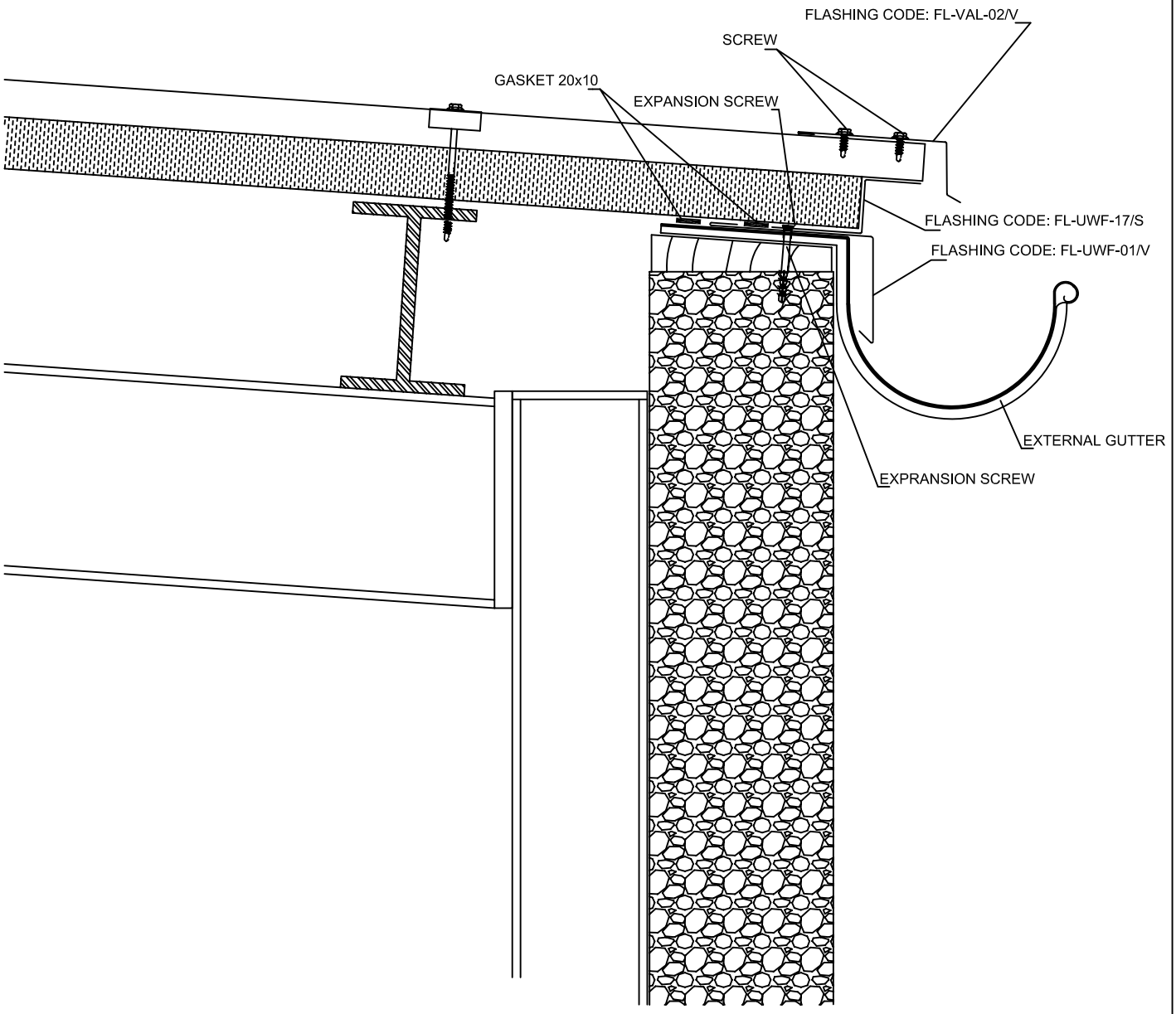


M O D	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A SCREW TYPE AND INTRODUCTION OF FLASHING FL-UWF-23/V 26. 03. 03	CHECK	

07.02.05/A

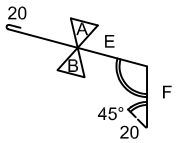
Roof details (Hipertec)

Application:	R	Upper wall finish
Installation:		



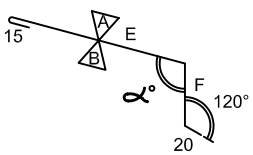
Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	185
F	80
α°	Varies with project
Width (mm)	305

α° Varies with roof slope

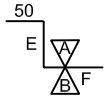


Flashing No.	FL-VAL-02/V			
Panel thickness (S)	50	80	100	120
E	130	160	140	120
F	79	110	130	150
α°	Varies with project			
Width (mm)	244	305	305	305

α° Varies with roof slope



Flashing No.	FL-UWF-17/S			
Panel thickness (S)	50	80	100	120
E	50	80	100	120
F	75	74	94	74
Width (mm)	175	204	244	244

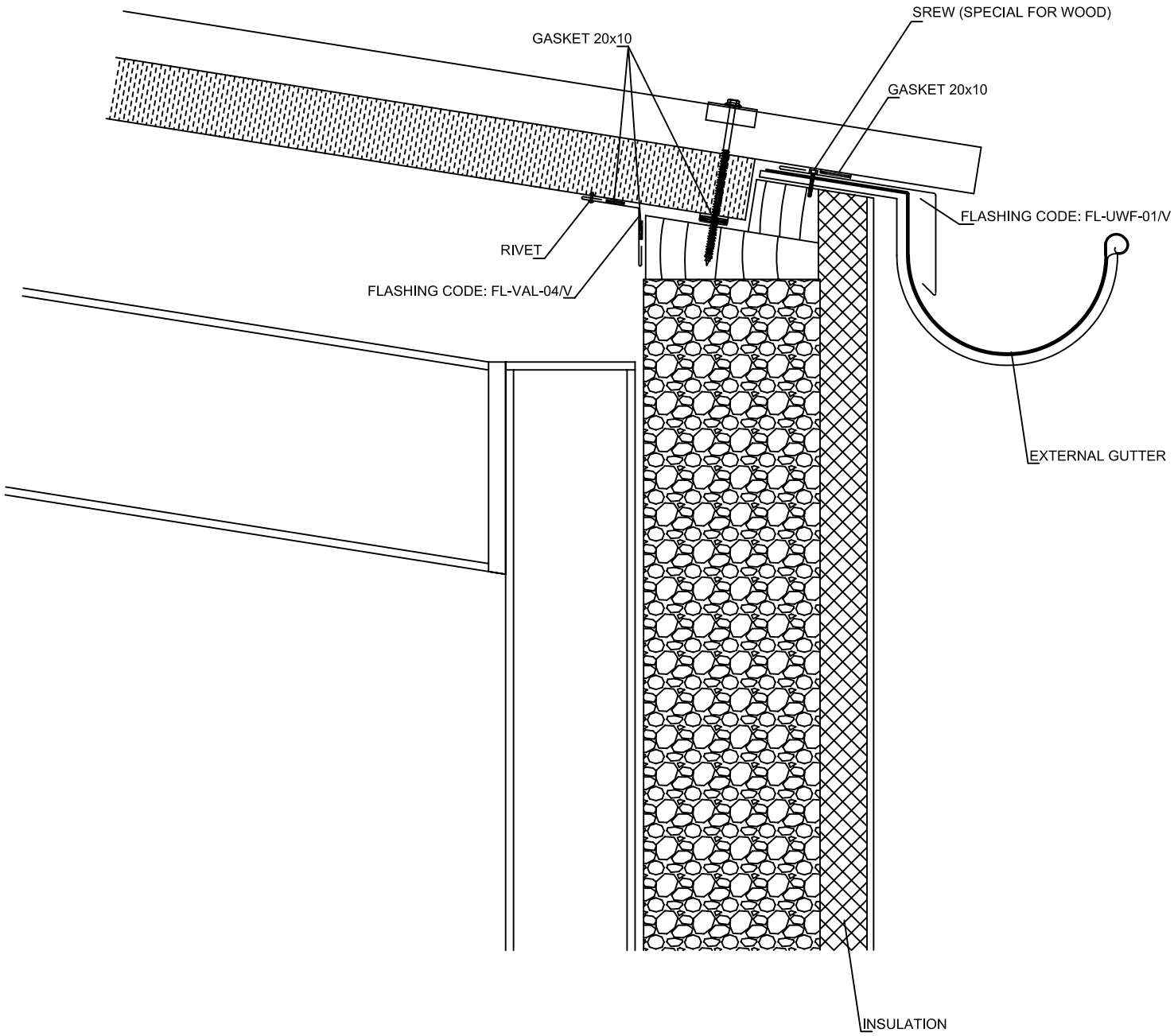


MOD	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A FLASHING FL-UWF-01/V DIMENSION AND SCREW TYPE 26. 03. 03	CHECK	

07.02.07/A

Roof details (Hipertec)

Application:	*R*	*Upper wall finish*
Installation:		

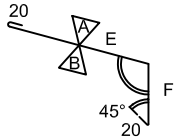


Flashing No.	FL-VAL-04/V
Panel thickness (S)	ALL
E	45
F	45
α°	Varies with project
Width (mm)	120

α° Varies with roof slope

Flashing No.	FL-UWF-01/V
Panel thickness (S)	ALL
E	185
F	80
α°	Varies with project
Width (mm)	305

α° Varies with roof slope

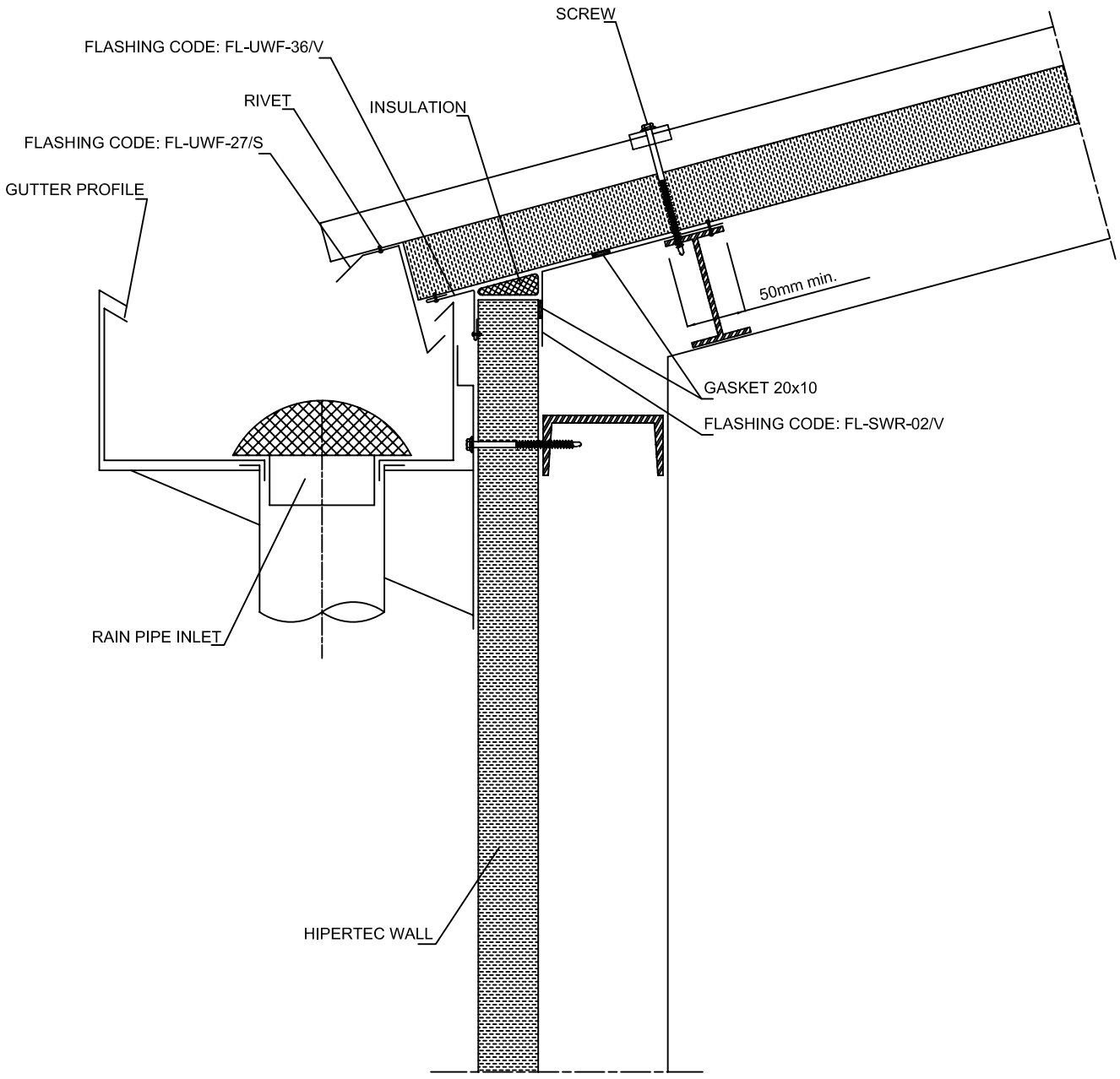


M O D	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A FLASHING FL-UWF-01/V DIMENSION AND SCREW TYPE 26. 03. 03	CHECK	

07.02.08/A

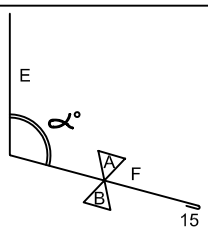
Roof details (Hipertec)

Application:	*R*	*Upper wall finish*
Installation:		

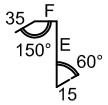


Flashing No.	FL-SWR-02/V
Panel thickness (S)	ALL
E	150
F	241
$\alpha°$	Varies with project
Width (mm)	406

$\alpha°$ Varies with roof slope



Flashing No.	FL-UWF-27/S			
Panel thickness (S)	50	80	100	120
E	105	135	150	170
F	48	59	44	24
Width (mm)	203	244	244	244



Flashing No.	FL-UWF-36/V
Panel thickness (S)	ALL
E	36
F	36
$\alpha°$	Varies with project
Width (mm)	102

$\alpha°$ Varies with roof slope

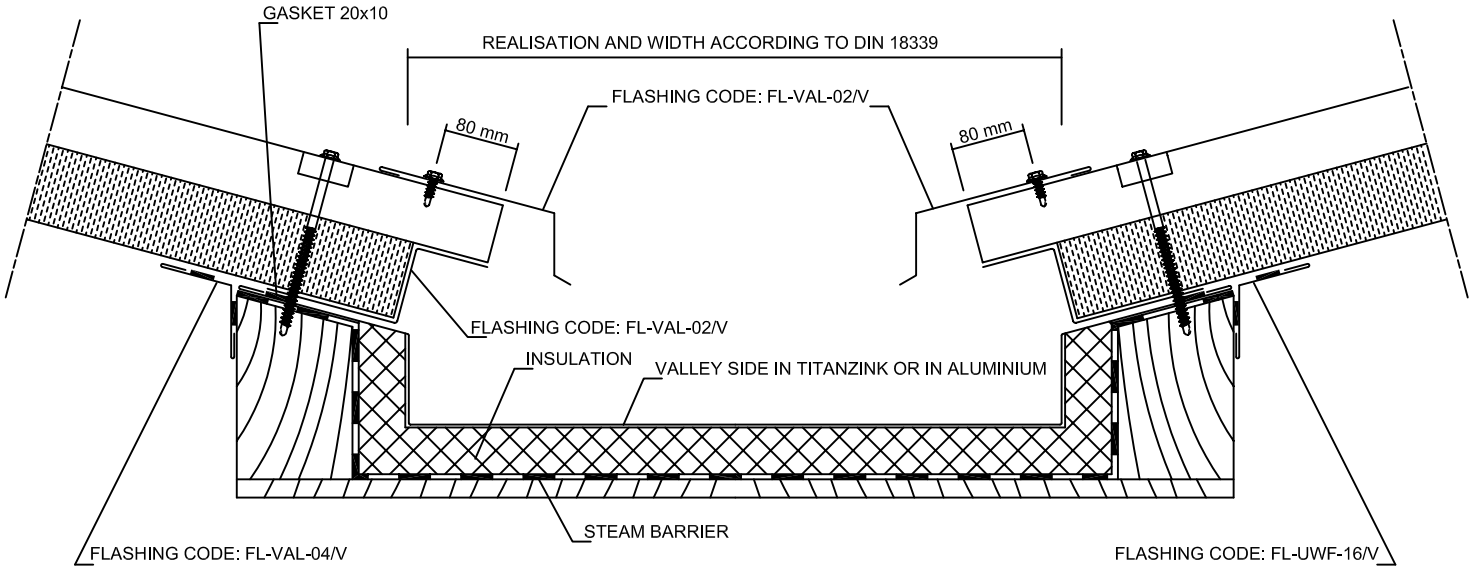
MOD			
	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A SCREW TYPE AND INTRODUCTION OF FLASHING FL-UWF-36/V 16.03.03	CHECK	

07.02.15/A

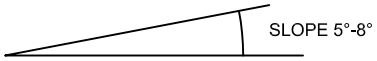
meTecno

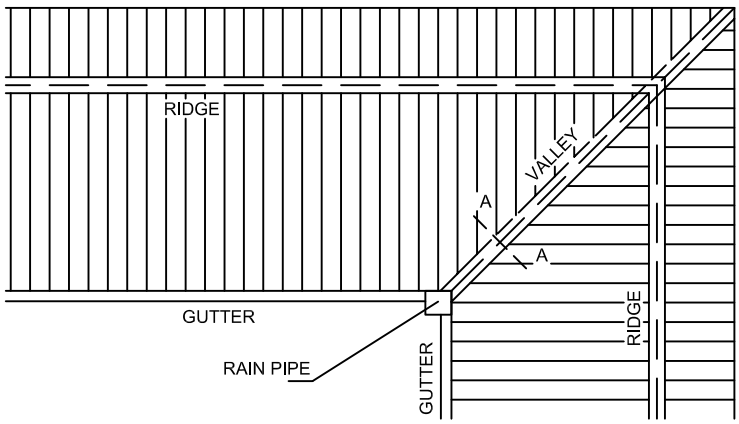
Roof details (Hipertec)

Application:	R	Valley
Installation:		



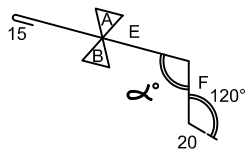
SECTION A-A





Flashing No.	FL-VAL-02/V			
Panel thickness (S)	50	80	100	120
E	130	160	140	120
F	79	110	130	150
$\alpha°$	Varies with project			
Width (mm)	244	305	305	305

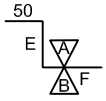
$\alpha°$ Varies with roof slope



Flashing No.	FL-VAL-04/V
Panel thickness (S)	ALL
E	45
F	45
$\alpha°$	Varies with project
Width (mm)	120

$\alpha°$ Varies with roof slope

Flashing No.	FL-UWF-17/S			
Panel thickness (S)	50	80	100	120
E	50	80	100	120
F	75	74	94	74
Width (mm)	175	204	244	244

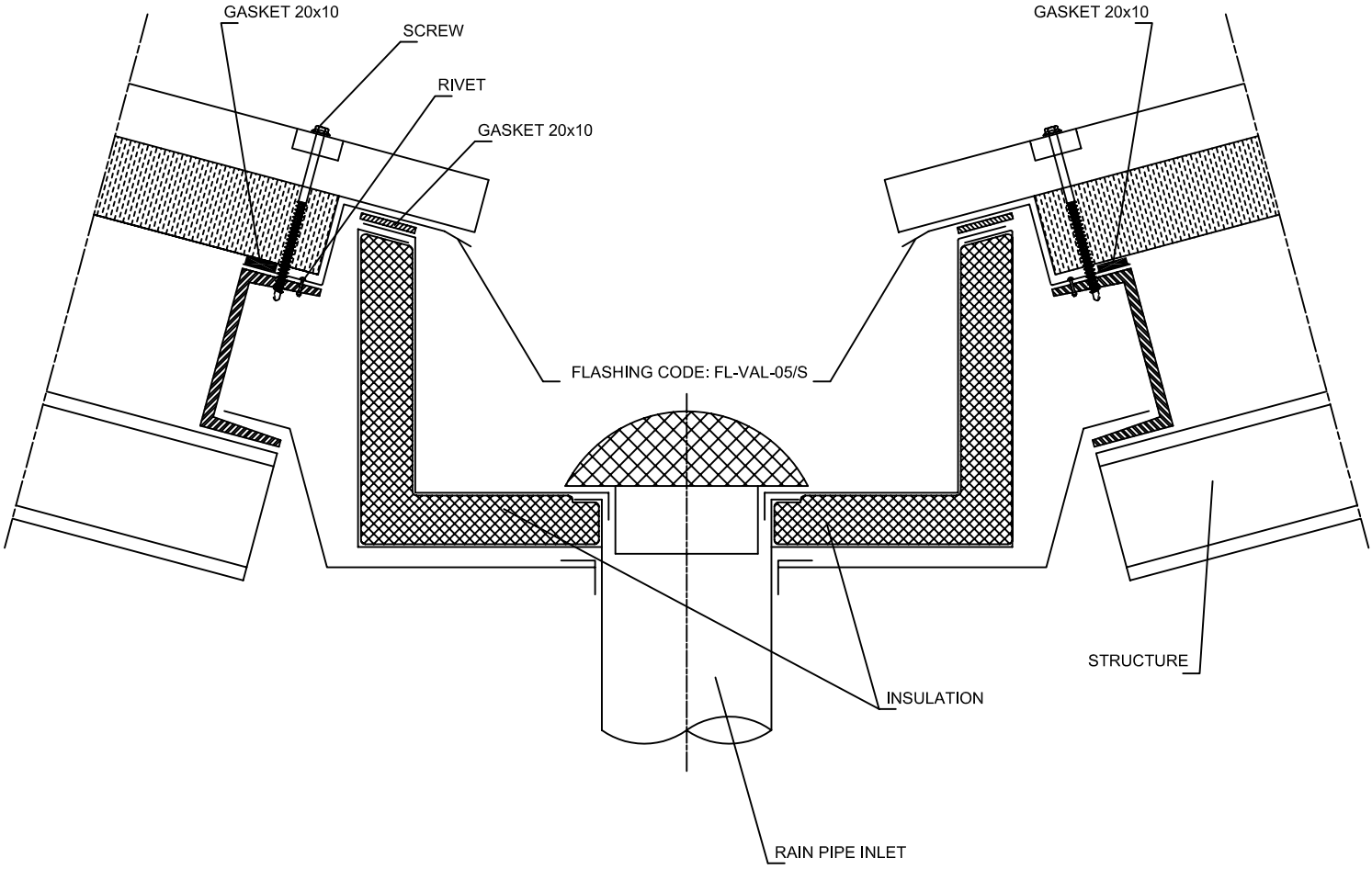


MOD			
	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A FL-VAL-01/V CANCELED + FL-UWF-17/S INTRODUCED + SCREW TYPE 26.03.03	CHECK	

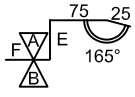
07.10.03/A

Roof details (Hipertec)

Application:	*R*	*Valley*
Installation:		



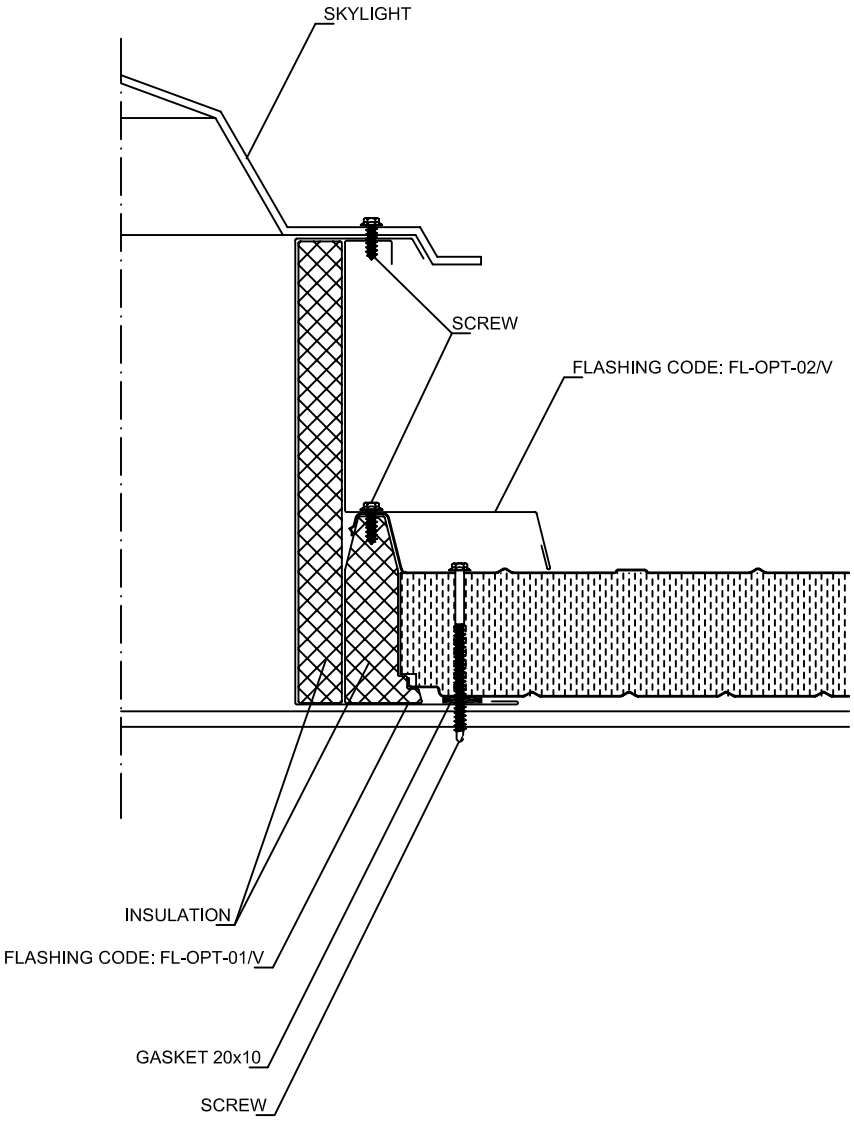
Flashing No.	FL-VAL-05/S			
Panel thickness (S)	50	80	100	120
E	50	80	100	120
F	50	119	99	79
Width (mm)	205	244	305	305



M O D	D	SCALE	1/2 -1/4
	C	DATE	06-06-2002
	B	AUTHOR	
	A SCREW TYPE AND GASKET POSITION 26. 03. 03	CHECK	

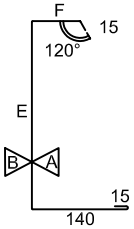
07.10.04/A

meTecno	Roof details (Hipertec)		
	Application:	*R*	*Optional*
	Installation:		



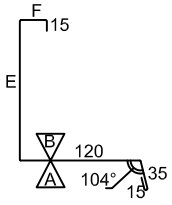
Flashing No.	FL-OPT-01/V
Panel thickness (S)	ALL
E	Varies with project
F	Varies with project
Width (mm)	Varies with project *

* multiple of 1220 mm



Flashing No.	FL-OPT-02/V
Panel thickness (S)	ALL
E	Varies with project
F	30
Width (mm)	Varies with project *

* multiple of 1220 mm



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	C	DATE	06-06-2002
	B	AUTHOR	
	A SCREW TYPE 26. 03. 03	CHECK	

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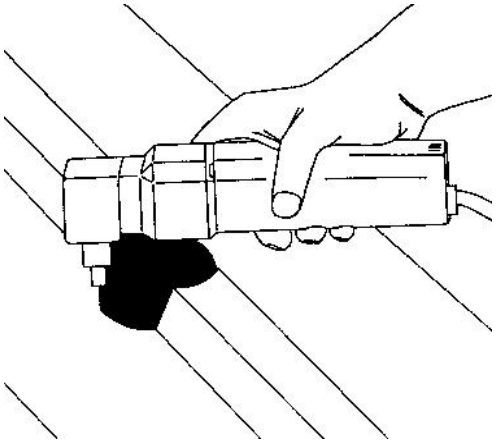
Roof details

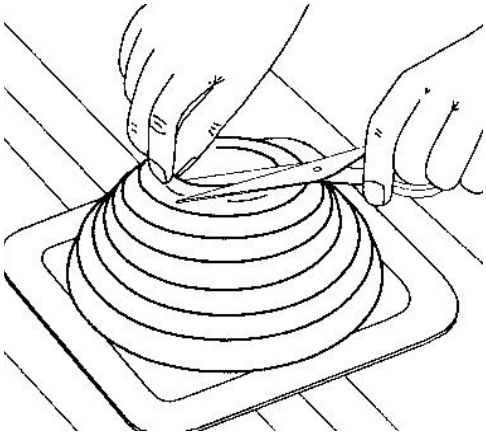
Application:	*R*	*Optional*
Installation:		

1



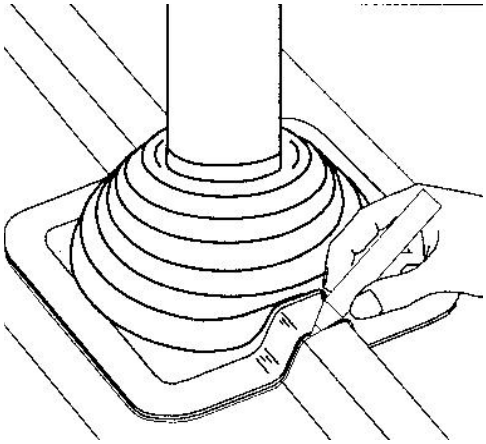
PREARRANGE THE HOLE FOR THE PIPE.
MUFFS MUST ALWAYS BE PLACED ON THE TOP OF THE PROFILED SHEET TOP IN ORDER TO PERMIT THE WATER FLOW.

2



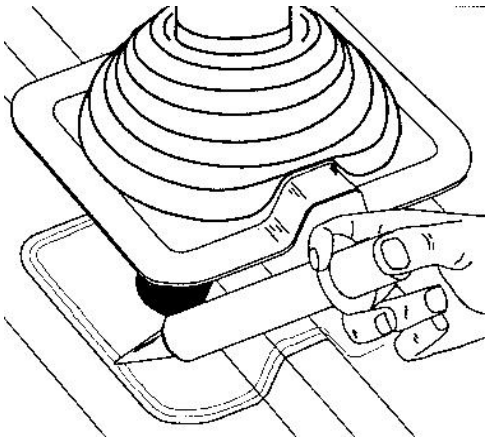
ADAPT THE MUFF TO THE PIPE. CUT THE OPENING SO AS TO BE AT LEAST 25 mm SMALLER THAN THE PIPE DIAMETER IN ORDER TO OVERLAP THE PIPE AT LEAST 20 mm

3



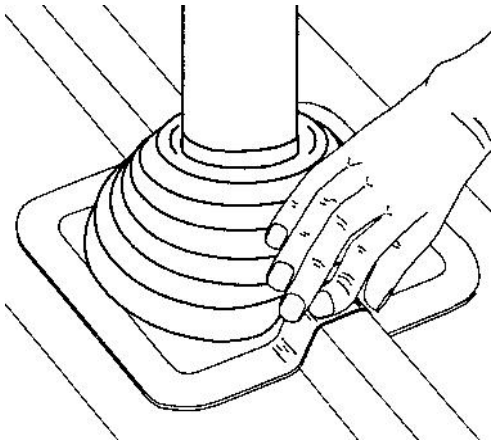
FOLD UP THE MUFF ON THE PIPE, EVENTUALLY USING WHITE LIQUOR (SOAP) ADAPT THE MUFF TO ROOF PROFILE AND MARK OUT THE CONTOUR.

4



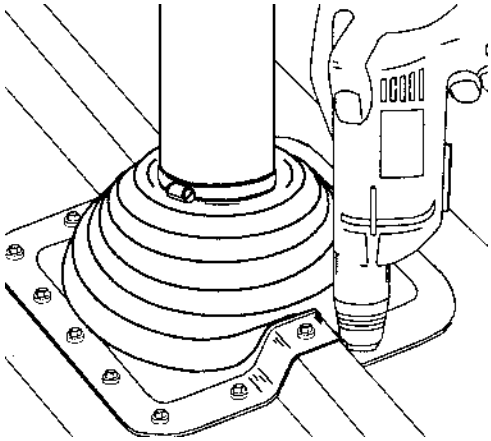
APPLY SEALANT ALONG THE TRACE.

5



PLACE THE MUFF BY PRESSING IT TO THE ROOF SURFACE.

6



FASTEN THE MUFF ON TO THE GLAMET EXTERNAL PROFILED SHEET (DISTANCE BETWEEN SCREWS EQUAL TO 50 mm); THEN INSTALL THE COLLAR.

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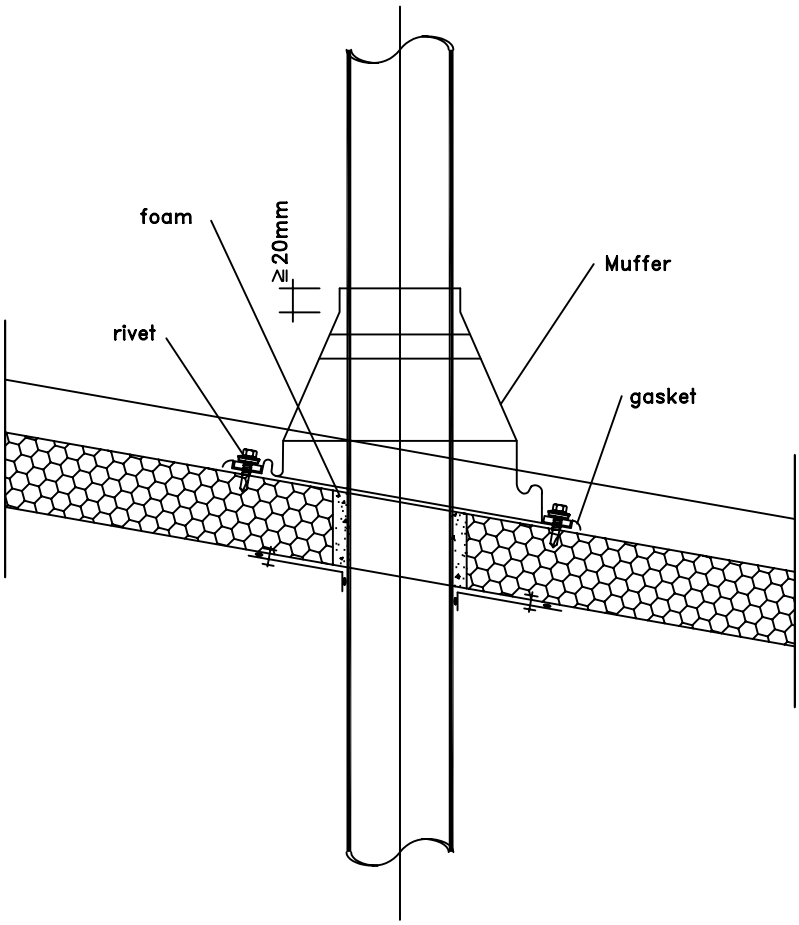
	Application:	*R*	*Optional*
	Installation:		

MUFFER FOR "FLASH" PIPE

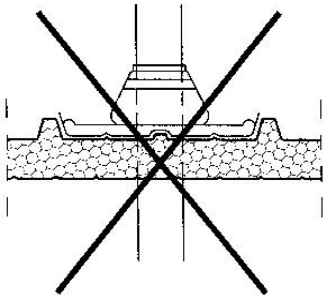
- AVAILABLE IN 3 DIMENSIONS FOR PIPES WITH DIAMETER FROM 75 mm TO 330 mm
- ATMOSPHERIC AGENTS RESISTANT, SINCE IN EPDM
- PERFECT ADAPTABILITY TO PROFILED SHEET THANKS TO A INTEGRATED ALUMINIUM FRAME
- UTILIZE WITH TEMPERATURES UNTIL TO 135° C

No.	mm	Ø PIPE	
		FROM mm	TO mm
4	255	75	150
6	305	125	230
8	430	175	330

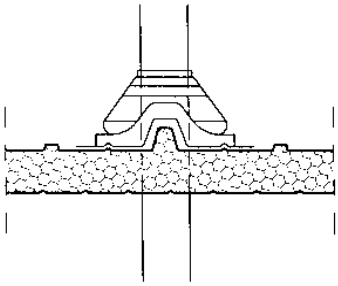
ADDITIONAL DIMENSIONS ON REQUEST



NOT THIS WAY.....



BUT THIS WAY.....



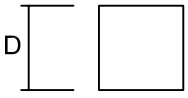
IMPORTANT:

MUFFS HAVE ALWAYS TO BE PLACED ON THE TOP OF THE PROFILED EXTERNAL PANEL SHEET.

FOR SLOPES HIGHER THAN 20° IT IS SUGGESTED TO USE A BIGGER MUFF IN ORDER TO COMPENSATE FOR THE GREATER ANGULATION BETWEEN THE ROOF AND THE PIPE.

IN CASE OF SQUARE PIPES THE SIDE HAS TO BE MULTIPLIED FOR THE FACTOR 1,3 IN ORDER TO BE ABLE TO CHOOSE THE RIGHT DIMENSION IN THE TABLE FOR CIRCULAR PIPES.
e.g. FOR A SQUARE SIDE EQUAL TO 130 mm WE OBTAIN 130 x 1,33 = 169 mm, THEREFORE WITH REFERENCE TO THE TABLE ABOVE, THE RIGHT DIMENSION IS THE No. 6.

THIS MUFF CAN BE USED FOR SQUARE PIPE BUT IN THIS CASE, THE RIGTH DIMENSION HAS TO BE CHOSEN FOLLOWING THE GENERAL RULE.



PIPE PERIMETER IS 4xD

PIPE CIRCUMFERENCE IS 3.14xD

IT COULD BE NECESSARY TO UTILIZE GASKETS NEAR THE UPPER PIPE JUNCTION IN ORDER TO FILL THE GAPS.
(SEE EJOIT COLLAR)

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	A	CHECK	

9. PANEL MAINTENANCE

9.1 For the good panel maintenance, two phases must be distinguished:

- First phase: regards the time necessary to assemble the panels.
- Second phase: regards the use of the building, to which the panels have been assembled.

In the first phase, in order to maintain panels undamaged, you should take care of the following:

- the handling during the unloading operations from vehicles must be carried out with suitable means and appropriate protections, in order to prevent panels from being indented or scratched.
- the handling during the removal of the protective film and the distribution near the works. In this stage, we always suggest that the panel and sections are controlled to remove any excess of the insulating material for the benefit of the perfect execution of the panel coupling joint.
- the lifting operations near walls, to be carried out with suitable means and safety systems for the staff.
- the assembly stages, taking particular care to the fastening operations, immediately removing all the shavings caused by drilling from the panel surface. In order to insert screws and avoid indentations to the panel, use screwdrivers that are equipped with a depth limiting device.
- when, during the distribution of panels, stains or deformations (indentations) that cannot be easily fixed are found, avoid to assemble such panels and set them aside for use as undersize elements, where possible.

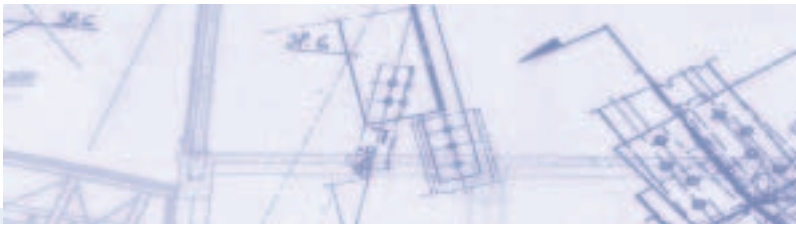
9.2 If the above-mentioned recommendations are truly complied with, they guarantee the product integrity and avoid the annoying building yard objections that very often translate into unpleasant financial costs. The second stage regards the panel maintenance, which is the final user's task, in order for the panels of his building to maintain their original look and have the building look pleasant.

9.3 The consequences of a slow degradation of the pre-painted external sides are mostly originated from the contact with aggressive substances contained in corrosive air and gaseous emissions from surrounding activities. Therefore, periodical inspections to the panels should be planned in order to find possible corrosion; if it is found, action should be taken immediately, starting protective cycles to stop the process. In the long run, smog deposits on painted surfaces and may create a dirt film, and the walls will have to be cleaned with water jets.

9.4 The existing seals will have to be controlled, verifying that they are still airtight and waterproof, which otherwise may cause deterioration. All the fastenings will have to be controlled to verify that they are still in good conditions. Any scratches of the paint that may have been caused accidentally will have to be protected by retouching: cleaning and painting. In case of large size dents caused by impacts, the panel will have to be replaced.

9.5 DISPOSAL

In case of yard working wastes and/or dismissal, the panel disposal shall only be entrusted with authorized companies and carried out in compliance with the current laws in each country.



10. SAFETY INFORMATION

Each user and/or worker must be aware of all the problems connected with the assembly of these panels, and should prepare a **SAFETY PLAN** in order to prevent dangerous situations.

THEREFORE, WE REMIND YOU TO STRICTLY COMPLY WITH THE REGULATIONS ON SAFETY IN WORKPLACES, BUILDING YARDS AND EQUIPMENT SAFETY

IMPORTANT

The information contained in this manual has been prepared in connection with our customers' needs. It has been processed based on our know-how at the time of publishing and, therefore, it is subject to changes without any prior notice.

For the same reason, this is not a full guide to installation, use and maintenance of METECNO products. In case of doubt or difficulty, the user must seek for METECNO's advice before proceeding.

METECNO does not accept any responsibility for damages to individuals or properties, caused by faults in assembly or installation, by improper use and wrong maintenance of Superwall® ML sandwich panels.

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