

# IKO METATECH™ PMMA INSTALLATION GUIDELINES

- a. This guide describes the minimum requirements for the IKO Diamond Shield Limited Warranty. Refer also to all IKO Commercial technical documents, including the Installation Manual, Standard Detail Drawings and Product Data Sheets to ensure that the installed roofing system complies with all IKO technical requirements.
- b. IKO Commercial does not practice architecture or engineering. IKO provides the information in this guide as a courtesy, and in good faith, and expects that a design professional will be consulted as to the applicability of IKO technical requirements for a specific project.
- c. The building owner or project design professional is responsible for consulting with all local authorities having jurisdiction (AHJs), national and local building codes, and insurance requirements to determine project-specific requirements. These codes and requirements may supersede IKO technical requirements, where the codes and requirements are more restrictive.

## DESCRIPTION

IKO Metatech is a fast-drying, two-component liquid waterproofing system based on PMMA polymers. It is used to create a waterproof connection with complex details, such as flashings, HVAC, roof lights, gutters, repair work, etc.

## ADVANTAGES

IKO Metatech has the following advantages:

- Seamless membrane.
- Rapid, flame-free application.
- Easy to use for precision work in difficult areas.
- Viscous: does not run downwards if applied on vertical surfaces (Metatech Flashing).
- Compatible with IKO Diamond Shield Limited Warranties.\*

\*Please refer to [www.iko.com/comm](http://www.iko.com/comm) for full terms and conditions or contact your local IKO.

## PREPARATION

### 1 — Working With IKO Metatech™ PMMA Products

IKO Metatech products are fast-drying, two-component resins based on PMMA. The first component is a liquid resin, and the second (IKO Perkadox™) is a powder, which acts as a catalyst and causes a chemical reaction. The drying time of the resin depends on the catalyst dosage.

The catalyst dosage indicated in this document has been determined so that after 45 minutes, you can walk over the applied layer. See Tables 1 and 2.

**Table 1: IKO Perkadox Dosage for Different PMMA IKO Metatech Products**

<i>Product</i>	<i>IKO Perkadox Dosage — Grams per Litre (as a mass %)</i>				
Substrate Temperature °C	+5 - +10°C	+11 - +15°C	+16 - +20°C	+21 - +30°C	+30 - +40°C
IKO Metatech Bitumen Primer	50 (5%)	40 (4%)	30 (3%)	20 (2%)	10 (1%)
Substrate Temperature °C	+5 - +10°C	+11 - +20°C	21 - +30°C	+31 - +40°C	
IKO Metatech Porous Primer	60 (6%)	50 (5%)	30 (3%)	10 (1%)	
Substrate Temperature °C	+5°C	+6 - +15°C	+16 - +40°C		
IKO Metatech Flashing	35 (3%)	25 (2%)	12 (1%)		
IKO Metatech Field	35 (3%)	25 (2%)	12 (1%)		

**Table 2: Drying Time for Different PMMA IKO Metatech Products**

<i>Product</i>	<i>IKO perkadox dosage recommended at 20°C</i>			
	<b>Pot life</b>	<b>Resistance to rain</b>	<b>Can be walked upon</b>	<b>Curing</b>
IKO Metatech Bitumen Primer	± 10 min	± 20 min	± 30 min	± 1 h
IKO Metatech Porous Primer	± 10 min	± 20 min	± 30 min	± 1 h
IKO Metatech Flashing	± 15 min	± 30 min	± 45 min	± 2 h
IKO Metatech Field	± 15 min	± 30 min	± 45 min	± 3 h

IKO Perkadox should always be mixed with the resin in the same way:

- Before using, first mix the resin using a double-helix mixer at low speed.
- If desired, pour the required resin quantity into a clean bucket.
- Add the required quantity of IKO Perkadox™, while stirring and mixing the resin using a double-helix mixer at low speed for a minimum of 2 minutes.
- Make sure that everything is thoroughly mixed down to the bottom and sides of the bucket.

It is important to clean tools immediately after use with generic acetone cleaner.

IKO Metatech products can be used:

- If the air, substrate temperature and resin temperatures are between the minimum and maximum level, as defined in Table 3.
- If the relative humidity level is lower than 85%.
- If it is not raining or foggy.
- On a dry surface, which is not frozen.
- On a surface that is not affected by rising dampness (for example, water vapour from inside the building due to the absence of a vapour barrier or rising dampness on a ground floor terrace due to the absence of a moisture barrier under the concrete).

**Table 3: Acceptable Temperatures When Using PMMA IKO Metatech Products**

<i>Product</i>	<i>Temperature in °C</i>		
	<b>Ambient</b>	<b>Substrate</b>	<b>Product</b>
IKO Metatech Concrete Primer	+5°C - +35°C	+5°C - +40°C	+5°C - +30°C
IKO Metatech Detail	+5°C - +35°C	+5°C - +40°C	+5°C - +30°C
IKO Metatech Finish	+5°C - +35°C	+5°C - +40°C	+5°C - +30°C
IKO Metatech Finish	+5°C - +35°C	+5°C - +40°C	+5°C - +30°C

\*The temperature of the surface must be at least 3°C above the dew point during application and curing.\*

## 2 — Checking and Preparing the Substrate

IKO Metatech™ can only be applied to a substrate that is clean, dry, and free of dust and loose particles. The maximum moisture content of the substrate must measure 18% on the wood scale or a maximum of 6% measured using a Tramex. It is a requirement of IKO and the National Building Code that all roof surfaces have positive drainage. Please go to [iko.com/comm](http://iko.com/comm) for more information. Cracks, blisters, expansion joints and finishes on existing surface edges must be checked and, if necessary, repaired or replaced.

Table 4 shows the compatibility of IKO Metatech with various substrates as well as the necessary preparation of these surfaces. Please contact IKO Technical Services for information about any surfaces that are not mentioned in this table.

**Table 4: Compatibility of IKO Metatech Flashing**

<i>Product</i>	<i>Preparation</i>	<i>Primer</i>	<i>Comments</i>
<b>1 — Waterproofing membranes</b>			
<b>SBS/APP bitumen</b>	Clean and remove loose particles. Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Bitumen Primer	The membrane must adhere sufficiently to the substrate. Any cracks and blisters must first be repaired. Adhesion to a sanded APP bitumen membrane must first be field tested for compatibility.  *Whilst priming with IKO Metatech Bitumen Primer is not required, it should be used to avoid bleed-through and maintain the aesthetics of the PMMA liquid membrane.
<b>EPDM</b>	Roughen the membrane prior to application to ensure proper adhesion.	None	The membrane must adhere sufficiently to the substrate. Any cracks and blisters must first be repaired.
<b>TPO</b>			Please contact IKO technical services.
<b>PVC</b>			Please contact IKO technical services.
<b>3 — Insulation panels</b>			
<b>Polyisocyanurate insulation</b>	Prepare roofs by applying an IKO self-adhesive membrane. Prepare accessible substrates subject to foot traffic by applying an IKO-approved support panel.		

**Table 4: Compatibility of IKO Metatech™ Flashing (continued)**

<i>Product</i>	<i>Temperature in °C</i>	<i>Primer</i>	<i>Comments</i>
<b>4 — Mineral surfaces</b>			
<b>Concrete and mortar</b>	Roughen polished concrete. Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Porous Primer	The substrate must have been in place for at least 28 days. Remove any laitance from the cement. It must have a compressive strength of at least 25 N/mm and a tensile strength of at least 1.5 N/mm.
<b>5 — Metals</b>			
<b>Ferrous metals (steel)</b>	Sand the metallic substrate to create a rough surface that promotes good adhesion. Ensure rust, grease and all other debris is removed.		Please contact IKO technical services.
<b>Non-ferrous metals (aluminum, copper, lead, zinc)</b>	Sand the metallic substrate to create a rough surface that promotes good adhesion. Ensure rust, grease and all other debris is removed.		Please contact IKO technical services.
<b>6 — Hard plastics</b>			
<b>PVC</b>	Sand down substrate enough to create a rough surface that promotes good adhesion. Remove grease, dirt and all other debris.	None	Please contact IKO technical services.
<b>Polyester</b>	Sand down substrate enough to create a rough surface that promotes good adhesion. Remove grease, dirt and all other debris.	None	Please contact IKO technical services.
<b>7 — Wood</b>			
<b>Treated wood (hardwood)</b>	Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Porous Primer	Must first be treated for all outdoor applications. Chipboard panels must be water-resistant.
<b>Plywood</b>	Ensure surface is clear of dust, dirt, grease and all other debris.	None	Please contact IKO technical services.

## 2.1 — Applying the Primer

Activate the primer (IKO Metatech Porous Primer or IKO Metatech Bitumen Primer), as described in the section “Working with IKO Metatech PMMA Products,” with the correct dosage of IKO Perkadox™.

Apply the primer (IKO Metatech Porous Primer or IKO Metatech Bitumen Primer) with a brush or short nap roller, using 0.4-0.8 kg/m<sup>2</sup> (0.04-0.08 L/ft<sup>2</sup>), depending on the nature of the substrate. Rougher substrates will require additional material.

The primer must be dry before you move on to the next step. If the next layer is not applied within two days, repeat this treatment.

## APPLYING METATECH™ FIELD AND METATECH FLASHING

Mark out the surface needing to be treated with adhesive masking tape in order to obtain a good finish.

Activate IKO Metatech resin, as described in the section “Working with IKO Metatech PMMA Products,” with the correct dosage of IKO Perkadox. Apply a first layer of IKO Metatech resin using 1.5 kg/m<sup>2</sup> (0.12 L/ft<sup>2</sup>) with a brush or short nap roller. Place a piece of IKO Polyester Fleece on the wet coating, press the fleece into the first layer using a roller and make sure that the fleece is fully saturated with IKO Metatech resin. There must not be any air bubbles between the first layer and the reinforcement fleece. Ensure a 2-inch (50-mm) overlap is left on the edges of the reinforcement fleece.

All Metatech liquid products must extend past the reinforcement fleece by a minimum of a ½ inch. Immediately apply a second layer of IKO Metatech resin using 1.5 kg/m<sup>2</sup> (0.12 L/ft<sup>2</sup>) with a brush or short nap roller according to the wet-on-wet method.

Remove the adhesive masking tape immediately after applying the product.

When working on bituminous membranes with a granule finish, it is possible to broadcast granules into the liquid waterproofing while it is still wet in order to obtain a continuous visual effect.

## MAINTENANCE

The durability of the waterproofing can be optimized provided:

- The waterproofing is not subject to standing water for an extended period of time. Drainage must meet applicable building code requirements and either Canadian Roofing Contractors Association (CRCA) or National Roofing Contractors Association (NRCA) minimum recommendations.
- The surfaces are regularly maintained according to the recommendations of either the NRCA or CRCA.
- The building and waterproofing are used for their initially intended purposes.

Compliance with the following maintenance instructions helps determine the life span of the waterproofing system. Maintenance begins as soon as the work is accepted. It consists of regular inspections and at least two annual visits, which should be conducted after winter and before the end of fall.

Maintenance tasks include:

- Keeping the (rain) water drainage system in a good state of repair.
- Regular removal of grass, moss and vegetation.
- Removal of fallen leaves at the end of fall.
- Keeping the small accessories (flashings, joints) and large structures (drain profiles, plinths, gutters, etc.) in a good state.
- Repair of any cracks detected.

Important Notes:

- Do not attach anything to the treated surface.
- Do not pour any aggressive products onto the surface, even if they are emptied directly into the drains.
- Do not make any changes without consulting IKO technical services.
- Please review the warranty for conditions and exclusions which could void the warranty.

## **IKO PRODUCTS USED IN THIS SYSTEM**

- IKO Metatech™ Bitumen Primer.
- IKO Metatech Porous Primer.
- IKO Metatech Flashing
- IKO Metatech Field.
- IKO Perkadox™.
- IKO Polyester Fleece.

# IKO Metatech Mixing Chart

## Metatech Field 10 kg - 8.2 L

Substrate Temperature	Weight of IKO Metatech Catalyst per Pail	Weight of IKO Metatech Catalyst per Litre	% Catalyst Mass	Coverage (ft <sup>2</sup> /unit)	Pot Life @ 20°C	Resistance to Rain @ 20°C	Can Be Walked Upon/ Coated @ 20°C	Cured @ 20°C
5°C	300 g	36.6 g per litre	3%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
6°C to 15°C	200 g	24.4 g per litre	2%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
16°C to 40°C	100 g	12.2 g per litre	1%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours

## Metatech Field 20 kg - 16.4 L

Substrate Temperature	Weight of IKO Metatech Catalyst per Tin	Weight of IKO Metatech Catalyst per Litre	% Catalyst Mass	Coverage (ft <sup>2</sup> /unit)	Pot Life @ 20°C	Resistance to Rain @ 20°C	Can Be Walked Upon/ Coated @ 20°C	Cured @ 20°C
5°C	600 g	36.6 g per litre	3%	70 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
6°C to 15°C	400 g	24.4 g per litre	2%	70 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
16°C to 40°C	200 g	12.2 g per litre	1%	70 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours

## Metatech Flashing 10 kg - 8.2 L

Substrate Temperature	Weight of IKO Metatech Catalyst per Tin	Weight of IKO Metatech Catalyst per Litre	% Catalyst Mass	Coverage (ft <sup>2</sup> /unit)	Pot Life @ 20°C	Resistance to Rain @ 20°C	Can Be Walked Upon/ Coated @ 20°C	Cured @ 20°C
5°C	300 g	36.6 g per litre	3%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
6°C to 15°C	200 g	24.4 g per litre	2%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours
16°C to 40°C	100 g	12.2 g per litre	1%	35 ft <sup>2</sup> *May vary based on roughness of surface.	~15 minutes	~30 minutes	~45 minutes	~2 hours

## Metatech Porous Primer 10 kg - 9.9 L

Substrate Temperature	Weight of IKO Metatech Catalyst per Tin	Weight of IKO Metatech Catalyst per Litre	% Catalyst Mass	Coverage (ft <sup>2</sup> /unit)	Pot Life @ 20°C	Resistance to Rain @ 20°C	Can Be Walked Upon/ Coated @ 20°C	Cured @ 20°C
5°C to 10°C	600 g	60.6 g per litre	6%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
11°C to 20°C	500 g	50.5 g per litre	5%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
21°C to 30°C	300 g	30.3 g per litre	3%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
31°C to 40°C	100 g	10.1 g per litre	1%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour

## Metatech Bitumen Primer 10 kg - 10 L

Substrate Temperature	Weight of IKO Metatech Catalyst per Tin	Weight of IKO Metatech Catalyst per Litre	% Catalyst Mass	Coverage (ft <sup>2</sup> /unit)	Pot Life @ 20°C	Resistance to Rain @ 20°C	Can Be Walked Upon/ Coated @ 20°C	Cured @ 20°C
5°C to 10°C	500 g	50 g per litre	5%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
11°C to 15°C	400 g	40 g per litre	4%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
16°C to 20°C	300 g	30 g per litre	3%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
21°C to 30°C	200 g	20 g per litre	2%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour
31°C to 40°C	100 g	10 g per litre	1%	135-270 ft <sup>2</sup> depending on the nature of the substrate.	~10 minutes	~20 minutes	~30 minutes	~1 hour

**IKO Metatech products can be used:** **1)** If the air, substrate temperature and resin temperatures are between the minimum and maximum level, as defined in Table 3 of these installation guidelines. **2)** If the relative humidity level is lower than 85%. **3)** If it is not raining or foggy. **4)** On a dry surface that is not frozen. **5)** On a surface that is not affected by rising damp (for example, water vapour from inside the building due to the absence of a vapour barrier or rising damp on a ground floor terrace due to the absence of a moisture barrier under the concrete).



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# IKO Metatech Compatibility Chart

Product	Preparation	Primer	Comments
<b>1 — Waterproofing membranes</b>			
<b>SBS/APP bitumen</b>	Clean and remove loose particles. Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Bitumen Primer	The membrane must adhere sufficiently to the substrate. Any cracks and blisters must first be repaired. Adhesion to a sanded APP bitumen membrane must first be field tested for compatibility. *Whilst priming with IKO Metatech Bitumen Primer is not required, it should be used to avoid bleedthrough and maintain the aesthetics of the PMMA liquid membrane.
<b>EPDM</b>	Roughen the membrane prior to application to ensure proper adhesion.	None	The membrane must adhere sufficiently to the substrate. Any cracks and blisters must first be repaired.
<b>TPO</b>			Please contact IKO Technical Services.
<b>PVC</b>			Please contact IKO Technical Services.
<b>3 — Insulation panels</b>			
<b>Polyisocyanurate insulation</b>	Prepare roofs by applying an IKO self-adhesive membrane. Prepare accessible substrates subject to foot traffic by applying an IKO-approved support panel.		
<b>4 — Mineral surfaces</b>			
<b>Concrete and mortar</b>	Roughen polished concrete. Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Porous Primer	The substrate must have been in place for at least 28 days. Remove any laitance from the cement. It must have a compressive strength of at least 25 N/mm and a tensile strength of at least 1.5 N/mm.
<b>5 — Metals</b>			
<b>Ferrous metals (steel)</b>	Sand the metallic substrate to create a rough surface that promotes good adhesion. Ensure rust, grease and all other debris is removed.		Please contact IKO Technical Services.
<b>Non-ferrous metals (aluminum, copper, lead, zinc)</b>	Sand the metallic substrate to create a rough surface that promotes good adhesion. Ensure rust, grease and all other debris is removed.		Please contact IKO Technical Services.
<b>6 — Hard plastics</b>			
<b>PVC</b>	Sand down substrate enough to create a rough surface that promotes good adhesion. Remove grease, dirt and all other debris.	None	Please contact IKO Technical Services.
<b>Polyester</b>	Sand down substrate enough to create a rough surface that promotes good adhesion. Remove grease, dirt and all other debris.	None	Please contact IKO Technical Services.
<b>7 — Wood</b>			
<b>Treated wood (hardwood)</b>	Ensure surface is clear of dust, dirt, grease and all other debris.	IKO Metatech Porous Primer	Must first be treated for all outdoor applications. Chipboard panels must be water-resistant.
<b>Plywood</b>	Ensure surface is clear of dust, dirt, grease and all other debris.	None	Please contact IKO Technical Services.

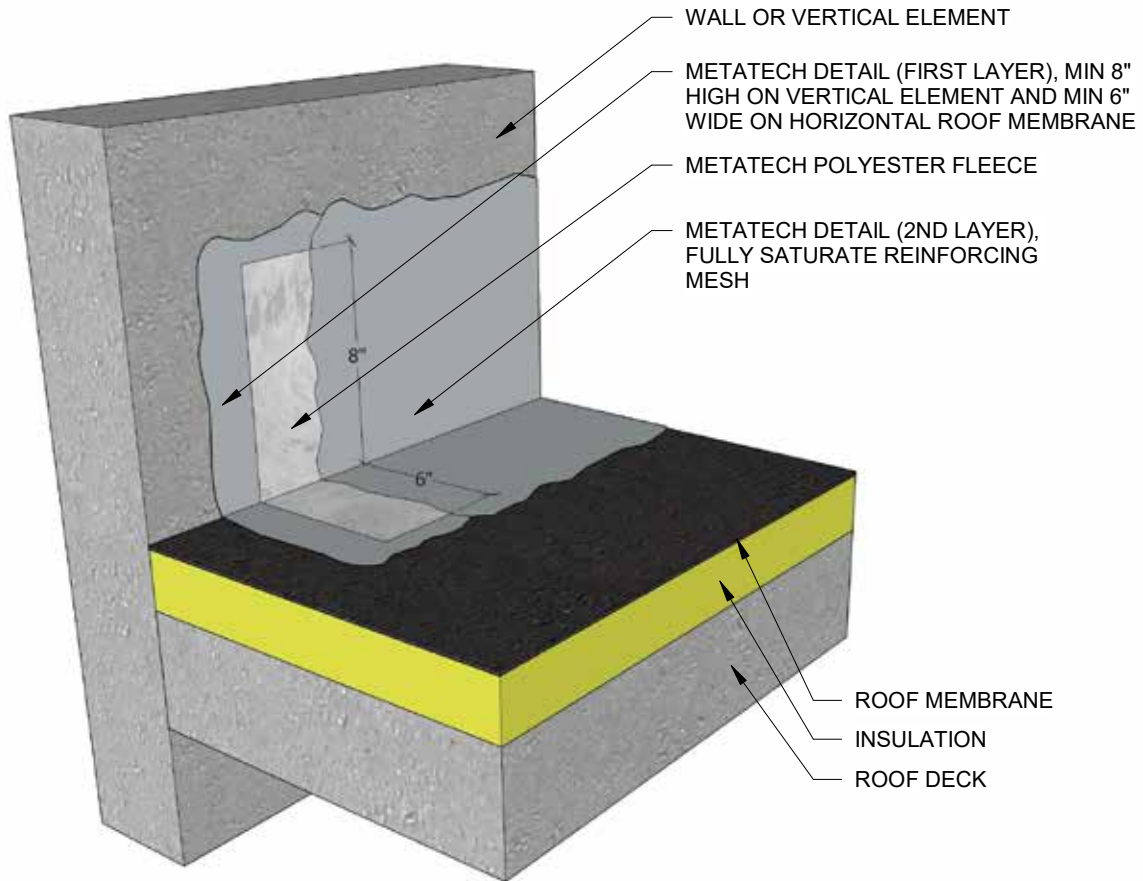
The information on this sheet is based on data considered to be true and accurate based on periodic internal testing and production measurements at time of manufacture. The information is offered solely for the user's consideration, investigation and verification. Nothing contained herein constitutes or represents a warranty or guarantee for which the manufacturer can be held legally responsible.



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## Metatech Detail Roof Edge

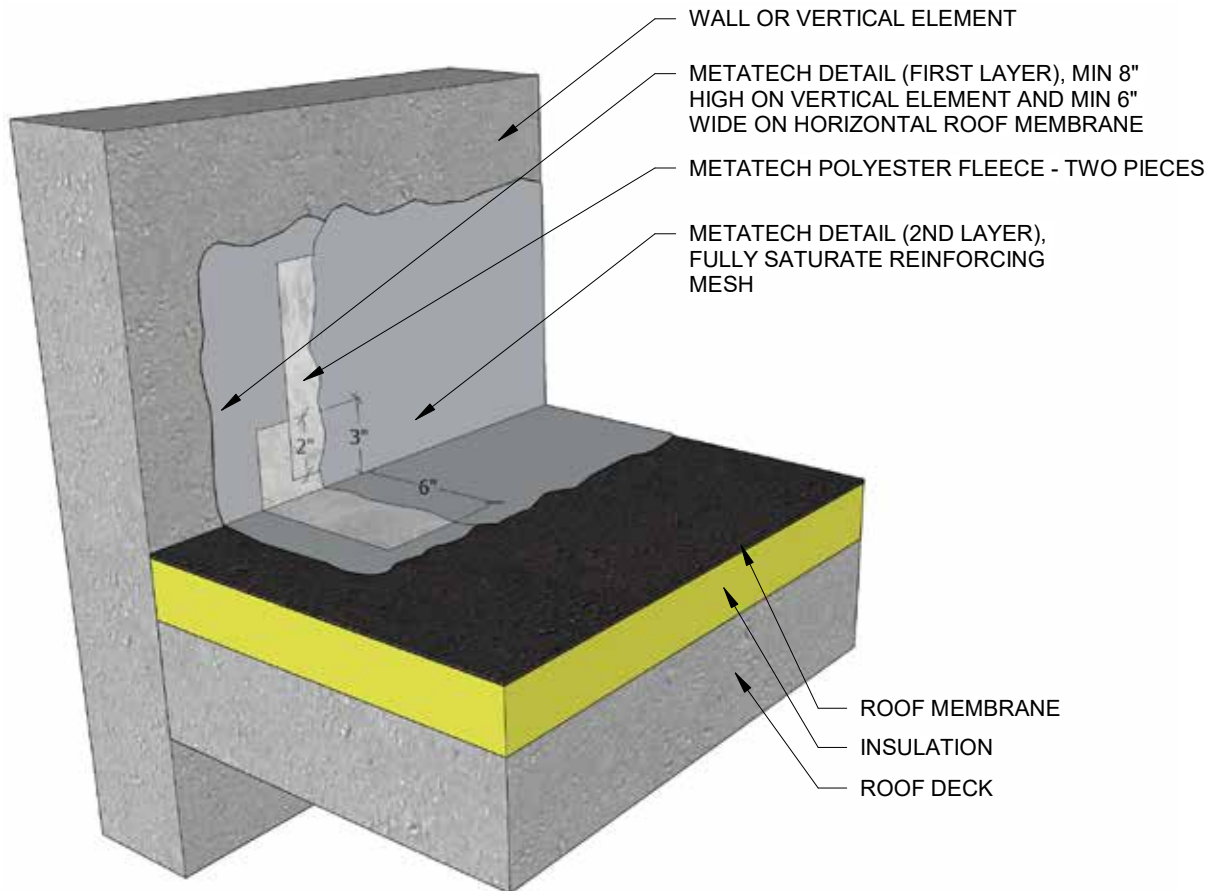


### NOTES:

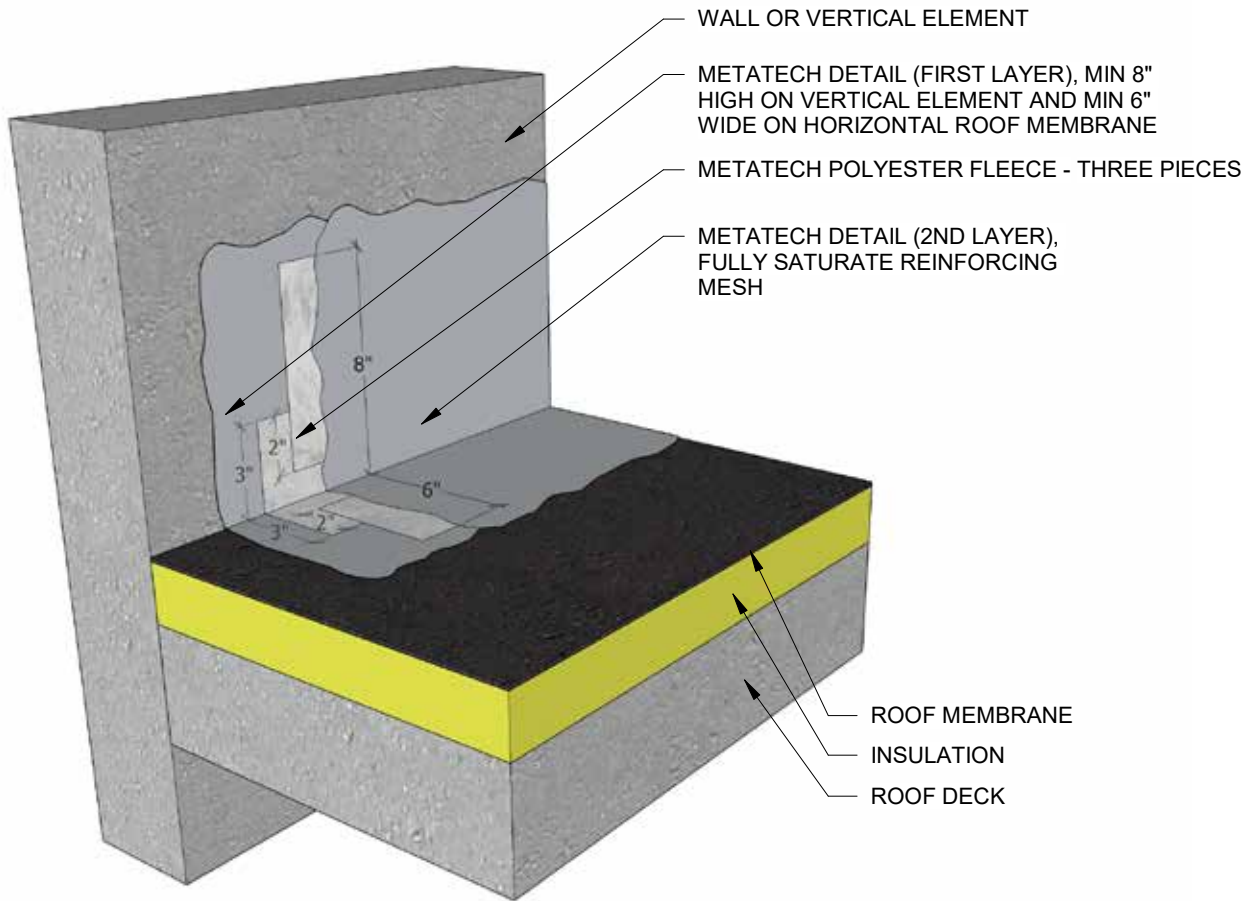
1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.



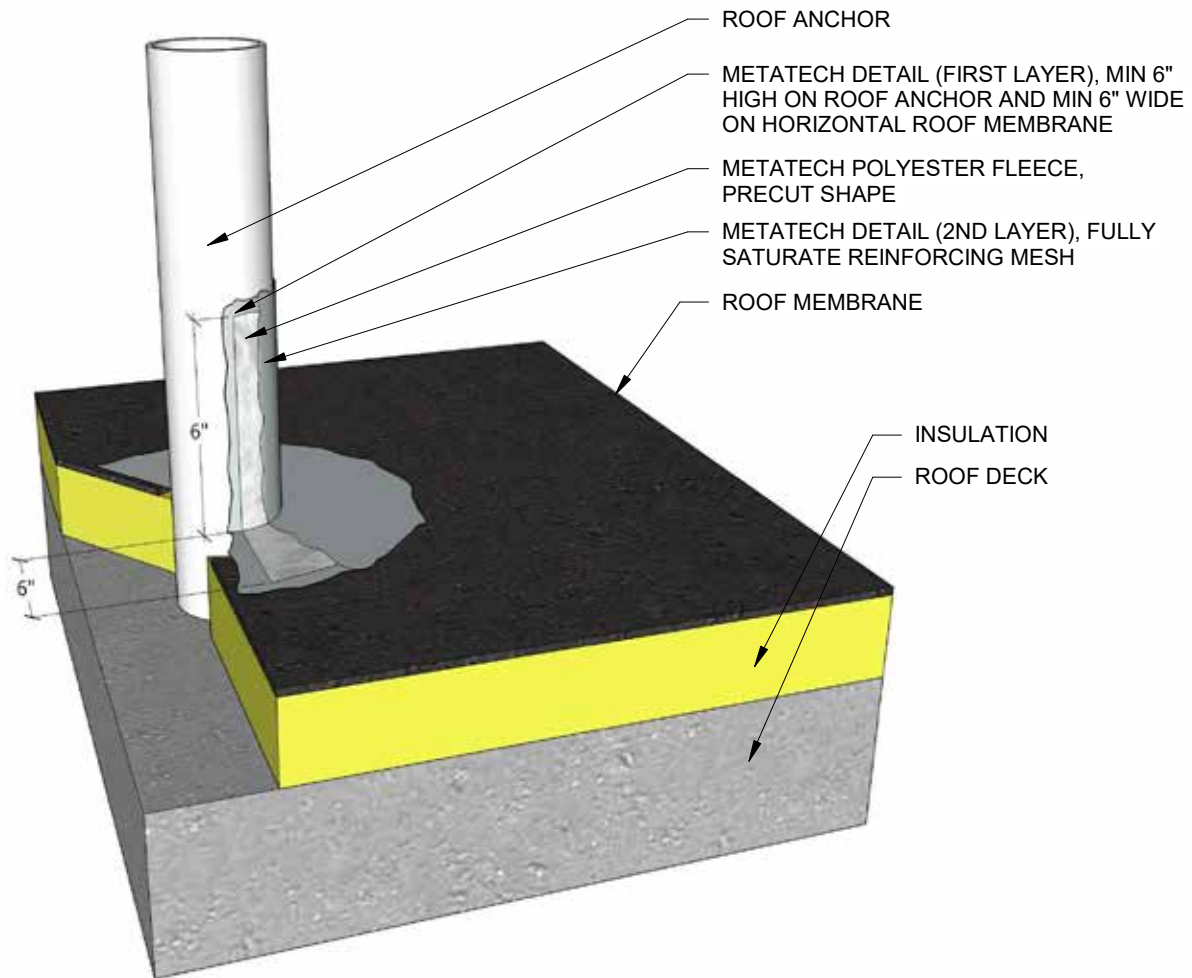
## Metatech Detail Roof Edge – Two Pieces



### Metatech Detail Roof Edge – Three Pieces



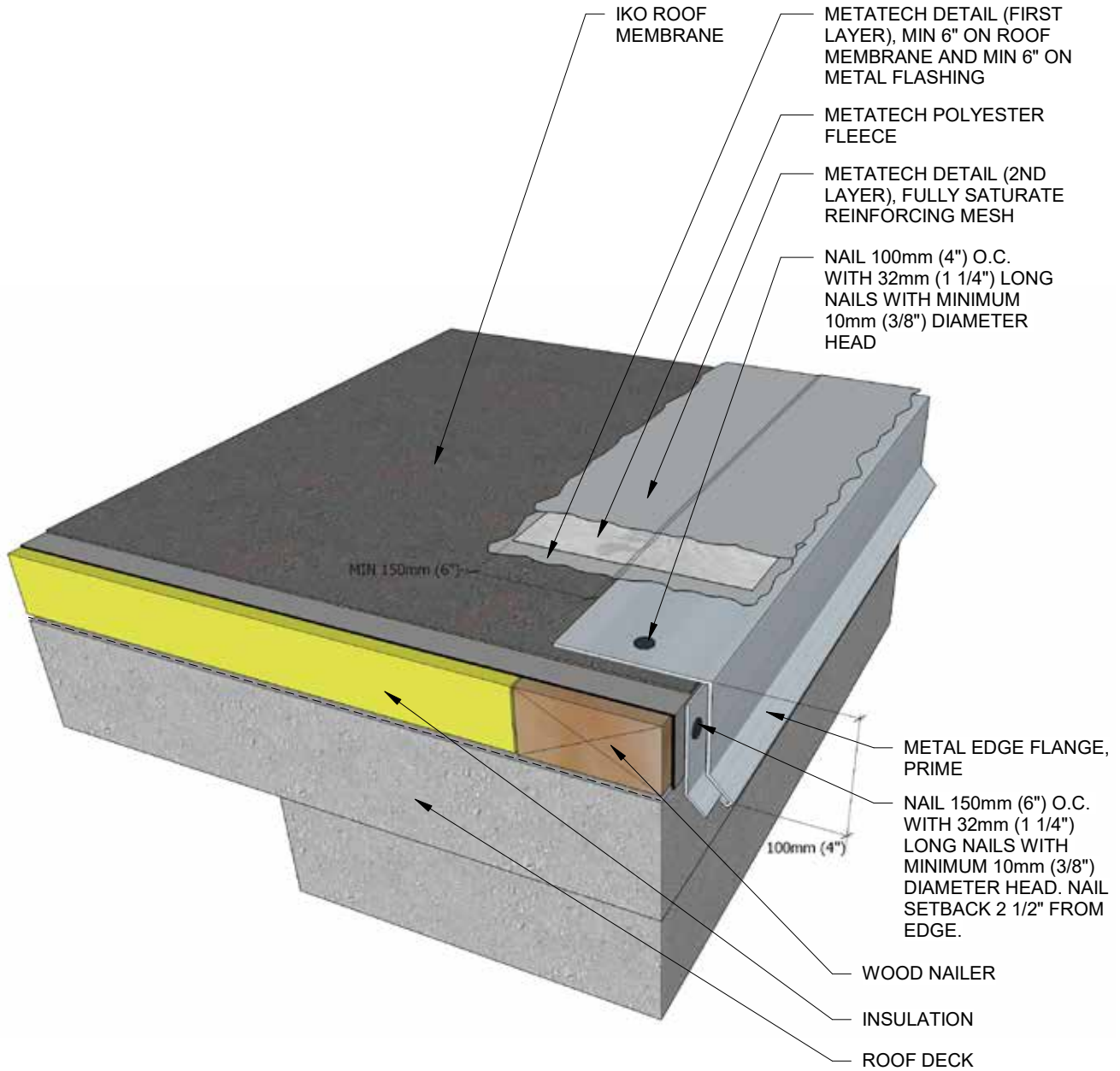
## Metatech Detail Pipe Penetration



### NOTES:

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.

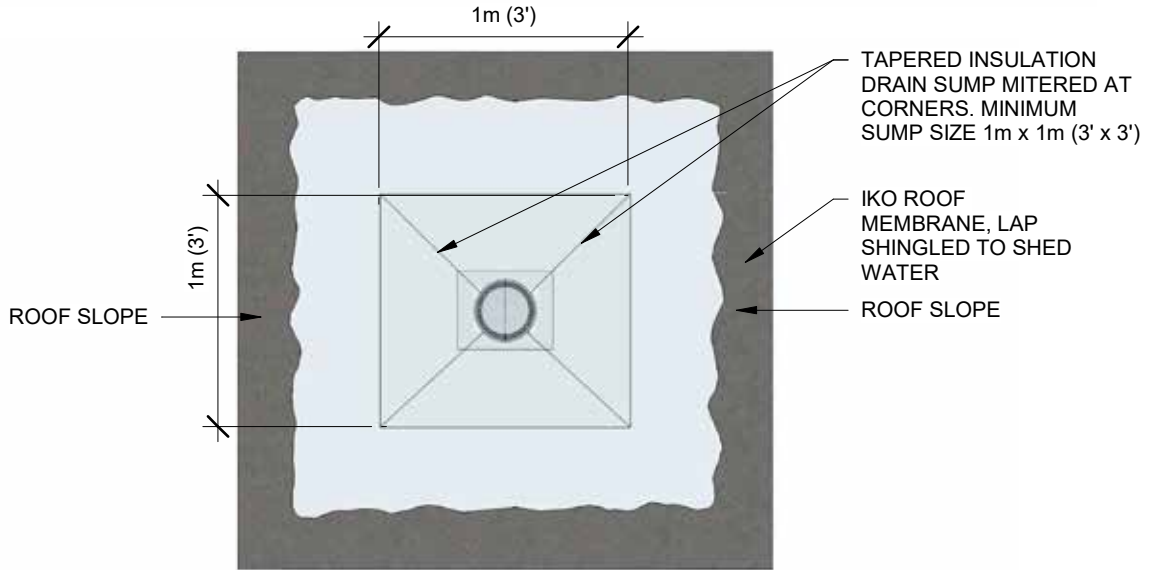
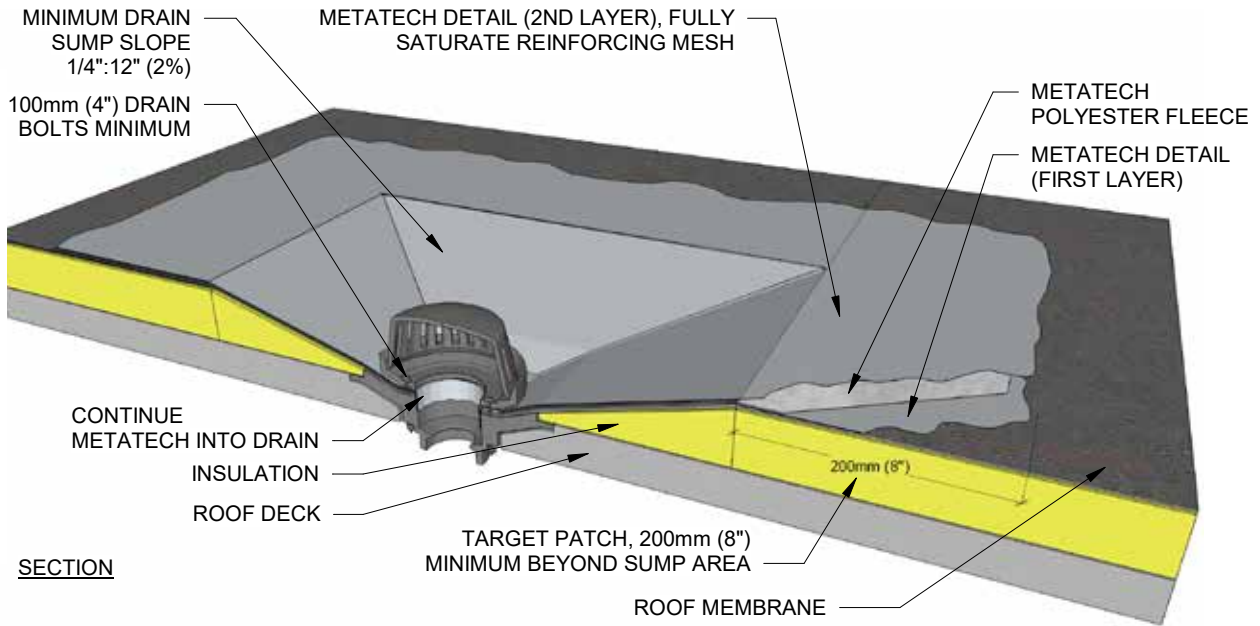
## Metatech Detail Drip Edge



### NOTES:

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.

### Metatech Detail Drain

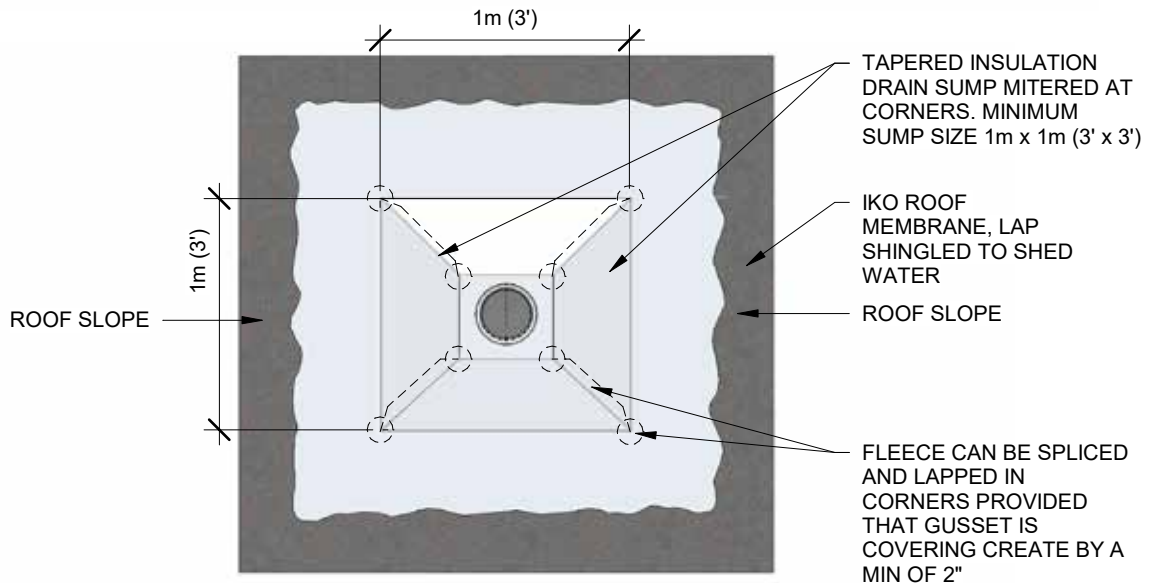
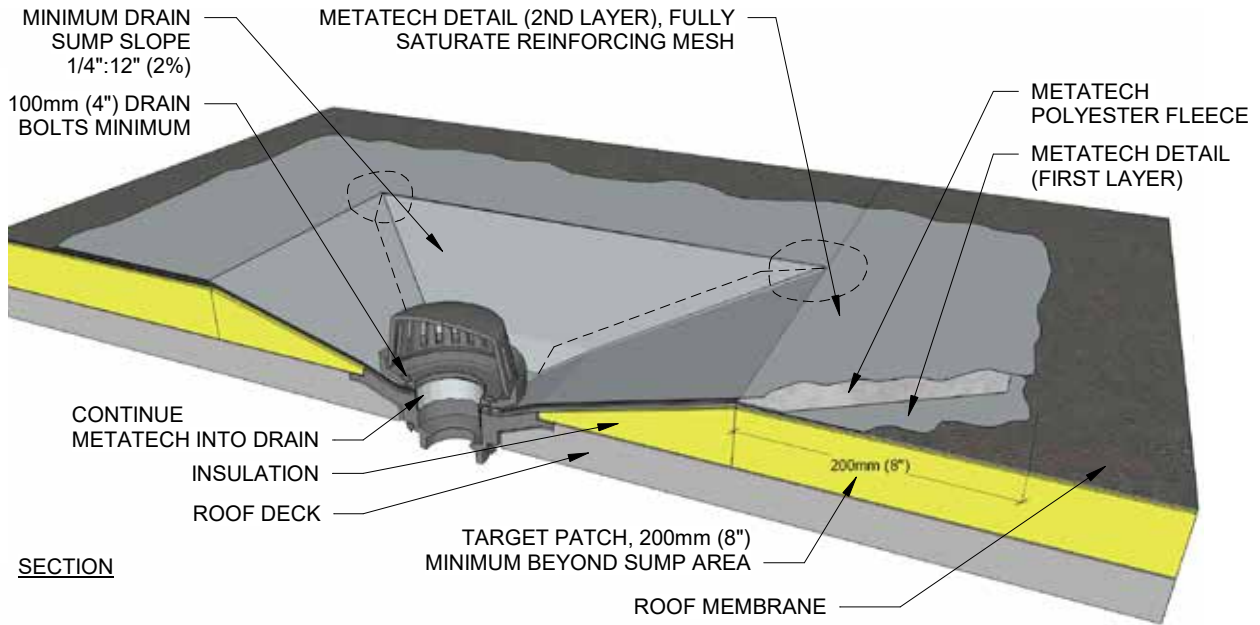


**NOTES:**

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.
3. For approval on variations based on structural limitations, consult with your IKO technical representative.



### Metatech Detail Drain – Spliced Corners

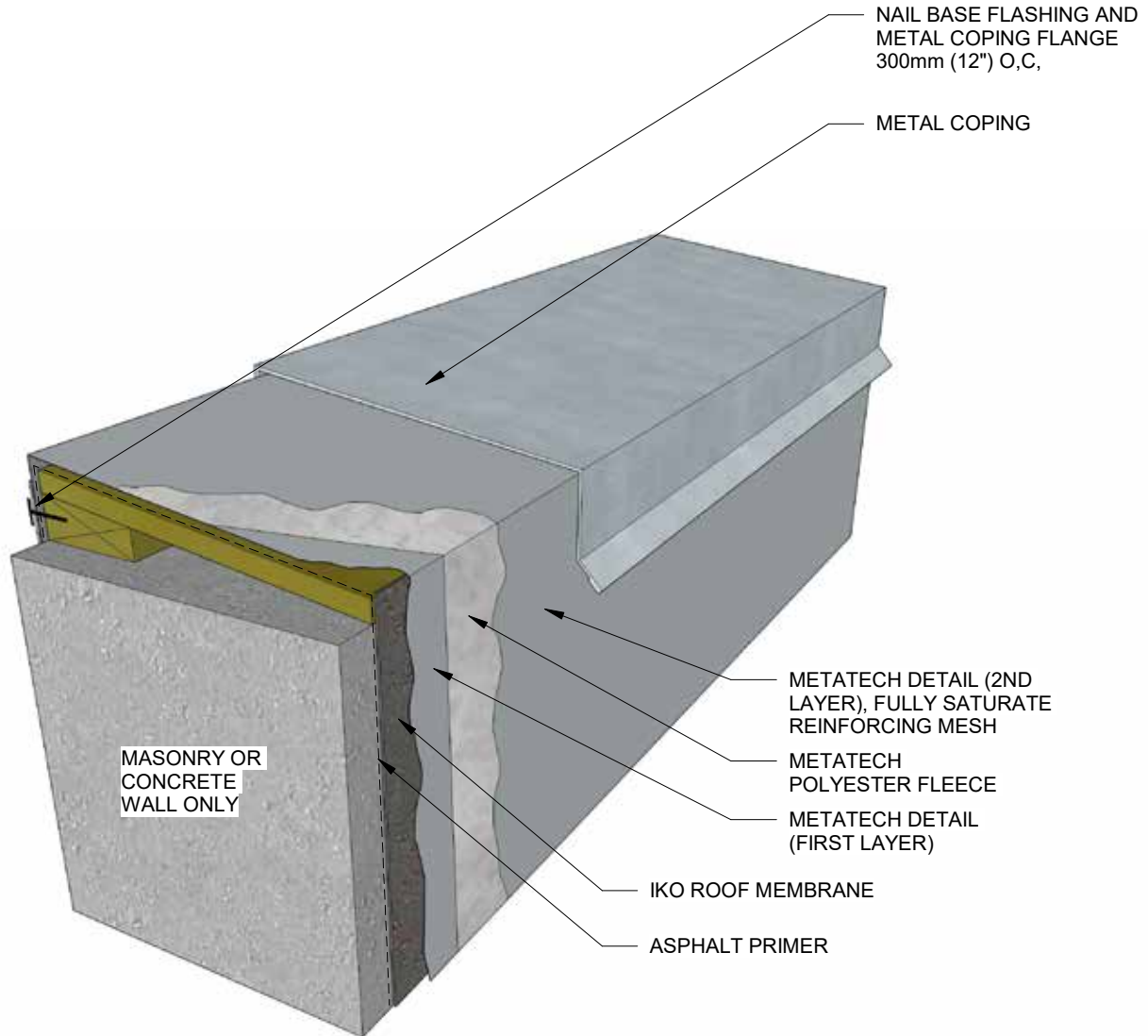


**NOTES:**

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.
3. For approval on variations based on structural limitations, consult with your IKO technical representative.



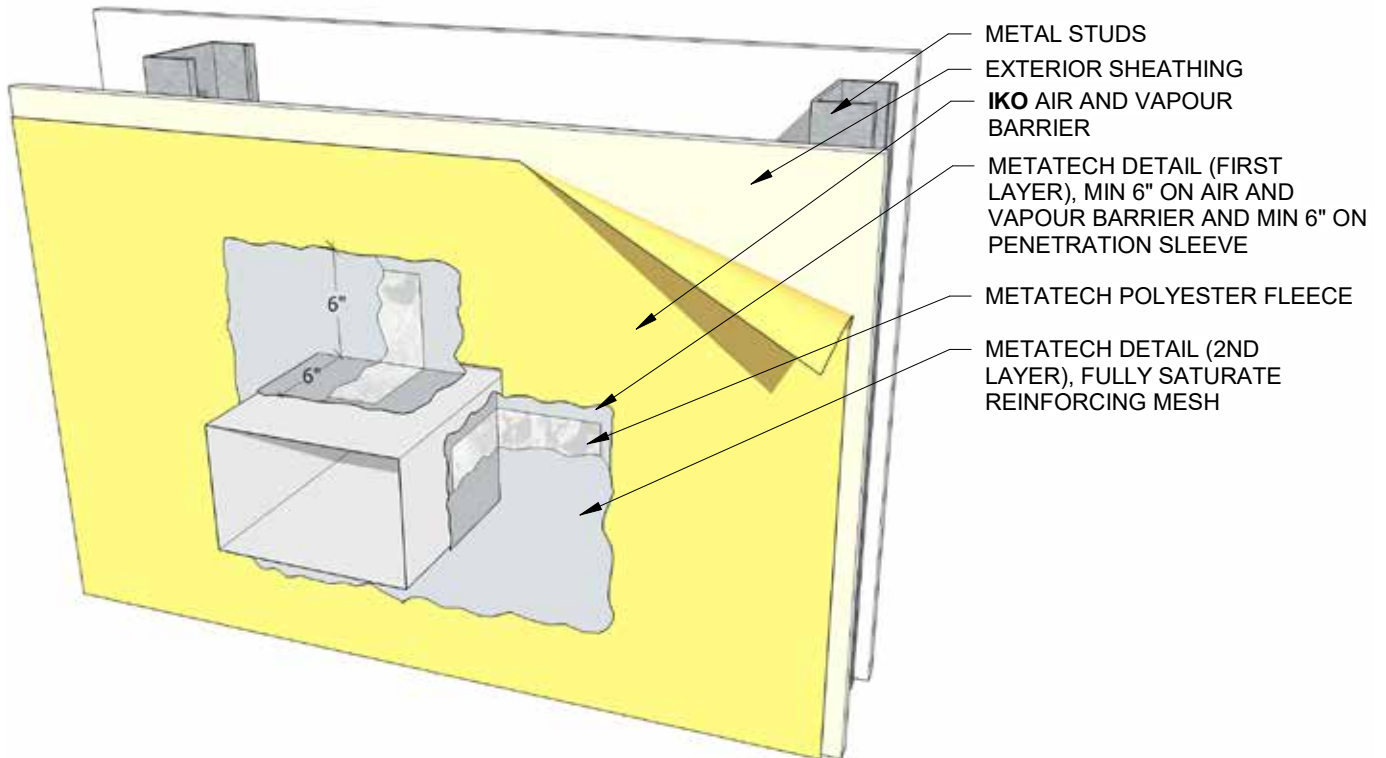
## Metatech Detail Drain – Parapet



### NOTES:

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.

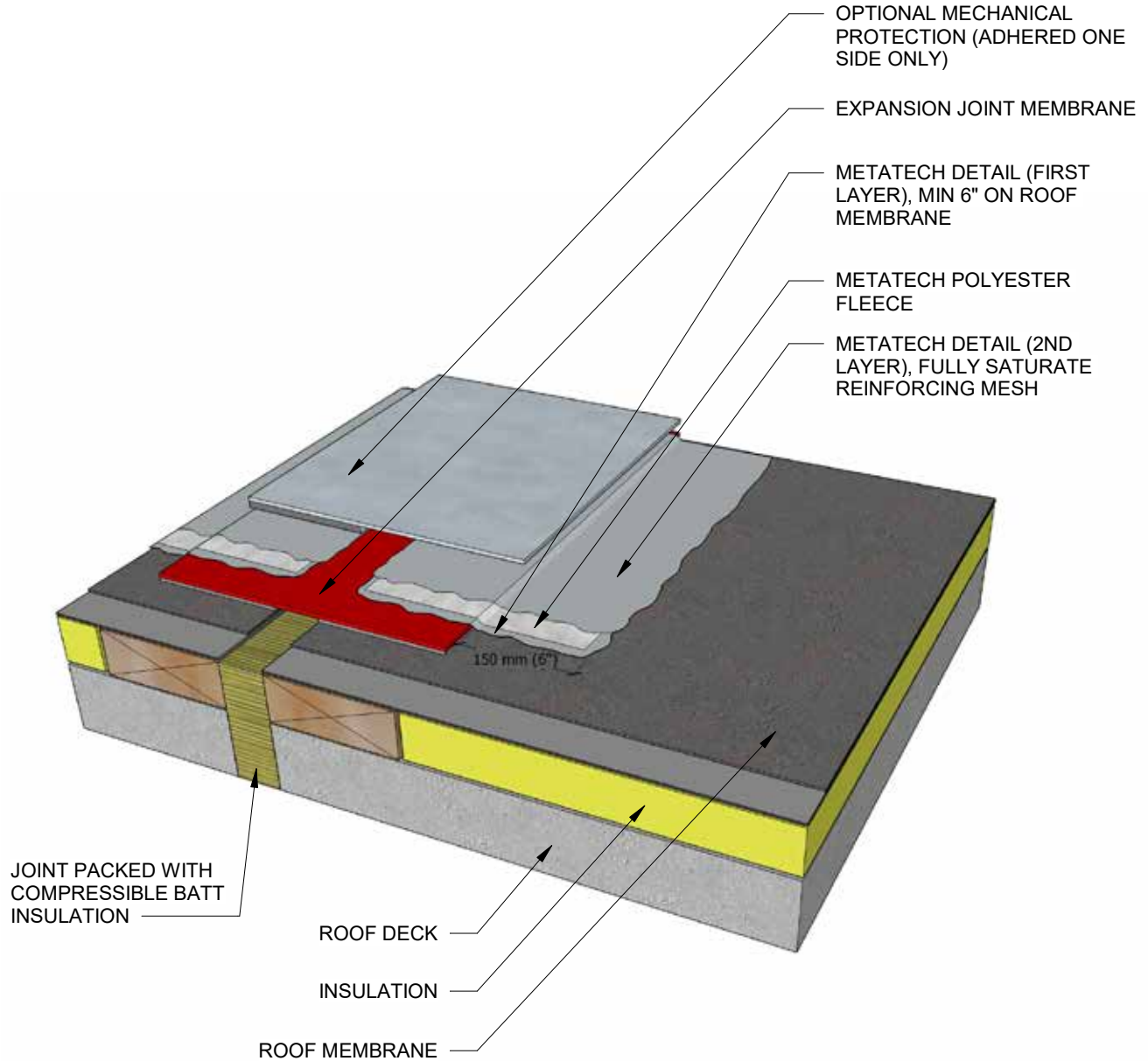
## Metatech Detail HVAC Penetration



### NOTES:

1. Proper surface preparation with applicable primers.
2. Please note that roof assembly is not comprehensive and is for demonstration purposes only.

## Metatech Detail Expansion Joint





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The technical information regarding the application of liquid waterproofing products supplied by IKO is provided in good faith on the basis of IKO's current know-how and experience, and assumes that these products will be used in accordance with the above-mentioned recommendations, under normal circumstances, and that these products were stored and handled in the correct manner. The above-mentioned information is only intended to inform the user about the various properties and/or recommendations and can in no way be considered as a guarantee with regard to the merchantability and suitability for a specific purpose in view of the continuously changing environmental factors, including the specific conditions at the building site, the use of different materials and substrates, etc. As a result, and with the exception of binding legal stipulations to the contrary, IKO cannot be held liable on the basis of the provided information and any other written recommendations and/or advice. Please contact IKO if you have any doubts regarding the processing, the end use or the application of these products. Users are recommended to consult the most recent edition of the technical data sheet. A copy of this will be provided upon request or can be obtained from [www.iko.com/comm](http://www.iko.com/comm).