

# Submittal 110 - Warm Roof Technical Data



## Submittal Form

Submittal: Warm Roof Technical Data	Submittal No.: <b>110</b>
Project Name: <a href="#">Airton Plaza</a>	Project Number <b>AP 001</b>
Description: Warm Roof Technical Data	Date Submitted: <b>07/11/23</b>
Submitted To: L&D / JH / AA / EDC / JFA / CG	Response Required by: <b>09/11/23</b>
Attachments: <input type="checkbox"/> Nil <input checked="" type="checkbox"/> Material Certificates <input type="checkbox"/> Drawings <input type="checkbox"/> Calculations: <input type="checkbox"/> Other:	
<b>Response</b>	
<input type="checkbox"/> Approved. <input type="checkbox"/> Acceptable with concessions, outlined below; <input type="checkbox"/> Unacceptable as outlined below;	
<b>Comments/Stamp:</b>	
<input type="checkbox"/>	Print Name and Title: Warley Souza
	Date: 07/11/2023



Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWELL BUSINESS PARK, WORCESTER, WR5 1QH

BALDONNELL, DUBLIN 22.

(01) 464 2534. INFO@SELECTROOFING.IE

# TECHNICAL SUBMITTAL

<b>Project:</b>	Airton Plaza	<b>Project No:</b>	23143
<b>Revision No:</b>	00	<b>Submission Date:</b>	02/11/2023
<b>Producer:</b>	Yasmin Sodeau	<b>Return Date:</b>	ASAP
<b>Company:</b>	Select Roofing Ltd	<b>Distribution</b>	
<b>Category:</b>	Roof Works		
<b>Info:</b>	Warm Roof Built Up System		



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UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 1

## Specification



## IKO Waterproofing Specification Proposal Ultra Gold SBS



### Project Name: Warm Roof – Airton Plaza Project

Address:

IKO Ireland Reference Number:

2023.11.397

Date of issue: 01/11/2023

This proposal specification is valid for 12 months from the date of issue. If the project is not completed during this period, contact should be made with IKO Technical Services Department prior to the commencement of the works.

# Submittal 110 - Warm Roof Technical Data

## IKO WATERPROOFING SPECIFICATION - CONTENTS

### CONTENTS

#### IKO CONTACTS

IKO Area Business Manager  
IKO Technical Department

#### IKO PROJECT SUMMARY

Project Summary  
Client brief  
Existing summary table

#### IKO WATERPROOFING PROPOSAL INFORMATION SUMMARY

IKO waterproofing system criteria and Guarantee offer  
Project information summary table

#### IKO WATERPROOFING SPECIFICATION PROPOSAL

Preliminary works and enabling works  
Schedule of IKO Waterproofing Materials and Ancillary Components  
Schedule of IKO Waterproofing Materials Installation

#### GENERAL CONDITIONS

Client and Contractor notes

## IKO PROJECT CONTACTS

#### IKO Area Business Manager

Shane O'Gorman

#### IKO Ireland

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Ireland

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Web: [www.iko.ie](http://www.iko.ie)

# Submittal 110 - Warm Roof Technical Data

## IKO PROJECT INFORMATION SUMMARY

### New Build - Initial design by third party

- N.B: This proposal specification has been prepared using the information and initial design drawings provided by the client or their representatives. Any changes to the design which may affect this specification, must be notified to IKO Technical Services as soon as possible so any necessary amendments to this specification can be made.
- Where this document is to be included within the clients/client's representative own specification documentation, a copy of such document must be forwarded to IKO Technical Services Department for final approval before commencement of the works.
- Any discrepancies between any specification and tender document should be highlighted to all parties for final approval prior to any works being undertaken.
- When pricing this contract, it is recommended that the Installing Contractor should conduct their own tests and review contract documentation and this proposal specification to confirm these findings and notify IKO Technical Services of any such variance as described within this proposal specification. This must be undertaken prior to any works being undertaken and once the project has started. *IKO will not be held liable for any variation or change once it has been accepted by all parties.*

# Submittal 110 - Warm Roof Technical Data

## IKO WATERPROOFING SYSTEM CRITERIA

### WATERPROOFING

**IKO Ultra Gold** is a high performance torch applied cap sheet used within an IKO built up flat roofing system with both hybrid and torch-on system options.

The IKO Built up roof waterproofing system specified meets the minimum performance criteria as listed below:

- **Independent approval:** BBA certificate number 91/2671
- **Durability statement:** in excess of 30 years
- **Fire performance:**
  - Broof (t4)
  - enables **unrestricted use** within Part B of the Approved Documents of the Building Regulations
  - incorporates graphite firewall technology with self-extinguishing properties
  - <http://www.ikogroup.co.uk/2017/07/23/iko-graphite-technology-bituminous-reinforced-membrane-fire-test/>
- **CE and UKCA marked membranes:** in accordance with harmonised European Standard BS EN 13707:
- **Manufactured:** all components manufactured within the UK
- **Installation:** hybrid built up roofing system
- **IKO Systems build up:**



- **System components:** must be sourced through IKO including
  - IKO/Unilin FR-BGM Insulation
  - IKO Adhesives & primers
  - IKO Internal rainwater outlets
- All IKO system components are covered as part of the IKO guarantee offer.

### INSTALLING CONTRACTOR

- The Installing contractor must be **IKO Approved** for the specified IKO system.
  - They must employ persons familiar with the application and installation requirements of the specified waterproofing system and its components.
  - Must employ **IKO Approved Installers** whom have undertaken and passed the IKO specified system induction programme.
  - IKO Approved Installers must carry a current and valid **IKO Approved installer card** for the IKO Specified waterproofing system that should be less than 3 years old.
  - The names of the IKO Approved installers must be provided to IKO [waterproofing@iko.ie](mailto:waterproofing@iko.ie) to ensure they are current and valid prior to any works being undertaken.

# Submittal 110 - Warm Roof Technical Data

## GUARANTEE

An IKO guarantee is available on this project and includes the following and is subject to:

- **Inspection and Sign Off:** by an **IKO Technical Engineer** upon completion to ensure the roofing works have been completed in accordance with this specification.
- **Guarantee: 25 year Materials & Labour** covering:
  - IKO Waterproofing material failure
  - Workmanship underwritten by the installing contractor

# Submittal 110 - Warm Roof Technical Data

## KO SPECIFICATION PROPOSAL SUMMARY

Note: This table provides an outline summary of the proposed specification for this project. It is not intended to be fully comprehensive and must be read in conjunction with the relevant clauses within the preliminary notes and enabling works.

Table 1

Existing Insulated Kingspan Panel			
ROOF AREAS/LOCATION	Warm Roof Areas	Approx. m <sup>2</sup>	
<b>Substrate Preparation</b>			
<b>Finished falls:</b>	NEW - Finished falls to be within the deck substrate		
<b>Substrates note:</b>	All substrates are to conform to the requirements highlighted within the preliminary and enabling section within this specification proposal. All substrates must have both an adhesion test and moisture content validated by the installing contractor prior to installing any components of the waterproofing.		
<b>Preliminary and Enabling works</b>	For the outline recommendations and guidance on the requirement of this project, Please refer to the section on preliminary and enabling works within this proposal specification.		
<b>Priming:</b>	<b>None</b>		
<b>Substrate Preparation layer</b>	In accordance with the substrate preparation requirement above		
<b>Air and Vapour Control layer</b>	IKO Sealbase		
<b>Insulation</b>	Unilin FR-BGM		
<b>Thickness – insulation</b>	120mm		
<b>Tapered</b>	<b>Not applicable</b>	<b>IKO Scheme ref:</b>	
<b>Bonding</b>	Mechanically Fixed To Substrate		
<b>Insulation facing preparation</b>	Clean, dry and sound		
<b>Insulated upstands</b>	Unilin FR-BGM – 50mm		
<b>Internal gutter</b>	Within The Substrate		
<b>Angle Fillets</b>	IKO Universal Angle Fillets		
<b>Underlay</b>	IKO Ultra T-O Underlay		
<b>Cap Sheet</b>	IKO Ultra Gold 20		
<b>Cap sheet bonding</b>	Torch applied		
<b>Roof Finishes</b>	None		
<b>ELD required</b>	Not required - no roof mounted equipment		
<b>Notes:</b>			

# Submittal 110 - Warm Roof Technical Data

## IKO SPECIFICATION PROPOSAL - SUMMARY

Table 2 – Detailing works

ANCILLARY COMPONENTS	Where applicable:
Cover flashings	<b>Not applicable</b>
Edge trims	<b>Non applicable</b>
Internal Rainwater Outlets	<b>Unknown</b>
Rooflights	<b>Supplied by others</b>
Insulated Hard edges	N/A
Cable entry systems	
Man safe system	
Edge protection	
Roof mounted plant and equipment	
Other comments	

# Submittal 110 - Warm Roof Technical Data

## IKO SPECIFICATION PROPOSAL - SUMMARY

The IKO Ultra Gold system build up as summarised within table 1



# Submittal 110 - Warm Roof Technical Data

## PRELIMINARY NOTES AND ENABLING WORKS

All reasonable care has been exercised in the undertaking of this specification to make it as comprehensive as possible. However it is not uncommon for situations on site to arise that may not have been immediately apparent and/or have been unforeseen during any survey. Such situations should normally be covered by way of a contract contingency sum allowance to provide protection to all contract parties against what may be termed a risk item. In the event such a 'risk' occurs on this project, it should be treated as a contract variation and be valued in accordance with the stipulated contract terms.

### CONTRACT DOCUMENTATION

- Where this document is to be included within the clients/client's representative own specification documentation, a copy of such document must be forwarded to IKO Technical Services Department for final approval before commencement of the works.
- Any discrepancies between any specification or tender document should be highlighted to all parties for final approval prior to any works being undertaken

### BUILDING REGULATIONS

- It is the responsibility of the client or their representative to ensure compliance of the proposed specification with all relevant Building Regulations by consultation with Building Control. In the event of any doubt about the interpretation or application of the Building Regulations in relation to any particular new build or refurbishment works, clarification must be sought directly from Building Control.
  - Part B: Fire Safety
  - Part E: Resistance to the passage of sound
  - Part F: Ventilation
  - Part H: Drainage disposal
  - Part L: Conservation of fuel and power.
  - Part M: Access to and use of building
- IKO waterproofing specifications has been prepared on the basis of that to meet the current Approved Documents of the Building Regulations. Where it has been specified a thermal insulation thickness or design to which will not comply with these current standards, it should be assumed that IKO have acted on the instruction of the client or their representative in this regard. As such IKO cannot be held liable for any proposal non-compliant with any element of the approved documents of the building regulations.

### INSTALLATION

- All works must be undertaken in accordance with the IKO Specification, current Building Regulations, British Standards Code of Practice and NHBC standards to provide a sound and secure, free draining and completely watertight waterproofing system. These include, but are not limited to:
  - BS 6229 - Flat roofs with continuously supported coverings.
  - BS 8217 - Reinforced bitumen membranes for roofing. Code of practice.
  - BS 5250 - Code of practice for control of condensation in buildings.
  - BS EN 1991-1-4 Euro code 1 - Actions on structures. General actions. Wind actions.
  - BS EN 12056-3 - Gravity drainage systems inside buildings. Roof drainage, layout and calculation.
- It is the installing contractor's responsibility to ensure they employ operatives that are familiar with the application requirements of the specified waterproofing components and have undertaken and passed any relevant IKO product induction. Any installation not undertaken in accordance with IKO recommendations using operatives competent with its installation may result in the withdrawal of the IKO guarantee offer.

### SITE STORAGE

- Insulation boards must be stored under cover in dry conditions, off the ground and covered by a tarpaulin; insulation boards must not be installed if wet or damaged. Foil faced Insulation boards will require the surface to be wiped with a cloth prior to their installation to remove any surface contaminant.
- Self-adhesive membranes must be stored above 5°C for 24 hours prior to use. Self-adhesive membranes must not be stored on the roof overnight or during hot sunny weather conditions.

# Submittal 110 - Warm Roof Technical Data

- Adhesives and liquid products must be stored between 5 and 30°C and out of direct sunlight. Application performance will be improved if stored above 10°C and below 30°C before use. Please refer to the technical datasheet for further guidance.

## TEMPORARY WEATHERING

- Day/night joints must be applied to all details and waterproofing areas, to ensure the building is kept watertight at all times and where the waterproofing integrity may be compromised due to the progress of the works or inclement weather.
- This temporary waterproofing seal should be provided to protect the building and any insulation from water ingress. An underlay or equivalent should be lapped and sealed by linking the vapour control layer to the waterproofing layers.

## WEATHER CONDITIONS

- Do not undertake the works in poor weather conditions, or where the wind speeds are in excess of 7m/s or temperatures are below 5°C.
- Works in severe or continuously wet weather conditions should be suspended unless an effective temporary roof is provided over the working area.
- Progress of the works is to be organised to maintain the waterproofing integrity of the new system.

## WATERPROOFING PROTECTION

- No solvents or other chemicals which could damage the waterproofing should be allowed to come into contact with the waterproofing system.
- Ensure that finished areas of waterproofing are adequately protected from damage by subsequent building operations and other trades. Prevent access to or onto the finished waterproofing by other trades, unless the areas have been adequately protected from any potential damage or misuse. Where the waterproofing has been completed, it would be recommended an ELD (Electronic leak detection test) is undertaken to satisfy the installing contractor the works were at the time of their installation was watertight and undamaged.
- Failure to provide sufficient protection may result in additional works being necessary before any guarantee is issued.
- Where access is required for the maintenance of plant items etc additional protection must be provided in the form of maintenance walkways.
- Where the area to be waterproofed is to be regularly accessed eg. On a balcony or terrace, the new waterproofing must be adequately protected by the provision of paving slabs, promenade tiles etc. or other wearing surface.

## WIND UPLIFT

- This roof is in an exposed location with a potential for high wind uplift and a wind load calculation (attached) has been undertaken and demonstrates the wind loading is within/outside the design parameter of the proposed system.
- The wind loading acting upon this building has highlighted specific areas of higher than normal risk of wind loading. The wind loading acting upon this roof has highlighted a perimeter fixing zone as being a higher than normal risk.
- As such the installation of these works must be read in conjunction with the IKO wind load calculation.
- The potential wind loads on a roof are higher at the perimeter edges and corners and as such it is important that the perimeters are fixed correctly according to this specification.
- The installing contractor must ensure all perimeter edges including trims, capping's and timbers are securely mechanically fastened to the construction with appropriate fixings. Nails must not be used in areas of high wind loads.
- The coverage rate of the adhesive for both the insulation boards and membrane must be doubled up at perimeter edges and around openings such as rooflights, referring to any enclosed wind uplift calculation for details on the perimeter zones.
- Fixing of perimeter timbers and GRP trims must be with suitable fixings into a sound substrate. The fixings must be spaced a maximum of 150mm centres and be min 30mm in length.

# Submittal 110 - Warm Roof Technical Data

## FALLS

- Falls should be in accordance with BS6229 where the **minimum finished falls including internal gutters are 1:80**. To ensure a minimum finished fall of 1:80 is achieved, allowing for construction tolerances, and deflection under load new substrates should be designed to 1:40.
- Falls may be created in various forms, including within the deck or structural support, or from a levelling screed such as IKO Permascreed or within the use of tapered insulation within a warm roof application.
- Allowance should be made by the installing contractor to remove any back falls, hollows, depression or deflections prior to the application of the first layer of waterproofing.
- Where ponding water is present and the allowance of tapered insulation is not viable, then consideration to improving falls by the use of levelling screeds, fillers or sacrificial layers of the waterproofing must be allowed for by the installing contractor. It is the contractor's obligations to ensure all reasonable measure have been allowed for rectification of poor drainage/falls prior to the installation of the waterproofing.
- Any arising defect associated with non-rectification of poor drainage falls resulting in ponding water upon the roof will not be covered by the IKO guarantee.
- IKO will not be held liable for any resulting ponding water once the works have started.

## Ponding Water

- Constant standing water on a roof waterproofing in excess of 10mm may affect the long term performance of the waterproofing, as well as adding weight (25mm of standing water over 20m<sup>2</sup> would equate to 500Kg), lead to progressive deck deflection, thermal stress, slip hazard and buildup of debris and algae. IKO will not be liable for standing water in excess of 10mm once the works have been started. 10mm of standing water should either free drain or evaporate within a 48hour period after the cessation of any heavy rainfall.

## DRAINAGE AND RAINWATER OUTLETS

- Flat roofs falls and drainage should be designed in accordance with BS6229: 2018
- Drainage of flat roof areas should be design in accordance with BS EN 12056: part 3 – Gravity drainage systems inside buildings – roof drainage, layout and calculation. Drainage rainwater outlet must be installed at the low point on the roof, and or defined within a tapered insulation scheme design.
- Drainage rainwater outlets must be fully compatible with the specified waterproofing system, only those approved by the waterproofing system supplier are to be used. Only IKO rainwater outlets will be covered by the IKO guarantee.

## Internal Rainwater outlets

- Drainage must be secure, free draining and weather tight at all times.
- Clean and prepare all rainwater outlets of any grease, debris to ensure a secure bond with the waterproofing can be achieved. Prime all rainwater outlet flanges with the specified IKO Primer.
- Protect outlets and apertures from ingress of debris and remove protection to outlets during non-operating periods.
- Ensure rainwater outlets are adequately sealed and connected to the internal/external pipework to prevent any water backing up the pipework.
- All rainwater outlets and drainage should be checked upon completion of the works to ensure that they are free flowing.
- An internal sump approx. 500mm x 500mm or as specified on any tapered scheme should be installed around each existing internal rainwater outlet to assist with drainage. Each sump should be installed in accordance with IKO detail. Contractor note: provide hard edge 10mm thinner than the insulation to prevent lap build up and water check.
- The use of preformed metal angles could be used as an alternative to insulated hard edge in line with the relevant IKO design detail. Whereby the metal angle is formed using 0.9mm galvanized metal min 75mm x 75mm (d) for insulation 120mm thick, and 75mm x 100mm for insulations of 140mm thickness. All metal angles are to fully bonded to the insulation using IKOpro PU adhesives.
- Grind or abrade and prepare all metal surfaces and remove any grease, oils or dust and clean and prepare with acetone cleaner.

# Submittal 110 - Warm Roof Technical Data

## New Outlet(s)

- Install new internal Rainwater outlets as specified
- Where an internal rainwater outlet is to be installed at substrate/deck level, it will be required to rebate the substrate/deck to accommodate the flange of the rainwater outlet and prevent a water check around the outlet.

## UPSTANDS, SILLS AND THRESHOLDS

- All waterproofing to upstands, sills and thresholds must achieve a **minimum height of 150mm above the finished roof level**. The finished roof level is the top surface of any additional finishes such as tiles, paving slabs, decking etc.
- Attention should be paid to window sills and door thresholds, brick and rendered upstands, cladding and tile abutments, plant and rooflight kerbs, pipes, retained fixed guardrails etc.
- **Where any low thresholds, sills and upstands existing, that cannot be raised as a requirement to this proposal specification, then IKO technical department must be notified prior to any works being undertaken. Details formed outside the design requirement defined within Codes of Practice, technical guidance documents and this specification, these details will not be covered by the IKO guarantee. IKO Technical department must be notified to provide guidance on any compromised detail to minimise any future defect arising.**
- **All existing waterproofing detailing to all upstands including kerbs, perimeter edges and internal gutter and the like. These must be stripped and removed with all substrates and surfaces made good prior to the application of the new waterproofing.**
- Allowance should be made during this work for the inclusion of a new IKOFlash or code 4 lead cover flashing, to be dressed over the new waterproofing upstand.
- IKO cannot take responsibility for water ingress over waterproofing details below the minimum height.

## Windows, glazing and sills

- The upstand height of the finished roof covering will be above the level of the existing window sills. It will therefore be necessary to raise the window sill level by replacing the window frames at these locations to accommodate the required roof covering thickness and minimum waterproofing upstand height of 150mm above the finished roof level. Refer to separate client's instructions for further details of this installation.
- Waterproofing upstands to glazing kerbs must achieve a minimum height of 150mm above the finished roof level. The waterproofing must be dressed behind the glazing. Remove glazing as necessary to allow detailing works. On completion of the detailing works apply the specified glazing ensuring a minimum cover of 75mm to the upstand/detail. Wherever this is not the case an additional flashing piece must be provided.  
Where glazing cannot be raised/ removed, IKO Technical department must be notified immediately, and should the formation of the waterproofing not achieve the minimum 150mm upstand from the finished roof level, then this detail will not be covered by the IKO guarantee.

## Door, sills and thresholds

- The upstand height of the finished roof covering will be above the level of the existing door threshold. It will therefore be necessary to raise the door threshold level by replacing or adjusting the door frames and doors at these locations to accommodate the required roof covering thickness and minimum waterproofing upstand height of 150mm above the finished roof level.

## Masonry walls

- All brickwork and blockwork jointing and pointing is to be made flush to allow a full bond of the waterproofing.
- Irregular walling such as stone walls will need to be addressed prior to the application of the waterproofing, stone walls will need to be cut back or rendered to provide a smooth even finish substrate for the application of the waterproofing layer. Dressing the waterproofing to the render is not acceptable and any arising defect is not covered by IKO.

## Rendered wall upstands

- Rendered walls will require the render to be cut back to allow the waterproofing to be dressed in accordance with IKO standard detail. Cut back the render to allow for the inclusion of a render stop and cover flashing. Redress

# Submittal 110 - Warm Roof Technical Data

the render to match the existing. Dressing the waterproofing to the render is not acceptable and any arising defect is not covered by IKO.

## Level threshold access balconies

- On balconies and terraces with designed accessible level thresholds a 75mm waterproofing upstand to a threshold is acceptable where the design meets NHBC standards and IKO requirements.

## CLADDING

- Waterproofing upstands to cladding must achieve a **minimum height of 150mm above the finished roof level**.
- The waterproofing must be dressed behind the cladding.
- Where applicable, remove cladding panels as necessary to allow detailing works. Where cladding panels cannot be removed it will be necessary to cut back the panels to allow for a minimum skirting of 150mm above the height of the finished roof level.
- On completion of the detailing works re-fix/apply the specified cladding systems ensuring a minimum cover of 75mm to the upstand/detail. Wherever this is not the case an additional flashing piece must be provided.
- Where cladding cannot be raised, IKO technical department must be notified prior to undertaking any works. Areas that cannot be raised to accommodate the required waterproofing upstand detailing, will not be covered by the IKO guarantee. Dressing the waterproofing to the cladding sheet is not deemed acceptable and must be avoided.

## COVER FLASHINGS

- All waterproofing upstands to brick/block/concrete etc. are to be terminated with the use of IKOFlash cover flashing and sealed with IKOpro Stickall mastic dressed to provide a minimum 75mm cover to the waterproofing.
- Alternative cover flashings, such as non-ferrous type e.g. lead, can be used as an alternative; however they must be installed in accordance with the LSA (Lead sheet association) guidelines being a maximum of 1.5m long being secured and clipped, and to provide a minimum 75mm cover to the waterproofing upstand. Cover flashings are to be sealed using a polysulphide mastic sealant or IKOpro Stickall. Alternatives such as sand cement mortar are not deemed acceptable by IKO and will not be covered by the IKO guarantee.
- Any retained cover flashing must be sound and secure and sufficient to provide min 75mm cover to the waterproofing detailing. All mastic must be removed and replaced with new. Any retained cover flashing will not be cover by IKO guarantee.
- Sloped and Vertical cover flashings are to be formed in accordance with the Lead Sheet Association guidelines using stepped flashings.
- Any mastics, sealant and gaskets will have a life expectancy of approx. 10yrs, and are seen as a maintenance items and as such is not covered by the IKO guarantee.
- The use of termination bar into brickwork and masonry is to be avoided and its use in such applications will not be covered by IKO.

## DPCS AND CAVITY TRAYS

- All DPC/cavity trays must be a minimum 150mm above the finished roof level and above the termination of the waterproofing detailing.
- The guarantee offered for this project will be compromised if minimum waterproofing upstand heights cannot be achieved.
- All brick and blockwork pointing and joints within the structure are to be made flush prior to the application of the waterproofing components.
- Where the new waterproofing system includes tapered insulation or an increase in insulation thickness, it will be necessary for the DPC/cavity tray to be raised to accommodate the new waterproofing build up.

## PARAPETS AND DWARF PARAPETS

- Parapet upstands that encapsulate the full height of the parapet must be formed in accordance with IKO Detail drawings. IKO do not recommend the use of termination bar beneath a coping or capping and should be prohibited.
- Any DPC/Cavity trays should be removed prior to encapsulating the parapet upstand.
- Parapets and upstand above 300mm must be mechanically restrained against slippage in accordance with this specification proposal (see additional mechanical restraint of the waterproofing)

# Submittal 110 - Warm Roof Technical Data

- Waterproofing dressed across the horizontal either beneath any coping or capping, or into any external edge trim, should be undertaken as separate waterproofing sections.

Install new waterproofing system as specified within the IKO detail drawings. Should the detail be unable to be formed, then IKO technical must be notified immediately.

## Edge trims and drip details

- Any retained timbers and components must be structurally sound and capable of accepting the new waterproofing system.
- All perimeter edges must be raised to accept the new waterproofing system build up. Allowance must be made for replacement external fascia or capping.
- Existing edge trims must be removed and replaced with new GRP (Aluminium trims are not acceptable).
- Fixings: suitable for the substrate being fixed into and of an appropriate length (min 20mm). Clout nails must not be used to secure perimeter edge trims; these should be secured using screw and threaded countersunk fixings securely mechanically fastened into a structurally sound substrate 30mm from ends and at 300mm maximum centres (150mm maximum for areas of high wind uplift).
- Any welted drips are to be formed as separate items, whereby the welted drip is formed using a 6mm former at a minimum depth of 75mm, being dressed to the external gutter or perimeter edge.

## CHECK KERBS

- Check kerbs are to be formed a min 50mm above the finished roof level.
- All detailing is to be formed as separate items whereby the detailing is to be lapped onto the main roof area by 150mm.
- Check kerbs and upstands above 300mm must be mechanically restrained against slippage in accordance with this specification proposal (see additional mechanical restraint of the waterproofing)
- Install new waterproofing system as specified within the IKO detail drawings. Should the detail be unable to be formed, then IKO technical must be notified immediately.

## HANDRAILS AND EDGE PROTECTION AND BALUSTRADES

- Handrails and permanent edge protection and balustrades should be free standing and not penetrate through the waterproofing.
- Any penetration or fixture for any handrail or balustrade must not be within the main falls of the waterproofing. Where the handrail or balustrade is being fixed through the waterproofing, then IKO must either approve the detailing in writing, or it will be excluded from the IKO guarantee.
- The handrail must be checked on completion by the CDM Coordinator for the project or other competent personnel, in conjunction with the client's instruction.

## Free-standing

- Where applicable remove or reposition existing free-standing handrails to allow necessary roofing works
- On completion of the waterproofing works, install and adjust as necessary the specified free-standing handrails accordance with the manufacturers/suppliers recommendations and instructions. Provide a sacrificial layer of cap sheet or support pad under each support leg.
- .

## SERVICES, PIPES, CABLES, DUCTING & LIGHTNING CONDUCTORS

- All services, pipes, cables, lightning conductors and associated fixtures must be temporarily removed or diverted to allow the waterproofing works. Redundant items should be removed. Works should be carried out in conjunction with the building owner by a qualified engineer.
- Any redundant cables/services and ducting is to be removed from the roof.
- Cables, services, pipework and the like should be secured with a proprietary cable fixing or cable tray system. Cables, wires, services and pipes must not be left or supported from the roof finish, to which would inhibit and restrict the drainage from the roof.

# Submittal 110 - Warm Roof Technical Data

- Pipe and cables that penetrate the waterproofing system must be undertaken by the use of a proprietary pipe and cable entry unit such as **IKO Roofport** or **IKO Roofbox**. Pipe or cable penetrations that penetrate through the waterproofing layers that are not detailed correctly will not be covered by IKO.
- Any retained PVCu pipework must be details in accordance with IKO standard details, and adequately prepared by lightly abrading the surface to provide a key.
- Lightning conductors should be secured using IKO Lightning Conductor Clips at 1m centres.

## PLANT, MACHINERY AND ROOF MOUNTED EQUIPMENT

- Provide kerbs of sufficient height allowing for the proposed insulation thickness and a waterproofing upstand which must achieve a minimum height of 150mm above the finished roof level.
- Where plant items are being placed directly onto the new waterproofing a proprietary plant support system should be utilised ensuring the new waterproofing is adequately protected and the weight distributed sufficiently so as to not be detrimental to the waterproofing. Sacrificial support pads or a loose laid section of mineral cap sheet could be used beneath each support pad.
- Where plant and/or associated roof mounted equipment cannot be removed to allow the necessary detailing, IKO Technical services department must be contacted immediately for a revised detail to be agreed. Areas where plant cannot be removed to allow satisfactory waterproofing to be installed, these areas or any resulting defect or breach will not be covered by the IKO guarantee.
- Heavy plant items must not be loaded directly to the roof waterproofing finish.

## PRIOR TO THE APPLICATION OF THE WATERPROOFING

- Any hollows, depressions, deflections, back falls etc. found in the substrate must be rectified prior to installation of the waterproofing system.
- Areas of evidenced standing water must be rectified prior to the application of the waterproofing, refer to the section on falls and drainage for further guidance. Standing water on the finished roof will not be the liability of IKO.
- Thoroughly clean surfaces, remove all debris and sharp objects likely to damage the waterproofing membrane, and ensure the substrate is even and dry.

## APPLICATION OF THE WATERPROOFING

- The installing contractor must use installing operatives that are competent with the use and installation requirement of the waterproofing components listed within the specification.
- Only installers who have undertaken and passed the IKO product induction programme should be undertaking the installation of the waterproofing components.

## ADDITIONAL MECHANICAL RESTRAINT OF THE WATERPROOFING

- At slopes greater than 5° reinforced bitumen felt membranes will require additional mechanical fixings according to BS8217. Fixings should be at the head of each length of cap sheet, fixing through all layers at 75mm centres in two rows 50mm apart into timber battens/deck below. The heads of the fixings must be covered by the end laps of the cap sheets above. In warm roof build ups additional timber battens will be required for anchoring the waterproofing system.
  - Roof pitch 5° to 25° - laid in maximum 8m lengths with fixings at the head of the sheet. Where the roof run is less than 8m, the sheets should be single runs without broken head laps. For runs over 8m, broken head laps should be provided midway or at max 4m centres, with additional battens as required.
  - Roof pitch 25° to 60° - laid in maximum 4m lengths with support battens at ridges, eaves and 2m centres
  - Roof pitch 60° to vertical – laid in maximum 1.5m lengths with support battens at ridges, eaves and 750mm centres
- Additional mechanical fixings will also be required on all vertical details more than 250mm high, with additional fixings as required according to the vertical height. Where fixing through insulation on a vertical detail a minimum of 4 membrane fixing plates and suitable fixing screws can be used to fix through each head lap, positioned so as to allow side laps to be fully sealed.

# Submittal 110 - Warm Roof Technical Data

## **WATERPROOFING DETAILS**

- All waterproofing details are to be formed in accordance and agreement with IKO installation recommendations. All waterproofing details should be detailed in accordance with IKO standard details or those issued by IKO as part of this specification.
- IKO will not be responsible for any details not formed in accordance with IKO recommendations, and such details may result in these being either excluded from the IKO guarantee or no IKO guarantee being offered.
  - Where such details cannot be formed in accordance with IKO recommendations defined within this proposal specification, then IKO Technical department must be notified before any works are undertaken.
- Where an increased thickness of insulation or where tapered insulation has been proposed, allowance must be made for adjustment, renewal or replacement of details as necessary such as:
  - Perimeter edges - (Kerbs and drip edges/External gutters/Fascia/Cladding or Parapets etc.)
  - Upstands - (Brick, block and rendered abutments/DPCs/cavity trays/sills and thresholds/rooflights and glazing/tiled abutments/Cladding etc.)

## **ISOLATION KERBS AND ADJOINING PROPERTIES**

- An Isolation kerb is to be formed at the junction with the adjacent roof where the new roofing system is to be terminated. The contractor must confirm that the proposed isolation kerb will not impact the drainage of either roof area prior to works commencing.
- Strip existing waterproofing back to the structural deck. Supply and mechanically fix timber kerb directly to the deck to create separation between the existing adjacent roof and the proposed new roof system.
- All junctions of the new roofing system with the adjoining roof are excluded from the IKO guarantee from any ingress directly attributable to the adjoining roof area or the junction with the new roofing system.

## **MOVEMENT JOINTS AND EXPANSION JOINTS**

- Movement and expansion joints should be located so not to affect the drainage and falls of the roof. Expansion joints must be formed in accordance with the manufacturer's recommendations.
- Proprietary expansion joint systems supplied and installed by third parties must be suitable for the application they are being used in. These items are not covered by the IKO guarantee, but must be installed in strict accordance with the suppliers and IKOs recommendations.
- Movement joints must be prepared down to the substrate and primed with the specified IKO primer, and installed in accordance with the IKO detail drawing.

## **TV AERIALS AND SATELLITE DISHES**

- Any TV aerials and or satellite dishes upon or may impede the installation of the waterproofing is to be temporarily removed to allow for the installation of the waterproofing works.
- The installing contractor and client's representative must liaise with the property owners to minimise any inconvenience.

## **CONSTRUCTION AND WEIGHT LOADING**

- Any retained components from the existing structure must be sound and capable of accepting the imposed loading of the new waterproofing system and associated installation procedures. This should be confirmed by a suitably qualified person or structural engineer.

## **MOISTURE CONTENT AND SUITABILITY OF SUBSTRATE**

- Must not impair waterproofing integrity.
- Moisture readings and adhesion tests should be undertaken by the installing contractor at locations over the whole area to ensure all areas are suitable for the application
- For certain substrates it may be necessary to abrade the surface to provide key.
- The substrate shall have a maximum moisture content of 6% or 75% relative humidity, determined using a Tramex CME4 for concrete substrates or a Delmhorst BD-10 or similar for existing substrates.
- An adhesion test must be undertaken to determine if suitable adhesion can be obtained to the prepared substrate. Test areas should be a minimum 300mm x 300mm, carried out at locations over the whole area and allowed to cure prior to the adhesion test being undertaken. The substrate must be prepared as required to provide adhesion of the system to the substrate with a minimum bond strength of 116 psi (0.8 N/mm<sup>2</sup>).

# Submittal 110 - Warm Roof Technical Data

- Determinations of adhesion, bond strength and moisture content shall be performed periodically by the contractor throughout the course of work at locations over the whole area, at max 50m<sup>2</sup> centres and must be undertaken at all locations where the substrate is different or has undertaken any form of mechanical abrasion and preparation, this is to ensure all areas are suitable for the application a record of all tests should be logged throughout the application process.
- Each area must be suitably prepared and clean and dry before any adhesion test is undertaken. The findings must be recorded by the installing contractor. Where adhesion is not achieved, IKO must be contacted immediately.
- A record of all test samples should be logged throughout the application process.

# Submittal 110 - Warm Roof Technical Data

## IKO WATERPROOFING SPECIFICATION PROPOSAL

### J41 REINFORCED BITUMEN MEMBRANE ROOF COVERINGS

To be read with Preliminaries/General conditions and detail drawings within this IKO Proposal specification:

#### 99! TYPES OF ROOF COVERING:

#### 110 BUILT-UP REINFORCED BITUMEN MEMBRANE WARM DECK ROOF COVERING

##### Main Roof Area

- Substrate: Concrete- Refer to Clause 610 for substrate preparation.
- Falls: Falls to be created within the deck construction
  - finished falls to be in accordance with BS6229 – see preliminary notes
- Preparation: refer to clause 610
- Primer: IKOpro Quick Dry Primer – Refer to Clause 320 and 530
- Preparation layer: **Not Required**
- Air and Vapour Control Layer: IKO Sealbase – Refer to Clause 395 and 670
- Insulation: Unilin FR-BGM– Refer to Clause 430 and 680
  - Thickness: 120mm
  - Tapered: N/A
  - Target U Value: 0.20 W/m<sup>2</sup>k
- Overlay to Insulation: refer to clause 690
- Insulation to upstands: where required as clause 429 warm roof
- Waterproof covering: IKO Goldseal Built up roofing system
- Manufacturer: **IKO Plc**, Appley Lane North, Appley Bridge, Wigan, Lancashire, WN69AB.  
email@technical.uk@iko.com
- First layer: IKO Ultra T-O Underlay
- Cap sheet: **IKO Ultra Gold 20**
  - Attachment: - refer to clauses 710, 715 and 740
  - Colour: available colours : - refer to clause 400
- Flashings and detail work: to be formed with minimum 2 layers of waterproofing
  - IKO Ultra Gold 20 - **hybrid detailing**- Refer to Clause 406a
- Surface protection: protect from follow on trades
- Additional Finishes: where applicable
  - Maintenance walkway
    - to the designated maintenance access route only.
    - defined by contrasting colour of the specified IKO Cap sheet,
    - all side and end laps sealed and not to inhibit drainage or falls.
- Ancillary Items: As required by client design.
  - IKOtrim - GRP edge trims
  - IKO Internal Rainwater Outlets

#### 201 MANUFACTURERS GUARANTEE

- The waterproofing system supplier is to provide a 25 year Materials & Labour
- The installing contractor must be approved by the waterproofing system supplier and employ installing operatives whom have undertaken and passed the specified waterproofing system accredited product induction course and carry an up to date installer card. Proof that each installing operative carry's an installer card must be provided prior to any works being undertaken.

#### 202 CONTRACTOR'S DESIGN OF ROOF COVERINGS:

- Design responsibility: Installing roofing contractor

# Submittal 110 - Warm Roof Technical Data

- Structural and fire requirements: to comply with the relevant sections of The Approved Documents of the Building regulations.
- Generally: As section B50.
- Modifications: Changes, amendments or revisions to the IKO proposal specification must be notifiable and agreed by all parties in writing, prior to any roofing works being undertaken.
- Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria. BS6229, BS8217 and BS8000 pt4. All waterproofing to be installed in accordance with IKO designed details.
- Functional requirements: Complete the detailed design to satisfy specified performance criteria to meet CR requirements.
- Performance: to satisfy specified performance criteria to meet CR requirements.
- Additional requirements: to ensure compliance with waterproofing system manufacturer's requirements.
- Design and production information: by installing roofing contractor
- Timing of submissions: prior to undertaking any works to the CR.

## 205 COMPLETION OF DESIGN OF ROOF COVERINGS:

- Description: waterproofing works – to designated flat roof areas
- Requirement: Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
- Structural requirements: As section B50.
- Additional requirements: to ensure compliance with waterproofing system manufacturers requirements.
- Design and production information: All waterproofing to be installed in accordance with IKO designed details..
- Timing of submissions: prior to undertaking any works to the CR

## 207 ROOF COVERING DESIGN PROVIDED:

- Description: waterproofing works - to designated flat roof areas
- Requirements:
  - Generally: As section B50.
  - Additional requirements: All waterproofing to be installed in accordance with IKO designed details.

## 210 ROOF PERFORMANCE

- General: lay roof covering in accordance with BS6229 and BS 8217 to provide a secure, free draining and completely weather tight roof.
  - Ancillary products and accessories, where not specified, to be types recommended for the purpose by IKO Technical Department.
  - Use operatives conversant in the application of built-up roofing and who have attended the IKO Specified system product induction. Submit evidence to IKO upon request.
  - Maintain a minimum of 50 % fully conversant operatives on site throughout the installation period.

## 220 AVOIDANCE OF INTERSTITIAL CONDENSATION: WARM AND INVERTED ROOFS:

To be read in conjunction with the **IKO Condensation Risk Analysis** within the appendixes of this proposal. Interstitial condensation within roof construction: Determine risk as recommended in BS 6229. Modify calculation method to conform to BS 5250.

- Air and Vapour control layer: Provide the specified **IKO Air and Vapour Control Layer** so that damage and nuisance from interstitial condensation do not occur.
-

# Submittal 110 - Warm Roof Technical Data

## 230 INSULATION

- Requirement: Determine type and thickness of insulation and integral or separate overlay to satisfy the following criteria:
  - Thermal performance of roof (maximum): 0.20W/m<sup>2</sup>.k
  - Compressive strength of insulation (minimum) at 10% compression: 150(kPa).
  - Finished surface: Suitably even, stable and robust to receive roof covering.
  - Insulation compliance: To relevant British Standard, or Agrément certified,
  - To be supplied by IKO and to be fully compatible with the specified waterproofing system.

## 245 ATTACHMENT OF ROOF COVERING IN ACCORDANCE WITH BS EN 1991-1-4:

- To be read in conjunction with the IKO Wind calculation report and layout diagram within the appendices of this proposal.
- Requirement: Determine methods of attachment to resist wind loads. Provide for relative movement of materials and effects of vapour pressure. Do not reduce performance of Air and Vapour Control Layer (AVCL).
- Design wind pressure: Calculate in accordance with BS EN 1991-1-4.

## 245 PRODUCTS:

### 335a ANGLE FILLETS

- Type: PIR
- Manufacturer: **IKO Plc**
- Product reference: **IKO ALU Angle Fillets**
  - Size: 1200mm x 50mm x 50mm
  - Product code: 40505012
- Installation: adhered at all junctions between horizontal and vertical interfaces
- Restriction:
  - Fillets under torch-on bitumen membranes to be non-combustible.

### 400 BUILT-UP REINFORCED BITUMEN WATERPROOF COVERING:

- Manufacturer: **IKO Plc**
- Product reference: IKO Ultra Gold 20 Built up roofing system
- First layer: IKO Ultra T-O Underlay
- Cap sheet: **IKO Ultra Gold 20**
  - Attachment: - refer to clauses 710, 715 and 750
  - Colour: Black, brown or green, to clients requirements

### 430 WARM DECK ROOF INSULATION

- Type: Polyisocyanurate (PIR)
- Manufacturer: **Unilin**
- Product reference: **FR-BGM**
  - Sizes: 1200mm x 1200mm
  - Thickness: 120mm
  - Tapered - N/A
  - Edges: Square edge and Butted.
  - Facing: Bituminous Glass Facing
  - Thermal conductivity (Lambda or  $\lambda$ ): 0.024W/mK

# Submittal 110 - Warm Roof Technical Data

- Compressive strength: 150kPa
- Density: 32Kg/m<sup>2</sup>

## 490 ROOF DRAINAGE OUTLETS

- Design: to BS EN 12056 -3 and national annexes
  - Submit calculations and manufacturers literature
  - to be read in conjunction with IKO drainage calculation
  - to be read in conjunction with section R10
- Manufacturer: **IKO Plc**
- Product reference: **IKO Internal Rainwater Outlet**
- Types: to be confirmed by CR and installing contractor
  - Roof
    - Grate: flat or dome (to be installed to all internal rainwater outlets)
    - Sizes: 82mm/110mm 160mm diameter
    - Flow rate: 5l/s (82mm), 10.7l/s (110mm) and 19l/s (160mm)
    - Extended roof grate: 255mm deep (cut to suit)
  - Balcony outlets:
    - Grate: flat or dome (to be installed to all internal rainwater outlets)
    - Sizes: 82mm/110mm 160mm diameter
    - Flow rate: 5l/s (82mm), 10.7l/s (110mm) and 19l/s (160mm)
    - Extended grate: 255mm deep (cut to suit)
  - Parapet chute:
    - Sizes: 300mm x 150mm x 600mm or 500mm x 150mm x 600mm
- Adaptors: threaded: 82mm/110mm/160mm
- Openings/downpipe:
  - must be protected at all times
  - Free draining upon completion to be checked by the installing contractor.
  -

## 495a COVER FLASHING

- Type: lead free cover flashing
- Use: cover flashing – refer to clause 775
- Manufacturer: **IKO Plc**
- Product reference: **IKOFlash**
  - Thickness: 3.5mm
  - Sizes: 12m rolls (150mm/250mm/300mm) widths
  - Colour: grey
  -

## 495b COVER FLASHING

- Type: dense elastomer modified bitumen sealing mastic
- Use: cover flashing sealant – refer to clause 775
- Manufacturer: **IKO Plc**
- Product reference: **IKOpro Stickall**
  - Sizes: 300ml
  - Colour: black

# Submittal 110 - Warm Roof Technical Data

499! **EXECUTION GENERALLY:**

500 **WORKMANSHIP**

- Installation of the IKO waterproofing system may only be carried out by certified operatives approved by IKO Plc who have undertaken and passed the relevant specified IKO Waterproofing system and who carry current ID badges. These should be available for inspection at all times.
- Workmanship must comply with current industry Codes of Practice and IKO Plc specification where otherwise stated. Non-compliant workmanship will not be permitted, even if the system is watertight. The client will be told that all such faults must be remedied, before the Guarantee is issued.

515 **ADVERSE WEATHER**

- General:
  - Do not lay coverings in high winds, wet or damp conditions or in extremes of temperature unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry. Protect edges of laid membrane from wind action.

520 **INCOMPLETE WORK:**

- End of working day: Provide temporary seal to prevent water infiltration.
  - Protect all installed insulation exposed edges by the creation of day/night joints.
- On resumption of work: Cut away tail of membrane from completed area and remove from roof

550 **CONTROL SAMPLES:**

- Type of covering: Reinforced bitumen membranes
- Sample area (minimum): 300mm x 300mm
- Location: at regular interval throughout the whole roof area. To be defined by the installing contractor.
- Approval of appearance: Obtain before proceeding with remaining work.
- Samples: each sample must be recorded and kept by the installing contractor. Copies must be forward to the IKO Technical department confirming suitability of substrate preparation.
- Substrate: Refer clause 615

610 **SUITABILITY OF SUBSTRATES:**

- Substrates: must be structurally sound and stable and capable of accepting all structural loads, include live and dead loads. All structural decks must be in accordance with The Building Regulations and IKO recommendation. Further guidance on IKOs guidance regarding structural decks may be upon request to technical.uk@iko.com.
- Substrates generally: Sound, Secure, clean, dry, smooth, and free from frost, contaminants, voids and protrusions.
- Voids, cracks and holes must be repaired and hollows, depressions and deflections must be made good before application of the new waterproofing.
  - Fill with cement based repair mortar.
- Any surface laitance must be mechanically removed and the substrate must be clean, dry, and free from surface water, frost, dust, dirt, oil, grease, curing compounds or any foreign matter detrimental to the adhesion of the new waterproofing.
- It is the installing contractors responsibility to ensure that the condition of the substrate is structurally sound and adequately prepared in line with this specification document
  - Any refurbishment works of existing building where the IKO specified waterproofing system is being proposed, must have been surveyed by the installing contractor to ensure the condition of the existing structure is sound and suitable to be overlaid. IKO will take no liability for any premature failure of the waterproofing integrity as a result of failures or defects arising within any existing structure.

# Submittal 110 - Warm Roof Technical Data

- Preparation work:
  - Grading to correct falls minimum 1:80 finished falls including any internal gutters. Refer to preliminary and enabling works section within this proposal.
  - Hollows, back falls and depressions to be rectified prior to laying of the waterproofing.
  - Make good any hollows, backfalls and depressions with a suitable levelling compound or similar.
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
    - Raised/constructed to achieve minimum 150mm above the proposed finished roof level.
    - Raise any cavity trays/DPC to accommodate a minimum 150mm above the proposed finished roof level.
  - Any detail including upstands, sills and thresholds not achieving these minimum requirements will not be covered by the IKO guarantee and will be specifically excluded from the IKO guarantee. Any arising water ingress or arising defect associated with details formed not in accordance with IKO recommendations will not be covered by the IKO guarantee.
  - Moisture content and stability of substrate: Must not impair roof integrity as per clause 550.
  - Undertake adhesion test prior to installation of the waterproofing first layer.
  - Adhesion tests must be carried out by the installing contractor to confirm satisfactory adhesion of the new waterproofing can be achieved to the prepared deck.
  - The substrate shall have a maximum moisture content of 6% or 75% relative humidity, determined using a Delmhorst BD-10 or similar for existing substrates.
  - An adhesion test must be undertaken to determine if suitable adhesion can be obtained to the prepared substrate. Test areas should be a minimum 300mm x 300mm, carried out at locations over the whole area and allowed to cure prior to the adhesion test being undertaken. The substrate must be prepared as required to provide adhesion of the system to the substrate with a minimum bond strength of 116 psi (0.8 N/mm<sup>2</sup>).
  - Determinations of adhesion, bond strength and moisture content shall be performed periodically by the contractor throughout the course of work at locations over the whole area, a record of all tests should be logged throughout the application process.
  - All existing waterproofing and associated detailing must be removed back to a sound surface/substrate and made good.
- All surfaces where the waterproofing is to be applied must be primed with the **specified IKO primer** for the application of the first waterproofing layer.

## 680 LAYING WARM DECK ROOF INSULATION

- Installation: Boards must be in good condition, dry, well-fitting and stable.
- Setting out:
  - Long edges: Fully support and run at right angles.
  - End edges: Adequately support.
  - Joints: Butt together.
  - End joints: Stagger.
- Bedding: IKO PU Insulation adhesive: as specified – Refer to clause 325
  - *Multi-layer insulation board applications: bedded to the vapour control layer as stated above. The adhesive should be applied in the direction of the board length at the same application rate as the base board to the Vapour control layer.*
- Priming: prime the upper surface of the insulation board – refer to clause 681
- Protection to exposed edges of insulation: Treated timber batten as clause 640 or **IKO Insulated Hard Edge** as clauses 331/641 Dimensions: 100 mm x 10mm thinner than the insulation thickness
- Encapsulation seal: Provision must be allowed for forming a minimum 100 mm lap seal between the vapour control layer and underlay, where the insulation finishes.

# Submittal 110 - Warm Roof Technical Data

- 682 **INSTALLING WARM ROOF INSULATION (INSULATED UPSTANDS)**
- Upstand insulation boards should be installed before the insulation to the flat areas so that the vertical upstand insulation is retained both at the base and at the top. At vertical wall abutments that are cavity insulated, retention is obtained by mechanical fixing of the insulation support bracket.
  - Mechanically fasten/adhere the insulation to the upstand.- refer to clause 715
  - Encapsulation of the insulation: where the insulation is terminated, allowance must be made for the vapour control layer and waterproofing underlay to form a 50mm sealed lap joint.
  - Prime the facing of the insulation board with the specified IKOpro Primer and allow to dry ready for the application of the waterproofing underlay.
  - Ensure a full bond is achieved throughout the waterproofing detailing
- 710 **LAYING REINFORCED BITUMEN MEMBRANES GENERALLY**
- Direction of laying: Unrolled up the slope.
    - Install so that water drains over and not into laps.
  - Side and end laps: All laps joints to provide a visible bead of bitumen (5mm-15mm) exuded from all laps joints.
  - Head and side laps: Offset.
  - Intermediate and top layer/ cap sheet: fully bonded
  - Successive layers: Apply without delay. Do not trap moisture.
    - Set out the membrane and stagger break joints.
    - Do not cross bond to the underlay.
  - Detailing: Form all waterproofing details as two layers and as separate items.
    - All detailing must be fully bonded through the detail.
    - Details formed in accordance with IKO detail drawings.
    - Strips of bitumen membrane for 'linear' details: Cut from length of roll.
  - Completed coverings: Firmly attached, fully sealed, smooth, weatherproof and free draining.
- 740 **TORCH-ON BONDING OF REINFORCED BITUMEN MEMBRANE**
- Bond: Full over whole surface, with no air pockets.
  - Use weighted roll bar when applying the membrane to remove any entrapped air.
  - Applied using a torching technique across the underside of the whole sheet.
    - Only operatives familiar with the safe use of a gas torch may undertake these works.
  - Excess compound at laps of top layer/ cap sheet: Leave as continuous bead 5-15mm.
- 750 **LAYING MINERAL FACED REINFORCED BITUMEN MEMBRANES**
- Lap positions and detailing of ridges, eaves, verges, hips, abutments, etc: Submit proposals.
  - To be installed in accordance with BS8217 and IKO recommendations.
  - No back laps are to be formed against falls
  - Setting out: Neat, with carefully formed junctions.
  - Lap bonding:
    - fully bonded
    - A continuous visible bead of bitumen must be exuded from all lap joints 5mm-15mm.
- 775 **SKIRTINGS AND UPSTANDS**
- Angle fillets:** as specified and bonded using IKOpro Adhesive as specified. Refer to clause 335
- Only IKO angle fillet may be used, alternatives will invalidate the guarantee offer.
  - Used at all horizontal and vertical abutments

# Submittal 110 - Warm Roof Technical Data

- Used above the insulation and before the waterproofing membrane application.

## **Detailing:** Refer to clause 110

- Carry in staggered formation up the upstand, with each layer fully bonded.
- All detailing works must be undertaken as separate items and as two layer application using the specified underlay and specified cap sheet.
- Underlays must be fully bonded throughout the detail and dressed 125mm onto the main roof area and minimum 125mm up the upstand.
- Cap sheets must be fully bonded to the underlay and dressed 150mm minimum onto the main roof area, and dressed a minimum 150mm up the upstand.
- Additional fixing of bitumen membranes: Mechanically fix the top leading edge of all upstand details in excess of 250 mm in height using appropriate fasteners.

## **Upstand detailing:**

- Waterproofing upstands must be a minimum of 150mm above the finished roof level. This must include any surface finish to the waterproofing such as slabs or tiles.
- Sills and thresholds: waterproofing detailing around sills and thresholds may be reduced to 75mm, in line with NHBC and BS6229 design requirements only.
- Special attention should be paid to all structures, such as rooflights, counter flashings, window and door sills, pipes etc. IKO cannot take responsibility for water ingress over waterproofing details constructed below the recommended minimum height.

## **Cover flashings:**

- All waterproofing upstands to brick/block/concrete etc. are to be terminated with the use of IKOFlash cover flashing and sealed with IKOpro Stickall mastic
- Cut out a 25mm deep chase into the wall abutment at the top of the waterproofing,
- Allow for the IKOFlash to provide 75mm cover to the waterproofing detail.
- Install at maximum 1.5m lengths and overlap adjoining at 75mm minimum overlap.
- Securely fix the IKOFlash into the chase and seal with IKOpro Stickall mastic. Provide even and full coverage.

## 784 ROOF DRAINAGE OUTLETS

- Product reference: **IKO Internal Rainwater Outlet**
  - Type: refer to clause 490 and R10
- Fixing: secure, fix before connecting pipework
  - Install in accordance with manufacturers recommendations
- Junctions between outlets and pipework: accommodate movement in structure and pipework
- Priming: prime outlet flange for the application of the waterproofing
- Testing: free flowing
- Grate: secure and fix grate/guard upon completion

## 785 FIXING PERIMETER TRIMS

- First/ intermediate layers bitumen membrane: Lay over roof edge. Project free edge 25 mm from wall or fascia.
- Trim: **IKO trim F - GRP Edge trim**
  - Setting out (minimum): 3 mm clear from wall or fascia.
  - Fasteners: Suitable for substrate as specified by project designer.
  - Fixing: 30 mm from ends at maximum 300 mm centres (maximum 150mm centres for Areas of High Wind Uplift)
  - Jointing sleeves: Fix one side only.
  - Corner pieces: Purpose made.
- Completion:

# Submittal 110 - Warm Roof Technical Data

- Contact surfaces: Prime.
- Completion of bitumen membrane:
  - Detailing Cap sheet: Press into channel of trim.

## 786 LIGHTNING CONDUCTOR CLIPS

- Product reference: **IKO lightning conductor clips**
- Size: 95mm x 95mm
- Colour: to match waterproofing finish
- Setting out:
  - The lightning conductor is to be fixed using the specified conductor clips, incorporating a colour matched capping sheet pad, fully bonded to the main capping sheet at 1m centres by the approved roofing contractor. Lightning conductor retention using bituminous membrane strips are not acceptable.
  - Where lightning conductors are required to be fixed to brickwork, upstands, parapet walls etc., proprietary clips mechanically fixed should be utilised. Care should be taken to ensure that fixings do not penetrate the new waterproofing system.

## 863 APPLYING MAINTENANCE WALKWAY:

- An additional layer of Cap Sheet in a contrasting colour is to be installed to mark out a designated maintenance walkway as directed by the client.
- The cap sheet should be installed as per the specification with all laps and edges fully sealed.
- Alternatively a sacrificial walkway mat specifically design for flat roof applications may be utilised as an alternative.

## 910 INSPECTION

- As part of the guarantee requirements, **all project starts** and/or pre-start meetings must be notified by the installing contractor a minimum of 10 working days before the project starts to [waterproofing@iko.ie](mailto:waterproofing@iko.ie). Failure to notify IKO may invalidate any guarantee offer.
- All works are to be installed in accordance with the IKO Specification and recommendations, by an IKO Approved Contractor for the specified waterproofing system.
- Installers must be competent in the installation requirements of the system specified.
- Interim and final roof inspections: Strictly in accordance with the IKO Technical Services requirements for guarantee.
- IKO technical inspection reports to be submitted and actions confirmed prior to completion.

## 940 COMPLETION

- Roof areas: Clean and cleared
  - Outlets: Clear
  - Work necessary to provide a weathertight finish: Complete.
  - Storage of materials on finished surface: Not permitted.
  - Completed membrane: Do not damage. Protect from chemicals, traffic and adjacent or high level working. Provide protection from follow on trades.
  - Reduce access to the roof from all parties not associated with its installation, inspection or maintenance.
- Protection:

# Submittal 110 - Warm Roof Technical Data

- Protect the roof during the installation process and upon completion roof areas are adequately protected from damage by subsequent building operations.
- The roof is not used as a working platform unless fully protected to the satisfaction of the CR.
- No petroleum based solvents or other chemicals harmful to bitumen are allowed to come into contact with the roof surface.
- No building materials are stored on the roof.
- Prevent unauthorised access to the roof upon and after completion.
- Provide a detailed risk assessment and method statement to any person accessing the roof within the term of the guarantee.
- Ensure no unauthorised works to or affecting the waterproofing is undertaken without prior written consent from the guarantor.
- Final Inspection: IKO technical engineer to undertake a final inspection of the completed waterproofing, prior to the issue of the guarantee.

## 950 GUARANTEE

- Guarantee Period: 25 Years
- IKO will provide a guarantee upon satisfactory completion of the waterproofing works covering IKO Materials and Workmanship by the installing contractor, and subject to the works being undertaken by an IKO Approved contractor and installed by operatives whom have undertaken and passed the IKO product induction and the works completed in accordance with IKO recommendations.
- Guarantee application: to be made by the installing IKO contractor to [waterproofing@iko.ie](mailto:waterproofing@iko.ie)
- Guarantee issue: IKO guarantees to be issued to the installing contractor upon satisfactory completion.

# Submittal 110 - Warm Roof Technical Data

## GENERAL CONDITIONS

### Specification

- All works are to be installed in accordance with the IKO Specification and recommendations, by an IKO Approved Contractor for the specified waterproofing system.
- Installers must be competent in the installation requirements of the system specified.

### Materials

- Manufactured and marketed by IKO.
- Only materials within this specification and supplied by IKO will be covered by the IKO guarantee.
- Any system component that is used for this project that is not supplied or approved by IKO, will not be covered by the IKO guarantee, and will either be an exclusion within it, or the guarantee offer will be reduced or withdrawn.

### Design

- Only waterproofing details approved by IKO will be covered by the IKO guarantee.

### Specification

- IKO specification must be followed.
- A copy of the IKO specification must be held on site by the installing contractor.
- IKO waterproofing details must be followed.
- Where this document is to be included within the clients/client's representative own specification documentation, a copy of such document must be forwarded to IKO Technical Services Department for final approval before commencement of the works.

### Specification variations

- The appointed installing contractor must ensure that the waterproofing specification proposal meets the clients brief, is fully compliant with Building Regulations requirement and that the proposal meets the project requirements.
- IKO must be notified where any element of the proposed specification does not meet the project requirements. IKO will not be held liable for any design undertaken outside the scope of this proposal.
- Any element of the IKO specification that is not followed or changed without prior written consent from IKO, will constitute that under CDM they will become the designer and take responsibility for the design of waterproofing. This will include compliance with the Approved Documents of the Building Regulations, specifically relating to fire performance and thermal performance.
- Any changes made to the IKO specification before or during the undertaking of the works must be brought to the attention of IKO and the client/client's representative immediately.
- Variations to this proposal must be agreed in writing, by both the client's representative and IKO technical department. Where this has not been notified and agreed in writing, then the IKO guarantee offer may be withdrawn.
- Any costs incurred or saved due to variations must be agreed by all parties and the work not undertaken until agreed by all parties.

### Project start notification

- As part of the IKO guarantee requirements, all project starts and/or pre start meetings must be notified by the installing contractor a minimum 10 working days before the project starts to [waterproofing@iko.ie](mailto:waterproofing@iko.ie).
- Failure to notify IKO through this email address may invalidate any guarantee offer proposed with this specification proposal.

### Workmanship

- By undertaking this proposal, the IKO Contractor is fully responsible for their workmanship and the installation of the waterproofing materials throughout the term of the guarantee.

# Submittal 110 - Warm Roof Technical Data

- They must employ installing operatives that are deemed competent and that are familiar with the application methods required for the installation of the specified waterproofing system, and where applicable undertaken and passed IKOs product induction programme.
- If found through the term of the guarantee that the installing contractor has not followed the IKO specification or installed the waterproofing in accordance with this proposal, then the installing contractor will be deemed liable for any associated remedial repairs and that the IKO guarantee will no longer be valid until such time the remedials have been rectified.

## Installation

- Must be undertaken by a competent person who is familiar with the correct application techniques required to install the waterproofing system components in accordance with IKO recommendations.
- The works must comply with the requirements of the Health and Safety at Work Act and specific requirements as set out by the client. All risk assessments and method statements must be undertaken and recorded by the installing contractor.
- Before the works commence, the installing contractor should ensure that the surfaces to receive the new waterproofing system are acceptable and that the specification conforms to the clients requirements.
- Allowance should be made by the installing contractor for the extent of, volume and degree of difficulty in stripping and removal from site the existing waterproofing and associated build up.
- Any retained components from the existing structure must be sound and capable of accepting the imposed loading of the new waterproofing system and associated installation procedures.
- Where the installation has been undertaken that is not in line with either IKO recommendations or that of good practice, these items will not be covered by the IKO guarantee.

## Project completion

- It is the responsibility of the **IKO Contractor** to advise the IKO Technical Engineer when the waterproofing works are ready for final inspection. Notice must be a minimum of 5 working days prior to completion and safe access must be provided to allow IKO to undertake any necessary final inspection.

## Applying for the guarantee

- Application for the guarantee is made by the IKO Contractor by completing the guarantee application form and forwarding to [waterproofing@iko.ie](mailto:waterproofing@iko.ie). The guarantee will then be forwarded to the IKO Contractor for forwarding to the client.

## Cover flashings

- All cover flashings and the sealants used within the chase are seen as items that require maintenance within the term of the guarantee. As such these items are not covered as part of the guarantee.

## Maintenance

- Maintenance must be undertaken in accordance with the terms of the guarantee.
- The waterproofing must be protected from any follow on trades or other works that may affect the waterproofing.
- Once completed, access will be required for future inspections and maintenance. Maintenance of drainage outlets, plant items and services etc. will be required to ensure the long term performance of the waterproofing system.
- The client is to ensure safe access is provided to allow maintenance.
- Unauthorised access should be prevented from all parties not associated with the installation of the waterproofing, inspection or maintenance.
- Designated walkways should be provided for maintenance and means of escape.
- Provide a detailed risk assessment and method statement to any person accessing the area within the term of the guarantee.
- Ensure no unauthorised works to or affecting the waterproofing are undertaken without prior written consent from the guarantor. Approval from the guarantor must be confirmed prior to any works being undertaken.
- No solvents or other chemicals harmful to the waterproofing system should be allowed to come into contact with the waterproofing.

# Submittal 110 - Warm Roof Technical Data

## Construction (Design and Management) Regulations 2015

- The Construction (Design and Management) Regulations (CDM) are the main set of regulations for managing the health, safety and welfare of construction projects, and are designed to help workers, contractors, designers and clients of construction businesses to plan and manage health and safety.
- CDM applies to **all** building and construction work and includes new build, demolition, refurbishment, extensions, conversions, repair and maintenance and includes all projects including domestic client projects
- The responsibilities of the client with legal duties under CDM include but are not limited to the following:
  - Appointment of a principle designer and principle contractor
  - Ensuring there are arrangements in place for managing and organising the project
  - Providing information to and communicating with the designer and contractor
  - Ensuring there is a written construction phase plan
  - Keeping a health and safety file, after the project is completed
  - Protecting members of the public, including all employees
  - Making sure all persons have the right skills, knowledge, training and experience
  - Making sure certain projects are notified to the HSE
- Refer to HSE guidance **Managing health and safety in construction – Construction (Design and Management) Regulations 2015 – (L153)** on the legal requirements for CDM 2015.

## Health & safety guidance notes

- The Contractors nominated in conjunction with this specification must be approved to install IKO materials specified and therefore will be in possession of the Health & Safety data sheets relating to any hazardous products manufactured and marketed by IKO which have been included within this specification.
- It is assumed that the Contractor/s will be working to the guidelines of the relevant British Standard Codes of Practice (in particular BS 8000: 1989) and that relevant Health & Safety information will be obtained from the manufacturers of any components which are not manufactured by IKO.

## Risk assessments and method statements

- Works must comply with the requirements of the Health and Safety at Work Act and any additional requirements of the Client.
- The contractor must ensure that the works are carried out in accordance with a written method statement for the project, which should be based on a project specific risk assessment. Prior to commencing work, the contractor must liaise with the client or building occupier to establish the nature of any hazards which exist, and agree a system of work for adoption in accordance with health and safety requirements.
- In addition to the normal hazards associated with working at height and hot works, we recommend that particular attention be paid to the following aspects, although this list is not intended to be exhaustive, contractors and specifiers must assure themselves that all potential risks have been accounted for.
  - **Safe2Torch** – The installing contractor is to ensure they follow the Safe2Torch guidelines that are available from the NFRC.
  - **Gas flues** – determine whether flues are live, and if so establish working methods to ensure that flues are not covered or obstructed in any way.
  - **Microwave transmitters** – establish safe working methods to prevent personnel from being exposed to microwave radiation.
  - **Air Intakes** – precautions should be taken to prevent the ingress of fumes from the waterproofing works entering the building.

## Rooflights/openings

- The Construction (Design and Management) Regulations places a duty on designers and specifiers to give proper consideration to eliminating or reducing risks at the design stage.
- Unless there is definite information to the contrary, existing rooflights (which may be constructed from glass, GRP or polycarbonate) should be assumed to be fragile and all appropriate measures taken to prevent people falling through them.
- The contractor for the works is required to provide a risk assessment and method statement for the safe working of personnel around rooflights and openings.

# Submittal 110 - Warm Roof Technical Data

- HSG 33 *health and safety in roof work* draws attention to the responsibilities of those specifying rooflights and designers should consider the following:
  - Specifying rooflights that are non-fragile.
  - Fitting rooflights designed to project above the plane of the roof and which cannot be walked on (these reduce the risk but they should be capable of withstanding a person falling onto them)
  - Protecting rooflights, e.g. by means of mesh or grids fitted above or below the rooflight.
  - Specifying rooflights with a design life that matches that of the waterproofing system, taking account of the likely deterioration due to ultraviolet exposure, environmental pollution and internal and external building environment.



## Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 2

# Primer – Quick Dry Bitumen Primer

# Submittal 110 - Warm Roof Technical Data



IKO PLC  
Technical & Design Services – Roofing  
Appley Lane North, Appley Bridge, Wigan,  
Lancashire WN6 9AB  
Tel: 0844 412 7228 Fax: 0844 412 7229  
E-Mail: technical@ikogroup.co.uk

## Quick Dry Bitumen Primer



www.ikogroup.co.uk

MW646402 / MW646405 / MW646408

### QUICK DRY BITUMEN PRIMER

#### DESCRIPTION:

Fast-drying bitumen priming solution designed to seal and prepare dry or slightly damp substrates surfaces for the application of bitumen waterproofing products and systems.

Drying time approximately 30 minutes at 20°C, depending on the substrate. No residual tack.

#### USE:

May be applied to many substrates including concrete, brickwork, zinc, metal, and existing bitumen roofing. For use with bitumen membranes and liquid IKOpro maintenance products.

#### APPLICATION:

Application temperature should be between +3 and +27°C ready for use. All surfaces must be clean, dry and free from grease, oil, dirt and loose material. Smooth metal surfaces, where necessary, should be prepared with a wire brush.

If moss or lichen is present this must be removed and the surface treated with IKOpro Algae and Fungi Remover applied in accordance with its application instructions before proceeding.

Apply IKOpro Quick Dry Bitumen Primer in one coat with a brush, roller or airless spray gun.

Apply a thin even coating, brushing well into the surface. Do not allow material to pool or collect in depressions.

Allow drying thoroughly before proceeding with the application of other bitumen products. Drying times may be extended in low temperatures.

**Note:** Use only in well-ventilated areas, or with respiratory apparatus, away from all sources of ignition. Precautions must be taken to prevent the solvent vapour entering the ventilating systems of buildings.

#### PHYSICAL AND CHEMICAL PERFORMANCES

Physical state / form: liquid

Colour: black

Odour: aliphatic-like

pH: 7

Boiling point/range: 100 – 200 °C.

Flash point: ± 0°C

Explosion limits: 0.6 % (V/V)

Relative density (water = 1): 0.81 to 0.85 g/cm³

Viscosity at 40 °C: 9 – 14 mm²/sec

#### COVERAGE:

Metal	10-15 m2/Litre;	70 – 100 ml/m2
Concrete	3-4 m2/Litre;	250 – 300 ml/m2
Bitumen:	± 5 m2/Litre;	± 200 ml/m2
Fibrocement	10-12 m2/Litre;	85 – 100 ml/m2

#### CLEANING:

White Spirit

#### PACKAGING:

2.5L, 5L & 25L

#### STORAGE:

Containers should be kept sealed in a cool, dry, well-ventilated environment and all practical precautions taken against fire. Partly used containers may be resealed and used again after correct storage. To avoid the risk of spillage, always store and transport in a secure upright position.

#### SHELFLIFE

Maximum 3 years in sealed container.

#### HEALTH AND SAFETY:

Keep container tightly sealed and away from direct heat. Keep away from sources of ignition. No smoking. Avoid contact with skin and eyes. Should there be contact with skin, wash immediately with soap and water or a recognised skin cleaner. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In the event of accidents, seek medical attention immediately.

Do not empty into drains.

Do not allow solvent vapour to enter the air intakes of the ventilation systems of buildings.

A separate safety datasheet is available on request to IKO PLC.

#### FIRE:

In case of fire, use foam, dry powder, carbon dioxide or sand. Never use water jet.



January 2011





## Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

### Section 3

## Vapour Control Layer - Sealbase

# Submittal 110 - Warm Roof Technical Data



## Sealbase

### Product Data Sheet

January 2011

#### Description:

Sealbase is a torch applied roofing membrane which comprises of a 50g/m<sup>2</sup> glass fibre base, coated with APP modified bitumen. Finished with talc on the top and surfaced on the underside with flame dispersible polyethylene. Sealbase is an economic underlay which can also be used as a vapour check.

Sealbase torch-applied should be installed in accordance with BS 8217: 2005, Code of Practice for built up roofing and to IKO specifications. Sealbase application should follow the recommended good practices for torch-applied membranes.

Care must be taken when using Sealbase in close proximity to combustible materials, decorative coatings and heat sensitive materials. Apply Sealbase by melting the heat dispersible backing and coating to create a molten flow in front of the roll. The flame of the torch should be applied at the low point where the roll meets the substrate. As the film and bitumen melts, roll the roofing forward. A bead of bitumen must exude from all lap joints to ensure a seal. Vapour control layers should always marry up with the waterproofing system to ensure the insulation is enveloped at all times.

#### Dimensions:

- thickness : 2 mm
- length : 10 m
- width : 1 m
- packaged : 36 rolls per pallet

#### Prices and conditions of sale

Current prices are available from our Customer Services offices. Our standard conditions of sale are included in our price list and all sales of Ruberoid products are made under these conditions. Ruberoid local managers can also provide prices and conditions of sales on request and will be happy to discuss your requirements in more detail.

#### Other products

IKO manufacture and supply a wide range of other roofing and waterproofing products for tanking and bridge decking requirements, as well as solutions and compounds. Full product literature is available on request.

#### Technical services

All IKO products and accessories are supported by a specialist Technical Sales force and Technical Services Department, which provide assistance and advice on good detailing and application techniques.

#### Health and Safety

A separate health and safety data sheet is available on request.

Whilst every care is taken to see that the information given in this literature is correct and up to date it is not intended to form part of any contract or give rise to any collateral liability, which is hereby specifically excluded. Intending purchasers of our materials should therefore verify with the company whether any changes in our specification or application details or otherwise have taken place since this literature was issued.

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#### IKO Limited

14 Sanda Road, Whitehouse, Newtownabbey, County Antrim, BT37 9UB  
Tel: 028 9086 7079 Fax: 028 9086 9079 E-mail: [waterproofing@iko-ni.com](mailto:waterproofing@iko-ni.com)

Unit 502, Northwest Business Park, Ballycoolin, Dublin 15  
Tel: 01 8855090 Fax: 01 8855858 Email: [waterproofing@iko.ie](mailto:waterproofing@iko.ie)

# Submittal 110 - Warm Roof Technical Data

## ATAB DECLARATION OF PERFORMANCE



Document No: 01260201/290313-1253

The following product is considered to meet the provisions of the relevant mandate, under the Regulation (EU) No. 305/2011 when installed in accordance with the installation instructions contained in the product documentation: EN 13707-2004: Flexible sheets for waterproofing-Reinforced bitumen sheets for roof waterproofing	Date : 10/04/2013  Name: Paul Alenus Position: Director of Sales & Marketing – ATAB
Notified certification body: INTRON Certificatie BV, Venusstraat 2, NL-4100 AG Culemborg, notified under registration number 0958. Certificate number(s): 0958-CPD-DK010	

Artikel Nbr.: 01260201	Commercial Name: Sealbase 10m			
Characteristic	Result	Units	Tolerance	Ref. Norm
Visible defects initial	None	-		EN 1850-1
Length	≥ 10	m		EN 1848-1
Width	≥ 1	m		EN 1848-1
Mass per unit area	2540	g/m <sup>2</sup>	± 15 %	EN 1849-1
Weight per roll:	25.4	kg	± 15 %	EN 1849-1
Thickness:	≥ 1,8	mm	-	EN 1849-1
Point of measurement	Sand			
Watertightness ≥10 kPa	Pass			EN 1928
External fire performance	Froof			EN 13501-5
Reaction to fire	Euroclass F			EN 13501-1
Peel resistance of joint (only SL MF) initial: Length/width	NPD	N/50mm		EN 12316-1
Shear resistance of joint (only SL or roofgarden) initial	NPD	N/50mm		EN 12317-1
Maximum tensile force length	350	N/50 mm	± 20%	EN 12311-1
Maximum tensile force width	250	N/50 mm	± 20%	EN 12311-1
Elongation at max. tensile force length	2	%	± 15	EN 12311-1
Elongation at max tens. force width	2	%	± 15	EN 12311-1
Resistance to tearing (nail shank) (only MF) length	NPD	N		EN 12310-1
Resistance to impact	NPD	Ø mm		EN 12691
Resistance to static loading	NPD	kg		EN 12730
Flexibility at low temperature initial (up/under)	≤-3	°C		EN 1109
Durability: Flexibility at low temperature after 12w70°C	NPD	°C		EN 1296 EN 1109
Durability: Flow resistance at elevated temp. after 12w70°C	NPD	°C		EN 1296 EN 1110
Durability for top layers and single layers without surface protection	NPD	Visual check		EN 1296 EN 1110 +EN 1297/1000h UV
Adhesion of granules	N/A	%		EN 12039
Type of coating:	Polymeric			
Type of reinforcement:	Glasfleece			
Finishing top/type:	Sand			
Finishing bottom:	Film			
<b>Intended method of installation:</b>				
Multilayer system without permanent surface protection				
• Underlayer and intermediate layer:	x			
• Toplayer:	-			
Single layer application:	-			
Only under heavy protection:	-			
Damp proofing, including basement tanking:	-			
Root resistant according EN 13948:	-			
Bitumen water vapour control layer according EN 13970 and $\mu d \geq 1500$ m	-			
Concrete bridge decks and other trafficked areas of concrete acc. EN 14695	-			
Certifications:				

NPD = No Performance Determined

Production and sales certified according ISO 9001: 2000&2008 Quality and management assurance program and ISO 14001:2004 Environmental Management Standard both certified from Bureau Veritas Certification.



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## Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

### Section 4

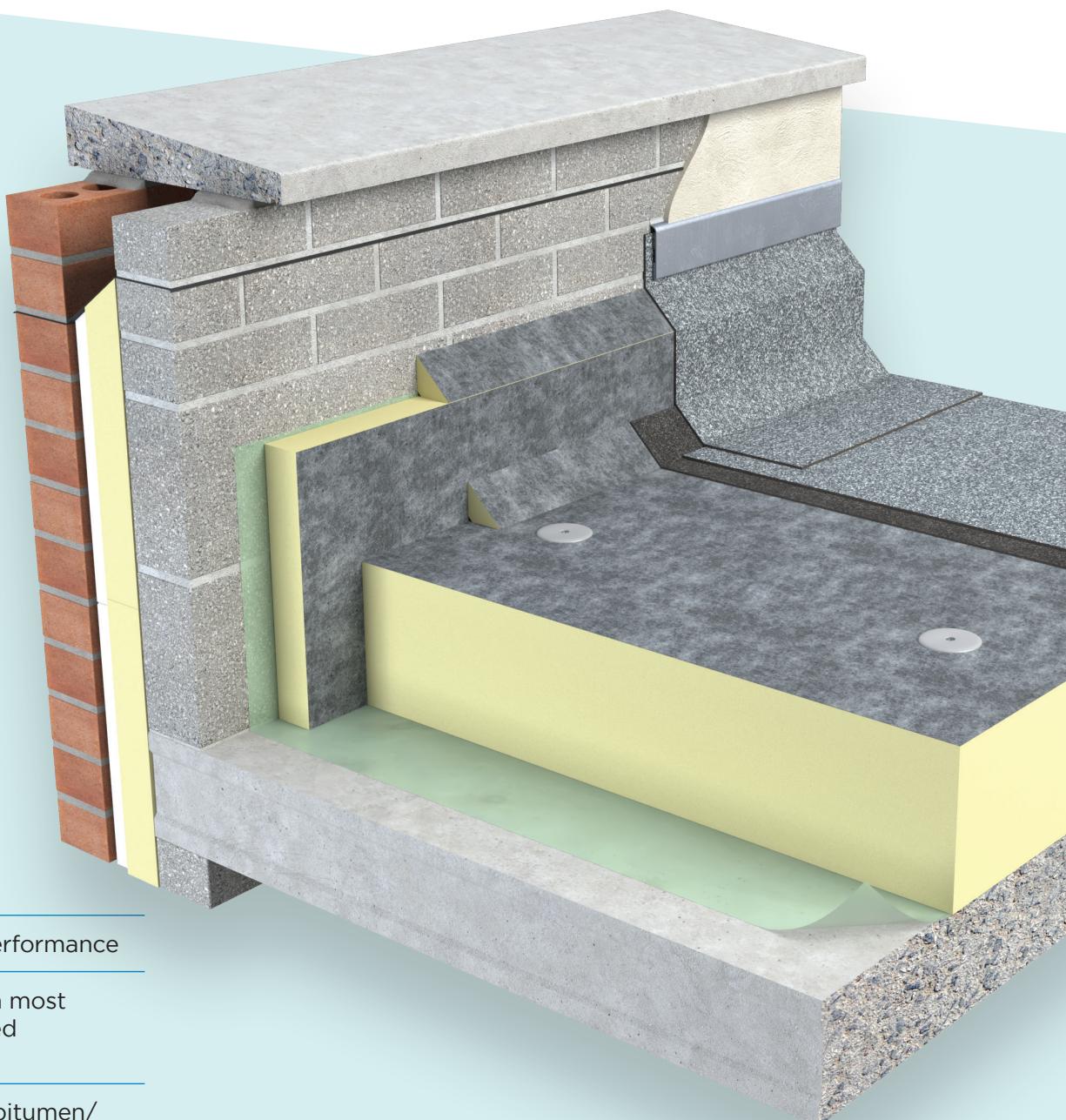
## Insulation – Partially Torched on FR/BGM

# FLAT ROOF

## TOTAL FLAT ROOF SOLUTIONS

Partially Bonded Torched-on Built-up Bituminous Felt Systems

FR/BGM



High Thermal Performance

Compatible with most  
bituminous based  
roofing systems

Fleece finished bitumen/  
glass fibre facings



**UNILIN** INSULATION

## FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

# Partially Bonded Torched-on Built-up Bituminous Felt Systems

### FR/BGM

**Flat Roof BGM** is faced with a polypropylene fleece finished bitumen/glass fibre working surface and a mineral glass facing to the under side. Flat Roof BGM is part of Unilin's comprehensive range of high performance flat roof boards providing total solutions for flat roof projects.

#### Benefits

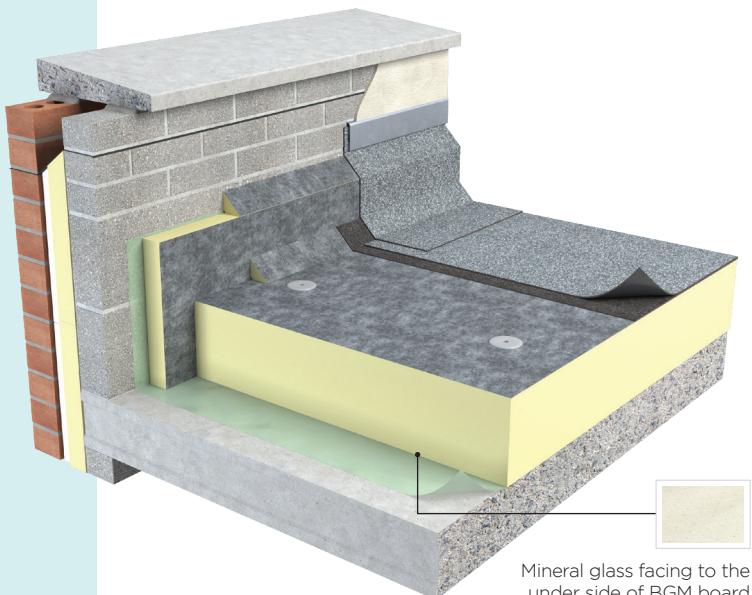
- High thermal performance.
- Compatible with most bituminous based roofing systems.
- Fleece finished bitumen/glass fibre facings.
- An Environmental Product Declaration (EPD), certified by IGBC is available for this product. Please contact technical support for further details.



#### Roof Design

These boards are suitable for use with most bitumen based, partially bonded water proofing systems typically including a BS EN 13707: 2013 (Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing) type 3G perforated base layer or proprietary system. BGM (Fleece side upper most) may also be fully bonded. Guidance in regard to moisture and condensation should be in accordance with BS 8217 (Reinforced bitumen membranes for roofing).

- During the construction process, the construction should be protected from rain penetration during breaks in the process.
- With fully bonded applications additional care is required to ensure that the construction remains free from moisture. Failure to protect will result in blistering of the waterproof layer.



#### Falls

The fall on a flat roof should be designed to ensure that rainfall does not pond.

#### Roof Loading

The boards are suitable for use on roof decks that are subject to limited maintenance foot traffic. Walkways should be provided on roofs requiring regular pedestrian access. When the roof is complete, protective boarding should be laid if additional site work is to be carried out.

#### Roof Finish

Built up roofing systems should be finished with a suitable reflective layer such as chippings. Advice should be sought from system manufacturer.

#### Fire Performance

The fire rating, when tested to EN 13501-5 and BS 476 Part 3 'External Fire Exposure Roof Test', will be dependent upon waterproofing system specified.

#### Vapour Control Layer

Decks should be primed before the application of the hot bitumen used to bond the vapour control layer. Reference should be made to BS 8217 when applying the vapour control layer. Carry the VCL past the insulation and seal with the parapet wall.

#### Laying (Metal Deck)

On metal decks, Unilin FR/BGM should be laid break bonded into hot bitumen (max temperature 240°C) mopped or poured over the vapour control layer. The boards can also be mechanically fixed or the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

#### Laying (Concrete Deck)

Ensure concrete decks are laid to provide correct falls to outlets and are clean, dry, without projections. Primer should be laid in accordance with the manufacturer's instructions. The vapour control layer should be fully bonded to the deck and the Unilin FR/ BGM should be laid into hot bitumen on the vapour control layer in a break bonded pattern. The boards can also be mechanically fixed or the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

#### Laying (Timber Deck)

On plywood decks, Unilin FR/BGM should be fully bedded in hot bitumen over a continuous vapour control layer which has been nailed or bonded to

# Submittal 110 - Warm Roof Technical Data



## FR/BGM

the deck. The boards can also be mechanically fixed or the mineral coated glassfibre facer (MG) can be adhered with other suitable adhesive. Fixing heads should be sealed with bitumen.

### Fixing

The specification for fixing Unilin roof boards will vary with the location, roof height/width and topographical data. Architectural specification should be consulted. Generally with 1200mm x 600mm boards, a minimum of 4 fixings per board are adequate, located between 50mm and 150mm from all edges, additional fixings may be placed along the centre line. Counter sunk washers, 50mm in diameter should be used with each fixing. However, BS 6399 Part 2 or BS EN 1991-1-4: 2005 + A1: 2010 (National Annex to Eurocode 1. Actions on structures. General Actions. Wind Actions) should always be consulted. In two layer systems, all layers should be fixed in accordance with fixing manufacturers instructions.

### Bitumen Based Built Up Roofing Systems

Technical guidance from the appropriate bitumen waterproofing manufacturer should be sought as to assure proper installation of the bonded built up roofing system.

### Fire

Each project should be assessed for suitability of torch on applications. The suitability of materials, substrates and specifications should be assessed before commencement. Application of the torch on system should be undertaken only by fully trained personnel with appropriate fire precautions and fire extinguishing equipment available at hand. All timber roof components, and most insulation materials are combustible, and will be vulnerable to a naked flame. These materials may be hidden from view. Due attention should be given and all precautions taken. This is the responsibility of the operatives.

### Specification Clause

The flat roof insulation shall be Unilin Insulation Thin-R FR-BGM \_ \_ \_ mm thick manufactured to EN 13165 by Unilin Insulation comprising a rigid Polyisocyanurate (PIR) core between fleece finished bitumen/glass fibre facings with a Agrément declared Lambda value as low as 0.024 W/mK. The flat roof insulation shall be installed in accordance with instructions issued by Unilin Insulation.

Refer to NBS clause J42 420, J42 10.



## FR/BGM

	IRL	UK
Length (mm)	1200	1200
Width (mm)	1200	600
Thickness (mm)	25, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150	

Other sizes are available subject to quantity and lead time.  
Note: Unilin reserves the right to amend product specifications without prior notice.

## Property & Units

Density (Foam Core)	32kg/m <sup>3</sup>
Compressive Strength	>150kPa@10% Compression
Thermal Conductivity	0.024 - 0.027 W/mK
Reaction to Fire	NPD

## Typical U-Values

Construction	Thickness (mm)	U-Value (W/m <sup>2</sup> K)
Concrete deck <sup>1</sup>	150mm	0.15
Metal deck <sup>2</sup>	160mm	0.15
Timber deck <sup>3</sup>	150mm	0.15
Concrete deck <sup>1</sup>	125mm	0.18
Metal deck <sup>2</sup>	130mm	0.18
Timber deck <sup>3</sup>	120mm	0.18
Concrete deck <sup>1</sup>	120mm	0.19
Metal deck <sup>2</sup>	120mm	0.20
Timber deck <sup>3</sup>	110mm	0.19

1. 200mm Concrete deck with suspended ceiling below.
2. 0.7mm metal deck with suspended ceiling below.
3. 18mm timber deck with joists and plasterboard below.

The given U-Values are indicative only. Adhered application has been used to calculate the U-Value. For comprehensive calculations on all deck types, please contact Unilin Technical Support.

# Submittal 110 - Warm Roof Technical Data

FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

## INSULATION FIXING TABLE

Minimum area of stress plate, number of fixings and layout

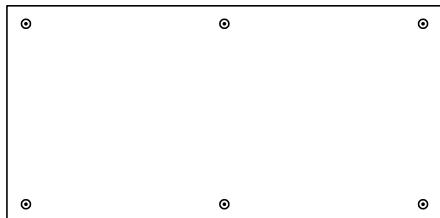
### Recommended Fixing Patterns

For comprehensive guidance and details on fixing patterns, please refer to guidance from the following bodies.

- “SPRA: SINGLE PLY DESIGN GUIDE”
- Insulation Manufacturers Association Information document ID/1/2009, published by IMA
- Liquid Roofing and Waterproofing Association, Technical Guidance

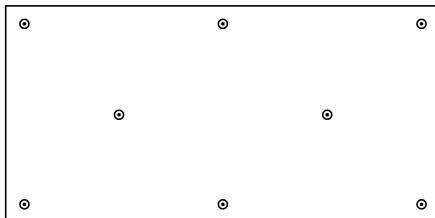
Distribute mechanical fixings evenly across the board, at a minimum of 50mm from the board edge and a maximum of 150mm. Refer to fixing patterns below for indicative purposes.

The required number of fixings shown is the minimum only. Regardless of the water proofing system attachment method, wind load calculations should be undertaken in order to determine actual fixing requirements in corner, perimeter and field roof areas. These areas should be clearly defined, especially where different numbers of fixings are required for each zone.



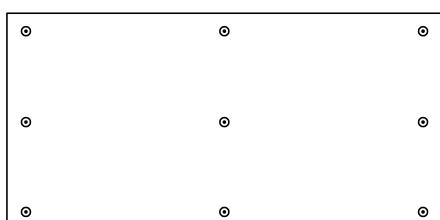
#### 6 fixings per board

Recommended fixing pattern  
for 6 fixings per board  
(2400m x 1200m board - 2.08 fixings/m<sup>2</sup>)



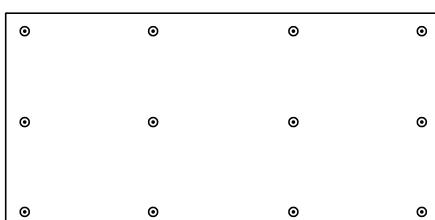
#### 8 fixings per board

Recommended fixing pattern  
for 8 fixings per board  
(2400m x 1200m board - 2.77 fixings/m<sup>2</sup>)



#### 9 fixings per board

Recommended fixing pattern  
for 9 fixings per board  
(2400m x 1200m board - 3.13 fixings/m<sup>2</sup>)



#### 12 fixings per board

Recommended fixing pattern  
for 12 fixings per board  
(2400m x 1200m board - 4.16 fixings/m<sup>2</sup>)

## HANDLING, CUTTING & STORAGE

Unilin insulation should be stored off the ground, on a clean, flat surface and must be stored under cover. The polythene wrapping is not considered adequate protection for outside exposure. Care should be taken to protect the insulation in storage and during the build process.

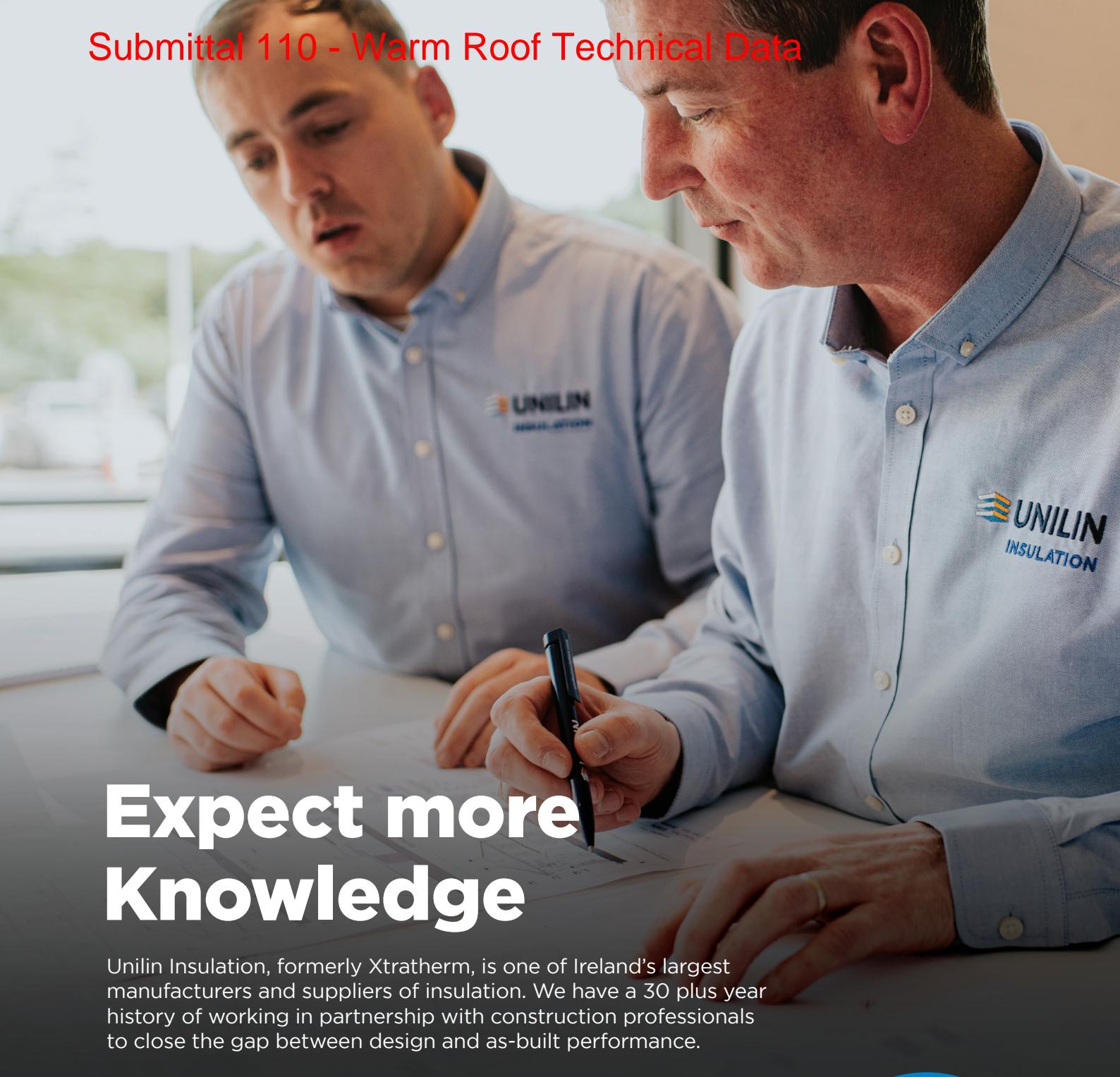
The insulation boards can be readily cut using a sharp knife or fine toothed saw. Ensure tight fitting of the insulation boards to achieve continuity of insulation as asked for within the ACDs. Appropriate PPE should be worn when handling insulation. Please refer to Health & Safety data sheets on our website.

The boards are wrapped in polythene packs and each pack is labelled with details of grade/type, size and number of pieces per pack.

### Durability

Unilin Insulation products are stable, rot proof, provide no food value to vermin and will remain effective for the lifetime of the building, dependent on specification and installation. Care should be taken to avoid contact with acids, petrol, alkalis and mineral oil. When contact is made, clean materials in a safe manner before installation.





## Expect more Knowledge

Unilin Insulation, formerly Xtratherm, is one of Ireland's largest manufacturers and suppliers of insulation. We have a 30 plus year history of working in partnership with construction professionals to close the gap between design and as-built performance.

Higher standards of fabric performance call for greater adherence to best practice detailing. To achieve this and to 'close the gap' between design and build, we provide a dedicated Technical Team, all qualified to the highest standards of competency in U-Value calculation and condensation risk analysis.

### Here to support you

- BRE listed Thermal Bridging Detailing
- BRE/NSAI Trained Modelling
- BBA/TIMSA calculation competent
- Warranted Calculations available
- Immediate technical response
- DEAP Qualified
- Insulation systems to deliver real onsite performance

### Get in touch

T: +353 (0) 46 906 6050 E: [info.ui@unilin.com](mailto:info.ui@unilin.com) [unilininsulation.ie](http://unilininsulation.ie)

**FREE**  
One-to-one  
advice



# Submittal 110 - Warm Roof Technical Data



## Unilin Insulation Ireland Ltd

Liscarton Industrial Estate  
Kells Road, Navan  
Co. Meath, Ireland  
C15 NP79

t. +353 (0)46 906 6000  
e. info.ui@unilin.com

unilininsulation.ie

## The Sustainable Solution

Specifying Unilin Insulation is a real commitment to minimising energy consumption, harmful CO<sub>2</sub> emissions and their impact on the environment. Using our products is one of the most effective ways to reduce energy consumption - in fact, after just eight months the energy they save far outweighs the energy used in their production. In addition, our manufacturing facilities operate to an ISO 14001 certified Environmental Management System.

## Environmental Product Declaration (EPD)

An Environmental Product Declaration or EPD for a construction product indicates a transparent, robust and credible step in the pursuit and achievement of real sustainability in practice, it is a public declaration of the environmental impacts associated with specified life cycle stages of that product. Unilin EPDs have been independently verified in accordance with EN 15804+A2:2019 and ISO 14025 accounting for stages of the LCA from A1 to A3, with options A4-A5 and modules C1-C4 and D included. The process of creating an EPD allows us to improve performance and reduce resource wastage through improvements in product design and manufacturing efficiency. They play a crucial role in manufacturing and construction and are increasingly asked for by industry.

## EPDs and BREEAM

BREEAM is primarily trying to encourage designers to take EPDs into consideration when specifying products. BREEAM requires EPDs to be verified by a third-party. For the Mat 02 category, points are awarded based on whether EPDs are generic, manufacturer-specific, or product-specific. Non 3rd party verified EPDs to EN 15804 cannot be accepted. All of Unilin EPDs are externally verified.

## Responsible Sourcing

Unilin has BES 6001 certification for responsible sourcing. The second BREEAM credit under that category is based on responsibly-sourced materials - at least 80% of the total insulation used in roofs, walls, ground floors and services must meet any of tier levels 1 to 6 in the BREEAM table of certification schemes. Our Environmental Management System is certified under EN ISO 14001, and our raw materials come from companies with similarly certified EMS (copies of all certificates are available for BREEAM assessments). This level of responsible sourcing meets tier level 6 in the BREEAM table.

Good workmanship and appropriate site procedures are necessary to achieve expected thermal and airtightness performance. Installation should be undertaken by professional tradespersons. The example calculations are indicative only, for specific U-Value calculations contact Unilin Insulation Technical Support. Unilin technical literature, Agrément certifications and Declarations of Performance are available for download on the Unilin Insulation website. The information contained in this publication is, to the best of our knowledge, true and accurate at the time of publication but any recommendations or suggestions which may be made are without guarantee since the conditions of use are beyond our control. Updated resources may be available on our websites. All images and content within this publication remain the property of Unilin Insulation.



ISO 9001 Quality Management Systems  
ISO 14001 Environmental Management Systems

# Submittal 110 - Warm Roof Technical Data

EN 13165:2012+A2:2016

Declaration of Performance  
Identification: IRL\_DOP\_FR/BGM\_Jan2023\_v1

CE



## DECLARATION OF PERFORMANCE

### FLAT ROOF TOTAL FLAT ROOF SOLUTIONS

FR/BGM

#### 1. Product Type

Unique identification code of the product type:

**Thin-R Flat Roof BGM**

#### 2. Type

Type batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):

Batch No on board

#### 3. Intended Use

Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

Thermal Insulation for Buildings

#### 4. Name, Registered Trade Name

Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):

Unilin Insulation Ireland Ltd  
Liscarton Industrial Estate  
Kells Road, Navan  
Co. Meath, Ireland  
C15 NP79

#### 5. Contact Address

Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):

Not relevant (see 4)

#### 6. AVCP

System or systems of assessment and verification of constancy of performance (AVCP) of the construction product as set out in CPR, Annex V:

System 3

#### 7. Notified Body (hEN)

In case of the declaration of performance (DoP) concerning a construction product covered by a harmonised standard:

EN 13165:2012+A2:2016

Notified Body: FIW/Crepim

Notified Body No: 0751/2137

Performed type testing under system 3 and issued test reports.

#### 8. Notified body (ETA)

In case of the declaration of performance concerning a construction product for which a European Technical Assessment (ETA) has been issued:

Not relevant (see 7)

---

#### Unilin Insulation Ireland Ltd

Liscarton Industrial Estate, Kells Road, Navan, Co. Meath Ireland, C15 NP79

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E info.ui@unilin.com

# Submittal 110 - Warm Roof Technical Data

EN 13165:2012+A2:2016

Declaration of Performance  
Identification: IRL\_DOP\_FR/BGM\_Jan2023\_v1

CE



## DECLARATION OF PERFORMANCE

### 9. Declared Performance

Essential Characteristics	Performance	Test Standard	Harmonised Standard
Thermal Conductivity	$d_N < 80\text{mm}$ : 0.027 $80\text{mm} \leq d_N < 120\text{mm}$ : 0.025 $d_N \geq 120\text{mm}$ : 0.024	EN 12667	
Reaction to Fire	NPD	EN 13501	
Thickness	T2	EN 823	
Length & Width	<1000mm: $\pm 5\text{mm}$ 1000 to 2000mm: $\pm 7,5\text{mm}$ 2001 to 4000mm: $\pm 10\text{mm}$ >4000mm: $\pm 15\text{mm}$	EN 822	
Squareness	$S_b \leq 5\text{mm/m}$	EN 824	
Flatness	Length: $\leq 2,5\text{m}$ Area $\leq 0,75\text{m}^2$ : Deviation $\leq 5\text{mm}$ Area $> 0,75\text{m}^2$ : Deviation $\leq 10\text{mm}$	EN 825	
Dimensional Stability	DS (70,90)4	EN 1604	
Dimensional Stability	DS (-20,-)2	EN 1604	
Compressive Strength	CS (10\Y) 150	EN 826	
Tensile Strength	TR 80	EN 1607	

EN 13165:2012  
+A2:2016

### 10. Declaration

The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance (DoP) is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Barry Rafferty, Managing Director  
Unilin Insulation Ireland Ltd.  
01-01-2023

A handwritten signature in black ink, appearing to read "Barry Rafferty".

#### Unilin Insulation Ireland Ltd

Liscarton Industrial Estate, Kells Road, Navan, Co. Meath Ireland, C15 NP79

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F +353 (0)46 906 6090  
E info.ui@unilin.com



# Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 5

### Underlayer – IKO Ultra T-O

# Submittal 110 - Warm Roof Technical Data

## SECTION 5.2



## Technical Data Sheet

October 2021

### ULTRA UNDERLAY

## IKO ULTRA T-O UNDERLAY

### PRODUCT INFORMATION

IKO Ultra T-O Underlay is a fully bonded torch-applied, polyester reinforced, SBS modified bitumen underlay. It has an upper surface finish of sand and a thermo-fusible film on the underside.



Surface	Product Code
Sand	62150000

### USE

This product is for use as an underlay within an IKO high performance built up roofing system specification.

The product must be applied by an IKO Approved Installer.

All work must be undertaken in accordance with the requirements of the specific information provided with the issued IKO Specification document, or guidance documents where applicable.

### INDEPENDENT ACCREDITATION



2797-CPR-537586



0086-CPR-745786

The product carries a Declaration of Performance Certificate and is UK Conformity Assessed.

### FEATURES & BENEFITS

**High Performance** – Exceptional dimensional stability and tensile strength.

**High Specification** – Forms part of an IKO flat roofing specification offer.

**Polyester Reinforced** – Robust carrier material

**SBS Modification** – Low temperature flexibility

### COMPOSITION

Bitumen Modification:	SBS
Carrier:	Polyester
Form:	Roll
Colour:	Sanded
Length:	12m
Width:	1m
Mass/Weight:	3.167kg/m <sup>2</sup>
Roll Weight:	38kg
Surface Finishes:	(upper) Sand (lower) Thermo-fusible film
Selvedge:	(upper) 75mm

### INSTALLATION

Membrane Bond:	Torch applied
Lap Bond:	Torch applied

### PERFORMANCE

For key product performance characteristics, please refer to the [IKO Declaration of Performance \(DoP\)](#)

### DISCLAIMER

As this product is utilised within an Approved Contractor network and guided by an IKO Specification document, where omission or differing information exists the IKO Specification document will take precedence.

Whilst every precaution is taken to ensure that the information given in this literature is correct and up to date it is not intended to form part of any contract or give rise to any collateral liability, which is hereby specifically excluded.

IKO reserve the right to amend and/or withdraw this document without notice. Intending purchasers of our materials should therefore verify with the company whether any changes in our specification, application details, withdrawals or otherwise have taken place since this literature was issued.

# Submittal 110 - Warm Roof Technical Data



## DECLARATION OF PERFORMANCE

Document Reference N°: 62150000-IKO Ultra Torch-On Underlay 12m

- 1 Unique identification code of the product type:  
**62150000**
- 2 Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):  
**IKO Ultra Torch-On Underlay 12m**
- 3 Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:  
**Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing**
- 4 Name, registered trade name or registered trade mark and contact address of the manufacturer:  
**IKO PLC (Head Office), Appley Lane North, Appley Bridge, Wigan, Lancashire WN6 9AB - UK**  
**tel. +44 1257 255 771 - www.ikogroup.co.uk - www.ikodop.eu**
- 5 Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):  
-
- 6 System(s) of assessment and verification of constancy of performance of the product:  
**System 2+**
- 7 In case of the declaration of performance concerning a construction product covered by a harmonised standard:  
**FPC certificate obtained from BSI Netherlands Notified Body, registered under registration number 2797.**  
**Certificate number: 2797-CPR-537568**
- 8 Declared performances:

Characteristic	Result	Units	Tolerance	Ref. Norm
External fire performance (Note 1)	Froof(t4)	-	-	BS EN 13707
Reaction to fire	NPD	-	-	
Watertightness ≤ 60 kPa	Pass	-	-	
Tensile force length	450	N/50 mm	± 20%	
Tensile force width	350	N/50 mm	± 20%	
Elongation length	15	%	± 1	
Elongation width	25	%	± 1	
Root resistant	NPD	-	-	
Resistance to static loading: method A	NPD	Kg	-	
Resistance to impact: method A	NPD	Mm	-	
Resistance to tearing length	NPD	N	-0:-	
Resistance to tearing width	NPD	N	-0:-	
Peel resistance of joints initial: length/width	NPD	N/50 mm	-0:-	
Shear resistance of joints: initial	NPD	N/50 mm	-0:-	
Pliability initial (up/under)	≤ 10	°C	-	
Durability: pliability after heat oven exposure	NPD	°C	± 5°C	
Dangerous Substances (Note 2)				

NPD = No Performance Determined

Note 1: Since the external fire performance of a roof is dominated by the built up system, no performance can be assessed for the product alone.

Note 2: In absence of European harmonized test methods, verification and declaration on release/content has to be done taken into account national provisions in the place of use.

The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer

Andrew Hafford, Quality Assurance Manager  
IKO PLC (name and function)

Place and date of issue:  
Wigan, Lancashire 06/01/2022



Manufactured in the UK by IKO PLC under the Quality Management Assurance Scheme ISO 9001. Manufactured in a facility accredited to ISO 14001, Environmental Management Standard and ISO 45001, Occupational Health and Safety Standard.





## Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 6

Top Layer – IKO Ultra  
Gold 20

# Submittal 110 - Warm Roof Technical Data

## SECTION 5.1

### ULTRA GOLD



## Technical Data Sheet

October 2021

## IKO ULTRA GOLD 20

### PRODUCT INFORMATION

IKO Ultra Gold 20 is a fully bonded torch-applied, polyester reinforced, SBS modified bitumen capsheet with added fire retardant. It has an upper surface finish of mineral granules and a thermo-fusible film on the underside.



Colour	Product Code
Brown	60183823
Black	60183824
Green	60183827

### USE

This product is for use as a capsheet layer within an IKO high performance built up roofing system specification.

The product must be applied by an IKO Approved Installer. All work must be undertaken in accordance with the requirements of the specific information provided with the issued IKO Specification document, or guidance documents where applicable.

### INDEPENDENT ACCREDITATION



2797-CPR-537586



0086-CPR-745786



The product carries a Declaration of Performance Certificate, Agreement Certificate 91/2671, and is UK Conformity Assessed.

### FEATURES & BENEFITS

**High Performance** – Exceptional dimensional stability and tensile strength.

**Fire Performance** – Incorporates Prevent Graphite Fire Wall Technology with self-extinguishing properties.

**High Specification** – Forms part of an IKO flat roofing specification offer.

### COMPOSITION

Bitumen Modification:	SBS
Carrier:	Polyester
Form:	Roll
Colour:	Brown/ Black/ Green
Length:	8m
Width:	1m
Mass/Weight:	4.75kg/m <sup>2</sup>
Roll Weight:	38kg
Surface Finishes:	(upper) Mineral (lower) Thermo-fusible film
Selvedge:	(upper) 75mm

### INSTALLATION

Membrane Bond:	Torch applied
Lap Bond:	Torch applied

### PERFORMANCE

For key product performance characteristics, please refer to the [IKO Declaration of Performance \(DoP\)](#)

### DISCLAIMER

As this product is utilised within an Approved Contractor network and guided by an IKO Specification document, where omission or differing information exists the IKO Specification document will take precedence.

Whilst every precaution is taken to ensure that the information given in this literature is correct and up to date it is not intended to form part of any contract or give rise to any collateral liability, which is hereby specifically excluded.

IKO reserve the right to amend and/or withdraw this document without notice. Intending purchasers of our materials should therefore verify with the company whether any changes in our specification, application details, withdrawals or otherwise have taken place since this literature was issued.

# Submittal 110 - Warm Roof Technical Data



## DECLARATION OF PERFORMANCE

Document Reference N°: IKO Ultra Gold 20 Torch-On Black Cap Sheet

- 1 Unique identification code of the product type:  
**60183824**
- 2 Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):  
**IKO Ultra Gold 20 Torch-On Black Cap Sheet**
- 3 Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:  
**Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing**
- 4 Name, registered trade name or registered trade mark and contact address of the manufacturer:  
**IKO PLC (Head Office), Appley Lane North, Appley Bridge, Wigan, Lancashire WN6 9AB - UK**  
**tel. +44 1257 255 771 - www.ikogroup.co.uk - www.ikodop.eu**
- 5 Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):  
-
- 6 System(s) of assessment and verification of constancy of performance of the product:  
**System 2+**
- 7 In case of the declaration of performance concerning a construction product covered by a harmonised standard:  
**FPC certificate obtained from BSI Netherlands Notified Body, registered under registration number 2797.**  
**Certificate number: 2797-CPR-537586**
- 8 Declared performances:

Characteristic	Result	Units	Tolerance	Ref. Norm
External fire performance (Note 1)	Froof(t4)	-	-	EN 13707
Reaction to fire	NPD	-	-	
Watertightness ≤ 60 kPa	Pass	-	-	
Tensile force length	800	N/50 mm	≥ 20%	
Tensile force width	600	N/50 mm	≥ 20%	
Elongation length	25	%	≥ 1	
Elongation width	35	%	≥ 1	
Root resistant	NPD	-	-	
Resistance to static loading: method A	NPD	Kg	-	
Resistance to impact: method A	NPD	Mm	-	
Resistance to tearing length	NPD	N	-0:-	
Resistance to tearing width	NPD	N	-0:-	
Peel resistance of joints initial: length/width	NPD	N/50 mm	-0:-	
Shear resistance of joints: initial	NPD	N/50 mm	-0:-	
Pliability initial (up/under)	≤ 15	°C	-	
Durability: pliability after heat oven exposure	NPD	°C	± 5°C	
Dangerous Substances (Note 2)				

NPD = No Performance Determined

Note 1: Since the external fire performance of a roof is dominated by the built up system, no performance can be assessed for the product alone.

Note 2: In absence of European harmonized test methods, verification and declaration on release/content has to be done taken into account national provisions in the place of use.

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer

Andrew Hafford, Quality Assurance Manager  
IKO PLC (name and function)

Place and date of issue:  
Wigan, Lancashire 15/07/2023



Manufactured in the UK by IKO PLC under the Quality Management Assurance Scheme ISO 9001. Manufactured in a facility accredited to ISO 14001, Environmental Management Standard and ISO 45001, Occupational Health and Safety Standard.





# Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 7

### Sample Warranty

# Submittal 110 - Warm Roof Technical Data

Guarantee number:

Sample



## 25 YEAR GUARANTEE

The roof waterproofing membranes (the 'Membranes') manufactured by IKO Ltd and installed on the roof of the Building by the Contractor are guaranteed against defects for a period of twenty-five years from the date hereof and subject to the terms and conditions set out overleaf.

Guarantee invalid without terms and conditions on back

### THE ROOFING CONTRACT DETAILS

The Building Owner:

The Building/Roof:

Details of Roofing Works:

Date of Completion:

The Contractor:

Address:

Signed: \_\_\_\_\_ Date: \_\_\_\_\_  
(For and on behalf of the Contractor)

Signed: \_\_\_\_\_ Date: \_\_\_\_\_  
(For and on behalf of IKO)

# Submittal 110 - Warm Roof Technical Data



## 25 YEAR GUARANTEE

### TERMS AND CONDITIONS

- 1 The Contractor undertakes to the Building Owner that the Membranes will not lose their waterproofing properties due to incorrect laying or defective workmanship and that, during the period of this undertaking, the Contractor will remedy any failure of the Membranes by repair or replacement in order to restore the waterproofing integrity thereof at his own cost.
- 2 For the avoidance of doubt the undertaking set out in paragraph 1 above shall not be deemed to include defects in the Membranes caused during the course of manufacture.
- 3 IKO undertakes to the Building Owner that the Membranes will not lose their waterproofing properties due to manufacturing defects in the Membranes and that, during the period of this undertaking, IKO will remedy any defects shown to its reasonable satisfaction to have been caused during the manufacture of the Membranes by repair or replacement in order to restore the waterproofing integrity thereof at its own cost.
- 4 The undertaking set out in paragraph 3 above shall not include any defects caused by damage arising after the Membranes have left IKO's factory or by incorrect laying or defective workmanship. . Membrane installation to be in accordance with the SPRA Design Guide for Single Ply Roofing.
- 5 The undertakings on the part of the Contractor and IKO contained herein are conditional upon the following:-
- Notification in writing to IKO and the Contractor specifying the alleged defect or defects within 7 days of discovering the same;
  - An opportunity being given to the Contractor and IKO to have access to the roof of the Building at all times during the term of this undertaking for the purposes of inspection;
  - Proper maintenance of the roof of the Building in accordance with Clause 27 of BS6229: 1982;
  - No alterations or repairs having been made to the Membranes except by the direction or with the express consent of the Contractor and IKO provided, however, that emergency repairs may be made to the roof if necessary to protect property from damage, the Contractor and IKO not being responsible for any damage resulting from such repairs: and
- e. In respect of IKO undertaking, the installation of the Membranes in accordance with the specification of IKO.
- 6 This undertaking replaces (so far as permitted by law) all other representations, warranties or conditions, express or implied, statutory or otherwise, including, without limitation, any warranty of merchantability or fitness for a particular purpose.
- 7 Without prejudice to the generality of the foregoing, the following are hereby specifically excluded from this undertaking:-
- Liability from any damage resulting from defects in or damage from any cause to the roof substrate and/or building structure or defects in the flashing surrounding the surface covered by the Membranes.
  - Liability in respect of damage caused by lightning, fires, storms and other abnormal weather conditions, acts of God, or deterioration or damage attributable to any cause other than abnormal weather conditions.
  - Liability for any damage caused by traffic of any nature on the roof or use of the roof as a storage area.
  - Liability for any other damage howsoever caused (save as expressly set out herein).
  - Liability for indirect, consequential or incidental damage.
- 8 Payment for the materials and contract/sub contract works of which the works form part must have been made in accordance with the terms of the contract/sub contract.
- 9 The liability under this Guarantee shall not exceed the contract price.
- 10 The undertakings given herein are limited in the case of the Contractor to that set out in paragraph 1 above and in the case of IKO to the undertakings given in paragraph 3 above.
- 11 The contractor and IKO each undertake to the other to fulfil the undertakings respectively given in paragraphs 1 and 3 above.
- 12 Insurance: This guarantee of IKO Roofing has the support of products liability cover for a sum in excess of €10,000,000.



# Submittal 110 - Warm Roof Technical Data

UNIT B5, KINGSWOOD BUSINESS PARK,

BALDONNELL, DUBLIN 22.

(01) 464 2534. [INFO@SELECTROOFING.IE](mailto:INFO@SELECTROOFING.IE)

## Section 8

### UValue Calc



# Submittal 110 - Warm Roof Technical Data

IKO Ltd

Unit 502, Northwest Business Park

Ballycoolin, Dublin.

D15 CP3V

01 88 55 090

## Project Information

Reference 23132  
Date 1 November 2023  
Project Airton Plaza

## Construction Type

Element	Flat roof - UValue Calculation-Warm Roof						
Internal surface emissivity	: High		External surface emissivity	: High	Thickness	Pitch	Bridge details
				(mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m²K/W)	Air gaps (Level, Delta U")
Outside surface resistance				-	-	0.040	
IKO Ultra Gold Capsheet		5.0	0.230	0.022			
IKO Ultra T-O Underlay		3.0	0.230	0.013			
Unilin Insulation Thin-R FR/BGM		120.0	0.024	5.000		L:0	0.000W/m²K
IKO Sealbase		2.0	0.230	0.009			
Reinforced concrete (1% steel)		250.0	2.299	0.109			
Void		200.0	-	0.340			
Plasterboard		12.5	0.210	0.060			
Inside surface resistance		-	-	0.100			
<b>Total thickness</b>	<b>592.5mm</b>						

## U-value = 0.18W/m²K

U-value, Combined Method : 0.176W/m²K (upper/lower limit 5.693 / 5.693m²K/W, dUf 0.0000, dUg 0.0000, dUp0.0000, dUr0.0000, dUrc1 0.0000, dUrc2 0.0000)

## Correction factors

Air gaps, Delta Ug = 0.000W/m²K