

Our Ref: NB18-203-20D

Date: 26/01/2018

Peter Hitchen Architects
Marathon House
The Sidings Business Park
Whalley
Lancashire
BB7 9SE

Dear Peter,

Re: Barcroft, Carr Lane, Blackburn

Further to our recent discussion we have pleasure in providing a NBS J42 waterproofing specification for this project, it is based on available information at the time of writing and we trust it meets your requirements.

If you have any queries, please do not hesitate in contacting the undersigned. Alternatively, you can contact the office on the office number listed below.

Yours faithfully
For and on behalf of
IKO Polymeric

Nicola Belger
Business Manager

Contact Details – email: nicola.belger@iko.com mobile: 07917464293



NBS J42 Specification

**Client: Peter Hitchen
Architects**

**Project: Barcroft, Carr Lane,
Blackburn**

Ref: NB18-203-20D

Date: 26/01/2018

J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS

To be read with Preliminaries/ General conditions and the IKO Polymeric technical and installation guidelines in conjunction with detailed design drawings.

This specification details the installation of the IKO Polymeric Armourplan PVC roofing system comprising of waterproofing membrane, thermal insulation and vapour control layer installed over the substrate as detailed below.

TYPES OF COVERING

- 110a WARM ROOF COVERING to East Elevation Flat Roof
- Substrate: 18mm Exterior Grade Plywood or OSB3
 - Preparation: Prime the deck
 - Roof covering system: Armourplan PVC
 - Manufacturer: IKO Polymeric, Coney Green Road, Clay Cross, Chesterfield, S45 9HZ
Tel: 01257 488000, email: polymeric.technical.uk@iko.com
Contact: Nicola Belger email: nicola.belger@iko.com mobile: 07917464293
 - Lower protective layer (loose laid): Not required
 - Vapour control layer: IKO Systems SA VCL
 - Insulation: IKO Enertherm ALU PIR or similar
 - Separating layer (loose laid): Not required
 - Waterproof membrane: Armourplan PSG glass tissue reinforced fleece backed PVC Membrane
UK Manufactured to BES 6001, ISO 9001 and ISO 14001
Width: 2120mm
Thickness: 1.2mm
Colour: Mid Grey RAL 7046
 - Upper protective layer (loose laid): Temporary protection required during works for following trades
 - Surface protection: Armourplan Walkway Membrane as clause 850
 - Accessories: Armourplan coated metal trims and flashing
Armourplan rainwater outlets
Armourplan PVC Sealant mastic
- 110b WARM ROOF COVERING to Northern Elevation Balcony
- Substrate: In-situ concrete decking screeded to a minimum fall of 1 in 80
 - Preparation: Prime the deck
 - Roof covering system: Armourplan PVC
 - Manufacturer: IKO Polymeric, Coney Green Road, Clay Cross, Chesterfield, S45 9HZ
Tel: 01257 488000, email: polymeric.technical.uk@iko.com
Contact: Nicola Belger email: nicola.belger@iko.com mobile: 07917464293
 - Lower protective layer (loose laid): Not required
 - Vapour control layer: IKO Systems SA VCL
 - Insulation: IKO Enertherm ALU PIR or similar
 - Separating layer (loose laid): Not required
 - Waterproof membrane: Armourplan PSG glass tissue reinforced fleece backed PVC Membrane
UK Manufactured to BES 6001, ISO 9001 and ISO 14001

Width: 2120mm

Thickness: 1.2mm

Colour: Mid Grey RAL 7046

- Upper protective layer (loose laid): Spectratex Fleece membrane to be used as a separating layer under paving slabs.
- Surface protection: Armourplan Walkway Membrane as clause 850
- Accessories: Armourplan coated metal trims and flashing
 Armourplan rainwater outlets
 Armourplan PVC Sealant mastic

PERFORMANCE

201 MANUFACTURERS GUARANTEE

- IKO Polymeric will provide a 20 Year guarantee covering Product and Design. To be read in conjunction with the IKO Polymeric guarantee terms and conditions. (Sample available on request). IKO Polymeric will only guarantee roofing systems installed by IKO Polymeric approved roofing contractors.

210 ROOF PERFORMANCE

- Roof covering: Secure, free draining and weathertight.

220 VAPOUR CONTROL LAYER

- Interstitial condensation risk of roof: Determine as recommended in BS 6229. Modify calculation method to conform to BS 5250.
- Basic design data:
 - Outdoor notional psychrometric conditions, winter:
 - Temperature: -5°C.
 - Relative humidity: 90%.
 - Vapour pressure: 0.36 kPa.
 - Duration: 60 days.
 - Outdoor notional psychrometric conditions, summer:
 - Temperature: 18°C.
 - Relative humidity: 65%.
 - Vapour pressure: 1.34 kPa.
 - Duration: 60 days.
 - Indoor notional psychrometric conditions:
 - Temperature: TBC
 - Relative humidity: TBC
 - Vapour pressure: TBC
- Winter interstitial condensate:
 - Calculated amount (maximum): 0.35 kg/m².
 - Calculated annual net retention: Nil.
- Vapour control layer: If calculated amounts of condensate exceed allowed amounts, provide a suitable membrane or sealed deck so that damage and nuisance from interstitial condensation do not occur.

230 INSULATION

- Requirement: Determine type and thickness of insulation and integral or separate overlay to satisfy the following criteria:
 - Thermal transmittance of the roof (maximum): 0.18 W/m²K
 - Compressive strength of insulation (minimum) at 10% compression: 175 kPa
 - Finished surface: Suitably even, stable and robust to receive roof covering.
 - Insulation compliance: To a relevant British Standard, or Agrément certified.

240 ATTACHMENT

- 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 vapour control layer.
- Wind loads: Calculate to National Annex to BS EN 1991-1-4:2005, Standard Method.
 - Wind speed (V_{bmap}): TBC
 - Altitude factor (C_{alt}): TBC
 - Direction factor (C_{dir}): 1
 - Seasonal factor (C_{season}): 1.
 - Probability factor (C_{prop}): 1.
 - Orography factor C_o (Z): TBC
 - Exposure factor C_e (Z): TBC.
 - Correction Factor $c_{r,T}$: TBC
 - Peak Velocity Pressure (qp): TBC
 - External pressure coefficients (C_{pe}): TBC
 - Internal pressure coefficients (C_{pi}): TBC

NB - Prior to installation a wind load calculation must be carried out by IKO Polymeric Technical Services Department to determine the correct fastener density to resist wind uplift forces

PRODUCTS

320 PRIMER FOR SYSTEMS S-A VCL

- Type: Bituminous
- Manufacturer: IKO PLC
 - Product reference: IKO Systems Bonding Agent

325 ADHESIVE

- Type: PU Adhesive
- Application: Bonding Armourplan PSG fleece backed membrane to roof substrate
- Manufacturer: IKO Polymeric
 - Product reference: Spectrabond Low Foaming PU Adhesive or IKO Sprayfast FMA

326 ADHESIVE

- Type: PU Adhesive
- Application: Bonding insulation boards to substrate
- Manufacturer: IKO Polymeric
 - Product reference: IKOpro High Performance PU Adhesive or IKO Sprayfast IBA

- 327 ADHESIVE
- Type: Contact Adhesive
 - Application: Bonding Armourplan P & D membrane to details and upstands
 - Manufacturer: IKO Polymeric
 - Product reference: Armourplan Contact Adhesive or IKO Sprayfast PCA
- 330 TIMBER FOR TRIMS, ETC
- Quality: Planed. Free from wane, pitch pockets, decay and insect attack except ambrosia beetle damage.
 - Moisture content at time of covering (maximum): 22%.
 - Preservative treatment: Aqueous Based
- 341 PREFORMED TRIMS
- Type: Armourplan Coated Metal
 - Manufacturer: IKO Polymeric
 - Product reference: Armourplan Coated Metal Flashings
 - Colour: To match roof covering
- 355 MECHANICAL FASTENERS, WASHERS, PRESSURE PLATES, ETC
- Type: Carbon steel fasteners to secure Peelstop bar
 - Manufacturer: IKO Polymeric
 - Product reference: IKOfix fasteners
- 395 VAPOUR CONTROL LAYER
- Type: Metal Lined Self Adhesive Bituminous VCL
 - Manufacturer: IKO Polymeric
 - Product reference: Systems S-A VCL
 - Thickness: 2mm
 - Vapour resistance: > 10,000 MNsg
- 420 RIGID URETHANE FOAM WARM ROOF INSULATION
- Type: Polyisocyanurate (PIR)
 - Manufacturer: IKO Polymeric
 - Product reference: IKO Enertherm ALU or similar
 - Thickness: 120mm
 - Facing: Foil
- 480 PIPE COLLARS
- Type: Armourplan
 - Manufacturer: IKO Polymeric
 - Product reference: Bespoke IKO Polymeric or site formed from Armourplan D membrane
 - Colour: To match roof covering
- 485 MEMBRANE WALKWAY
- Manufacturer: IKO Polymeric
 - Product reference: Armourplan Walkway Membrane
 - Width: 1000mm
 - Thickness: 2mm
 - Colour: Dark Grey

EXECUTION GENERALLY

510 ADVERSE WEATHER

- General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.

520 INCOMPLETE WORK

- End of working day: Provide temporary seal to prevent water infiltration.
- On resumption of work: Cut away tail of membrane from completed area and remove from roof.

530 APPLYING PRIMERS

- Coverage per coat (minimum): As per IKO Polymeric guidelines
- Surface coverage: Even and full.
- Coats: Fully bonded. Allow volatiles to dry off thoroughly between coats.

SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM ROOF INSULATION

610 SUITABILITY OF SUBSTRATE

- Surfaces to be covered: Firmly fixed, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
- Preliminary work: Complete, including grading to correct falls and formation of upstands, kerbs, box gutters, sumps, grooves, chases, expansion joints and fixing of battens, fillets, anchoring plugs/ strips, etc.
- Moisture content and stability of substrate: Must not impair integrity of roof.

640 FIXING TIMBER TRIMS

- Fixing centres (maximum): TBC
- Fasteners: Countersunk screws or ring shanked nails

670 LAYING SYSTEMS S-A VAPOUR CONTROL LAYER

- Laying: Adhered using self-adhesive backing to substrate primed with Systems Bonding Agent. Ensure the membrane lies flat and smooth upon completion.
- Side and head laps: 75mm overlap sealed with self-adhesive salve edge
- Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding.

680 LAYING WARM ROOF INSULATION

- Setting out:
 - Long edges: Fully supported
 - End edges: Adequately supported
 - Joints: Butted together
 - End joints: Staggered
- Attachment: Strip bonded using IKOpro High Performance PU Adhesive in accordance with IKO Polymeric recommendations
- Completion: Boards must be in good condition, well fitting and firmly fixed

WATERPROOF COVERINGS/ ACCESSORIES

720 ADHESIVE BONDING OF WATERPROOF MEMBRANE

- Laying membrane:
 - On a continuous even coating of adhesive.
 - Do not wrinkle or stretch.
- Attachment: Spectrabond Low Foaming PU Adhesive
- Surface condition at completion: Fully sealed, smooth, weatherproof and free draining.

721B ARMOURPLAN PSG ADHERED APPLICATION

Unroll and position Armourplan PSG membrane.

Secure Armourplan PSG membrane using Spectrabond low foaming PU adhesive in strict accordance with application instructions.

NOTE: Spectrabond Low Foaming PU adhesive must not be used in temperatures below 5 °C.

Subsequent sheets should be laid allowing the 60mm fleece free edge to overlap the previous sheet laid, ensuring that the welded edge is not contaminated by adhesive. Hot air weld laps.

End laps in Armourplan PSG to be butt jointed and covered with a 150mm wide strip of Armourplan P with all edges fully welded.

Secure all perimeters and penetrations with IKO Peelstop bar and IKOfix fasteners to suit.

Avoid introducing unnecessary wrinkles or folds into the Armourplan membranes.

730 WELDED JOINTING

- Laying: Loose lay, do not wrinkle or stretch.
- Side and end joints:
 - Side Laps (minimum): 60mm
 - End Laps: To be butt jointed and covered with a minimum 150mm wide Armourplan P coverstrip
 - Preparation: Clean and dry surfaces for full width of joint.
 - Sealing: Hot Air Weld together using suitable Automatic welding machine or hand held hot air guns
- Condition at completion: Fully sealed, smooth, weatherproof and free draining.

760 PERIMETER OF MEMBRANE

- General: Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with IKO Polymeric Peelstop bar or Armourplan Coated Metal fastened using suitable IKOfix fasteners.

765A PERIMETER DETAILS USING ARMOURPLAN COATED METAL FLASHINGS

- Upstands, edge trims, drips, kerbs, etc: Secure preformed metal sections to roof structure with suitable IKOfix fasteners.
- Roof membrane: Dress over perimeter profile. Overlap beyond fasteners by minimum 40mm
 - Sealing: Hot Air Weld together.

770A PERIMETER DETAILS FORMED USING ARMOURPLAN MEMBRANE

- Upstands, kerbs, etc: Form flashings from Armourplan P membrane material.
- Edge trims, drips, etc: Form flashings from Armourplan Coated Metal.
- Roof membrane: Terminate in horizontal plane immediately adjacent to change in direction and secure with mechanical fasteners.
- Flashings: Dress over perimeter profile. Overlap horizontal roof membrane beyond Toothed Flatbar by minimum 50mm
- Sealing: Hot Air Weld together

780 ROOF PENETRATIONS THROUGH ARMOURPLAN MEMBRANES

- Roof membrane: Cut around penetrations and secure to deck.
- Flanged sleeve:
 - Type: Bespoke prefabricated IKO details or site fabricated using Armourplan D non reinforced membrane or Armourplan G glass reinforced membrane.
 - Installation: Dress over and around penetration.
 - Roof membrane overlap to flange (minimum): 50 mm beyond fasteners.
 - Sealing: Weld flange to roof membrane.
 - Protection to top edge of sleeve: Stainless steel jubilee clip and Armourplan PVC sealant.

SURFACING

850 LAYING MEMBRANE WALKWAYS

- Manufacturer: IKO Polymeric
- Product reference: Armourplan Walkway Membrane
- Width: 1000mm
- Thickness: 2.0mm
- Colour: Dark Grey
- Attachment: Hot Air weld perimeter of walkway membrane to Armourplan PSG membrane to layout as specified by Architect.

COMPLETION

910 INSPECTION

- Interim and final roof inspections: Submit roof covering manufacturer's reports.

920 ELECTRONIC ROOF INTEGRITY TEST (OPTIONAL)

- Testing authority: TBC
- Timing of test: TBC
- Condition of roof prior to testing:
 - Waterproof membrane complete to a stage where integrity can be tested.
 - Surface: Clean.
- Test results and waterproof integrity certificate: Submit on completion of testing.

930 FLOOD TEST (OPTIONAL)

- Condition of roof prior to testing:
 - Waterproof membrane complete to a stage where integrity can be tested.
- Outlets: Externally cover and seal. Protect against damage from water pressure using temporary kerbs. Do not use plugs to seal outlets.
- Flood levels: Submit proposals. In no case higher than kerbs.
- Flood duration: TBC
- Inspection: Regular, to detect leaks.
- Completion of test: Slowly drain roof. Do not overload or flood outlets.
- Test results: Submit.

940 COMPLETION

- Roof areas: Clean.
 - Outlets: Clear.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect against damage from traffic and adjacent or high level working.
- Final Inspection: Final Inspection to be carried out by IKO Polymeric Field Engineer prior to issue of IKO guarantee