A black background with a black square

Description automatically generated with medium confidence

**Occam® Brick Cladding Systems**

The below NBS format specification clauses are for a typical Occam® Brick Slip Cladding System.

The NBS format specification clauses can be tailored to suit individual projects and performance requirements.

Please consult with the Proteus Sales department.

Section H92

NBS specification clauses

Jan 2025 – Issue V1.1

Occam**®** Brick Cladding Systems

A building with many windows

Description automatically generated

H92  
Rainscreen cladding

Project:

Client:

Tendering

10 Information to be provided with tender

1. Submit the following cladding particulars
   1. Typical plan, section and elevation drawings at suitable scales.
   2. Typical detailed drawings at large scales, including ……….
   3. Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes, including ……….
   4. Certification, reports and calculations demonstrating compliance with specification of proposed cladding.
   5. Proposals for connections to and support from the primary support structure.
   6. Proposals for primary support structure additional to that shown on preliminary design drawings.
   7. Schedule of builders' work, special provisions and special attendance by others.
   8. Examples of standard documentation from which project quality plan will be prepared.
   9. Preliminary fabrication and installation method statements and programme.
   10. Proposals for replacing damaged or failed products.
   11. Areas of non-compliance with specification.

Type(s) of rainscreen cladding

120 Rainscreen cladding

* Description:  Brick slip cladding system – mechanically fixed
* Primary support structure: … (Primary steel frame/ secondary steelwork/ SFS/ Masonry etc.)
* Rainscreen cladding system
  + Manufacturer: Proteus Facades Ltd

1 Gerrard Place, Skelmersdale

Lancashire, WN8 9SU

+44 (0) 151 545 5075

Email: [info@proteusfacades.com](mailto:info@proteusfacades.com)

Web: www.proteusfacades.com

* + Type: Occam® Brick Cladding System
  + Requirement: Include products, fixings and interfaces necessary to complete the fabrication and installation. Performance criteria to comply with design/ performance requirements and testing subsections.
  + Fire performance requirements: As clause 470 for rainscreen cladding, clauses 480 and 485 for backing wall, and clause 490 for cavity fire barriers.
* Rainscreen panel
  + Manufacturer: Proteus Facades Ltd
    - Product reference:  Occam® Brick Slip / Occam® Clay Tile
  + Material:  Clay unit (minimum brick tolerance & range group T2-R1 as per BS EN 771-1).
  + Thickness:  Nominal 27mm (Brick Slip) / Nominal 28mm (Clay Tile)
  + Finish/ colour: …
  + Panel fixings: Occam® Brick Carrier
  + Joint width: Nominal 10mm
* Air gap: Not less than 38mm between rear of panel and substrate/insulation.
* Secondary support/ framing system: Occam® Support Frame
  + Manufacturer: Proteus Facades Ltd
    - Product reference: Occam® helping hand brackets and rails
  + Material: Extruded aluminium rail and purpose made high grade aluminium rail support brackets to suit loads and cladding depth.
  + Fasteners: Stainless steel fixings
* Backing wall: … (SFS with sheathing board/ Masonry etc.)
  + Air and vapour control layer: … if required.
  + Thermal insulation: … to suit U-value requirements.
  + Breather membrane: … if required.
* Accessories:  Continuous closer panels at openings, where reveal are less than 175mm deep.  
   Contact Proteus Façades Limited for further information.
* Other requirements: Louvres, louvred doors, secret doors, perforated screens, mesh screens etc.

Contact Proteus Façades Limited or visit www.proteusfacades.com

General requirements/ preparatory work

210 Design

* Rainscreen cladding system and associated features: Complete detailed design in accordance with this specification and the preliminary design drawings and submit before commencement of fabrication.
* Related works: Coordinate in detailed design.

215 Design proposals

* Submission of alternative proposals: Preliminary design drawings indicate intent. Other reasonable proposals will be considered.

220 Specification

* Compliance standards:
* Reference information: For the duration of the contract, keep available at the design office, workshop and on site copies of:
* The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.
* Publications invoked by the CWCT 'Standard for systemised building envelopes'.

230 Information to be provided during detailed design

* Submit the following cladding particulars
  + A schedule of detailed drawings and dates for submission for comment.
  + A schedule of loads that will be transmitted from the rainscreen cladding to the structure.
  + Proposed fixing details and systems relevant to the structural design and construction with methods of adjustment and tolerances.
  + A schedule of fabrication tolerances/ size tolerances.
  + A detailed testing programme in compliance with the main contract master programme.
  + A detailed fabrication and installation programme in compliance with the main contract master programme.
  + A quality plan in compliance with The Centre for Window & Cladding Technology (CWCT) ‘Guide to Good Practice for Facades’, Section 6.
  + Proposals to support outstanding applications for Building Regulations consents or relaxations.

235 Information to be provided before commencement of testing or manufacture of rainscreen cladding system

* Submit the following cladding particulars
  + Detailed drawings to fully describe fabrication and installation.
  + Detailed calculations to prove compliance with design/ performance requirements.
  + Project-specific fabrication, handling and installation method statements.
  + Certification for incorporated components manufactured by others confirming their suitability for proposed locations in the rainscreen cladding.
  + Recommendations for spare parts for future repairs or replacements.
  + Recommendations for safe dismantling and recycling or disposal of products.

240 Product samples

* General: Before commencing detailed design, submit labelled samples of: …

Design/performance requirements

310 CWCT 'Standard for systemised building envelopes'

* General: Unless specified or agreed otherwise, comply with:
  + Part 2 – Loads, fixings and movement.
  + Part 3 – Air, water and wind resistance.
  + Part 4 – Operable components, additional elements and means of access.
  + Part 5 – Thermal, moisture and acoustic performance.
  + Part 6 – Fire performance.
  + Part 7 – Robustness, durability, tolerances and workmanship.
* Project performance requirements specified in this subsection: Read in conjunction with [CWCT](https://www.cwct.co.uk/) performance requirements.

340 Integrity

* Requirement: The rainscreen cladding must resist wind loads, dead loads and design live loads, and accommodate deflections and movements without damage.
* Support spacings and fixing spacing to be confirmed by *Proteus Façades Limited* based upon the below loading information. *Proteus Façades Limited* to provide deadloads for particular external facing type.
* Design wind pressure: *… To be advised by the structural engineer.*
  + Impact performance: To CWCT TN75 (BS EN 14019).
  + Safety impact requirements: …
  + Serviceability impact requirements: …
  + Hard body impact loads
    - External impact exposure category: …
    - Location: …
  + Soft body impact loads
    - External impact exposure category: …
    - Location: …
* Permanent imposed loads: …
* Temporary imposed loads: … *delete if none.*
* Other design parameters:
* Verification: …
* Submittals: …
* Timing: …

370 Appearance and fit

* Requirement: Design rainscreen wall:
  + To ensure position and alignment of all parts and features as shown on preliminary design drawings.
  + To accommodate deviations in the primary support structure.
* Primary support structure: Before commencing installation of rainscreen cladding system, carry out survey sufficient to verify that required accuracy of erection can be achieved.
  + Give notice: If the structure will not allow the required accuracy or security of erection.
  + Design tolerances:  *… to include allowance for maximum setting out tolerance of +1mm (non-cumulative) across the width of the carrier, carrier face is to be plumb (+/-0mm) and cladding zone on majority of constructions allow +/- 10mm adjustment*
* Rainscreen envelope zone tolerances
  + Width: …
    - Critical reference location:  …

380 General movement

* Requirement: Rainscreen cladding must accommodate anticipated building movements as follows: *… to be calculated by the structural engineer*

385 Thermal movement – service temperature ranges

* Requirement: To CWCT 'Standard for systemised building envelopes', clause 2.7.2 (amended) and/ or with the addition of the following: …

390 Air permeability exfiltration

* Requirement: The maximum permissible air exfiltration rate through the building envelope system must not exceed: to satisfy the requirements of Building Regulations Part L.

410 Air permeability

* Permeability class to BS EN 12152:
  + Peak test pressure: to satisfy the requirements of Building Regulations Part L.

420 Water penetration

* Watertightness to BS EN 12154: …
  + Peak test pressure: …
* Additional requirements: …

430 Thermal properties

* Method for calculating the thermal transmittance (U-value) of the rainscreen wall: Weighted U-value.
* Average U-value of rainscreen wall: to satisfy the requirements of Building Regulations Part L.
* Method for assessing thermal transmittance (U-value) of assemblies: … guidance can be provided for insulation thicknesses; project specific thermal analysis will need to be undertaken by a specialist.
* Verification: …
  + Submittals: …
  + Timing: …

450 Air and vapour control layer

* Condensation risk within rainscreen wall: Determine using the method described in [BS 5250](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=333180). Where required, provide a suitable air and vapour control layer to ensure that damage and nuisance from condensation is reduced.

470 Fire performance of rainscreen cladding

* Standard:  EN 13501-1
* Reaction to fire classification
  + External surfaces: A1
  + Internal (cavity) surfaces: A1
* Verification of fire performance: Occam® test report by WarringtonFire

480 Fire resistance of backing wall

* Minimum periods and criteria: to satisfy the requirements of Building Regulations Part B or a specialist fire consultant.

485 Internal reaction to fire of backing wall

* Class (minimum): to satisfy the requirements of Building Regulations Part B or a specialist fire consultant.

490 Fire resistance of cavity fire barriers

* Standard: BS 476-20
* Requirement:
  + To resist the passage of flame and smoke for not less than:to satisfy the requirements of Building Regulations Part B or a specialist fire consultant.

495 Durability

* Relevant agents or degradation mechanisms: Hygrothermal and freeze/thaw.
* Secondary components: Submit details together with required maintenance regime.
* Durability Testing: Occam® test by Lucideon Ltd to EAD-090062-01-0404.

Testing

510 Comparison (type) testing

* Verification of performance
  + Submit: …
* Commencement of fabrication and installation of rainscreen cladding: Not until test results and reports showing compliance with this specification have been submitted.

515 Project testing (laboratory)

* Timing of testing: At an agreed stage in detailed design work arrange for laboratory testing of specimens of rainscreen cladding and components in accordance with relevant clauses of this specification.
* Commencement of fabrication and installation of rainscreen cladding: Not until test results and reports showing compliance with this specification have been submitted.

530 Testing authority – UKAS-approved laboratory

* Requirement: Project testing must be carried out by a [United Kingdom Accreditation Service (UKAS)](https://www.ukas.com/)-approved independent laboratory.

672 Site testing of fixings

* Test standard: To [CWCT](https://www.cwct.co.uk/) [Standard for systemised building envelopes](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=292320), Standard test methods for building envelopes, section 19.
* Type of test: to suit project specific requirements.
  + Peak load: …
    - Load directions: …
* Number and location of test fixings:…

Products

710 Aluminium alloy framing sections

* Standards:  To BS EN 755 alloy 6063-T6
* Structural members: To comply with BS EN 1999.

712 Aluminium alloy sheet

* Standards:  To BS EN 485, BS EN 515 and BS EN 573
* Alloy, temper and thickness:  to suit application and specified finish

720 Stainless steel sheet

* Standards: To relevant parts of BS EN 10029, BS EN 10048, BS EN 10095 and BS EN ISO 9445
* Grade: To BS EN 10088-2 generally, 1,4301 (316)
* Thickness: Minimum 0.8mm, or as specified for impact resistance, etc

730 Mechanical fixings – material requirements

* Stainless steel:  to BS EN ISO 3506 grade A2 generally, grade A4 when used in severely corrosive environments.
* Carbon steel:  To BS 4190; galvanised to BS EN ISO 1461, sheradised to BS 4291, class 1 coating thickness and passivated or alternative coating suitable for corrosion protection
* Aluminium:  To BS EN 755

735 Fixings and fasteners

* Type and use: As part of Proteus Façades Limited Occam® standard system.

770 General sealants

* Selection: In accordance with [BS 6213](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=293692)
* Classification and requirements: To [BS EN ISO 11600](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=298214).
* Reaction to contact products and finishes: Stable and compatible.

775 Thermal insulation

* Material: A1 non-combustible
  + Properties: Durable, rot and vermin proof and not degradable by moisture or water vapour.
* Fixing: Attached to the outer face or supported within the backing wall so as not to bulge, sag, delaminate or detach during installation or in situ during the life of the rainscreen cladding.

785 Breather membrane

* Material: If required, as per drawings and Façade Engineers’ specification.
* Standard: To [BS EN 13859-2](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=306558).
* Continuity: No breaks. Minimize joints.
  + Penetrations and abutments: Attach to breather membrane with tape. Achieve full bond.
  + Laps: Not less than 150 mm, bond with tape. Achieve full bond.
* Tape: As recommended by breather membrane manufacturer.
* Repairs: Lapped patch of breather membrane material secured with continuous band of tape on edges.
* Junctions at flashings, sills, gutters etc. Overlap and allow free drainage to exterior.

786 Mortar

* Mortar is a traditional hydrated lime, sand, GGBS mortar. Dry packed blend of lime complying with BS EN 459-1, GGBS complying with BS EN 15167 and BS EN 998-2, selected silica sands and natural aggregates complying with BS EN 13139 together with additives to provide water resistance, thixotropic properties, workability and colour.
* Mortar Manufacturers:
  + Instarmac Group plc, Head office Danny Morson Way, Birch Coppice Business Part, Dordon, Tamworth, Staffordshire, B78 1SE. Tel: 01827 254400, Fax: 01827 285386. Email: enquiries@instarmac.co.uk
  + Parex Ltd, Holly Lane Industrial Estate, Atherstone, Warwickshire, CV9 2QZ, Tel: 01827 711755, Fax: 01827 711330, Email: enquiries@parex.co.uk

Finishes

830 Powder coating

* Requirement: As section Z31.

840 Anodizing

* Requirement: As section Z33.

850 Polyvinylidene fluoride (PVDF) coating

* Standard: To BS 4842, AAMA 2604-05 or AAMA 2605-05, subject to minimum coating thickness recommended by the sheet supplier

Fabrication and installation

910 Generally

* Electrolytic corrosion: Take necessary measures to prevent.
* Identification of products: Mark or tag to facilitate identification during assembly, handling, storage and installation. Do not mark surfaces visible in the complete installation.

912 Metalwork

* Requirement: As section Z11, unless specified otherwise in this section.

925 Sealant application

* Requirement: As section Z22, unless specified otherwise in this section.

930 Assembly

* Location: Carry out as much assembly as possible in the workshop.
* Joints: Other than movement joints and designed open joints, must be rigidly secured, reinforced where necessary and fixed with hairline abutments.

960 Preliminary rainscreen cladding installation

* Requirement: Complete an area of cladding as set out below for inspection and approval of appearance

970 Rainscreen cladding installation

* Commence rainscreen cladding panel fixing only when other trades have completed their work; e.g. electrical and mechanical first fix; insulation (if by others); to minimise damage to finished work
* Tightening mechanical fasteners: To manufacturer's recommended torque figures. Do not overtighten fasteners intended to permit differential movement.
* Protective coverings: Remove only where necessary to facilitate installation and from surfaces which will be inaccessible on completion.
* Agree locations of physical barriers to be erected by the main contractor for the protection of vulnerable works

980 Interfaces

* Installation: Locate flashings, closers etc. correctly and neatly overlap cladding to form a weathertight junction.

985 Damage

* Repairs: Do not repair cladding without approval.
  + Approval: Will not be given where the proposed repair will impair performance or appearance.
* Record of repairs: Prepare schedule or record on drawings for inclusion in the maintenance manual.

995 Maintenance

* Maintenance manual: Incorporate Proteus Façades Limited standard maintenance guidelines into Building Manual in accordance with [CWCT](https://www.cwct.co.uk/) [Standard for systemised building envelopes](http://www.thenbs.com/PublicationIndex/DocumentSummary.aspx?DocID=292320), clause 7.6.1.