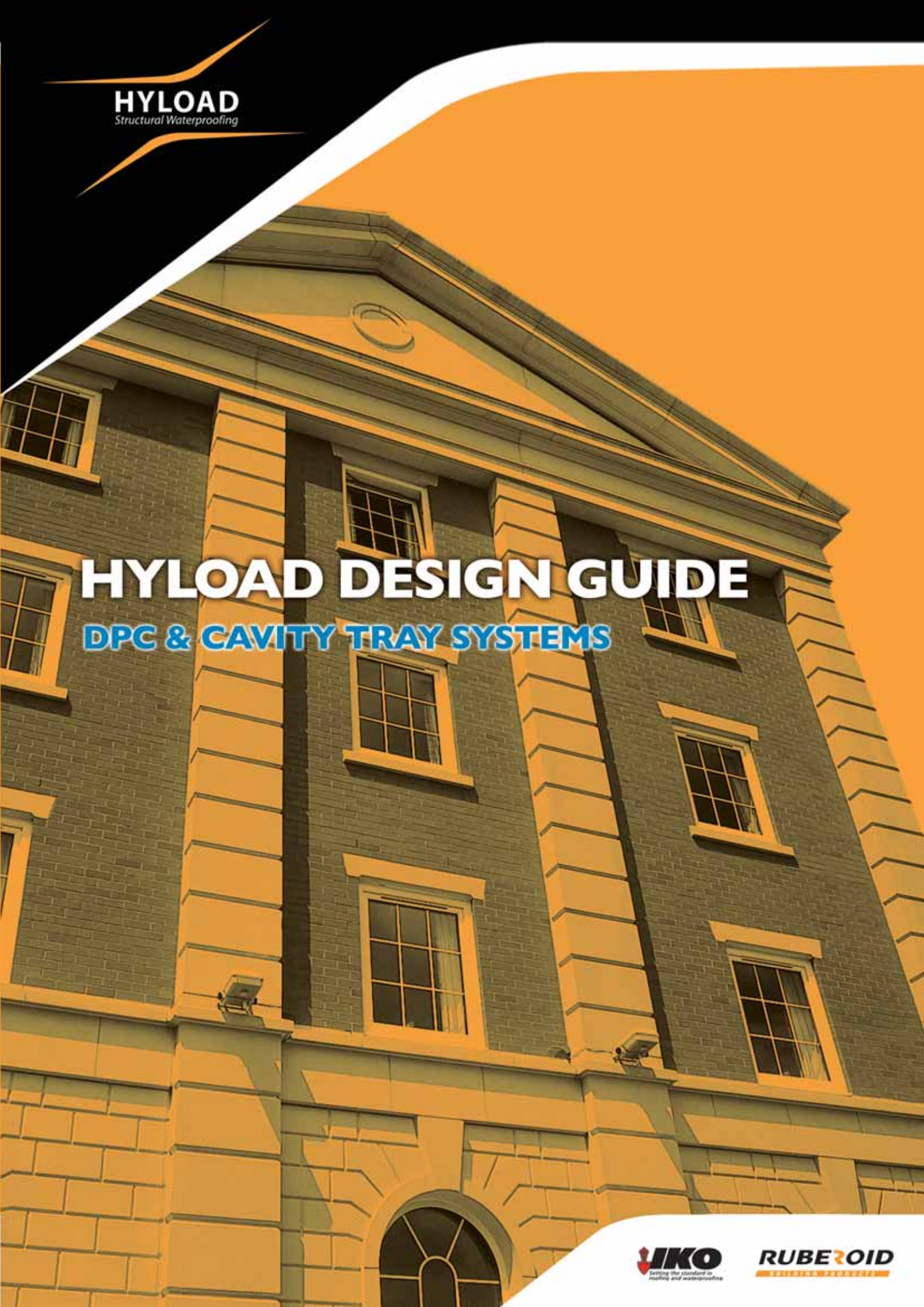
HYLOAD
Structural Waterproofing

HYLOAD DESIGN GUIDE

DPC & CAVITY TRAY SYSTEMS



IKO
Setting the standard in roofing and waterproofing

RUBEROID

The most specified DPC and Cavity Tray Systems in the country

Hyload's DPC and Cavity Tray Systems encompass a complete family of high performance, specialist damp proofing products, each highly evolved for the job in hand, including insulated, gas and fire resistant systems. This extensive choice is further extended with valuable system accessories, from fixings, adhesives and jointing systems, to a wide range of standard and specially made preformed cloaks to ensure even the most complex architectural details are easily achieved.

Hyload's DPC and Cavity Tray Systems also benefit from the unrivalled support of the structural waterproofing industry's leading design and technical services team, plus on-site technical support to ensure that you get more from the most specified damp proofing systems in the country.

Peace of mind is reinforced by a brand portfolio that includes Hyload Original, which was the UK's first high performance polymeric DPC, and has been the recognised market leader for over 40 years.

Ruberoid Building Products

Ruberoid is the UK's leading manufacturer and supplier of high performance waterproofing and roofing systems and a division of IKO PLC, a member of the IKO Group - one of the world's foremost specialists in bituminous waterproofing. The Ruberoid name has been synonymous with high quality damp-proofing, tanking membranes and weather protection products for over 100 years.

We have built our reputation through close working partnerships with specifiers, contractors and clients in both the public and private sector, on a wide variety of new build and refurbishment projects.

Ruberoid has always led the field in the development and production of waterproofing membranes and damp proof courses, consistently setting levels of product performance that have subsequently become industry standards.

Ruberoid was the first manufacturer in its field to gain quality accreditation to BS EN ISO 9000: 2000 (formerly BS 5750).

BS EN ISO 9000: 2000
Certificate Nos.
Q05233, Q05244

Housing and commercial development, West One, Sheffield Architect: Carey Jones

"The penetration of water into the fabric of a building has serious consequences for the health of the occupants and for the long term serviceability of the structure... By their nature, masonry walls are not waterproof."

BS 5628: Part 3: 2001, section 5.5

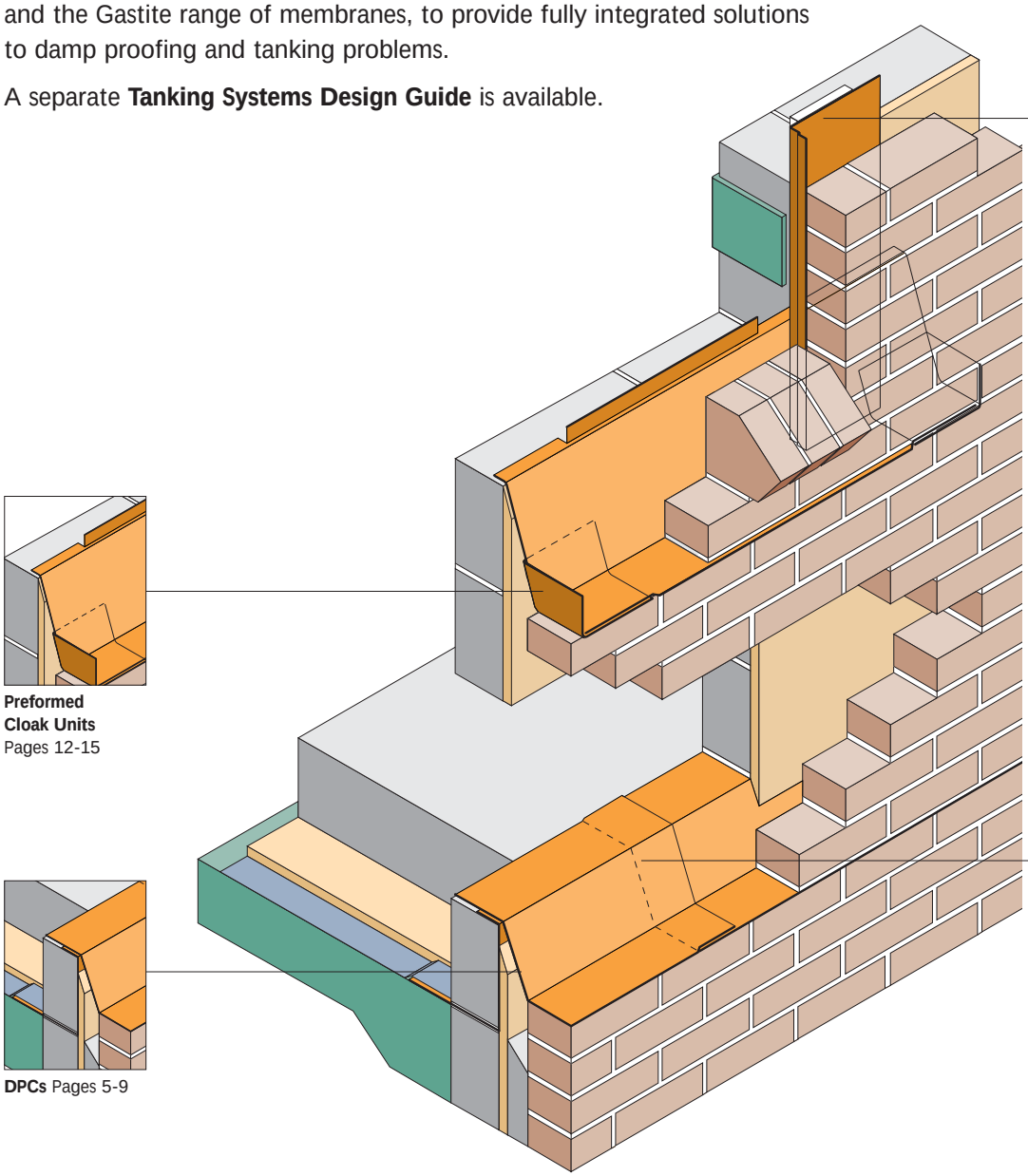
Total damp-proofing design...

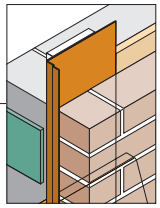
All the products detailed on the following pages form part of complete DPC systems, comprising:

- the DPC which can be easily formed to create a cavity tray
- standard and special Preformed Cloak Units which simplify the damp-proofing of awkward junctions and eliminate leakage paths
- Hyload DPC Lap Adhesive
- Hyload DPC Jointing Tape
- Hyload DPC Mastic
- Hyload DPC Joint Support System
- the Ruberoid range of insulated, fire resistant and gas resistant DPCs and Cavity Closures.

These DPC systems combine with the Synthaprufe range of liquid products, the Plasprufe range of self adhesive and torch applied tanking systems, and the Gastite range of membranes, to provide fully integrated solutions to damp proofing and tanking problems.

A separate **Tanking Systems Design Guide** is available.

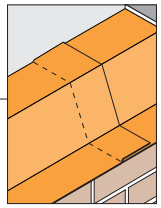




Insulated and Fire DPCs
Pages 10-11

Preformed Cloak Units
Pages 12-15

DPCs Pages 5-9



Jointing Systems
Pages 16-19

Lingham Court apartments, London SW9 Architect: Pollard Thomas Edwards

...to full technical support

Our principle goal is to make life easier for the specifier and contractor by taking responsibility for the design and manufacture of all DPC and cavity tray systems, providing a bespoke and complete solution for every project. Ruberoid's dedicated structural waterproofing technical services team provide NBS specifications, take-off schedules, detailed 3D drawings and location plans, whilst our national team of project managers also provide on-site technical and installation support, for complete peace of mind.

Ruberoid subscribes to NBS Plus, which is an electronic library of technical details and guidance notes.

NBS clauses allow the accurate and easy completion of specifications relative to manufacturers' proprietary products.

Ruberoid also offers RIBA-approved CPD seminars for above and below ground waterproofing. To find out more about these seminars please contact us on **Tel: 0800 587 7391.**

The Hyload brand

Hyload Original was the UK's first high performance polymeric DPC, and was also awarded the first Agrément Certificate back in 1967. It has been the recognised market leader providing damp-proofing security for over 40 years, without a single reported material failure.

Innovations in technology and manufacturing techniques have led to the development of an extensive choice of DPCs and fixing systems which bear the Hyload name.

Ruberoid has also developed other DPC systems to meet the latest fire and thermal building requirements, and to ensure that all architectural specifications can be achieved.

Standards and authority

Hyload Original and Hyload MortarMatch hold British Board of Agrément Certificate number 95/3133, which also includes Preformed Units and the Hyload DPC Jointing System.

Hyload HouseBuilder holds British Board of Agrément Certificate number 97/3403.

Permabit holds British Board of Agrément Certificate number 88/1966, which also includes the Preformed Units and DPC Jointing System.

Hyload Insulated DPC (Ruberclose) holds British Board of Agrément Certificate number 97/3310.

Hyload FR Insulated DPC (Ruberclose FR) holds British Board of Agrément Certificate number 97/3310.

DPC selection by application

This table is designed as a guide to assist the specifier in identifying the appropriate DPC for typical applications. Where specific project details are not covered, please contact Ruberoid's Structural Waterproofing Design Service for further information.

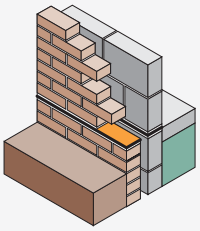
Ruberoid's recommendations for typical applications are based upon one or all of the following key DPC performance criteria:

- Ability to adhere to mortar
- Membrane colour
- Durability
- Flexibility
- Resistance to loading
- Thermal efficiency
- Fire resistance
- Gas resistance

All products can be recommended, but the products indicated in orange have been specially developed for the application

Damp proof course or cavity tray for residential dwellings up to three storeys high

Hyload HouseBuilder*
Hyload MortarMatch
Permabit
Hyload Original
Gastite
Pluvex†

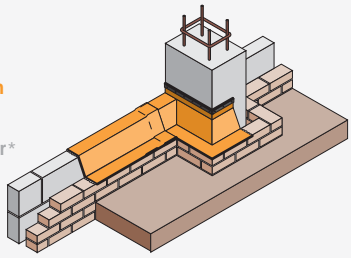


The traditional Pluvex products conforming to BS 6398 have been largely superseded by Hyload HouseBuilder which is superior with regards to flexibility in cold weather and ease of use on site. Hyload HouseBuilder forms part of a system so that when used as a supported cavity tray, joints are sealed using Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

*Not to be used as an unsupported cavity tray or in residential constructions in excess of three storeys.
†Damp proof course only. Not to be used as a cavity tray.

Damp proof course or cavity tray for commercial or residential developments up to fifteen storeys high

Hyload Original
Hyload MortarMatch
Permabit
Hyload HouseBuilder*
Gastite

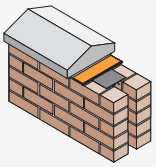


Hyload Original DPC has been waterproofing buildings for over 40 years. The name Hyload has become synonymous with the requirements for a robust, flexible, general purpose DPC that will not extrude under load. It conforms to the selection criteria of BS 5628 and BS 8215 and forms part of a complete system so that when used as a cavity tray, joints are fully supported and sealed, and awkward junctions such as internal and external corners are waterproofed with preformed cloak units.

*Not to be used as an unsupported cavity tray or in residential constructions in excess of three storeys.

Damp proof course or cavity tray below copings, in parapet walls or free-standing walls

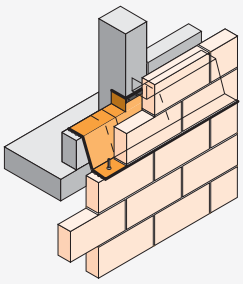
Permabit
Hyload MortarMatch
Hyload Original



Permabit DPC is specifically developed for lightly loaded parts of the construction such as beneath copings or as a cavity tray in parapet walls. This high bond strength DPC has exceptionally good adhesion to mortar. Permabit forms part of a complete system so that when used as a cavity tray, joints are fully supported and sealed, and awkward junctions such as internal and external corners are waterproofed with preformed cloak units.

Damp proof course or cavity tray matched to stonework and/or mortar

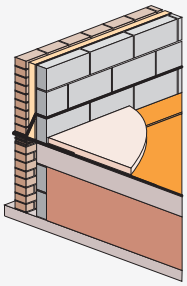
Hyload MortarMatch



Hyload MortarMatch DPC is colour matched to the external skin of the construction. The standard colours of brown and white greatly reduce the visual impact of the DPC projection from the mortar joint. Hyload MortarMatch forms part of a complete system so that when used as a cavity tray, joints are fully supported and sealed, and awkward junctions such as internal and external corners are waterproofed with colour matched preformed cloak units.

Damp proof course or cavity tray resistant to methane, radon and other ground gases

Gastite†
Hyload MortarMatch*
Permabit*
Hyload Original*
Hyload HouseBuilder*

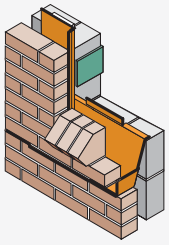


Gastite DPC is specifically developed to resist the passage of all ground gases and is used in conjunction with either loose laid or bonded Gastite DPMs. It is commonly used as a horizontal DPC bridging the wall construction thereby preventing the movement of gases up through the cavity. A cavity tray is positioned immediately above the Gastite DPC.

† For total gas resistance, use Gastite DPC in conjunction with Gastite DPM or Gastite LL.
* Radon gases only

Insulated DPCs for windows and doors

Hyload Insulated DPC/
Hyload FR Insulated DPC



Hyload DPC allows structural openings to meet Building Regulations with regards thermal efficiency. Sandwiched between the internal and external masonry units at window and door reveals, Hyload Insulated DPC prevents the occurrence of cold bridging. Hyload FR Insulated DPC meets the requirements of the Scottish Building Regulations. Where fire resistance is a requirement, Hyload FR Insulated DPC achieves a minimum 30 minutes fire resistance.

High Performance DPCs

Innovations in technology and manufacturing techniques have led to the development of an extensive choice of DPCs and fixing systems which bear the Hyload name.

Hyload Original

A polymeric DPC which is suitable for providing damp-proofing and the formation of cavity trays in all applications. Hyload Original will not extrude under load.

Hyload Original was the first high performance polymeric DPC membrane in the UK, and was awarded the first ever Agrément Certificate in 1967.

Hyload Original has been providing damp-proofing security for over 40 years, without a single reported system failure.

Hyload Original
Certificate No. 95/3133

Permabit

A superior performance bitumen polymer DPC, specifically designed to provide excellent adhesion to mortar. **Permabit** will not compress, even under the heaviest of wall loadings.

Permabit
Certificate No. 88/1966

Hyload MortarMatch

A high performance, polymeric DPC, designed to further enhance the advantageous characteristics of Hyload Original. The membrane is pigmented to match typical mortar colouration, and therefore is significantly less conspicuous in situ than black DPCs, at the same time offering a more durable material, with increased mortar adhesion. Bespoke Hyload MortarMatch DPCs are also available to match particular regional or historic building requirements.

Hyload MortarMatch
Certificate No. 95/3133

Hyload HouseBuilder

A polymeric DPC specifically designed to provide long-term damp proofing for housing applications, and specifically offered to provide the housebuilder with a high performance cost effective alternative to traditional bitumen DPCs. **Hyload HouseBuilder** has not been assessed unsupported across cavity constructions, and as such is not recommended as an unsupported cavity tray. Hyload HouseBuilder utilises the same proven production technology of Hyload Original.

Hyload HouseBuilder
Certificate No. 97/3403

Gastite

Formulated to provide a reliable and effective barrier against the transmission of radon, methane and other gases and used in conjunction with Gastite loose laid DPM or Gastite self-adhesive DPM/tanking membrane. This polyester-reinforced damp proof course incorporates a 50 micron aluminium core and is coated in flexible rubber modified bitumen.

Other Ruberoid DPCs

Hyload insulated DPC (Ruberclose) has been developed to minimise cold bridging when closing masonry cavity walls around openings (see page 10).

Hyload FR insulated DPC (Ruberclose FR) offers thermal effectiveness with the added security of fire resistance (see page 10).

Ruberoid also supplies a range of fire rated **Structural Cavity Closures** as well as the **Pluvex** range of domestic grade (BS 6398) DPCs. For further information refer to specific data sheets.

Product features

Hyload Original

- Over 40 years proven reliability
- Excellent performance under high compressive loads
- Good flexibility at low temperatures
- Tough and durable

Permabit

- Excellent mortar adhesion properties
- Over 25 years proven reliability
- Excellent performance under both high and low compressive loads
- Tough and durable with excellent flexibility

Hyload MortarMatch

- Mortar colour-matched: Standard Brown and White
- Substantially greater tensile strength and elongation
- Improved tear strength
- Improved puncture resistance
- Improved flexibility

Hyload HouseBuilder

- Specifically designed for housing
- No extrusion under heavy loads
- Usable under concrete floor beams
- Offers superior performance to traditional British Standard DPCs.

Gastite

- Effective against gas permeation.
- Good product flexibility and tolerance at low temperatures.
- Formulated to provide a reliable and effective barrier against the transmission of radon, methane and other gases and used in conjunction with Gastite DPM or Gastite LL.

Dimensions and weight

	Hyload MortarMatch	Permabit	Hyload Original	Hyload HouseBuilder	Gastite
Nominal weight (kg/m^2)	1.47	1.60	1.50	1.15	4.0
Nominal thickness (mm)	1.12	1.25	1.27	0.90	3.0
Nominal length (m/roll)	20	20	20	20	8

Standard widths (nominal)

Roll width	100	112.5	125	150	225	300	337.5	360	450	600*	900*	1000*
m^2 roll	2.00	2.25	2.50	3.00	4.50	6.00	6.75	7.20	9.00	12.00	18.00	20.00

Non-standard widths are available to order in 25 mm increments.
*Non-standard widths for Hyload HouseBuilder.

Summary of technical data

	Hyload MortarMatch	Permabit	Hyload Original	Hyload HouseBuilder	Gastite
Permeability to water vapour to BS 3177 (g/m^2 over 24 hours)	2.0	0.5	2.0	2.5	(Refer to Gastite data sheet)
Tensile strength at break to BS 2782, 320A at 100 mm/minute (N/mm^2)	MD = 10.9 CD = 9.3	MD = 5.1 CD = 4.7	MD = 8.8 CD = 6.9	MD = 8.9 CD = 6.9	
Elongation at break to BS 2782, 320A at 100 mm/minute (%)	MD = 245 CD = 260	MD = 510 CD = 490	MD = 200 CD = 190	MD = 200 CD = 190	
Tear strength TO BS 2782, 360B at 100 mm/minute (N/mm^2)	MD = 39.0 CD = 41.0	MD = 64.1 CD = 58.8	MD = 33.0 CD = 42.0	MD = 34.0 CD = 42.0	
Static indentation with 24 kg for 24 hours to MOAT 27, 5.1.9	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Dynamic indentation with 12 mm punch to MOAT 27, 5.1.10	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Low temperature flexibility at –30°C to BS 747, Appendix C4	Pass	Pass	Pass	Pass	

MD = machine direction (longitudinal) CD = cross direction (transverse) Note: Figures shown are typical test method results and should not be used for specifying purposes

Insulated DPCs

Insulated DPCs to minimise cold bridging

The use of Hyload Insulated DPCs enable the cavity to be closed in the traditional way, while conforming to the latest thermal and cold bridging requirements of the Building Regulations – Approved Document L, NHBC, and BRE guidelines ‘Thermal insulation: avoiding risks.’

Hyload Insulated DPC

Hyload Insulated DPC (Ruberclose) will minimise cold bridging when within closing structures in masonry cavity walls around openings.

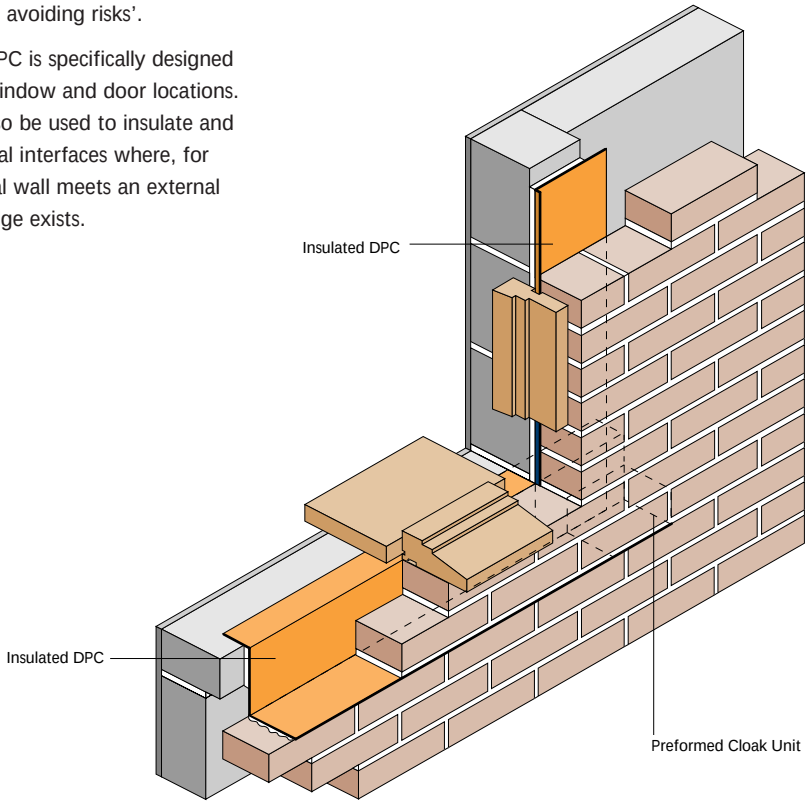
The use of insulated DPC enables the cavity to be closed in the traditional way, while conforming to the requirements of Building Regulations – Approved Document L and new Robust Details Document. Hyload Insulated DPC also conforms to the requirement of NHBC and BRE guidelines ‘Thermal insulation: avoiding risks’.

Hyload Insulated DPC is specifically designed for application at window and door locations. However, it may also be used to insulate and waterproof structural interfaces where, for example, an internal wall meets an external wall and a cold bridge exists.

Hyload FR Insulated DPC

Hyload FR Insulated DPC (Ruberclose FR) is a fire retardant insulated DPC, which will minimise cold bridging when closing masonry cavity walls around openings, whilst meeting current and proposed fire regulations in England, Scotland and Wales. In addition Ruberclose FR also meets the requirements of Approved Document L of the Building Regulations (England and Wales) and of Part J (Appendix B) of the Technical Standards of the Building Regulations (Scotland) to prevent surface condensation and mould growth and to avoid additional heat losses at the edges of openings.

Ruberclose and Ruberclose FR
Certificate No. 97/3310



Product features

Hyload Insulated DPC - Ruberclose

- Superior Thermal Resistance
- BBA Approval, Agrément Certificate No.97/3310
- Flexible High Performance DPC superior to polyethylene DPC
- Insulation remains flexible when bent and will not crack
- Uniformly maintains thermal properties and does not allow thermal leakage
- Exceptionally easy to handle
- Non standard sizes available

Hyload FR Insulated DPC - Ruberclose FR

- Superior Thermal Resistance
- BBA Approval
- Tough, flexible, high performance DPC covered by Agrément Certificate No. 97/3310
- Phenolic foam insulation offering: Excellent resistance to burning and the spread of flame. Almost complete absence of smoke when subjected to a flame. High closed cell content and fine cell structure. Good resistance to moisture penetration and no wicking. The **lowest thermal conductivity** of any commonly available insulation material, including mineral wool.
- Environmentally friendly - CFC free
- Safe and easy to install:
  Easy to cut
  Lightweight and rigid - easy to position
- Non standard sizes available

Dimensions

Hyload Insulated DPC - Ruberclose is supplied in 8 m rolls

DPC roll size (mm)	Insulation width and thickness (mm)	Selvedge width
8 m x 165	100 x 17	32.5 mm
8 m x 180	100 x 17	40 mm
8 m x 225	140 x 17	42.5 mm

Note: The DPC extends on either side of the insulation. To comply with Codes of Practice requirements, where more than one length is installed, the insulation must be trimmed back on-site 100 mm from one end.

Hyload FR is available in 1300 mm lengths of which the insulation length is 1200 mm

DPC width (mm)	Insulation width and thickness (mm)	Units per pack	Selvedge width
165	100 x 20	10 lengths	32.5 mm
180	100 x 20	10 lengths	40 mm
225	140 x 20	10 lengths	42.5 mm

Note: Thicknesses of Phenolic Insulation at 30 mm, and 40 mm are available on request as specials supplied in 1200 mm lengths bonded to 1300 mm DPC. Please contact our Structural Waterproofing Design Service for price and availability.
The DPC extends 32.5 mm or 40 mm on either side of the insulation and 100 mm at one end. This allows the DPC to contact the window/door frame and to extend the required amount into the cavity. The extension of DPC at one end allows vertical connection and lapping. If necessary the insulation can be easily trimmed back on site 100 mm from the end of the DPC.

Performance

Thermal properties

	Hyload Insulated DPC	Hyload FR Insulated DPC
k (λ) value (W/mK)	0.034	0.018
R value (m^2K/W)	0.50	1.11

Preformed Cloak Units

To comply with current British Standard recommendations

BS 5628: Part 3: 2001, clause 5.5.5.3: "... preformed cloaks should be specified so as to restrict the site operation to simple jointing only."
Ruberoid's Structural Waterproofing Design Service can assist with the development of the details for inclusion within the tender document.

Description

Preformed Cloak Units are fabricated from specially formulated sheet material which is a blend of synthetic polymers. Preformed Cloak Units simplify the damp-proofing of awkward junctions and eliminate leakage paths.

Certain architectural details are impossible to damp-proof efficiently by site forming of strip materials or even leadworking. Preformed Cloak Units are available to overcome complex shapes and changes in direction, saving potential problems and costly remedial works on site.

The standard built in cloak units shown opposite, are designed to accommodate 50, 75 or 100 mm cavity widths and a 150 or 225 mm rise in the cavity tray. The standard surface fixed cloak units are designed for these same cavity widths and for a 150 mm rise in the cavity tray.

The Structural Waterproofing Design Service provides free of charge design support to specifiers, producing special or project specific Preformed Cloak Units.

Product features

- Enable the designer and installer to comply with BS 5628: Part 3: 2001
- Factory manufactured and quality inspected
- Effective and reliable waterproofing solution for awkward junctions
- Speeds up DPC installation and helps to reduce costs
- Fully compatible with all Ruberoid DPC products
- Dedicated free design service readily available to locate and detail special (project specific) Preformed Cloak Units.

Type 5 Cloak Unit

Jamb Cloak

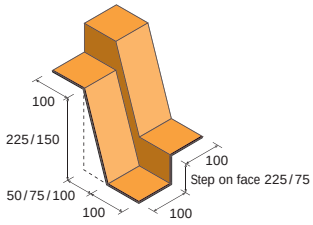
Type 3 Cloak Unit

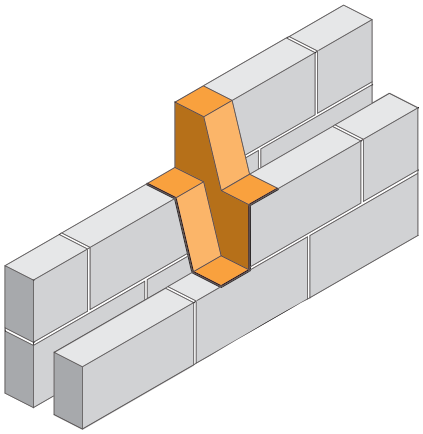
Pipe Cloaks

Standard Preformed Cloak Units

Type 1
Change of level unit (brick/block) **Reversible**

Product code	Cavity rise/width (mm)	Step on face
303005	150/50	75
303007	150/75	75
303009	150/50	225
303011	150/75	225
303013	225/50	75
303015	225/75	75
303017	225/50	225
303019	225/75	225





Type 2
Change of level unit (surface fixed)

Product code	Cavity rise/width (mm)	Step on face
303025 RH	150/50	75
303027 LH	150/50	75
303029 RH	150/75	75
303031 LH	150/75	75
303032 RH	150/100	75
303032 LH	150/100	75
303033 RH	150/50	225
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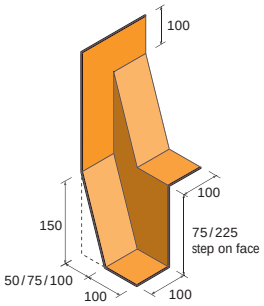
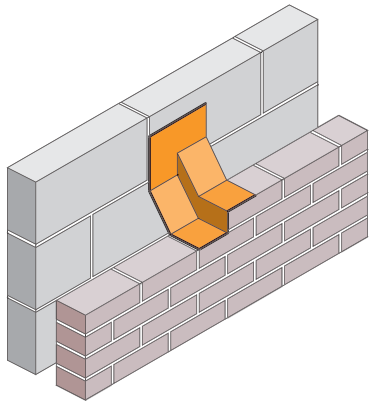
303037 RH	150/75	225
303039 LH	150/75	225
303040 RH	150/100	225
303040 LH	150/100	225



Right hand unit shown



Type 3
Stop end (brick/block or surface fixed)

Product code	Cavity rise/width (mm)
303045 RH	150/50
303045 LH	150/50
303047 RH	150/75
303047 LH	150/75
303048 RH	150/100
303048 LH	150/100
303049 RH	225/50
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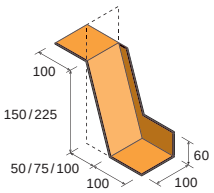
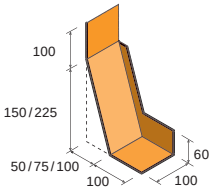
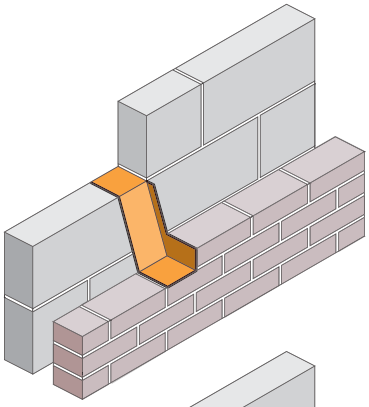
303051 RH	225/75
303051 LH	225/75
303052 RH	225/100
303052 LH	225/100

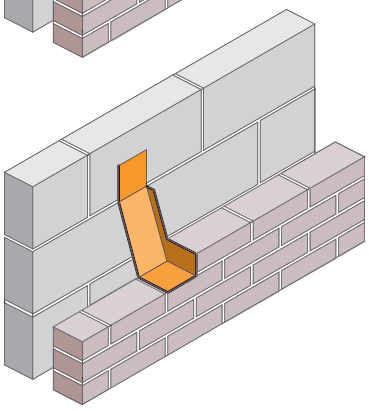


Right hand unit shown



Right hand unit shown

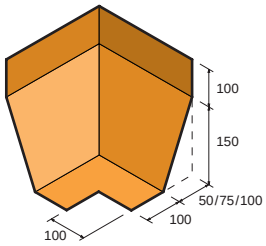


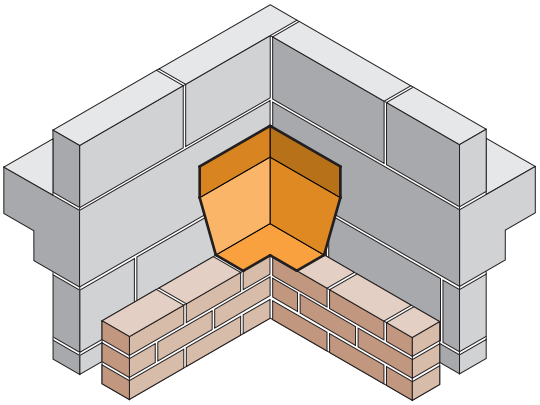


Standard Preformed Cloak Units (continued)

Type 5
Internal corner (surface fixed)

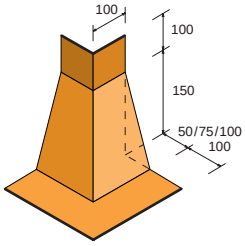
Product code	Cavity rise/width (mm)
303057	150/50
303059	150/75
303060	150/100

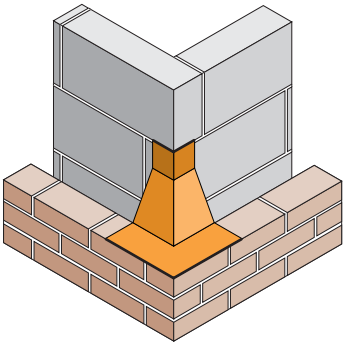




Type 6
External corner (surface fixed)

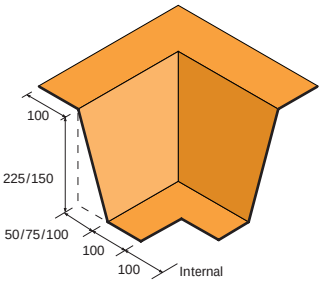
Product code	Cavity rise/width (mm)
303065	150/50
303067	150/75
303068	150/100

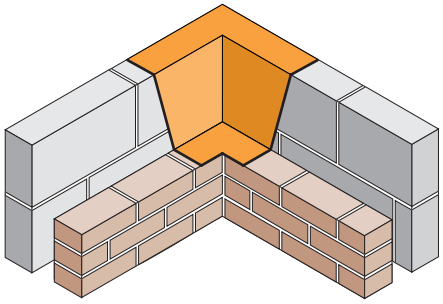


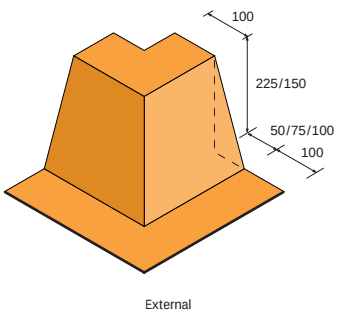


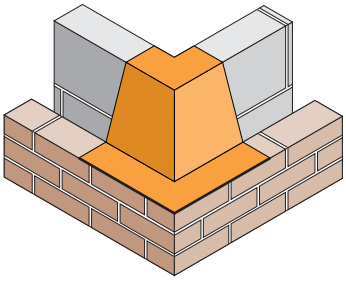
Type 7
Internal/external corner (brick/block)

Product code	Cavity rise/width (mm)
303073	150/50
303075	150/75
303076	150/100
303077	225/50
303079	225/75
303080	225/100



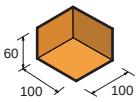


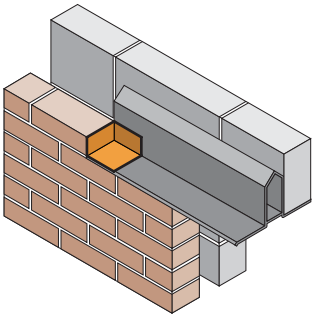




Type 8
Internal corner *Reversible*

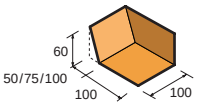
Product code
303083

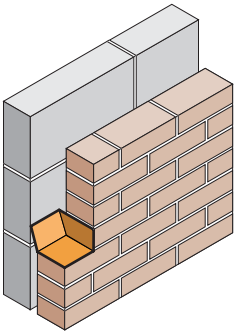




Type 8S
Angled stop end (right or left hand)

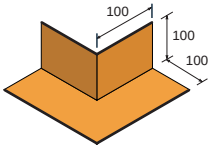
Product code	Cavity width (mm)
303089 RH	50
303089 LH	50
303091 RH	75
303091 LH	75
303092 RH	100
303092 LH	100

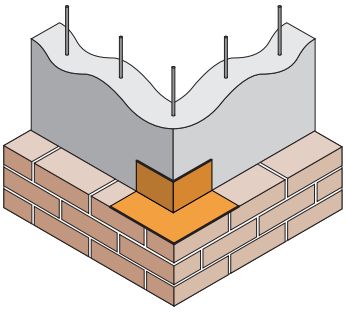




Type 9
External corner

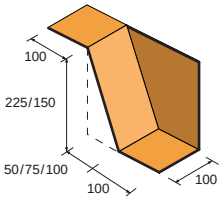
Product code
303097

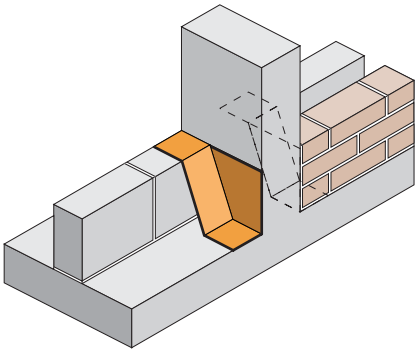




Type 10
Column stop end (brick/block or surface fixed)

Product code	Cavity rise/width (mm)
303106 RH	150/50
303106 LH	150/50
303108 RH	150/75
303108 LH	150/75
303109 RH	150/100
303109 LH	150/100
303112 RH	225/50
303112 LH	225/50
303114 RH	225/75
303114 LH	225/75
303115 RH	225/100
303115 LH	225/100





Jointing Systems

Simplifies installation and fully supports DPC joints

BS 5628: Part 3: 2001, clause 5.5.5.4: "Cavity trays should be supported at their joint positions to facilitate effective sealing."
BS 8215: 1991, clause 5.5: "... joints should be fully supported, well-lapped and sealed."

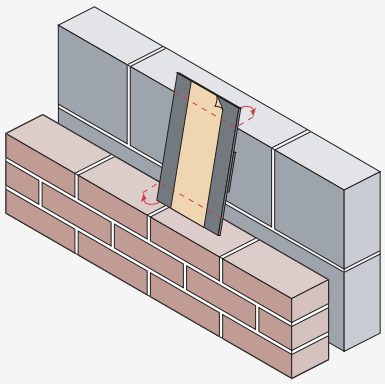
Hyload DPC Joint Support System
Ruberoid in recognising the practical difficulties in jointing cavity trays have introduced the Hyload DPC Joint Support System. This enables contractors to make effective and waterproof joints between DPCs, cavity trays and Preformed Cloak Units. The system works by providing rigid support across the cavity allowing pressure to be applied to effect a waterproof joint.

The Hyload DPC Joint Support System consists of a 350 x 200 mm reinforced support of twin walled polypropylene with a 100 mm self adhesive strip protected by silicone release paper bonded centrally to its upper surface. Joints are formed by means of a 100 mm wide self adhesive tape protected on both sides by silicone release paper.

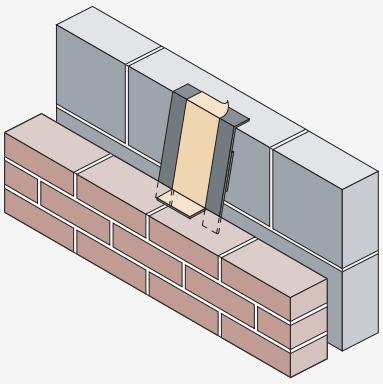
The Hyload DPC Joint Support System is a patented system and available only from Ruberoid.

Product features
- DPC joint fully supported
- Product enables designer and installer to comply with current best practice
- Provides a watertight joint
- Improves installation procedures helping to reduce overall costs

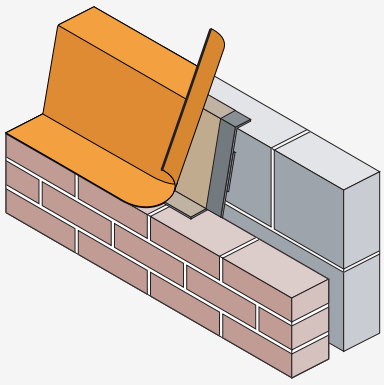
Application of Hyload DPC Joint Support System



1 Joint support prior to bedding 25-40 mm on each leaf



2 Fold edges to rest on brickwork/blockwork. Where the board locates on the external leaf, fold the two 40 mm x 50 mm side flaps to locate down the inside face of the outer skin. The board will now be tightly retained against the outer masonry.



3 Position joint support at point where DPC lap joint will occur. Remove central silicone release paper and push DPC firmly in place

Hyload DPC Fixing Strip

The Fixing Strip is a semi-rigid plastic strip 25 mm x 3 mm x 2 m pre-drilled at 150 mm centres. It is used where surface fixing any Ruberoid high performance DPC to the inner leaf.

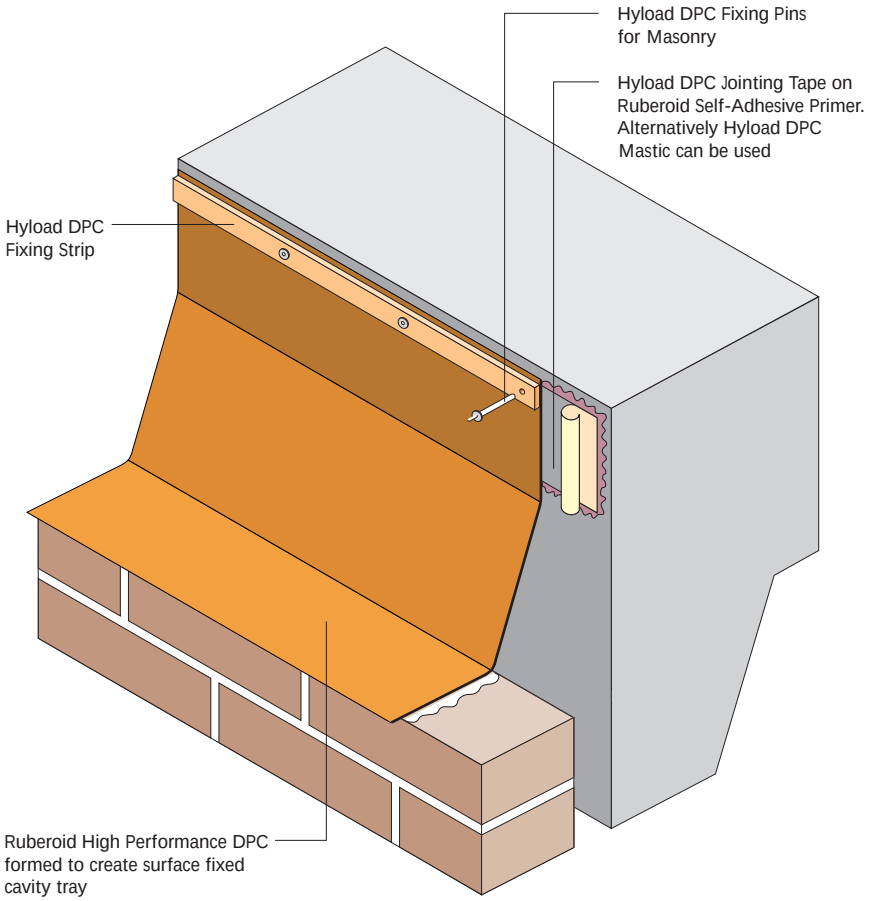
Hyload DPC Fixing Pins

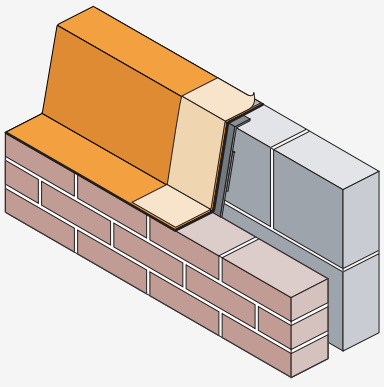
Used with Hyload DPC Fixing Strip, Hyload DPC Fixing Pins for Masonry can be used for surface fixing to solid internal substrates such as blockwork, stone and concrete.

Composite inner skins require Hyload DPC Fixing Pins for Insulation to ensure correct fixing (see page 30).

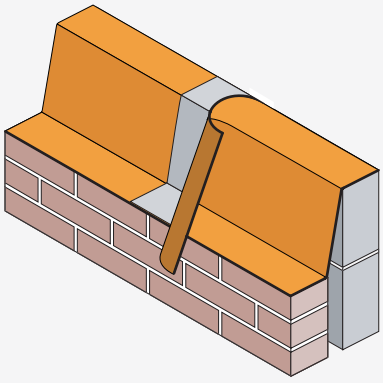
Hyload DPC Fixing Pins are:

- Corrosion resistant
- Quick and easy to install
- Complements Hyload DPC Fixing Strip

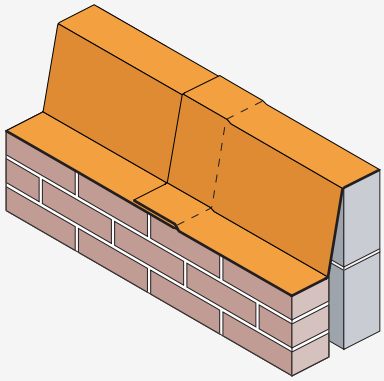




4 Apply a strip of Hyload DPC jointing tape to the DPC



5 Remove top silicone release paper and immediately lap and bond DPC



6 Supported and watertight 100 mm wide joint

Jointing Systems (continued)

Hyload DPC Lap Adhesive

A synthetic rubber/resin mixture supplied in 500 ml cans. It is suitable for bonding DPC to DPC, and DPC to Preformed Cloak Units.

Before use, ensure that surfaces to be bonded are clean and dry. Apply Hyload DPC Lap Adhesive to both surfaces and allow to dry. Bring surfaces together and apply firm pressure to create a permanent bond.

One 500 ml can gives coverage of approximately 3 m^2 (1.5 m^2 of bonded area).

Hyload DPC Jointing Tape

A double sided self adhesive bituminous tape, 10 m x 100 mm, for bonding DPC to DPC, and DPC to Preformed Cloak Units.

Before use, ensure that surfaces to be bonded are clean and dry. Removal of release films reveals self adhesive surfaces. Apply firm pressure to create a permanent bond.

Hyload DPC Mastic

A thick synthetic rubber mastic adhesive with gap filling properties up to 6 mm suitable for bonding Ruberoid high performance DPCs and Preformed Cloak Units to a wide range of common building materials. No primer is required. Hyload DPC Mastic is applied to one surface only. Apply firm pressure to create a permanent bond.

For vertical DPC applications, the Hyload DPC Fixing Strip and Pins must be used.

Typical coverage on smooth surfaces 1.2 to 2 m^2 per litre.

Ruberflex Sealant

Ruberflex is a one-part bitumen modified synthetic rubber sealant. The product is suitable for application to bituminous substrates as well as other common building materials. It is commonly used to seal penetrations in cavity trays caused by wall ties.

- Speed and simplicity of application
- Resistant to alkalis, dilute acids and de-icing salts
- Remains flexible over a wide temperature range
- Excellent adhesion
- Impermeable to water

Ruberoid Self-Adhesive Primer

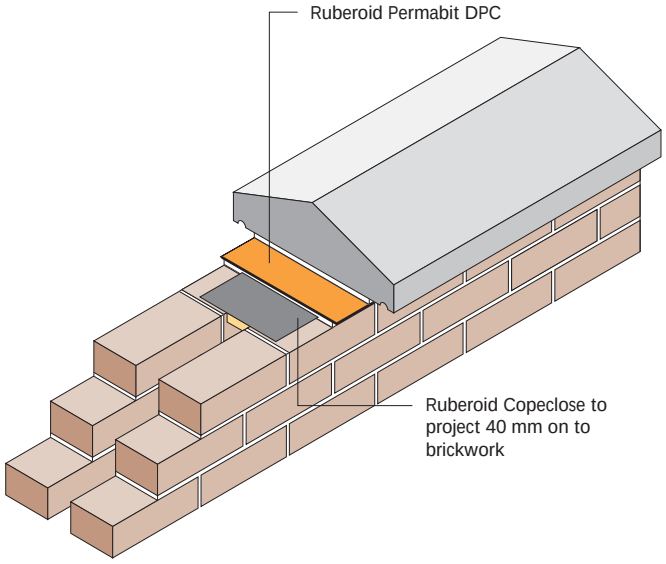
A rubber modified bituminous primer for the preparation of substrates prior to the application of self-adhesive products.

Typical coverage 4-6m^2 per litre.

Ruberoid Copeclose

A tough flexible polymeric cavity closure ideal for closing cavities and supporting Ruberoid High Performance DPC's below copings and parapets.

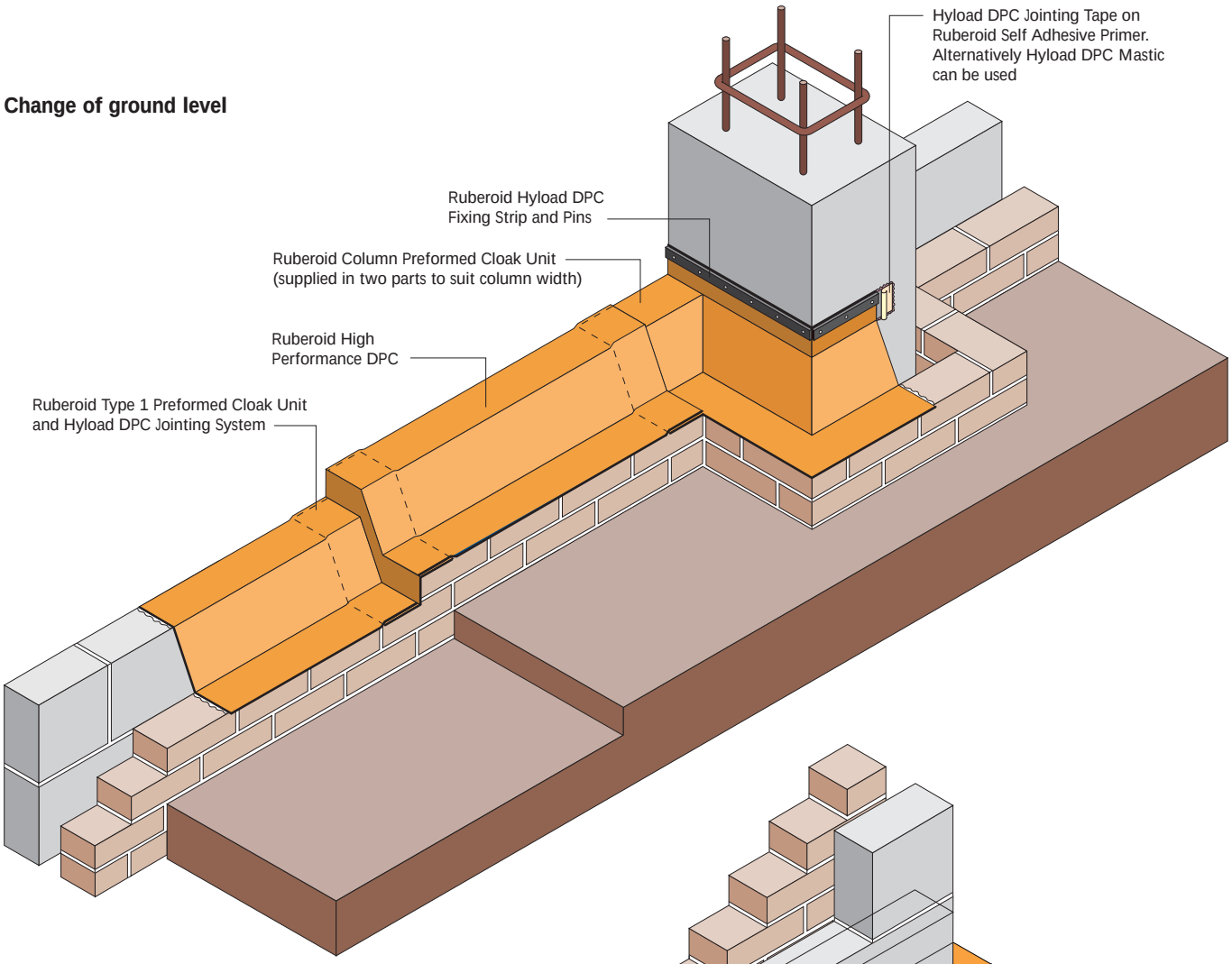
- Flexible, allowing ease of handling on site
- Available in standard 180 mm x 1 metre lengths
- Non-standard sizes available on request
- Excellent puncture resistance
- Easy to cut and shape on site



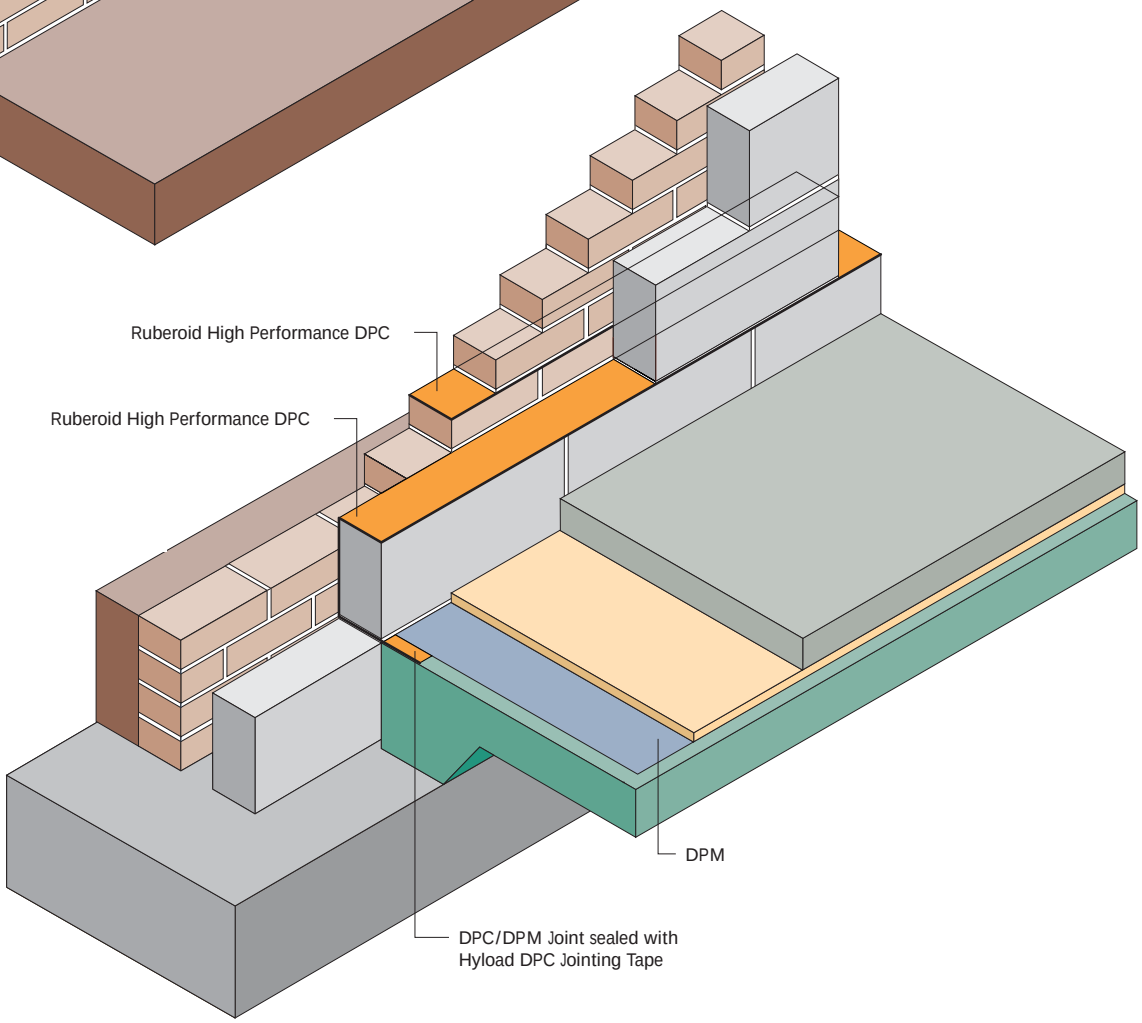
Lingham Court apartments, London SW9 Architect: Pollard Thomas Edwards

Typical details

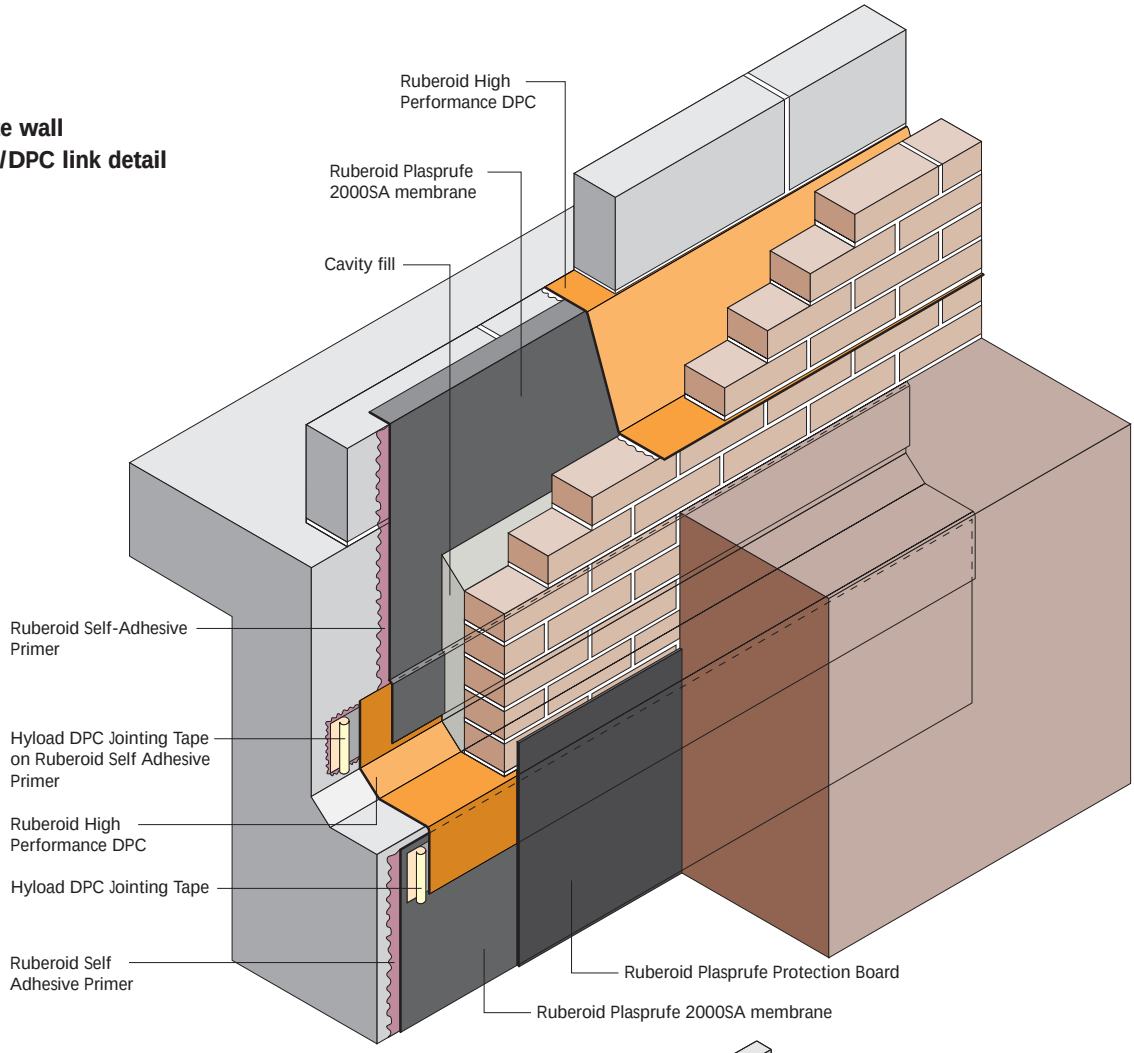
Change of ground level



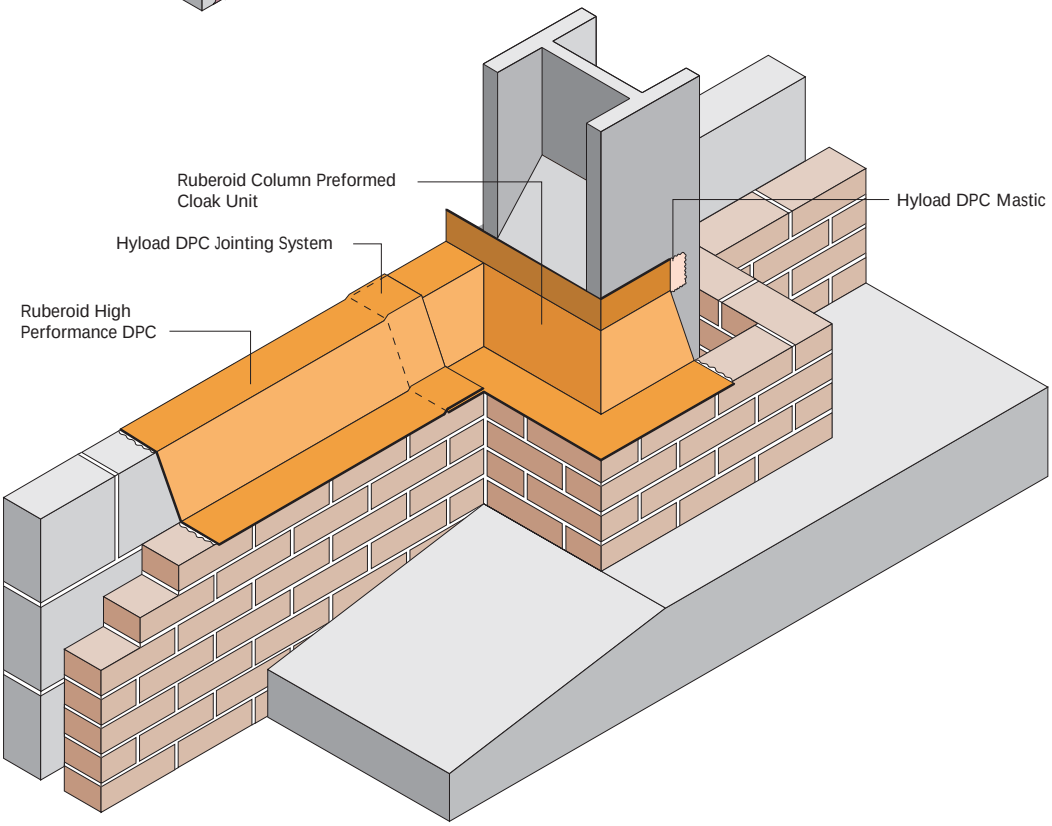
DPC/DPM link



Concrete wall tanking/DPC link detail



Steel column



DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar.**

All joints between lengths of DPC, and DPC and Preformed Cloak Units must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

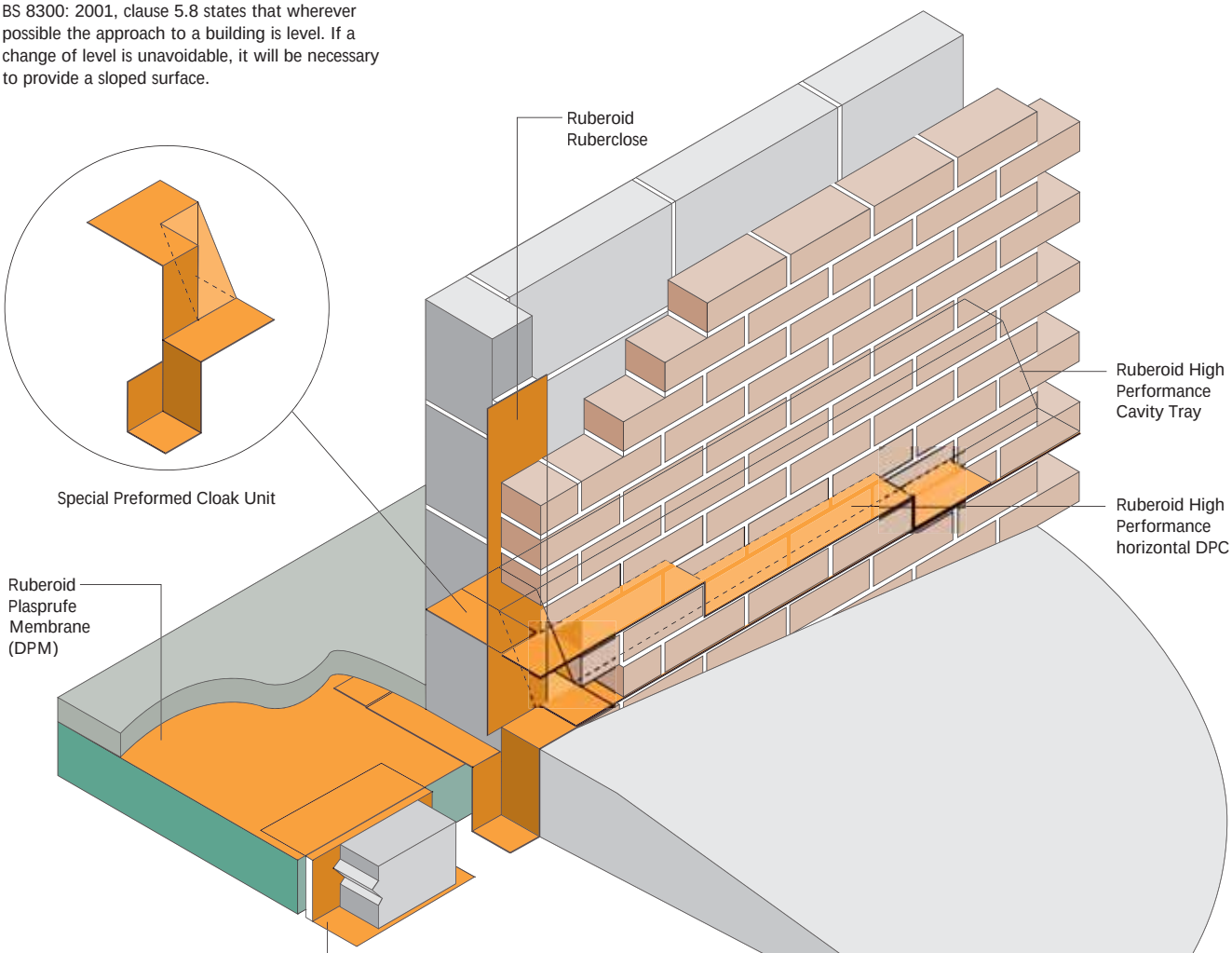
The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

Insulation omitted for clarity.

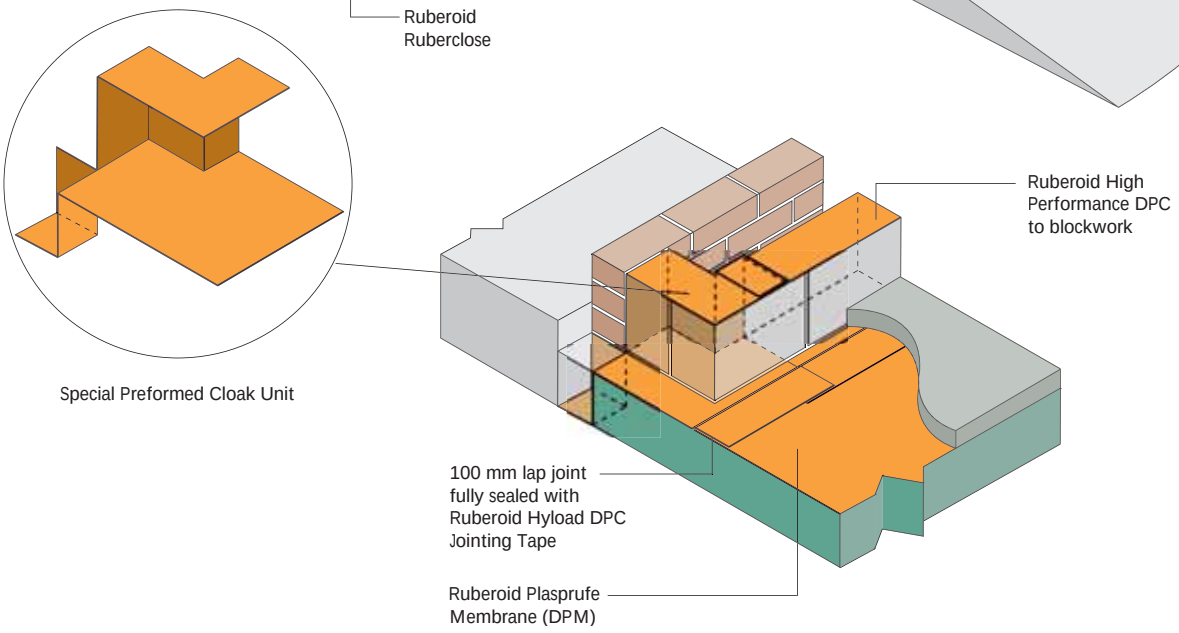
Typical details (continued)

Ramped access

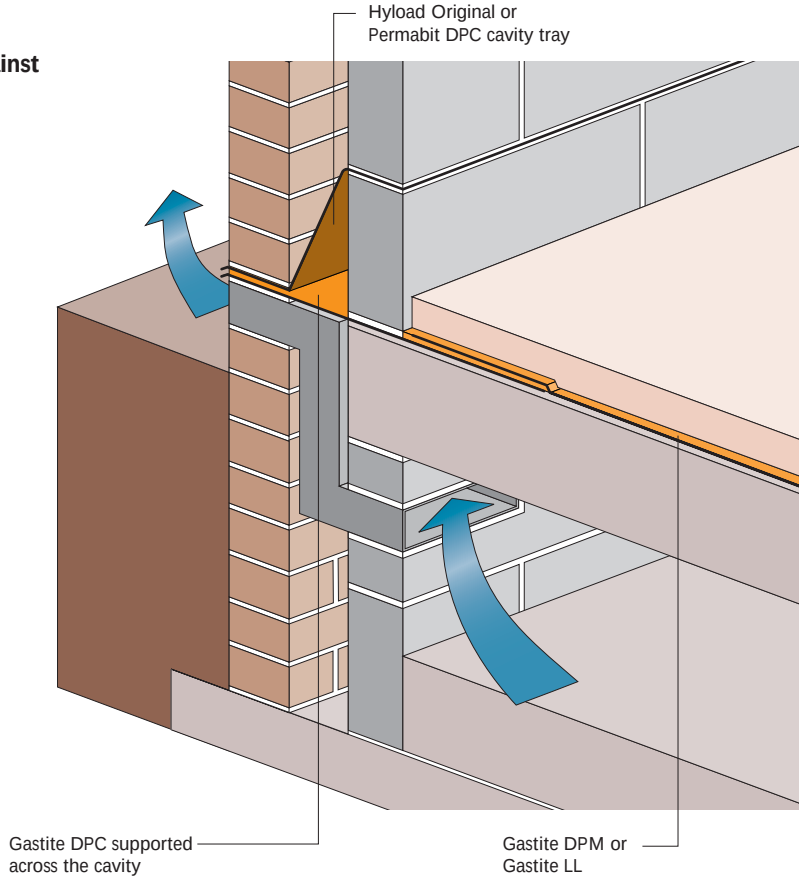
BS 8300: 2001, clause 5.8 states that wherever possible the approach to a building is level. If a change of level is unavoidable, it will be necessary to provide a sloped surface.



Internal view



Protection against ground gases



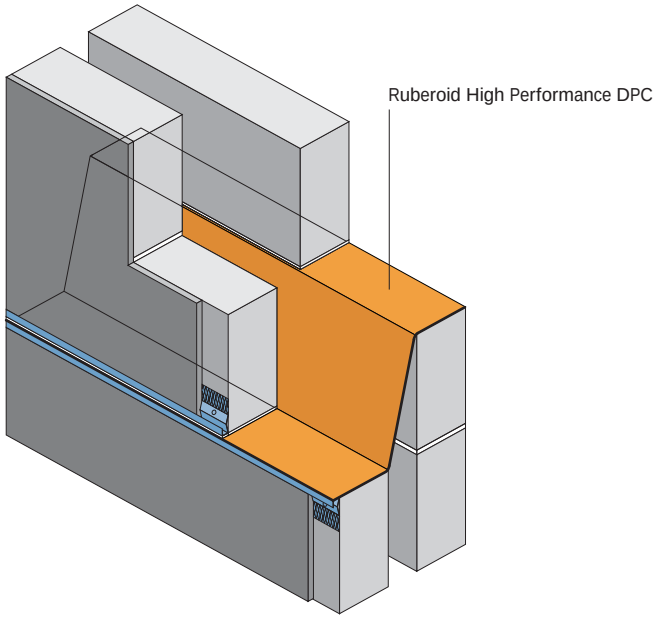
DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar.**

All joints between lengths of DPC, and DPC and Preformed Cloak Units must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

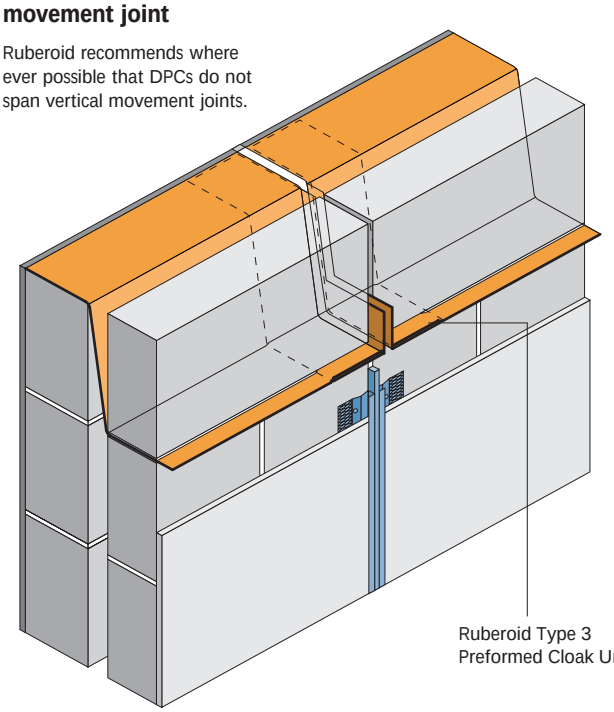
Insulation omitted for clarity.

Typical horizontal movement joint



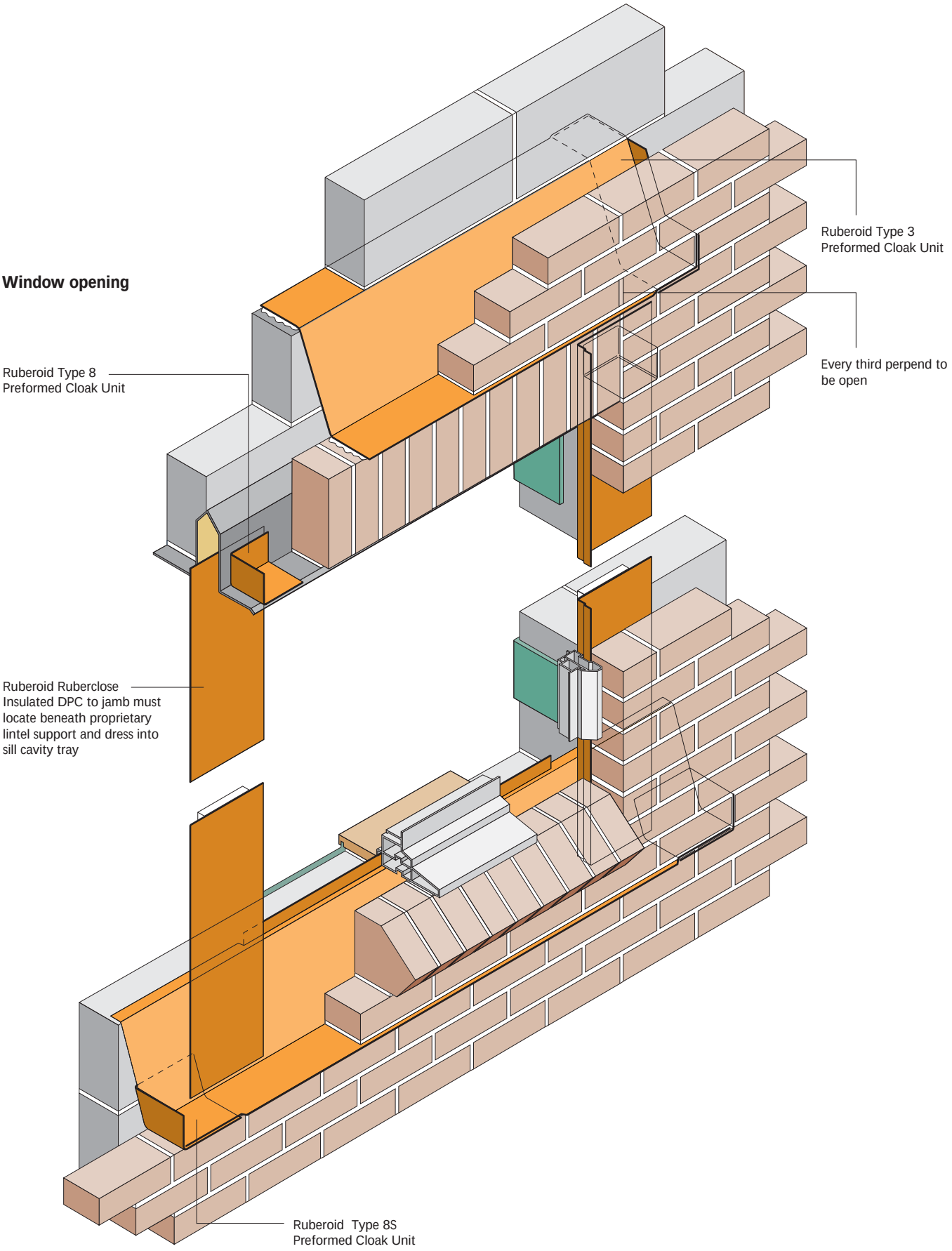
Typical vertical movement joint

Ruberoid recommends where ever possible that DPCs do not span vertical movement joints.

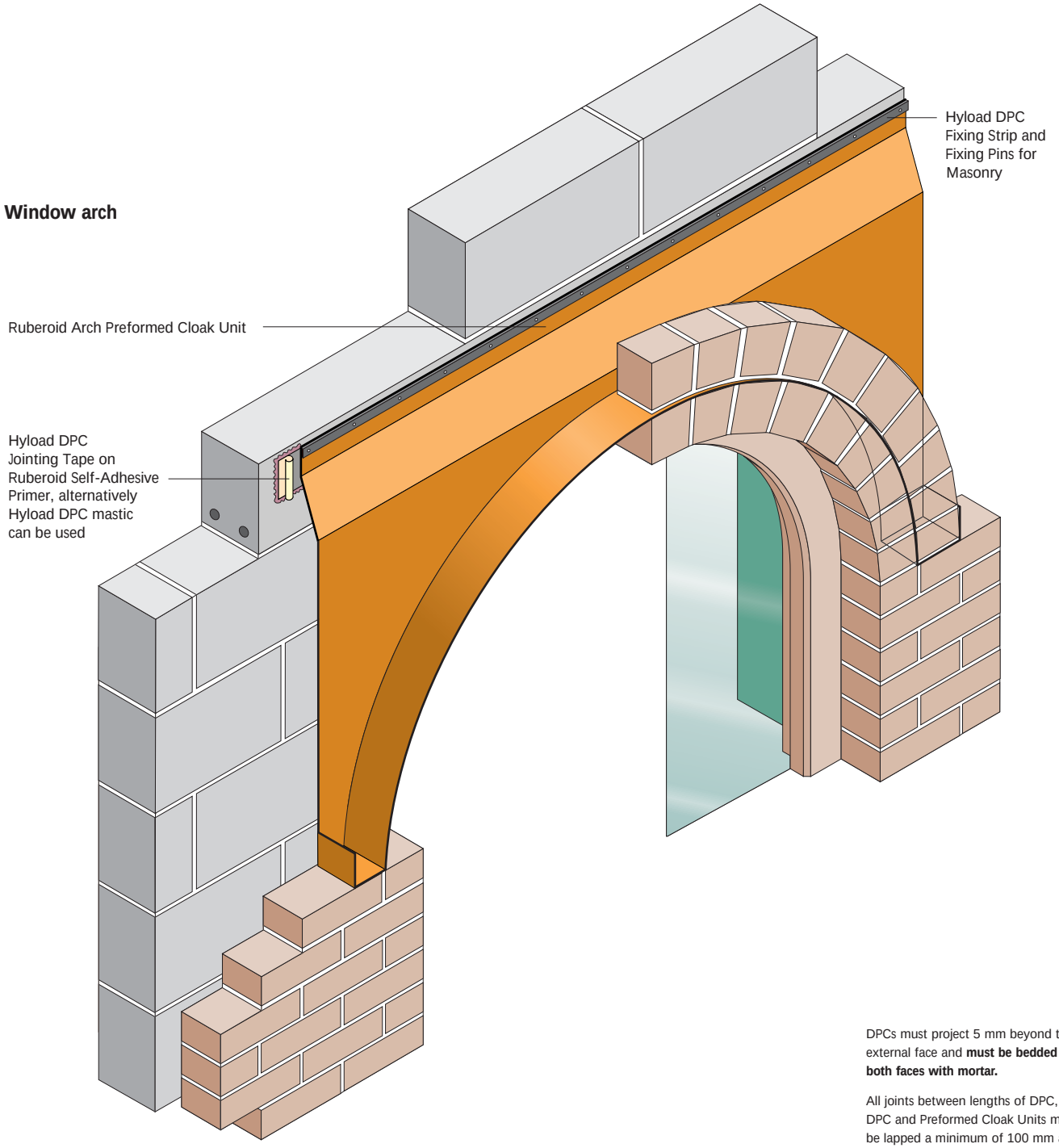


Typical details (continued)

Window opening



Window arch



DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar.**

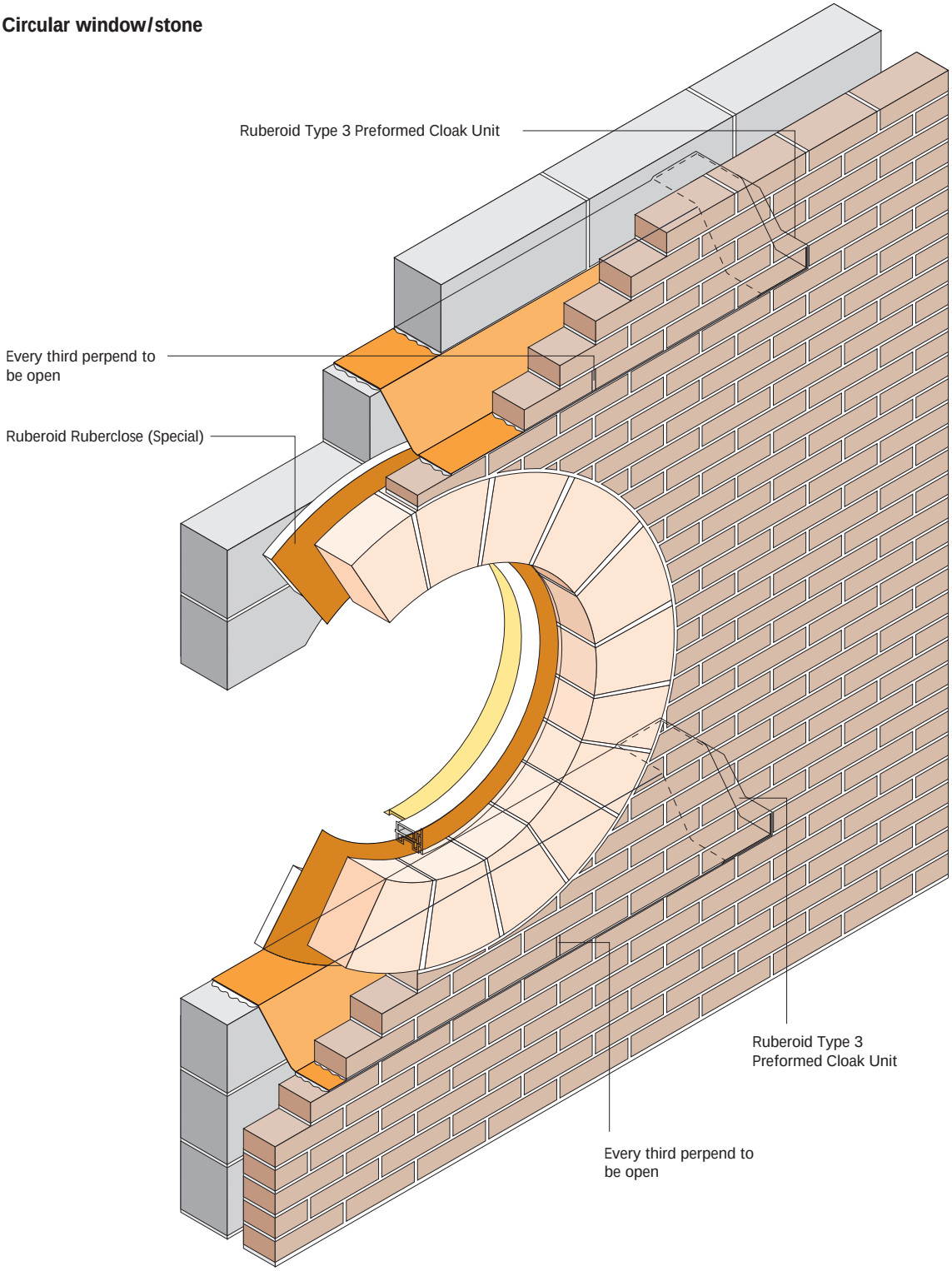
All joints between lengths of DPC, and DPC and Preformed Cloak Units must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

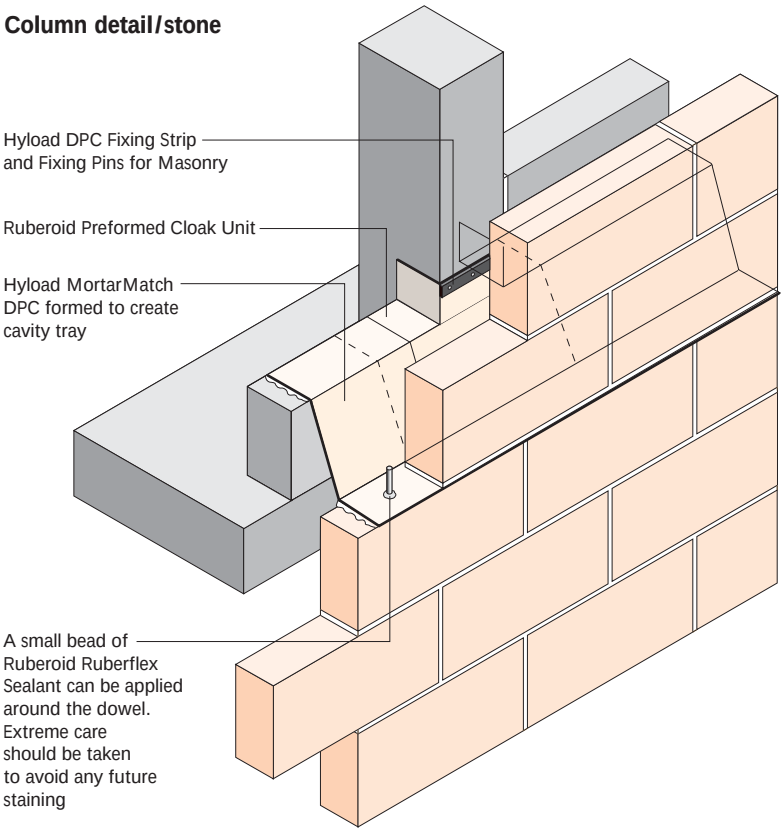
Insulation omitted for clarity.

Typical details (continued)

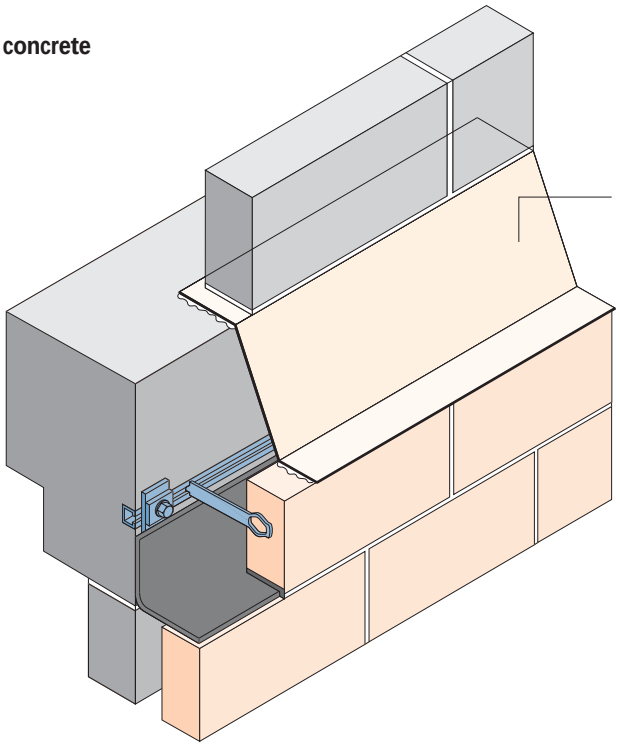
Circular window/stone



Column detail/stone



Intermediate concrete floor/stone



DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar.**

All joints between lengths of DPC, and DPC and Preformed Cloak Units must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

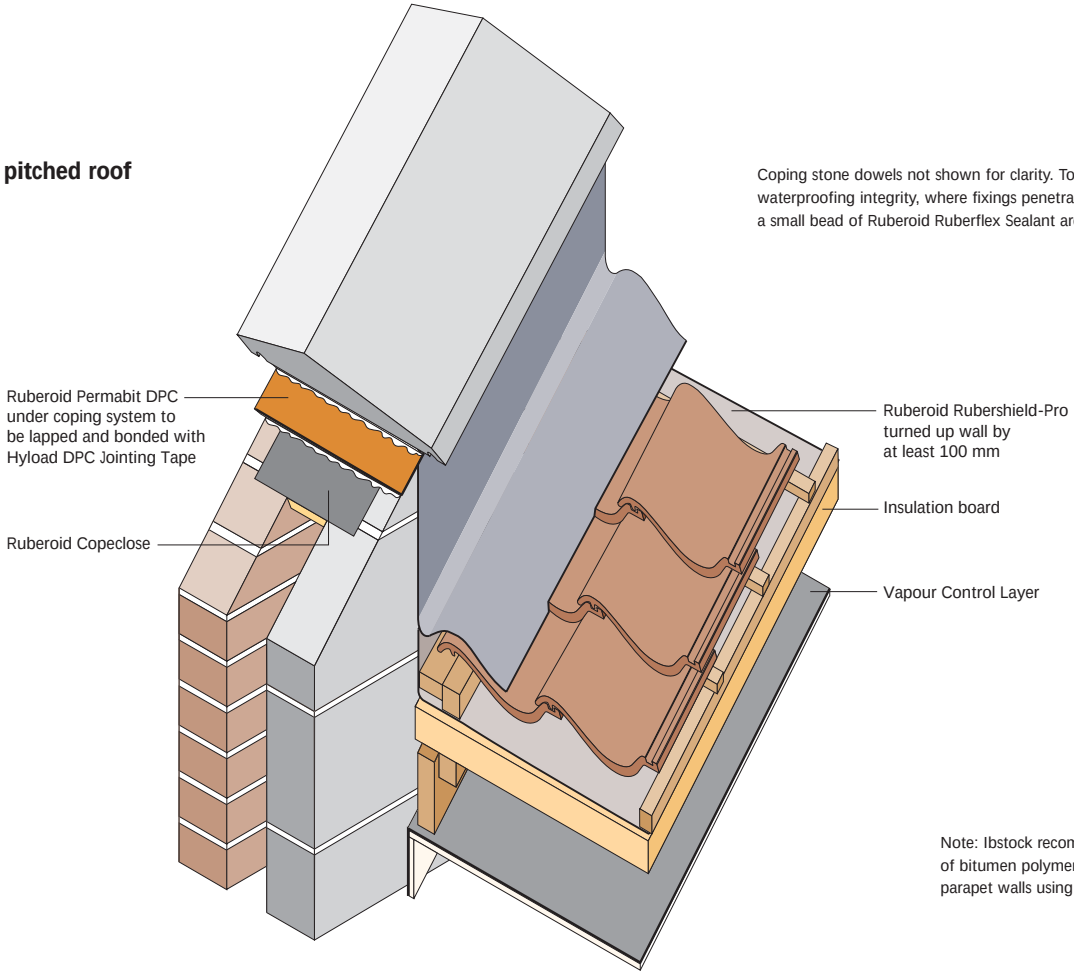
The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

Insulation omitted for clarity.

Typical details (continued)

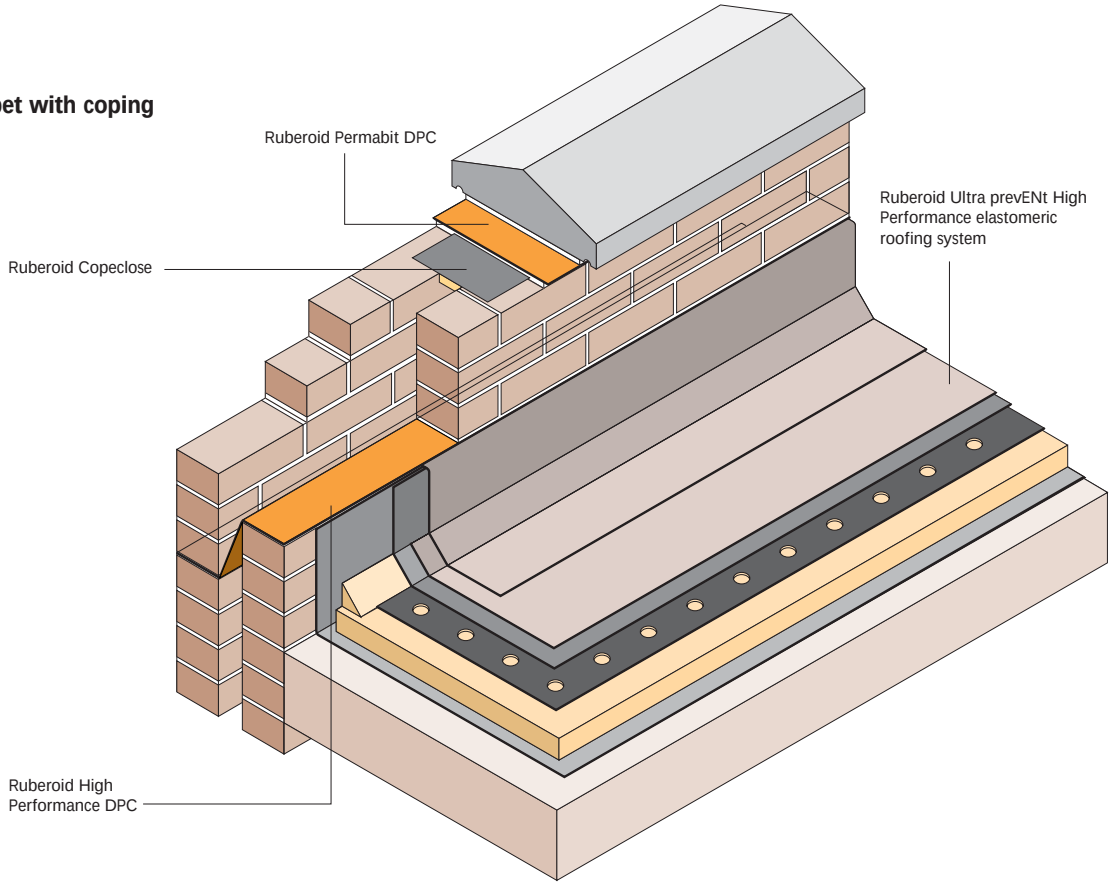
Parapet - gable pitched roof

Coping stone dowels not shown for clarity. To ensure waterproofing integrity, where fixings penetrate DPC, apply a small bead of Ruberoid Ruberflex Sealant around dowels.

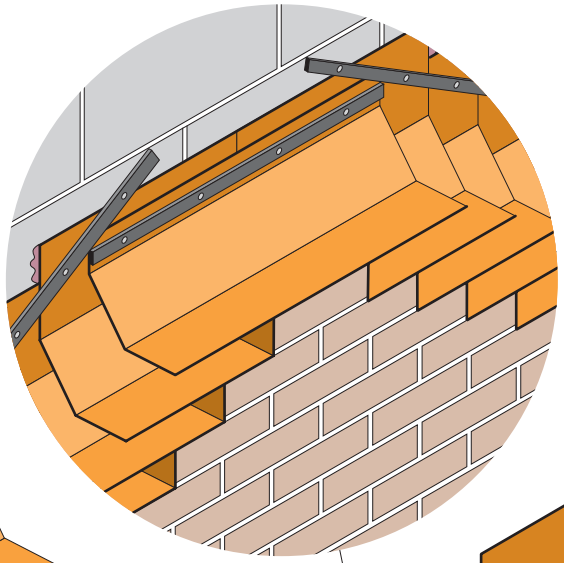


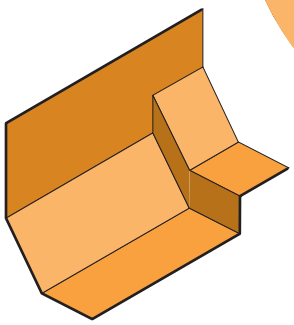
Note: Ibstock recommends the use of bitumen polymer DPCs in parapet walls using their copings.

Parapet with coping

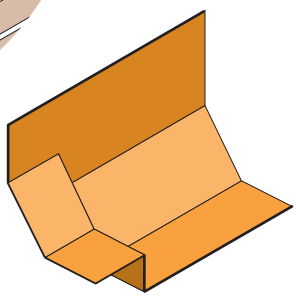


Pitched roof abutment





Preformed Roof Abutment Cloak
(Left hand side)



Preformed Roof Abutment Cloak
(Right hand side)

Soakers to suit roof covering and lead flashing to be installed in the traditional manner.

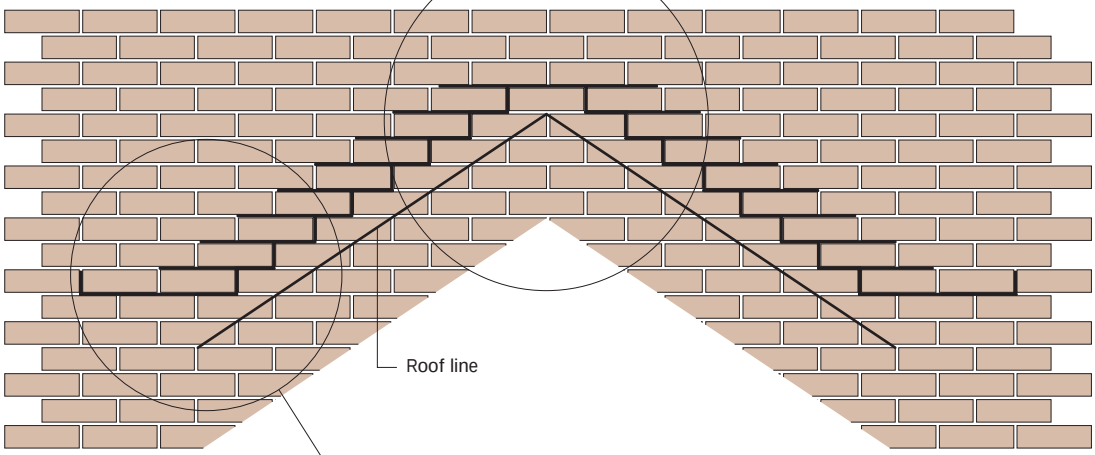
Weep holes at 1 metre maximum centres or at least one per cavity tray.

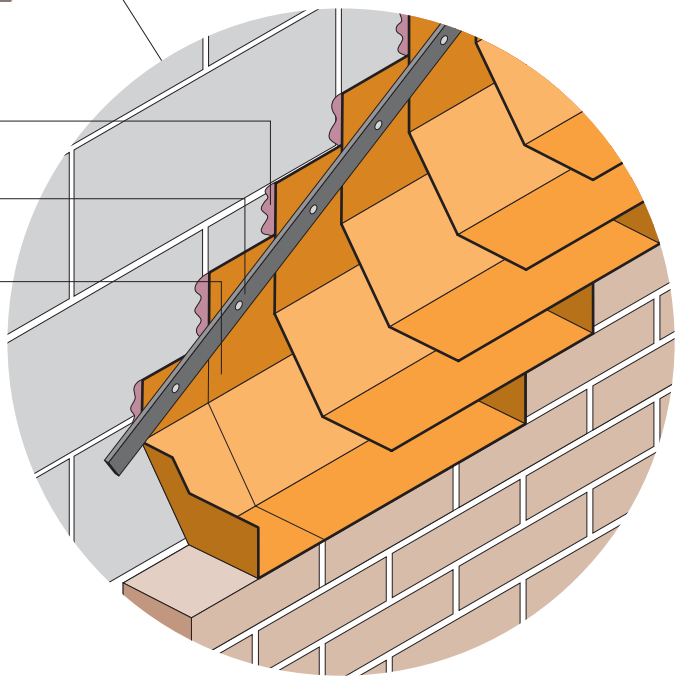
DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar**.

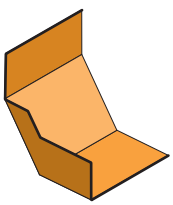
All joints must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

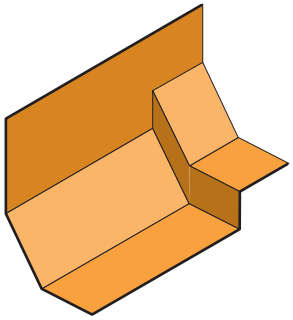
Insulation omitted for clarity.







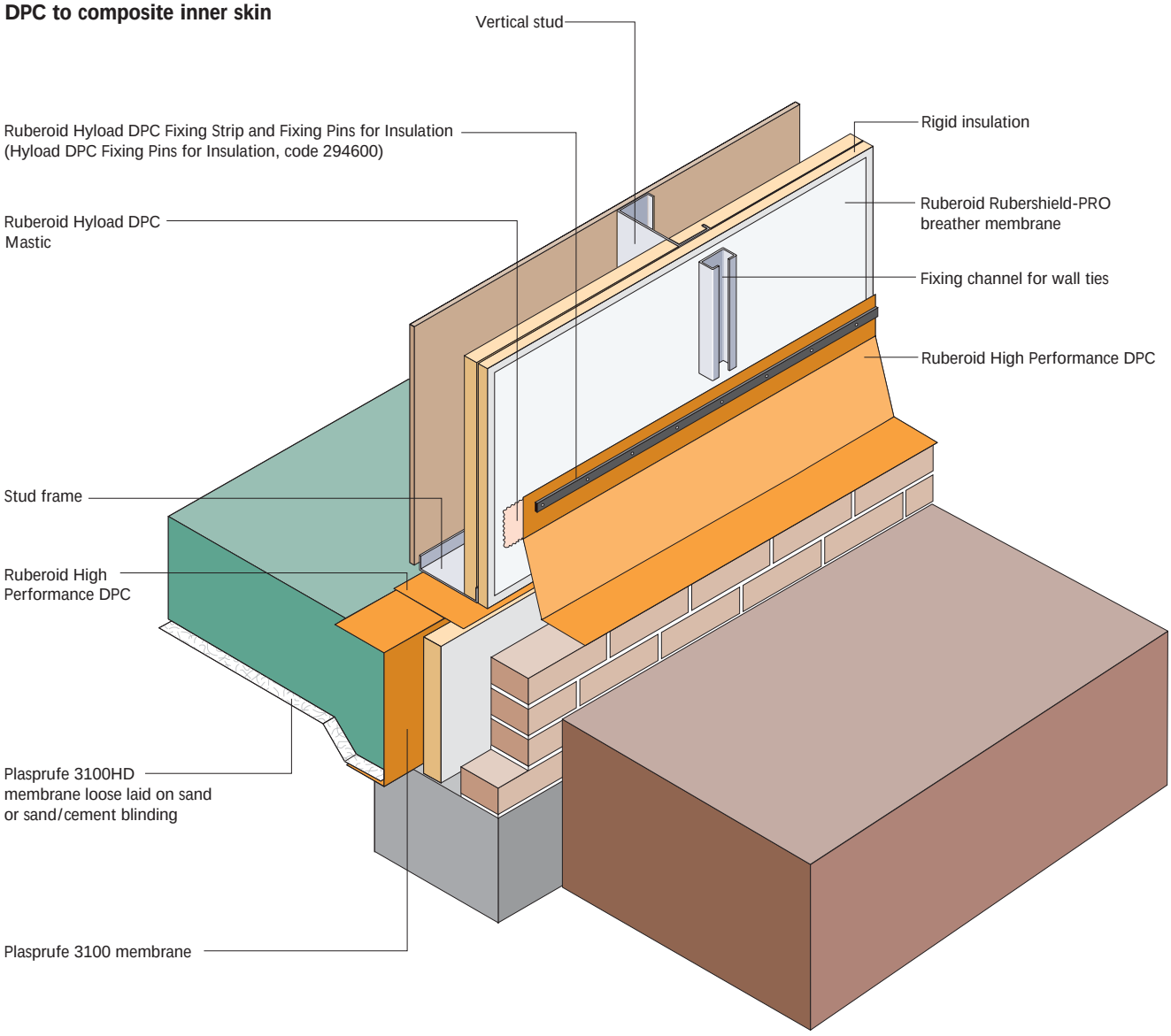
Preformed Stop End Cloak
(Left hand side)



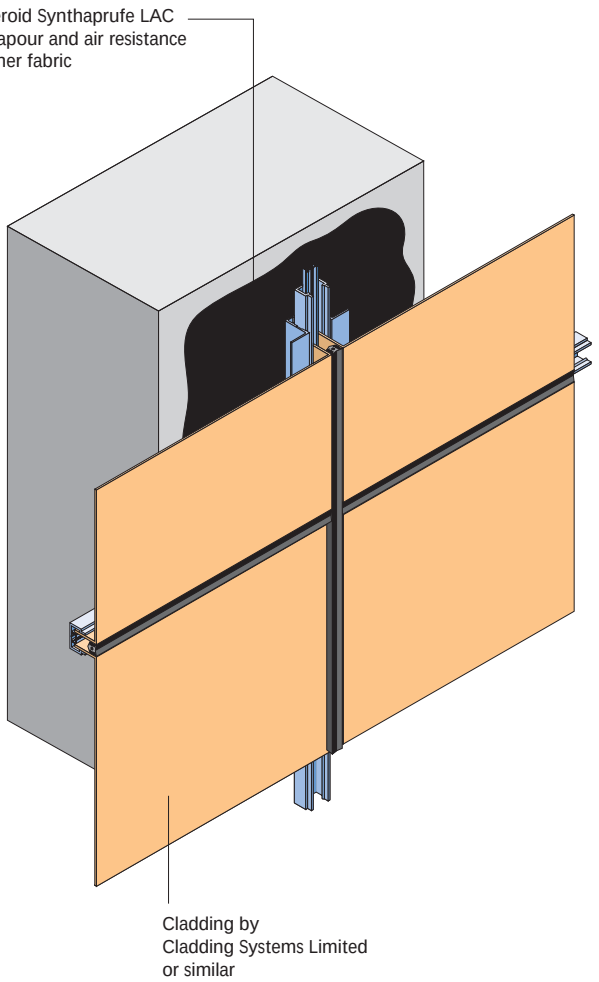
Preformed Roof Abutment Cloak
(Left hand side)

Typical details (continued)

DPC to composite inner skin

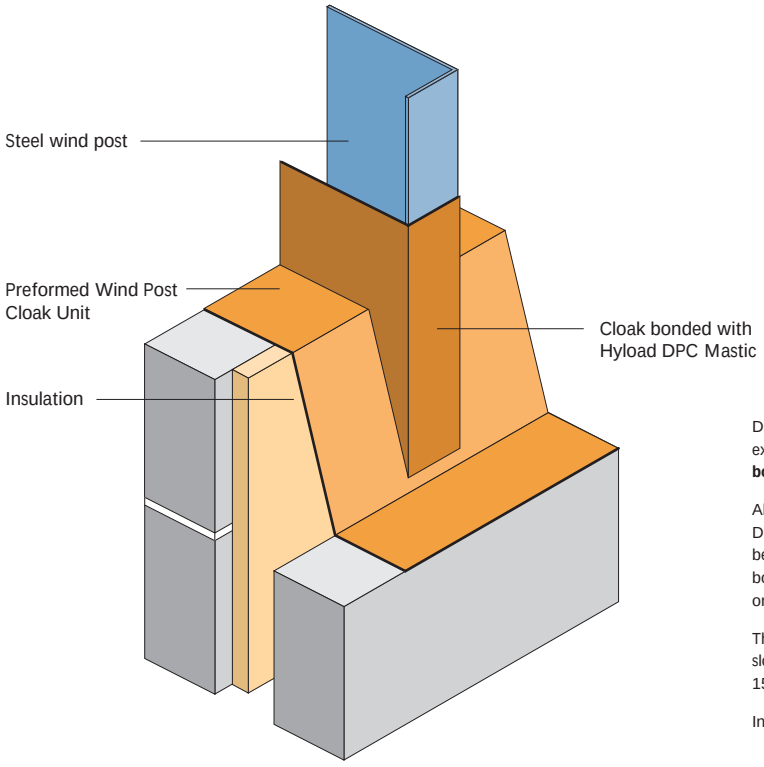


Protection to structurally clad unit



Note: Cladding Systems Limited recommends the use of Synthraprufe LAC in conjunction with their cladding products.

Wind post



DPCs must project 5 mm beyond the external face and **must be bedded on both faces with mortar.**

All joints between lengths of DPC, and DPC and Preformed Cloak Units must be lapped a minimum of 100 mm and bonded with Hyload DPC Lap Adhesive or Hyload DPC Jointing Tape.

The cavity tray should step down or slope across the cavity not less than 150 mm towards the external leaf.

Insulation omitted for clarity.

Sitework

Delivery to site

Hyload high performance DPCs are delivered to site in rolls, secured with a paper wrapper. On delivery it is important to check compliance of materials with specification requirements.

Handling and storage

Rolls must be stored level, on end and under cover. Care must be taken to ensure that DPCs are not contaminated by hydrocarbon or other organic solvents.

Ruberoid's instructions regarding handling and storage must at all times be followed.

Standard Preformed Cloak Units are supplied in cardboard cartons.

Installation of DPCs

Installation must follow normal good practice for the detailing of damp proof courses, as set out in the relevant clauses of BS 5628: Part 3: 2001, BS 8000: Part 3: 2001 and BS 8215: 1991, and must be in accordance with Ruberoid's instructions.

The following installation practices are essential:

1. DPCs must extend through the full thickness of the wall or wall leaf, including pointing, applied rendering or other facing material and project beyond the external face by 5 mm.

2. DPCs must be laid between even beds of wet mortar, and perforations in adjacent courses of brickwork must be completely filled with mortar.

3. All lap joints in the DPC must have a fully supported 100 mm overlap and be completely sealed.

4. Ruberoid Preformed Cloak Units must be used at stop ends, and all corners and changes in level of cavity trays.

Product data sheets may provide additional installation information and should be consulted. Data sheets are available from the Ruberoid website or by phoning the technical hotline.

Lap joints

All surfaces to be jointed should be clean and dry. Release paper protecting the self adhesive strips should not be removed until the joint is ready to be formed. When the jointing system is used during low temperatures, gentle warming of the self adhesive may be necessary.

When forming a lap joint using the support unit and self adhesive tape, the manufacturer's instructions should be followed.

The joint support board should be fitted in such a way as to span the cavity, the ends of the support unit being bent so far as to bear upon the inner and outer leaves of the wall for a distance of between 25 mm and 40 mm. If necessary the support unit may be temporarily fixed in place.

The first layer of cavity tray or preformed cloak unit to be joined should be offered up to the joint support board. The release film should be removed from the adhesive strip and, by application of uniform pressure the cavity tray or preformed cloak unit bonded to it.

A strip of self adhesive tape should then be applied to the upper surface of the cavity tray or preformed cloak unit over the area supported by the joint support board.

The upper silicone release paper should be removed and the joint formed ensuring that a full seal is achieved.

Surface/face fixing

Where the cavity tray or Preformed Cloak Unit is required to be surface fixed to a brick, block, concrete or composite inner skin, the vertical portion should be held in place by either Hyload DPC Jointing Tape (the substrate having been previously primed with Ruberoid Self Adhesive Primer, or alternatively Hyload DPC Mastic, which does not require a primer). Hyload DPC Fixing Strip must then be installed using appropriate Hyload DPC Fixing Pins, to provide a permanent mechanical fixing.

Fixing Pins for masonry

Drill a clearance hole 6 mm diameter by 45 mm deep into the substrate.

Insert the Fixing Pin into the hole.

Tap the pin firmly home using a flat faced hammer.

The barbed portion of the Fixing Pin will expand giving a secure grip and high pull-out resistance.

Fixing Pins for insulation

Using a tool such as a bradawl, form a pilot hole through the DPC prior to inserting the push-fit Fixing Pin.

The fir-tree portion of the Fixing Pin will securely locate into the insulation of composite inner skins.

Cleaning of cavities

As with all other damp proof course materials, damage can occur during cleaning of mortar droppings from the cavity unless care is taken. The following recommendations should prevent damage occurring:

1. Cavity battens should be used to prevent excessive mortar droppings reaching the damp proof course.

2. Mortar droppings should be removed before they have had time to harden.

3. Implements such as steel rods should never be used for cleaning.

4. Damp proof courses should be examined for damage as work proceeds.

Laying Preformed Cloak Units

Ruberoid Preformed Cloak Units should be laid as follows. A Type 7 Preformed Cloak Unit is used as an example.

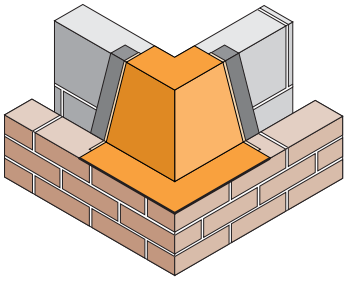
1. An even bed of mortar should be applied to both leaves of the wall and the Preformed Unit placed firmly into position.

2. Lay the first run of cavity tray and bond firmly to the Preformed Cloak Unit allowing a minimum 100 mm overlap.

A Hyload DPC Joint Support should be used at the junction.

3. Lay the second run of cavity tray as above.

After installation, the next brick/block course should be laid immediately on a bed of wet mortar and the joint finished to normal thickness.



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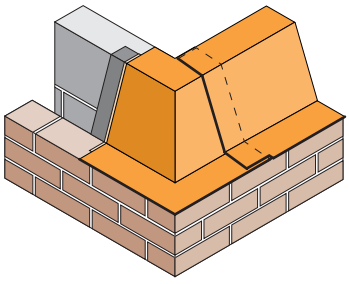

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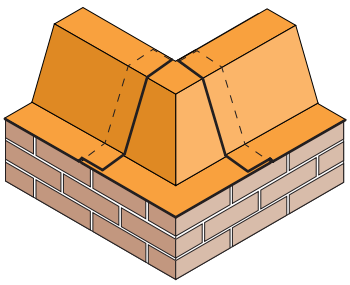

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Ruberoid Insulated DPCs

Handling

Ruberoid Insulated DPCs require no special handling. However, excessive physical action can cause delamination of the insulation and should be avoided.

Installation

Installation must follow good practice for the detailing of damp proof courses (refer to BS 5628: Part 3: 2001, BS 8215: 1991 and BS 8000: Parts 3 and 4, and in accordance with the manufacturer's instructions.

In particular, the following practices are essential:

(i) The width of insulation must sufficiently cover any masonry cavity closer, thus avoiding any risk of condensation through cold bridging.

(ii) The side projections of the DPC must project beyond the masonry closer into the cavity, and must not be bridged by mortar. The DPC projection into the opening must locate within the frame.

(iii) The vertical insulated DPC must be dressed into the cill cavity tray and be located behind the head cavity tray or sealed to the soffit of the lintel.

(iv) Where it is necessary to joint the Insulated DPC vertically, the upper piece must be installed with the 100 mm extension at the bottom with this lapping over and to the outside of the lower piece and sealed.

(v) Where it is necessary to give temporary support to the Ruberoid Insulated DPCs whilst building brickwork, this should be done by turning the material over onto the top of the blockwork and securing by weighting down with masonry. On no account should the DPCs be secured by nailing.

Note: Ruberclose FR is self-supporting due to the rigid nature of the product.

Weepholes

BS 5628: Part 3: 2001, Use of masonry, states that weepholes should be left in the outer leaf of the brickwork immediately above a cavity tray. These should be formed by leaving open perpend joints at not greater than 1 m intervals in the course of brickwork immediately above the cavity tray, with not less than two weepholes over each window/door opening.

Water leaving the weephole will contain cementitious materials, which will cause staining on the masonry face. In addition an open perpend can allow the ingress of wind driven rain, snow and insects.
To overcome these problems a perpend filter system should be used which will eliminate staining by a filtering action, while allowing the water to escape. Such systems are incorporated into the brickwork and reduce the visual impact of weepholes.

Technical support

Technical Services

For technical advice relating to all aspects of damp proofing or tanking, contact Technical Services on **0800 587 7391**.

Technical/on-site support

Ruberoid's national network of Project Managers will be pleased to help specifiers and end users with practical advice on installation procedures, calculations and any other information they may require. The service is free to specifiers and end users who can benefit from Ruberoid's unequalled experience in this highly technical field.

Structural Waterproofing Design Service

Ruberoid recognises that specifiers do not always have the time and in-depth information they need to become DPC and tanking specialists. For this reason the Ruberoid Structural Waterproofing Design Service is organised to provide fast, expert help on waterproofing detailing to help specifiers progress work quickly and efficiently. For assistance contact Technical Services.

Again, the service is free to specifiers and end users who can benefit from Ruberoid's unsurpassed experience in this highly technical field.

Ruberoid staff have specialist knowledge and experience of designing and producing 3D/isometric drawings of the complex shapes required to provide effective damp-proofing. Using state of the art technology the desired DPC shapes are factory welded to create accurately formed and totally waterproof units.

Training

Product training and installation sessions are offered to both UK and overseas customers at the purpose built Ruberoid Training Centre at Appley Bridge.

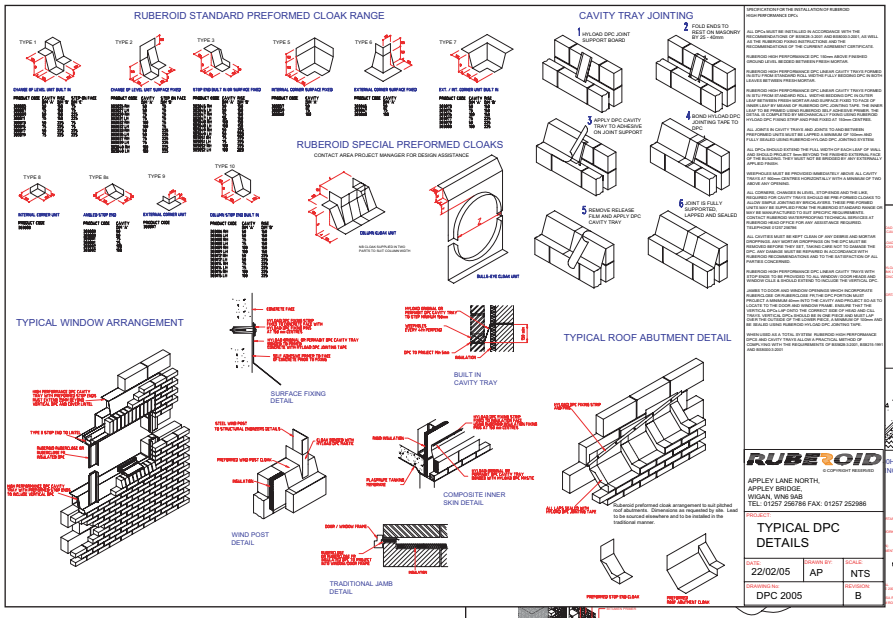
Specification services

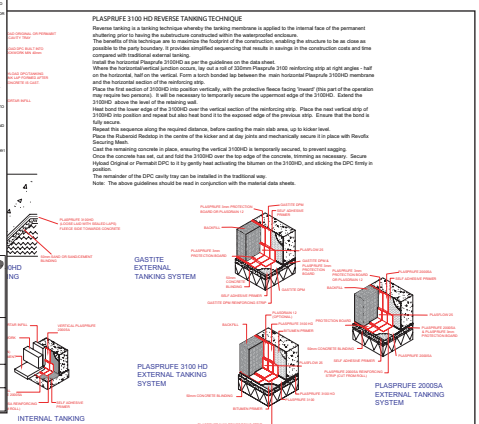
Ruberoid subscribes to NBS Plus, which is an electronic library of technical details and guidance notes.

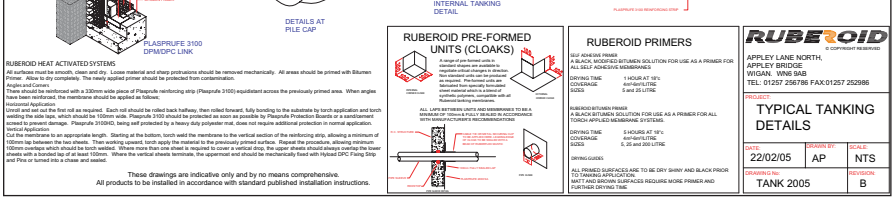
NBS Plus is a library of manufacturers' product information, linked to specific clauses within the NBS specification software products. It enables Ruberoid to make its product information available to specifiers at the point they need it most - when completing a specification. Links within the specification software allows the user to specify products quickly and accurately by simply dragging and dropping the product information directly into a specification.

Ruberoid also offers RIBA-approved CPD seminars for above and below ground waterproofing.

To find out more about NBS Plus specifications and these seminars please contact us on **Tel: 0800 587 7391.**







Supply & references

Availability

Ruberoid High Performance DPCs are available through a network of distributors/merchants nationwide.

Orders should state the types of quantities required, delivery date and site address. Stock items are normally delivered within 3 working days. Delivery of special units is normally within 7-10 working days from confirmation of order.

Details of the Ruberoid Customer Services offices is shown overleaf.

Standard Preformed Cloaks Units

Normally available from stock. Orders and enquiries should be addressed to your nearest sales office. Orders should state the codes and quantities of each type of unit, delivery address and date required.

Special (project specific) Preformed Cloak Units

Enquiries should be addressed to the Structural Waterproofing Design Service at Appley Bridge, enclosing relevant plan, elevation and sectional drawings. This information should be provided as early as possible to ensure that delivery can be met.

Health and safety

Separate health and safety data sheets are available on request.

Other products

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

Prices, Conditions of Sale

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

Standards referred to in this publication

BS 743: 1970, Specification for materials for damp proof courses

BS 5628, Code of practice for use of masonry

Part 1: 1992, Structural use of unreinforced masonry

Part 3: 2001 Materials and components, design and workmanship

BS 6398: 1983, Specification for bitumen damp proof courses for masonry

BS 8000, Workmanship on building sites

Part 3: 2001, Code of Practice for masonry

Part 4: 1989, Code of Practice for waterproofing

BS 8102: 1990, Code of practice for protection of structures against water from the ground

BS 8215: 1991, Code of Practice for design and installation of damp proof courses in masonry construction

BS 8300: 2001, Code of Practice for design of buildings and their approaches to meet the needs of disabled people

CP 102: 1973, Code of Practice for protection of buildings against water from the ground (damp-proofing of floors)

BRE Digest 77, Damp proof courses

BRE Digest 380, Damp proof courses

HYLOAD
Structural Waterproofing

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Front cover image is the Tulip Inn, Trafford Park completed by Marlborough Brickwork using Hyload Structural Waterproofing throughout.

IKO
Setting the standard in roofing and waterproofing

RUBEROID