

System 400

NEWTON 408 DECKDRAIN

Drainage Membrane for Decks and Flat Roofs

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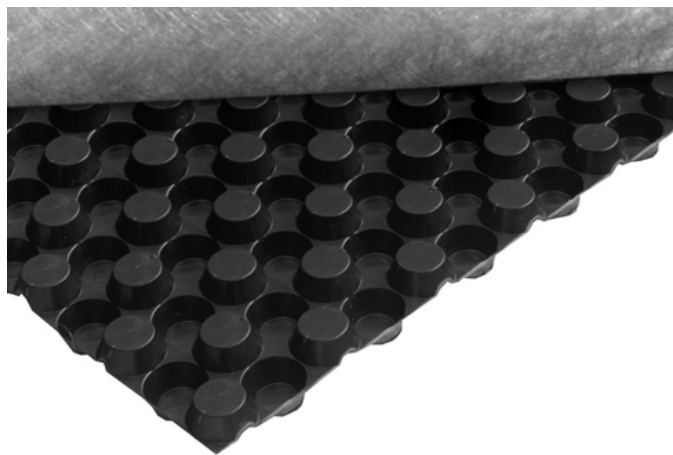
PRODUCT CODE - M33

INTRODUCTION

Newton 408 DeckDrain is a double cusped, deck and flat roof drainage membrane, that incorporates a polypropylene geotextile filter layer, bonded to a water impermeable HDPE (High Density Polyethylene) core. The double cusped design provides two layers of drainage; allowing for primary drainage through the geotextile filter, as well as secondary drainage between the underside of 408 DeckDrain and the primary waterproofing layer. The lower drainage layer eliminates the risk of trapped water, a problem associated with conventional single cusped deck drainage membranes.

KEY BENEFITS

- Provides a clear and clean drainage path for surface water to roof drainage outlets
- Double cusped (drainage studs to the upper and lower surfaces) design provides a clear and clean drainage path above the deck waterproofing membrane, to ensure that water cannot be trapped above the deck membrane, as can be the case with single cusped deck drainage membranes
- Suspended soil particles (fines) are filtered out by the geotextile layer
- Quick and easy to install



SUITABLE SUBSTRATE

Directly above primary deck or roof waterproofing membrane.

SPECIFICATION

Newton Waterproofing Systems work in partnership with RIBA NBS who publish our products on [NBS Source](#). The platform integrates seamlessly into project workflows, providing all product data from Newton's NBS BIM Objects, NBS Plus Clauses and RIBA Product Selector into one single source of product information.

NBS Source also hosts a large selection of Newton [case studies](#), as well as product [literature and certifications](#).

A wide range of drawings are available [on our website](#).

TYPICAL APPLICATIONS

As the buried drainage layer above a deck, balcony or flat roof waterproofing membrane such as [Newton 103-S](#) or [Newton 107E](#), particularly where:

- Block paving or flooring slabs are bedded on sand as the surface finish
- Soil filled planters are included to the deck or flat roof
- An Intensive Green Roof is planted to the deck or flat roof

Also suitable for use as a vertical drainage layer when used as part of a professionally designed and installed externally applied basement waterproofing system.

DECK & FLAT ROOF DRAINAGE DESIGN

Decks, flat roofs (and balconies functioning as roofs) should be engineer designed to provide adequate rainwater disposal to suitable drainage outlets. The design fall should be 1:40 to ensure a finished fall of at least 1:80.

With concrete construction it is preferable that the fall is created at the concrete placement. If this is not possible or the fall is to be created retrospectively, the fall should be formed with screed.

With timber roofs and decks, the timber frame should be constructed to the correct design fall.

Drainage falls to warm-decked roofs using tapered insulation should be designed by the insulation manufacturer, with falls of not less than 1:60. The insulated boards should be 100% bonded to the vapour control layer, with the primary waterproofing above a fully bonded support membrane. Cross-falls should be achieved using mitred joints.

Allowance for deflection should be made in the structural design where falls are achieved using screeds, particularly on large roofs.

The size and number of outlets should be designed to meet the expected rainfall intensity in accordance with BS EN 12056- 3. For flat roofs and decks bounded by parapets, at least two outlets (or one outlet plus an overflow) should be provided. Outlets should have a recessed mouth to allow the free flow of water.

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TECHNICAL DATA

Features – Studded core	Result	Units	
Material	HDPE		
Colour	Black		
Density	604	g/m²	
Stud depth – Double cuspated	7.1	mm	
Height	7.3	mm	
Vicat softening temperature	148	°C	
Features – Geotextile	Result	Units	
Material	Polypropylene		
Colour	White		
Density/Specific gravity	1.36		
Thickness	1.1	mm	
Features – 408 DeckDrain	Result	Units	
Width	2.0	m	
Length	20.0	m	
Area	40	m²	
Thickness	8.4	mm	
Density	710	g/m²	
Packaged weight	30.0	kg	
Service temperature	-40 to +80	°C	
Installed Performance	Result	Units	Test Method
Compressive strength – Temporary loading	280	kPa	EN ISO 25619-2
Compressive strength – Permanent loading	10	kPa	EN ISO 25619-1
Water vapour diffusion resistance – Sd value	>604	m	BS EN 1931
Water vapour diffusion resistance – μ value	>1208000	μ	Calculated from SD value
Water vapour diffusion resistance	>3020	MNs/g	Calculated from SD value
Tensile strength (Machine direction)	13.6	kN/m²	EN ISO 10319
Tensile strength (Cross direction)	14.7	kN/m²	EN ISO 10319
Chemical resistance – Excellent	100	%	EN14030
Oxidation resistance – Excellent	100	%	EN ISO 13438

408 DECKDRAIN DRAINAGE PERFORMANCE

When used conventionally below block paving or slabs bedded on sand, Newton 408 DeckDrain requires at least one drainage outlet per 10 linear metres of membrane.

The maximum flow of water reaching the outlets over a 1 metre width of 408 DeckDrain during rainfall of 50mm per hour with a fall or slope of 1:80 is 0.07 litres per metre width per second. The total volume of water to be drained is dependent on the width of the membrane and the drainage calculation should take this into account.

Where insulation is placed above Newton 408 DeckDrain (inverted warm roof) this will result in more water running off the finished surface (and through the sand blinding) and less water entering the upper drainage void.

Because the membrane is impermeable to water ingress, rainfall above 50mm per hour will increase the percentage of rainfall being discharged above the 408 DeckDrain and also above the finished surface. It is possible that some water will enter the secondary lower drainage layer of the 408 DeckDrain (directly above the primary waterproofing layer), thus increasing water flows. This drainage layer is primarily designed to be available to prevent standing water to the surface of the primary waterproofing layer but will increase water flow if water enters this space.

For further information, please call our Technical Department on the number at the foot of the page.

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TRAINING & COMPETENCY OF USER

Newton 408 DeckDrain is always to be used in conjunction with a primary waterproofing membrane such as Newton 114 AcriFlex as part of a designed waterproofing solution for decks, flat roofs, terraces and balconies and should therefore be installed by a competent person with responsibility for the overall design and installation of the waterproofing system.

TOOLS REQUIRED

- Tape measure
- Shears or utility knife

CONSTRUCTION & MOVEMENT JOINTS

Newton 408 DeckDrain should continue over construction and movement joints and acts as a de-coupling membrane preventing movement from the substrate transferring through to the surface finish.

INSTALLATION

The membrane is rolled out in the direction of the fall with the geotextile surface facing upwards. Cut lengths with a utility knife or shears to suit the dimensions of the surface area.

Subsequent lengths of membrane are placed adjacent to the previously rolled out lengths to form simple butt joints. It is not necessary to overlap the dimpled cores.

If preferred, the dimpled core can be overlapped to the previously laid sheet to form a stud into stud joint.

This joint can be taped with Newton Waterseal Tape if required. Please note: To form a stud into stud joint, some of the geotextile will have to be removed from the edge of the previously laid sheets.

Take the 408 DeckDrain into the double entry drainage outlets. There is no need to seal to outlets or protrusions through the membrane.

Lap the membrane down vertical surfaces to suit either high level drainage or to join to [Newton 410 Geodrain](#), if the drainage is to continue to below the footing of the foundation wall.

There is no need to lap 408 DeckDrain up vertical interfaces.

COLOUR

Double cusped core is black. Geotextile layer is White.

PACKAGING

Newton 408 DeckDrain is supplied in wrapped and labelled 20m long x 2.0m rolls.

STORAGE

Newton 408 DeckDrain should be stored away from direct sunlight. Rolls should be stored in the upright position.

LIMITATIONS

- Should not be used as an Extensive Green Roof membrane. Please use [Newton 420 Reservoir](#)
- Not suitable for use directly above insulation unless the insulation is fully adhered to the substrate and then reinforced with fully bonded support membrane and then waterproofed with the primary waterproofing membrane
- Do not mechanically fix through drainage layers where waterproofing beneath can be punctured.
- Drainage must be fully buried so that sufficient load above membrane is imparted to prevent wind lift. Please consult specialist.

HEALTH & SAFETY

Newton 408 DeckDrain should only be used as directed within this Data Sheet. There is no legal requirement for a Safety Data Sheet (SDS) for this product. PPE should be worn at all times when working on building sites including eye protection when drilling or fixing. Safety procedures should be adhered to when working at height and working within excavations for your personal protection.

Any specification/advice provided is only valid if used with products supplied by John Newton and Company Ltd (trading as Newton Waterproofing Systems). Newton Waterproofing Systems reserve the right to update product literature at any time. Please always refer to our [website](#) for the latest versions.