

ATAL 109 LM TECHNICAL DATASHEET

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Structural Waterproofing Systems

INTRODUCTION

Atal 109-LM is a radon gas certified flexible, single-component, cold-applied, seamless rubber waterproofing membrane with a number of uses for the external waterproofing of basements, foundation walls, decks, and flat roofs. Atal 109-LM is also adept as a detailing membrane for the termination and jointing of other Atal waterproofing products, and with its very high adhesive properties it is the perfect primer for adhesion of butyl products to concrete and mortar.

Atal 109-LM is extremely puncture resistant with elasticity of 850% and a 95% recovery memory. The membrane becomes fully engaged into the substrate to prevent water tracking and is suitable for all below-ground and earth-retained structures, ranging from domestic basements to the largest civil engineering projects. Atal 109-LM can be used in isolation or in conjunction with other Atal waterproofing and damp proofing products to provide a coordinated and combined approach to the waterproofing of the whole structure that includes protection against water ingress to the deck, through construction joints, through and around service entries and to movement joints. Correctly protected, Atal 109-LM will provide, under normal service conditions, a durable waterproof covering for the life of the building to which it is installed.

INSTALLATION

Applied by brush, roller or airless spray machine, Atal 109-LM can be applied in cool and damp conditions and without a primer. Atal 109LM should be applied in two coatings at 3.2l/m².

KEY BENEFITS

- Fully-bonded seamless membrane
- Good elasticity with no shrinkage
- Medium/Low Viscosity variants to ensure the correct viscosity at differing temperatures
- Membrane is instantly rain tight when sprayed with Atal 109-LM Catalyst*
- Primer not required for most substrates**
- Complete vapour barrier
- Solvent-free, non-toxic and odourless
- Non-flammable - No VOCs
- High radon gas resistance

METHODS OF APPLICATION

- Applied by brush
- Applied by spray
- Applied by roller

TYPICAL APPLICATIONS

- Waterproofing and radon protection of retained structures,
- Standalone waterproofing and radon membrane for basement, foundation and earth-retained walls.
- Loading-capable, liquid DPM connecting wall waterproofing membrane to internal skin DPC

SUITABLE SUBSTRATES

Correctly prepared substrates of:

- Concrete of at least 20 kN
- Concrete block walls with flush pointing
- Insulated formwork walls (ICF)

SUITABLE SURFACES

Walls - Positive pressure

METHOD OF APPLICATION

- Brush
- Roller
- Airless Spray

SPECIALIST TOOLS REQUIRED

ATAL 109-LM does not require any specialist tools.

LIFE EXPECTANCY

When fully covered and protected, Atal 109-LM will provide, under normal conditions, a durable waterproof covering for the life of the building to which it is installed.

The membrane is not hard wearing and should be protected against wear and whilst backfilling.

APPLICATION RATE - RC WALLS

- To main wall sections, the membrane is applied in one or two coats at a rate of 1.6 litres/m², to a total thickness of 1.0 mm
- To joints and changes of direction apply in two to four coats at a total rate of 3.2 litres/m², to a total thickness of 2.0 mm in two phases:

1) Joints and changes of direction: 1.6 litres/m² = 1.0 mm

2) Main coat over: $1.6 \text{ litres/m}^2 = 1.0 \text{ mm}$

APPLICATION RATE - BLOCK & ICF WALLS

Two to four coats, to a total of 3.2 litres/m² over the whole surface area to be treated.

APPLICATION RATE - BURIED CONCRETE HORIZONTAL ELEMENTS

The membrane is applied to a total thickness of 2.0 mm, which requires an application rate of 3.2 litres/m².

APPLICATION RATE - RADON BARRIER

The membrane is applied to a total thickness of 2.0 mm, which requires an application rate of 3.2 litres/m².

CONSTRUCTION - CONCRETE WALLS

Concrete walls should be constructed to BS EN 1992-3, with the intention of providing a Type B form of waterproofing as described within BS 8102:2009. Joints should be designed out where possible and where unavoidable, they should be waterproofed with ATAL Bentostrip or by a proprietary shrinkage joint sealing system.

CONSTRUCTION - BLOCK & ICF WALLS

Walls should be designed by a Structural Engineer to withstand the load of the retained earth, as well as the expected water pressure defined by BS 8102:2009. The mortar joints should be pointed flush to the wall surface.

SURFACE PREPARATION - CONCRETE WALLS

- The surface must be clean and free from dust, laitance, release agents, oils, paints or other forms of contamination. Jet washing with a mild detergent (which later must be fully removed) may be required. If contaminants are still present, more aggressive preparation, such as grit blasting, will be required.
- Holes, cracks, voids and honeycombing should be filled and made good with Atal Asocrete M30.
- Pin holes and non-structural cracks that are between 0.5 mm and 2 mm wide and block walls should be filled with sand/cement using a bag rubbing technique.

SURFACE PREPARATION - BLOCK WALLS

- Mortar joints should be flush pointed.
- Large holes or indentations should be filled with Atal Asocrete m30
- Remove snots

- Blocks with an open surface should be smoothed with sand/cement using a bag rubbing technique

SURFACE PREPARATION – ICF

- Holes, voids and indentations should be filled with Atal Asocrete M30
- Where the insulation is badly damaged, remove back to good formwork and make good with Atal Asocrete m30

JOINTS & CHANGES OF DIRECTION

- Reinforce static joints with Atal Aso Joint Tape 2000S.
- Apply over shrinkage joints, using 25 mm wide masking tape to create delamination
- With movement joints, lap the 109-LM into the joint and then use our standard Atal Aso Tape movement joint detail. Please speak to our Technical Department if you require assistance on the correct specification to joints

PRIMING

Atal 109-LM does not require a primer unless applied to horizontal surfaces. Where concrete or screed are aged, very dry and have an open surface, the surface should be dampened prior to application. In some cases, a very thin first coat should be applied prior to the main application.

MIXING & STIRRING

Atal 109-LM is a single component product and so does not require mixing. The product should be stirred for at least 30 seconds with a wooden stirrer within its own container.

SALT CATALYST

If there is risk of rain damage to the applied membrane, the surface can be skinned to be immediately rain tight if sprayed with Atal 109-LM Catalyst. Conditions for catalyst use:

- Mix six parts water with one part catalyst (6:1) by weight
- Use only when rain is imminent or expected
- Do not use in warm or hot weather or when there is a dry wind; the product will skin quickly without the need of the catalyst
- Use only the recommended catalyst supplied by Atal Waterproofing Systems
- If further coats are required after catalyst use, the catalyst must be removed from the surface of the membrane before subsequent coats are applied. Use clean water and soft rags to remove the catalyst

CATALYST APPLICATION RATE

The catalyst comes in 1kg bags, and when mixed at a ratio of six parts water to 1 part catalyst, an application rate of 0.1 litres/m² can be expected by spray, or 0.15 litres/m² by brush. Be mindful of windy conditions when spraying, as more product may be required.

POT LIFE & FURTHER USE

Atal 109-LM is a single-component product with no chemical curing reaction, therefore the product is reusable if the lid is correctly fitted and the product is stored accordingly. In these conditions, the product should be used within three months. There is no practical pot life.

CLEANING

Thoroughly clean all tools and equipment with xylene immediately after use.

PROTECTION OF THE MEMBRANE

When used to waterproof retained walls, Atal 109- LM must be protected prior to back-fill, either with:

- Atal Protection board
- Fibran XPS 500-C insulation
- Atal Flo Board 4E

When used as a detailing membrane for termination to DPC, life expectancy will be greatly improved by protecting the membrane from direct UV exposure. The simplest, most cost-effective and aesthetically pleasing method is to broadcast sand or grit to a fresh tack-coat of 109-LM. Cast the sand or grit onto the tack coat until no more can be taken by the membrane. Leave to fully dry before lightly brushing off any excess. Sands and grits can be purchased in a wide variety of colours, sizes and grades. To horizontal surfaces, the membrane must be both protected and loaded:

- Protect with geotextile
- Drain with Atal Flo Board 4E.
- Load with earth or floor finish If screed/concrete is to be placed above the membrane, 100% broadcast a further tack-coat of Atal 109-LM with dry-kiln sand, even if a DPM is used.

LIMITATIONS

The product is seasonal, but careful planning and use of the Atal 109-LM Catalyst will allow for use during the winter months. Regardless of the time of year, do not apply prior to rain.

- Do not apply at temperatures lower than +5°C or higher than +35°C
- Always use the correct preparation and priming of the support substrate as directed above

- Not suitable as a permanent vehicle or pedestrian traffic surface. Where occasional pedestrian traffic is required, apply a further tack coat and 100% broadcast with small aggregate

- Do not apply too much product. Apply to a maximum thickness of 1 mm per coat

COLOUR

- In packaging - Brown
- Cured - Black

STORAGE

Store in dry conditions at temperatures between +5°C and +25°C with containers fully sealed. Do not expose to freezing conditions. Do not allow to freeze.

HEALTH & SAFETY

Use appropriate PPE for the environment the system is installed within. Use products only as stated within this Data Sheet and MSDS.

PACKAGING

20 Litres

PRODUCT LIFE EXPECTANCY

When fully covered and protected, Atal 109- LM will provide, under normal service conditions, a durable waterproof covering for the life of the building to which it is installed. Where the membrane is exposed to UV and weathering, the life expectancy is 10 years, and we suggest that after 5 years, the membrane is inspected every 2 years and new product applied over as required. Please note that this is not the guarantee. The waterproofing guarantee is provided by the specialist waterproofing contractor who installs the product.

<u>FEATURES</u>	<u>RESULT</u>	<u>UNITS</u>
FORM	Liquid	
COLOUR	Brown	
DENSITY / SPECIFIC GRAVITY	1.03	
PACKAGING - BUCKET	20	Litres
SHELF LIFE	12	Months
POT LIFE	N/A	
APPLICATION RATE IN 1 TO 2 COATS - RC WALLS	1.6	Litres/m ²
APPLICATION RATE IN 2 COATS - JOINTS IN CONCRETE WALLS - BAND OF 250MM	3.2	Litres/m ²
APPLICATION RATE IN 2 TO 4 COATS - BLOCK AND ICF WALLS	3.2	Litres/m ²
APPLICATION RATE IN 2 TO COATS - RADON BARRIER AND HORIZONTAL	3.2	Litres/m ²
APPLICATION METHOD		
APPLICATION TEMPERATURE	+5 to +40	°C
SERVICE TEMPERATURE	-15 to +40	°C
ODOUR	Slight resinous odour	
VOC	Does not contain solvents	
VISCOSITY	Low or medium	
PH	11 to 13	
<u>CURING***</u>	<u>5°C 10°C 15°C 20°C 25°C</u>	<u>Units</u>
READY FOR NEXT COAT****	24/0.1 12/0.1 2/0.1 0.4 0.2	Hours
TO NOT BE ADULTERATED BY RAIN****	24/0.1 12/0.1 1/0.1 0.5 0.5	Hours
READY FOR TEMPORARY FOOT TRAFFIC / PROTECTION BOARDS****	24/4 12/3 2/2 1 1	Hours
READY FOR FLOOD / HOSEPIPE TEST	48 24 4 3 2	Hours
FULLY CURED	48 24 8 5 3	Hours
<u>CURED PERFORMANCE</u>	<u>Result</u>	<u>Units</u>
COLOUR	Black	
MEMBRANE THICKNESS - RC WALLS	1	mm
MEMBRANE THICKNESS - RC JOINTS	2	mm
MEMBRANE THICKNESS - BLOCK AND ICF WALLS	2	mm

MEMBRANE THICKNESS - RADON BARRIER & HORIZONTAL ELEMENTS	2	mm
DENSITY / SPECIFIC GRAVITY (NO REINFORCEMENT)	1.1	
SOFTENING TEMPERATURE	> 130°C	
ADHESION TO CONCRETE	0.62	N/mm ²
TENSILE STRENGTH & ELONGATION AT BREAK (REINFORCED)	0.68	N/mm ²
TENSILE STRENGTH & ELONGATION AT BREAK (REINFORCED) (AGED)	0.58	N/mm ²
LOADING CAPABILITY (NO REINFORCEMENT) - CLASS 1	0.06	MN/mm ²
RESISTANCE TO STATIC INDENTATION (REINFORCED)	250	N
CRACK BRIDGING ABILITY (NO REINFORCEMENT) - CLASS CB2	≥2	mm
RESISTANCE TO FATIGUE MOVEMENT - 1000 ACTIONS @ -10°C	C Pass	
DIMENSIONAL STABILITY AT HIGH TEMPERATURE - NO DRIPPING	≥70	°C
LOW TEMPERATURE FLEXIBILITY @ -10°C	Pass	
FLEXIBILITY AT LOW TEMPERATURE @ 0°C	Pass	
WATER VAPOUR DIFFUSION RESISTANCE – SD VALUE	72.4	m
WATER VAPOUR DIFFUSION RESISTANCE - μ VALUE	36200	μ
WATER VAPOUR DIFFUSION RESISTANCE	362	MNs/g
WATER TIGHTNESS	7	bar
WATER RESISTANCE - 21 DAYS AT 21°C	Watertight	
IMPACT RESISTANCE AFTER UV-AGEING - 1000H - 10 MM	Pass	
RADON GAS DIFFUSION RESISTANCE (1 MM MEMBRANE)	2.1 x 10 ⁻¹¹	m ² /s
REACTION TO FIRE CLASSIFICATION	Euroclass B2	