ARDEX WPM 1500

Weldtec™ Pre-Applied Tanking Membrane

Compliant to AS 4654.1

Excellent water migration resistance

Radon, hydrogen sulphide, and methane gas barrier

BRANZ Appraised No: 1126 (2021) - Below Grade Tanking System

Excellent flexibility & elongation – excellent crack bridging capabilities

Excellent bond strength to concrete - not reliant on confining pressures, hydration or tape systems

WeldTec™

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PRODUCT DESCRIPTION

ARDEX WPM 1500 Weldable Waterproofing Membrane is a pre-applied, fleece-lined, weldable waterproofing membrane for below ground tanking and gas barrier applications. ARDEX WPM 1500 is welded at laps and seams to create a strong, continuous waterproofing membrane. ARDEX WPM 1500 fleece-lined surface allows a high bond strength to concrete, and provides excellent resistance to water migration.

FEATURES

- Compliant to AS 4654.1
- BRANZ Appraised No: 1126 (2021) - Below Grade Tanking System
- Excellent water migration resistance
- Radon, hydrogen sulphide, and methane gas barrier
- Suitable for use under decking & paver pedestal applications
- Excellent flexibility & elongation – excellent crack bridging capabilities
- Excellent bond strength to concrete - not reliant on confining pressures, hydration or tape systems

USES

ARDEX WPM 1500 is generally used as a single layer membrane in horizontal or vertical applications for waterproofing in below-ground applications. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement, to prevent water ingress or as a gas barrier to prevent the ingress of toxic gases.

ARDEX WPM 1500 can also be used in other applications including under floor slabs, behind masonry walls, the lining of substrates of in-situ or precast concrete, retaining walls, lift shafts, and tunnels.

ARDEX WPM 1500 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing needs. The exact specification will depend on the functional and economic requirements.

SUBSTRATE PREPARATION

By way of mechanical methods and vacuum cleaning as necessary, remove all dirt, dust, curing compounds, oils, grease, surface sealers, and any other contaminants prior to membrane installation. Prepare surface to leave sound, clean, dry, free from sharp edges, loose or other materials which may damage the membrane.

Damaged concrete between 2mm - 30mm can be treated with ARDEX A 46. Spalling concrete must be treated accordingly with the ARDEX Concrete Repair range such as ARDEX BR 345, please review the respective product data sheets on treating spalling concrete.

DAMP OR GREEN CONCRETE

When masonry or concrete substrate moisture content is measured at greater than 80% relative humidity (ASTM F2170) or exceeds 15gm/m²/24hrs (ASTM F1869) when tested in accordance with AS 1884 or AS 3740, ARDEX WPM 300 (HydrEpoxy) shall be considered as the nominated primer prior to ARDEX WA 98 Adhesive. This is typically equivalent to 5% or greater moisture content from a digital non-destructive moisture meter, however Australian Standards must be followed.

Apply two coats of ARDEX WPM 300 (HydrEpoxy) at a rate of 3m²/litre (per coat) and allow to dry for a minimum of 24 hours. Drying times will vary depending on substrate temperatures and ambient air conditions. Once the ARDEX WPM 300 (HydrEpoxy) has cured, apply a neat primer coat of ARDEX WA 98 Adhesive and allow to totally dry. Apply another neat coat of ARDEX WA 98 Adhesive to the primed substrate and to the sheet underside, then bring together once tacky.

NOTE: If the ARDEX WPM 300 (HydrEpoxy) is not allowed to fully cure, the application of ARDEX WA 98 Adhesive will noticeably damage the uncured ARDEX WPM 300 (HydrEpoxy).

DETAILING

The ARDEX Flashing Tape is to be used in all external corners, pipe penetrations, and drainage waste outlets. The ARDEX Flashing Tape is to be cut to size and adhered with ARDEX WA 98 Adhesive during installation. Once correctly installed, the ARDEX WPM 1500 shall be glued and heat-welded to the ARDEX Flashing Tape to create a seamless waterproofing membrane system within and around critical areas.

SUBSTRATE ADHESIVE

ARDEX WA 98 Adhesive is a ready to use solvent-based external contact adhesive for bonding ARDEX Wedltec™ membranes.

With a brush or roller apply ARDEX WA 98 Adhesive to both the sheet underside and the substrate at a rate of 4m² - 8m²/litre, and allow approximately the same drying time. Drying times will vary depending on substrate temperatures and ambient air conditions. Once the applied ARDEX WA 98 Adhesive becomes tacky to touch then it is ready for bedding. The ARDEX WA 98 Adhesive can be reapplied if the drying time elapses.

To create optimum adhesion, apply a neat primer coat of ARDEX WA 98 Adhesive to the prepared substrate and allow to totally dry. Apply another neat coat of ARDEX WA 98 Adhesive to the primed substrate and underside of sheet, then bring together once tacky.

It is highly suggested to shake and stir the unopened ARDEX WA 98 Adhesive drum to thoroughly mix contents before use.

Ensure not to apply ARDEX WA 98 Adhesive over an area that will later be spliced or seamed to another sheet or flashing

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as you will not be able to weld glued laps and seams. ARDEX WA 98 Adhesive for external use only.

INSTALLATION

The application of ARDEX WPM 1500 must be carried out by an ARDEX Accredited Applicator. Installation shall be in strict accordance with the manufacturer's recommendations.

Examine substrates, areas, and conditions with the installer present, for compliance with requirements and other conditions which may affect the membrane's performance. For applications over blinding, a concrete mud-slab, compacted subgrade or vertical soil retention system, verify that compacted sub-grade or concrete mud-slab is smooth and sound; and ready to receive the ARDEX WPM 1500.

Verify that vertical soil retention systems are prepared using drainage composite, plywood, shotcrete or other approved means to achieve a uniform, sound and continuous substrate ready to receive the ARDEX WPM 1500. Proceed with installation only after unsatisfactory conditions have been corrected.

HORIZONTAL INSTALLATION

Unbonded system (loose laid)

ARDEX WPM 1500 can be loose laid to the prepared compacted subgrade with heat welded side and end laps of 100mm minimum. Use the ARDEX Brass Roller and ARDEX Small Hand Roller to ensure all seams and laps are secure. Using a probe, ensure the laps are welded properly; re-weld if necessary.

A 100mm diameter patch shall be heat welded at all "T" Intersections. Areas sectionally completed should be weighted down with sand bags until reinforcement steel is placed and concrete slab poured.

Floor sheets of ARDEX WPM 1500 must extend up the wall at least 450mm. Without over-stretching the membrane, ensure the ARDEX WPM 1500 is laid tightly into all corners. All transition substrate gaps must be filled appropriately to adequately support the ARDEX WPM 1500.

Bonded system

ARDEX WPM 1500 can be directly adhered to the prepared substrate using ARDEX WA 98 Adhesive - please refer to the Substrate Adhesive section within this document for application guide.

When directly bonded, a minimum weld width of 50mm is required for all side and end laps. Use the ARDEX Brass Roller and ARDEX Small Hand Roller to ensure all seams and laps are secure. Using a probe, ensure the laps are welded properly; re-weld if necessary.

Floor sheets of ARDEX WPM 1500 must extend up the wall at least 450mm. Without over-stretching the membrane, ensure the ARDEX WPM 1500 is laid tightly into all corners. All transition substrate gaps must be filled appropriately to adequately support the ARDEX WPM 1500.

VERTICAL INSTALLATION

Whether loose lay or direct bonded, it is suggested to mechanically fasten the top edge of the WPM 1500 into place to greatly assist in installation and during concrete pour.

In the overlaps, mechanically fasten the membrane vertically using flat headed fixings appropriate to the substrate. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten or fixing 50mm below the top edge. Use fixings at typically 600mm centres to secure the membrane flat against the substrate.

Fixings with plates can be made through the selvedge; this allows firmly welded and rolled overlaps, which are covered by the subsequent sheet of ARDEX WPM 1500. Any exposed fixings should be patched by heat welding a patch of ARDEX WPM 1500.

A minimum weld width of 100mm (unbonded system) or 50mm (bonded system) is required for all side and end laps. Use the ARDEX Brass Roller and ARDEX Small Hand Roller to ensure all seams and laps are secure. Using a probe, ensure the laps are welded properly; reweld if necessary.

Wall sheets of ARDEX WPM 1500 should overlap and be heat welded onto the upturned floor membrane by a minimum 50mm within bonded applications and by a minimum 100mm for unbonded applications.

MEMBRANE REPAIR

After installation of ARDEX WPM 1500 and before installation of reinforcement steel and concrete placement, complete a final inspection of the membrane. Ensure that the membrane is clean so that a full bond to the concrete pour can form.

Repair damage by thoroughly cleaning the surrounding membrane area with water so that it is free of dust and dirt. Once the area is completely dry, repair the area with the replacement of a full sheet of ARDEX WPM 1500 or a patch with a minimum of 50mm overlap of the welded area.

REMOVAL OF FORMWORK

ARDEX WPM 1500 membranes can be applied to removable single and double sided formwork, slab perimeter formwork, pile caps, etc. Once concrete is poured the formwork must remain in place until the concrete has gained sufficient compressive strength to develop the surface bond with ARDEX WPM 1500.

A minimum concrete compressive strength of 10MPa is recommended prior to stripping formwork supporting the ARDEX WPM 1500. Premature stripping may result in loss of adhesion between the membrane and concrete.

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LIQUID MEMBRANE TRANSITION

When transitioning from ARDEX WPM 1500 to an ARDEX Water-Based Liquid Applied Membrane, the ARDEX STB Tape must be installed prior. There are two application options to consider:

1. Prime the substrate above the upturned ARDEX WPM 1500 with the appropriate primer - please refer to the respective ARDEX water-based liquid membrane product data sheet for correct primer choice. Centrally place the ARDEX STB Tape along the top edge of the upturned ARDEX WPM 1500. The ARDEX STB Tape can be carefully heat welded directly to the ARDEX WPM 1500 membrane - the fleece on the ARDEX WPM 1500 will be removed during this type of application method. Use the ARDEX Brass Roller and ARDEX Small Hand Roller to ensure adhesion to the ARDEX WPM 1500 and prepared substrate is smooth and all edges are removed.
2. Prime the substrate above the upturned ARDEX WPM 1500 with the appropriate primer - please refer to the respective ARDEX water-based liquid membrane product data sheet for correct primer choice. Carefully remove the fleece on the ARDEX WPM 1500 using the welding equipment and ensure all loose fleece is removed from the area before centrally placing the ARDEX STB Tape along the top edge of the upturned ARDEX WPM 1500. Use the ARDEX Brass Roller and ARDEX Small Hand Roller to ensure adhesion to the ARDEX WPM 1500 and prepared substrate is smooth and all edges are removed.

Once either method is correctly installed, apply the ARDEX water-based liquid membrane to encapsulate the ARDEX STB Tape and lapping onto the ARDEX WPM 1500. Overlapping of ARDEX STB Tape end to end must be 50mm (minimum).

Approved ARDEX Water-Based Liquid Applied Membranes:

- ARDEX WPM 310
- ARDEX WPM 330

For other ARDEX Water-Based Liquid Applied Membranes please contact ARDEX Technical Services (technicalservices@ardexaustralia.com).

TILING APPLICATION

The ARDEX WPM 1500 is specially designed for direct stick tile applications. With the ARDEX WPM 1500 surface being totally sound, dry, and clean, tiling may commence 1 hour after the membrane system has been fully installed. Recommended ARDEX Tile Adhesives include:

- ARDEX X 18
- ARDEX X 56
- ARDEX X 77
- ARDEX Optima

For other ARDEX Tile Adhesives please contact ARDEX Technical Services (technicalservices@ardexaustralia.com).

For tiling applications, ARDEX WPM 1500 must not be exposed to UV greater than 30 days. Suitable protection must be provided if tiling is delayed to protect membrane and fleece component from any source of damage. This does not apply to installations such as pavers / decking on support pads.

SCREED APPLICATION

The ARDEX WPM 1500 is suitable for screed applications. With the ARDEX WPM 1500 surface being totally sound, dry, and clean, the screed mix may commence 1 hour after the membrane system has been fully installed.

When directly bonding to the ARDEX WPM 1500, a minimum screed thickness of 15mm is recommended when using diluted ARDEX WPM 405 instead of water. For unbonded screeds or a screed thickness greater than 40mm, reinforcing mesh is required.

Admix for slurry coat: 1 part ARDEX WPM 405: 1 part clean water: 4 parts cement (by volume).

Admix for screed: Mix 1 part ARDEX WPM 405 with 4 parts clean water and use as the guaging mix (mixing water) with a 3:1 or 4:1 sand/cement mix.

Mix a thin slurry and spread the mix over the surface with a brush, roller, or soft bristle broom (2mm maximum thickness). The screed mix must be applied whilst the slurry coat is still wet. A wood float finish is recommended to create a key for subsequent tiling and waterproofing. Do not lay the reinforcing mesh directly onto the membrane, the reinforcing mesh must be installed between the screed layers.

For epoxy-based screeds, the minimum thickness is 10mm. Please refer to the ARDEX EG 800 F product datasheet regarding mix ratios, and application recommendations.

For screed applications, ARDEX WPM 1500 must not be exposed to UV greater than 30 days. Suitable protection must be provided if screeding is delayed to protect membrane and fleece component from any source of damage. This does not apply to installations such as pavers / decking on support pads.

SEALANT & EPOXY ADHESIVE APPLICATION

Prior to use of the ARDEX products below, carefully remove the fleece on the ARDEX WPM 1500 using the welding equipment and ensure all loose fleece is totally removed from the area. The below products may be used in situations such as pipe penetration detailing, membrane termination applications, and more.

- ARDEX RA 040
- ARDEX RA 050
- ARDEX RA 88 PLUS
- ARDEX CA 20 P PLUS

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For other compatible ARDEX Products please contact ARDEX Technical Services (technicalservices@ardexaustralia.com).

MEMBRANE TERMINATION

Membrane termination detail to be in accordance with AS 4654 or ARDEX recommendation - please consult ARDEX Technical Department for further information (technicalservices@ardexaustralia.com).

Vertical Termination Finishing

The ARDEX Weldtec™ membrane shall be terminated with one of the suggested options.

Option 1:

The termination with an ARDEX Pressure Seal Strip shall be attached onto the wall using appropriate mechanical fixings at maximum 150mm centres. ARDEX RA 050 shall be used along the top edge of the ARDEX Pressure Seal Strip to the waterproof wall. Membrane termination height to be in accordance with AS 4654 Appendix A.

Option 2:

The termination of an Over-Flashing shall be sealed into the waterproof wall via a minimum 15mm x 15mm reglet. The Over-Flashing must be fixed in place with either ARDEX RA 88 PLUS or ARDEX RA 050 or ARDEX CA 20 P PLUS. Membrane termination height to be in accordance with AS 4654 Appendix A.

Option 3:

Terminate the membrane directly into a minimum 15mm x 15mm reglet. Carefully remove the fleece on the upper face of ARDEX WPM 1500 using the hot air welding equipment and ensure all loose fleece is removed from the area that will be inserted into the 15mm x 15mm reglet. Once the ARDEX WPM 1500 has been appropriately installed, the termination (reglet) shall be filled with either ARDEX RA 88 PLUS or ARDEX RA 050 or ARDEX CA 20 P PLUS, dependent on specific application. Membrane termination height to be in accordance with AS 4654 Appendix A.

Horizontal Termination Finishing

The termination of the ARDEX WPM 1500 shall be terminated into the concrete substrate via a minimum 15mm x 15mm reglet. Carefully remove the fleece on the upper face of ARDEX WPM 1500 using the hot air welding equipment and ensure all loose fleece is removed from the area that will be inserted into the 15mm x 15mm reglet. Once the ARDEX WPM 1500 has been appropriately installed, the termination (reglet) shall be filled with an ARDEX approved product such as:

- ARDEX RA 88 PLUS
- ARDEX RA 56
- ARDEX WA 100
- ARDEX EG 800 F
- ARDEX RA 142 / ARDEX RA 144

Dependent on reglet size and length, ARDEX suggest both products ARDEX RA 56 and ARDEX EG 800 F to be bulk filled with ARDEX Aggregate. All remaining termination details such as vertical downward, parapet capping, cavity flashing, external door opening etc refer to AS 4654.

TECHNICAL DATA

CHARACTERISTICS	TEST METHOD	NOMINAL VALUES
Membrane Gauge		1.5mm
Service Temperature		-30°C - 80°C
Tensile Strength (Min)	AS 4654.1	4.56 MPa
Elongation at Break	AS 4654.1 Appendix A	>300%
Field Seam Strength	EN 12316.2 EN 12317.2	Shear: 335 N (end lap) 301 N (side lap) Peel: 69 N (end lap) 65 N (side lap)
Low Temperature Flexibility	ASTM D1970	Pass (@ -29°C)
Resistance to Hydrostatic Head	ASTM D5385	69 kPa (no failure)
Puncture Resistance	ASTM E154	600 N
Water Vapour Transmission	ASTM E96	0.03 g/m²/24hours
Watertightness	EN 1928	Pass
Durability of watertightness against chemicals	EN 1847 EN 1928	Pass
Resistance to tear (nail shank)	EN 12310-1	351 N
Radon Diffusion Coefficient	K124/02/95	Pass
Methane Permeability	ISO 15105	Pass
Hydrogen sulphide resistance	EN1847	Pass
Hydrogen sulphide permeability	ASTM D1434	Pass

BACKFILLING AND DRAINAGE APPLICATION

The membrane must be protected against potential damage by the placement of protection material between the membrane and granular backfill. A suitable protection board and drainage system should be used for effective drainage and membrane protection requirements.

DECKING & PAVER PAD INSTALLATION

Timber decking or paver pad (tiling pedestal) are to be installed as per manufactures recommendations. When placing the decking cradles or tiling pedestals onto the waterproofing membrane it is highly recommended to place

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rubber matting under each support to greatly reduce potential damage to the waterproofing membrane and prolong the service life of the waterproofing membrane.

BOSS Tiling Pedestals from DTA Australia are an approved system to be used with ARDEX Weldtec™ Waterproofing Membranes. Visit www.dta-aus.com.au for more information.

PACKAGING

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Roll size: 1.4m wide x 20m long

Approximate weight per roll: 53kg

ARDEX WA 98 Adhesive - 20L pail

ARDEX WA 98 Solvent - 20L pail

ARDEX WPM 405 - 20L pail

ARDEX Flashing Tape - 100mm x 4.7m (roll)

ARDEX STA Tape - 40cm x 2.4m (sheet)

ARDEX STB Tape - 75mm x 15m (roll)

STORAGE

ARDEX WPM 1500 has an indefinite shelf life when stored in good conditions, between 5ºC and 30ºC. Rolls must be stored horizontally, out of direct sunlight, away from sources of puncture and physical damage, away from ignition sources and open flame.

LIMITATIONS

The application of ARDEX WPM 1500 must be carried out by an ARDEX Accredited Applicator. ARDEX WPM 1500 waterproofing membrane is not suitable as a trafficable surface or to be left UV exposed for long periods of time. It is the responsibility of the main building contractor to ensure all sub-trades likely to be working in the vicinity of the ARDEX WPM 1500 membrane are aware that a waterproofing membrane has been installed and all care must be taken to protect the membrane from damage.

Before any substrate preparation, installation or finishing methods relating to ARDEX product are undertaken, please be aware of any potential risks and use appropriate PPE (personal protective equipment). This may involve contacting substrate manufacturers for Safety Data Sheets.

GUARANTEE

ARDEX Australia Pty Ltd ("we" or "us") guarantees this product ("our goods") is free from manufacturing defects and will perform to any applicable specification published by us for 20 years from the date of purchase. Our liability under this guarantee is limited at our option to replacement of the product, repair of any damage to the immediate surface or area of application of the product, or compensation, in each case if we are satisfied loss or damage was due to a breach of this guarantee. This guarantee does not apply if damage or loss is due to failure to follow published instructions or any act or circumstance beyond our control, including shade variations and efflorescence. If you wish to make a claim under this guarantee you must notify us (ARDEX Australia Pty Ltd, 2 Buda Way Kemps Creek NSW 2178; Toll Free: 1800 224 070; Email: technicalservices@ardexaustralia.com) and provide evidence of your purchase of the product within 30 days of any alleged loss or damage occurring. We reserve the right to ask you for satisfactory evidence of any alleged loss or damage. Any claim under this guarantee is at your cost. This guarantee is in addition to any rights or remedies you may have as a "consumer" under the Australian Consumer Law and to that extent you need to be aware that: "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss of damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure".

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standards. Our instructions and recommendations are only for the uses they are intended. Users are advised to confirm that this product is suitable for their application and conforms with the specifications of the system. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may affect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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