

TECHNICAL BULLETIN – TB147

THE INSTALLATION OF ARDEX DS40 SOUND REDUCTION MATTING IN INTERNAL INSTALLATIONS

Date, Friday, 20 April 2018

INTRODUCTION & SCOPE

There is a statutory (NCC Construction Code of Australia) requirement in both new builds and restoration construction for the installation of soundproofing in domestic residences upper floors. The ARDEX DS40 mat system allows the economic rapid installation of a proven sound reduction de-coupling system in both wet and dry areas within the residence.

This bulletin provides a step by step process of the installation for the two principal areas within a domestic residence. The two areas common to all domestic residences are:-

1. **Internal Dry Areas** such as lounge, dining, bedrooms, etc.
2. **Internal Wet Areas** such as shower recesses, bathrooms, laundries, kitchens, etc.

The surface preparation processes and requirements are the same for all types of installation.

RECOMMENDED SUBSTRATES FOR ARDEX DS40 APPLICATION

The following bases are considered acceptable for the installation of the DS40 system.

1. Concrete, Sand and Cement.
2. Heated Screeds.
3. Wooden Floors and Wooden Particleboards.
4. Smoothing Cements.

SURFACE PREPARATION

- 1) All uncoated surfaces to which the matting system is to be applied must be cleaned free from all grease, oil, dirt, dust, curing membranes, bond release agents and all other surface contaminants. All surfaces must be open pored either by preparation using mechanical surface methods such as mowing for concrete and sanding for fibre-cement. Surfaces should finally be thoroughly vacuumed to remove all residual dust.
- 2) All substrate surfaces must be dry and concrete or screeds must be allowed to cure for 28 days or 7 days respectively.
- 3) If surfaces cannot be left to dry or cure for the required period because of the construction schedule, they should be primed as, and when, described below, using ARDEX WPM300 HydrEpoxy and allowed to cure for 24 to 48 hours before proceeding.

INTERNAL DRY AREAS

- 1) All surfaces to be treated must be smoothed uniform to plane if necessary using ARDEX ARDEX A45, ARDEX A46 or one of the BR range BR340, BR345 or BR460 to fill any surface imperfections cracks and/or deformations or ARDEX K005 bulk filling (final surface smoothing can be done with ARDEX LQ92, ARDEX K120/K220, ARDEX K12N ARDEX K301 or ABA Levelfast. Allow to cure for 48 hours prior to proceeding.
- 2) All surfaces must be finally cleaned free from all surface contaminants and dust immediately before proceeding with any installation. Wet surfaces (e.g. concrete or render) that has not reached its specified cure period shall be primed with ARDEX WPM300 HydrEpoxy, at a coverage rate of 3 square metres per litre, and allowed to cure to a scratch hard stage (normally 16-48 hours depending on temperatures).
- 3) Dry surfaces not primed with Ardex WPM300 HydrEpoxy shall be primed by applying one coat of ARDEX Multiprime using a sponge, brush or roller over all porous surfaces to be sealed. Ensure that contents are shaken before use. In the case of very porous surfaces such as Hebel, a second coat may be required. The ARDEX Multiprime must

be spread to avoid any ponding or surface pooling of the primer and allowed to dry prior to application of subsequent coatings.

- 4) Expansion joints should be telegraphed through all layers to the tiled surface.
- 5) Install a 10 x 5mm foam perimeter strip around all perimeter walls and surface protrusions.
- 6) Bond ARDEX DS40 matting to the substrate using one of the adhesives outlined in the table below. Install the ARDEX DS40 with the fleece side down in a tight brick pattern and
- 7) Roll into the adhesive using a fluted roller. Fill all gaps between the sheets using a neutral cure silicone sealant.
- 8) When installing the tiles, ensure a minimum 6mm gap exists along all perimeter walls and protrusions to allow total isolation of the tiles from the adjacent building structure.
- 9) Direct bond the tiles using one of the following tile adhesives; ARDEX X56*, ARDEX X77, ARDEX STS8W+E90, ARDEX X18, ARDEX X52 or ARDEX S28N+E90 (for moisture sensitive tiles). Spread the adhesive using a 10-12 mm or greater notched trowel to achieve full undertile coverage at a bed thickness (after tile installation) of at least 3 mm. Only apply the adhesive to a small area at a time to allow the tiles to be placed and positioned before the adhesive forms a surface skin.
- 10) Fill the gap between the tiles and the perimeter walls and protrusions using ARDEX SE silicone. Fill the perimeter gaps and gaps between the tiles and surface protrusions using ARDEX SE Silicone. (Note: Use Ardex ST silicone with natural stone tiles)
- 11) Grout the tile finish after the adhesive has dried for at least 24 hours using the ARDEX FG8, ARDEX FSDD, or ARDEX WJ50 mixed with an equal blend of ARDEX Grout Booster and water. Allow the grout to cure and dry for 24 hours before subjecting the area to normal loads.

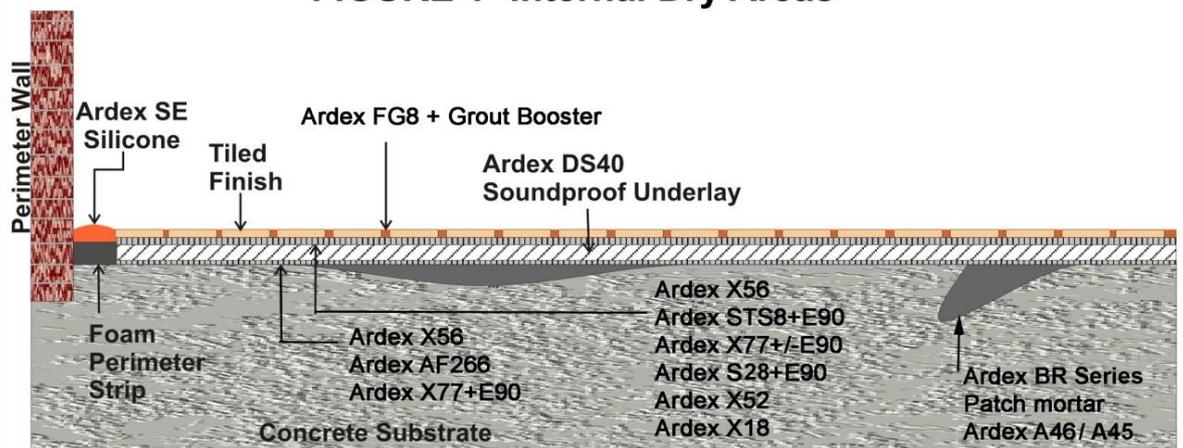
Table 1

ARDEX Adhesive	Trowel Type	Water/20kg bag	Additive
ARDEX AF266 Carpet Adhesive (preferred Option)	3.2mm V3	-	-
ARDEX X56 Tile Adhesive	3-4mm notch	6.75 l	
ARDEX X77 + E90 Tile Adhesive	4mm notch	4.5 l	4.5 l

*Note: Where the subfloor under the DS40 is sheet timber (ply or particleboard) or fibre-cement underlay sheet placed over timber (any type), then the only recommended adhesive is ARDEX X56. Moisture sensitive tiles are problematic because S28N+E90 may not be flexible enough for the combined movements in the floor and the matting.

Ardex DS40 Soundproof Underlay Installation

FIGURE 1- Internal Dry Areas



INTERNAL WET AREAS

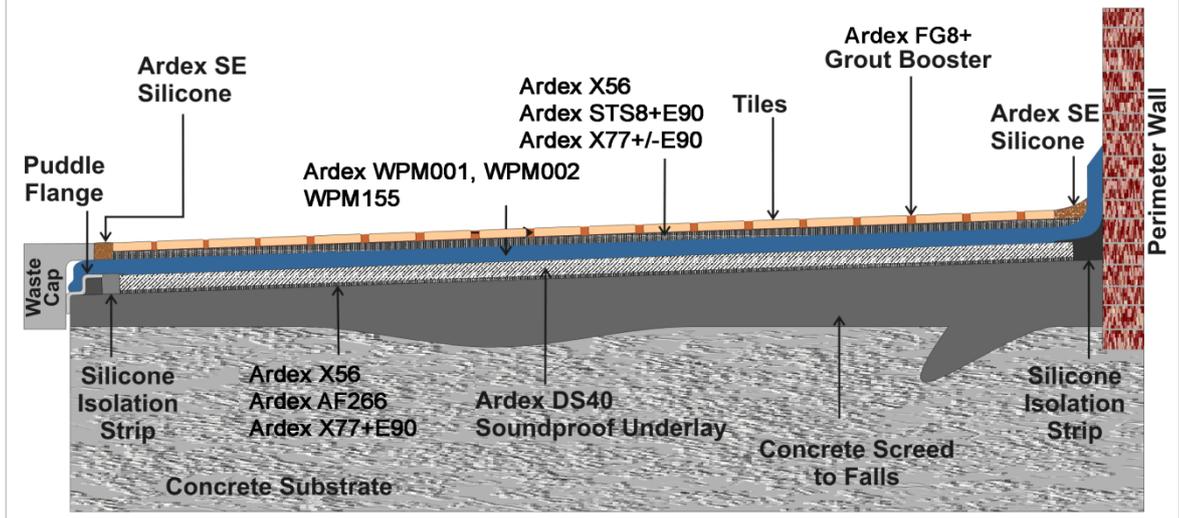
Option 1

- 1) Expansion joints should be telegraphed through all layers to the tiled surface.
- 2) Install screeds to falls by applying a polymer modified slurry coat and screed to falls as detailed in the ARDEX Abacrete product Data Sheet. Ensure the screed is applied while the slurry coat remains wet.
- 3) Allow the screed to dry for 7 days prior to proceeding or apply a coat of Ardex HydrEpoxy 300 at a coverage rate of 3 square metres per litre as soon as the screed is hard enough to accept the coating without drag-up and allow to cure to a scratch resistant stage before proceeding (normally 16-48 hours depending on temperature). A full coverage must be achieved without pinholes.
- 4) If ARDEX HydrEpoxy 300 has not been applied to the screed and the screed is dry and has been allowed to cure for 7 days, apply ARDEX Multiprime using a sponge, brush or roller over all porous surfaces to be sealed. Ensure that contents are shaken before use. In the case of very porous surfaces such as Hebel, a second coat may be required. The Ardex Multiprime must be spread to avoid any ponding or surface pooling of the primer and allowed to dry prior to application of subsequent coatings.
- 5) Bond ARDEX DS40 matting using any one of the Ardex adhesives outlined in Table 1. Install the ARDEX DS40 with the fleece side down in a butt-jointed brick pattern and roll into the adhesive using a fluted roller. Fill any gaps between the sheets using ARDEX ST neutral cure silicone sealant. Leave a 6-10mm gap between all perimeter walls and all surface protrusions to allow for the installation of sealant to isolate the mat from the building structure.
- 6) Fill the gaps between the mat and walls and protrusions using ARDEX ST neutral cure silicone forming it into a bond breaker by spreading across the floor and walls or protrusions to extend 5mm beyond the joint in both directions. Apply a liberal stripe coat of ARDEX WPM001 Premixed Membrane or ARDEX WPM002 (2 Part) Membrane or ARDEX WPM155 (PU Acrylic Membrane) along all joints and corners extending not less than 120 mm on either side of the joint or corner and, while the coating remains wet and fluid, lay ARDEX Deckweb equidistantly across the corner or joint. Knead the ARDEX Deckweb into the underlying coating, ensuring there are no creases, folds or air pockets, to thoroughly wet out the ARDEX Deckweb. Only apply in short lengths at a time to ensure the ARDEX Deckweb is embedded before the membrane skins.
- 7) As soon as all corners and joints have been reinforced a full coat of the selected membrane shall be applied to all surfaces and upturns to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0 mm.
- 8) Allow the preceding coat to cure hard (normally at least 4 hours and longer over impermeable surfaces), and apply a further two full coats of the selected membrane to all surfaces to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0 mm per coat. Allow each coat to dry thoroughly before proceeding with the next coat.
- 9) When installing the tiles ensure a minimum 6mm gap exists along all perimeter walls and protrusions to allow total isolation of the tiles from the adjacent building structure.
- 10) Allow the membrane to dry thoroughly and direct bond the tiles using polymer modified tile adhesive such as ARDEX X56, X77, Abaflex, Optima, STS8W + E90, by spreading the adhesive using a 10-12 mm or greater notched trowel to achieve full undertile coverage at a bed thickness (after tile installation) of at least 3 mm. Only apply the adhesive to a small area at a time to allow the tiles to be placed and positioned before the adhesive forms a surface skin.
- 11) Fill the gap between the tiles and the perimeter walls and protrusions using ARDEX SE silicone.
- 12) Grout the tile finish after the adhesive has dried for 24 hours using the ARDEX FG8

- 13) ARDEX FSDD or ARDEX WJ50 mixed with an equal blend of ARDEX Grout Booster and water. Allow the grout to cure and dry for 24 hours before subjecting the area to normal loads.

Ardex DS40 Soundproof Underlay Installation

FIGURE 2- Internal Wet Areas - Option 1



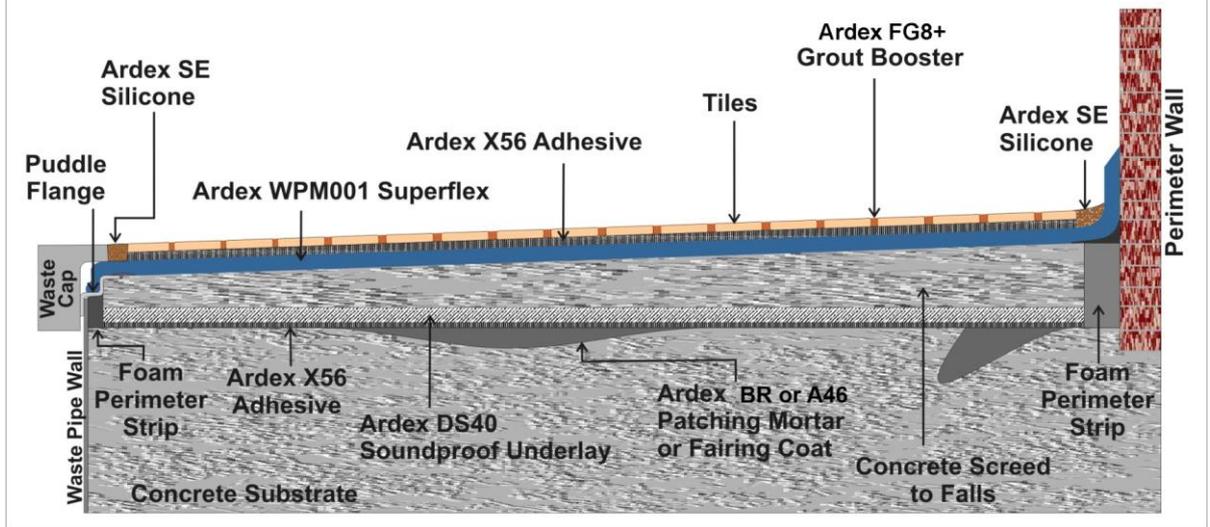
Option 2

- 1) All surfaces to be treated must be smoothed uniform to plane if necessary using ARDEX B340, BR345, BR460 or ARDEX A46 to fill any surface imperfections cracks and/or deformations. Bulk filling can be done with ARDEX K005, and then finished with ARDEX LQ92, ARDEX K301 or ABA Levelfast for full surface smoothing. Allow to cure for 48 hours prior to proceeding.
- 2) All surfaces must be finally cleaned free from all surface contaminants, dags and dust immediately before proceeding with any installation. Wet surfaces shall be primed with ARDEX WPM300 HydrEpoxy, at a coverage rate of 3 square metres per litre, and allowed to cure to a scratch resistant stage (normally 16-48 hours depending on temperatures).
- 3) Dry surfaces not primed with ARDEX WPM300 HydrEpoxy shall be primed by applying one coat of ARDEX Multiprime using a sponge, brush or roller over all porous surfaces to be sealed. Ensure that contents are shaken before use. In the case of very porous surfaces such as Hebel, a second coat may be required. The ARDEX Multiprime must be spread to avoid any ponding or surface pooling of the primer and allowed to dry prior to application of subsequent coatings.
- 4) Expansion joints should be telegraphed through all layers to the tiled surface.
- 5) Bond ARDEX DS40 Sound Reduction Underlay using any one of the Ardex adhesives outlined in Table 1. Install the ARDEX DS40 with the fleece side down in a butt-jointed brick pattern and roll into the adhesive using a fluted roller. Fill any gaps between the sheets using a neutral cure silicone sealant.
- 6) Install a 10 mm wide perimeter joint of foam immediately adjacent to all perimeter walls and all protrusions to isolate the subsequent layers from the building structure. The perimeter joint shall extend to at least the height of the finished screed as applied in the next section.
- 7) Install screeds to falls by applying a polymer modified slurry coat and screed to falls as detailed in the Ardex Abacrete product data Sheet. Ensure the screed is applied while the slurry coat remains wet.

- 8) Allow the screed to dry for 7 days prior to proceeding or apply a coat of ARDEX HydrEpoxy 300 as soon as the screed is hard enough to accept the coating without drag-up and allow overnight drying before proceeding.
- 9) If ARDEX HydrEpoxy 300 has not been applied to the screed, apply ARDEX Multiprime using a sponge, brush or roller over all porous surfaces to be sealed. Ensure that contents are shaken before use. In the case of very porous surfaces such as Hebel, a second coat may be required. The ARDEX Multiprime must be spread to avoid any ponding or surface pooling of the primer and allowed to dry prior to application of subsequent coatings.
- 10) Expansion joints should be bridged using ARDEX *Construction Detail Bandage* bonded to the substrate surface using the fleece on either side of the central strip in accordance with ARDEX Technical Bulletin TB226. The fleece is bonded with a sand blinded epoxy resin such as ARDEX EG15 or EG800F.
- 11) Install a neutral cure silicone bead bond breaker across all joints and spread to extend 5 mm on either side of the joint. Apply a liberal stripe coat of ARDEX WPM001 Premixed Membrane or ARDEX WPM002 (2 Part) Membrane or ARDEX WPM155 (PU Acrylic Membrane) along all joints and corners extending not less than 120 mm on either side of the joint or corner and, while the coating remains wet and fluid, lay ARDEX Deckweb equidistantly across the corner or joint. Knead the ARDEX Deckweb into the underlying coating, ensuring there are no creases, folds or air pockets, to thoroughly wet out the ARDEX Deckweb. Only apply in short lengths at a time to ensure the ARDEX Deckweb is fully embedded before the membrane skins.
- 12) As soon as all corners and joints have been reinforced a full coat of ARDEX WPM001 Premixed Membrane or ARDEX WPM002 (2 Part) Membrane or ARDEX WPM155 (PU Acrylic Membrane) shall be applied to all surfaces to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0 mm.
- 13) Allow the preceding coat to cure hard (normally at least 4 hours and longer over impermeable surfaces), and apply a further coat(s) of the selected membrane to all surfaces to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0 mm per coat to achieve a total dry film thickness of not less than 2mm. (Note that to achieve 2mm dry film thickness will normally require 3- 4 coats).
- 14) When installing the tiles ensure a minimum 6mm gap exists along all perimeter walls and protrusions to allow total isolation of the tiles from the adjacent building structure.
- 15) Allow the membrane to dry thoroughly and direct bond the tiles using ARDEX X56, X77, Abaflex, Optima, STS8W + E90 tile adhesive by spreading the adhesive using a 10-12 mm or greater notched trowel to achieve full undertile coverage at a bed thickness (after tile installation) of at least 3 mm. Only apply the adhesive to a small area at a time to allow the tiles to be placed and positioned before the adhesive forms a surface skin.
- 16) Fill the gap between the tiles and the perimeter walls or protrusions using ARDEX SE or ST silicone.
- 17) Grout the tile finish after the adhesive has dried for 24 hours using the ARDEX FG 8 grout mixed with an equal blend of Ardex Grout Booster and water where the joints between tiles are up to 5mm wide. Allow the grout to cure and dry for 24 hours before subjecting the area to normal loads.

Ardex DS40 Soundproof Underlay Installation

FIGURE 3- Internal Wet Areas - Option 2



IMPORTANT

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations contact your nearest Ardex Australia Office.

DISCLAIMER

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

REASON FOR REVISION - ISSUER

Deletion of K009, addition of K301 and BR340,345 and 460. Modification to notch trowel for X56 from 4 to 3-4mm. Some text revisions and figure revisions.

DOCUMENT REVIEW REQUIRED

24 months from issue

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