

TILING SOLUTIONS



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About ARDEX

ARDEX specializes in high-quality construction materials for substrate preparation, levelling floors, waterproofing, the fixing of natural stones & ceramic tiles and other surfacing materials. ARDEX offers innovative products of outstanding quality and optimal environmental friendliness, as well as providing training and support services for their application. The ARDEX Group comprises of 28 subsidiaries and some 1,400 employees active in offices and branches in more than 50 countries.

The history of ARDEX can be traced back over 50 years to Witten, Germany where ARDEX Chemie GmbH was founded by Herr and Frau Fortmann and Dr. Kraft. Products such as **Ardurit Z8** and **Ardur K15** are firmly established as benchmarks for flooring products worldwide.

In December 2001 ARDEX acquired Norcross Building Products (NBP) Australia. The latter has a similar heritage in the Australasian market with **ABA tile adhesives** – renowned for their quality and technical excellence, a reputation built over 30 years. Innovations such as Abaflex are unique in the market until this day. Other brands offered by NBP Australia include **Superflex** under-tile waterproofing systems, **Shelter (previously Dunlop)** sheet membrane systems and **Hydrepoxy** coatings. In 2002 **Vibro Products Pty Ltd**, manufacturers under licence of ARDEX floor levelling and adhesives, was acquired and integrated into ARDEX Australia.

These brands, leaders in their respective fields, come together under the ARDEX Australia umbrella, offering you expert solutions. In addition, sharing of resources and technology within our extensive network enables us to provide you with a broader range of world benchmarked products and services.

Make ARDEX your single point of contact for all your flooring, tiling and waterproofing needs.

ALSO AVAILABLE FROM ARDEX AUSTRALIA:



Comprehensive range of waterproofing solutions for various internal and external applications, including: rooftops, tanking, retaining walls, façade etc. Encompasses a variety of technology from bituminous and butynol sheets membranes, water based epoxies, acrylic and polyurethane membranes.



Comprehensive range of specialist, fast track substrate preparation solutions with a focus on patch and repair mortars and self levelling compounds including ARDEX K15.

For technical advice contact 1800 224 070



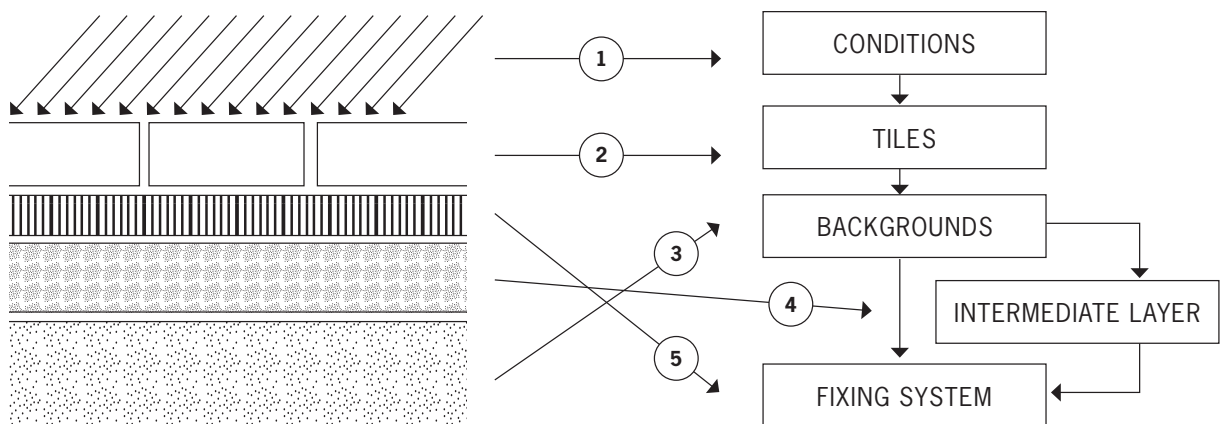
Guide to Tiling Specification & Systems

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Tiling Flowchart & Checklist

Tiling Flowchart

Consider the main elements of the Tiling Installation in the order set out below.



- 1. Conditions** Wall, Floor, Interior, Exterior, Commercial, Residential, Traffic (foot/vehicles), Wet area, Direct sunlight, Rain, Pool/Fountain.
- 2. Tiles** Tiles and their properties:
 - Refer to “Tiles” and “Tile Properties” in the **Tile Selection Notes**.
- 3. Backgrounds** Framing, Sheet Linings, Concrete, Set-downs.
 - Refer to “Backgrounds” in the **Tile Selection Notes**.
- 4. Intermediate Layer** Waterproofing, Render, Mortar bed, Underlay.
 - Refer to “Installation Materials” in the **Tile Installation**.
- 5. Fixing System** Adhesive, Grout.
 - Refer to the Guide Tiling System Schedules (“Application Tables”) in the **Tiling Specification Guide**.

Tiling Flowchart & Checklist

Tiling Checklist

PROJECT NAME: _____ DATE: _____

NO.	CHECK ITEMS	
1	Establish and record scope of tiling work and locations. Update as revised.	
2	Plan tiling documentation and interlinking of drawings, tile schedule and tiling specification.	
3	Establish/distribute tiling drawing standards, including wet area elevations and plans.	
4	Mark up drawings with waterproofing tiling extent. Include set-downs, fixtures, set-out, control joints and junction details.	
5	Verify status of co-ordination of tiling documentation prior to each distribution or issue.	
6	Record each distribution or issue of tiling documentation.	
7		
8		
9	Identify and record conditions in tiling locations, eg. internal, external, wet area, traffic level.	
10	Select tiles and record. Ensure complete tile description (eg. Code No.). Update as revised.	
11	Verify and record suitability of selected tiles for conditions eg. slip resistance, chemicals.	
12	Verify and record availability of selected tiles and lead times on order.	
13	Confirm backgrounds for tiling locations, eg. concrete, masonry, sheeting, framing.	
14	Confirm intermediate layers for bedding, eg. bedding mortar, render.	
15	Confirm intermediate layers for waterproofing. Check compatibility of waterproofing system.	
16	Confirm intermediate layers for movement or sound isolation, or for levelling.	
17	Select tile fixing system to suit conditions, tiles, background and intermediate layers.	
18		
19		
20	Identify a Guide Tiling System Schedule ("Application Table") in Tiling Specifications Guide for each tile fixing system.	
21	Record "Scope of Work" in Tiling Specification.	
22	Record tile selections and locations in Tiling System clauses or cross refer to a tile schedule.	
23	Customise Tiling System clause headings. Duplicate Tiling System clauses as required.	
24	Amend Tiling System clauses as required to suit conditions, eg. waterproofing, mortar bed.	
25	Delete inapplicable Tiling System Schedule clauses.	
26	Delete inapplicable clauses from Materials, Installation and General sections of Tiling Specification.	
27		

Tile Selection Notes

TILES

A ceramic tile is a mixture of clays which has been shaped and fired at high temperatures. It may be glazed and decorated or left untreated. Glazed tiles provide a wider range of finishes and, with improved production technology, can be used on floors as well as walls. Fully vitrified tiles usually have the same colour and consistency throughout.

Production Methods

Dust-Pressing and Extrusion are the two most common production methods. They are based on two different ways of shaping the tile. Hand shaping is a third method available for special situations.

Dust-Pressing The raw material is ground, mixed and moistened, then pressed into the required shape. The shaped pieces are then dried and kiln fired at temperatures as high as 1230°C. Glaze and decoration is then applied and the bisque fired again, causing the glaze to fuse with the tile surface. This “double-firing” allows maximum versatility in pattern, decoration and colour. “Single-firing” (or monocottura) is an alternative method in which the bisque and glaze are fired together in a single pass of the kiln. The decorative possibilities are more limited but the tile has higher mechanical resistance and greater body glaze adhesion, making it suitable for floors.

Extrusion The raw materials are forced through a die cut into uniform sizes then fired. Quarry, clinker and terracotta tiles are usually shaped using this method.

Tile Types

The various types of ceramic tiles are usually distinguished by the composition of the raw materials. Glazed tiles include Cottoforte, Majolica, White-body Earthenware and Monocottura. Unglazed tiles include Clinker, Porcelain, Red Stoneware and Terracotta.

Cottoforte A pink – red bisque of average strength, used for most decorated, double-fired tiles.

Majolica A yellow – pink bisque commonly used for interior wall tiles, takes non-transparent glaze.

White-Body Earthenware Mostly used for walls, sometimes for floors in light traffic areas. A white tile body that can be coated with a glaze and takes colour easily.

Monocottura Higher mechanical strength makes it suitable for heavier foot traffic.

Clinker Used for exterior and wall applications as well as interior floors. May be coloured by oxides or coated with a thin layer of transparent glass.

Red Stoneware Suitable for interior or exterior floors in both residential and commercial settings. High mechanical strength and resistance to abrasion, chemicals and frost.

Terracotta A perennial rustic favourite, used indoors and outdoors. Unglazed surface may be oiled and waxed to enhance lustre.

Porcelain/Fully Vitrified The raw material is similar to that used to make china. Various colours may be achieved by dispersing mineral through the unglazed bisque so the colour runs all the way through the tile. This makes them extremely hardwearing and very dense (with very low moisture absorption). Porcelain tiles with an anti-slip surface can be used outside. Traditionally porcelain tiles have been unglazed with a surface similar to natural stone i.e. matt, honed and polished. Modern production techniques now allow for the production of glazed porcelain.

NATURAL STONE TILES

Stone is a natural solid formation of one or many minerals. There is a large variety of stone types - limestone, marble, granite, slate etc. Knowing the type of stone is important to the selection process as the physical/mechanical properties of these stones varies considerably, e.g. granite is normally harder and therefore more abrasion resistant than marble.

The trades commonly refer to marble or granite as natural stone. A number of natural stones are sensitive to moisture. This can have a major effect on two properties – the colour and dimensional stability, the latter becoming more noticeable as the tile size increases. In fixing natural stone the principle is simple – reduce or eliminate the amount of water used in the fixing system. The degree of sensitivity to moisture will determine the type of adhesive used. For details refer to ARDEX technical bulletin TBO10.

Natural stone often has a honed or polished surface achieved by grinding the cut face with successively finer grades of abrasive. **Honed** provides a flat to low sheen gloss. This surface is very smooth, but often porous and should be protected with an appropriate sealer. This texture is common in high traffic buildings. **Polished** provides a glossy surface that wears away with time due to heavy foot traffic and improper maintenance procedure. This surface is very smooth and less porous. The shine comes from the natural reflection of the stone's crystals, not from a coating.

Man made Stone These comprise of natural stone chips held together in a mixture of resin or cement.

Terrazzo: Marble and granite chips embedded in a cement composition.

Agglomerate or conglomerate: Marble chips embedded in a colored resin composition.

Cultured or Faux Marble: A mix of resins that are painted or mixed with a paint to look like marble.

Tile Selection Notes

Due to the variability in composition of these stones, the adhesive recommendation is based on a case by case evaluation. Contact ARDEX Technical Services on 1800 224 070.

Dimensions

Tiles are manufactured in a range of dimensions from tiny 20mm mosaics to large 600 x 600mm tiles, and in some cases larger. In shape, they are usually either square, or 2:1 rectangular, though other shapes are available. Squares include 25mm and 50mm mosaics and overall, tiles generally range through 100, 150, 200, 250 & 300mm. Rectangular tiles include 200 x 100mm, 200 x 250 through to 600 x 300mm.

“Grid Size” The “grid size” can be critical in tile set-out especially where matching tiles of different sizes and source are used. Some tiles are quoted at exact size (eg exactly 200mm), others at a normal size with allowance for the grout line (actual size, say, 198mm) and others still at non-standard sizes (eg 205mm). All of these examples may be quoted as 200mm tiles.

Where set-out maintenance of alignment between adjacent tiles is important, check the actual tile dimensions of various tiles.

TILE PROPERTIES

Sound knowledge of the physical qualities and performance characteristics of tiles, provide a rationale for narrowing the selection of a tile for a particular situation.

Performance

These properties may have a direct bearing on the performance and therefore selection of a tile.

Abrasion Resistance AS 3958.2 Floor tiles should be selected to suit the traffic level, particularly in commercial applications and high traffic residential locations. A European scheme classifies tiles into four traffic levels based on abrasion resistance.

Group 1: Light Residential Traffic

Group 2: Moderate Residential Traffic

Group 3: Maximum Residential Traffic

Group 4: Commercial Traffic

Slip Resistance Slip resistance is critical in paving areas exposed to the elements, and/or likely to get wet. Unglazed tiles are more slip resistant than glazed tiles. An abrasive grit may be added to the surface to increase slip resistance. The co-efficient of friction of the tile surface provides an objective measure for comparison of slip resistance and may be obtained from the supplier for most flooring tiles.

The higher the co-efficient the more slip resistance. A typical co-efficient of a glazed tile is 0.42 and for an

unglazed tile 0.70. Refer to AS3661 “Slip resistance of pedestrian surfaces”, for further information.

Chemical Resistance In installations subjected to chemicals, tiles must be selected for resistance to those chemicals and, where applicable, must meet regulations.

Water Absorption Water is absorbed to varying degrees by the body of tiles, but not the glaze. Water absorption affects other properties such as frost resistance.

Frost Resistance This is a consideration for outdoor applications in cold climates, and cold storage rooms. Low water absorption is essential. Confirm with the manufacturer.

Physical Qualities A range of other physical qualities may be significant in certain situations. Such physical qualities include: Crazeing, Dirt Resistance, Colour Permanence, Electrical Conductivity, Expansion, Fire Resistance, Mechanical Strength, Thermal Conductivity and Weight.

Relevant information can usually be obtained from the tile manufacturer or supplier.

BACKGROUNDS

The background to which tiles are fixed affects the tiling installation, performance, and options available.

Floors

Floor backgrounds carry traffic loads and may move in response to those loads, depending on their construction.

Timber Framed timber flooring structures commonly have flooring surfaces of strip timber (tongued and grooved), particleboard or plywood. All of these are subject to movement and should be covered with a flexible underlay before tiling over or use an appropriate flexible adhesive for direct fixing to timber. This partially isolates the tiles and grout from the movement in the flooring and reduces cracking of the tiling.

Sound transmission, particularly impact sounds, can be a problem due to the light weight of timber structures – an underlay can reduce sound transmission.

Concrete Tiles may be fixed by “direct-stick” to the concrete surface or to a mortar bed in a prepared “set-down”. Set-downs are necessary in wet areas and showers, whereas direct-stick is commonly used elsewhere. Concrete slabs for direct-fix should be “wood float” finished.

Set-downs are also used in large areas such as foyers, where the finished levels need to be matched exactly. Allowance can then be made for the effect of several factors which may change between pour time and installing the finishes in the foyer, such as paving material thicknesses, as well as slab level tolerances.

Walls

Walls are classified as framed or solid, and loadbearing or non-loadbearing. The weight added by tiling may, in some cases, warrant structural consideration, particularly for non-loadbearing framed walls.

Framed Walls Framed walls are generally lined with sheet linings to which tiles can be fixed directly. In all cases for tiling, the linings should be water-resistant. Linings must be fixed in accordance with the lining manufacturer's published instructions.

Masonry & Concrete Masonry and concrete are usually best rendered before tiling to isolate movement.

Any existing rendering should be checked for soundness. A coin run over the surface will reveal "drummy" unsound render (This check also applies to existing tiled areas.)

Unsound render should be repaired prior to tiling.

Waterproofing

Tiling and waterproofing wet areas, balconies, and decks can present a compatibility problem between waterproofing and tile fixing, the waterproofing membrane by ARDEX WPM 001, WPM 002 and WPM 390 are compatible with ARDEX tile adhesives and is designed to form a complete wet area and decking system.

All background materials must be installed strictly in accordance with manufacturer's recommendations and deemed suitable for the application by the said manufacturer.

MAINTENANCE

Maintenance is an integral part of a successful tiling installation. Information gathered may be included in a building maintenance manual for the building owners and/or managers.

Residential

Clean residential tiles in accordance with these guidelines.

Glazed Tiles A mild solution of hot water and all purpose liquid cleaner or soapless detergent is suitable for cleaning floors, walls and counter-tops. Use a window cleaner for moderate staining. Remove cleaning solutions thoroughly by rinsing. Do not use soap as it forms a film, dulls the lustre, and promotes growth of mildew and bacteria in damp areas. Scrub dirty grout with a plastic bristle brush.

Showers Weekly cleaning is recommended to avoid a build up of soap scum, body oils and hard water deposits. Use all purpose cleaners as described above and scrub with a plastic scouring pad to remove deposits. A mild solution of white vinegar and water will remove hard water deposits. Ventilation of the shower room also assists.

Unglazed Tiles Use cleaning solutions as described for glazed tiles. Do not use powdered cleaners as particles may be retained by unglazed surfaces.

Commercial

Daily maintenance of public areas should include wiping down of floor and wall tiles. Treat spillages with a warm solution of all purpose liquid cleaner. Clean wet areas daily with a commercial cleaner suited to the location.

Food Preparation Areas Use the recommended mix of commercial cleaners in commercial kitchens and on tiled floors in dining areas, and for mopping up spillages. This should be done daily. Commercial plastic scrubbers may be needed for heavier spills.

Exteriors

Exteriors should be cleaned in accordance with the following guidelines.

Walls Cleaning is seldom required but harsh environments may warrant regular cleaning.

Use a warm water solution of soapless detergent to wash walls. Use a soft bristle brush to remove any build-up of deposits. Rinse thoroughly with warm water.

Decks Wash down as required with a hose spray. Use a hot water solution of industrial cleaner or all purpose liquid cleaner to remove stains and spills.

Swimming Pools Use all purpose cleaners and a plastic scouring pad to clean water line scum.

Special Conditions

Efflorescence may be encountered after tile installation and may reveal the need for a sealer on unglazed tiles.

Efflorescence Moisture reacting with impurities may cause crystalline deposits on the surface.

Eliminate the source of moisture if possible. Remove efflorescence with a stiff bristle brush and clean water, then rinse. Repeat if required. Acid washes should only be used as a last resort and only very weak solutions (<2%), if grout is coloured. Be sure to rinse tiles thoroughly if an acid rinse is used. Acid washes should not be used on glazed tiles.

Sealers Surface sealers are sometimes applied to unglazed tiles, particularly in commercial areas where spillages may be a recurring problem. Follow the manufacturer's recommendations when using commercial tile sealers.

Acknowledgements

These Tile Selection Notes are based on Chapter 1 of "The designer's guide to Italian ceramic tiles and their installation." ©1987 The Italian Tile Center. These notes are a guide only, and should be supplemented with information specific to the selected tiles.

Tile Installation

INSTALLATION METHODS

Thin-set and thick-bed are the alternative installation methods. Installation methods are the subjects of Australian Standard AS 3958.1 "Ceramic tiles – Part 1: Guide to the installation of ceramic tiles".

Thin-Set

Tiles are fixed to the background by a thin layer of adhesive or modified mortar mix. The thin layer may be 1 to 3mm thick depending on the fixing material. Adhesives are spread onto the prepared background using a notched trowel that lays a ribbed bed of adhesive. The tiles are then pressed firmly onto this bed so that the whole of the back of the tile is in good contact with the adhesive, and no voids exist.

This method is suitable for wall and floor applications. On floors it is used to "direct stick" to concrete slabs, mortar beds, underlays, and compatible waterproofing membranes. It is commonly used for walls, though render is often applied first, to masonry or concrete backgrounds.

Advantages of thin-set installations include: greater bonding strength, low labour cost, reduced time for installation and curing, a thinner profile and less weight.

Thick-Bed

Thick-bed is usually restricted to floor applications where a mortar bed is used to create falls in wet areas. Where waterproofing is also required a compatible membrane is laid over the bed and the tiles thin-set fixed to it.

A "set-down" usually about 50 to 75mm deep must be left in the concrete slab. After the slab has cured, a mortar bed mix is laid into the set-down and the required surface falls are formed. In some cases, a slip layer of polyethylene sheet is laid to partially isolate the bed from minor movements in the slab.

The mortar bed is mixed very dry as it has to support the weight of the tiles so they do not 'sink' into the bed. A slurry coat of neat cement mixed with a liquid polymer additive can be poured over the mortar bed, and the tiles beaten into the mix. Alternatively, in the case of larger tiles, this mix can be painted onto the back of the tiles individually. This system provides a high strength bond between the mortar bed and tiles.

It has been common practice to 'dust the surface down' with cement dust instead of applying the polymer cement mix. This dry powder absorbs water from the underlying mortar bed to hydrate the cement. The tiles, either individual or in sheets, are then beaten into the bed relying on the bonding strength of the cement.

This is traditional method, but if adhesive fixing of the tiles has been scheduled, the "dusting" method will not conform to the specification. Adhesive fixing can be used in conjunction with a mortar bed with falls and will provide a higher bonding strength than "dusting".

Note: Australian Standard AS3958.1 states that this traditional method is not suitable for fixing dense tiles eg. monocottura tiles and porcelain.

INSTALLATION MATERIALS

Materials for installation will usually include the selected tiles, adhesives (or modified mortar), and grout. Depending on the installation, additional materials for preparation and waterproofing may also be required.

Tiles

Tiles should be selected to suit the installation application. Selection may include consideration of tile properties and their performance characteristics. Production methods and tile types have a direct bearing on their appearance. Set-out of the tiling will be affected by tile dimensions and their "grid size". These various factors are discussed in the Tile Selection Notes section.

Natural stone, such as marble and granite, may also be selected in tile size pieces usually about 9mm thick. In most cases these may be fixed with the same thin-set adhesive methods used for ceramic tiles. Selection should also include consideration of properties and performance characteristics of the available materials.

Preparation

Surfaces to be tiled may require a form of preparation to present a true and sound surface to receive the tiles.

Cement Render Cement render is the recommended preparation for fixing tiles to concrete and to masonry walls. The render coat provides a true and even surface and the opportunity to finish to the required lines, such as door frames or mirror installations. The render coat serves to: a) partially isolate the tile and adhesive bond from any further stress from movement in the wall; b) provide a bonding surface relatively free of chemical admixtures; and, c) provide an optimal porosity level for fixing.

Mortar Bed (Screed) A mortar bed (or screed), preferably with a strengthening additive, can be used to achieve greater control over finished levels, set-out, and matching of adjacent surface levels. Mortar beds are also used to provide falls in set-downs. Screeds greater than 40mm must be reinforced as per AS3958.1.

Underlay There are different types of underlay material which serve different functions.

1. An flexible underlay (eg ABA Ceramic Tile Underlay) is used to isolate a floor tile installation from movement in the background materials. This is required where floor tiles are installed over timber floor boards or particleboard floor sheeting and is an alternative to direct fixing with an adhesive suitable for timber floors.

2. A levelling compound (e.g. ARDEX LQ 92) may also be referred to as an underlay, and is used to level uneven concrete floors prior to tiling.
3. An acoustic underlay (eg ABA Soundproof Underlay) is used under hard floor coverings to reduce impact noise in multi-storey situations.
4. A removable floor tiling system, ARDEX X 23 removes tiles without damaging substrates. It's ideal for leased or heritage applications. ARDEX X 23 isolates base movement with minimal build height.
5. ARDEX DS 40 is a decoupling and sound reduction system for the installation of tiles, slabs, natural stone and concrete pavers on to substrates such as concrete, heated screeds, dry screed systems, wooden floors, old tiles and slabs.

Waterproofing

Waterproofing of tiled wet areas continues to be a vexing problem, particularly assuring compatibility between the tile fixing and the membrane to which it is often bonded. Fortunately, ARDEX has a completely compatible tiling waterproofing system, ARDEX WPM 001 / WPM 002 / ARDEX WPM 390.

Waterproofing wet areas and balconies contains and directs moisture that has penetrated the tile surface (grouted joints are porous), to the appropriate drainage outlets.

"Waterproofing of wet areas within residential buildings" is the subject of Australian Standard AS 3740.

Adhesive

The new Australian Standard AS 4992, Part 1 classifies ceramic tile adhesives based on their constituent materials as:

- Cementitious adhesives – (C)
- Dispersion adhesives – (D)
- Reaction resin adhesives – (R)

The standard specifies the performance requirements for all ceramic tile adhesives. This covers application properties such as open time, slip, maturing time etc, as well as final properties such as adhesion strength, deformability and transverse deformation. For more information on these requirements refer to AS 4992.

Cementitious Adhesive As the name indicates this has portland cement as its main ingredient to which other admixtures are included. The adhesive is formed by mixing the powder with clean water, though it may be mixed with a liquid polymer additive for enhanced performance characteristics. These can be either single part or two part.

Dispersion Adhesive A proprietary mix, whose main ingredient is an organic aqueous dispersion to which other organic additives and mineral fillers are added. The adhesive is ready of use (premixed).

Reaction Resin Adhesive The three parts consists of a resin, hardener and filler that chemically cure after mixing. Epoxy provides a high level of chemical resistance, strong bond, high resistance to impact, and resistance to bacteria and fungal growth. In complete epoxy installations, the same epoxy product is used as both bonding adhesive and as grout to fill the joints. Epoxy systems are essential in many applications where the chemicals present would simply disintegrate any other type of grout and adhesive system, with the consequent dislodgment of the tiles.

Grout

Grout is the material used to fill the joints (gaps) between the tiles. In some instances (such as with paper faced mosaic tiles), the grout is applied to the rear of the tiles before fixing in place. This is called the "back-fill method". In most cases, however, the grout is applied to the face of the tiled area at least 24 hours after fixing, when the adhesive has set.

Plain Portland cement has been used for grout, sometimes with colouring oxides. Modern cement based and organic based grouts, often premixed with a range of colours, usually have additives that make them more flexible and more uniform in colour. Background movement significant enough to affect the retention and durability of the grout occurs in most tiling installations. The selection and use of a modern grout that accommodates movement is therefore recommended and carries the added advantage of better colour control.

Joint Fillers

Tiled areas also require control joints which are generally located around the perimeter of the tiled area, at fixtures and other interruptions to the tiling and, in large areas, to break the area up as a control on the effects of movement.

Control joints should be filled with a flexible material such as a polyurethane or silicone sealant. The primary requirement of the joint filler is to accommodate the movement expected, and adhere to the sides of the joint without unsightly splitting.

AUSTRALIAN STANDARDS

AS 3958 Ceramic Tiles –

Part 1: Guide to the installation of ceramic tiles;

Part 2: Guide to the selection of a ceramic tiling system.

AS 3740 Waterproofing of wet areas within residential buildings.

AS 4992 Ceramic tiles – Products for installation

Part 1: Adhesives – Definitions and specifications

Part 2: Adhesives – Test methods.

AS 4662 Ceramic Tiles – Definitions, classifications and characteristics and marking.

Tiling Specification Guide

This is a Tiling Specification Guide which should be customised to suit the particular tiling applications.

Application Tables accompanying this specification describe Tile Fixing Systems for a range of common situations.

The following approach is suggested:

1. Customise the SCOPE OF WORK clause to describe the specific application.
2. Specify the selected tiles, either:
 - on the Drawings or Finishes Schedule, OR
 - in the Tiling clause (or clauses) in the MATERIALS Subsection, OR
 - in the relevant Application Tables.
3. Locate the relevant Application Tables. For example, "Internal Ceramic Wall Tiling on Sheet Linings".
4. Delete the Tables that do not apply.
5. Customise the relevant Tables for the specific applications, such as:
 - CLAUSE TITLES: Customise as preferred.
 - TILES: Descriptions of the selected tiles.
 - LOCATION: References to relevant location drawings.
 - PERFORMANCE LEVEL & STANDARD: Delete for Project Specification, if preferred.
 - WATERPROOFING: Delete where not applicable or provided by some other means.
 - GROUT: State colours if selected at this stage.
 - Delete references to any other inapplicable alternatives.
6. By referring to the relevant Tables to identify the applicable materials and, if preferred, delete clauses for materials that do not apply.
7. If preferred, delete clauses from the "INSTALLATION" and "GENERAL" Sections that do not apply.
8. Delete this guide text.
9. Make other changes as desired to customise and complete the specification.
10. Check that other Specification Sections are co-ordinated with this Tiling Specification, such as:
 - CONCRETE: Wood float finish for Direct fix to slabs.
 - SHEET LININGS & SHEET FLOORING: Grades, Thicknesses and Fixing to manufacturer's recommendations for tiling situation.

For Tiling Applications not covered by this guide or to receive further technical guidance call ARDEX on 1800 224 070 or Fax on 02 9838 7817.

Further information on the design, specification and installation of tiling is also available in the following Australian Standards:

- AS 3958.1 Guide to the installation of ceramic tiles
- AS 3958.2 Guide to the selection of a ceramic tiling system

Tiling Specification Guide

Subsection 1: General

1.1 SCOPE OF WORK

SCOPE: Supply and install tiling, including preparation.

TILES:

- Ceramic floor and wall tiles
- Natural stone floor and wall tiles

LOCATIONS:

- Internal floors and walls
- External paving and decks
- External walls
- External facade panels

EXTENT: As shown on the drawings and described in the Finishes Schedule.

1.2 STANDARDS

REQUIREMENT: Complete the work in accordance with the relevant standards, including:

AS 1315	(1982)	Portland cement
AS 1672	(1974)	Building limes
AS 4992	(2003)	Ceramic tiles – Products for installation – adhesives
AS 3740	(1994)	Waterproofing of wet areas within residential buildings
AS 3958.1	(1991)	Guide to the installation of ceramic tiles
AS CA27	(1959)	Code of recommended practice for internal plastering on solid backgrounds
AS 4662	(2003)	Ceramic Tiles Definitions, classifications and characteristics and marking

1.3 STORAGE

MATERIALS: Store material on and off-site so as to avoid deterioration as described in clause 2.14 of AS 3958.1-1991 for Tiles, Cement, Lime, Sand, Adhesives and Jointing Materials.

1.4 SAMPLES AND SPARES

TILES: Prior to installation, make available samples of each tile type. On completion, leave spare tiles from opened packs for future repairs.

SAMPLE INSTALLATION PANEL: Make first area of work available as a sample panel for inspection to confirm workmanship. Provide additional panels if requested.

1.5 QUALITY ASSURANCE

REQUIREMENT: Prepare an Inspection and Test Plan (ITP) for the work. Record on the ITP the inspections and checks as they are made. Make ITP's available for inspection or provide copies when requested.

Tiling Specification Guide

Subsection 2: Materials

2.1 CERAMIC TILES

SELECTION: The selected Ceramic Tiles are described:

- on the Drawings
- in the Finishes Schedule
- in the Application Tables

2.2 STONE TILES

SELECTION: The selected Stone Tiles are described:

- on the Drawings
- in the Finishes Schedule
- in the Application Tables

Translucent Marble:

- Ensure White Adhesives are selected.

Moisture Sensitive Stone: Confirm fixing methods and materials with ARDEX Tiling Specification Guide, section 8.2.

2.3 MORTAR MATERIALS

SAND: To AS CA27, graded to Table 1 of the Appendix to that code.

CEMENT: Normal cement to AS 3972.

WHITE CEMENT: To AS 1315, Type A and free of iron salts.

WATER: To AS CA27.

2.4 SEALANTS

STANDARD: Sealants and back-up materials shall be as described in clause 2.7 of AS 3958.1-1991 and in clause 9.18 of AS 3740.

ARDEX SE Silicone where appropriate.

COLOUR: As selected from standard colour range.

INSTALLATION: Install in accordance with the manufacturer's recommendations.

2.5 STRIPS AND WEATHERBARS

MATERIAL: Unless otherwise shown, these materials shall be:

- Tile Edge Strips: Aluminium
- Floor Finish Divider Strips: Aluminium
- Weatherbars: Aluminium

2.6 GROUT

ARDEX FG 8: Joints 1 to 8mm wide.

ABACOLOR WIDE JOINT: Joints 5 to 15mm wide.

COLOUR: As selected from standard colour range.

APPLICATION: Mix grout with water, or ABA GROUT BOOSTER and apply in accordance with manufacturer's recommendations.

2.7 EPOXY GROUT

ABAPOXY GROUT

100% solids epoxy grout for superior stain and hygiene control as well as physical and chemical resistance (e.g. commercial food preparation areas, hospitals.)

COLOURS: As selected from standard colour range.

GRADES:

Fine: Optimum joint finish (1.5 to 15mm joints).

Coarse: Installation efficiency (3 to 15mm joints).

APPLICATION: Mix and use ABAPOXY GROUT in accordance with manufacturer's recommendations.

2.8 TILE FIXING ADHESIVES GENERALLY

DISPERSION ADHESIVES: To AS 4992, Part 1, Table 2.

CEMENT-BASED ADHESIVES: To AS 4992, Part 1, Table 1.

COMPATIBILITY WITH SUBSTRATE: Ensure compatibility of all adhesives with the relevant substrates, particularly waterproofing membranes and coatings.

2.9 ABACRETE

DESCRIPTION: Liquid polymer used instead of water in cement mortar and render mixes, and as a bonding polymer in mortar bedding.

MIXING: Mix in proportions as specified in BEDDING MORTAR clause and in accordance with manufacturer's instructions.

2.10 ABAFIX

DESCRIPTION: Dispersion adhesive with extended open time. For internal walls only.

COLOUR: White

MIXING: Premixed, no mixing required.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide use a 6 x 6 x 6mm notched trowel.

CAUTION: Do not use for non-porous tiles over non-porous substrates.

2.11 ABAFLEX

DESCRIPTION: High performance, flexible, polymer modified, cement based adhesive capable of withstanding heavy pedestrian traffic. Suitable for early age concrete and cement screeds/renders. For internal and external tiling.

COLOUR: Off-white or grey

MIXING: Mix with clean water in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.12 ABALASTIC

DESCRIPTION: A liquid polymer additive for mixing with selected ABA cement based adhesives. Improves adhesion, flexibility, elasticity and water resistance. Suitable for internal and external tiling.

COLOUR: White liquid

MIXING: Mix with ABA cement based adhesives instead of water.

Note: ABALASTIC must not be diluted.

2.13 ABAMASTIC

DESCRIPTION: Dispersion adhesive with superior non slump and extended open time. For internal walls.

COLOUR: White

MIXING: No mixing required.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide use a 6 x 6 x 6mm notched trowel.

CAUTION: Do not use for non-porous tiles over non-porous substrates.

2.14 ABAPOXY ADHESIVE

DESCRIPTION: 100% solids epoxy adhesive, for fixing moisture sensitive stone. Three part system.

COLOUR: Neutral

MIXING: Mix in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. Alternatively, use back buttering method in accordance with manufacturer's instructions.

2.15 ABA CERAMIC TILE UNDERLAY (CTU)

DESCRIPTION: Two component underlay to isolate movement in floor backgrounds and to provide a suitable surface for tiling. For internal and covered external areas.

COLOUR: Green/aqua

BACKGROUNDS: Strip timber flooring, particleboard sheet flooring, compressed fibre cement sheet flooring, concrete flooring subject to movement.

MIXING: Mix powder and liquid in accordance with manufacturer's instructions.

APPLICATION: Apply to substrates in accordance with manufacturer's instructions.

2.16 ABA GLUE

DESCRIPTION: Economical, rubber modified cementitious adhesive for internal and external (with satisfactory falls) tiling.

COLOUR: Off White

MIXING: Mix with clean water in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.17 ABA GROUT BOOSTER

DESCRIPTION: Water based, additive to impart resilience and strength to cement-based grouts.

COLOUR: White liquid

MIXING: Mix with ABA cement-based grouts in accordance with the manufacturer's instructions.

Tiling Specification Guide

Subsection 2: Materials

2.18 ABA ISOFLEX (TWO PART)

DESCRIPTION: Highly flexible, two component rubber modified adhesive and underlay combined.

COLOUR: Grey or White (Internal)

MIXING: Mix powder and liquid in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

Underlay/timber adhesive: ABA specialised notched trowel for timber floors or 12mm sabre trowel.

2.19 ABA ISOFLEX (1 PART)

DESCRIPTION: Single component rubber modified adhesive

COLOUR: Grey

MIXING: Mix with clean water in accordance with manufacturers instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, use a 6 x 6 x 6mm notched trowel for walls, and for floors use a 10 x 10 x 10mm notched trowel.

2.20 ABA MULTIPURPOSE POWDER (MPP)

DESCRIPTION: Cementitious, flexible mastic adhesive (powder) for internal tiling.

COLOUR: White

MIXING: Mix with clean water in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.21 ABA OPTIMA

DESCRIPTION: High performance and water resistant, two part adhesive. For internal and external tiling.

COLOUR: White

MIXING: Mix powder & liquid in accordance with manufacturer's instructions.

TILE FIXING: For fixing to existing tiles without any mechanical preparation. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.22 ABA PREMIXED RESAFLEX

DESCRIPTION: Ready to use, dispersion adhesive, for internal walls and floors (fibre cement sheet floors only).

COLOUR: Dark grey

MIXING: Premixed, no mixing required.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, use a 6 x 6 x 6mm notched trowel for walls, and for floors use a 10 x 10 x 10mm notched trowel.

CAUTION: Do not use for non-porous tiles over non-porous substrates.

2.23 ABA QUICKBOND

DESCRIPTION: A fast setting, polymer fortified, cement based adhesive for internal and external tiling.

COLOUR: Light grey

MIXING: Mix with clean water in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.24 ABA SOUNDPROOF UNDERLAY

DESCRIPTION: Cement based, semi self-smoothing acoustic underlay for use under hard floor coverings. Two part system for use in internal and external areas.

COLOUR: Grey

BACKGROUNDS: Concrete floors, timber, compressed fibre cement sheets & Superflex.

MIXING: Mix powder and liquid in accordance with manufacturer's instructions.

APPLICATION: Apply to background surfaces in accordance with manufacturer's instructions.

2.25 ABA SUPER TILESET

DESCRIPTION: Cement based, polymer fortified adhesive for internal and external (not subject to movement) tiling.

COLOUR: Grey

MIXING: Mix with clean water in accordance with manufacturer's instructions. Mix with ABALASTIC where movement is anticipated.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.26 ARDEX D 2

DESCRIPTION: High performance, non slump, water resistant dispersion adhesive with extended open time for internal walls.

COLOUR: White

MIXING: no mixing required.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide use a 6 x 6 x 6mm notched trowel.

CAUTION: Due to extended drying times, not suitable for non-porous tiles over non-porous substrates.

2.27 ARDEX LQ 92

DESCRIPTION: Cement based, fast setting, under-tile levelling compound for uneven concrete floors.

COLOUR: Grey

BACKGROUNDS: Uneven concrete floors.

MIXING: Mix with clean water in accordance with manufacturer's instructions.

APPLICATION: Apply to background surfaces in accordance with manufacturer's instructions.

2.28 ARDEX MULTIPRIME

DESCRIPTION: Water based primer for preparing porous and unsealed surfaces prior to tiling & waterproofing.

COLOUR: White liquid

APPLICATION: Apply in accordance with manufacturer's instructions.

2.29 ARDEX S 16

DESCRIPTION: Rapid drying cement based adhesive for internal tiling.

COLOUR: Grey or white

MIXING: Mix with clean water in accordance with manufacturer's instructions. Mix with ARDEX E 90 (Ardion 90) where movement is anticipated.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.30 ARDEX STS 8

DESCRIPTION: High tensile strength, cement based tile adhesive with non shrink capability for internal and external (not subject to movement) tiling.

COLOUR: Off White or White

MIXING: Mix with clean water in accordance with manufacturer's instructions. Mix with ARDEX E 90 (Ardion 90) where movement is anticipated.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

2.31 ARDEX X 56

DESCRIPTION: Highly flexible, fast setting, polymer modified adhesive for internal and external tiling. Suitable for early age concrete and cement screeds/renders. Single part adhesive and underlay combined.

COLOUR: Light grey

MIXING: Mix with clean water in accordance with manufacturer's instructions.

TILE FIXING: Notched trowel method. Use an appropriate notched trowel to achieve full coverage. As a general guide, for walls use a 6 x 6 x 6mm notched trowel, and for floors use a 10 x 10 x 10mm notched trowel.

Underlay/timber adhesive: ARDEX specialised notched trowel for timber floors or a 12mm sabre trowel.

2.32 ARDEX WPM 390

DESCRIPTION: Water-based, modified polyurethane membrane developed for high-performance under-tile waterproofing.

COLOUR: Mauve paste

MIXING: Mix in accordance with manufacturer's instructions.

APPLICATION: Apply to substrates in accordance with manufacturer's instructions.

2.33 ARDEX E 90 (ARDION 90)

DESCRIPTION: Admixture for use with ARDEX cement-based adhesives to increase bond strength, elasticity and water resistance.

COLOUR: White

MIXING: Mix with ARDEX cement-based adhesives in accordance with the manufacturer's instructions.

2.34 UNDERTILE MEMBRANE SYSTEMS

WATERPROOF MEMBRANE: Flexible acrylic based liquid waterproofing membranes which accommodate normal structural movement.

ARDEX WPM 001 (Premixed Bathroom & Balcony): One part, blue, liquid reinforced acrylic for use under tiles.

ARDEX WPM 002 (Two Part Bathroom & Balcony): Two part, light green, acrylic cementitious system for use under tiles – fast drying.

SYSTEM SELECTION: Select and apply the system most suited to the requirements of the installation and the installation conditions.

APPLICATION: Apply to substrates in accordance with manufacturer's instructions.

Tiling Specification Guide

Subsection 3: Installation

3.1 INSTALLATION GENERALLY

PREPARATION: Preparation of backgrounds shall generally be as described in Section 4 of AS 3958.1-1991. Suitably prepare backgrounds and substrates in accordance with manufacturer's instructions to receive the bedded finish.

Note: Backgrounds must be properly prepared. Remove all dirt, dust, grease, oil, loose particles and any other form of contamination or deleterious material.

Substrates must be sound and dry.

INSTALLATION: Installation will be as described in Section 5 of AS 3958.1-1991, including Setting out, Fitting, Movement joints, Sealants, Tile finish and joints and Grouting.

3.2 BACKGROUND MATERIALS

INSTALLATION: Installation of background and substrate materials by other trades is required to meet relevant standards and manufacturer's instructions.

INSPECTION: Inspect background and substrate materials for conditions unsuitable for tiling over and do not commence work in the affected area until rectified.

BACKGROUND PREPARATION: Preparation may vary depending on adhesive used. Details on packaging.

3.3 COMPLETION

REQUIREMENT: Work must be free of damage or defects on completion.

3.4 CLEANING

REQUIREMENT: Clean the work as it proceeds and leave the work clean on completion.

3.5 SETTING OUT

STANDARD: Setting out, cutting and fitting of tiles shall be as described in clauses 5.4.2 and 5.4.3 of AS 3958.1-1991.

SET OUT: Set out tiling as shown on the Drawings. Confirm bond and pattern before installing.

FALLS: Provide even and correct falls to floor tiles where required, including falls to floor wastes. A level finish at walls is required.

LEVEL FLOORS: Where falls are not required, lay floor tiles level.

3.6 TILE FINISH AND JOINTS

STANDARD: Provide tile finish and joints, including tolerances, as described in clause 5.4.6 of AS 3958.1-1991.

JOINT WIDTHS: Joint widths shall be suited to tile and in accordance with tile manufacturer's recommendations.

3.7 GROUTING

STANDARD: Grout tiling as described in clause 5.7 of AS 3958.1-1991.

3.8 ADHESIVE APPLICATION METHODS

ADHESIVE COVERAGE: The whole of the back of the tile must be in good contact with the adhesive, with no voids. Remove a tile from time to time during installation to ensure correct coverage. Do not fix tiles over skinned adhesive.

NOTCHED TROWEL METHOD: Adhesive application by Notched Trowel Method shall be as described in clause 5.6.2(a) of AS 3958.1-1991.

Notched Trowel Sizes:

- 4.5 x 4.5 x 4.5mm (mosaics)
- 6 x 6 x 6mm
- 10 x 10 x 10mm
- 12 x 12 x 12mm

Use an appropriate notched trowel to achieve full coverage.

BUTTERING METHOD: Adhesive application by Buttering Method shall be as described in clause 5.6.2(c) of AS 3958.1-1991.

TILES IN AWKWARD LOCATIONS: For tiles in awkward locations, the buttering method of fixing may be necessary to ensure full bedding, even though the notched trowel method has been specified.

3.9 MOVEMENT JOINTS

STANDARD: Provide movement joints as described in clause 5.4.5 of AS 3958.1-1991.

DEPTH: Movement joints shall go right through the tile and bed to the background.

WIDTH: Minimum 6mm.

LOCATIONS: Movement joint locations include the following:

At corners:

- In wall tiling, at internal vertical corners
- In floor tiling, at walls, columns, nibs, hobs and the like.

At interruptions:

- around sanitary fixtures

- around fixtures interrupting the tile surface, such as pipes, brackets, bolts, nibs, and the like
- at junctions with joinery fixtures, such as window and door frames and built-in cupboards.

At changes in substrate or background: Along line of change, wherever changes occur.

In large areas:

- In floor tiling, provide joints at not less than 4.5 metres spacing in both directions and 3.5 metres externally
- In wall tiling, provide vertical joints at not less than 3.5 metres spacing along the length of a wall
- In wall tiling, provide horizontal joints at each storey rise in the height of a wall
- Over all existing expansion joints.

3.10 MORTAR BED

STANDARD: Install as described in Appendix A of AS 3958.1-1991.

PREPARATION: Apply a slurry coat to background of 3:2 by volume of cement to Abacrete, to improve adhesion.

MIXING: For screeds mix 21 litres of diluted Abacrete (1:3 by volume, Abacrete to water) with 40kg of Portland cement and 120kg of clean sand. Apply screed while slurry coat is still damp.

THICKNESS: Reinforce as per AS3958.1 if over 40mm thick. Minimum screed thickness is 15mm with Abacrete.

TILING OVER: Allow at least 7 days after screeding before tiling over, unless using ABAFLEX or ARDEX X 56 in which case tiling can commence after 16 hours.

3.11 CEMENT RENDER

PREPARATION, MIXES AND APPLICATION: Prepare surfaces, mix and apply as described in Appendix B of AS 3958.1-1991.

CEMENT RENDER: Apply Slurry Coat and Render Coat to required thickness.

Slurry coat: 3:2 by volume of cement to Abacrete.

Render coat: For renders mix 27 litres of diluted Abacrete (1:3 by volume, Abacrete to water) with 40kg of Portland cement and 120kg of clean sand. Apply render while slurry coat is still damp. Renders are applied in the normal manner up to 13mm and allowed to take their initial set. For Renders in excess of 13mm contact ARDEX.

TILING OVER: Allow at least 7 days after rendering before tiling over, unless using ABAFLEX or ARDEX X 56 in which case tiling can commence after 16 hours.

3.12 UNDERLAY

UNDERLAY MATERIAL: ABA CERAMIC TILE UNDERLAY (CTU)

LOCATIONS: In internal installations apply underlay over the following flooring backgrounds subject to movement:

- strip timber flooring (tongued and grooved)
- particleboard sheet flooring.

INSTALLATION: Supply and install ABA CERAMIC TILE UNDERLAY (CTU) in accordance with the manufacturer's recommendations.

3.13 WET AREA WATERPROOFING

STANDARD: Provide waterproofing to Wet Areas as described in AS 3740.

WATERPROOFING MATERIAL: ARDEX WPM 001/WPM 002 or ARDEX WPM 390.

LOCATIONS: Extent of wet areas as described in AS 3740 and as shown on the drawings.

INSTALLATION: Supply and install waterproofing membrane in accordance with the manufacturer's recommendations by an ARDEX accredited waterproofing applicator.

3.14 EXTERNAL WATERPROOFING

LOCATIONS: As shown on the drawings or scheduled to:

- external decks
- balconies
- rooftops.

WATERPROOFING MATERIAL: ARDEX WPM 001/WPM 002 or ARDEX WPM 390.

INSTALLATION: Supply and install waterproofing membrane in accordance with the manufacturer's recommendations by an accredited ARDEX waterproofing applicator.

Application Tables

This set of Application Tables is intended for use with the Tiling Specification Guide. The Tables should be customised to suit the particular tiling applications. The customised Tables should be accompanied by the Specification.

The steps suggested for their use are found at the front of the Tiling Specification Guide.

For Tiling Applications not covered by this guide or to receive further technical guidance on its application to your tiling installation call ARDEX on 1800 224 070 or fax us on (02) 9838 7817.

Further information on the design, specification and installation of tiling is also available in the following Australian Standards:

AS 3958.1-1991. Guide to the installation of ceramic tiles

AS 3958.2-1992. Guide to the selection of a ceramic tiling system

GUIDE TABLES INCLUDED:

Subsection 4: Light Traffic Floor Tiling Applications

- 4.1 Light traffic floor tiling on concrete slabs (Abaflex, Glue, X 56, STS 8 and A90)
- 4.2 Light traffic floor tiling on compressed fibre cement sheet flooring (Abaflex, Glue, X 56 and 2 part Isoflex)
- 4.3 Light traffic floor tiling on particleboard or timber flooring
- 4.4 Light traffic floor tiling on ARDEX DS 40
- 4.5 Light traffic floor tiling on Soundproof Underlay

Subsection 5: Heavy Traffic Floor Tiling Applications

- 5.1 Heavy traffic floor tiling on concrete slabs
- 5.2 Heavy traffic floor tiling on particleboard or timber flooring

Subsection 6: Internal Wall Tiling Applications

- 6.1 Internal wall tiling on masonry, concrete or cement render
- 6.2 Internal wall tiling on sheet linings

Subsection 7: External Wall And Facade Tiling Applications

- 7.1 External wall tiling on masonry, concrete or cement render

Subsection 8: Special Location Tiling Applications

- 8.1 Swimming pool tiling over concrete
- 8.2 Moisture sensitive stone tiling over masonry, concrete, render and sheet linings
- 8.3 Moisture sensitive stone over concrete slabs
- 8.4 Tiling over existing tiles
- 8.5 Floating Tiled Floor
- 8.6 Soundproof Floors

Application Tables

Subsection 4: Light Traffic Floor Tiling Applications

4.1 LIGHT TRAFFIC FLOOR TILING ON CONCRETE SLABS

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble).
LOCATIONS:	Internal floors, including wet areas with adequate falls to a waste. External floors with adequate falls to a waste.
PERFORMANCE LEVELS:	Residential and Light Commercial only (ie. no load stress).
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Concrete floor slab with or without set-downs.
SUBSTRATE:	With Set Downs: Lay MORTAR BED (refer section 3.10) in set-down, with or without falls. Falls to waste required when waterproofing. For Direct Fix: Concrete floor slab, wood float finish; free from contamination and curing compounds. Concrete slabs 35MPa to 50MPa must be shot blasted prior to tiling. Contact ARDEX for concrete > 50MPa.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX ABA GLUE ARDEX X 56 ^{NT} ARDEX STS 8 (where movement is anticipated & externally, mix with ARDEX E 90 (Ardion 90)). ARDEX S 16 / ABA QUICKBOND ^{NT} (Fast setting. Where movement is anticipated mix with ARDEX E 90 (Ardion 90) / Abalastic respectively). ARDEX S 16 suitable for dry area internal floors only.
GROUT:	ARDEX FG 8 – 1 to 8mm ABACOLOR WIDE JOINT – joints 5 to 15mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

Application Tables

Subsection 4: Light Traffic Floor Tiling Applications

4.2 LIGHT TRAFFIC FLOOR TILING ON COMPRESSED FIBRE CEMENT SHEET

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble).
LOCATIONS:	Internal floors, including wet areas with adequate falls to a waste. External floors with adequate falls to a waste.
PERFORMANCE LEVELS:	Residential and Light Commercial only (no load stress).
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
SUBSTRATE:	Compressed fibre cement sheet as recommended by the manufacturer. In wet areas use a MORTAR BED (refer section 3.10) with falls to waste.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX ABA ISOFLEX ^{NT} 2 part (dry areas) ABA GLUE ARDEX X 56 ^{NT} ARDEX STS 8 and ARDEX E 90 (Ardion 90)
GROUT:	ARDEX FG 8 – 1 to 8mm ABACOLOR WIDE JOINT – joints 5 to 15mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tilesurface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

4.3 LIGHT TRAFFIC FLOOR TILING ON PARTICLEBOARD OR TIMBER FLOORING

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble).
LOCATIONS:	Internal floors, including wet areas with adequate falls to a waste.
PERFORMANCE LEVELS:	Residential and Light Commercial only (no load stress).
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
SUBSTRATE:	Structural particleboard floor sheeting. Tongued and grooved timber floor boards (where maximum load deflection does not exceed 1/360 of the span and with good under floor ventilation). For oil rich timbers e.g. cypress pine, contact ARDEX. Does not include unbonded timber such as laminated flooring. In wet areas use a MORTAR BED (refer section 3.10) with falls to waste.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX over ABA Ceramic Tile Underlay ABA ISOFLEX ^{NT} 2 part (dry areas) ARDEX X 56 ^{NT}
GROUT:	ARDEX FG 8 mixed with diluted Grout Booster – for joints 1 to 8mm ABACOLOR WIDE JOINT mixed with undiluted Grout Booster – joints 5 to 15mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

Application Tables

Subsection 4: Light Traffic Floor Tiling Applications

4.4 LIGHT TRAFFIC FLOOR TILING APPLICATION ON ARDEX DS 40

TILES:	All types.
LOCATIONS:	Internal and external floors.
PERFORMANCE LEVELS:	Residential only.
STANDARD:	Similar tiling systems as per AS 3958.
BACKGROUND:	Concrete floor substrates with or without setdowns.
SUBSTRATES:	For direct application, Concrete floor substrate, wood float finish and free from contamination and curing compounds. Concrete slabs 35 to 50MPa must be shot blasted prior to application of Soundproofing Underlay system. Level uneven surfaces with ARDEX Primer and ARDEX LQ 92 Leveling Compound.
PRIMER:	For absorbent substrates only. Use ARDEX MULTIPRIME and allow to dry. For dense substrates and timber surfaces, Use ARDEX P 82 primer and allow to dry.
SOUNDPROOFING:	Apply the ARDEX DS 40 mat onto the prepared substrate surface. Spread the appropriate adhesive (see list below) and place the mat fleece side down into the spread adhesive.
TOPPING SCREEDS:	Apply MORTAR BED (refer section 3.10) with or without falls.
WATERPROOFING:	To be applied over topping screeds only. Select from the following: ARDEX WPM 001, or ARDEX WPM 002 or ARDEX WPM 390 liquid applied membranes.
ADHESIVES:	ARDEXX 56 or ARDEX STS 8 mixed with ARDEX E 90 (Ardion 90) or ARDEX S 16 mixed with ARDEX E 90 (Ardion 90).
GROUT:	Cement based grout such as ARDEX FG 8, FLEXGROUT ULTRASMMOOTH or ABACOLOUR WIDE JOINT mixed with Grout Booster diluted 50:50 in water.
MOVEMENT JOINTS:	As required by AS 3958.
APPLICATION:	Apply materials in accordance with manufacturers instructions.

4.5 LIGHT FOOT TRAFFIC FLOOR TILING APPLICATION ON SOUNDPROOFING UNDERLAY

TILES:	All Types.
LOCATIONS:	Internal and external Floors. Substrate to be flat and level with no fall to wastes. Falls to floor wastes may be provided by topping screeds placed over the cured Soundproofing Underlay.
PERFORMANCE LEVELS:	Residential only.
STANDARD:	Tiling to AS 3958. Waterproofing to AS 3740.
BACKGROUND:	Concrete floor substrates with or without set-downs.
SUBSTRATE:	<p>With set-downs, apply Soundproofing Underlay first before providing topping screed with or without falls. Falls to wastes are to be provided in the topping screeds when waterproofing is required.</p> <p>For application direct to concrete, slab to have wood float finish, free from contamination and curing compounds. Concrete slabs 35 to 50MPa must be shot blasted prior to application of the Soundproofing Underlay.</p> <p>Apply ARDEX LQ 92 if necessary to ensure surface has less than 3mm variation over 2m. Alternatively apply a layer of Soundproof Underlay (max 10mm thick) to level the floor.</p>
PRIMER:	<p>ARDEX MULTIPRIME to fully cured and dry substrates.</p> <p>ARDEX WPM 300 where the substrate has greater than 5% moisture content.</p>
SOUNDPROOFING:	<p>Apply the Soundproofing Underlay in accordance with the design criteria.</p> <p>Standard Systems are 5mm and 10mm thick applied to the primed concrete.</p> <p>Super Systems are 5mm and 10mm applied over a Synthetic Felt mat that has been precut to suit the dimensions of the rooms. Mat is to be adhered to substrate with 50mm overlaps. Allow the slurry to dry prior to application of the top layer. Apply the Soundproofing Underlay over the mat to the required thickness and allow to cure.</p>
WATERPROOFING:	ARDEX WPM 001 or ARDEX WPM 002 or ARDEX WPM 390 liquid applied membranes if soundproofing underlay is an external application or if applied to internal wet area floors.
TOPPING SCREED:	Apply MORTAR BED (refer section 3.10) with or without falls. Topping may be applied directly over the cured Soundproofing Underlay or over the cured Waterproofing membrane.
ADHESIVE:	ARDEX X 56, ISOFLEX 2 part or ISOFLEX 1 part or ABAFLEX.
GROUT:	Cement based (such as ARDEX FG 8, FLEXGROUT ULTRASMOOTH or ABACOLOUR WIDE JOINT) mixed with Grout Booster diluted 50:50 in water.
MOVEMENT JOINTS:	As per AS 3958.
APPLICATION:	Apply materials in accordance with Manufacturers instructions.

Application Tables

Subsection 5: Heavy Traffic Floor Tiling Applications

5.1 HEAVY TRAFFIC FLOOR TILING ON CONCRETE SLABS

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble).
LOCATIONS:	Internal floors, including wet areas with adequate falls to a waste. External floors with adequate falls to a waste.
PERFORMANCE LEVELS:	Commercial / Industrial.
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Concrete floor slab, with or without set-downs.
SUBSTRATE:	With Set Downs: Lay MORTAR BED in set-down, with or without falls. Falls to waste required prior to waterproofing. For Direct Fix: Concrete floor slab, wood float finish; free from contamination and curing compounds. Concrete slabs 35MPa to 50MPa must be shot blasted prior to tiling. Contact ARDEX for concrete > 50MPa.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	Commercial: ABAFLEX ARDEX STS 8 mixed with ARDEX E 90 (Ardion 90) ARDEX S 16 / ABA QUICKBOND ^{NT} (Fast setting. Where movement is anticipated mix with ARDEX E 90 (Ardion 90) / Abalastic respectively). ARDEX S 16 suitable for dry area internal floors only. Industrial: ABAPOXY ADHESIVE
GROUT:	ARDEX FG 8 – 1 to 8mm ABACOLOR WIDE JOINT – joints 5 to 15mm Industrial: ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

5.2 HEAVY TRAFFIC FLOOR TILING ON PARTICLEBOARD OR TIMBER FLOORING

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as dark coloured marble i.e. green, black, burgandy).
LOCATIONS:	Internal floors, including wet areas with adequate falls to a waste.
PERFORMANCE LEVELS:	Commercial (load bearing floors).
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Structural particleboard floor sheeting. Tongued and grooved timber floor boards where maximum load deflection does not exceed 1/360 of the span and with good under floor ventilation For oil rich timbers e.g. cypress pine contact ARDEX. Does not include unbonded timber such as laminated flooring. A screed must be installed prior to fixing. In wet areas use a MORTAR BED with falls to waste (refer section 3.10).
SCREED:	Unbonded slip sheet followed by a 40mm reinforced screed. Alternatively, mechanically fix fibre sheets to the background (refer to manufacturer's instructions).
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX ARDEX STS 8 (mix with ARDEX E 90 (Ardion 90) for tiling over fibre-cement sheets).
GROUT:	ARDEX FG 8 mixed with diluted Grout Booster – for joints 1 to 8mm ABACOLOR WIDE JOINT mixed with undiluted Grout Booster – joints 5 to 15mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

Application Tables

Subsection 6: Internal Wall Tiling Applications

6.1 INTERNAL WALL TILING ON MASONRY, CONCRETE OR CEMENT RENDER

TILES:	Ceramic wall tiles (all types). Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble). When fixing tiles that weigh more than 4kg individually or to a height above 3 metres, mechanical support is required.
LOCATIONS:	Internal walls, including wet areas.
PERFORMANCE LEVELS:	Commercial and Residential.
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Masonry, Concrete walls or Cement Render with wood float finish.
SUBSTRATE:	Apply SAND/CEMENT RENDER over Masonry and concrete if true surface needs to be established. Render should have a wood float finish. Add ABACRETE for greater strength and adhesion.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX or ABA MULTI PURPOSE POWDER (MPP) ABAMASTIC or ABAFIX (dry areas only) ARDEX STS 8 or ARDEX X 56 ^{NT} ARDEX D 2 (when using over waterproofing membrane, suitable for porous tiles only).
GROUT:	ARDEX FG 8 – 1 to 8mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

6.2 INTERNAL WALL TILING ON SHEET LININGS

TILES:	Ceramic wall tiles (all types). Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble). When fixing tiles that weigh more than 4kg individually or to a height above 3 metres, mechanical support is required. Check sheet lining manufacturer's maximum load bearing capacity.
LOCATIONS:	Internal walls, including wet areas.
PERFORMANCE LEVELS:	Commercial and Residential.
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Fibre-cement sheeting. Plasterboard (prime jointing compound only).
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX or ABA MULTIPURPOSE POWDER (MPP) ABAMASTIC or ABAFIX (dry areas only) ARDEX X 56 ^{NT} or ARDEX STS 8 + ARDEX E 90 (Ardion 90) ARDEX D 2 (when using over waterproofing membrane, suitable for porous tiles only).
GROUT:	ARDEX FG 8 – 1 to 8mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} *Not suitable for translucent tiles*

Application Tables

Subsection 7: External Wall and Facade Tiling Applications

7.1 EXTERNAL WALL TILING ON MASONRY, CONCRETE OR CEMENT RENDER

TILES:	Ceramic Wall Tiles (suitable for external use). Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble). When fixing tiles that weigh more than 4kg individually or to a height above 3 metres, mechanical support is required.
LOCATIONS:	External walls.
PERFORMANCE LEVELS:	Commercial and Residential.
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Masonry, Concrete walls or Cement render with wood float finish.
SUBSTRATE:	Apply SAND/CEMENT RENDER over Masonry and Concrete if true surface needs to be established. Render should have a wood float finish. Add ABACRETE for greater strength and adhesion.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAFLEX ABA OPTIMA ARDEX STS 8 + ARDEX E 90 (Ardion 90)
GROUT:	ARDEX FG 8 – 1 to 8mm ABACOLOR WIDE JOINT – joints 5 to 15mm Add ABA Grout Booster for improved flexibility, strength and water resistance.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ABA COLOURFLEX Plus sealant.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

Application Tables

Subsection 8: Special Location Tiling Applications

8.1 SWIMMING POOL TILING OVER CONCRETE

TILES:	Ceramic Tiles (of suitable types).
LOCATION:	Swimming pools.
PERFORMANCE LEVELS:	Commercial and Residential.
BACKGROUND:	Concrete pool shell.
SUBSTRATE:	Apply SAND/CEMENT RENDER over background if true surface needs to be established; wood float finish. Add ABACRETE for greater strength and adhesion.
PRIMER:	ARDEX MULTIPRIME or ARDEX WPM 300
WATERPROOFING:	ARDEX WPM 002 / ARDEX WPM 390
ADHESIVE:	Public: ABA Optima
GROUT:	Domestic: ARDEX FG 8 (Colour-200) mixed with ABA GROUT BOOSTER – joints 1 to 8mm. ABACOLOR WIDE JOINT (Off white) mixed with undiluted GROUT BOOSTER – joints 5 to 15mm. Public: ABAPOXY GROUT (OFF-WHITE) Hydrotherapy: ABAPOXY GROUT (OFF-WHITE)
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use a suitable sealant.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

Application Tables

Subsection 8: Special Location Tiling Applications

8.2 MOISTURE SENSITIVE STONE TILING OVER MASONRY, CONCRETE, RENDER AND SHEET LININGS

TILES:	Marble, Granite or other stone tiles sensitive to moisture. When fixing tiles that weigh more than 4kg individually or to a height above 3 metres, mechanical support is required. Check the substrates load bearing capacity. For details refer to ARDEX technical bulletins TB001, TB010 and TB148.
LOCATIONS:	Internal and external walls, including wet areas. Check suitability of stone for external use with supplier.
PERFORMANCE LEVELS:	Commercial and Residential.
BACKGROUND:	Masonry, concrete, plasterboard, fibre-cement sheet and render.
SUBSTRATE:	Apply SAND/CEMENT RENDER over masonry and concrete if true surface needs to be established, wood float finish. Add ABACRETE for greater strength and adhesion. Check with sheet manufacturers for specific load bearing capacity.
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAPOXY ADHESIVE ARDEX S 16 W (low to medium dimensionally stable stone, internal only).
GROUT:	ABAPOXY GROUT for superior physical, chemical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

8.3 MOISTURE SENSITIVE STONE TILING OVER CONCRETE SLABS

TILES:	Marble, Granite or other stone tiles sensitive to moisture. For details refer to ARDEX technical bulletin TB010.
LOCATIONS:	Internal and external floors, including wet areas with adequate falls to a waste.
PERFORMANCE LEVELS:	Residential and Light Commercial (i.e no load stress).
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
BACKGROUND:	Concrete floor slab, with or without set-downs.
SUBSTRATE:	With Set Downs: Lay MORTAR BED (refer section 3.10) in set-down, with or without falls. Falls to waste required prior to waterproofing. For Direct Fix: Concrete floor slab, wood float finish; free from contamination and curing compounds. Concrete slabs 35MPa to 50MPa must be shot blasted prior to tiling. Contact ARDEX for concrete > 50MPa.
PRIMER:	ARDEX MULTIPRIME
WATERPROOFING:	ARDEX WPM 001 / WPM 002 / ARDEX WPM 390
ADHESIVE:	ABAPOXY ADHESIVE ARDEX S 16 W (low to medium dimensional stable stone, internal only).
GROUT:	ABAPOXY GROUT for superior physical, chemical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

Application Tables

Subsection 8: Special Location Tiling Applications

8.4 TILING OVER EXISTING TILES

TILES:	Ceramic Floor Tiles 0.01 – 6% water absorption. Marble, Granite or other natural stone tiles (excludes water sensitive natural stone such as green marble).
LOCATIONS:	Internal / external
PERFORMANCE LEVELS:	Residential and Commercial.
STANDARD:	Similar Tiling Systems in AS 3958.1-1991.
SUBSTRATE:	Existing tiles or terrazzo in sound condition.
ADHESIVE:	Without mechanical removal of existing glaze (Internal only): ABA OPTIMA ARDEX STS 8 + ARDEX E 90 (Ardion 90) (in dry areas only) Where glaze of existing tiles is mechanically removed: ABAFLEX ARDEX X 56 ^{NT} (no load stress)
GROUT:	ARDEX FG 8 – 1 to 8mm ABACOLOR WIDE JOINT – joints 5 to 15mm ABAPOXY GROUT – for superior chemical, physical and stain resistance. Colours as selected from standard colour range.
MOVEMENT JOINTS:	Provide at junctions of horizontal and vertical surfaces, where fixtures interrupt tile surface, around perimeters and to break up large areas as per AS 3958. Use ARDEX SE Silicone.
APPLICATION:	Apply materials in accordance with manufacturers' and suppliers' instructions.

^{NT} Not suitable for translucent tiles

