

2nd July 2012

Mr James Roskrug
Mobile Ceramics

Dear James,

RE: Adhesion to Protectowrap AFM

This letter is to advise that based on the testing completed by Davco back in 2007, as long as there have been no changes to the characteristics of the Protectowrap product, then ParexGroup will continue to warrant the performance of the tested adhesives Powder Mastic and Ultraflex over Protectowrap AFM.

As stated in the report, the tensile strengths of the tile adhesives exceeded the cohesive strengths of the Protectowrap AFM. This means that the Protectowrap failed before the adhesive.

ParexGroup Australia Pty. Ltd.



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Davco

EXCELLENCE IN
TILING SYSTEMS

POWDER MASTIC

DESCRIPTION

POWDER MASTIC Tile Adhesive is a white, premium grade cement-based adhesive. It is polymer modified to allow it to be used on a larger range of tiles and surfaces. It is non-slump and has extended open time. It is designed to resist shrinkage and has been specifically formulated to provide superior coverage with smoother and easier application.

POWDER MASTIC is classified C1S1TE when tested to AS4992

USES

- Davco POWDER MASTIC is intended for use on walls and floors in interior and exterior applications.
- Davco POWDER MASTIC can be used to fix tiles onto concrete, cement renders, screeds, blockwork, rendered brickwork, fibre cement sheet, plasterboard and suitable waterproofing membranes.
- POWDER MASTIC can be used on correctly installed compressed fibre cement sheet floor systems that have been approved for tiling.
- POWDER MASTIC is suitable for tiling over timber floors, provided that a fibre cement sheet tile underlay is first installed.
- Davco POWDER MASTIC is recommended for the fixing of all types of ceramic, mosaic, vitrified, porcelain, terracotta, slate, quarry, granite and marble tiles (with the exception of green marbles). It well suited for use with light coloured stone.

SURFACE PREPARATION

- All surfaces must be structurally sound, dry, clean and free from movement, oil, grease, wax, curing compounds and any other loose or contaminating materials.
- Painted surfaces must be scabbled/abraded to expose at least 80% of the original substrate.
- Newly rendered/screeded surfaces must be allowed to cure for at least 7 days and have a wood float finish.
- All building boards must be firmly fixed according to the manufacturer's instructions and the relevant Australian Standard(s)
- Old rendered/screeded surfaces must be thoroughly cleaned prior to tiling and have a wood float finish.
- New concrete must be allowed to cure for 6 weeks and should have a wood float finish.
- Steel trowel finished concrete must be acid etched or mechanically abraded prior to tiling.

- Old concrete surfaces must be thoroughly cleaned prior to tiling.
- Make sure all release agents are removed from concrete surfaces, especially on tilt-up slabs.
- Porous/dusty surfaces (including fibre cement and other building boards) must initially be primed using Davco Ultraprime.
- Certain non-absorbent/contaminated surfaces can easily be prepared for tiling via the use of Davco Ultrabond.

Movement joints should be provided as follows:

1. Over movement joints in the background.
2. At a junction between different background materials.
3. At fixtures interrupting the tile surface e.g. columns.
4. At internal vertical corners.
5. Around the perimeter of the tiling system.
6. At a maximum of 5 metre intervals in a grid pattern.

Note: Movement joints should go right through the tile adhesive bed to the background and be kept free from dirt and adhesive droppings. Movement joints must not be less than 6mm nor greater than 10mm wide. All movement joints that are 6mm wide can be filled with Davco *Sanitized*® Colorcaulk. For wider applications use Davco Dawsil or polysulphide and polyurethane type fillers.

MIXING

- The mixing ratio is 20kg of Davco POWDER MASTIC to approximately 6 litres of clean water.
- Place the mixing water in the bucket and add Davco POWDER MASTIC powder to the water, mixing until it has a thick and creamy consistency.
- Allow to stand for 5 minutes and remix briefly before using.
- Always make sure it is fully mixed (no lumps) before using.
- Mix mechanically with a drill and paddle. Do not mix by hand.

APPLICATION

- Standard requirements:

Tile	Trowel
Wall tiles up to 150mm x 150mm.	6mm
Wall/Floor tiles larger than 150x150mm	10mm or 12mm
Large tiles 400x400 or larger	12mm
Mosaic tiles	6mm

- Coat the back of tiles with lugs or grooves or larger tiles with adhesive before placing. This is required to ensure adequate adhesive coverage and a better bond.



POWDER MASTIC

- Make sure the adhesive does not skin before bedding the tile.
- If the surface is properly primed up to 2m² of adhesive may be spread at any one time.
- Press tiles firmly into position and make sure that all the tiles are well bedded with no voids in the adhesive.
- Occasionally lift a tile after placing to check that the coverage is adequate.
- After laying do not disturb or allow traffic on the tiles for at least 24 hours (at 20°C).

GROUTING

- Grouting can be carried out 24 hours after the tiling.
- Suitable Grouts

Joint Width	Grout
1 – 6 mm	Sanitized® Colorgrout
6 – 12 mm	Slate & Quarry Grout
1 -3 mm	Sanitized® Porcelain Grout

- Refer to the Davco Adhesive and Grout Selection Guide for further information.
- Davco Grout Additive may be used to increase grout flexibility and water resistance. It should always be used when grouting over fibre cement sheeted floors to reduce cracking or powdering.
- Wait 24 hours after grouting before putting the area into service.

PRECAUTIONS

- Do not apply Davco POWDER MASTIC in temperatures above 40°C or below 5°C.
- Back buttering to achieve 100% coverage is recommended for light coloured or translucent tiles/stone to help ensure colour consistency.
- Do not allow the adhesive to skin prior to laying the tiles. If the adhesive skins, remove and dispose of it, then re-apply fresh adhesive.
- For other uses or the use of Davco POWDER MASTIC in situations not mentioned in these instructions, contact your ParexDavco (Australia) Pty Ltd state office.
- Being cement based, Davco POWDER MASTIC is alkali in nature, which can cause dermatitis. It is recommended that applicators wear PVC or similar gloves and safety goggles.
- For a full MSDS on this product, contact your ParexDavco (Australia) Pty Ltd state office.

COVERAGE

A 20kg bag of POWDER MASTIC Covers approximately:

10m² using a 6mm x 6mm-notched trowel.
7m² using a 10mm x 10mm-notched trowel.
5m² using a 12mm x 12mm-notched trowel.

CLEAN UP

- Avoid letting excessive adhesive dry as it easiest to remove when it is fresh.
- Remove wet product with a damp cloth.
- Clean tools and equipment with water.
- If allowed to dry it will need to be removed mechanically or using a suitable acid based product. In some cases these methods can affect the tile and should be avoided whenever possible.

PACKAGING

20kg bags.

SHELF LIFE

Up to 12 Months when stored unopened in elevated, cool and dry conditions.

TECHNICAL DATA

Properties:	
Appearance:	White Powder
Bulk Density:	~1.5 kg/L
Open Time at 20°C (primed surface):	30 minutes
Adjustment Time at 20°C:	~25 minutes
Pot Life at 20°C:	>2 Hours
Curing Time at 20°C:	24 hours

DISCLAIMER

The use of this product is beyond the manufacturer's control, and liability is restricted to the replacement of material proven faulty. The manufacturer is not responsible for any loss or damage arising from incorrect usage. All workmanship must be carried out in accordance with AS 3958.1 - 2007.

The information contained herein 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 the product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

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Australian Standard AS4992

Classification: **C1S1E**

ULTRAFLEX

Davco Ultraflex is a premium grade, thick or thin bed, off-white, ***rubber modified*** cement based adhesive. Specifically formulated to adhere a wide range of tiles onto a variety of substrates.

WHY USE DAVCO ULTRAFLEX?

Ideal for interior & exterior applications ♦ suitable for wall and floor tiles ♦ Ideal for commercial and residential work ♦ Cures in 6-8 hours – can grout the same day ♦ Use over concrete cured in 7 days ♦ Use over screed cured in 24 hours ♦ Suitable to use over undertile heating ♦ Ideal to use over variety of substrates including rigid and flexible building board surfaces ♦ 20kg bag will cover approximately 5-12m² depending on the size of the trowel used.

Tile Types	Excellent adhesion properties makes Ultraflex suitable to use on a wide range of tile such as porcelain, ceramic, vitrified, mosaic, terracotta, slate, quarry, granite and marble with the exception of moisture sensitive stone such as green marble.
Substrates	Ideal to use on concrete, new concrete cured in 7 days, new screed cured in 24 hours, cement renders, blockwork, rendered brickwork, existing tiles, plasterboard, fibre cement sheet, compatible waterproofing membranes and over timber floors provided that a fibre cement sheet tile underlay is first installed. Also ideal to use over undertile heating.
VOC Content Test Certificate	Low VOC - Specification for V2 IEQ-13, V1.1 IEQ-11
Excellent Coverage	High coverage – which makes Ultraflex an economical product for the job.
Excellent Pot Life	The mixed mortar remains useable in a container for up to 1hour & 30min at 20°C, prolonging its usefulness, therefore reducing wastage and saving you money.





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CODE	EAN number	DESCRIPTION	SIZE	PALLET QTY
1414520	9312095 001253	ULTRAFLEX	20KG	64

USES

- Davco ULTRAFLEX can be used on both walls and floors, in interior and exterior applications.
- Davco ULTRAFLEX can be used to fix tiles onto concrete, new concrete cured in 7 days, screed/render cured in 24 hours, blockwork, rendered brickwork, existing ceramic tiles, plasterboard, fibre cement sheeting, existing tiles and compatible waterproofing membranes.
- Davco ULTRAFLEX is also suitable to use over undertile heating.
- Davco ULTRAFLEX is suitable for tiling over timber floors, provided that a fibre cement sheet tile underlay is initially installed over the timber floor.
- Davco ULTRAFLEX is recommended for the thin or thick bed fixing of all types of ceramic, mosaic, fully vitrified, porcelain, terracotta, slate, quarry, granite and marble tiles with the exception of moisture sensitive stone such as green marble.
- When using ULTRAFLEX with translucent tiles the colour of the adhesive must be considered.

SURFACE PREPARATION

- All surfaces must be structurally sound, dry, clean and free from movement, oil, grease, wax, curing compounds and any other loose or contaminating materials.
- Painted surfaces must be scabbled/abraded to expose at least 80% of the original substrate, or alternately use Davco Ultrabond.
- Newly rendered / screed surfaces must be allowed to cure for at least 24 hours and have a wood float finish.
- All building boards must be firmly fixed according to the manufacturer's instructions and the relevant Australian Standard(s).
- Old rendered / screeded surfaces must be thoroughly cleaned prior to tiling and have a wood float finish.
- New concrete must be allowed to cure for 7 days and should have a wood float finish.
- Steel trowel finished concrete must be mechanically abraded or acid etched prior to tiling.
- Old concrete surfaces must be thoroughly cleaned prior to tiling.
- Make sure all release agents are removed from concrete surfaces, especially on tilt-up slabs.
- Porous / dusty surfaces (including fibre cement and other building boards) must initially be primed using Davco Ultraprime.
- Certain non-absorbent/contaminated surfaces can easily be prepared for tiling via the use of Davco Ultrabond. Refer to Ultrabond's datasheet for further details and suitability.
- Existing ceramic tiles can be tiled over with Ultraflex after the use of Davco Ultrabond. Refer to Ultrabond's datasheet for further details. Ensure the existing tiles are structurally sound, clean, dry and free from oil, grease, wax, curing compounds and any other loose or contaminating materials before using Davco Ultrabond. Tiling over existing tiles is not recommended in immersed applications such as swimming pools etc.
- Suitable for adhering tiles over in floor heating provided that a smooth level surface is first achieved.

MOVEMENT JOINTS

Movement joints must be installed as stipulated by AS3958 – Guide to the Installation of Ceramic Tiles. Failure to do so may result in drummy or lifting tiles. Movement joints should be provided as follows:

1. Over movement joints in the background.
2. At a junction between different background materials.
3. At fixtures interrupting the tile surface e.g. columns.
4. At internal vertical corners.
5. Around the perimeter of the tiling system.
6. At a maximum of 5 metre intervals in a grid pattern.

Note: Movement joints should go right through the tile adhesive bed to the background and be kept free from dirt and adhesive droppings. Movement joints must not be less than 6mm nor greater than 10mm wide. All movement joints that are 6mm wide can be filled with Davco *Sanitized*® Colorcaulk. For wider applications use Davco Dawsil or polysulphide and polyurethane type fillers.



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MIXING

- The mixing ratio is 20kg of Davco ULTRAFLEX to approximately 7 litres of clean, potable water.
- Place the water into a bucket and add the ULTRAFLEX while constantly mixing with a drill and paddle. Mix until a thick creamy consistency is achieved.
- Allow the mixture to stand for 5 minutes, remix then use the adhesive.

APPLICATION

Tiles must be installed as stipulated by AS3958 – Guide to the installation of Ceramic Tiles.

General requirements:

An appropriate amount of adhesive must be used to ensure an adequate bed depth and adhesive coverage.

Suggested trowel sizes:

Tile	Trowel
Wall tiles up to 150 x 150mm.	6mm
Wall / Floor tiles larger than 150 x 150mm	10mm
Large tiles 400 x 400mm or larger	12mm
Mosaic tiles	6mm

- It is required that tiles larger than 400 x 400mm must be back buttered before placement. This is required to ensure adequate adhesive coverage and a better bond.
- Do not exceed the open time of the adhesive (ensure adhesive does not skin before bedding the tile).
- Press tiles firmly into position and make sure that all the tiles are well bedded with no voids in the adhesive.
- Occasionally lift a tile after placing to check that the coverage is adequate (90 – 100% coverage).
- 1m² of adhesive may be spread onto an adequately primed surface at any one time.
- Once the tiles have been laid, they must not be disturbed or allow light foot traffic on the tiles for at least 6 hours (at 20°C).

GROUTING

- Grouting can be carried out 6-8 hours after the tiling.
- Suitable Grouts:

Joint Width	Grout
1 - 3 mm	Davco Sanitized® Superfine Grout
1 – 6 mm	Davco Sanitized® ColorgROUT
6 – 12 mm	Davco Slate & Quarry Grout

- Davco 4-in-1 Grout Additive may be used to enhance the colour and increase grout flexibility and water resistance. It should always be used when grouting over fibre cement sheeted floors to minimize the likelihood of the grout cracking or powdering.
- Wait 24 hours after grouting before putting the area into dry service and 3 days for wet service.
- Refer to the appropriate Product Datasheet for more detailed grouting information.

PRECAUTIONS

- Do not apply in temperatures above 35°C or below 5°C.
- Do not allow the adhesive to skin prior to laying the tiles. If the adhesive skins, remove and dispose of it, then re-apply fresh adhesive.
- Ultraflex is not suitable for fixing tiles directly onto timber floors.
- Ultraflex is not suitable for the tiling of areas where continual immersion occurs i.e. swimming pools, spas, etc.



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- Contact ParexDavco (Australia) Pty Ltd for more advice if considering using in areas or onto surfaces not described in this document.
- Davco ULTRAFLEX contains cement which is alkaline and can cause dermatitis. It is recommended that applicators wear PVC or similar gloves and safety goggles.
- Always read the MSDS before using. Contact ParexDavco (Australia) Pty Ltd or visit the website for copies.

COVERAGE

A 20kg bag of Davco ULTRAFLEX will cover approximately 7-12m² depending on the size of the trowel used.

CLEAN UP

- Avoid letting excessive adhesive dry as it is easiest to remove when it is fresh.
- Remove wet product with a damp cloth.
- Clean tools and equipment with water.
- If allowed to dry it will need to be removed mechanically or using a suitable acid based product. In some cases these methods can affect the tile and should be avoided whenever possible.

PACKAGING & SHELF LIFE

Davco ULTRAFLEX is available in 20kg bags. The shelf life is up to 12 months when stored unopened in elevated, cool and dry conditions.

TECHNICAL DATA

Properties:

Appearance:	Off White Powder
Bulk Density:	~1.4 kg/L
Open Time at 20°C (primed surface):	30 minutes
Adjustment Time at 20°C:	20 minutes
Pot Life at 20°C:	90 minutes
Ready for Grouting:	6-8 hours
Ready for Service at 10°C-20°C:	24 hours
Ready for wet area service:	7 days

DISCLAIMER

The use of this product is beyond the manufacturer's control, and liability is restricted to the replacement of material proven faulty. The manufacturer is not responsible for any loss or damage arising from incorrect usage. All workmanship must be carried out in accordance with AS 3958.

The information contained herein 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 the product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

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DAVCO TECHNICAL SERVICES REPORT

Date of Report: October 2007 Project number: P1098.4

TEST DETAILS:

Project Name: Adhesion to Protectowrap conducted for Jacobsens NZ

Standard: AS 4992

Tests Conducted: 28 day dry

Adhesives Tested: Powder Mastic
Ultraflex

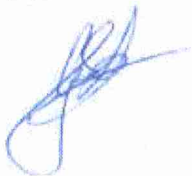
RESULTS AND COMMENTS:

The adhesives tested have sufficient strength to bond to the surface of the submitted mat.

The tensile strength of both Powder Mastic and Ultraflex exceeded the cohesive strength of the Protectowrap mat. Therefore it is concluded that the bond produced has sufficient tensile strength to be considered suitable to bond to the submitted mat.

The tests conducted were not designed to test the suitability of the mat for any particular use. As such, the installer and/or specifier are responsible for the suitability, installation and use of the mat.

DAVCO CONSTRUCTION MATERIALS PTY LTD



Gary Schwarz
Technical Services Manager

The information in this report is based solely on the information and samples made available to Davco Construction Products at the time of writing. Compliance with the relevant standards is the responsibility of the Specifier, Installer and/or tile manufacturer. Although care has been taken to ensure the information in this document is correct no liability will be accepted for its use.