

## TECHNICAL BULLETIN – TB123

### SURFACE PREPARATION FOR COMPRESSED FIBRE CEMENT SHEET (NON ASBESTOS, NON MAGNESIA AND NON SCYON™ TYPES)

Date, Wednesday, 13 January 2016

#### INTRODUCTION & SCOPE

Compressed Fibre-Cement Sheet is a common and durable flooring material used for decks, verandahs and internal floors. It is particularly effective when used in wet-area floors such as bathrooms and showers. In this bulletin we will look at the surface preparation required to obtain a good bond for ceramic tile adhesives and membranes.

#### QUALIFICATIONS

This recommendation does not apply to Compressed Fibre-Cement sheeting used for walls, facades and fascias. These sheets are 9-12mm thick and coated with special sealers that CANNOT be tiled onto. These sheets are only used for paint coatings and texture coats.

#### BACKGROUND INFORMATION

Compressed Fibre-Cement sheet (CFC) is, or has been available in thicknesses ranging from 6 to 24mm. In flooring applications the minimum thickness is 15mm, with the thinner 6-12mm versions used for facades and fascia panels which are rarely tiled.

#### Asbestos Cement

In Australia this product was originally manufactured with asbestos reinforcing fibres, but from the early 1980s was converted to asbestos free.

Compressed floor sheets laid between 1966 and approximately 1982 will contain asbestos as the reinforcing fibre. These are still common as bathroom floor sheets, but also sometimes verandahs. Wall sheets can be either Asbestos Cement Compressed Sheet or 'Tilux' which was very common on bathroom walls from the 1950s to 1970s. Tilux is easily recognisable by the Zinc Silicate designs and patterns printed on to it. It cannot be tiled successfully either.

**The instructions described in this bulletin DO NOT apply to Compressed Asbestos Cement Sheet. When in doubt about the sheet's age or composition, do not sand, and look for the asbestos warning sticker which may still be on the back of sheets manufactured after the mid 70's. This is an example-**



## Fibre-cement

Modern Compressed Fibre-Cement Sheet is manufactured to comply with AS2908.2 from laminations of uncured fibre-cement that are placed in a press and compressed by 20% between steel plates. This results in a 30% increase in density and surface hardness, with a corresponding decrease in surface porosity compared to 'medium density' fibre-cement used for walls (i.e. Villaboard™, Duraliner™ or Wallboard). The steel plates also produce a smooth and sometimes slightly shiny surface, and a mould release oil may have been used in the pressing process. The finished sheets often have a slightly dusty surface which creates a bond breaking layer.

While common practice is to prime this surface prior application of paint finishes, heavier loadings applied by decorative finishes such as tiles require physical bonding into the CFC surface.

The nature of Compressed Fibre-Cement is such that the surface may require some preparation to achieve a satisfactory bond as in a few cases de-bonding of adhesives has occurred.

### SURFACE PREPARATION

The following general surface preparation is suggested –

- Lightly sand the surface to produce a roughened and porous finish – Note Use appropriate personal protective equipment (respirator or dust mask) and vacuum dust extraction on the sander.
- Vacuum the surface to remove any dust residues
- Prime the surface with
  - ARDEX MULTIPRIME
  - ARDEX WPM265 WATER BASED PRIMER,
  - ARDEX WPM270 SOLVENT BASED PRIMER,
  - ARDEX P9,
  - ARDEX P82 (dry internal only),
  - ARDEX WPM300 ± Broadcast sand (normally for external applications)
  - ARDEX WPM368 used with membranes.
- Apply the appropriate flexible tile adhesive &/or membrane.

The application of Ardex flooring cements onto Compressed Fibre-Cement is covered separately in other bulletins. Refer to Ardex Technical Services for these bulletins if required.

### CONCLUSION

Tiling or waterproofing on Compressed Fibre Cement Sheet is a simple application, and some surface preparation will make sure the installation has a long service life.

Where there are any doubts about the sheet composition, do not sand, drill or grind the sheets, and contact the manufacturer for advice on handling renovations or other building changes.

### GLOSSARY

**Asbestos cement**–The original type of fibre cement invented in 1903 and manufactured using up to 15% Chrysotile (white), Amosite (brown) or Crocidolite (blue) Asbestos. These materials were colloquially called 'Fibro' from the original French name, but later from name of the common Australian made 'Fibrolite' range of products.

In Australia, production halted in 1982 for flat sheets and 1986 pipes. These materials are still manufactured in Asia and other places, but banned from import or sale in Australia



after 2001.

**Façade and Fascia**– Decorative cladding styles used on the outside face of buildings, especially for curtain walls of commercial buildings.

**Fibre-cement**– The generic name used for all types, but **now** refers to the non-asbestos materials, which contain cellulose fibres as the re-inforcement. These products originally appeared in 1970s but became the major product in western countries from the 1980s.

**Low density fibre-cement**-Fibre cement materials manufactured from Calcium Silicates or Magnesia Cements with a density between 900-1100kg/m<sup>3</sup>. Products like the James Hardie Scyon<sup>®</sup> family are this category.

**Medium density fibre-cement**– Fibre cement sheets made from Portland Cement, silica and cellulose with a density between 1200 and 1400kg/m<sup>3</sup>. These products comprise the majority of fibre-cement sheets sold for things such wallboards, eaves linings, ceiling sheets, wall planks and various external applications like gable sheets and texture coat base sheets.

**High density and Compressed fibre-cement**– Sheets made from the same materials as medium density sheets, but pressed to make a thicker and harder sheet. Density range 1500-1800kg/m<sup>3</sup>. They have been used exclusively for primary floor sheets, facades and fascia sheets, toilet partitions and certain other special applications.

Scyon<sup>™</sup> and Villaboard<sup>™</sup> are a registered trademark of James Hardie Australia Pty Ltd.

Fibrolite and Tilux are former tradenames of James Hardie & Coy, Pty Ltd.

Duraliner<sup>™</sup> is a registered trademark of BGC Australia Pty Ltd.

Wallboard is a product name of CSR Building Products

**IMPORTANT**

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

**DISCLAIMER**

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

**REASON FOR REVISION - ISSUER**

Modifications to the text of V005, to bring bulletin into line with DTB123.001

**DOCUMENT REVIEW REQUIRED**

24 months from issue

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