

TECHNICAL BULLETIN – TB162

ISSUES WITH ASBESTOS CONTAINING SUBSTRATES

Date: Friday, 3 October 2014

INTRODUCTION & SCOPE

For the last 2000 years the group of minerals grouped together under the name asbestos have been used in various products as re-inforcement fibres. In particular we are concerned with asbestos in the building products industry. Whilst the use of Asbestos has been banned in Australia effectively since the mid 1990's, building materials containing this fibre have widely been around since about 1903, and can be encountered on building sites. This bulletin discusses some of the issues that can be encountered in refurbishment of old buildings containing these materials.

WHAT IS ASBESTOS?

The name asbestos covers a range of different minerals that have a fibrous crystal habit. The three most common ones are called Chrysotile (white asbestos) which is a polymorph of the mineral serpentinite, Amosite (brown asbestos) and Crocidolite (blue asbestos) which are both minerals called amphiboles. All three of these fibres have been used in Australia, but the most common one is white asbestos.

WHY IS ASBESTOS A PROBLEM?

The problems with asbestos relate to the size and shape of the fibres, and the fact that microscopic fibres can become airborne and embed in the lungs when breathed in. The resultant build up of fibres can lead to a continuum of breathing related diseases generically called asbestosis, which is scarring of the lung tissue, produces emphysema and stresses the heart. Asbestos exposure is linked to the development of lung cancer and also the rarer and invariably fatal cancer mesothelioma which attacks the lining of the lungs and abdominal cavity. Whilst the development of these diseases is normally related to long exposure, cases do occur where there has only been slight exposure. The latency period of these diseases is also long and typically is 20-40 years.

WHAT IS ASBESTOS FOUND IN?

There are many products asbestos has been used in, but the main ones of concern to users of Ardex products in Australia are likely to be:

Asbestos cement sheets (till ~1983), corrugates and mouldings (~1982), and pipes (1986)

Some vinyl tiles (pre ~1980)

Some bituminous adhesives (e.g. old blackjack pre-1980s)

Magnesite flooring (~1960-70s)

Some overseas manufactured cementitious tile adhesives

Bituminous waterproof membranes (~pre-1980s)

Note that whilst these products are no longer made in Australia, other countries continue to manufacture them, especially asbestos cement sheeting. However, these materials cannot be legally imported into Australia (note in recent years some illegally though unwittingly imported stone tiles have been found to contain asbestos minerals).

HOW DOES THE ASBESTOS BECOME DANGEROUS?

Normally when asbestos containing materials are left undisturbed, the fibres remain firmly bound up in the matrix. However, these fibres become airborne when the asbestos containing material is broken up during removal or renovation, cut, drilled, sanded or ground by mechanical means, or simply weathered out by exposure. The airborne fibres are then free to be move about the work area or even travel further afield.

What is the Legal Position?

Asbestos is a proscribed material and is regulated at all levels from Federal and State to local Government, as well as the relevant 'WorkCover' bodies. Therefore any works involving asbestos

containing materials have strict provisions for handling, protective equipment requirements and disposal of asbestos containing material. Removal is normally a specialist job undertaken by trained and licensed applicators.

Ardex therefore recommends that any activities requiring asbestos removal or works are referred to such licensed operators and are not the realms of home handymen or the untrained.

ARE THERE ANY WORKAROUNDS THAT DO NOT INVOLVE REMOVAL?

In some situations it is possible to leave the material in place and cover it, but in others removal is required. For government and institutional sites removal is normally the only option.

Examples of leaving material in place include:

- Well bonded vinyl tiles containing asbestos can be cleaned down with stripping solution to remove sealers or waxes. *At all times the surface integrity must be maintained, all fibres contained in the surface, and wash liquids must be disposed of as contaminated wastes.* The can then be smoothed with Feather Finish or Feather Finish+P82 mix prior to vinyl coverings or carpet. It is also possible to use ceramic tile adhesives such as Abaflex or X56 over vinyl tiles (see TB080).
- Blackjack can be smoothed with Arditec but this is a last ditch option and carries risks of de-bonding and problems with applied carpet or vinyl adhesives.
- Asbestos cement sheeting such as corrugates can be sealed with a system comprising Ardex WPM256, WPM300 and WPM350 or WPM310 as the final finish (see TB137).
- Hard and well bonded cementitious tile adhesives residues may be left in place and smoothed prior to new floor coverings. This applies to both potentially asbestos containing adhesives and compressed asbestos cement floor sheets with adhesive on them. *However, this approach can carry the risk of the adhesive de-bonding under load at a latter time.*
- Sound tile beds on asbestos cement wall sheets or compressed asbestos cement floors may be successfully over-tiled with suitable adhesives such as Ardex Optima, STS8+Ardex E90, X56 or Abaflex (see TB117).
- Tiled shower recesses on compressed asbestos cement sheeting may be re-waterproofed and tiled over the old tiles, provided the surface is sound and there is not structural water damage (see TB122).
- Old bituminous asbestos containing membranes if generally sound, may be over-sheeted with a bonded new membrane, or covered with a bituminous modified screed and then re-membraned.

Examples where removal is really the only option:

- ✗ Badly bonded vinyl tiles and wet or loose bituminous adhesives.
- ✗ The patterned thin compressed asbestos cement sheet used in bathrooms and toilets as walls known as 'Tilux' and coated with Zinc Silicate coatings, cannot be tiled successfully.
- ✗ External façade compressed sheets 'painted' with Zinc Silicate based coating will not take paints or tiles.
- ✗ Where magnesite has been used as a topping or sound deadening.
- ✗ Wall sheets coated with water based paints which tend to be attacked by tile adhesives. Do not sand!
- ✗ Whilst it is possible to bond some tile adhesive to properly prepared alkyd paints, this normally involves roughening the surface which is not acceptable in the case of asbestos cement.
- ✗ Wall sheets coated with poorly bonded alkyd or water based coatings are unsuitable. Do not sand!
- ✗ Damaged asbestos cement sheeting or corrugates.

- ✘ Leaking compressed asbestos cement decks may too complex to re-waterproof and require re-instatement.
- ✘ Bituminous asbestos containing membranes in poor condition are best removed.

CONCLUSIONS

Whilst it is possible to work with existing asbestos based materials, it is considered better to have them removed and start with clean and fresh substrates. Where removal is not an option, a procedure may be possible to safely proceed with the job. If in doubt Ardex strongly recommends that expert advice be obtained concerning asbestos and only licensed and trained removers are used.

For full details and general safety information refer to the Safe Work Australia publications on the following web sites-

Model Code of Practice - How to Safely Remove Asbestos

This Code of Practice on how to safely remove asbestos is an approved code of practice under section 274 of the Work Health and Safety Act (the WHS Act).

This Code provides practical guidance for persons conducting a business or undertaking who have duties under the WHS Act and WHS Regulations to safely remove asbestos from all workplaces including structures, plant and equipment.

Topic: Asbestos
 Type: Model Code of Practice
 Industry: General

Publication Date: 23/12/2011

http://www.safeworkaustralia.gov.au/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/641/How_to_Safely_Remove_Asbestos.pdf

Safe Removal of Asbestos 2nd Edition [NOHSC: 2002 (2005)]

This revised Code of Practice for the Safe Removal of Asbestos [NOHSC:2002 (2005)] provides guidance for industry to meet their legal obligations, and should be applied whenever any amount of asbestos or asbestos-containing material is to be removed from a workplace. The purpose of this code of practice is to provide advice for the safe removal of asbestos and asbestos-containing materials (ACM) from buildings and structures, plant and equipment, and vehicles.

Related publications:

- * Code of Practice for the Management and Control of Asbestos in the Workplace [NOHSC:2018(2005)]

Topic: Asbestos
 Type: National Codes of Practice
 Industry: General
 Publication Date: 1/01/2005

http://www.safeworkaustralia.gov.au/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/234/SafeRemoval%20ofAsbestos2ndEditionNOHSC2002_2005.pdf

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

Minor changes to text and 24 month revision.

DOCUMENT REVIEW REQUIRED

24 month from issue.

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