



# What to look out for

A guide to common possible building defects from your specialist building inspectors, **Betta Inspect It.**



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Here at Betta Inspect It, our team care about protecting all parties involved in a property transaction. Our mission is to:

*Provide timely property information so you can make an informed property decision.*

In a nutshell, we want you to be able to identify potential areas of risk associated with a property. This document is not an all-inclusive run-down but rather some of the most common defects our team find when inspecting thousands of properties across New Zealand annually.

If you're unsure whether the property you are looking at has one of the following defects, or if you just need further clarification, our inspectors and national support team are always available to chat. Just pick up the phone and call **0800 422 388**. Easy.

Remember, we want all Kiwis to realise their dreams, whether that be the buyer, vendor, agent, broker, bank or lawyer, so we can all live in safe and risk-free homes.

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# Oil Tempered Hardboard (known as ‘Weatherside’)

## HISTORY

- Made in the 1970s and removed from the market in the 1980s.
- Oil Tempered Hardboard does not tolerate prolonged exposure to moisture.
- Compensation packages were offered to homeowners to replace the product – these are no longer available. However, not everybody that received compensation decided to use the funds to replace their cladding or only parts of the cladding were replaced.

## THE ISSUE

- Oil Tempered Hardboard still exists on a range of houses in New Zealand.
- If painted correctly it can be ok, however regular maintenance is required.
- If paint is damaged and water is able to contact the wood fibres, the material will swell and rot.

## HOW DO WE IDENTIFY OIL TEMPERED HARDBOARD?

It's difficult to pick the difference between Oil Tempered Hardboard and other products such as Hardiplank, which are similar claddings. The easiest way to determine if a property has Oil Tempered Hardboard cladding is by a process of elimination.

1. **Rot.** Usually around nail holes and joints, as well as chipping along the bottom edges of planks (approx 10c coin size). Rot is most common on the lower three or four boards and / or on the damp side of a house.
2. **Bevel.** Oil Tempered Hardboard has a more bevelled edge than Hardiplank.
3. **Colour.** If you scratch the paint off Oil Tempered Hardboard you'll see a brown fibre-cement material. Hardiplank will be grey.
4. **Size.** Both Hardiplank and Oil Tempered Hardboard are identical in width at 240mm but Oil Tempered Hardboard is 10mm thick whereas Hardiplank is 7.5mm thick.
5. **Sound.** When tapping boards Oil Tempered Hardboard sounds more hollow than Hardiplank.
6. **Joints.** The joiners between planks are usually metal not plastic and wider than Hardiplank joints.



Photos of Oil Tempered Hardboard ('Weatherside')

# Wall linings (Scrim)

## HISTORY

There are generally three types of wall lining that have been used in New Zealand houses:

- Scrim and sarking.
- Low density Fibreboard.
- Plasterboard – GIB (Gibraltar Board).

Scrim was widely used throughout the 19th and 20th centuries before plasterboard became more common from the 1920s. GIB's first year of production was 1927.

## WHAT'S THE ISSUE?

Insurance companies can refuse to insure a property where scrim and sarking is present, as it has been identified as a potential fire risk. If it is identified, please discuss with your insurer or check your insurance policy terms.

## HOW DO WE IDENTIFY SCRIM AND SARKING?

Often just called 'scrim', this type of wall lining is a hessian or jute sacking material (scrim) that was tacked or stapled to rough sawn, thin wooden planks (sarking). Wallpaper was often applied over the top. Over the years scrim and sarking may have been covered by many layers of wallpaper and in more recent times, painted.

If a house was built between the late 1800s and the 1930s, there are three tests you can use to identify if it has still has scrim and sarking.

**1. The knock test.** Scrim (unsurprisingly) feels like knocking on wood. It has a very hard surface and the knock produces a hollow sound.

**2. The floating wallpaper test.** Scrim and sarking was 'finished' by covering the scrim with wallpaper (sometimes the wallpaper was painted). With age the hessian scrim starts coming away from the sarking and gives the impression of floating, bulging or twisting wallpaper. This is especially evident in the corners of rooms.

**3. Close inspection.** You can sometimes see rough sawn board (sarking) or hessian (scrim) where wallpaper is loose or has come away. Or, the wallpaper may look 'textured' as the woven hessian fabric has imprinted into the wallpaper from behind.

**NOTE:** If a house has plasterboard and is pre-1930s, please ask (if possible) if the scrim was removed prior to the plasterboard being applied. Often plasterboard was installed over the scrim, which is not ideal.



Layers of wallpaper on scrim.



Sarking boards, scrim and wallpaper.

# Onduline roof & wall cladding

## HISTORY

- Onduline is a tough, lightweight, prefinished, bitumen-impregnated cellulose fibre corrugated roof and wall cladding originally made in Europe from organic fibres from around the mid 1950s.
- Importers stated it was a flexible and economical alternative to traditional materials, and claimed it was ideal for New Zealand and Australian climates. Among its claims was that it was corrosion-free, and fungus-resistant.

## WHAT'S THE ISSUE?

- In recent years, Onduline products have failed in the New Zealand environment and subsequently many legal claims have been made against the importers, re-sellers, builders, and property owners.
- The failure of Onduline products in New Zealand revolves around corrosion of the bitumen coating, which leads to an ingress of water and the breaking down of the organic fibres that comprise the substance of the sheeting. Whether this is due to a higher UV or the harsh conditions of coastal environments is unclear.

- Known issues with the product include de-lamination, fading, colour leeching, sagging, cracking and disintegration.

## HOW DO WE IDENTIFY ONDULINE?

Onduline is relatively easy to identify. Here are four tests you can use:

1. **Age.** Onduline first came on the market in New Zealand during the early 1990s and was used widely during this time, particularly in coastal communities. It exited the market in the mid 2000s.
2. **Corrugations.** Onduline was manufactured as a corrugated profile (just like corrugated iron) but with much larger troughs (like the old asbestos roofing).
3. **Thickness.** Onduline is also a lot thicker than typical corrugated iron roofing.
4. **Look.** Onduline is not completely smooth. You'll be able to see the fibres, unlike corrugated iron roofing, which is smooth.





Photos of Onduline.



# Dux Quest piping

## HISTORY

- Polybutylene ('plastic') Dux Quest piping for plumbing was introduced in the late 1970s and was used well into the 1980s.
- It was one of the first 'plastic' piping systems to be used in New Zealand and was installed in more than 20,000 homes.

## WHAT'S THE ISSUE?

- It can leak. This type of plumbing is now over 35 years old and is past the manufacturer's expected lifetime. It's also well outside its warranty period.
- Leaks are caused either by the pipes splitting down the length or at the joints (joints are crimped with either a copper or aluminium ring).
- There is an increased risk of leaking if the piping is exposed to excessive sunlight. It more than often fails as its ideal exposure is less than 30 days of direct sunlight. This timeframe includes the time the piping sat in the back of a tradesman's van.

- Dux Quest is more of a problem in homes with very high water pressure, with leaks often occurring after an old low-pressure hot water cylinder has been replaced with a newer mains pressure cylinder, which lifts the water pressure dramatically in the hot water feed.
- The stress on the pipes can also be greater if the piping has been bent or curved.
- As with scrim, insurance companies may refuse to insure the property. Make sure you check this with your insurer.

## HOW DO WE IDENTIFY DUX QUEST PIPING?

- **Colour.** It's black.
- **Look.** It looks like plastic and is similar to the piping used for garden sprinkler systems.
- **Age.** The period the house was built: 1970-1989 approximately.
- **Branding.** There is often Dux Quest (or Quest) written in white along some sections of the pipe.



Dux Quest plumbing.

# Asbestos

## HISTORY

- Many different building products that contain asbestos were used in New Zealand up until 1990 when their use was largely phased out.
- Thousands of New Zealand homes still contain asbestos.
- It's highly heat-resistant but also highly toxic.

## ABOUT ASBESTOS CLADDING

Asbestos cement cladding products (for walls and roofs) are by far the most common forms of asbestos that exist in New Zealand.

### What is asbestos?

Asbestos cement is a form of non-friable asbestos, meaning the fibres are within the matrix of the material and are not readily released unless disturbed. Disturbed means broken, sawn, drilled, sanded or water blasted, all of which are banned actions under the current 'Guidelines for the Management and Removal of Asbestos' administered by the Ministry of Business, Innovation and Employment (MBIE).

## WHAT'S THE ISSUE?

- Studies show exposure to high levels of asbestos increase the risk of lung cancer. In particular Mesothelioma,

a cancer of the lining of the chest and the abdominal cavity. Also Asbestosis, in which the lungs become scarred with fibrous tissue.

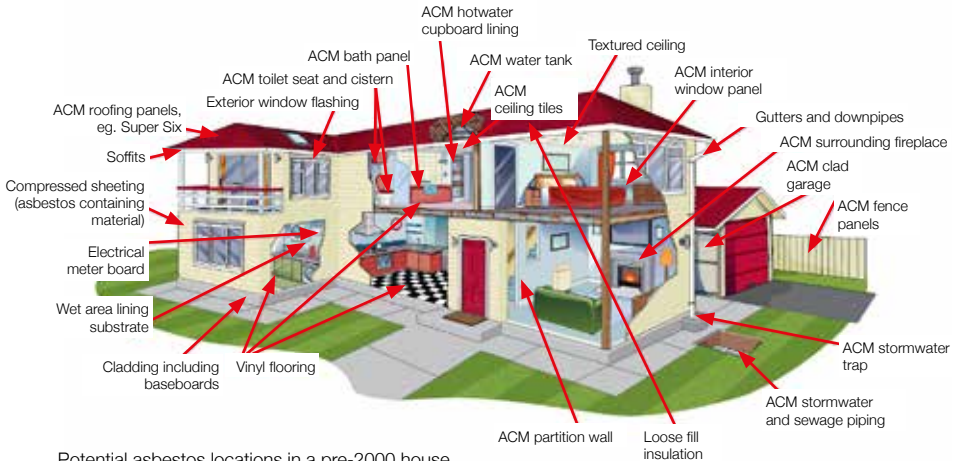
- The symptoms of the above diseases do not usually appear until approx 20 to 30 years after the first exposure to asbestos.

## COMMON BUILDING PRODUCTS CONTAINING ASBESTOS

The term, 'textured ceiling', refers to the porridge-like material that was a popular alternative to stopping ceilings in the 60s, 70s, and 80s (used up until about 1985). Asbestos products are also known by their popular trade names Gamatex and Whisper.

## WHAT DOES ASBESTOS LOOK LIKE?

- As textured ceilings, its appearance ranges from white to cream and can often contain glitter or metal flakes (however, many ceilings applied prior to the mid 1980s may contain asbestos regardless of appearance).
- A common misconception is if it does not have the 'glitter effect' it doesn't contain asbestos. This is simply not true.



Potential asbestos locations in a pre-2000 house.  
 Source: Asbestos – Invercargill City Council.

Many ceilings have since been painted over time, thereby masking the so-called 'glitter effect'. Chrysotile (white) asbestos was also added to some products as a binder.

### Where does asbestos exist?

Houses built between the 1950s and the early 1980s prior to 1986, are likely to have asbestos cement in some form somewhere.

### Who made asbestos?

The main manufacturer of asbestos cement sheeting was James Hardie & Co, who produced a range of products under the brand name Fibrolite. The name Fibrolite was used to describe virtually any of its asbestos cement products such as flat sheeting, fibre cement weatherboards, corrugated sheeting, decorative profiles, mouldings and pipe.

### When did they stop manufacturing asbestos products?

Below is a rough guide of the product names and dates when these products ceased to be manufactured. Be aware that the use of asbestos was slowly phased out (presumably to allow manufacturers to use up old stocks of asbestos fibre they had).

- Hardiflex 1981.
- Hardiplank 1981.
- Villaboard 1981.
- Versilux 1982.
- Harditherm 1984.
- Drain Pipe 1984.
- Super Six 1985.
- Highline 1985.
- Shadowline 1985.
- Coverline 1985.

# Asbestos

## HOW DO WE IDENTIFY ASBESTOS?

### Age

Any structure such as a house, garage or shed built in the 1940s, 50s, 60s, 70s and 80s is a candidate for containing asbestos fibre. Buildings constructed post 1990 should not have any products containing asbestos (unless 'old stock' has been used).

To find the date the house was built consult the local authority. If unavailable from them then check the hot water cylinder for the date of manufacture as a guide.

**NOTE:** Replacing old timber weatherboards with asbestos fibre cement boards was a popular renovation technique. Also look for building extensions clad with asbestos fibre.

### Fasteners and jointers

A dead giveaway of the existence of asbestos fibre are the 40mm x 6mm or 75mm x 8mm battens used to cover the joints between sheets, as well as moulded corner battens (see over page). Also, note the special nails used to fix

asbestos fibre cladding do not have a point, with the theory being these punch a hole through the sheet therefore reducing fracturing.

### Inspect the rear of the cladding

Older asbestos fibro often has a distinctive dimpled pattern on the back, much like the dimples of a golf ball.

### Lab testing

If all else fails and you want to be absolutely sure what you're dealing with, then the ultimate test is to take a sample for laboratory analysis.

*Betta Inspect It can take samples and send them to an independent laboratory for analysis so that you know with certainty whether a product contains asbestos or not.*



Asbestos sample.



Asbestos coated ceiling.



Asbestos ceiling removal.

## Asbestos products



Asbestos joints.



Asbestos cladding.



Asbestos roofing.



Asbestos veneer cladding covering weatherboards.



Asbestos soffit.



Asbestos cladding.

## Asbestos fasteners and joiners



Asbestos nail.



Asbestos corner.



Asbestos joiner.

# Wiring types

## HISTORY

- Wiring types and protective devices (switch boards) have evolved over the years with technology.
- The loading on wiring has increased due to the level of technology now used in homes.

### What's the issue?

- Many of the wiring types and protective devices are older and non-compliant.
- Some electrical systems are deemed unsafe.
- For older electrical systems, upgrades will be required to allow additional electrical points or additional services such as heat pumps to be added.
- Insurers may decline insurance if wiring is too old and not fit for purpose (VIR and TRS).

## COMMON ELECTRICAL ISSUES

### PROTECTIVE DEVICES

#### Porcelain Fuses

Porcelain Fuses are no longer installed and are non-compliant for any new work. Any additional circuits added to an existing circuit protected by a fuse must have the fuse replaced with a circuit breaker complete with a residual current device (RCD).

#### High Rupturing Capacity (HRC) fuses

These are not common in domestic installations but are still used in some circumstances. However, in a domestic installation any new circuits must be protected by an RCD.

#### Older Miniature Circuit Breaker (MCB)

Still compliant and only superseded by modern MCBs, which are the most recent type of protective devices and are used in all new installations and upgrades.

## WIRING

#### Vulcanised Indian Rubber (VIR)

Vulcanised Indian Rubber (VIR) was installed until the late 1940s. It usually runs within conduit or wooden casing. The internal rubber typically perishes at the termination points where heat is present. VIR is non-compliant and requires replacement.

#### Tough Rubber Sheath (TRS)

Typically used from the 1940s to the 1950s, TRS is highly susceptible to perishing and is considered the highest fire risk cable. TRS is non-compliant and requires replacement.

#### Tough Plastic Sheath (TPS)

Used from the early 1960s onwards, this is the cable used in all residential installations today. However, some of the early installations of this type of cable were only two-core and have no earth – this version of TPS is longer used.



## Compliant



Older MCBs.



Modern MCBs.



TPS wiring with earth.

## Non-compliant



Porcelain Fuses.



Wiring (VIR).



Green Gunge.



HRC fuses.



Wiring (TRS).



Green Gunge.

Any new metal light fittings require an earth therefore replacement of the no-earth version is necessary.

## Green Gunge

Green gunge (also known as green goo, slime or exudate) can often be seen coming out of the ends of older PVC

insulated and sheathed cables installed in the 1960s and 1970s. This cable has a bare earth conductor, which is no longer compliant for any new connection or when existing electrical networks are being upgraded or added to.

# Weather tightness

## LEAKY BUILDING ISSUES

### Interior: common signs/risk areas

- Sagging of ceiling linings.
- Corrosion of fixings such as screws and nails.
- Uneven floor surfaces, like the lifting of vinyl.
- Mould or fungi formation on surfaces (although this can also be due to poor ventilation).
- Musty smells.
- Swollen materials such as skirting and architraves.
- Staining or discolouration of materials or surfaces.
- Stained or rotting carpet, or rusting of carpet fixings.
- Cracking in plaster.

### Exterior: common risk areas

- Cladding fixing.
- Age.
- Windzone.
- Design.

Examples of these are shown in the numbered diagram on page 17:

1. Flat roofs, or roofs with parapets.
2. Roof to wall junctions.
3. Pergola fixings.
4. Handrail fixings.

5. Lack of flashings to windows and other penetrations.
6. Decks over living areas.
7. Balustrade to deck or balustrade to wall junctions.
8. Clearances at bottom of claddings/levels.
9. Level of ground outside is above interior floor level.

### Predominant cladding types that have leaked in the past

Direct fixed claddings:

- Hardietex.
- Polystyrene (EIFS).
- Solid Stucco.

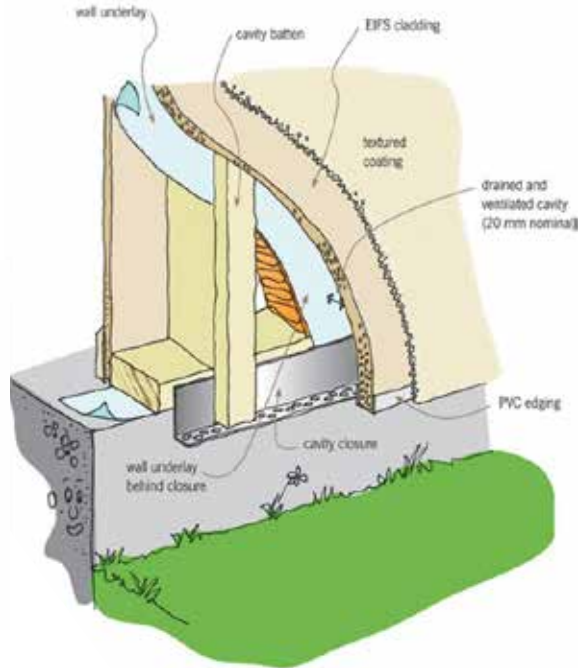
## LEGISLATION

The government has established the Weathertight Homes Resolution Service (WHRS). Claims concerning leaky homes made to the WHRS must, as a general principle, be made within 10 years of the date of the act or omission that has caused the leak/s (this timeframe has now passed).

By April 2010, the WHRS had received over 6,000 claims relating to over 7,700 residential properties. Industry experts believe this possibly represents only 15-20% of homes that have weather-tightness problems, with the balance being leaky homes that are yet to be identified, homes that have been identified but no action is being taken, or those that are subject to some other form of resolution.



Common risk areas in a house.  
Elements numbered on page 16.  
Source: BRANZ Weathertight.



New building Method – with a cavity.  
Source: BRANZ Weathertight.

## PROPOSED SOLUTION TO THE ISSUE

The solutions include putting external plaster cladding systems on a cavity, following the basic philosophy for managing water known as the 4Ds – deflection, drainage, drying and durability, as follows:

- 1. Deflection.** Water is primarily deflected by the cladding.
- 2. Drainage.** Water must be able to drain off roof and wall surfaces, and any water that penetrates the cladding must also be drained back out from within the cladding assembly.
- 3. Drying.** Air needs to be able to circulate within wall assemblies to dry water absorbed by components, and wind and sun will dry water off the cladding exterior.
- 4. Durability.** All components of a cladding and wall assembly need to be appropriately durable for the relevant conditions and New Zealand Building Code durability requirements.

# Methamphetamine (METH OR P)

## METH TIMELINE OF EVENTS

- 1887: Amphetamine first made in Germany.
- 1919: Methamphetamine developed in Japan.
- 1919-1999: Meth was used (but was not popular) to treat medical and other health issues such as obesity, narcolepsy, sinus and heroin addiction. It was also used during war times to keep soldiers awake and alert.
- 2000: Meth becomes a popular drug in much of the western US.
- 2015: Meth appears in the New Zealand media after years underground.
- 2017: New Zealand's first Meth testing and decontamination standard released (NZS:8510:2017).

## HEALTH IMPLICATIONS

### Short-term health effects:

- Headaches.
- Watery or burning eyes.
- Nausea.
- Burning skin.
- Coughing or choking.
- Pain in diaphragm.

- Feeling of coldness or weakness.
- Shortness of breath / dizziness.
- Decrease in cognitive function.
- Vertigo.
- Convulsions.
- Sleep disorders.

### Long-term health effects:

- Cancer.
- Nervous disorders / tremors.
- Damage to kidneys and liver.
- Birth defects.
- Reproductive problems.
- Death.

## WHAT'S THE HYPE?

- In 2001 New Zealand was second to Thailand for highest Meth use in the world.
- The Ministry of Health indicated Meth was used by 1.1% of the New Zealand population aged 16-64 years in 2013/14 (approx 40,000 people).
- Results from over 5,000 tests we have completed at Beta Inspect It show 35% of Meth tests come back positive after independent laboratory testing.
- The Meth testing lab has indicated 15% of the samples they analyse are over the new New Zealand guideline of 1.5ug (quoted 2017).

## WHAT ARE THE SIGNS THE PROPERTY MAY HAVE BEEN A METH LAB?

- Yellow-ish discolorations on walls, drains, sinks and showers.
- Blue-ish discolorations of taps and random fire extinguishers.
- Fire detectors are removed or have tape over them.
- Burning in eyes, itchy throat, metallic taste in the mouth, breathing problems when in the house.
- Strong odour similar to the smell of cat urine or ammonia.
- Bleach stains on carpet, dark stains in sinks (yellow, purple or red).
- Burn piles in the yard.
- Appearance of not caring such as graffiti on walls.
- Most of the time Meth is odourless but while it's being cooked, it has the smell of burning plastic.

## OR, HAS SOMEONE BEEN ON THE PIPE?

- Ask the neighbours:
  - Are curtains always or often closed?
  - Are there excessive numbers of people coming and going?
  - Is there random behaviour (like not seeing occupants for days)?
- Unwell feelings when entering the house.
- Not many furnishings within the house.
- Rubbish and / or graffiti around as signs of unmotivated people.
- Light bulbs have been removed.

The only way to be sure whether a home is contaminated is by carrying out laboratory analysed testing. Unfortunately, there is no one suburb, region or house type that's more popular to Meth manufacturers or users. Any house could be a Meth house.

*Betta Inspect It can undertake Meth testing to determine with certainty whether the dwelling has a Methamphetamine contamination issue or not.*

# About Betta Inspect It

If you've identified anything in this booklet which is of concern to you, have identified any other potential defect which we haven't covered, or if you just want a second opinion about a property, simply give us a call.

Betta Inspect It operates nationwide, covering every nook and cranny of the country. All our inspectors are typical Kiwis and are here to help and protect you.

After all, our motto at Betta Inspect It is:

*"We inspect all properties as if a family member was buying them. And, what we report is exactly what we'd tell them."*

We're a one-stop-shop, offering you a complete inspection solution.

| Building Inspection  | Meth Testing  | Asbestos Sampling  |
|--|---|--|
| <ul style="list-style-type: none"><li>• Industry-qualified inspectors.</li><li>• Comprehensive and easy to read reports.</li><li>• Quick turnaround.</li><li>• Accepted by all banks.</li><li>• Trusted by thousands.</li><li>• Freephone support.</li></ul> | <ul style="list-style-type: none"><li>• Trained samplers.</li><li>• Confidential.</li><li>• Discrete.</li><li>• Quick results.</li><li>• Definitive answers.</li><li>• Lab-analysed samples.</li><li>• Experienced.</li></ul> | <ul style="list-style-type: none"><li>• Industry trained.</li><li>• Completely independent.</li><li>• Lab-analysed samples.</li><li>• Non obstructive.</li><li>• Simple Yes / No answers.</li><li>• Freephone support.</li><li>• Definitive answers.</li></ul> |
| <b>From \$495<sup>+GST</sup></b>   | <b>From \$159<sup>+GST</sup></b>  | <b>From \$299<sup>+GST</sup></b> (per sample)  |

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# Betta book

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**0800 422 388**

Our easy booking process makes arranging your inspection a doddle. The Betta team will organise access to the property so the inspection can be carried out to suit your deadline.