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PACIFIC WASTE MANAGEMENT

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Asbestos Contaminated Materials

Guide for Disaster Debris Removal

April 2020

The risk of property damage from natural disasters is high in Pacific Island Countries, if buildings contain asbestos in the walls, roof or pipes, hazardous fibres may be released, if the building is damaged, during a disaster. A number of PacWastePlus programme supported Pacific island countries are actively working on asbestos management to reduce the risk of environmental pollution, and health issues for their communities.

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Secretariat of the Pacific Regional Environment Programme (SPREP)
PO Box 240 Apia,
Samoa
www.sprep.org

sprep@sprep.org

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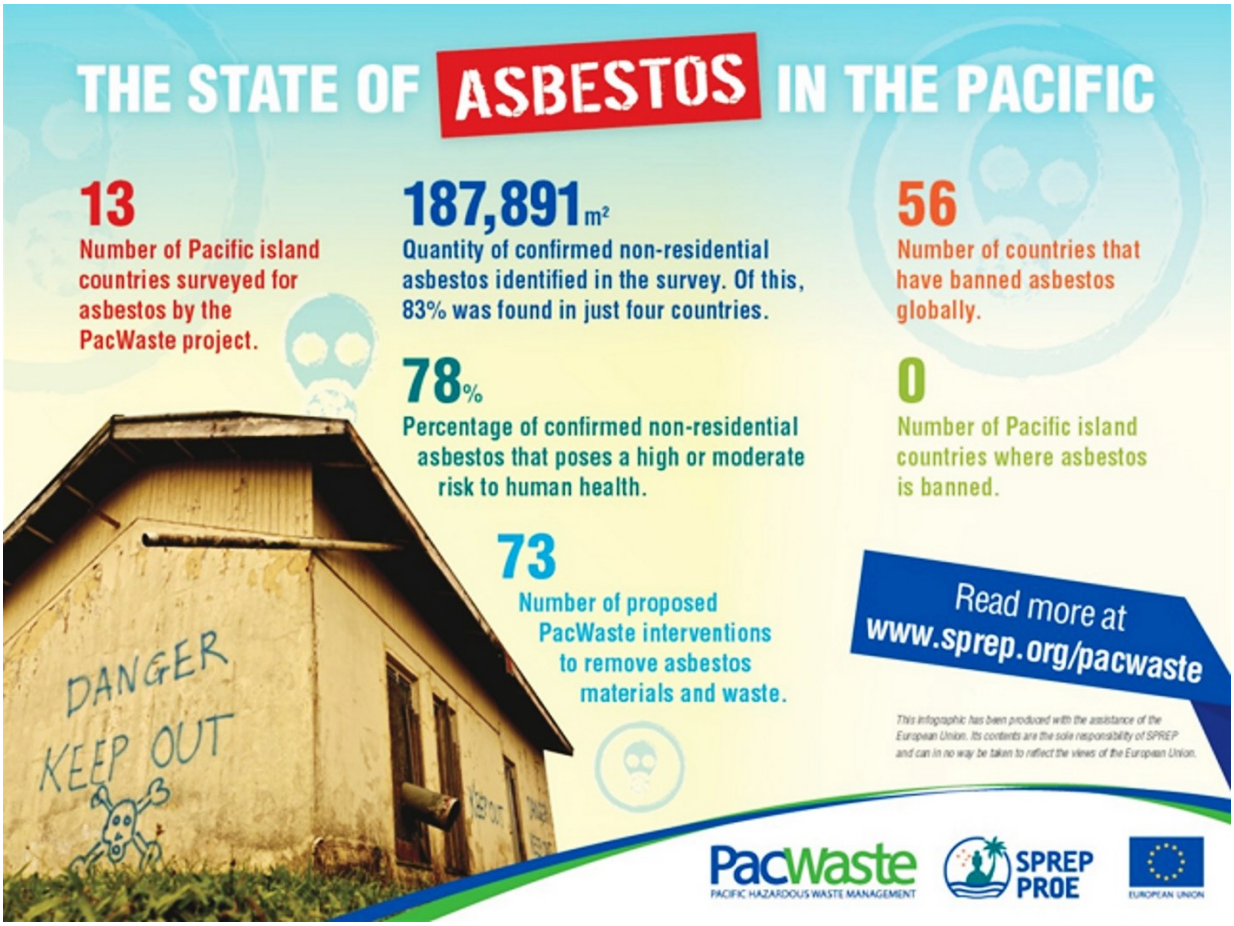
Content



Introduction

Natural disasters such as wildfires, cyclones, and floods can damage asbestos-containing materials and lead to asbestos exposure among first responders, clean-up crews and nearby residents.

This document is designed to provide guidance on response and management, and to supplement knowledge and skills – utilising this guide does not imply qualifications, and we strongly recommend undertaking appropriate training and employing necessary protective measures prior to handling asbestos containing materials.

How Is Asbestos a Risk During a Natural Disaster?

Many homes and commercial buildings constructed prior to the 1980s were built with asbestos materials. Those products are considered safe if they are in good condition, but once ripped, broken, burned, blown or washed away and become part of a debris pile, the products may release toxic asbestos fibres into the air.

Breathing in these fibres can lead to serious health conditions years later. The more someone is exposed to asbestos, the higher their risk of developing asbestos-related diseases such as mesothelioma. Natural disasters pose dangers from the moment they occur. People don't often consider health risks after a cyclone rips through their neighbourhood or a flash flood destroys their personal possessions.

Asbestos exposure is not an immediate danger such as live electrical wires or unstable infrastructure. It also is not as apparent as more obvious health risks such as black mold. Asbestos fibres are microscopic and travel by air or in clouds of dust, so you can be exposed and not even know it. It is essential to consider and properly prepare for asbestos exposure prevention when planning for natural disasters and severe weather. Knowing how to keep safe from asbestos after a disaster can help prevent health conditions later in life.

Cyclones and Asbestos Exposure

Cyclones present three primary sources of destruction: Powerful winds, storm surge and rain. Storm surges lead to flooding along coastlines, damaging infrastructure, and public spaces. Powerful winds can destroy buildings, while heavy rains cause flash floods. Debris can expose homeowners, emergency workers and volunteers participating in the clean-up process to materials that may contain asbestos.

Who Is at Risk of Asbestos Exposure During a Disaster?

As the first people on the scene, emergency response crews and early response volunteers face an increased risk for asbestos exposure in the wake of a natural disaster due to the likelihood of asbestos fibres being released from accumulated debris.

The risk of health effects increases over time and depends upon frequency and amount of exposure to asbestos to these workers. Homeowners of damaged properties also face these risks and should always use caution when cleaning or searching through debris.

Asbestos Exposure Prevention for Responders After a Disaster

Different types of natural disasters present a variety of asbestos exposure risks. For example, cyclones and floods may carry asbestos contaminated debris from one location to another, contaminating several villages with asbestos.

Consider these tips to minimize asbestos exposure:

- If materials must be moved, wet them first so that the fibres are less likely to become airborne. Asbestos abatement contractors will be familiar with proper removal and disposal regulations. In many localities, there are regulations that govern the removal and management of asbestos-containing materials after a natural disaster.
- Use only properly fitted NIOSH-Approved, N-100 or P-100 respirators. Do not use basic paper or fibre dusk masks, handkerchiefs or other, lower-grade air respirators, which will provide you with little or no protection from asbestos fibres.
- Wet or cover asbestos-related debris to minimize dust, and always wear additional protective gear, such as boots, coveralls and gloves during removal.
- Double-bag all asbestos contaminated building debris.
- Enclose the work area with plastic sheeting and duct tape to minimize dust.
- Only disturb construction materials that must be removed and minimise any excess breakage to prevent the release of dust and fibres into the air.
- Be sure to thoroughly shower and wash once you have completed debris removal to remove any dust and fibres that could become airborne.
- It is recommended to properly dispose of your clothes or wear disposable coveralls when handling asbestos materials. Washing clothes covered in asbestos dust or tiny fibres interwoven into the fabric can lead to exposure for you and your family members.

Survey and Collection Plan for Debris Removal Workers Relating to Asbestos Containing Building Materials

A survey and collection plan should be developed for field personnel conducting ACM removal. The procedures listed below are for identifying and to provide instruction for removal of Buildings constructed between approximately 1880 and 1985 may have building products that contain asbestos. These building products include (but, not limited to):

- Pipe and boiler insulation
- Transite
    - Roofing tiles
    - Corrugated panels
    - Siding
    - Pipe
    - Duct work
    - Wallboard
- Roofing shingles and paper
- Vinyl/asphalt/linoleum flooring tiles
- Ceiling tiles
- Zonolite ceiling plaster
- Vermiculite insulation
- Mono-Kote

Example photographs of these asbestos-containing materials are provided on the following pages.

Asbestos experts should be made available to each response team so that they can be consulted to ensure appropriate identification of asbestos-containing material when necessary.

As ACM materials are identified as present, the specific materials should be wet-down, and double-bagged in plastic, labeled as ACM prior to disposal as hazardous waste.

Exceptions:

1. **Vermiculite** insulation was commonly used in homes between 1910 and 1985. Vermiculite can be found in attic spaces and between wall studs. Since Vermiculite is a friable, pelletized material, it may be found strewn around the foundation and within the structure after a fire. (See attached Vermiculite/Zonolite photos.) Dust generation while attempting to gather this material can cause asbestos exposure. Therefore, for small quantities, the material should be wetted, and HEPA vacuumed, if possible; double bagged, labelled as ACM and disposed as hazardous material. If large volumes are discovered, label parcel as high hazard.

2. **Mono-Kote** is a spray-applied, whitish, flocculent material typically applied to the steel/aluminum superstructure of commercial buildings. Buildings found to have Mono-Kote on structural members will be designated as high hazard.

3. **Remnant structures**, without physical hazard for entry, that are found to contain ACM will be marked with safety tape and identified as high hazard.

Products Containing Asbestos

There are dozens of asbestos-containing products in older construction such as single-family homes, apartment complexes, office buildings, churches and schools.

These products are considered safe if they are in good condition and left undisturbed in walls, floors and the ceilings and roofs of structures. If asbestos-containing materials are suspected during clean-up efforts, experts recommend you leave them alone.

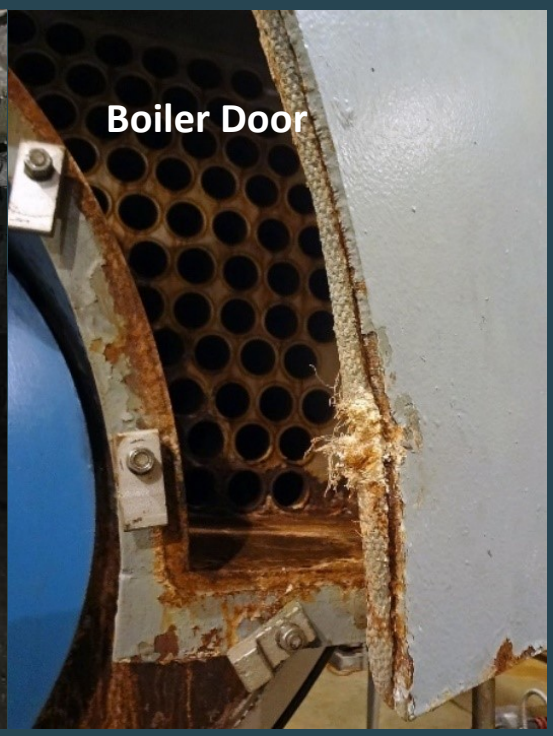
Stirring up asbestos contaminated materials (ACM) in debris can result in airborne asbestos fibres, and exposure is likely at that point.

Common Household Materials Containing Asbestos

- Roofing felt
- Pipe lagging
- Block insulation
- Adhesives
- Appliance components
- Ceiling products
- Cement board
- Gardening products
- Flooring
- Paints
- Roofing
- Table pads
- Wallboard
- Insulation
- Fireplace decorations
- Taping compounds and plasters
- Electrical insulation and panels
- Heating and cooling systems


WARNING
ASBESTOS
WASTE MATERIAL
IS PRESENT
AT THIS SITE
KEEP OUT
FOR INFORMATION
CALL
13 13 75

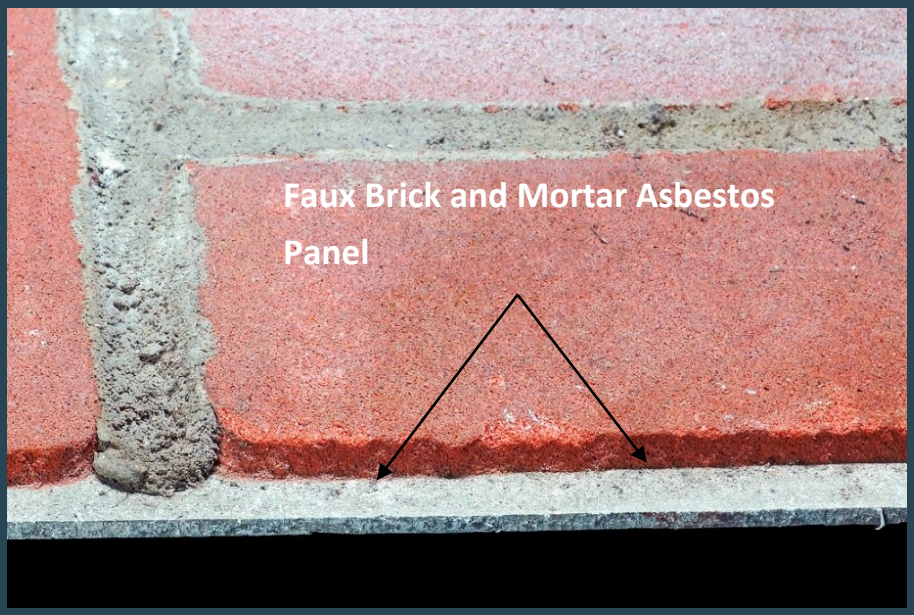
Photos of asbestos contamination:



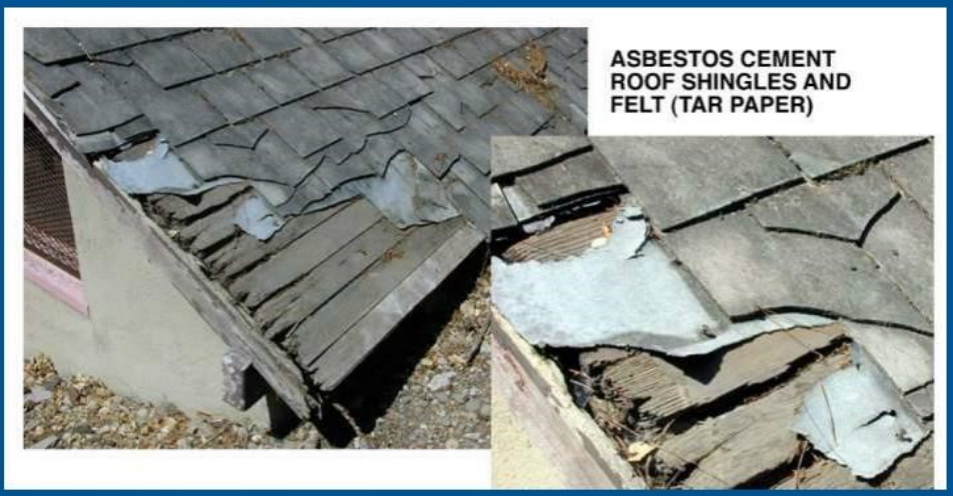
Pipe Insultation:


Transite Roofing
Material


Shingles

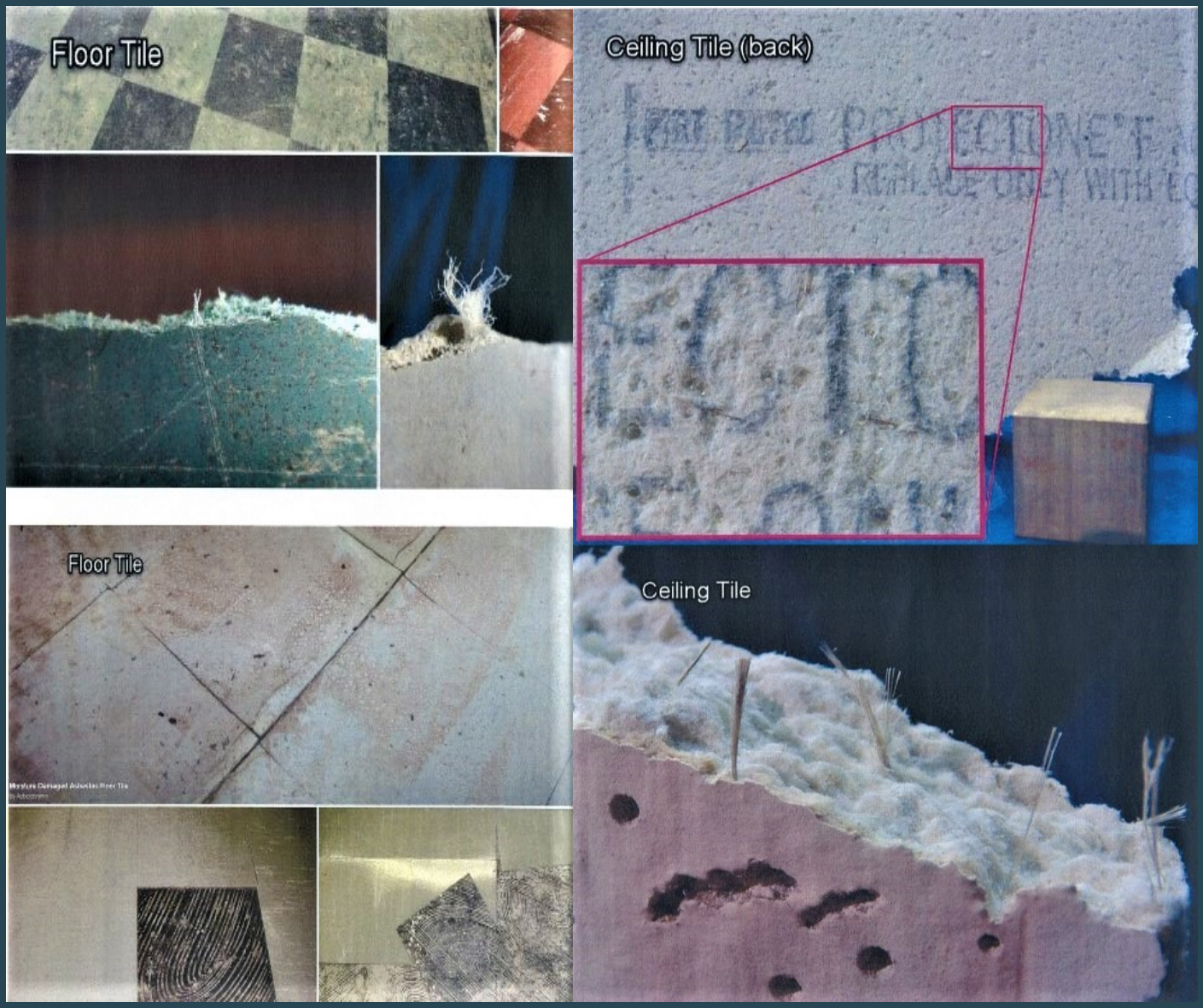


Asbestos Roofing Material – used from 1920's to 1970's



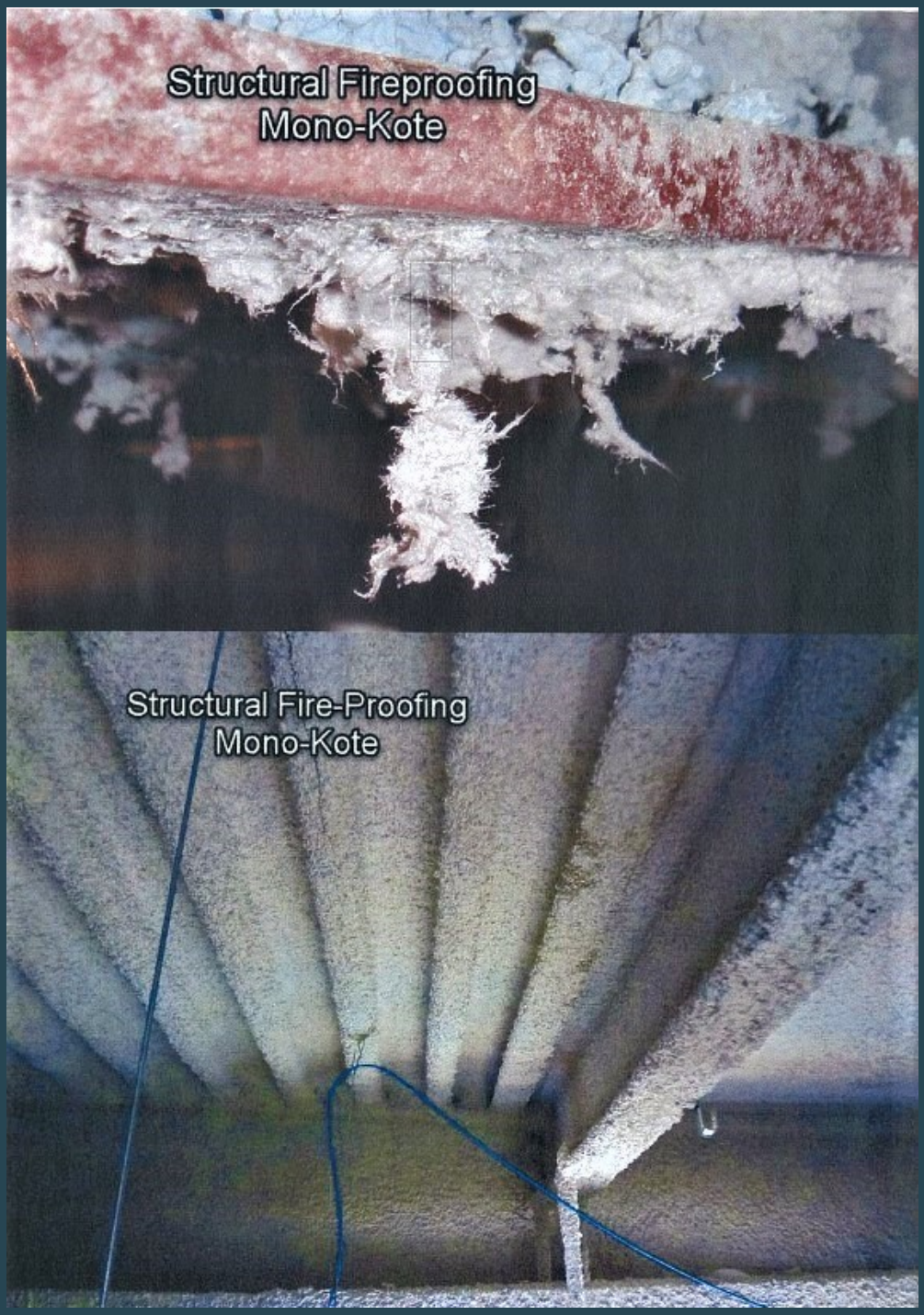

Siding Shingle

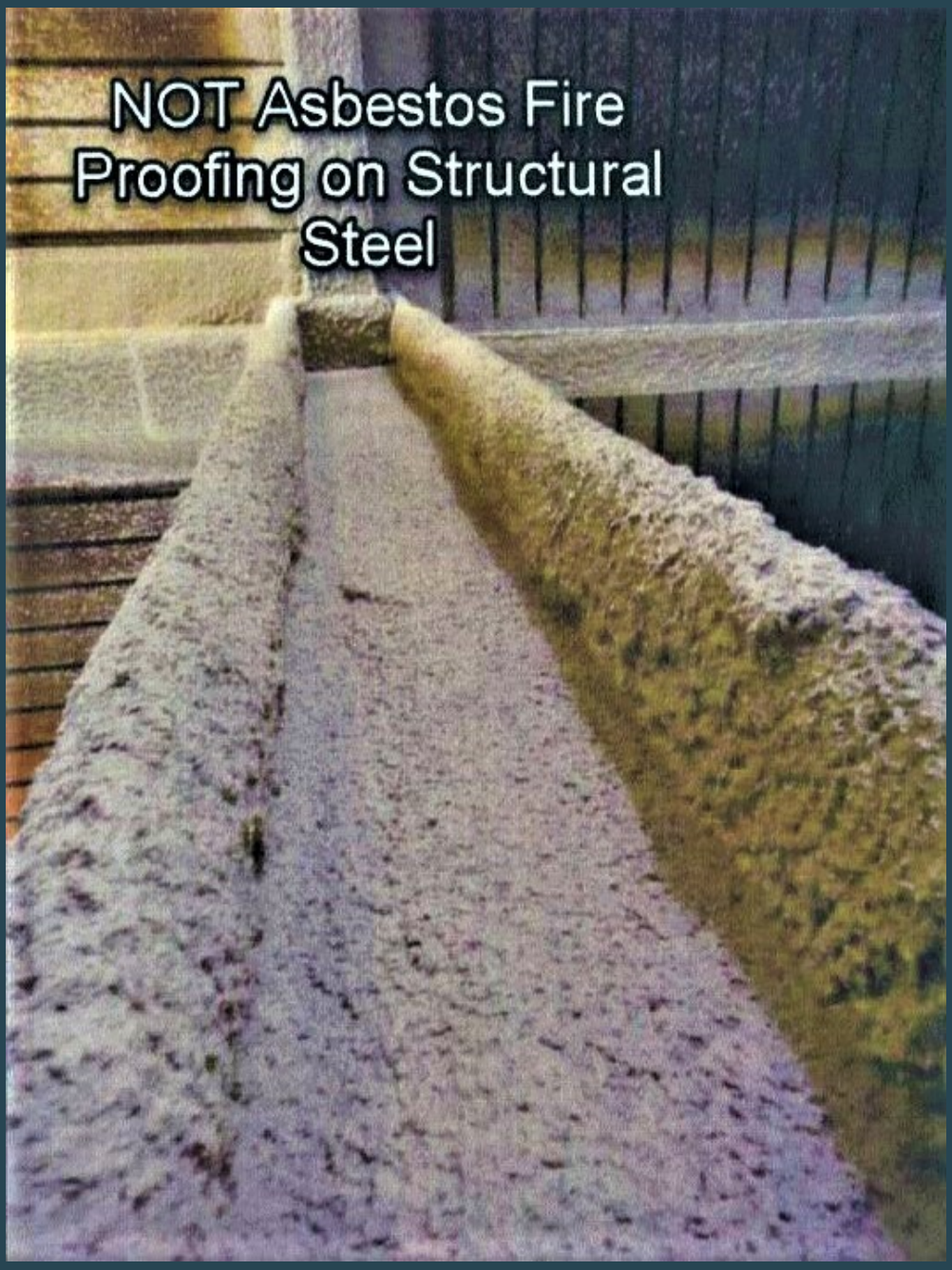

Roofing Shingles
GRAY
Careystone Asbestos Roof Shingle Sample - Grey
Careystone
Weathered Brown
Careystone
DUPLEX
Careystone
WEATHER-AGED
SHINGLES
Tudor Black
Transite - Siding
or Roofing
Shingle


Floor Tile
Ceiling Tile (back)
Floor Tile
Ceiling Tile


Zonolite
INSULATION
ZONOLITE
ATTIC
INSULATION
ZONOLITE
Vermiculite (Zonolite)
Insulation


Vermiculite (Zonolite)
Vermiculite "ashes" in faux fireplace


Structural Fireproofing
Mono-Kote
Structural Fire-Proofing
Mono-Kote


NOT Asbestos Fire
Proofing on Structural
Steel

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