



Endeavour
Energy



Ausgrid



Asbestos Product Guide

October 2013





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Introduction

This Product Guide, developed by Ausgrid is based upon the Ausgrid document NUS 211 – Working with Asbestos Products. It is a collection of data sheets, each representing a unique asbestos-containing product which are often found on Endeavour Energy assets.

Each data sheet contains a description, identification, common names used to describe these products and photographs for an easy identification of the products for our staff who may not have come across those products.

There is also a safety section describing the level of Personal Protective Equipment required, procedures, precautions and regulations required when working in the vicinity of, or removing those products.

This guide covers well known asbestos-containing products discovered to date on Endeavour Energy assets, nevertheless it is a living document and any future discovered materials will be added to it.

The following symbols were used in the Guide:

	Level 1 – Precautionary Asbestos PPE should be used
	Level 2 – Working with Asbestos-Containing Materials PPE must be used
	Level 3 – Emergency Asbestos PPE ONLY
	Removal by Class A Licensed Asbestos Contractor Only
	Removal by Class B Licensed Asbestos Contractor Only
To describe friability, the following is used:	
	Friable Risk - HIGH
	Friable Risk – LOW or non-friable material
	Generally Friable Risk – HIGH , but friable component is encapsulated

The aim of this guide is to assist staff and trainers to better identify asbestos-containing products found on Endeavour Energy assets. This guide is available from the Asbestos Register.

For any comment, possible corrections or any queries please contact Asbestos Management on Telephone 02 9853 6053 or by email: stuart.watts@endeavourenergy.com.au

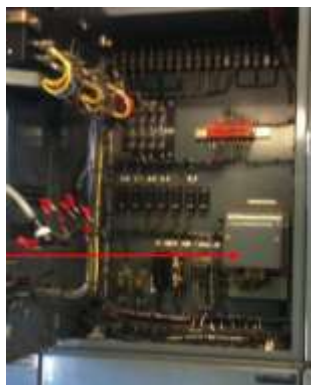
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Contactors Covers



Description	Medium density asbestos cement sheet on a metal backing to protect protection relays against heat and electrical arcs from the contactor's arc chute when operating.	
Identification	These have been found in 11kV Westinghouse J18/B18 family of circuit breakers, in South Wales DX4 breakers at Kellyville and in 33kV GCN breakers. 33kV GCN approx. pre 1965 breakers which have contactor covers that have a square box that is the same colour as the rest of the breakers. Ex-Electricity Commission breakers tend to have silver coloured boxes which do not contain asbestos.	
Other names	Arc Chute covers, Closing Coil Contactor Covers	
Photographs		
	11kV Arc Chute Contactor Covers	33kV GCN Arc Chute Contactor Covers
Friability	 Friable Risk - HIGH Asbestos rope seal is classified as a friable material and can pose an immediate risk to employees if touched or disturbed. During maintenance activities the potential for asbestos fibres to be released into the air is higher if material is broken or in very bad condition. Any occurrences should be reported to Asbestos Management and scheduled for removal.	

Safety Guide

Working in proximity	 Level 2 – Precautionary Asbestos PPE should be used. Work in accordance with GSY 1065 procedures.
Working on this product	 No work should be performed on this product as it is friable. It should be removed by Class A Licensed Asbestos Contractor Only
Removal of this product	 Removal by Class A Licensed Asbestos Contractor Only

Asbestos Product Guide

Asbestos Rope Seal



Description	Soft flexible rope usually fitted in the door, lid, and hatch recess to seal the associated enclosure/box. The rope seal becomes quite hard with the age. Can be found in 100A Wilco power outlets, 11kV OCB contactor boxes and other boxes where a heat resistance seal is required.
Identification	The rope seal can range in colours from white through grey to brown. Asbestos-containing rope seals are not easily distinguished visually from seals that are asbestos-free and tests have shown out of all known (104) 100A Wilco power outlets 10 per cent were non asbestos.
Other names	Asbestos seal, door seal
Photographs	 Asbestos rope seal at the hatch of 100A Wilco power outlets (usually in zone substations)  Seal of 11kV OCB closing contactor box
Friability	 Friable Risk - HIGH Asbestos rope seal is classified as a friable material and can pose an immediate risk to employees if touched or disturbed. During maintenance activities the potential for asbestos fibres to be released into the air is higher if material is broken or in very bad condition. Any occurrences should be reported to Asbestos Management and scheduled for removal.

Safety Guide

Working in proximity	 Level 1 – Precautionary Asbestos PPE should be used. Work in accordance with GSY 1065 procedures.
Working on this product	 No work should be performed on this product as it is friable. It should be removed by Class A Licensed Asbestos Contractor Only
Removal of this product	 Removal by Class A Licensed Asbestos Contractor Only

Asbestos Product Guide

Asbestolux



Description	Asbestolux was typically used as wall and ceiling panels, often in high humidity applications. It has been used for fire protection, thermal and acoustic insulation and for general building work in industrial and commercial buildings, education facilities and domestic premises. It was manufactured in the late 1950s to mid-1960s and is unlikely to be found in buildings constructed after 1982. It can be found only in a few locations in Endeavour Energy, mainly in old zone substation amenities and control room ceilings.
Identification	Asbestolux is a low density asbestos fibre board, lightly compressed, it looks similar to asbestos cement sheeting or plaster board, but asbestos fibres are not bound in a cement matrix as with asbestos cement sheeting but in calcium silicate plaster, which makes Asbestolux quite soft and the pressure of a fingernail into the surface can leave an indentation. Samples of Asbestolux have shown it contains up to 70 per cent (by volume) asbestos fibres. It is usually painted white.
Other names	Low density asbestos fibre board, AC board.
Photographs	   Unpainted board Control room ceiling Amenities ceiling
Friability	✗ Friable Risk - HIGH Due to the high percentage of asbestos fibres present in Asbestolux and the soft nature of the product, Asbestolux is regarded as a friable asbestos containing material. Asbestolux is softer than asbestos cement sheeting and will crumble easily if disturbed. If the material is in good condition and left undisturbed, it presents a low risk to building occupants. However, release of airborne fibres can occur even with minor mechanical disturbance. During maintenance activities the potential for asbestos fibres to be released is high if Asbestolux is broken, removed or disturbed without adequate precautions.
Safety Guide	
Working in proximity	1 Level 1 – Precautionary Asbestos PPE should be used (subject to risk assessment).
Working on this product	✗ No work on this product as it is highly friable when disturbed, sawing, drilling or cutting into this material will result in significant fibre release. Only Class A Licensed Asbestos Contractor can remove or replace.
Removal of this product	✗ Removal by Class A Licensed Asbestos Contractor ONLY.

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Asbestos-Cement Conduits



Description	Hard, brittle material, usually grey in colour with low asbestos content (up to 30 per cent). Asbestos Cement conduits were mainly used to convey HV and LV cables into and out of substations, buried under road crossings, containing cables inside or being empty, used as spares alongside roads or buried in the footpath. Extensively used in pit and duct system in Sydney CBD. Sometimes concreted in substation slabs'. The use of AC conduits was stopped around 1987, from that date FRC (fibre reinforced concrete) has been used.
Identification	Sometimes it is hard to distinguish asbestos cement conduits from cement conduits, the best way is to always take a sample and test. When broken, asbestos-containing conduits will have visible fibres, whereas non-asbestos material will have a clean homogenous break.
Other names	FC conduits, conduits, AC ducts, ducts.
Photographs	    Conduits in substation concrete floor Conduit debris from kiosk concrete base Outdoor enclosure conduits in ground (sealed with Emerclad) Broken conduits inside substation cable basement
Friability	 Non Friable Risk – LOW.

Safety Guide

Working in proximity	0 Level 0 – No PPE required, non-friable asbestos containing material.
Working on this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. The product can become friable if subjected to fire (e.g. substation fire) or has been worked on using power tools (grinder, jack hammer, etc). It may also be considered friable if inappropriately buried in the form of small pieces (usually determined by an asbestos hygienist). Work in accordance with GSY1065 procedures. Sometimes to simplify the task of cable pulling through existing AC conduits internal lining with plastic was employed (pictured). There are number of companies specialising in installation of plastic inserts into conduits (the list is available from Asbestos Management). 
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used.
Product	Our trained staff can only remove up to 10m² of AC conduits. Removal of any greater amount can only be done by a licensed asbestos contractor. Any work or removal of AC conduits should be done in accordance with GSY1065 procedures.
References	There is no record of AC conduits in the Asbestos Register; the only place where it could be found is GIS maps and field books. Those records are not always accurate with the description of conduits, so if you are unsure that the particular conduit is asbestos then it should be tested. Asbestos Register records must always be verified during your site risk assessment.

Asbestos Product Guide

Bituminous Electrical Backing Board



Description	Backing boards are commonly used as the mounting base for switchboards, protection panels, street lighting panels, auxiliary power boards, etc. They are usually fixed to a steel construction which is attached to the floor and walls of the substation. Fuses, links, protection relays, control relays, contactors, small circuit breakers, meters, MDI and other electrical equipment is installed on backing boards. They are hard, stiff and dark in colour.
Identification	The backing boards are usually a dark brown or black colour, have a rough fibrous or wood like surface finish and may have a strong tar smell about them. Brand names such as Lebah, Zelemite, Miscolite and Ausbestos may be stamped on the rear of the backing boards.
Other names	LV board, power board, electrical boards.
Photographs	    'Lebah' board in OE sub 'Zelemite' board phase barriers 'Miscolite' board at S335 LV board with bituminous electrical backing boards
Friability	 Non friable material, can only become friable when subjected to fire or worked on by power tools.

Safety Guide

Working in proximity	0 Level 0 – No PPE required, non-friable asbestos containing material.
Working on this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. When drilling, battery drills with dust extraction equipment or shadow vacuuming must be used in accordance with GSY1065 procedures. Using power tools like electric drills, grinders or water blasting these panels is not allowed as it may release harmful asbestos fibres.
Removal of this product	 Removal by Class B Licensed Asbestos Contractor Only if the total area exceeds 10 m² otherwise can be done by our trained staff in accordance with GSY1065 procedures.

Asbestos Product Guide

Brake Pads



Description	Brake pads are used as a friction material in all kind of older braking systems. They are very hard, attached to brake shoes in cars, lifts, cable drum stands, etc. Since a total asbestos ban they have not been used, but can still be found in older types of lift braking mechanisms and old vehicles.
Identification	They dark grey in colour and are surrounded by dust on adjacent parts. Reliable identification can only be achieved by laboratory analysis, but generally one can only expect asbestos containing brake pads or linings in older equipment.
Other names	Brakes, brake linings.
Photographs	    Car brake pads with asbestos lining Lift motor brake lining Brake shoes with asbestos lining Cable drum trailer brake lining
Friability	 Non friable material – however there is usually a lot of asbestos containing dust coming from the operation of brakes (friction) and care should be taken when removing or coming into close contact, no compressed air to be used in vicinity.

Safety Guide

Working in proximity	0 Level 0 – No PPE required.
Working on this product	The only work on existing asbestos brake pads is the removal work.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used and the work in accordance with GSY 1065

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Cable Bandages



Description	Cable bandages were installed as a means of fire protection on electrical cables in electrical substations, typically located in switchrooms and switchyards of Zone and Sub-transmission substations, underground and chamber distribution substations, as well as in cable basements and cable pits. Typical locations include high voltage cables at transformer, high voltage cables at switchgear, switchgear-transformer cables, and low voltage cables at feeder panels. Cable Bandages have only been found within ex Electricity Commission and Ausgrid substations. All known cable bandages have been removed from Endeavour Energy assets. Cable bandages are usually wrapped uniformly around the cable, they are white to cream in colour, highly friable asbestos material where fibres could be freed just by touching them.
Identification	White/grey woven bandage type material. Usually 50mm to 100mm in width. May be similar in appearance to bitumen impregnated cotton cable wrap which is dark black/grey in colour (non-asbestos). Commonly installed on high voltage cables (e.g. 11kV). Modern fire protection of cables is a sprayed white material that does not appear woven.
Other names	Cable lagging, limpet, cable insulation, pipe insulation, rope braid, woven asbestos sheath.
Photographs	 Outside switchyard  Tx HV cables  Feeder cables at Zone  HV cables in Distribution sub
Friability	 Friable Risk - HIGH Due to the high percentage of asbestos fibres present in cable bandage and the soft nature of the product, cable bandage is regarded as a friable asbestos containing material. Cable bandage is usually soft and release of airborne fibres can occur even with minor mechanical disturbance or with touching by hand or brushing against it. During maintenance activities the potential for asbestos fibres to be released is higher if the cable bandage is broken or in very bad condition.
Safety Guide	
Working in proximity	 Level 1 – Precautionary Asbestos PPE should always be used. The product is always considered as friable. It can be made temporarily safe by wrapping in 200µm plastic sheeting. Do not touch or come closer than 300mm. Report occurrences of cable bandages to Asbestos Management Immediately.
Working on this product	 Level 3 - Emergency Asbestos PPE ONLY. There is no Endeavour Energy safe work procedure to work with this product as it is friable. Do not touch or come closer than 300mm.
Removal of this product	 Removal by Class A Licensed Asbestos Contractor ONLY. It should be encapsulated by Class A Licensed Asbestos Contractor and scheduled for removal at the earliest convenient time also by Class A Asbestos Contractor.

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Corrugated Cement Sheet



Description	Corrugated cement sheets were mainly used for substation roofs, fences, shed walls etc. After prolonged use and weathering they deteriorate and can release asbestos fibres in small quantities which could be deposited near downpipes if they flow to the outside and not to the town sewer.
Identification	They are white to grey in colour, hard brittle material, made by James Hardie as a popular brand Super 6. Now days they are replaced with fibre cement materials not containing asbestos of similar appearance.
Other names	Cement sheets, Super 6.
Photographs	   
	Distribution substation fence FSC fence Zone substation roof (removed) Badly damaged fence
Friability	 Non friable material, can only become friable when subjected to fire or worked on by power tools.

Safety Guide

Working in proximity	0 Level 0 – No PPE required.
Working on this product	1 Level 1 – Precautionary Asbestos PPE should be used.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. Endeavour Energy doesn't have many more asbestos roofs and external licensed contractors are used to for removal.  Small quantity (less than 10 m ²) can be removed by our trained staff, but Class B Licensed Asbestos Contractor only if the total area exceeds 10 m ² .

Asbestos Product Guide

English Electric Fuse Holders



Description	Black in colour, smooth, hard polished surface. English Electric fuse holders are used mainly in CBD underground and basement substations and they are the only product from the English Electric fuse holder family that contains asbestos. Asbestos is bonded in the matrix of the black moulded component of the fuse holder.		
Identification	Black colour, distinct embossed letters “EE” and the characteristic shape.		
Other names	Fuse holder, fuse, fuse handle.		
Photographs	 English Electric fuse holder containing asbestos commonly in underground subs in CBD  St George type fuse holders NOT containing asbestos  Caspar type fuse holder commonly used in chamber subs NOT containing asbestos  A view of embossed English Electric symbol  Mackellar type fuse holders NOT containing asbestos		
Friability	 Non friable material, very hard to break or reduce to rubble or dust		
Safety Guide			
Working in proximity	 Level 0 – No PPE required, subject to the site condition risk assessment.		
Working on this product	 Level 1 – Precautionary Asbestos PPE should be used. This product when in use is always ‘live’ or stored in substation cabinets as spare. There is no need to do any work on fuse handles, only removing and replacing with non-asbestos version. In 2005 a program was started to replace EE fuse holders progressively when not in service. Because it was an <i>ad-hoc</i> operation there is no record of how many were already replaced.		
Removal of this product	 Level 0 – No PPE required, subject to the site condition risk assessment.		

Description	By the fire regulation substation entrance and internal doors must be fire rated. Asbestos was widely used in the internal construction or backing of fire doors due to its excellent fire resistance properties. That includes switchroom fire doors (wooden clad) in the form of core insulation, transformer room entrance doors (steel clad) in the form of mastic insulation, interior entrance and connecting fire doors (wooden clad) in the form of core insulation. They are usually painted gray or some other suitable colour to blend with the surroundings.
Identification	As most of older type of fire doors don't have any labels or distinct markings it is very hard to positively identify asbestos content. The only way to do it is by sampling, but this is a destructive process and hygienists prefer to classify them as: 'suspected positive' or 'suspected negative', based on their age and appearance. Newer types of fire doors are labelled, which make it easier to identify them as asbestos-free.
Other names	Safety door, fire barrier door, substation main doors
Photographs	 Damaged substation fire door  Damaged fire door exposing asbestos core  Wooden frame door  Damaged fire door leaking asbestos as white powder on floor
Friability	 Friable Risk – LOW Although classified as friable, fire doors have an asbestos component encapsulated within the door frame. Only in cases of the outside frame/cover being damaged (e.g. rust, mechanical damage etc) the asbestos core can become friable and should be treated accordingly.

Safety Guide

Working in proximity	0 Level 0 – No PPE required when in good condition. When damaged, no work should be done in the proximity of the door and it should be reported immediately to Asbestos Management or raise a hazard alert with your supervisor.
Working on this product	 No work should be performed on fire doors except painting or the non-invasive attachment of labels. Any drilling or cutting of the door could release asbestos fibres.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. Work is performed by the Substation Building Maintenance section in cooperation with a friable asbestos removal contractor who disposes of the door and an asbestos hygienist who performs air monitoring and provides the final clearance certificate.

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Flat Cement Sheet



Description	Flat cement sheets were made of asbestos fibres and cement mix, commonly in the ratio of 1 to 9. In the asbestos cement sheet, asbestos fibres are bound within the cement matrix and are considered to be well immobilised in the cement and less prone to be released into the environment. Due to its asbestos content, cement sheets are heat and moisture resistant. Asbestos cement sheets were used as ceiling panelling, walls and external eaves of some older type substations and depots.
Identification	Asbestos cement sheets are white to grey in colour and are quite hard and brittle. When subjected to machining, power tools or extensive weathering this product can become friable and the internal fibres that were originally bounded by cement can become liberated into the air.
Other names	AC sheet, fibre cement sheet, fibre
Photographs	 Mascot zone cable troughing cover  Depot building awning  Asbestos cement substation building eaves
Friability	 Non Friable Risk – LOW, Can only become friable when subjected to fire, extensive weathering or worked on by power tools.

Safety Guide

Working in proximity	0 Level 0 – No PPE required, non-friable asbestos containing material
Working on this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used This product can become friable if subjected to fire (e.g. substation fire), extensive weathering or has been worked on using power tools (grinder, jack hammer, etc.). If drilling is required then battery drills with dust extraction equipment or shadow vacuuming must be used in accordance with GSY1065 procedures.
Removal of this product	 Removal by Class B Licensed Asbestos Contractor Only if the total area exceeds 10 m², otherwise, if the total area is less than 10 m², it can be done by our trained staff in accordance with GSY1065 procedures.

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Fuses (Low Voltage)



Description	Fuses containing asbestos were used at customer meter boards mainly during the 1960's. These fuses have two main types, Henley fuses with a millboard wrap around the fuse element and fuses with a friable asbestos matting for arc quenching
Identification	See below for fuse pictures.
Other names	Henley Fuses, Service Fuses, Council Fuses
Photographs	   Top – Henley Fuse with cover off Middle – Henley Fuse with cover on Right – Henley fuse removed from meter board Federal Type Asbestos containing fuse Henley Type Asbestos Fuse Arc Quenching Wrap
Friability	 Friable Risk – High These fuses should not be touched. These fuses can be bypassed with a modern fuse where urgent operational needs are identified.

Safety Guide

Working in proximity	Level 0 – No PPE required when in good condition. 0 When damaged, no work should be done in the proximity of the fuse and it should be reported immediately to Asbestos Management or notify your supervisor.
Working on this product	 No work should be performed on these fuses except for bypassing the fuse.
Removal of this product	 Removal by Class A Licensed Asbestos Contractor Only.

Asbestos Product Guide

HV Striker Fuses containing Asbestos



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Description	Asbestos-containing HV striker fuses are commonly used in 11kV Ring Main Isolators and Fuse Switches that will take 10 inch oil immersed fuses. These fuses may also be stored in depots and substations as replacement spares. Asbestos is encased inside the striker fuses in the form of washers and ropes at the non-striking end of the fuse.
Identification	The types of striker fuses containing asbestos are: EMP OC10M - 40A GEC ES2692 – 60A GEC KEMXQ – 60A Reyrolle JOS1025 – 60A EMP fuses are tan or brown in colour with the outer casing comprised of compressed particle or Bakelite, with the ends copper or silver in colour. They are approximately 65mm in diameter and 250mm long. GEC, GE and Reyrolle fuses are white or off white in colour with the outer casing comprised of a porcelain or ceramic and with the ends being silver or dirty grey in colour. The end cap with the striker may be flat or have a recessed domed area which can vary in size. They are approximately 65mm in diameter and 250mm long with the exception of one kind which is 360mm long. When striker fuses are present inside equipment they pose no asbestos risk (hermetically sealed with robust construction and immersed in oil) and should be left in place until they require replacement or the equipment is decommissioned. Fuses kept as a spare should be packed as per instruction below and sent to the main store in Somersby.
Other names	HV fuses, striker fuses
Photographs	    EMP OC10M type fuses containing asbestos GEC KEBXO & KEMXO type fuses containing asbestos EETEE CFCA3 type fuse containing asbestos (longer version) Asbestos rope inside broken fuse
Friability	 Friable Risk - LOW Although classified as friable, striker fuses have an asbestos component encapsulated within the body of the fuse and are immersed in oil. Only in cases of the outside canister being mechanically damaged, the asbestos component can become exposed and should be treated accordingly.

Safety Guide

Working in proximity	0 Level 0 – No PPE required, fuses are immersed in oil inside Ring Main Isolator or Fuse Switch.
Working on this product	0 Level 0 – There is no work to be performed on this product except in relation to its removal (see below)
Removal of this product	1 Level 1 – Precautionary Asbestos PPE should be used when handling intact fuses. Striker fuses should be double bagged and returned to the central store for disposal. They should be placed inside an asbestos waste bag and the bag rolled along its length creating multiple layers of plastic surrounding the fuse. The end of the waste bag should be sealed with duct tape. The wrapped fuse should be placed in a second waste bag by repeating the process above prior to return to store via the normal process.
	2 Level 2 – If asbestos-containing fuses are accidentally broken, then staff should immediately: (a) Isolate the area and prevent access. If access to the area is required then Level 2 working with Asbestos PPE must be applied. (b) Contact Asbestos Management to arrange removal of the fuse and decontamination of the area if required.

Asbestos Product Guide

Millboard



Description	Asbestos millboard was used in the construction industry all over the world. Because of its flame-resistant durability it became a popular material to use above fireplaces and stove-tops, as well as other locations in walls and ceilings. Its asbestos content could reach up to 85 per cent. In Endeavour Energy, millboard was used mainly in lining of boxes or interiors of compartments containing heat or spark producing electrical equipment, like relay boxes, contactor boxes. It was also used for lining the inside of wooden outdoor enclosure cabinets or meter boxes.
Identification	Millboard is white to grey in colour, soft flexible material which can be easily damaged. Similar non-asbestos products are made with asbestos substituting substances such as Rockwool mineral fibres, which provide heat-resistance.
Other names	Asbestos board, millboard lining.
Photographs	    Millboard lining inside the fuse box Millboard sheet Millboard lining in OCB closing contactor box Millboard lining in 33kV CB closing contactor box
Friability	✗ Friable Risk - HIGH Due to the high percentage of asbestos fibres present in millboard and the soft nature of the product, it is regarded as a friable asbestos-containing material. Millboard is usually soft and release of airborne fibres can occur even with minor mechanical disturbance. During maintenance activities the potential for asbestos fibres to be released is higher if millboard is broken or in very bad condition.

Safety Guide

Working in proximity	1 Level 1 – Precautionary Asbestos PPE should be used. Work in accordance with in GSY1065 procedures.
Working on this product	✗ No work should be performed on this product as it is friable. It should be removed by Class A Licensed Asbestos Contractor ONLY.
Removal of this product	✗ Removal by Class A Licensed Asbestos Contractor ONLY.

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Moulded Cement Sheet



Description	Moulded cement sheets were mainly used for cable troughings, fuse boxes, CBD UG substation busbar trunking, etc. They are basically flat cement sheet moulded to suit the application, usually painted silver on the outside.
Identification	If not painted they are white to grey in colour quite hard, strong, fibrous material.
Other names	Busbar trunking, cable troughing, fuse boxes.
Photographs	 End of Busbar trunking in CBD underground substation  Moulded cement sheet – bottom of fuse box in CBD underground substation  Busbar trunking and fuse box in CBD underground substation  Moulded cement sheet troughing
Friability	 Non Friable Risk – LOW.

Safety Guide

Working in proximity	0 Level 0 – No PPE required, non-friable asbestos containing material.
Working on this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. The product can become friable if subjected to fire (e.g. substation fire) or has been worked on using power tools (grinder, electric drill, jack hammer, etc).
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used.  Small quantity (less than 10 m ²) can be removed by our trained staff but Class B Licensed Asbestos Contractor ONLY if the total area exceeds 10 m ² .

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NC Compound



Description	Asbestos-containing dark grey to brown in colour, mastic flexible 'Non Corrosive' putty, typically used for fire-proofing and to prevent the entry of water into substations and cable pits, specifically in cable ducts and equipment hatches. It also seals cables inside conduits to prevent vermin or any other contamination entering conduits and damaging cables.
Identification	It is impossible to tell if the NC compound contains asbestos or not. Reliable identification can only be achieved by laboratory analysis. Non-asbestos NC compound looks exactly the same as that which contains asbestos. Includes cable penetration caulking in the form of mastic sealant.
Other names	Cable caulking, sealing compound, conduit seal and air conditioning duct flange mastic.
Photographs	   NC compound in substation wall Damaged NC compound Tx cable sealed with NC compound
Friability	 All NC or caulking compound/putty, unless it is damaged or visibly deteriorating, is classed as non-friable asbestos.

Safety Guide

Working in proximity	0 Level 0 – No PPE required. General strategy for this product is to first encapsulate by Emerclad or other suitable paint when the product is damaged and then schedule for replacement with a non-asbestos product.
Working on this product	1 Level 1 – Precautionary Asbestos PPE should be used when in good condition.  When dried out with white dust forming on top, no work should be done in the vicinity. The deteriorating product should be reported immediately to Asbestos Management or raise a hazard alert with your supervisor.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. Removal work in accordance with GSY1065 procedures.

Asbestos Product Guide

Street Lighting Control Panel



Description	Street light control panels mounted on asbestos containing bitumous panels.
Identification	Used in older areas, identified by a metal box, modern boxes made from
Other names	Street lighting box, choke box, SLCP, street light control point.
Photographs	   Pole mounted street light control panel The external metal cover of a street light control panel A street light control panel located within a kiosk substation in the Illawarra
Friability	 Non Friable Risk – LOW.

Safety Guide

Working in proximity	0 Level 0 – No PPE required. Opening of the box or the kiosk door no PPE is required due to the bonded state of the material
Working on this product	1 For minor works such as replacement of fuses and testing on the front of a panel - in this instance the panel does not need to be moved which may potentially disturb dust. All staff are required to wear a P2 respirator while working on a SLCP Level 1 – Precautionary Asbestos PPE should be used.
Removal of this product	2 For major work on SLCP's – such as moving the panel or drilling the panel, should not be carried out. If a faulty SLCP is attended and after opening the door determine that major work is required then close the door, tape it closed, and fit a hazardous condition tag to the outside noting the asbestos on the tag and major work required. Removal of this product should be undertaken by taping any holes in the control point closed, removing the connections at the remote end from the control panel, removing from the pole, lowering down to the ground. Once on the ground the box should be wrapped in 200um plastic and disposed of as asbestos waste. Level 2 – Working with Asbestos-Containing Materials PPE must be used.

Asbestos Product Guide

Vinyl Floor Tiles



Description	Solid, brittle material in a variety of colours used in control rooms, bathrooms, common rooms and amenities rooms of zone substations and Field Service Centres. Sometimes used in bigger distribution substations.
Identification	Asbestos-containing vinyl floor tiles can have a variety of colours and shapes, but they will look exactly the same as non-asbestos-containing vinyl floor tiles. Reliable identification can only be achieved by laboratory analysis.
Other names	Floor tiles, vinyl floor, plastic tiles.
Photographs	   Floor tiles at zone substation Amenities at zone substation Control room floor tiles
Friability	 Non Friable Risk – LOW

Safety Guide

Working in proximity	0 Level 0 – No PPE required.
Working on this product	1 Level 1 – Precautionary Asbestos PPE should be used only when lifting tiles or collecting damaged tiles, otherwise no PPE required for work like cleaning or polishing.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used and removal in accordance with GSY1065 procedures.

Description	Soft, flexible or brittle when dry material, grey dark colour used in old style steel framed windows as the glazing putty. Generally found in older chamber substations.
Identification	Reliable identification can only be achieved by laboratory analysis.
Other names	Steel frame window putty, asbestos putty.
Photographs	 Window putty in substation steel frame window
Friability	 All window putty is classified as non-friable asbestos

Safety Guide

Working in proximity	0 Level 0 – No PPE required. General strategy for this product is non-disturbance. If the product is damaged it should be first encapsulated by Emerclad or other suitable paint sealant and then scheduled for replacement with non-asbestos product.
Working on this product	1 Level 1 – Precautionary Asbestos PPE should be used.
Removal of this product	2 Level 2 – Working with Asbestos-Containing Materials PPE must be used. Removal work in accordance with GSY 1065 procedures.

Asbestos Product Guide

Woven Asbestos Cloth



Description	Soft woven material, white to grey in colour with high asbestos content, used for flexible fireproof couplings, air conditioning and other ducting. Not very common on Endeavour Energy assets.
Identification	Similar to cable bandages, physical appearance could be misleading, it should always be sampled and tested. Could look like non-asbestos woven material.
Other names	Cable bandage, asbestos fabric.
Photographs	 Opera House ventilation duct with asbestos cloth coupling (now removed)  Close up of asbestos clothing at Opera House substation (now removed)  Asbestos cloth wrapped around green resistors inside distance relay box
Friability	 Friable Risk - HIGH Due to the high percentage of asbestos fibres present in asbestos cloth and the soft nature of the product, it is regarded as a friable asbestos-containing material. Asbestos cloth is usually soft and the release of airborne fibres can occur even with minor mechanical disturbance with touching by hand or brushing against it.

Safety Guide

Working in proximity	 Level 1 – Precautionary Asbestos PPE should be used.
Working on this product	 No work should be performed on this product as it is friable. It should be removed by Class A Licensed Asbestos Contractor ONLY. No spraying with PVA solution, no plastic wrapping.
Removal of this product	 Removal by Class A Licensed Asbestos Contractor ONLY.