3M Transcript for the following interview: Ep-59 Loose Fill Asbestos

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Welcome to the 3M Science of Safety podcast presented by 3M Australia and New Zealand Personal Safety Division. This is a podcast that is curious about the signs and systems of all things work, health and safety, that keep workers safe and protect their health. Whether you are a safety professional, occupational hygienist, or someone with any level of WHS responsibility in the workplace, maybe you are a user of safety products or maybe you are a bit of a safety nerd who finds this stuff really interesting, then this is a podcast for you.

(R) Welcome to the 3M Science of Safety podcast everyone. I'm Mark Reggers, an occupational hygienist, who likes to ask the questions why, how and please explain. Today, we're continuing our episodes looking at asbestos with Steve Nikolovski. Welcome, Steve.

(N) Thank you, Mark. Great to be here.

(R) Now, we're talking about loose-fill asbestos. Before we get into the topic of loose-fill asbestos, can you please introduce yourself? Who are you, where are you from and a little bit about what you do?

(N) Yeah, sure, Mark. I'm Steven Nikolovski from SafeWork New South Wales. I'm the state inspector for asbestos and demolition and in regards to loose-fill asbestos, I manage the inspection program within the loose-fill asbestos task force. I've been the state inspector for Safe Work New South Wales for about four years now. Prior to that, I've been an inspector for approximately 15 years in the construction team. Then I've been in the investigations unit, doing fatalities and serious incidents and all sorts of stuff in that regard and then found my calling, so to speak.

(R) Found your calling, asbestos, so to speak. So, as a good starting point with most of our asbestos episodes, can you please explain the difference between friable asbestos and non-friable asbestos?

(N) Yeah, sure. Well, friable asbestos is material that contains asbestos in a powder form or can be crumbled, pulverised or crushed, so to speak, under hand pressure into a powder when it's dry. So, non-friable is usually bonded within a resin or cement. I like to think of the two as friable asbestos, it's quite easy to release asbestos fibres into the air and therefore inhale them and non-friable is obviously the opposite of that. It's not easy to release them.

(R) And I think that's important for workplaces and workers to know, because obviously if something's friable, much higher risk versus non-friable. Still risks in both. We need to be aware of them but it's a very key important thing, hence why I like to reinforce that with every single asbestos episode that we do.

(N) That's exactly right. I mean, common examples of friable asbestos; you've got lagging, limpet, rope. there's not a lot of binding agent in amongst that material, so it's easily disturbed and therefore can become airborne quite easily, therefore the precautions are a lot higher.

(R) So, loose-fill asbestos; now I'm assuming that lands on the friable side of things, just by the terminology 'loose-fill', but can you delve into what is it and why is it so bad?

(N) Yeah, well loose-fill asbestos insulation is raw, crushed asbestos. So, there's no binding agent in predominantly or most of the cases. And it was used as ceiling insulation in the '60s and '70s and it was predominantly amosite that was used as loose-fill asbestos insulation, but there was a number of properties as well that were crocidolite, so the two amphibole varieties of asbestos. We have found a number of properties that were also chrysotile around New South Wales and it's something that didn't happen in the ACT.

(R) And I know we've covered on a previous asbestos episode that irrespective of the form or the type, we're talking crocidolite, chrysotile, they all have a level of risk and all should be avoided as far as breathing in. You mentioned 'raw' before, so we talk about non-friable products or something those fibre cement sheets may have a lower percentage of asbestos. So, when you say 'raw' what percentage are we talking about here?

(N) We're talking 100.

(R) 100% pure asbestos?

(N) 100% yeah, so what we did was when our assessors would go out to these properties and take samples, they took three samples per property. They'd have them tested under normal polarised light microscopy conditions. If there was a percentage of something else in there, and we sent that off for XRD analysis, and whilst there was always going to be organic fibres and things like that, because of the period of time and settling in the ceiling space, we'd get up to 100%, 95% grunerite, amosite and when you have a look at the photographs of the ceiling space, it's undeniable after you've seen so many of them that it is amosite or chrysotile or the tinge of blue in crocidolite.

(R) I mean, to set the scene here from a risk point of view to our listeners, so we've got non-friables then we have friable. We can have friable products like pipe lagging that has a percentage of asbestos not 100%. But we're talking loose-fill, 100% asbestos, easily disturbed especially from a risk point of view.

(N) There is a high risk, a very high risk.

(R) It's a very high risk as far as a chance of disturbance and inhalation, which is why this is such a serious topic when we look at what's happened historically and why the steps are being made today across different places in Australia and across the world. So, we've mentioned New South Wales. We've mentioned ACT. Has it been found in other states in Australia and territories, or globally is it known as well? I mean, where is this predominantly being found?

(N) Yeah, look, around Australia, apart from the ACT and New South Wales, I don't know. But the British Health and Safety Executive have advised previously that there is loose-fill asbestos insulation within Britain and that was from workers taking it home and using it as a cheap form of insulation. And there's some talk that it's in the US, in the form of vermiculite-contaminated insulation as well. But I don't know enough about that to delve down that avenue.

(R) It just highlights that when you come to assessing risk is that all right, it may be low, but you still need to understand and ask some of those key questions to rule it out or go down the path to investigate. So, not that we're needing you to definitely say yay or nay, but just understanding that this isn't just an isolated area or incident just in Australia, but cross your Ts and dot your Is and to do those checks.

(N) Yeah, well, I think you need to look at just across New South Wales, where we found it as north as Tamworth and as south as the Berrigan local government area, Albury and down towards the Victorian border. So, it is broad.

(R) Many of our listeners would be familiar with the term 'Mr Fluffy' and who that is, but for those that aren't familiar, can you please give us a little bit of a background and a history lesson of who that was and why that's important to know, given the situation of today?

(N) So, Mr Fluffy was the name given to Dirk Jansen and Dirk Jansen was a plasterer by trade who's from the ACT. He did a few different things in the construction industry and even at a point selling cleaners wholesale to David Jones. In 1967, he expanded his business to asbestos where he was involved in fire proofing and for some reason, in '67 and '68, he bought a second-hand insulating truck from Sydney. In '68, he started to insulate people's houses with asbestos fluff which was amosite. I believe he used crocidolite as a premium product. The asbestos was sourced through South Africa, being amosite, through [EGNAP] with the shipping mark of James Hardy. So, the material came in 45-kilogram hessian bags and what the workers would do is there was a hopper at the end of this insulating truck. They would cut the 45-kilo hessian bag, basically put their hands in it, throw it into the hopper that had two metal beaders and it was fan-forced through a hose into the ceiling space where another worker was obviously pumping it through. The ceiling spaces would be filled between five and ten centimetres thick of loose-fill asbestos insulation. It was thick. Some had been attempted to be remediated but when we went to test them again, there was still fibres found on the encapsulation material that was sprayed to it. And in the subfloor area, it was still caked in there. So, his son took over after a couple of years and rebranded Asbestosfluf to Amoswool. That was a little bit more subtle in branding. And I think building regulations in the ACT stopped the particular practice and the material was withdrawn in 1979. So, we've got that 1968 to 1979 timeframe of when Dirk Jansen, his family and associated companies would be doing this type of work. It looks like from all the testing that we've done in New South Wales, the predominant contamination was in the ACT in the area of the ACT with only a number of properties found in New South Wales.

(R) So, to set the scene, they're getting a big pump, putting it up through the manhole into a ceiling space and essentially just blowing this 100% loose-fill asbestos into the ceiling space with the worker in there. Is that what you've described? I get this visual here which is scary stuff when we think about asbestos today and the exposure levels and …

(N) That's exactly what I'm saying.

(R) It's scary scary stuff.

(N) Yeah.

(R) And so, you mentioned before about getting into the floor space. If they're blowing into the ceiling, how is it moving throughout wall cavities and floor spaces, if it's getting blown into the ceiling space?

(N) Yeah, I mean, your typical house has wall cavities that are accessible through the ceiling. So, the material, because it's so fluffy and because there's cross-ventilation and all of that stuff in your ceiling space, the material actually migrates down wall cavities and into the subfloor areas. So, from a health risk perspective, we were looking at that material within New South Wales and seeing whether or not it did actually go through into people's living spaces.

(R) I know the ceiling space is an area you probably enter weekly or monthly, but over a course of years, I'm sure people are getting up there from time to time to check things, or maybe you've got tradespeople going up there as well. So, I'm trying to get people thinking it's in the ceiling space; it's locked in there, which is far from the case at all from what you're describing.

(N) No, look, most of them were manhole entry into the ceiling space and precisely, when you think about all the various tradies that get into the ceiling space, your pest controllers, a lot of the areas, all the boilers and hot water systems would be based up there and yes, they would still have asbestos lagging and rope and all of those things up there. But they would probably be servicing those areas as well and we also found a number of properties where insulation, synthetic mineral fibre batts would be placed on top of the loose-fill asbestos. Now, I don't know whether that was because of the home insulation scheme but one would think that that might be the case. So, you've got other trades that are doing work within there that are potentially exposed and don't necessarily know about it.

(R) On previous episodes, I've spoken about different health related diseases and health risks. So, what are the risks to these people that may be living in a house that had loose-fill asbestos, or those tradespeople that may have a short-term exposure?

(N) Asbestos related risks and diseases are well known, so that's why the New South Wales, with input from a range of experts, determined that demolition, site remediation and disposal are the best ways to remove the health and safety risks from the New South Wales community.

(R) So, not just sucking out the asbestos that was blown in there. You're talking fully demolishing houses because of the transition of asbestos fibres going throughout the different areas.

(N) Yeah, it was a voluntary purchase and demolition scheme and the ACT experience of sucking it out in the late '80s and early '90s, they thought that they captured it all, but it was shown that there was remnant fibres within the homes. So, the New South Wales chief health officer said that the enduring solution to this problem was to do exactly what I just described previously.

(R) Well, it's the hierarchy of controls; elimination. We just want to get this thing out of the situation to eliminate that health risk versus if it's there, there's always going to be some level of risk.

(N) Yeah, and look there is going to be always some level of risk. How you quantify that is very difficult but being raw, crushed asbestos and if it does get into the living space, does give it the potential to be breathed in.

(R) When you look at workplace exposures, the approach is no exposure. We want to eliminate all exposures, and so that is the same approach to a residential point of view. We want to eliminate all exposures to just take that out of the question. So, you mentioned about demolition of houses, but can you just take a step back and give us an overview of the program that New South Wales did and what you were involved in?

(N) Sure, so unlike the ACT, the problem or how big the problem was is unknown in New South Wales, apart from the testing program that occurred. Queanbeyan and Yass were a part of that, so we had some historical data. So, back in 2015, there was an extensive media campaign, community engagement, direct mailing and New South Wales received over 105,000 registrations for free testing.

(R) That's not a small number at all.

(N) That is not a small number and the registrations team would then contact the people who have registered. And to be part of the program, the house had to be pre-1980s and you had to be the owner. So, out of the 105,000 total registrations, 71,200 properties were eligible for inspection and the reason why you would be ineligible is there was obviously duplicate registrations and people would be ringing up and they wouldn't be the homeowner. So, you had to be the homeowner because the responsibility obviously came down to …

(R) Well, that makes sense. If you're a tenant, you're still going to have that concern of maybe it is in the place that you're residing in. So, that makes sense to have that number of people.

(N) Yeah, it sure does and a lot of the times, they would provide us with the homeowner's name and once we contacted them, they'd still become part of the program. So, we had a number of teams within the taskforce. We had a process of registration which requires consent from the homeowner to test their properties and then we told them that if it a positive property, then this is what happens, so it was pretty good communication. And you've got to imagine, we had two floors in Paramatta of people doing the registrations.

(R) Well, 70,000 eligible houses, that …

(N) No, 105,000, so the 105,000 was the registration phase, so every single one of those …

(R) Had to be evaluated.

(N) Yeah, exactly right. Once they were evaluated, they then came over into testing and I suppose from the testing point of view, that program of work was really interesting because we'd had the home insulation scheme as well, so there were lessons learnt in regards to that, in regards to workplace health and safety and being from SafeWork New South Wales, I obviously took all of those things on board. So, put together a sampling protocol and used only licensed asbestos assessors to undertake this testing. They've already been deemed competent by SafeWork New South Wales in the space of friable asbestos. there was over 120 licensed asbestos assessors working on the program at the one time, about 20 entities. We held workshops with them, going through safety aspects, so one of the main ones was the disconnection of power to properties. That would probably be the number one risk associated with this type of work.

(R) Houses are so different with shape and size and access areas, so I could only imagine that the scope of assessment, when you've got people going out to these … they don't know where they're turning up to as far as before they get there to try and cover off on all these particular things.

(N) Yeah, sure, so we had your predominantly residential properties, where you could disconnect power at the main and safely conduct an inspection. We still had people using voltmeters to ensure that power was not live. And then, they had torches or headlamps and things like that to undertake the inspections in the ceilings. So, power was one thing. Appropriate ladders to use to access the manholes; many people might not know but falls of ladders are one of the biggest factors in the

construction industry when it comes to injuries. And getting in and out of so many manholes per day, we limited it to about 10 to 15, maximum. That was a significant risk as well.

(R) I'd assume they'd have respiratory protection on as well, talking about asbestos as an inhalation hazard.

(N) Absolutely, so all of these processes were set up in the services, so they knew straight up the licensed asbestos assessors, what they were up for when they participated in this program. So, the services told them, "You need to wear gloves. You need to wear coveralls. You need to wear your P2 minimum respiratory protection cartridge." So, the thing was you're not only dealing with asbestos. You're dealing with synthetic mineral fibre and you're dealing with organic material up there as well. So, it does get dusty and all of that stuff. So, PPE was a key issue but as well as PPE being worn, it was also important for them to set up a decontamination point prior to going up into the ceiling space so they didn't then troll through the house with dusts and other stuff.

(R) Dusts and other stuff. Whether it's asbestos or not, you don't want to be spreading stuff throughout the household.

(N) Well, if you think about loose-fill asbestos, yes, that's an obvious one. But you also had asbestos contamination from ceilings, walls and other material that was up there that potentially contained asbestos as well. So, we set up an audit program and we got a licensed asbestos assessor, which was Brett Jurmann, who was a former SafeWork New South Wales inspector. He undertook over 300 audits for the loose-fill asbestos taskforce, so he tried to get to every assessor once and it was really important because some of the things that some of the assessors were doing were not in line with what our requirements were or in line with their safe work method statements. So, they wouldn't be able to start without safe work method statements and all of the safety requirements.

(R) The plan of attack to do the job, to do it safely, yeah.

(N) Yeah, so I just think that having the requirements set out in the contract makes it quite easy for them to tender and to know what their responsibilities are straight up.

(R) So, you've put the call out to households. They've registered for this program. You've engaged these licensed asbestos assessors to go out to these thousands of houses to do the sampling. Then when you get the samples and you get the results, what happened after that?

(N) Sure, so I trained a team of around 16 people within the task force on how to read these reports. So, we had templates that the licensed asbestos assessors were to use and so, my guys would review sample numbers against the chain of custody details against what the NATA certificate said. They would also look at whether there was any power turned on within the premises, or they could see sources of power. So, my guys would review all of those reports from a quality assurance point of view, to make sure that the customer got the report that they deserved and needed. And that was a pretty seamless process. Using licensed asbestos assessors, there was nothing really of a technical nature that we needed to delve into. And so, the homeowner would get a report. At the end of the day they basically said their property was negative to loose-fill asbestos and if it was positive, then would go through a different process.

(R) I was just about to ask, if it does come back as positive, out of this 70,000 plus houses that were assessed, how many did come back as positive, if you can give us those numbers or rough indications.

(N) Sure, so there was 151 positive properties within New South Wales and 38 of those is one unit-complex in Queanbeyan and there's another unit complex of six in Cremorne. So, that's the number of positive properties that we've got in New South Wales. Of those 151 properties, 97 have already been remediated.

(R) So, when you say 'remediated', demolished?

(N) Yep, so the asbestos has been removed and what we did as well in regards to the demolition was public works advisory was excellent in regards to the demolition side of things. Very early on, we had an early tender involvement with class A friable asbestos removalists and DE1s, which is your unrestricted demolition contractors. They were able to tender, provide some innovative ways of doing the asbestos removal and demolition of these properties. So, we didn't have the sucking out program that the ACT had. So, we still had it mostly there in bulk in people's ceiling spaces. So, they encapsulated the whole house, used negative air pressure throughout.

(R) I've seen pictures. Essentially, you're literally wrapping the whole house in plastic and turning on a negative pressure unit to make sure the air is sucking inward, and nothing can get out in broad principle terms.

(N) Yeah, 12 pascals, the whole lot; smoke testing it and doing everything that needs to be done to ensure a negative pressure remains within the property. There's air monitoring programs done by licensed asbestos assessors for control monitoring.

(R) I was going to say, if you're a neighbour next door, there'd be a level of concern or questioning that hopefully they're doing it correctly with these things in place and not spreading these potential asbestos fibres throughout the neighbourhood.

(N) And that's right. Well, the early tender involvement made it really clear for these contractors as to what they were going to be doing as well, so there was no surprises there. We've used DE1 unrestricted demolition contractors and friable asbestos removalists, so the air monitoring program as well gave that security to neighbours that that work that is being undertaken here is in line with best practice, not just meeting the relevant code of practice. And these guys would suck out the material as much as humanly possible, strip away gyprock and further vacuum down noggins and …

(R) Every surface area.

(N) … every surface area and then obviously, clearance is provided after the asbestos removal has been undertaken. And every time, all the levels would be less and 0.1 with no visible signs. Then it would be sprayed down with a PVA solution and then the house would commence demolition. And after that, there would be a hundred ml scrap of the land.

(R) So, the top of the surface, whatever's left, yep.

(N) The top 100, yep. And then there'd be surface sampling undertaken by licensed asbestos assessors as well of the footprint and the immediate surrounds and if it came back as negative, well then, a clearance certificate would be issued. Otherwise, there'd be further scraping to make sure it's clean and remediated. So, the process would be that when your property was found to contain loose-fill asbestos, you went on a public register. Full remediation of the property and obtaining the clearance certificate would take that property off the public register.

(R) So, we're in 2019 and this program's been running for a couple of years now. If someone today may suspect that they have loose-fill asbestos in their ceiling, what would be the steps that they should take?

(N) Yeah, look, the first step would be to have it assessed by a competent person. So, by that, there's licensed asbestos assessors listed on the SafeWork New South Wales website that they could contact, find one in their area who can test for the presence of asbestos material or non-asbestos material. And if it's found to be positive, then to contact Service New South Wales and all of the numbers are available on the Fair-Trading website. All you need to do is a Google search, type in 'loose-fill asbestos New South Wales' and a link to the Fair-Trading website will be there and there's a lot of frequently asked questions there for precisely this purpose that will provide people with that advice.

(R) We're only having a short chat here today, but there is a lot to this, and we can't really go into all the depth of it, but you've highlighted this is not just a quick little process. It was a very detailed and comprehensive program that you were involved with.

(N) It is and so many legalities and first times from putting it into legislation under the Home Building Act as to what loose-fill was and how you came to be on the public register, the tests that you needed to meet. I think it's safe to say that from an asbestos point of view, it's unlikely that myself or any person that was involved in the task force will ever do something like this again. It was really a once in a lifetime experience to help those homeowners who had this stuff put in. Sometimes, they weren't even the homeowner at the time. They've obtained this property from somebody else and not known, so it was really good to see that these people now have options or had options as to what they could do with their properties.

(R) In summing up our chat about loose-fill asbestos today, what would you want to leave with our listeners?

(N) Well look, that if they're unsure as to whether their property contains loose-fill asbestos or not, to contact a competent person to get the property tested and if it is positive, to make those representations to New South Wales Fair Trading. And also, in regards to workplaces that may have loose-fill asbestos insultation, those persons that are conducting that business or undertaking, or that manage or control those workplaces, they need to make sure that they have their asbestos registers, their asbestos management plans, and they need to manage it from a workplace health and safety point of view. That may mean that they remove it. That may mean that they put in all the necessary controls to ensure that their workers are safe.

(R) Well, thank you so much for your time today, Steve.

(N) Not a problem, Mark. Any time.

(R) Well, thanks for listening everyone. You can get in contact with the show by sending an email to scienceofsafetyanz@mmm.com. If you have any questions, or topic suggestions or you'd like some assistance around PPE in your workplace, 3M are certainly here to help. You can also visit our website, 3m.com.au/sospodcast for further resources and a transcript of the chat that Steve and I have had today. Be sure to subscribe and share through Apple Podcasts, Spotify or Google Podcasts or wherever you get this podcast from. And as William Shakespeare said, "No legacy is so rich as honesty." Thanks for listening and have a safe day.