

3M Transcript for the following interview: Ep-46 To slip or not to slip

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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. I am Mark Reggers, an occupational hygienist, who likes to ask the questions Why, How, and Please Explain. 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) Today, we're talking with Ranmalee Da Silva about to slip or not to slip. Welcome back Ranmalee.

(D) Thank you, Mark.

(R) Fantastic to have you back. For those who haven't heard the previous episode we did on spill control in the workplace, can you introduce yourself? Who are you? Where are you from and what do you do?

(D) Well, Mark, as you said, my name's Ranmalee Da Silva and I'm an Application Development Engineer at 3M looking after our cleaning and workplace safety products, so I look after your floor polishers and coatings and brushes and floor

pads onto your anti-slip products like your anti-slip tapes and films and spill products like your spill kits and sorbents.

(R) A very broad range of fun products there. So, slips and trips in the workplace; we hear about it in the news or something's happening in the supermarket or shopping centres or walking down the footpath. Why does this keep happening? Most people who are able to walk know how to walk, but this keeps happening. What's going on?

(D) There are lots of reasons why it keeps happening Mark and it is a rather large problem. There are many reasons. One of them could be the poor condition of the walking surface, so you could be walking along on a floor that is really old and worn. You could have tiles that are laid unevenly and having lippage.

(R) Lippage? Is that different to slippage?

(D) Yes, it is, Mark. It definitely is. So, you'll probably notice this out in various areas where tiles have been laid not flat and you get some high points and low points and as you're walking through you kind of get a bit wobbly because you start hitting your foot against those high points. If you come off an extremely flat surface onto one of those high points, yeah, you can slip over.

(R) I think about the footpaths, council footpaths as tree roots move, you get those high lips. I guess that's more of an extreme example of lippage.

(D) Yes, that's right. That's correct. Now, other than the poor condition flooring, you can also have contaminants. So, you could have rainwater. You could have spills. That causes a big problem, because sometimes people can't see what they're walking on.

(R) Grapes in supermarkets? I take falls comes in that category as well, they've not noticed that slippery thing?

(D) Absolutely. That's one of the big problems in our supermarkets; stray grapes rolling all over the place. You can have lettuce leaves, various contaminants, and we also have to look at who's walking. Like you said, someone could be looking at a phone. They can be distracted. We have an ageing population. That's a concern as well when it comes to slips, trips and falls, and on top of all that, you've got to consider footwear. You could be running around in your thongs that are loose on a poor walking surface and trip over, very easy. It can happen any time.

(R) So, there really are lots of factors that go into this slips and trips potential from environmental, personal, that increased potential and risk of these things actually happening for these slips and trips. But is there regulation to help govern from workplaces around the health and safety of this potential happening?

(D) Actually, Mark, there are a number of regulatory requirements in Australia that address slip issues either directly or indirectly. If you look at the building code, it is very prescriptive around requirements for slip resistance in certain areas like stairs and ramps. And then you have the indirect regulations, which is really based on your state workplace health and safety regulations and they call for identification of foreseeable hazards that may arise from people slipping, tripping or falling, and then you also have the Disability Discrimination Act which calls for accessible parts of travel to be slip resistant.

(R) If I'm a workplace, I could be a shopping centre or a facility owner, how do I approach, understand to inform a risk assessment about the potential for slips and trips because it's pretty broad from what we covered just before?

(D) Yes, it can be. So, like you said, Mark, you need to conduct a risk assessment. When you look at your risk assessment, there are things you should consider. Are there areas where surfaces are worn? Are there tripping hazards? You might have unsecured carpets or matting around that cause potential hazards on top of just the standard walking surface and then there could be potential for contaminants to come in, like an entrance way where rain gets in, where you could have water pooling or people just simply just tracking through water and other contaminants. Another thing you should consider is have there been near misses in the area, not that you should wait for something to happen to consider it ...

(R) Of course.

(D) But that'll give you an idea that there is potential for slipping or tripping or falling and you should address it and take into account what the hazards are and manage those risks.

(R) As an occupational hygienist, I like data. I like numbers. Can you measure how slippery a floor is or a surface is to do this assessment because I reckon that would be very useful if that is possible?

(D) You sure can and there are actually two Australian Standards, AS 4586 and AS 4663, that address how you can measure and how you can test and classify surfaces based on slip resistance.

(R) How do you actually test how slippery something is?

(D) There are actually four different test methods that are specified for surfaces. Two of those tests can be done in situ, so you can actually do it on the walking surface. So, that is a wet slip test that's done with a pendulum that's an

apparatus that has a swinging foot with a rubber at the bottom of it, at the base of it, and there's a test method that you follow, where you spray water and swing your pendulum and you get a number called a BPN or the British Pendulum Number that then derives a classification for a wet slip and that can be done on your standard floor tiles at home. There are test methods for even doing it on fabrics, like carpets. That is a very common test method that's used. We also look at dry slip, because you can get really shiny polished surfaces without any water, without any contaminants that can still be dry and slippery and that uses another piece of equipment called a tortus that gives you a coefficient of friction, which again can be classified according to the Standard. Whether you get a pass, or a fail depends on what value you get from that. But yes, there are those two methods and other than that, there's also laboratory methods where you have a ramp test where you can have an oil ramp test where someone wears special shoes and coats the shoes in oil and oil is flooded onto this ramp and they walk and then they measure at what point they lose traction and there's another bare foot test that can also be done on a ramp in a laboratory, where water is poured on the ramp and someone walks through and judges at what point they lose traction. So yes, you get in situ methods that can be done on site and then you get lab methods.

(R) Definitely a lot more than I was expecting in that answer there, but that's good to know because as you're explaining it, it makes sense. We want to know about this, so how often should a floor be tested? If I've got a new building, a beautiful new shopping centre with these beautiful surfaces, but over time, as people are walking and wearing, I'm assuming that's going to have an impact on how slippery a surface is and maintaining that. Is there a time period that they should be retesting these surfaces?

(D) Well, Mark, to answer in short, there isn't any regulation around how often you should get it done but most facilities, say your shopping centres, your commercial buildings, would get periodic tests done. Some of them have it done every quarter,

especially if they have concerns around certain areas like entrance ways and entrances to major retailers. Some shopping centres that already perhaps have a high traction floor surface already and have a lower risk might only do a test once a year or once every six months. So, it's really up to the facility how they manage that. We recommend that you test your surfaces regularly, especially if you've got surface coatings that give you higher traction. You need to check how those coatings are doing and when they're wearing off and when you need to recoat.

(R) So, in work health and safety, we have the hierarchy of controls. Elimination; we can't eliminate people walking in these particular areas, but from a substitution, identification of flooring surfaces, are there surfaces that have better slip resistance, just inherently, without having to treat something right from the very start to manage this risk?

(D) Yes, absolutely there are. We have certain tiles that are sold with particular slip ratings, so like R12 tiles or R11 tiles. That is a slip rating by the way, that you derive from one of those tests, so you can potentially put in a flooring that has a high traction potential already. They are very common and popular now. If you have a surface that say is like marble or terrazzo, that's slippery, you can look at say putting a surface coating on it that'll give you a high traction rating.

(R) So, we've got something, and it's got a lower rating, what could a workplace or facility put in place as far as those controls to reduce that likelihood of slips and trips?

(D) There are so many different options. Like I mentioned before, you could use coatings. You could use surface coatings. Some of them can be permanent. You can look at something like acid wash which would then give you a permanent etch to the surface that'll basically roughen it up. Lots of people don't like that because it makes it harder to clean. It could potentially not be as aesthetically pleasing to

the eye as well. We all want to walk into shopping centres that are nice and glossy. There are lots of surface coatings now, floor polishes that can give you a higher traction than the original floor, hard surface coatings that you can use. People are looking at films which give you a high traction rating and then of course most people are quite familiar with safety tape. That's the black mineral grit tape that is quite common, especially in external areas. You see the tapes on the edging of stairways. You will see them at the entrances to some centres.

(R) I've seen them also on ladder rungs as well.

(D) Yep.

(R) Yeah, so I know what you're talking about there.

(D) Yeah, so you get tapes. You get films. You get coatings and you get chemical treatments.

(R) What about mats? I know when you walk into shopping centres on a rainy day, they'll have the mats put out. Is that a permanent thing or generally that's brought out in those types of more wet environmental conditions?

(D) Very good question Mark. People do use mats to improve the traction of their surfaces, especially at entranceways. It can be permanent, so you can have it recessed in and adhered down to the surface so it's not going to move, which is probably a better option because otherwise you might have an additional problem where there's a trip hazard on top of a slip hazard. Another thing is if there's say external contaminants coming in, like when it's raining for example, yes, you do see people pull out mats and they're the mats that are essentially soaking up that water that's coming from outside.

(R) Preventing it getting spread throughout the facility ...

(D) Tracked through.

(R) And making it more slippery throughout the whole place instead of just the entry.

(D) Yes, correct. But when we use those methods during rainy days or time periods where there can be contaminants tracked in, what you should consider is are they secured in some ways so that you're not again causing another problem on top of the slip issue there?

(R) Now, housekeeping. How big of a thing is housekeeping when it comes to slips and trips?

(D) Very, very big, Mark. So, I'll give you a recent example. I heard of a potential slip issue in a shopping issue and we were trying to work out what the issue was because the floor surface had a coating on it that provided a higher traction and the coating was in good condition, so that couldn't have been the issue we thought. And then after a lot of investigation, we realised that there was a fine dust being tracked through the centre that wasn't visible to the naked eye, but it was causing a massive slip issue. People were just skating all over this floor.

(R) And is that from the need to increase their frequency of cleaning to prevent that dust?

(D) Yes, so to prevent that, we couldn't actually stop the dust coming in. It was a construction site so it's a bit hard to tell people to stop building.

(R) Very hard and yes, I'd imagine it'd be hard, near impossible.



(D) But what we could do was put in a cleaning schedule for the cleaners on site where during the day, they would walk around with a dust mop that would pick up the dust periodically during the day and reduce the risk of someone slipping over because of the build-up of dust on that floor.

(R) I mean, dust wasn't the first thing that come to mind. When I think housekeeping, I'm thinking box and other larger things, but it just goes to the point it doesn't have to be a big thing that you can obviously see but maintaining the surfaces and what's landing on the surfaces sounds pretty critical for any surface where people are walking, especially in high traffic areas.

(D) Yep, and to your point Mark, yes, the larger things matter too, so make sure there are no boxes in the way or any other obstacles that could cause a trip hazard and a potential injury to someone.

(R) How effective are those paints that have grit in them? Are they an option for different places as well, if you can paint a surface with grit rather than being on a marble or a really shiny, glossy surface?

(D) Yes, that is an option, but with grit-based products, something you have to consider, especially if you're using a paint, is that when it wears off, when the grit wears off, then how are you going to manage that situation? Is it easy to take off that solution and put on a new coat or a different product? Wearing of the surface is something you have to be quite conscious of because these are walking surfaces. People are walking over them. They are going to wear down or wear off. How you handle that and manage the slip resistance of that surface being maintained at the appropriate level is something you need to consider. Sometimes, instead of a coating, you might consider putting a tape or a film where if there's damage, you can replace it quite quickly and quite easily.

(R) I hadn't thought of the film aspect side of things. You just peel it off and put a new one down rather than trying to scrape and time to do that.

(D) Exactly or use really harsh chemical solvents to remove it and strip it off.

(R) Time is money. If you can take it off quickly, most people are going to want to do that as well. So, with new buildings that are getting built, with residential houses that need to have water tanks, is there requirements for new buildings to have these products or these type of slip resistant materials right from the day dot rather than have to be installed down the track when something happens?

(D) Mark, that's a very topical question. Actually, we've seen updates to the Building Code. I mentioned earlier that there are some prescriptive requirements for certain areas. New buildings built after 2014 when the Code was updated actually need anti-slip products on certain areas like staircases both internal and external and it includes commercial buildings as well as residential buildings. So, we have a number of people who have built new homes and because they don't have an anti-slip tape or other anti-slip products or solutions on their stairway that meets a particular rating, they actually don't get an occupancy certificate. So, it's really important that builders know what the new changes to the Codes are as well as new homeowners. I might also add on top of that, that whatever anti-slip product or solution you get, you have to then conform, meet the appropriate slip rating that's specified under the Code and that's another rut that people fall into. They just go down to Bunnings and buy a tape and apply it and think they're going to meet the requirements of the Building Code and when an assessor comes on site, they ask them for a certificate. So, then you've got to go around trying to hunt down the correct certificate from the manufacturer of the product, so please ensure that when you are looking at anti-slip solutions that require certification, that you go to a manufacturer that have had their products tested to the Australian

Standard and can provide you with certification so that you don't hold up the process that gets you into your home or your new office building.

(R) That's the last thing I'd imagine you'd be wanting to worry about, with a beautiful new home, worrying about the certificate for some anti-slip product or solution on some stairs, for an example. In summing up, slips and trips and prevention, how would you like to summarise this or what would you like to leave our listeners as some good takeaway points?

(D) The first thing is you need to be aware of your slip hazards in your area, be it your home, be it your office, your shopping centre, your supermarket.

(R) Wherever.

(D) Wherever, you need to be aware. Then you've got to make an assessment of what is required to improve the slip resistance of that area and then implement the solution that you require for that area.

(R) There's a lot here, because we've really only touched on a few of these key concepts and points, but where can listeners get more information? Where should they be heading to find out more about this?

(D) Mark, there are a number of resources here. When it comes to construction of new buildings, I would direct people to the BCA, the National Construction Code, which has a really good informative website that you can get a lot of resources from and of course, the two Australian Standards that I mentioned give you a lot of information about how to measure and classify slip resistance so that's the AS 4586 and AS 4663. And then of course, you have a handbook that's been developed by Standards Australia which is HB 198, that really acts as a guide to the

two standards and also gives you commentary on the National Construction Code and guidance for appropriate slip resistance for common application areas.

(R) What about if they're wanting to look at different slip resistant products and some of those certificates? Where can they go for that?

(D) They can definitely come to the 3M website for that information.

(R) That's great, Ranmalee and really, really helpful stuff. So, thank you so much for coming in again, today.

(D) No problem, Mark.

(R) Well, thanks for listening everyone. If you have any questions, comments, suggestions for future topics or guests you think would be great to get into the studio, you can shoot us an email to [scienceofsafetyanz@mmm.com](mailto:scienceofsafetyanz@mmm.com). You can also contact us via that email if you need any information around anti-slip products, you want to get in touch with Ranmalee or anything to do with health and safety products. 3M are certainly here to help. You can also visit our website, [3m.com.au/sospodcast](http://3m.com.au/sospodcast) which has a transcript and resources of the chat that Ranmalee and I have just had, as well as links to some of those resources that were mentioned. Be sure to subscribe to the podcast through Apple Podcasts, Spotify, Google Podcasts or wherever you get this podcast from so you don't miss any future episodes. If you enjoyed the podcast or found it informative, we really would appreciate it if you could take a few moments to leave us a review as it really does help other people to find the podcast. And as Terri Guillemets said, "Chase down your passion like it's the last bus of the night." Thanks for listening and have a safe day.