

# **Response to the Proposal to remake the Telecommunications (Types of Cabling Work) Declaration 2013 Consultation Paper**

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## **Scope**

My comments relate only to the wording of item 4 in Schedule 1 of the Declaration. This is the item which allows me, an ordinary person, to plug a telephone into a telephone socket, without being a registered cabler and without complying with the Wiring Rules (AS/CA S009:2020).

My understanding is that this item applies to all people, and therefore also exempts registered cablers from complying with the Wiring Rules when performing the cabling work listed in the item.

I believe there may be some loopholes in the 2013 wording/proposed 2024 wording of this item, which could be closed in the revised version, and welcome the opportunity of the Consultation to share my thoughts on this subject with the ACMA.

For simplicity, I will consider the use of a single cord in my examples.

## **Intention of item 4**

My understanding is that the main thrust of the 2013 version of item 4 is to allow ordinary people to plug their telephone, computer, etc. into a telecommunications outlet (TO), which will usually be on a wall in a room, and potentially tack the line cord/fly lead etc. to a skirting board or around an architrave, gaffer tape it to the carpet, etc.

The item does not permit ordinary people to make connections in areas such as inside walls, floors and ceilings, nor make connections with cords dangling out of holes in walls, floors and ceilings.

It is assumed that ordinary people do not have the specialist knowledge that a registered cabler has, especially with respect to safety, and that ordinary people are not aware of the Wiring Rules.

## Appreciation for the existing restrictions

I and my immediate colleagues are computer network technicians.

The restrictions in item 4 help protect us. With these restrictions in place, we have a good argument to use when explaining to architects that there should be an accessible socket and fly lead for ceiling-mounted equipment such as wireless access points.



When one of us needs to work on a network problem here with their laptop computer, a long fly lead can be plugged into the socket so that the network testing can be done safely at floor level.

This is the situation referred to in Note 2 of Clause 5.9.1 of the Wiring Rules:

Note 2: An Ordinary Person is permitted to connect Cabling to Customer Equipment under very limited circumstances, all of which involve compliance-labelled Cords. As technicians servicing Customer Equipment or testing network connections are often not registered Cabling Providers, a conventional Socket termination and Cord should be provided for connection of Customer Equipment wherever possible. The use of plug-terminated Cabling as fixed or concealed Cabling is also associated with physical safety hazards for network technicians who need to connect test equipment such as a laptop computer directly to the Plug, as the Plug may be high up, in a building cavity or in another location where it is difficult to work safely.

As many architects (and some other people) consider a visible socket and cord to be unattractive, regulatory support for our safety is valuable.

## Roof cavity

Note 2 to item 4 says:

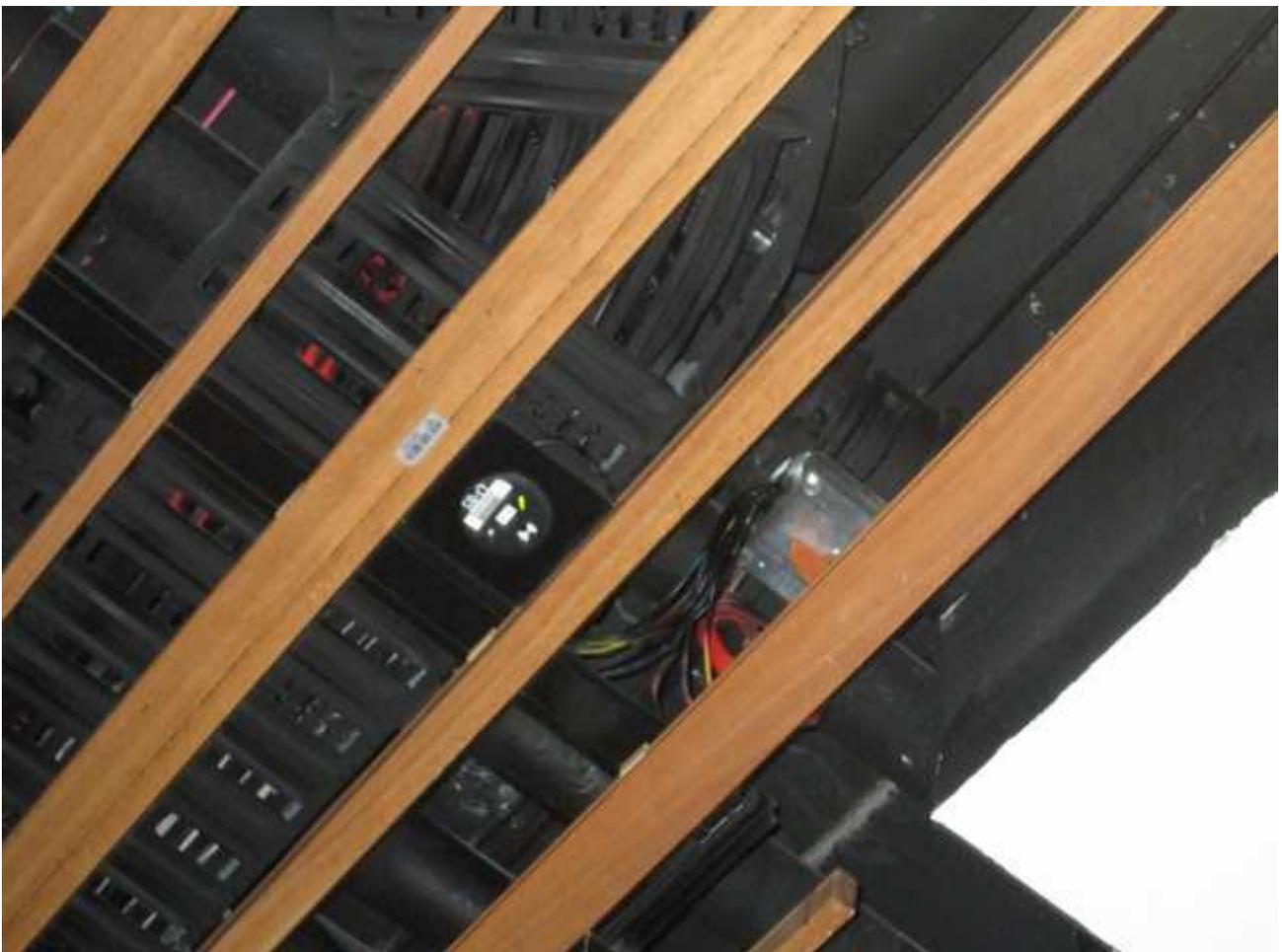
Note 2: A connected item is concealed in a building cavity if all or part of the item is concealed in the wall, floor or ceiling cavity of the building.

It may make sense to add the word "roof" here as well.

It would also make sense to change "the wall, floor [...]" to "a wall, floor [...]", as most buildings have more than one wall, floor, ceiling, etc.

## "Concealed"

It could be difficult to win an argument that an item is "concealed" if it is visible through the wall of a glass lift shaft, or a perforated metal ceiling panel, etc. For example, this timber ceiling is slatted:



(The architect specified that services above the ceiling be sprayed black so they would be hard to see.)

The meaning of "concealed" could perhaps be broadened by wording such as:

"Concealed" includes a situation where a thing would be concealed if a transparent, slatted or perforated building material were instead opaque and without gaps.

## Exposed services

Depending on the type of building, not all services such as power, water, gas, etc. will necessarily be concealed in building cavities. In industrial premises, or premises designed to have an industrial "look", there may be exposed cable trays, pipes and conduits within various areas. Some may be infrastructure of hazardous services.



**Exposed services in an office**

The wording of item 4 does not appear to disallow ordinary people (or registered cablers) from running cords on electrical trays, strapped to hot pipes, etc., if these services are not concealed in a building cavity. Amateurs tend to drape cords on overhead services and let them dangle: such cords could be claimed to be neither fixed nor concealed. Amateurs could also conceal cords inside exposed trunking of another service, such as this metal outdoor trunking:



Concealing a cord in this electrical trunking isn't safer than concealing a cord in a building cavity.

These situations might perhaps be disallowed by using wording something like this:

but only if the connected item is not --

(a) concealed in a building cavity; or

(b) supported or concealed by the infrastructure of a non-telecommunications service (such as an electrical cable, electrical cable tray, water pipe, gas pipe, air conditioning duct, sewer pipe, stormwater downpipe or supporting structure of one of these)

Such a restriction would have similar application both indoors and outdoors: power poles (which might be private poles) would be an example of another type of outdoor infrastructure that ordinary people should leave well alone. This wording would also capture buried infrastructure outdoors, such as underground electrical conduits. The word "supported" has been suggested instead of "fixed", as ordinary people may simply flop cords onto or into other infrastructure without using any fixings.

But what if the other service required a telecommunications connection? Sometimes we would expect to need to route a cord inside some kind of service enclosure to plug it in; this could be a network-connected electricity meter in a protective metal housing on a wall, for example. So the wording above in orange is not adequate. Perhaps it could be improved by adding this:

except where the connected item is supported or concealed in a pathway or enclosure designed to support or enclose telecommunications cabling.

But any new wording of this kind would need careful thought and widespread review, as there may be more examples needing exceptions or clarification.

## Electrical power cords

Electrical power cords might or might not be understood to be electrical "infrastructure". It is quite usual for ordinary people to bundle their desktop computer's power and ethernet cords together for neatness. These plug-in power cords don't need to be installed by an electrician.



I have been asked about this situation a number of times, as my colleagues are well aware that cabling must separate power and data cables in the ceiling.

If the proposal in orange were adopted, a clarifying note something like this would probably be needed:

Note: A plug-in electrical power cord, such as may typically be connected to electrical power by an ordinary person, is not considered to be electrical infrastructure for the purposes of this item, nor are analogous things such as plug in hoses.

## Telecommunications infrastructure

For simplicity, the suggested wording above in orange *does* permit support or concealment by telecommunications infrastructure. But see the section on "Hazardous telecommunications services" below.

## **Hazardous telecommunications services**

Some telecommunications services are also hazardous services. In the Wiring Rules, the rules for ES3 cover these.

Given that ordinary people are permitted to plug in mains power cords to mains electricity, it would be unreasonable to place restrictions on the equivalent use of cords for ES3 services (or LV telecommunications services, as defined in earlier versions of the Wiring Rules).

It still might be possible to prohibit ordinary people from installing non-ES3 service cords on exposed telecommunications cable pathways carrying ES3 services. This would ideally be consistent with the approach to mains power cable pathways. However, as most ordinary people would not know how to distinguish an ES3 service from other telecommunications services, there would be practical problems.

If there is a desire to treat ES3 pathways similarly to mains power pathways, a possible approach would be to list the common services which are classified as ES3 (such as EWIS cabling) and prohibit installing cords supported by or concealed by the infrastructure of those services.

I do not know enough about ES3 installations to propose any wording on this topic. My reference for information about ES3 services is Appendix F of the Wiring Rules, which has a number of sections giving information about ES3.

## **Optical fibre**

Most optical fibre cables have no electrically conductive cable elements. The Wiring Rules exempts those cables from some of the requirements for separation from other services.

This kind of exemption is less suitable for ordinary people. Whether or not an optical fibre cord can conduct electricity, it is still inappropriate for an ordinary person to install that cord inside an electrical conduit, as the ordinary person's lack of skill could result in damage to the electrical infrastructure.

So it would not seem to be a good idea to treat the installation of those optical fibre cords differently from other cords in the Telecommunications (Types of Cabling Work) Declaration.

## Outdoor cabling

Item 4 seems to permit any outdoor cabling work provided that it is done with a cord or similar (and does not enter a building cavity). This is surprising.

Outdoor cabling usually requires special weatherproof cabling products, ones that ordinary people are unlikely to be aware of (or be able to obtain easily).

Even cabling with an Open registration are not permitted to do some types of outdoor cabling work (underground or aerial) without a specialist competency added to their registration.

## What types of outdoor cabling work are there?

It is useful to refer to definitions from the Wiring Rules:

### **building**

Building includes a structure, a caravan and a mobile home.

Note: A structure includes any substantial construction intended to protect persons, animals, vehicles, machinery, tools or equipment from the weather but does not include such things as—

(a) a pole, tower, mast, antenna, fence, retaining wall; or

(b) any freestanding Enclosure with a total enclosed volume less than 0.4 cubic metres.

### **indoor cabling**

Customer Cabling that is installed inside a Building but not underground or exposed to the elements.

Note: Cabling installed within a sheltered structure between Buildings, such as a service tunnel, covered walkway or above-ground Trunking system, is treated as Indoor Cabling for certain requirements of this Standard (e.g. Cable properties, separation from other services).

### **outdoor cabling**

Customer Cabling that is installed external to a Building, either underground or exposed to the elements.

Note: Cabling installed within a sheltered structure between Buildings, such as a service tunnel, covered walkway or above-ground Trunking system, is treated as Indoor Cabling for certain requirements of this Standard (e.g. Cable properties, separation from other services).

### **underground cabling**

Cabling that is installed below ground level external to a Building.

Note: Cabling installed within an underground structure such as a service tunnel or mine is treated as Indoor Cabling for certain requirements of this Standard (e.g. Cable properties, separation from other services.)

## **aerial cabling**

Cabling that is suspended between poles, Buildings or other supporting structures external to a Building.

Note: Cabling that is supported along its length by a fixed, solid support such as a beam or girder between Buildings is treated as outdoor surface Cabling.

The Wiring Rules use the term **outdoor surface cabling** to cover most other outdoor cabling situations which are neither underground nor aerial (but are fixed or concealed).

## Underground cabling

Installing underground services is a generally hazardous type of work. Just as hazardous services are found in building cavities and need to be separated correctly there, hazardous services are also buried in the ground.

It is unlikely that there is any form of underground cabling work that an ordinary person should be permitted to perform, even with cabling products intended for underground use. Nor should registered cablers install weatherproof cords underground and flop the connectors out above the surface for ordinary people to plug into things. (That is equivalent to dangling a cord out of a building cavity.)

In the case of covered cable troughing set into the ground, this is effectively a very long telecommunications pit, which can collect water. It is therefore quite reasonable that this kind of outdoor pathway below ground level only be used by a registered cabler, no matter how readily accessible it is. (An indoor equivalent would be what is sometimes called a "trench", which is effectively a strip of access floor set into a normal floor.)

Underground cabling by ordinary people could be disallowed by adapting the definition from the Wiring Rules:

but only if the connected item is not --

[...]

(c) below ground level external to a building;

Note: A connected item is below ground level external to a building if all or part of the item is below ground level external to a building.

## Aerial cabling

Aerial cabling work has its own hazards, and poorly installed aerial cables create new hazards:

- Aerial telecommunications cables are often near aerial power cables.
- An ordinary person might try to use an aerial power cable as a catenary wire to hold up customer cabling such as a cord.
- Ordinary people may not install poles correctly, or may not select appropriate poles for installation (or may use trees as poles).
- Aerial cables which are too low are a physical hazard. Tall vehicles can hit them. This can pull over a loose pole or snap a weak pole. A pole could fall on someone or fall on infrastructure or other property.
- Water can run down aerial cables and into a building if there is no drip loop.
- Ordinary people may not use weatherproof fixings, so that the cord may later fall down and cause a hazard. A low cable hanging across a path used by bicycles could cause a serious injury.

Aerial cabling work should be restricted:

- Ordinary people should not be allowed to attach cords to poles, especially power poles.
- Registered cablers should not be allowed to avoid the aerial cabling wiring rules by using a cord as an aerial cable.
- A registered cabler should not fix a cord aurally and dangle the plug down the last pole for an ordinary person to connect cabling to. (If a connection point for ordinary people to use is required at the pole, a weatherproof socket should be provided.)
- Connecting buildings together aurally, even directly (without poles), should be done by a registered cabler who will follow the Wiring Rules.

Aerial cabling by ordinary people could be disallowed by adapting the definition from the Wiring Rules:

but only if the connected item is not --

[...]

(d) suspended between poles, buildings or other supporting structures external to a building

Note: A connected item is suspended between poles, buildings or other supporting structures external to a building if all or part of the item is thus suspended.

## Other outdoor cabling situations

Is there *any* outdoor cabling work that is suitable for an ordinary person to perform? Really, only outdoor surface cabling is left, plus cabling which is neither fixed nor concealed.

### Materials for outdoor cabling

In general, ordinary people are unlikely to use appropriate (i.e. weatherproof) materials for outdoor cabling situations. Most ordinary people would not realise that weatherproof cords exist. Ordinary shops don't sell weatherproof cords. Even specialist trade shops may only stock short lengths, and need to order in anything longer.

Cables designed for outdoor use are UV stable and usually have tougher sheaths than indoor cables; some types of damage are more likely outdoors, such as damage from sharp pieces of stone thrown by lawn mowers. If a cord used outdoors is not robust enough, its insulation may be breached or break down and any metallic conductors may become exposed.

Other indoor-rated cabling products may also deteriorate outdoors. Notice how this grey corrugated conduit (which is black with outdoor grime) has split into pieces, exposing cables inside:



It should be assumed that any outdoor cabling work done by ordinary people is unlikely to use the correct materials. Consequently, outdoor cabling work done by ordinary people should be assumed to be unsuitable for long term use.

## **DIY power**

Where do-it-yourself customer cabling work is being done with cords, it is likely that do-it-yourself power cabling is being done as well (which may be with power extension cords.) Customer cabling cords and power cords may be being bundled together, which is relatively safe in most indoor environments.

If indoor type cords are being used outdoors, they are more likely to become damaged and there is more potential for a bare electrical conductor to make contact with a bare metallic telecommunications conductor.

The longer the indoor-rated cords remain outdoors, the more likely damage is to occur.

## **Lightning**

Lightning strikes can affect all outdoor cables (cf. Figure N1 in the Wiring Rules).

Ordinary people are unlikely to take measures which will reduce the harm from an outdoor cable being affected by lightning.

In a lightning-prone area, the more days a cord remains in position outdoors, the more likely it is that it will be affected by lightning. This is a further point supporting the proposition that outdoor cabling work by ordinary people should only be for temporary situations.

## **How temporary is "temporary"?**

If ordinary people should only make outdoor connections that are temporary, how could the notion of "temporary" be expressed?

A time-limit approach to a connection (e.g. one week) is unlikely to be enforceable. There would be these problems:

- the concept of cabling work intrinsically relates to the point in time when the cabling work is performed, not how long the installation remains in place
- disconnecting and reconnecting the cabling would reset the time limit without the overall cabling being removed and reinstalled. A person who had performed cabling work that had apparently remained in use past the time limit could easily claim that the cabling had been disconnected at various times. It could be difficult to disprove a claim of this type.

Given that a time limit approach seems unviable, I will propose a different possibility for characterising the idea of "temporary".

## Temporary buildings

Ordinary people need to be able to set up connections for an outdoor event. Consider this marquee in a backyard:



Similar temporary structures are used for fetes and other outdoor events. Portable structures such as gazebos may be used on beaches.

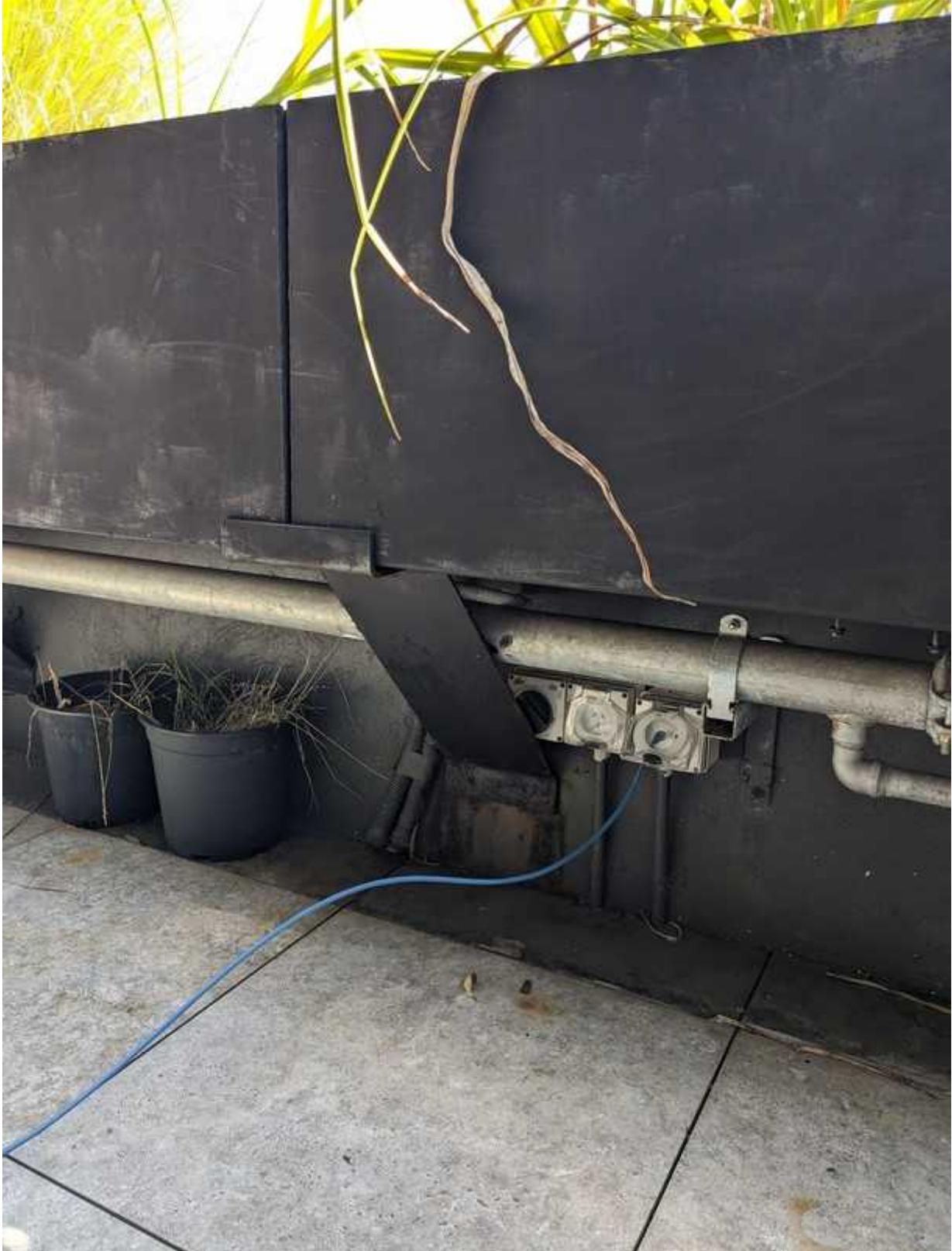
But not all temporary structures are as transient as these. A builder's site shed is usually lifted into position by a crane and may stay there for months or years. A portable school classroom can stay in position for decades.

So classifying a building as "temporary" isn't useful for helping us come up with rules for temporary outdoor cabling.

## Making a connection for service outdoors

### Outdoor socket

An ordinary person **must** be permitted to plug a cord into an outdoor socket:



Yes, that's an indoor type cord. We must expect that.

## Outdoor enclosure for customer cabling or customer equipment

A socket might be inside an enclosure which has a special flap to let cords out through the locked door:



This particular enclosure houses the terminations of a customer optical fibre cable and also an ethernet switch with RJ45 ports. So a cord leaving the enclosure might be connected either to customer cabling or to customer equipment inside.

## Out the window

Many people have only a rare requirement for an outdoor connection. An ordinary person **must** be allowed to run a cord out an opening such as a window:



(There is no outdoor data socket at this house.)

## Mobile?

The cord between this mobile phone and the laptop computer is a trivial case of outdoor cabling work.



I have included this example as a reminder that outdoor cabling doesn't necessarily start at a building. An outdoor cabling installation that is connected to a telecommunications network via a wireless link could be more complicated than this trivial example.

## The camera pole

This outdoor camera pole is a more interesting example.



(Look above the black pole for the white camera enclosure hiding among the tree leaves.)

## **The cabling at the camera pole**

There is an underground Category 6A shielded cable entering the bottom of the pole.

The pole has a removable cover at waist height. Inside is an ordinary RJ45 socket which terminates the underground cable. With this cover taken off, a computer network technician can connect a laptop computer to the socket to test the network. (It is not safe or practical to do this at the top of a pole.)

The interior of the pole has a single cavity reaching up to the top. There is a hole near the top of the pole where a conduit links the pole's cavity with the waterproof camera enclosure. A fly lead running up this cavity connects the socket to the port on the back of the camera. The conduit link needs to be waterproof so that water can't get inside the top of the pole and run down the fly lead and into the socket.

This camera pole doesn't have a mains power connection, but some others may. Given that poles usually have only one internal cavity, a conduit would be needed to separate the two services correctly.

### **Analysis of the camera pole situation**

A pole is explicitly not considered a building under the Wiring Rules.

Only a registered cabler should install the concealed fly lead up the inside of the pole, especially if there is going to be power cabling inside as well. But an ordinary person must be allowed to connect a laptop computer to the internal socket behind the hatch.

The socket is not concealed when the hatch is open.

This example seems to be useful for checking possible rules about what cabling work an ordinary person ought to be able to do outdoors.

## Fixing and concealment outdoors

It is clear that an ordinary person must be permitted to connect a "free" cord outdoors. (By "free", I mean a cord that simply flops without being fixed or concealed in any way.)

However, to bring a service to a marquee, some outdoor fixing or concealment may be necessary for pedestrian safety. There are various materials and types of equipment specifically designed for doing this -- here are photos of a cable covering hump.



But ordinary people may also try to connect more permanent structures, such as linking an outbuilding to a house. In this case, the cabling may be intended to be permanent, and a more

permanent style of installation may be attempted, more closely resembling the style work normally done by a professional cabler.

### **Equipment installers -- neither fish nor fowl**

Installers of customer equipment are not always registered cablers. A person installing an outdoor wireless access point on an external building wall could charge a customer money for fixing an indoor-type cord to the external wall, perhaps using fixings that are not UV-stable or that would rust.

We could say that this kind of installer is "neither fish nor fowl", as they charge money for installing cabling but they are not a registered cabler.

So, when considering cabling work done by ordinary people, we should remember that not all amateur cabling work is done in a "do it yourself" situation.

### **Examples of outdoor cabling work with cords**

Consider the examples of outdoor cabling in the table below, and how "fixed" or "concealed" they seem to be. Is there a pattern? Is there an obvious place where a line could be drawn between what an ordinary person might safely do, and what is likely to be too unsafe? Or do the examples represent a continuum between trivial cabling work and the kind of cabling work that should only be done by a professional cabler?

*The last column in the table has been left blank for the reader to note their own thoughts if desired.*

The table does not contain any examples of underground or aerial cabling work, on the presumption that these are fundamentally unsuitable for ordinary people to carry out.

|    | <b>Cabling work</b>   | <b>Fixed or concealed?</b> |
|----|---|----------------------------|
| 1  | Plugging a laptop computer into an outdoor data socket, with the cord flopping along the ground   |                            |
| 1a | Same as (1) but with the cord gaffer-taped to the ground to avoid a trip hazard.  |                            |
| 1b | Same as (1) but with the cord pegged to a lawn with tent pegs to avoid a trip hazard.   |                            |
| 1c | Same as (1) but with the cord held above the ground by portable lead stands   |                            |
| 1d | Same as (1) but with part of the cord enclosed in a portable cable protection hump to avoid a trip hazard   |                            |
| 1e | Same as (1) but with the cord woven in and out of some of the bars of a portable crowd control barrier  |                            |
| 1f | Same as (1) but with the cord lying below a temporary mat which is protecting a lawn from damage during an event  |                            |
| 1g | Same as (1) but with the data socket (or a customer equipment port) concealed inside a locked metal enclosure, with the cord exiting the enclosure through a flap |                            |
| 1h | Same as (1), but with the cord plugged into an indoor socket and leaving a building via a window  |                            |
| 1j | Same as (1) but with the laptop computer inside a marquee (with the outdoor data socket outside)  |                            |
| 1k | Same as (1) but with the outdoor data socket and the laptop computer both inside a marquee  |                            |
| 2  | Using magnetic cable hangers to route a cord along a permanent fence  |                            |
| 2a | Same as (2) but using natural twine to tie the cord to the fence  |                            |
| 2b | Same as (2) but using UV-stable synthetic rope to tie the cord to the fence   |                            |
| 2c | Same as (2) but using hook and loop tape <sup>1</sup> to fix the cord to the fence  |                            |
| 2d | Same as (2) but using nylon cable ties to fix the cord to the fence   |                            |
| 2e | Same as (2) but using nail-on cable clips to fix the cord to the fence  |                            |
| 3  | Using nylon cable ties to fix a cord along an above ground outdoor water pipe   |                            |
| 4  | Fixing a conduit or trunking to a permanent fence and threading a cord through the conduit to connect a house to an outbuilding                                   |                            |
| 4a | Running a cord through above ground electrical trunking   |                            |
| 5  | Threading a cord out an upstairs window, down the inside of a stormwater downpipe, and out the bottom of the pipe at ground level                                 |                            |
| 6  | Fixing a cord to an external brick wall of a building to connect an outdoor wireless access point fixed to the wall   |                            |
| 6a | Fixing a cord (without a mower guard) up a timber private power pole to connect an outdoor wireless access point screwed to the power pole                        |                            |
| 7  | The camera pole example described above (a combination example)   |                            |

<sup>1</sup> The name Velcro is a trademark.

## **Analysis of the examples**

### **The green group**

Most people would agree that the cabling work described in the green group is reasonable for an ordinary person to do unsupervised.

### **The blue group**

The blue group illustrates a continuum where opinions might vary about what is reasonable for an ordinary person to do. The first example is innocuous, effectively equivalent to the lead stands mentioned in the green group. But the nylon cable ties and the nail-on cable clips are a more permanent style of fixing that we would expect a professional cabler to use.

It would be better if the Wiring Rules applied to more permanent styles of installation outdoors, so that the correct weatherproof materials would be used.

### **The orange group**

The orange group is more of a mixed bag. Some of these examples could be quite dangerous, and would be clear breaches of the Wiring Rules. However, most of the orange group could be prohibited by a general prohibition on support or concealment by infrastructure of a non-telecommunications service, as suggested above.

### **The pink example**

The camera pole example is described in detail in a separate section above. The computer network technician's test connection to the socket falls into the green group. The fly lead to the camera belongs in the orange group, as it is effectively permanent cabling in a metal conduit that may also contain electrical cabling.

### **Where could a line be drawn?**

A possible way to draw a line through the middle of the table (through the blue group) would be to permit cabling work where the cord is neither fixed nor concealed, except by using the kinds of materials and devices described in the green group and the first part of the blue group.

This would allow both amateurs and events professionals to set up rudimentary temporary communications cabling to structures like marquees, and to fix and conceal the cords using materials and devices appropriate to a safe temporary installation.

The challenge would be to devise suitable wording to draw this line. Some of the devices and materials used are specifically intended for temporary reticulation of cabling, but others are generic (e.g. tent pegs).

Consultation would be needed to ensure that the line was drawn in a sensible place, otherwise more professions could be captured under the Cabling Provider Rules.

## Half indoors and half outdoors

The rules that suit indoor use of cords would need to apply to any part of a cord that is indoors (e.g. the rule about not making a connection with a cord that has any part of the cord inside a building cavity). Any outdoor rules would need to apply from the point where the cord passes to the outdoors.

An enclosed party marquee should count as a building, so that the indoor rules would apply once a cord entered a marquee. This would allow the cord to be tied to the internal supporting structure of the marquee, just as any temporary lighting cords would be.

## Sheltered structures -- indoors or outdoors?

The Wiring Rules permit some indoor-style cabling work to be done in some locations which are "sheltered structures", such as under covered walkways and in enclosed above-ground trunking. *But rules devised for professional cablers aren't necessarily as appropriate for ordinary people.*

Given that the Wiring Rules also require fitness for purpose, a registered cabler is likely to assess such locations with more care than an ordinary person would, and may give cables extra protection such as conduit if there is a higher risk of damage or occasional exposure to water (such as water carried by gusts of wind). Professional cablers may also judge that it would be best to use weatherproof materials in these situations.



This canopy is at a hospital. The light fittings look weatherproof. Indoor type cords wouldn't be a good idea here -- gusts of wind could potentially carry rain right up under the canopy sometimes.

## Avoiding too much subtlety

For the purposes of the Telecommunications (Types of Cabling Work) Declaration, it would be simpler to have a straightforward interpretation of the terms "indoor" and "outdoor" for cabling work by ordinary people, rather than adding complexity by including the concept of a sheltered structure. Under a simple "either indoor or outdoor" model, "outdoor" rules could apply to:

- under awnings and anywhere on open verandahs
- under a beach gazebo (which is more like a canopy than a marquee with sides)
- inside a freestanding camera pole
- inside above ground trunking
- inside picnic shelters

Underground services tunnels could be considered to be underground parts of the buildings they connect, and consequently be considered to be indoor locations. A standalone underground tunnel could be considered to be a standalone building. (While some underground tunnels aren't salubrious environments, neither are all indoor locations.)

A marquee with sides should be considered to be a building.

There will always be some grey areas when judging what is indoors and what is outdoors -- what if a marquee has three closed sides and one open side, but the open side abuts an awning that extends out from a house, so that neither rain nor wind are likely to enter? But there seems to be little value in labouring over this sort of point in the Telecommunications (Types of Cabling Work) Declaration.

## Summary

My comments for the Telecommunications (Types of Cabling Work) Declaration consultation can be summarised as follows:

- my comments are only about item 4
- indoor and outdoor cabling work should have different rules
- the existing rules in item 4 work fairly well indoors, except in the case of exposed services
- the existing rule about cords in building cavities helps computer network technicians to do their indoor work safely, but some tweaking of the wording would help even more
- underground and aerial cabling work should be restricted to registered cablers
- exposed services outdoors have the same kinds of safety issues as exposed services indoors
- hazardous telecommunications services do exist, but do they need to be treated specially?
- ordinary people must be allowed to connect "free" cords outdoors and also perform trivial outdoor surface cabling work for temporary needs such as connecting a marquee
- ordinary people are likely to use indoor type materials for outdoor cabling (i.e. materials which are incorrect and would often fail in the longer term)
- outdoor cabling by ordinary people should be of a temporary nature only
- time limits and building styles are not viable ways to characterise the concept of "temporary" outdoor cabling
- ordinary people should be allowed to fix and conceal cords outdoors if they are using materials and devices appropriate to a temporary style of installation
- allowing ordinary people to install cords outdoors in a more permanent style is less desirable
- it is not immediately obvious how to draw a sensible line between the two styles, or whether any professions would be unfairly affected by such a line
- most of the more dangerous outdoor practices could be disallowed anyway by the suggested prohibitions on underground and aerial cabling work and by the suggested prohibition relating to cabling work in or on infrastructure of other services
- a straightforward prohibition on underground and aerial cabling work by ordinary people would probably be uncontroversial
- careful thought and further consultation would be needed for any proposed wording relating to cabling work in or on infrastructure of other services