

010254W02
Installation of Pits

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Summary

This document provides the requirements for the installation and maintenance of pits in the Telstra InfraCo Network. This includes Greenfield and Brownfield installation.

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01 Purpose

This document provides the requirements for the installation and maintenance of pits in the Telstra InfraCo Network. This includes Greenfield and Brownfield installation.

02 Scope

This document applies to all Constructors employed on pit maintenance and installation in the Telstra InfraCo network.

Where more detailed information is required refer to the applicable Telstra InfraCo 010254 series Work Instruction.

The term Constructor refers to both Telstra InfraCo employees and contractors.

This document supersedes and replaces all previous documents on this topic.

This document is subject to change. Before using it, please ensure you have the latest issue.

All material shall be approved by Telstra InfraCo Exchanges and Infrastructure unless otherwise directed.

For a summary of the key requirements, see section 018 Measures.

03 Safety and Environment

Requirements when working with and in Telstra InfraCo's underground network.

3.1. Land Access

As a licensed telecommunications carrier, Telstra InfraCo has an obligation to comply fully with all relevant Commonwealth legislation, including the Telecommunications Act and its related regulations and instruments. Also, where applicable, Telstra InfraCo must comply with relevant State and Territory legislation.

Contractors engaged by Telstra InFraCo to undertake network facility activities, such as survey and inspection, maintenance which includes pit replacement on a like for like basis, and installation of low impact facilities such as pits/manholes, and who are under contract must comply fully with all relevant legislation. Contractors are also required to understand and comply with all Telstra's InfraCo policies and procedures relating to land access and environmental matters.

From time to time, Telstra InfraCo's network facilities may need to be relocated for various reasons. Where the facility relocation is at the request of another party (the "Disturber"), certain land access requirements must be satisfied before Telstra InfraCo will agree to the relocation of its facilities. This is to ensure that the relocated facilities retain full rights of tenure and accessibility at the new site or location.

It is the responsibility of all staff and contractors (including sub-contractors) to ensure that no harm comes to the environment via the activities carried out by them while acting on Telstra's behalf.

Please contact the LANDS team if you have any further queries.

<https://telstra.unily.com/sites/access-network-facilities-engineering/SitePage/152839/lands>

3.2. Asbestos Containing Material (ACM)

For Telstra InfraCo employees and contractors under the direct control and supervision of Telstra (e.g. Labour Hire), it is a requirement to follow the [Asbestos Management Procedure in Telstra](#) for all asbestos related works.

All other Contractors shall comply with Telstra InfraCo [Contractor Asbestos Management Guide](#).

These Procedures outline the SWMS that are accepted for use when working with ACM in Telstra InfraCo's network.

Prior to commencing any Asbestos related works in the Access Network, workers are to consider alternative construction methods that will avoid asbestos disturbance.

Note: ACM Ducts shall not enter any new/replacement pits, see section 10.3.

3.3. Excess Soil Management

Works likely to involve excess soil must follow the Telstra Excess Soil Management Process This process involves:

- Preliminary soil screening (desktop review) to categorise the potential for soil contamination. This will also dictate the preferred methods for excavation, or if soil sampling is required.
- Visual assessment of the site prior to and during excavation to identify potential contaminants.
- Disposal from site in accordance with known and observed contaminants (including ACM).
- For additional information refer to the Excess Soil Management Process.

[New Soil Management Procedure](#).

04 Locating Underground Assets

Before any excavation works are to be carried out all constructors shall comply with;

[Working on or Adjacent to Underground Assets Procedure](#)

And complete

[Working on or Adjacent to Underground Assets Permit](#)

05 Fire Ants

To prevent the spread of fire ants, the Queensland Government has implemented movement controls in areas of Queensland where this pest species has been detected. These controls apply to individuals and commercial operators and restrict the movement of materials that could carry fire ants.

It is an offence if you do not comply with movement controls within fire ant biosecurity zones. Breaches of these controls can potentially impact the community, economy and the environment.

To help prevent the spread of fire ants, you should:

- understand what fire ants look like and what materials (i.e. fire ant carriers) they might be moved in
- be aware if you are living or working in a [fire ant biosecurity zone](#)
- take all reasonable steps to ensure you do not spread fire ants.
- if you are unsure of your obligations contact a Biosecurity Queensland inspector on 13 25 23

<https://www.daf.qld.gov.au/plants/weeds-pest-animals-ants/invasive-ants/fire-ants>

06 Earthing

To find all current methods and materials involved for installing new Earthing infrastructure for pits, manholes and pedestals within Telstra InfraCo's underground Access Network refer to 010254W11 Earthing in Telstra InfraCo Pits and Manholes.

07 Pits

Pits are described by their size and body material i.e. plastic, composite, "cement", concrete. ("Cement" pits were manufactured using asbestos or cellulose fibre re-enforced cement).

- All pits have accessories and fittings, which vary depending on the size of the pit.
- Pit installation in this Work Instruction refers to the installation of the pit and all accessories and fittings.
- The size and type of pit to be installed will be stated in the instruction provided to the Constructor. In the absence of such instruction an approved pit of the same size or larger pit size shall be used taking account of the accommodation requirements of cable sizes, joint closure types and equipment to be housed.
- A list of all pits shapes and major dimensions of the pit body is provided Work Instruction 010254W01
- PVC White ID tags shall be fitted to all new or replacement pits. Information shall include the following to be used for identifying constructor:
 - Date
 - Constructor / Company name
 - Consol or CNI number

Note: If depth of pit installation, to base of pit, is greater than 1180 mm then a manhole solution shall be installed.

7.1. Accessories and Fittings for pits

The Constructor shall provide all approved pit accessories and fittings. Examples of accessories and fittings are given below:

- Composite Covers are to be used for current pit sizes 2, 4, 5, 6-8-9.
- Concrete Covers are used for other pit sizes (quantity of 1, 2 depending on size of pit).
- Cast Iron Covers (fit as directed).
- PVC Bush (provides smooth entry to conduits and seals between conduit and pit wall).
- Cross-Bars (central support for multiple lids, 1 for 6, 8 and 2 for 9).
- Fibreglass Joint Support Bar (to support all single ended joints).
- Cable supports (6, 8 and 9).
- Pit Cover Black Gaskets (fit to all new pits, pit replacements and/or upgrades).
- Cover keyhole Plugs (fit plugs where directed).
- Risers or Collars (to increase the depth of the pit or to raise the level of an existing pit). Refer to section on Plastic Collars and Risers in 010254W01.
- Reinstatement kit (for reinforcing the walls of large size plastic pits where installed over existing cables and conduit).
- Polythene flashing or builder's film.
(For sealing cuts, extension collars and conduit entries where required).
- Pre-mix concrete (for sealing conduit entries where required).
- Stainless Steel Self-Drilling Hex Head Screws. Material No: 64202001.
- Tag, ID PVC White fitted to all new pits used for identifying constructor or where ACM duct labelling is required.

7.2. Pit Location & Position

Unless directed otherwise by Telstra InfraCo:

- All pits shall be installed with their long sides parallel to the adjacent property boundary or footpath.
- The exact location and orientation at which each pit is to be installed will be directed by Telstra InfraCo; this may take the form of plans, instructions or “typical drawings” specifying minimum or maximum offsets relative to property boundaries and/or other utility structures (i.e. power pillars in shared trenches). Tolerance is permitted to find the best fit in relation to obstructions and conduit entries particularly where conduits already exist. Deviation from the directed position must not exceed 100 mm in any horizontal direction. Any specified minimum or maximum offsets must be observed.
- In trenches shared with other utilities, pits shall be located in accordance with the Agreements in place with the other utilities, local government authorities and Telstra InfraCo design rules. The contractor should ensure they have a copy of any such Agreements.
- The pit shall be installed so that the top is flush with the ground level or pavement and conforming with the general slope of the ground level or pavement on all sides except that the slope shall not exceed 1 tag
- Pits shall not be placed in trafficable areas or other locations likely to be used for driveways (see Section 013) or property vehicular or pedestrian entrances. Where pits are permitted to be located either side of property boundaries or utility structures, the contractor shall closely consult the plans or directions for indications of building offsets, kerb laybacks or garages for likely driveway locations and for new estate installations, consult with the developer where reasonably practicable.
- For new pit installations, pits shall not be located closer than 3 m to the projection of the property boundary at street intersections.
- Pits should be installed in an easily accessible location to facilitate installation and operational tasks.
- Pits must not be installed where safe working access is impeded by a fence, including locations where a fence does not exist but future installation of a fence is foreseeable.
- For new pit installations, pits shall not be located closer than 1 m to the kerb.
- Pits shall not be placed in doorways or gates.

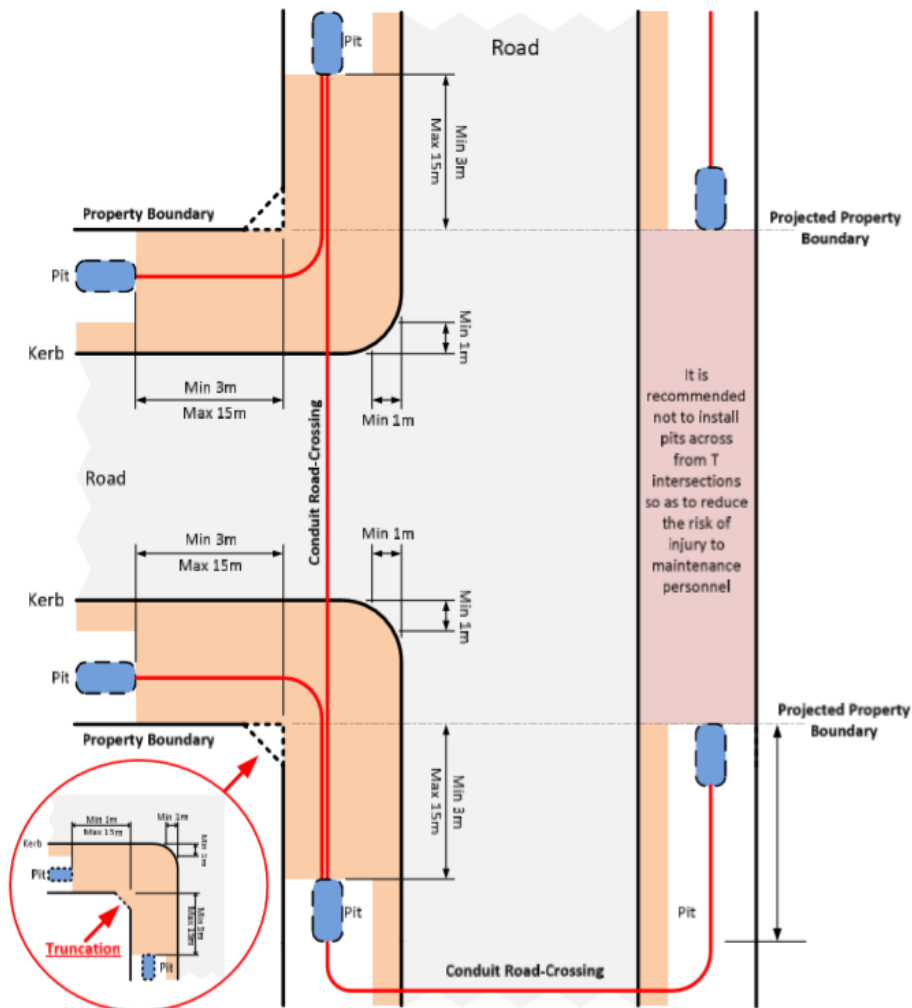


Figure 1 - Pit distance from kerb.

Note: For rural pit installation, including installation over direct buried cable, refer to work instruction 010264W01.

7.3. Pits in Rural Areas at Risk of Damage from Grass and Bushfires

Always ensure pits are located to minimise erosion of soil from around them and always ensure plastic pit excavations are properly backfilled to prevent settlement of soil - both these problems can result in a build-up of dry grasses around and under the pit structure providing fuel for fires.

All pits, but especially buried pits, must be marked with a marker post of a suitable type (metal) to assist location of the pits.

Exact location of buried pits must be noted on all plans.

To minimise the risk of bushfire damage to pits or their contents (cables, joints, etc.) in rural locations, installations shall be either:

- a concrete (C) pit, or
- a Plastic or High Strength pit as detailed in section 7.3.1.

7.3.1. Plastic or High Strength Pits

Where work is carried out in rural areas where plastic pits are at risk of damage by fire there are two approved methods to prevent grass fires causing pits to catch alight:

- Install pit at a depth to allow 100 mm of soil to cover it at completion of work (particularly applicable to Optical Fibre routes rarely entered); and / or
- Install a poured reinforced concrete collar of 100 mm wide & 100 mm deep (minimum) around the pit lip - even if pit is buried if erosion is likely.

For P5 (and also for any existing P2, P3, P4) pits, place a precast concrete collar on top of the pit. Install pit so that the top of the collar is level with the surrounding surface.

Note: Where pits are buried, only composite covers are to be used with a pit gasket installed to stop soil entry into pit.

08 Excavation for Pit Installation

Except where otherwise directed by Telstra InfraCo.

- All appropriate requirements of Work Instruction 015839 apply (Break-out and reinstatement of sealed surfaces) for Plastic (P) pits.
- Breakout and reinstatement for High strength pit range refer to Work Instruction 010254W13, 010254W15 and 010254W16
- The total extent of concrete, bitumen or other hard pavement surface to be broken-out by the Constructor shall be the minimum necessary to execute the work instructed.
- All Local Government Authorities (LGA) and other relevant Authorities' permits and requirements are to be complied with.
- Any excavation shall be made safe and/or shored in accordance with appropriate government Acts, regulations, State or National Codes.
- Precautions shall be taken to prevent any work causing damage to any adjacent buildings & properties.
- Locate, identify, expose and make safe any underground plant in the area of the excavation.
- Safety barricades and warning signs as appropriate (meeting all LGA, State, and National requirements) are to be put in place prior to commencement of work at any location and will remain in place until either full temporary reinstatement is in place or all the work at that location is completed.
- The extent of excavation must be no more than is required to install the pit, make necessary conduit connections and adequately place and compact the backfill.
- Normally a minimum distance of 150 mm (N/A for High Strength (HS) pit range) beyond the outer wall of the pit is sufficient. There is no maximum width of backfill specified.
- Any plant damaged due to excavation activities shall be reported to the Authority responsible for that plant.
- Spoil resulting from the excavation is to be disposed of in an appropriate manner and in such a way so as not to damage the surrounding environment. Refer to Excess Soil Management (See Section 3.3 of this document.)

8.1. Rock in Excavation

Where separate provision is made in Schedule of Rates and Prices for payment for excavation in rock it will apply to a "pay-line" no greater than 150 mm beyond the extreme outer dimensions of the pit to be installed unless, for pit replacement, otherwise agreed by Telstra InfraCo's representative.

Note: Telstra InfraCo defines Rock as being in continuous strata or laid down on a massive scale. It can only be removed by blasting and ripping or by using a rock breaker or a rock saw.

09 Typical Installation

A typical installation cross section is provided in Work Instruction 010254W01. For specific installation refer to individual pit type work instruction.

- Care shall be exercised when a new pit is replacing an old pit and existing conduits contain cables. All cables are to be handled with care to avoid any damage. Any cable damage is to be reported to the cable owner.

9.1. Foundation

Unless otherwise agreed by Telstra InfraCo, a foundation of sand or fine crushed rock shall be placed to support the pit.

- Bed the pit in a layer of sand or fine crushed rock of an appropriate type approximately 100 mm thick. Ensure that the level of the foundation brings the top of the pit level with and conforming to the surrounding pavement or surface.
- Where electricity cables pass beneath the pit location place suitable approved mechanical protection barrier, covering the extent of the pit base below the foundation material. Examples of protection barriers include: Precast concrete slab, pit covers or approved orange Polymeric Strip (Material Number – 7300319 & 7300320, 300 mm wide strips, overlapping by 50 mm where more than one Strip is required).

9.2. Conduit Entry, Position and Installation

Unless directed otherwise by Telstra InfraCo:

- Holes for conduits are to be cut with the correct size hole-saw to ensure a tight fit of bushes.
- All new conduits installations are to enter the ends of the pit (short side), to be sealed by fitting bushes, or applying mortar as appropriate (mortar shall only be used on cement pits).
- Existing conduits for service lead-ins, including road crossing conduits, may enter the long side of 5, 6, 8 or 9 pits at a location within 100 mm of the end of a replacement pit.
- Conduits are to enter the pit at or below the minimum depth of cover as specified in Work Instruction 010260W01.
(Generally conduits shall enter 450 mm from the top of conduits to surface level for street works and 300 mm from the top of conduits to surface level for direct lead-ins and within private property).
- The bottom edge of conduits shall enter a pit not less than 50 mm from the bottom of the pit (measured inside the pit).
- Where conduits enter the end wall they shall enter as near as possible in the centre of the end wall or be spaced evenly across if more than one conduit is at that depth of cover. The maximum number of conduits allowed to enter a given pit is not to be exceeded. Refer to 010254W01
- Conduit entries in opposite ends of pits should align as closely as possible to allow a continuous pull through of cable.

Note: Where new conduit installations are required for SX48 Micronode Pedestals, there may be some exceptions made to the following procedures and practices regarding the number of conduits entering the end of a pit as well as an exception to allow conduits to be installed in the side of a pit.

Refer to Work Instruction: [Dual SX48 Micronode Pedestal – Construction & Installation Practices](#).

9.2.1. Conduit Entry for Plastic & High Strength Pits

Except where otherwise directed by Telstra InfraCo:

- All conduits entering pits shall be cut square and flush with the inside wall of the pit and all sharp edges or burrs removed.
- All conduits shall be fitted with a bush of the appropriate size. The conduit is to be fully inserted into the bush and glued in place.
- All bushes shall be flush with the inside wall of the pit (with due allowance for ribs or curved pit walls).
- Where the bush does not seal the entry, then the area around the bush shall be sealed. Use premixed concrete on the outside of cement pits and on plastic pits a reinstatement kit shall be used.
- Where the bush has been cut to install it over a cable the cut edge of the bush is to be glued and the cut positioned to the side of the conduit (i.e. 3 or 9 o'clock).
- Where a bush without ribs is used it shall to be held in position by a sealing ring glued to the part of the bush projecting outside the pit with the ring hard against the outside wall of the pit.
- In expansive soil areas or termite prevalent areas (as may be advised by Telstra InfraCo), the contractor may be directed to extend the conduit 50 mm inside the pit, sealing with premixed concrete on the outside of the pit.

9.2.2. Conduit Entry for Precast Concrete (C) Pits

Install conduit entry and pipe bush as described above for plastic pit. In addition:

- Where the precast concrete pit has been cut or broken away to allow existing cables to pass through the pit, the cut or broken area is to be repaired with pre-mixed concrete. Refer Work Instruction 010254W05.
- Where directed to omit the bush in cement pits the conduit shall enter 50 mm into the pit with the end cut square and all sharp edges and burrs removed. The hole around the conduit is then sealed with mortar placed inside and outside of the pit and tapering to the conduit.

9.2.3. Conduit Entry for Cement Pits

Unless it is known that a cement pit is free of asbestos it shall be treated as if asbestos is present.

Install conduit entry and pipe bush as described above for plastic pit. In addition:

- All entry holes shall be securely sealed with mortar.
- Where the pit has been cut or broken away to allow existing cables to pass through the pit, the cut or broken area is to be securely sealed with mortar.
- Where directed to omit the bush in cement pits the conduit shall enter 50 mm into the pit with the end cut square and all sharp edges and burrs removed. The hole around the conduit is then sealed with mortar placed inside and outside of the pit and tapering to the conduit.

9.2.4. Fitting Pit Covers

- Clean cover seating surface and free of any debris.
- Fit pit cover gasket/s under the cover of new pits.
- Fit plastic keyhole plugs where directed by Telstra InfraCo.

010 DUCTS ENTERING PITS

10.1. PVC Ducts

- When installing PVC ducts into pits the approved bush shall be used where possible.
- Some sizes (10 mm) are not available. In these cases the duct should be installed into the pit in the same manner as non-standard ducts shown below in section 10.2.

All new unoccupied conduits (i.e. new estates) shall be appropriately sealed. Occupied conduits are to be sealed where there is a history of the following:

- Siltation
- Gas
- Water
- Vermin
- Debris
- Seal all lead-in conduits

10.1.1. Pipe Bushes

Conduits shall be fitted with a suitable bush (flange) inserted from the inside of the pit except in:

- highly reactive soils where allowance should be made for longitudinal movement of the conduit by extending the conduit at least 50 mm, but no more than 100 mm, into the pit or access hole; or
- areas where ants or termites are particularly aggressive, in which case any conduit that runs to a building should be extended at least 50 mm, but no more than 100 mm, into the pit or access hole to allow the application of a suitable ant-proof sock.

Size	Material Number
Bush, Pipe PVC 20 mm	07300100
Bush, Pipe PVC 35 mm	07300069
Bush, Pipe PVC 50 mm	07300070
Bush, Pipe PVC 80 mm	07300101
Bush, Pipe PVC 100 mm	07300102

Table 1 - PVC Conduit Bushes

10.2. NON-STANDARD DUCT SIZES AND TYPES ENTERING PITS

For non-standard ducts (PE, PVC or GI) drill tight fitting entry holes into the pit or seal the outside of larger holes with concrete. Trim non-standard ducts square and at the end, extending 50 mm inside the pit.

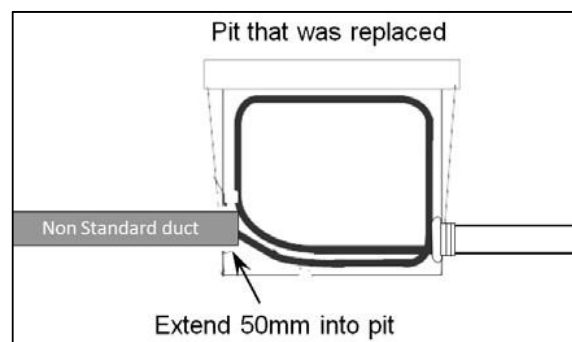


Figure 2 - Non-Standard Duct Entering Pit

10.3. CEMENT DUCT ENTRIES INTO PITS

Cement ducts shall not enter new or replacement pits. They shall be extended into pit using PVC pipe. A label shall be fixed in pit above the bush entry of that pipe, refer to section 10.3.

Warning: Cement duct may contain ACM. Always know and following your company's approved SWMS for ACM when carrying out any work with ACM materials.

10.3.1. Cement duct on one side of the new pit

If cement ducts are only on one side of a replacement pit move the pit position along the non-cement duct.

Prepare the cement duct following your company approved SWMS for ACM duct removal and repair.

The constructor shall neaten the end of asbestos conduits as close as reasonably possible to a square end. Follow all safe working procedures for asbestos.

Note: Where ACM duct has exposed ends ensure they are sealed with coating of bondcrete or similar bonding agent applied with disposable brush or non-pressurised hand spray pump bottle, before inserting PVC bell coupling.

Extend the duct with PVC split duct as shown below in Figure 3.

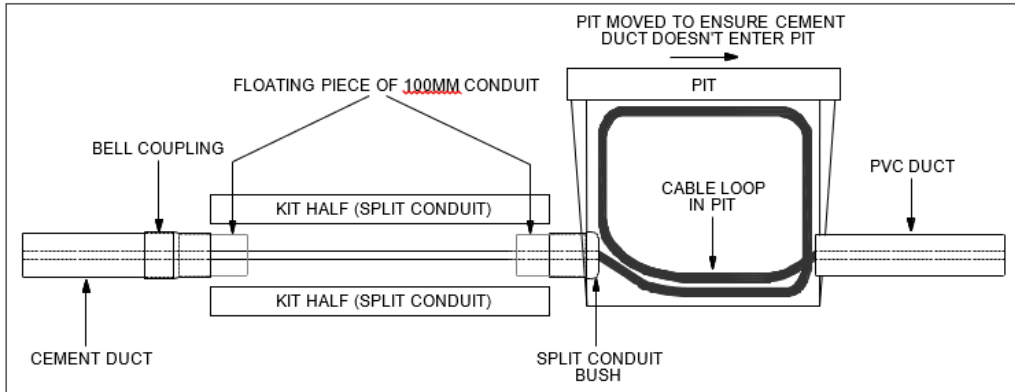


Figure 3 - Cement ducts do not enter pits.

10.3.2. Cement duct on both sides of new pit

Where cement duct is on both sides of a new pit:

- Remove a section of cement duct on one side of the pit following your company approved SWMS for ACM duct removal and repair. Install the pit towards that side
- The ACM duct shall be a minimum distance of 100 mm from the outside pit wall. The duct will be extended into the pit with PVC pipe and adapters.
- The constructor shall neaten the end of asbestos conduits as close as reasonably possible to a square end. Follow all safe working procedures for asbestos.

Note: Where ACM duct has exposed ends ensure they are sealed with coating of bondcrete or similar bonding agent applied with disposable brush or non-pressurised hand spray pump bottle, before inserting bell housing.

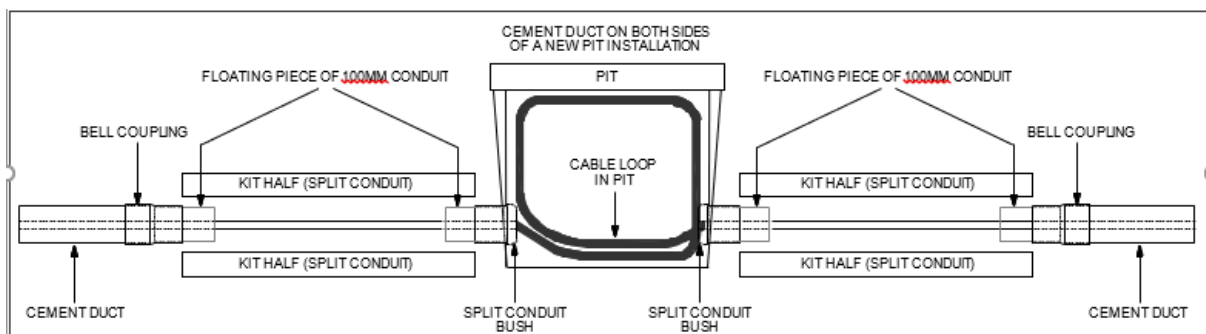


Figure 4 - Example of Cement ducts not entering into pits

10.3.3. PVC Interface to Cement Duct

A PVC 100 mm Bell Coupling, (Material Number 07300052) is required to be installed as an interface between a split PVC duct and the prepared end of the existing cement duct.

When the cement duct is occupied, split and tape the bell coupling onto the Cement duct and then use split duct repair kit Material Number 07300285 (these are made from oversized duct, and will fit over the end of the coupling and floating piece of duct.)

The Contractor shall neaten the end of asbestos conduits as close as reasonably possible to a square end. Follow all safe working procedures for asbestos.

Note: Where ACM duct has exposed ends ensure they are sealed with coating of bondcrete or similar bonding agent applied with disposable brush or non-pressurised hand spray pump bottle, before inserting bell housing.

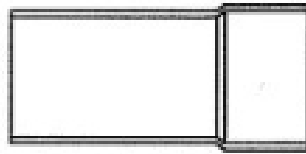


Figure 5 - Bell Coupling 07300052

10.3.4. Installing PVC interface for split duct repair kit

- Remove as required and prepare the end of the cement duct following your company approved SWMS for ACM duct removal and repair.
- Cut a piece of 100 mm PVC duct (longer than 100 mm) to serve as a joiner piece, between the kit and the duct bush.
- Make a longitudinal cut through a duct bush to enable placement of the bush over the cable in the pit.
- Position the duct bush over the cable, place it through the hole in the pit wall and fit to the joiner section as shown. Glue in position.
- Assemble the repair kit to extend the existing occupied duct to the new pit position as described in above. Ensure that all components are glued and or PVC taped held securely in place before backfilling.

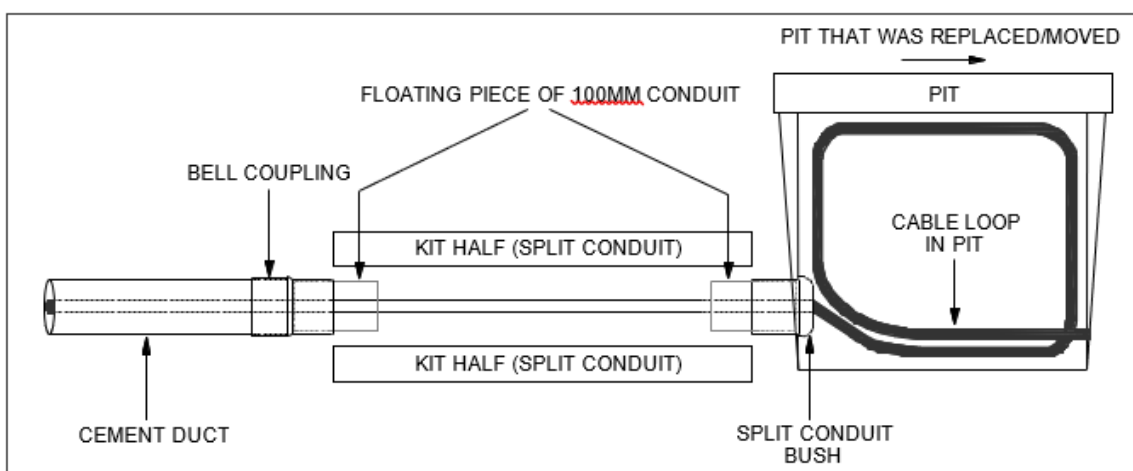


Figure 6 - Installation of split conduit.

10.3.5. Installing the split duct repair kit

- Cut the split-duct sleeve to length. Allow 100 mm extra for overlap. Remove all burrs.
- Apply PVC adhesive to the overlap area on the interfaces.
- Fit the repair kit around the interfaces.
- Apply PVC adhesive to the inner surface of four PVC clips.
- Place these clips over the area where the repair kit overlaps the interfaces.
- Apply PVC tape over the interfaces at both ends of the kit to hold it until adhesive is set.
- Apply PVC adhesive to the remaining PVC clips and fit to the centre section.
- Fit plastic cable ties of suitable length to stabilise the repair as required.
- Carefully back-fill around the repair. Backfill must be well compacted in layers to ensure stability of the ducts and avoid later subsidence of the soil.

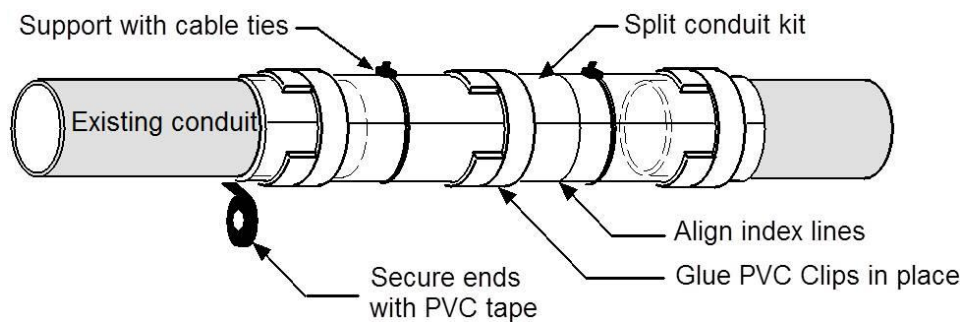


Figure 7 - Split pipe kit installation.

10.3.6. Repair Using More Than One Repair Kit

- Cut a piece of the 100 mm duct (longer than 100 mm) to serve as a joiner piece between each adjacent repair kit to be installed.
- Assemble the kits as in installing the split duct repair kit above.

10.3.7. ACM Duct labelling in pits

Where the PVC split pipe kit has been attached to ACM duct entering a pit, a white PVC tag Material No: 9700104 stating "This Duct is ACM" shall be fixed in pit above the bush entry of that pipe.

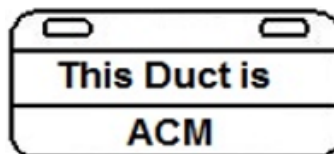


Figure 8 - PVC Tag

011 Installing Pits Over EXISTING Cables & Conduits

Take care not to damage or unnecessarily move cables and devices within the pit.

11.1. Large Size Pits

- All pits are to be cut following either the cutting guides or the external ribs (except where large cables are involved. See Section 9.2 & Parts 010254W03 and W04.
- Cutting of the pit must be carefully planned to limit the extent of cutting and executed as neatly as possible.
- All large size plastic pits are to be reinstated with Telstra InfraCo approved 35 mm stainless steel screws, driven through the cut ribs or cutting guides.
- Screws driven from the inside of the pit are to be installed at an angle to ensure that the point of the screw is embedded into the wall of the pit. No screw points are to protrude into the inside of a pit.
- All screws are to be at a spacing of no greater than 100 mm apart.

11.2. Removing sections of pit wall

- Sections of the pit wall are only to be cut out where large cables are present and cannot be installed into the pit by passing them through the openings produced by cutting the ribs or cutting guides, by “hinging” the base or cutting the base completely off. Refer to Work Instruction 010254W03 and W04.
- Practices stated in Work Instruction 010254W01, W03 & W04 must be closely followed in respect of cutting and subsequent reinstatement.
- All cut out sections shall be reinforced with sections of re-instatement kits (refer to section 11.3) attached with stainless steel screws (material No. 64202001).
- Screws are to be located and installed in accordance with Work Instruction 010254W03.

11.3. Reinstatement kits

The reinstatement kit is used to reinforce the pit walls where conduits enter the pit within the ribbed wall areas or to reinforce the pit wall where it has been cut in locations other than the cutting guide.

The sheet plastic supplied in the reinstatement kit is the same material as used to manufacture the large size plastic pits.

The number of pipe or conduit entry points that can be reinstated by each kit depends upon the size and location of the conduit entry points.

Approved vendor reinstatement kits are Telstra InfraCo's preferred option for repairing plastic pits.

Kits supplied from Vendor:

- Viscount are made from 5 mm MDPE / HDPE (see below for definitions) Material No. 9900174.
- Cubis are made from 3 mm HDPE (see below for definition) Material No. 40009467.

Should a contractor wish to use an “alternative” it MUST be the same – either 5mm Black MDPE/HDPE or 3mm Black HDPE.

Products made from LDPE or other plastics (e.g. PVC, food grade with fragrant oil etc.) shall NOT to be used.

Definition of Terms:

-
- LPDE – Low Density Polyethylene – typically low cost garden edging.
 - MDPE – Medium Density Polyethylene – for example – Icon Plastics Garden Edge Black, part# 150151.150.
 - HDPE – High Density Polyethylene.
 - PVC – Poly Vinyl Chloride.

If in doubt, contractors shall consult the manufacturer's SDS to determine the type of plastic used in the alternative product being considered.

11.4. Small plastic pits

Small plastic pits i.e. P2 (Injection moulded) have guide lines and internal maintenance fins moulded inside to allow the pit to be cut and installed over existing cables.

- Pits shall only be cut along raised guidelines and maintenance fins to remove sections to allow cables and joints to pass into the pit.
- All cut edges are to be sealed to prevent siltation. A pit reinstatement kit or a sheet of plastic large enough to cover the base, sides and ends of the pit past the highest conduit entry shall be placed around the pit to stop siltation.
- The cut section of the pit shall be placed in position and held with maintenance clips at spacing no greater than 100 mm apart.

11.5. Housing Cables

- On completion of the pit installation carefully & neatly house cables.
- Support joints within the pit.

11.6. Fitting Pit Covers

- Fit pit cover gasket under the cover of all replacement and/or upgraded pits.
- Fit plastic keyhole plugs where directed by Telstra InfraCo.

012 Backfilling

Plastic pits are manufactured with large reinforcing ribs, so backfilling with a material that flows into the spaces between the ribs is essential. Furthermore, because the pits are manufactured of plastic, excessive forces at the pit walls by the use of mechanical rammers, wheel loadings or machine tracking can cause the pit walls and/or rims to deform, causing difficulties in removing covers etc. Hence it is the Contractor's responsibility to ensure the finished backfilled surface does not settle beyond what is acceptable to the Local Government Authorities (LGA) or Telstra InfraCo, and that the backfilling is carried out such that pit deformation does not occur.

The constructor shall make good any such settlement or pit deformation occurrences.

- Backfill material around the pit must be sand, stabilised sand, fine crushed rock or equivalent, which will enable all voids to be filled and allowing required compaction over the whole side support.
- Cable bearers (for P6 or larger pits) and covers must be installed prior to backfilling.
- Pits walls shall not be distorted by the backfilling process.

-
- If the backfill material is exposed at the surface to provide part of the temporary pavement then it shall be neatly trimmed to levels and grades that match the pit and surrounding surface levels.
 - In grassed areas, only bring the backfill material within 50 mm of the surface and using suitable top dressing complete the reinstatement to surface level. Apply grass seed to the reinstated area and rake into the topsoil. Lightly sprinkle water over the reinstated area.
 - As a general guideline, all backfilling should be compacted by hand-held (non-mechanical) rammers in layers not exceeding 150 mm in thickness and the compaction will be taken to the full height of the backfill material.

013 Pits in trafficable areas

13.1. Pits shall not be installed in a driveway

New pits shall not be installed within a driveway, proposed driveway or trafficable area.

13.2. Existing pits in driveways

For existing pits in driveways Refer to Work Instruction 018621.

Note: If the pit and or lid are unsound due to the volume or weight of vehicles using the driveway then the constructor shall bring this to Telstra InfraCo's attention and if directed by Telstra InfraCo make arrangements for the relocation of the pit away from the driveway.

014 Tree Roots Affecting Pit Installation

If the pit is being replaced due to damage caused by tree roots the following shall apply:

- consult with the LGA regarding trimming of tree roots.
- request approval and direction from Telstra InfraCo

Possible solutions include:

- moving the pit further from the tree
- 100 mm reinforced concrete barrier on the affected sides.
- use vibrated concrete C8 or C9 pit

015 Unistrut Type Rail

Unistrut rail is available for large size pits. It is retrofitted where required. Installation guide is provided with the kit.

016 Documentation

Staff required to follow this Work Instruction shall have read the following referenced documents and be familiar with their content before proceeding.

Document number	Title
015839	Breakout and Reinstatement of sealed Surfaces
017573 Series	Safe Work at Telstra InfraCo Manholes and Pits
018527	Dewatering Work Instruction
018621	Pits in Trafficable Areas
018633	Make Safe Solutions for Telstra infrastructure
010254W01	Pits used in Telstra InfraCo Network
010254W03	Installation of Rotationally Moulded Plastic Pits
010254W04	Installation of Viscount Plastic Pits
010254W05	Installation of Concrete C8 Pits
010254W07	Pit Maintenance and Repair
010254W09	P5 Split Pit
010254W10	Installation of Concrete C9 Pits
010254W11	Earthing in Telstra InfraCo Pits and Manholes
010254W13	Installation of CUBIS Fortress HS 6-8 Pit
010254W15	Installation of CUBIS Fortress HS 5 Pit
010254W16	Installation of CUBIS Fortress HS 9 Pit
010260W01	Conduit Installation
010260W02	Pipe and Conduit Repair
010260W03	Clearance of Pipe and Conduit Blockages

Table 2 - Associated Documents

017 Material

The following is a list of the main components that are referred to in this document. This list is specific to the currently contracted material and may be subject to change:

Material Description.	Material No
Adhesive, PVC 250ml Blue	7300279
Bracket, cable support galvanised steel (suit J8, H8 & JC8 pits)	9900067
Bush, suit 100mm pipe pvc	7300102
Bush, suit 80mm pipe pvc	7300101
Bush, suit 50mm pipe pvc	7300070
Bush, suit 35mm pipe pvc	7300069
Bush, suit 20mm pipe pvc	7300100
Collar, concrete suit P2 pit CUBIS	9900136
Collar, concrete suit P3 pit CUBIS	9900137
Collar, concrete suit P4 pit CUBIS	9900138
Collar, concrete suit P5 pit CUBIS	9900180
Collar, concrete suit P6,8 pit CUBIS	9900148
Collar, extension for P5 pit, CUBIS / Viscount	9900219 / 9900173
Collar, extension for P6 & P8 pit, CUBIS / Viscount	9900220 / 9900172
Concrete, premixed 4:2:1 mixture 20kg bag	7600036
Coupling, Bell PVC 100mm Dia	7300052
Cover, Polymeric Cable For P5	7300319
Cover, Polymeric Cable For P6 & P8	7300320
Cover, suits pits 1 & 3 (concrete cover for early rectangular cement pit), CUBIS	9900006
Cover, suits pit B (concrete), CUBIS	9900020
Cover, suits pit C (concrete), CUBIS	9900021
Cover, suits pit H1, J1, JC1, P1 (concrete)	9900058
Cover, suits pit H2 J2 JC2 P2 (composite lightweight), CUBIS	40009743
Cover, suits pit P2 (concrete electricity), CUBIS	04200751
Cover, suits pit H2 J2 JC2 P2 (cast iron), CUBIS	9900068
Cover, suits pit P2, (cast iron locking)	9900151
Cover, suits pit H3 J3 JC3 P3 (concrete)	9900060
Cover, suits pit H3 J3 JC3 P3 (cast iron), CUBIS	9900069
Cover, suits pit H4 J4 JC4 P4 (composite lightweight), CUBIS	40009744
Cover, suits pit H4 J4 JC4 P4 (cast iron), CUBIS	9900070
Cover, suits pit P4, (cast iron locking)	9900153
Cover, suits pit HS5, P5, (composite lightweight), CUBIS	40003043
Cover, suits pit HS5, P5, (cast iron), CUBIS	9900198
Cover, suits pit HS5, P5, (cast iron locking)	9900179
Cover, suits pit HS5, P5, (concrete electricity)	9900181
Cover, suits pit HS6, HS8, HS9, P6, P8, P9, (composite lightweight), CUBIS	40003044
Cover, suits pit HS6, HS8, HS9, P6, P8, P9, (cast iron), CUBIS	9900071

Cover, suits pit HS6, HS8, HS9, P6, P8, P9, (cast iron locking)	9900154
Cover, suits Pit 7 (concrete)	9900010
Crossbar, cast iron, suit 6, 7, 8 pits, thick type (for early model pits), CUBIS	9900029
Crossbar, cast iron, suit 6, 8, 9 pits, thin type, (for late model pits), CUBIS	9900067
Crossbar, cast iron, suit 6, 8, 9 pits, thin type, Viscount (same as 09900067)	9900210
Installation Tool, TDUX Sealing System	7300160
CO2 Gas Cylinder (10 per carton)	7300229
Duct Sealing System, Wraparound TDUX45	7300193
Duct Sealing System, Wraparound TDUX60	7300194
Duct Sealing System, Wraparound TDUX100	7300196
Clip, Duct TDUX-CL-20 box of 5	7300199
TDUX CL - 60 - Duct Seal Clip,	7300227
Duct Tape	4300038
Gasket, thermoplastic pit 6 8 and 9	9900164
Gasket, thermoplastic pit P2	9900001
Gasket, thermoplastic pit P3	9900002
Gasket, thermoplastic pit P4	9900003
Gasket, thermoplastic pit P5, HS5	9900177
Gasket, thermoplastic pit P6/8/9, HS6/8/9	9900164
Locking Mechanism, for lockable pit cover for 6, 8 & 9 pits	9900160
Mortar, premixed 20kg sand + cement	7600015
Pit, P2, cable jointing plastic, CUBIS or Viscount	9900211 or 9900098
Pit, P5, cable jointing plastic, CUBIS or Viscount	9900214 or 9900165
Pit, P5 split pit, cable jointing plastic, Viscount	9900182
PIT,CABLE JOINTING PLASTIC P5, 800, CUBIS	9900215
Pit, P6, cable jointing plastic CUBIS or Viscount	9900216 or 9900161
Pit, P8, cable jointing plastic, CUBIS or Viscount	9900217 or 9900162
Pit, P9. cable jointing plastic, CUBIS or Viscount	9900218 or 9900163
Pit, C8, vibrated concrete with unistrut and knockouts, CUBIS	9900123
Pit, C9, vibrated concrete with floor, (for Optic Fibre), CUBIS	9900083
Pit, C9, vibrated concrete without floor, (for Optic Fibre), CUBIS	9900149
Pit, concrete collar suit P6	9900148
Plug, pit lid 50mm wide 30mm deep	9900132
Plug, Pipe EPDM 20 mm nom	7300216
Plug, Pipe EPDM 35 mm nom	7300217
Plug, Pipe EPDM 50 mm nom	7300218
Plug, Pipe EPDM 80 mm nom	7300219
Plug, Conduit PE 100 mm	7300044
Tapered Polyethylene Plug 100 mm	7300044
Reinstatement Kit, Large Plastic Pits CUBIS or Viscount	40009467 or 9900174
Sleeve, PVC Pipe Repair Split 100MMX1M	7300285
Sleeve, PVC Pipe Repair Split 100mmx1m Long	7300285

Screw, sd type 17 ss hex 14-10g x 35mm p100	64202001
Support bar, fibre glass (cut to length, to support openable joint)	9900176
HS5 Stakkabox Fortress Wall Ring section 150mm (bulk order 48 rings shall be used and purchased with HS5 utility Base Mix 40010481)	40010480
HS5 Utility Base Mix (Bulk order for 12 HS5 pit bases)	40010481
HS5 Adjustable Frame Surround kit	40010482
HS5 Stakkabox Fortress Pit Complete Kit (without frame and cover)	40010483
HS5 Adjustable Frame surround Kit bulk supply (12 kits)	40010484
HS6 Stakkabox Fortress Pit complete kit	40009017
HS6/8 Stakkabox Fortress Pit Base Kit	40009018
HS6/8 Stakkabox Fortress Pit Riser Kit 150 mm	40009019
HS6/8 Stakkabox Fortress Adjustability Kit	40009020
HS6/8 Stakkabox Fortress Cable Support Kit	40009021
HS6/8 Stakkabox Fortress Cover Frame	40009022
HS6/8 Stakkabox Fortress Concrete Surround Kit	40009023
HS6/8 Concrete Base Kit	40009024
HS9 STAKKABOX ULTIMA COMPLETE KIT PIT	40011657
HS9 STAKKABOX ULTIMA PIT BASE KIT	40011658
HS9 STAKKABOX ULTIMA 150MM RISER KIT	40011659
HS9 PIT ADJUSTABLE FRAME & SURROUND KIT	40011660
HS9 PIT STAKKABOX CONCRETE SURROUND KIT	40011661
CONCRETE COLLAR COLOUR BLACK STAKKABOX (Box of 6 containers)	40009484
CONCRETE COLLAR COLOUR BROWN STAKKABOX (Box of 6 containers)	40009485
CONCRETE COLLAR COLOUR RED STAKKABOX (Box of 6 containers)	40009486
TAG, ID PVC WHITE 65 X 35MM BOX 100	9700104

Table 3 - Material List.

17.1. Non-Conforming Product

Any staff finding material that is Defective on installation shall follow the DDDR process.

The Defective, Damaged, Returns Resource (DDRR) System ensures all defective Product Sourcing Agreement (PSA) material is reported.

Access and information to the DDDR system is via the Telstra Intranet at the following link;
<https://telstra.unily.com/sites/logistics-services/SitePage/194843/systems-m>

Where access to the Telstra Intranet is not available, defect details should be submitted back to the contract manager to lodge the DDDR on behalf of the contractor.

The DDDR Co-ordinator will contact the DDDR originator regarding remedial action, replacement or repair.

018 Measures

Measures are a summary of the critical points that must be achieved in the installations. The measures for the installation of Pits for new work and existing work are as follows:

18.1. New Work

The new installation of pits shall meet the following criteria:

Measure	Tolerance
All new pits shall be located in the footway as per requirements set out in Section 7.2	Compliant
Cable bearers fitted to P6 pits and larger.	Compliant
Conduit Entry per requirements set out in section 010 Street conduits shall have 450 mm minimum depth of cover and align as closely as possible. Pipe bushes to be fitted to all conduits with the exception of P150 CCU entry conduit.	Compliant
Pit and backfill material level with surrounding area. Pit walls not distorted by backfilling process.	Compliant
Pit cover gasket/s installed under the cover/s (plastic keyhole plugs where directed).	Compliant
Spoil removed.	Compliant
PVC White ID tags shall be fitted to all new or retro fitted pits. Information shall include date, constructor / Company name and Consol or CNI number	Compliant

18.2. Over Existing Plant or Pit Replacement

The installation of pits over existing plant or pit replacements shall meet the following criteria:

Measure	Tolerance
All new pits shall be located in the footway as per requirements set out in Section 7.2	Compliant
Aluminium channel re-located where required	Compliant
Cut or extended pits reinstated as per the relevant Work Instruction or manufacturer's instruction sheet.	Compliant
Existing cables not damaged by the pit installation process.	Compliant
Pipe bushes to be fitted to all conduits with the exception of P150 CCU entry conduit. Conduit entries sealed as required.	Compliant
Pit and backfill material level with surrounding area. Pit walls not distorted by backfilling process.	Compliant
Pit cover gasket/s installed under the cover/s (plastic keyhole plugs where directed).	Compliant
Spoil removed.	Compliant
PVC White ID tags shall be fitted to all new or retro fitted pits. Information shall include date, constructor / Company name and Consol or CNI number	Compliant



019 References

Document number	Title
018621	Pits in Trafficable Areas
010254W01	Pits used in Telstra InfraCo Network
010254W11	Earthing in Telstra InfraCo Pits and Manholes
010254W13	Installation of CUBIS Fortress HS 6-8 Pit
010254W15	Installation of CUBIS Fortress HS 5 Pit
010254W16	Installation of CUBIS Fortress HS 9 Pit

020 Definitions

Term	Definition
ACM	Asbestos Containing Material
C	Concrete Pit
CAN	Customer Access Network
Conduit	Means a tube or Pipe that physically accommodates cables and offers mechanical protection for cabling, allowing them to be drawn in and/or replaced.
HS	High Strength pit
HDPE	High Density Polyethylene
MDPE	Medium Density Polyethylene
LDPE	Low Density Polyethylene
LGA	Local Government Authorities
Manhole	An underground roofed workspace, designed to house cables, joints and other equipment, typically entered through the opening in the roof.
OH&S	Occupational Health & Safety
P	Plastic pit
Pipe	Has the same meaning as Conduit
Pit	Pit is a handhole, designed to house cables, joints and other equipment that is lifted out of the pit to be worked on.
PVC	Polyvinyl Chloride

Rural	Rural locations and locations which may be deemed as rural by virtue of the lack of other development which clearly defines all property boundaries, vehicular and pedestrian carriageways, street lighting, drainage kerb & gutters.
SS	Stainless Steel
SWMS	Safe Work Message Statement

20.1. Attachments

Document number	Title
NIL	

021 Document control sheet

Who to reach out to if you have any queries, questions, changes or concerns.

Name	Contact Details
Telstra InfraCo staff contact:	Asset Management (email: ! Exchanges & Infrastructure)
Contractors contact:	Telstra's Contract Manager

If you have a suggestion for improving this document, please contact the person listed above

022 Record of Issue

Issue number	Issue date	Details on the change
1	08 March, 2004	First issue
2	10 September, 1998	Specification updated & Moved to new template
3	05 October, 1999	Backfill description changed.
4	29 February, 2000	Para. 2.1 - Accessories list changed to read the same as part 1. Dot point 6 & 7 amended.
5	12 December, 2000	Reference to mastic sealant removed from accessories list in Section 2.1. Sect. 4.22 & %3 The use of plastic sheeting and/or pre-mixed concrete. Updated and format changed
6	04 March, 2002	Section 2.1 updated to require the fitting of Pit Cover Gaskets. Section 4.2.2 New Section - Conduit Entry For Precast Concrete (C) Pits. Section 4.3 New Section - Fitting Pit Covers. Section 5.5 New Section Fitting Pit Covers. Section 8 New Section – Measures. Section 9 Reference to Appendix 3 - Part 5 added.

7	10 June, 2003	Section 3.1 Note box – Rock definition & Implementation Approval updated
8	08 March, 2004	New Telstra Document Number Replaces App 3 part 2
9	18 April, 2016	Updated to new template. Added Material list. ACM excess soil management. ACM Duct management Changed from Technical standard to Work Instruction. Include reference to Micronode Work Instruction.
10	17 August, 2017	Document reviewed and updated to new template Inclusion of ; Locating Underground Assets - Fire Ants & Earthing Include ACM Duct Labelling in Pits Remove old Earthing Kits References Add Earthing in References Update Conduit Entry, Position and Installation Defined maximum depth of pit installation before requiring a manhole solution. Back fill material updated Pit Location and position note for rural installation reference
11	02 July, 2018	Defined Reinstatement kit material Updated Hyperlinks Updated Rural pit installations Updated Material No.
12	05 November, 2020	Updated Template Telstra InfraCo Updated Hyperlinks New Section Land access Updated Pit Location & Position Updated Excavation For Pit Installation Updated Ducts Entering Pits Updated Reinstatement Kits Updated Title and Section Pits in Trafficable Areas New Section Tree Roots Affecting Pit Installation New Section Unistrut Rail New section Documentation New section Non-Conforming Product Updated Material No. Updated Defintions Updated Measures Updated document control Sheet

13	04 October, 2021	Removed old J8 and J9 label references from concrete pits and replaced with new label C8 and C9. Updated sections: 7.3 Pits in Rural Areas at Risk of Damage from Grass and Bushfires. 9.2.2 Conduit entry for Precast Concrete (C) Pits. 014 Tree Roots Affecting Pit Installation 016 Documentation 017 Material List 019 Definitions
14	03 November, 2021	Updated sections: 07 Pits 10.1 PVC Ducts 017 Material 18.1 New Work 18.2 Over Existing Plant or Pit Replacement
