

## Introduction

This information relates to the installation of an underground **lead-in** to connect private premises on a typical rural property to the nearest telecommunications network.

Failure to comply with this information may result in a refusal to connect the premises to the network, with the cost of rectifying any sub-standard installation to be met by the customer.

Before commencing work, you should check with a telecommunications network provider regarding supply and ownership details, trenching and installation services, charges and appointments.

There are three components to an underground **lead-in**:

1. **Lead-in pipe** with associated pre-formed bends, to protect the cable and make it easier to replace or add cable:
  - If the lead-in pipe is provided by a building owner/developer it should be a minimum of 20mm in diameter and a designated colour for telecommunications.
2. **Lead-in cable**:
  - A grease filled cable designed for outside use
3. **External Termination Point (ETP)** to house the connection point between the inside and outside cabling.
  - The ETP should be positioned as close as possible to the front of the building.
  - If the ETP is provided by a building owner/developer it should be a minimum of 200mm x 300mm.

Where the lead-in pipe and ETP is supplied by a telecommunications network provider they will determine the appropriate size and colour of the materials.

## Trenching

Trenching can be done by either open trenching or underground mole methods. You can save unnecessary work and cost by following these basic requirements:

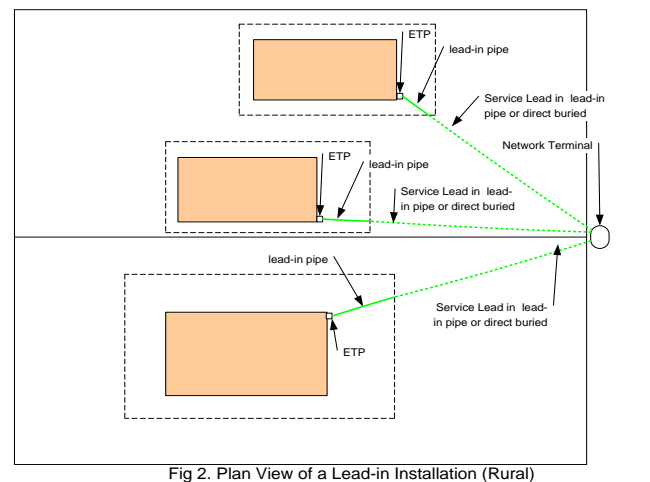
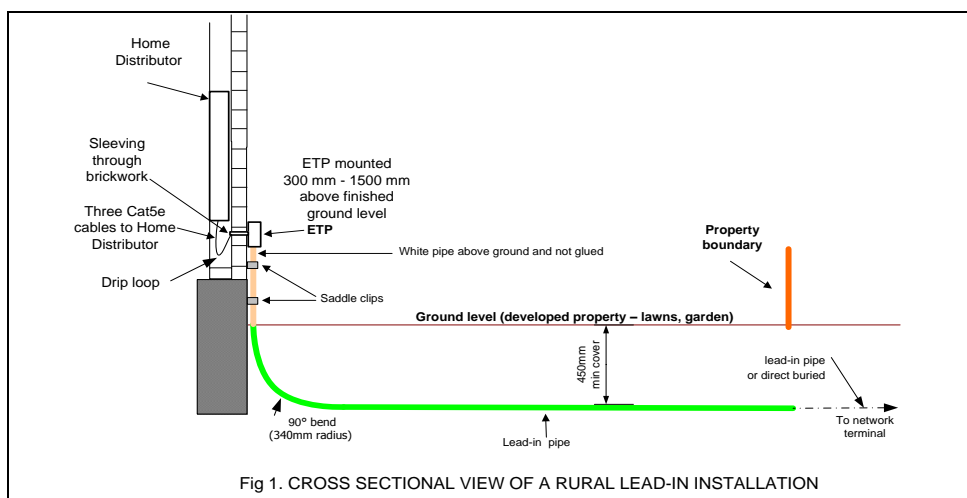
- Obtain local council permission if trenching of public footpaths/roads is required.
- Check the location of existing power/telecommunications and other underground networks before digging (e.g. call 0800 248 344 / 0800 B4UDIG). Special conditions may apply if any network is present.
- Clearly identify the network access point in the street and the ETP location at the property BEFORE selecting the trench route and digging. Contact a network/service provider where there is no terminal or you are unsure.
- The trench should be as straight as practicable avoiding sudden changes in direction or elevation.
- Trench depth should be 450mm below finished ground level. Where the lead-in will be under permanent material (e.g. concrete driveway) the depth can be reduced to 300mm.
- Take extra care when digging within 500mm of a network access point.
- If damage to Chorus/Telecom cables occurs, call 120 immediately.

If you are unsure about trenching requirements contact Chorus on 0800 33 44 04.

## Installation

Important things to remember during installation of the lead-in:

- The lead-in cable must be installed in a lead-in pipe.
- Every residence must have an individual lead-in from the network terminal to the ETP.
- Access to and terminating at a network terminal is the responsibility of the network provider.
- A lead-in cable can share a trench with other services, but requirements for Clearances (see over) must be met.
- Telecommunications cables must leave buildings through their own conduit and this must not be shared with power cables



- Individual lead-in pipes to each living unit. One living unit = flat, house etc.
- Lead-in pipes are to be kept as straight as practicable.
- The ETP is the connection point for internal to external wiring

## Clearances

- Power: See table 1
- Gas pipelines: (Pressures 420 - 2000 Kpa)
  - Crossings: 300mm minimum
  - Parallel: 450mm minimum
- Sewer, Stormwater, Water etc: 150mm minimum

## Mechanical Protection

Mechanical protection is installed to protect the power cable from any future digging activity.

Examples are:

- 50mm thick (or greater) concrete slab.
- 25mm thick (or greater) ground contact treated timber.
- Tough plastic slab of minimum dimensions 10mm thick x 150mm wide x 750mm long
- Mechanical protection installations are detailed in Fig 3.

Power Cable Voltage	Power Cable Type is	With Mechanical Protection Installed	Minimum Separation is
Low voltage - exceeding 50V AC or 120V ripple free DC, but not exceeding 1000V AC or 1500V DC	Neutral screened or armoured	No	150mm crossing 300mm parallel
		Yes	50mm
	Other than neutral Screen or armoured	No	450mm
		Yes	50mm crossing 450mm parallel
High voltage - any voltage exceeding 1000V AC or 1500V DC	Single core or Multi core	No	450mm
		Yes	150mm crossing 450mm parallel (2.4km max parallel length)

Table 1. Clearances between Power Cables and Telecommunication Cables

If unsure about a type of power cable contact your local power company

Contact Phone Number

## Contractors' information

Installing underground telecommunications lead-ins for rural premises

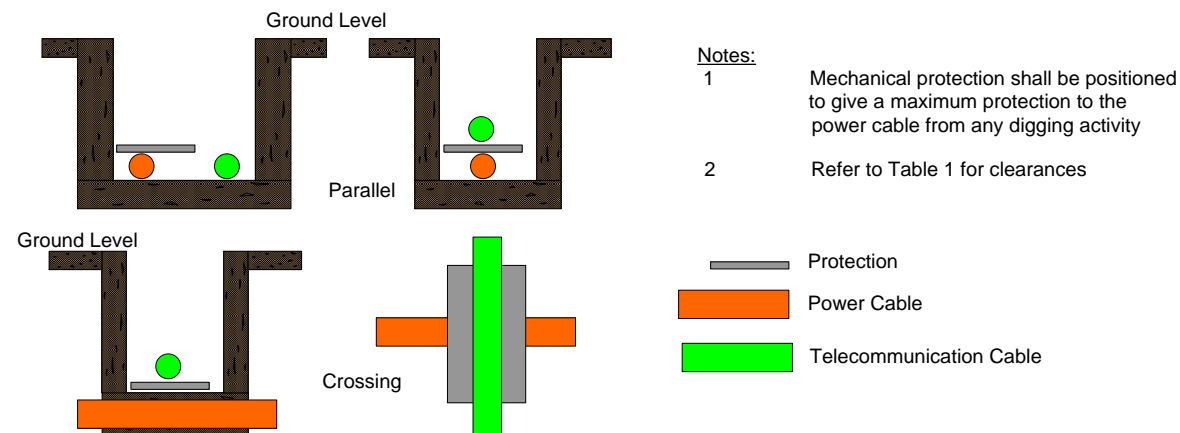


Fig 3. Examples of Installing Mechanical Protection in a Shared Trench