

## Basic requirements for a new home or a home undergoing major renovation:

- **Conduit/pipe from boundary to house**
- **External Termination Point (ETP)**
- **Home distributor or star wiring box**
- **Conduit/pipe (or at least fibre and copper cabling) from ETP to home distributor box**
- **At least four Cat6 cables from the home distributor box to the primary consumption point (typically behind the main TV)**

### Why an ETP?

The ETP allows our technician to connect the home's internal cabling to the external service lead. We will install an ETP when we come to complete the connection but if you want to install one earlier, they can be purchased from an electrical wholesaler.

### Why conduit or pipe inside?

When installing fibre, our technician needs to bring cable from the ETP to the home distributor box. Conduit or pipe provides a pathway for the cable to be fed through. To make this easier, the pipe needs to have swept bends, not elbows or flexi. This cable could be fibre or a combination of fibre and copper called composite cable. You can install this yourself, but it needs to be managed carefully. There needs to be 1.2m slack at each end.

### What's a home distributor box?

It's a networking box that connects the incoming signal from the broadband provider to the rest of the home data network. Typically these have a couple

of power outlets, a data patch panel and maybe an Ethernet switch. This is where our Optical Network Terminal (ONT) will be installed, however the modem or router will likely need to be placed elsewhere for optimal wireless performance.

### Why four or more Cat6 cables to the primary consumption point?

Typically the modem will be installed at this location. A signal is delivered from the ONT to the modem on the first cable. And multiple signals will be delivered from the modem – data, phone and TV – back to the data patch panel in the home distributor box on the other cables.

We recommend a minimum cable specification of Cat6 (UTP) from the home distributor box to each jack point.

### So you want to install your own fibre cable from the ETP to the home distributor box?

Ensure there is a 20mm pipe between the ETP and the home distributor box. If the cable inside gets damaged or is faulty, it needs to be replaced. If you decide to install your own cable within the pipe, make sure you do the following:

- Leave at least 1.2m slack at each end to allow our technician to connect the premises to the telecommunications network
- Use a product recommended by Chorus. Check out [chorus.co.nz/contractors](http://chorus.co.nz/contractors)

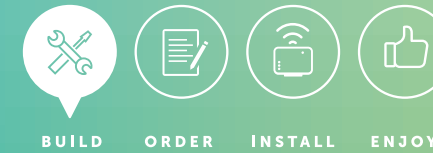
The preferred composite cable used to connect to the Chorus network is the Prysmian Opticat cable. Other suitable products can be found on our website.

C H ● R U S

**When building a new home, or completing a major renovation, home wiring that makes the most of our new fibre network is essential for the best broadband experience. Here's how to make sure your home is 'fibre ready'.**

If you'd like more information, visit [chorus.co.nz/contractors](http://chorus.co.nz/contractors) and [tcf.org.nz](http://tcf.org.nz)

[www.chorus.co.nz](http://www.chorus.co.nz)



BUILD ORDER INSTALL ENJOY

# Wiring homes for fibre

C H ● R U S

# Who does what?

## Developer/homeowner:

- Pipe from ETP to home distributor box
- Home distributor box, preferably with patch panel and patch cables
- Pipe from boundary to ETP position, with a draw tape inside

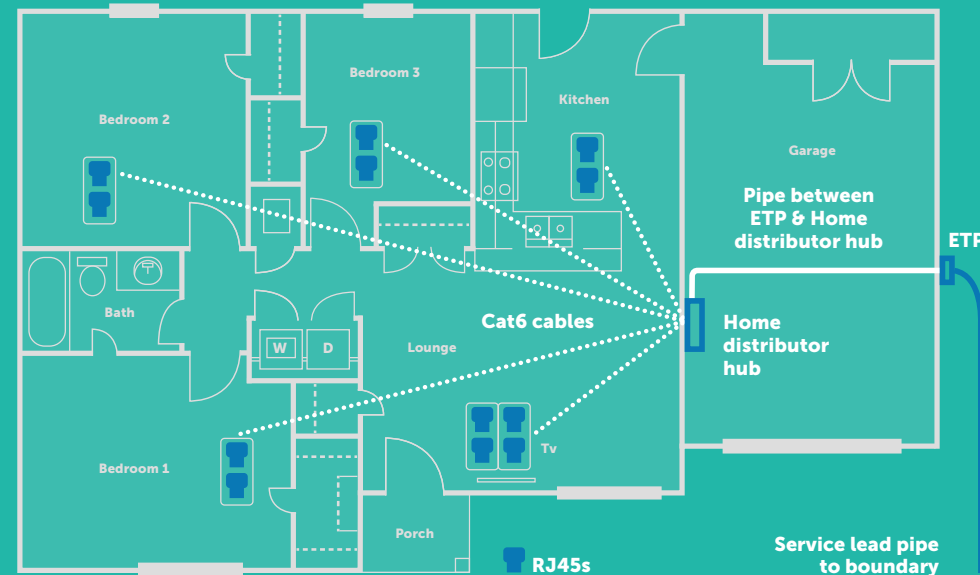
## Broadband provider:

- The home owner's broadband provider will supply the modem

## Chorus:

- We will provide the ONT which we'll typically install in the home distributor box
- We can also provide the new ETP if you have not installed one yourself

## Star wiring distribution looks like this:



This standard has been developed by the industry through the NZ Telecommunications Forum, of which Chorus is a member.

For full details, go to [tcf.org.nz](http://tcf.org.nz). Check out 'Wiring your home' under 'Digital Living'. This site has lots of useful information, including 'Are you wiring for a smart home?' and Wiring Installer Guidelines.

# Handy stuff to know:

## The ETP:

- This is typically positioned on the external wall of the garage or utility room in new homes
- Must be at a height between 300mm and 1500mm above the final ground level
- Install pipe from the ETP position, through the wall and up into the star wiring box, using minimum 20mm diameter pipe and swept bends. Do not use an elbow bend
- Inside the pipe, run either a Cat6 cable or an approved composite or fibre cable from the ETP to the home distributor box, leaving at least 1.2m of slack at each end
- Make sure the ETP is installed away from any gas regulator/cylinder exclusion zone

## The home distributor box:

- A dual power outlet is recommended to power any equipment
- Ideally the home distributor box will be installed in a recess on the inside wall near the ETP position, about eye level is best
- We recommend minimum dimensions of 350mm wide x 700mm high x 80mm deep
- The door on the home distributor box must have louvers or vents so air can circulate to keep the equipment cool
- Testing and verifying the data cabling throughout the house is highly recommended. Performance can be impacted by:
  - too much cable insulation being removed
  - cabling being too close to electrical cabling, causing interference
  - cable bend radius being exceeded
  - wiring being incorrectly terminated
  - copper pairs not kept twisted as close as possible to the point of termination
  - poor quality cables and components being used

## Boundary to ETP:

Our network is typically built up to the boundary of the property. A lead-in pipe is needed to get the network cable from the point on the boundary where our network terminates (the network terminal) to the point on the building where the internal cabling needs to connect to our network (ETP). The lead-in pipe is the property owner's responsibility and can be installed by an electrician or builder.

## Components to an underground lead-in:

- Lead-in pipe with associated pre-formed bends. This protects the cable and makes it easier to replace or add cable. The lead-in pipe should be a minimum of 20mm internal diameter and should be telecommunications green in colour. This can be purchased from electrical wholesalers
- Lead-in cable. We require a draw tape rather than cable installed. There are different cable choices including fibre or composite. We'll use the draw tape to install the correct cable for the property
- ETP to inside the 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 at a minimum height of 300mm above finished ground level (with a maximum height of 1500mm). We'll provide and install the correct ETP, or you can purchase it from an electrical wholesaler

If you don't comply with this information, you run the risk of a refusal to connect your premises to the network and will be required to meet the cost of rectifying any sub-standard installation.

