Cabling the rest of the premises

When cabling:

- Two Cat6 cables should be fed from the home distributor to each outlet position at which communication services are required, including the main TV position.
- Make sure clearances between communication cables and power cables are maintained. See the Premises Wiring Code of Practice for more detail on the 'segregation of services' (cable separation).
- Leave at least 300mm of cable slack at each outlet.

When you are considering where to install outlets or jackpoints, be sure to consider:

- At least two RJ45 type on the same faceplate in each bedroom and normally occupied room.
- Two or more such outlets are recommended in the lounge, rumpus room, and study.
- Avoid wet areas such as bathrooms and laundries.

Quality components, testing and verification

We strongly recommend only installing good quality components such as patch cords and connectors, that have been independently certified - e.g. that are Underwriters Laboratories '(UL)' certified. Low quality components will affect the performance of phone or broadband services.

We also recommend that newly installed cabling be tested and verified (by its installer) as being capable of operating at the speed for which it is rated. Service performance will be affected where:

- Too much cable insulation is removed, or there is excessive untwisting of copper cable pairs, at termination points;
- The wiring is incorrectly terminated;
- The communications cabling is too close to electrical cabling, lighting, or appliances that can cause interference;
- The minimum bend radius is exceeded; and
- Low quality components have been used.

Checklist for wiring a smart home

1. Are you familiar with the cabling requirements necessary for wiring a smart home available at: www.tcf.org.nz > For Consumers > Wiring Your Home?
2. Is the home distributor large enough and easily accessible?
3. Is Cat6 cabling being used?
4. Are there multiple outlets assigned in key living areas?
5. Have you tested and verified the installed cabling?

network tasman fibre

Wiring homes for fibre

Advice for cable installers on the wiring of homes in subdivisions serviced by the thelink™ telecommunications network.

This pamphlet provides an overview of things needed to ensure a home is being properly wired to meet the world of modern telecommunications.

It is based on the following "TCF NZ Telecommunications Forum Inc" approved documentation:

- Advice for homeowners – are you wiring for a smart home?
- Advice for cable installers – are you wiring for a smart home?
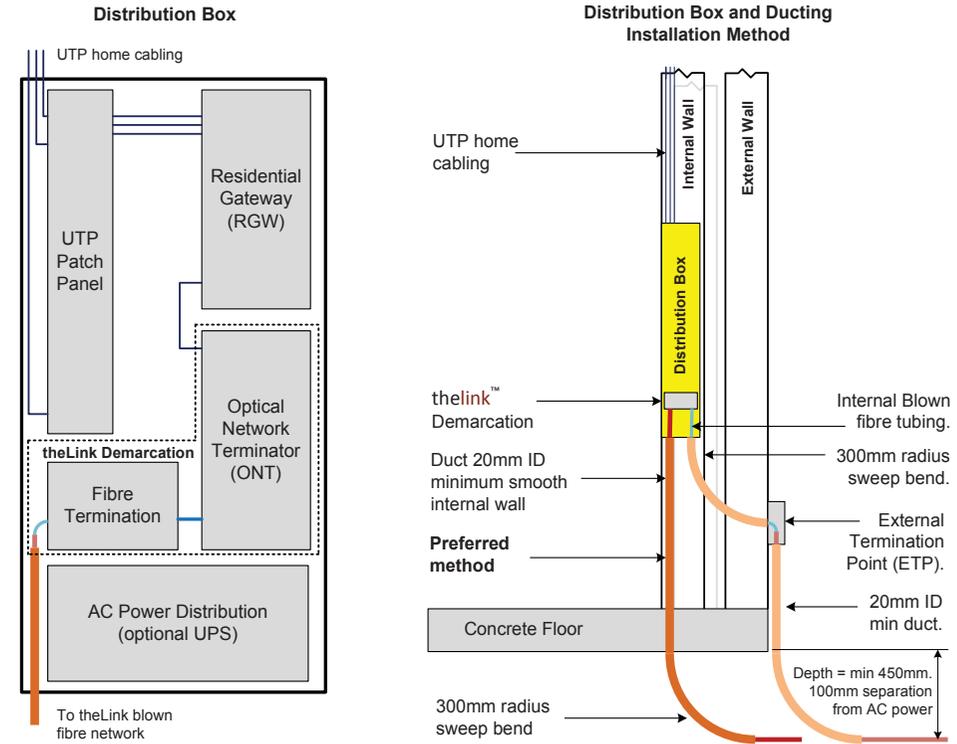- TCF Premise Wiring Code of Practice May 2011

For full details please visit www.tcf.org.nz > For Consumers > Wiring Your Home

Minimum communication cabling requirements

Following are the minimum cable installation requirements recommended for new homes and major renovations for which there is an opportunity to install new wiring. thelink™services do not use the video distribution cabling however now is a good time to have them installed.

1. Cabling must be 'star wired'. Telecommunications cables should be Cat6 (UTP) specification.

2. A home distributor (star wiring box) needs to be located at a 'star point' - to provide for the interconnection and distribution of cabling around the home, as well as for testing capability. It is the homeowner or builder's responsibility to supply the home distributor, a patch panel and patch cords.

3. The home distributor should be easily accessible and above the height of the External Termination Point (ETP) if installed, to minimise the risk of water entering the premises. It is typically located at about eye level on the inside of a home's external wall in a garage or utility room.

4. The home distributor must be large enough - with minimum dimensions of 350mm (W) x 700mm (H) x 80mm (D) - to house devices such as a media converter and router. It must also have integrated power sockets for these devices. Dual or multiple power outlets are recommended, with room for "plug pack" power supplies. Consider installing a UPS to maintain electrical supply to vital devices that are required to keep telecommunications working in times of interrupted AC power supply to the home.

5. The door on the home distributor must be louvered so air can circulate and prevent the equipment from overheating.

6. A conduit with minimum internal diameter of 20mm and a smooth internal wall should be provided from the home distributor box to outside the home either via the foundation or through an external wall to an ETP (External Termination Point). The preferred method of routing the conduit is via the foundation and installed at the same time as the AC power wiring to the home. This will allow thelink™ to install its external blown fibre tubing directly to the distributor box. If an ETP needs to be installed then the blown fibre tube will enter the home and be routed to the distributor box. Consider placement of duct and ETP carefully to ensure it is unobtrusive when the house is finished. Any bends should have a minimum 300mm radius. Do not use an elbow bend. A seal will be installed at the end of the blown fibre tubing in the distribution box to prevent the possibility or water entering the premises.

7. The blown fibre tubing can he laid in the same trench as the electrical supply cable to the home maintaining 100mm separation and a minimum depth of 450mm. thelink™ supplies the blown fibre tubing.

8. At the home distributor, all Cat6 cables should ideally be terminated on keystone RJ45 type modular sockets mounted in a patch panel. This will allow for very simple patching to/from routers and easy replacement if any develop a fault.

Distribution Box

UTP home cabling

UTP Patch Panel

Residential Gateway (RGW)

theLink Demarcation

Fibre Termination

Optical Network Terminator (ONT)

AC Power Distribution (optional UPS)

To theLink blown fibre network

Distribution Box and Ducting Installation Method

Internal Wall

External Wall

Distribution Box

UTP home cabling

thelink™ Demarcation

Duct 20mm ID minimum smooth internal wall

Preferred method

Concrete Floor

300mm radius sweep bend

Internal Blown fibre tubing.

300mm radius sweep bend.

External Termination Point (ETP).

20mm ID min duct.

Depth = min 450mm. 100mm separation from AC power

Wiring for the future

Although Cat5e standard wiring is sufficient for meeting the bandwidth demands of existing telecommunications services, there is negligible cost difference with higher specified Cat6 so it is a good idea to use Cat6 to prepare ahead for future upgrades and services. Installing ducting when building or renovating the home can be a good way of preparing a property for future options such as fibre optic cabling.

thelink™ Fibre Network

Bedroom 1

Bathroom

Garage

Telephone Printer Computer

Modem Office

TV Telephone

Home distributor or Star point

Lounge

Telephone TV

Kitchen

Telephone

Bedroom 2

Telephone Laptop

TV

Bedroom 3

Telephone Laptop

TV

Star Wired Cabling System Components

Telecommunications Outlet (TO) at the main TV position consisting of 2x RJ45 sockets and 2x "F" connector (Coax)

Telecommunications Outlet (TO) consisting of 2x RJ45 sockets and 4x "F" connector (Coax)

Cable Run consisting of 2x Cat5e cables and 2x RG6 Tri-shield Coax cable (4x RG6 to the main TV position)