

Cabling of multi-storey residential buildings

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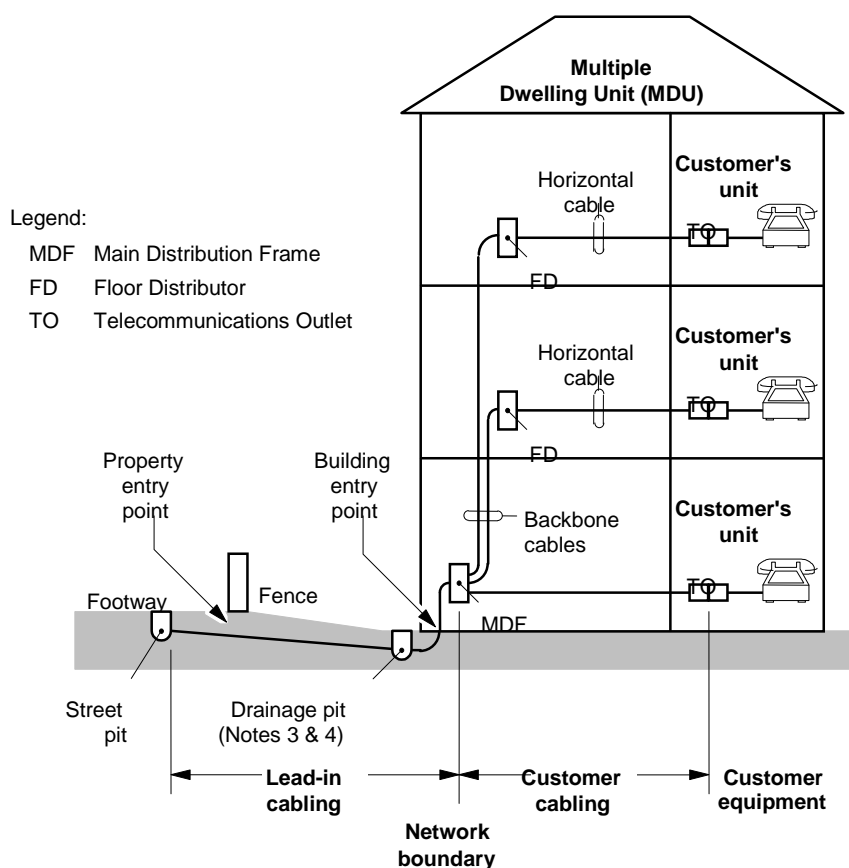
1 INTRODUCTION

This document provides property developers (and also builders and building owners/managers) with an outline of Telstra's requirements for the provision of telecommunications cabling within a multi-storey multiple dwelling unit (MDU) to enable the supply of telecommunications services to the occupants.

This document may be downloaded from the Telstra Smart Community® web site www.telstra.com.au/smartcommunity/ (look under "Builders").

2 RECOMMENDED CABLING METHOD FOR A MULTI-STOREY MDU

A multi-storey MDU should be cabled from a main distribution frame (MDF) located near the point where Telstra's lead-in cabling enters the building. The Telstra lead-in cable terminates on this MDF, and customer cabling emanates from the MDF to the individual units. This arrangement is illustrated in Figure 1.



NOTES:

1. The above diagram shows a cabling architecture that is suitable for cabling of residential apartments and which is based on joint Australian/New Zealand Standard AS/NZS 3080, *Telecommunications installations — Generic cabling for commercial premises*.
2. Guidelines for location of the MDF and applicable ACMA Wiring Rules (AS/CA S009) requirements are provided in Telstra Document No. 017153a08, "Telstra Requirements for Customer MDFs", which may be downloaded from the Telstra Smart Community® web site www.telstra.com.au/smartcommunity/ (look under "Builders"). AS/CA S009 also applies to the cabling between the MDF and the units.
3. A pit will generally be required at the building perimeter for drawing in cables and/or for drainage of water that may flow down the lead-in conduit.
4. In addition to the internal customer cabling, there may be external customer cabling from an MDF to other buildings on the premises. In such cases, separate conduits and pits are required for the lead-in cabling and the external customer cabling.

Figure 1 – Typical cabling of a multi-storey MDU

3 WHAT ARE TELSTRA'S REQUIREMENTS FOR MDUS?

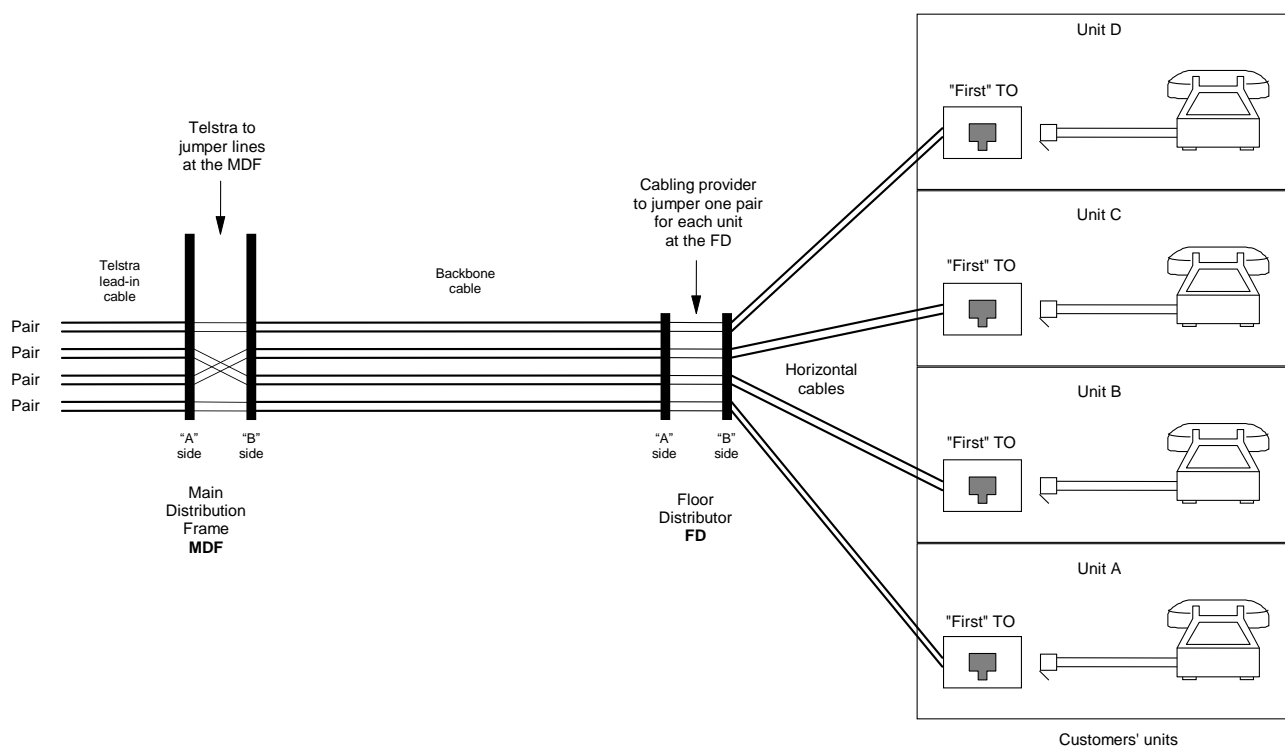
Telstra's aim is to make each residential unit ready for connection of telephone services prior to occupancy to facilitate speedy service connection when the customer moves in. This means that a pair needs to be connected through to a telecommunications outlet (TO) in each living unit prior to occupancy.

To achieve this, Telstra requires the developer's cabling provider to pre-jumper a pair from the "B" side of the MDF, through the floor distributor (FD) and any intermediate distributors to the first pair of the cable running to each unit, which in turn should be connected to a telecommunications outlet (TO) in the unit. This concept is illustrated in Figure 2.

If the unit contains a home networking system, the pair should be jumpered or patched in the home networking box to a suitable TO.

The building cable records should be marked accordingly. Figures 3, 4 and 5 show typical cable records for an MDU cabling system like the one shown in Figure 1.

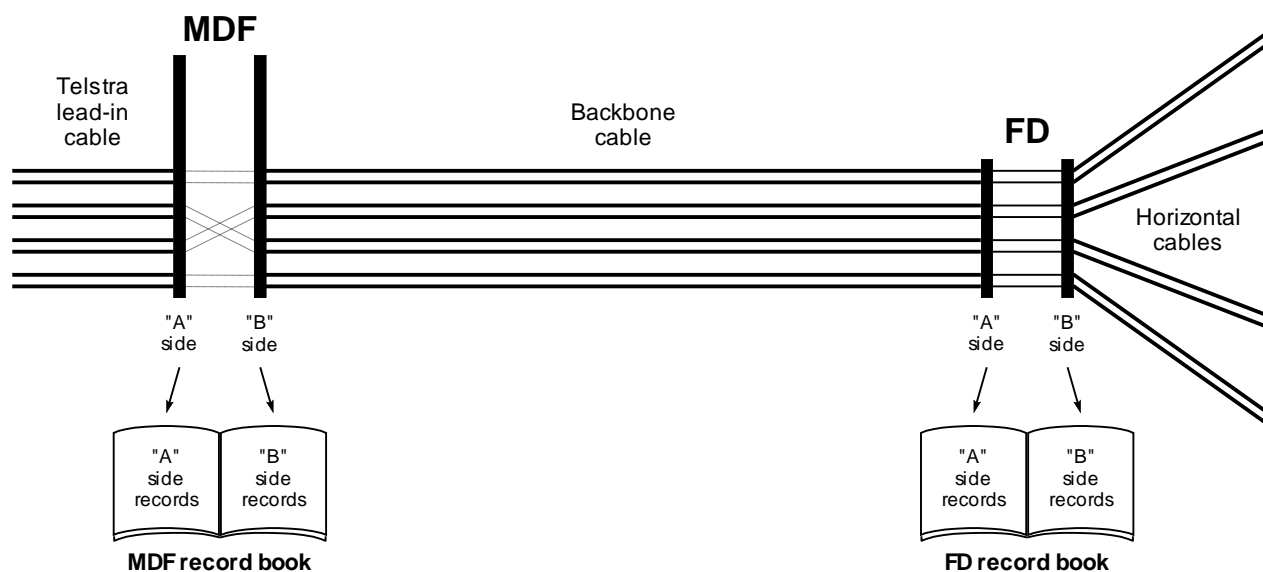
Telstra will jumper the "B" side of the MDF to the assigned service pairs on the "A" side of the MDF.



NOTES:

1. The MDF, backbone cables, FDs, horizontal cables, TOs and associated cable records are provided by the developer. The MDF "A" side modules, MDF jumpers and "A" side cable details are provided by Telstra.
2. Backbone cables and horizontal cables should ideally be Class D (Category 5) or better.
3. Each backbone cable should be sized to provide at least 2 pairs to each unit. At least one 4-pair cable should be provided to each unit from the FD.
4. One pair should be jumpered all the way through from the "B" side of the MDF to a suitable TO in each unit by the developer's cabling provider. Typical cable records for this arrangement are shown in Figures 3, 4 and 5.
5. If a home networking system is installed in the unit, all horizontal cable pairs should be terminated in the home networking box and the first pair of the horizontal cable should be jumpered or patched through to the TO.

Figure 2 - Typical cabling and jumpering arrangements for an MDU



NOTES:

1. The developer's cabling provider supplies the MDF and FD record books.
2. The cabling provider completes the MDF "B" side records and the FD records, including details of backbone cables, horizontal cables and FD jumper details. The cabling provider should enter the living unit details against the corresponding pairs in the MDF "B" side records as well as the "A" side and "B" side FD records (see Figures 4 and 5).
3. Telstra completes the MDF "A" side records, which include lead-in cable details, individual line details and jumper details.
4. Examples of suitable cable records are provided in Figures 4 and 5.

Figure 3 - Typical building cable records

Vertical A

Cable Details	Pair No.	Service Number or Address Number	Name or other Particulars of Service	Jumpered to	
				Vertical	Pair
50 PAIR LEAD-IN CABLE FROM DA15 PAIRS 0151 - 0200	0200	50			
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
	0191	41			
	0190	40			
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
	0181	31			
	0180	30			
	9				
	8				
	7				
	6				
	5				
	4	(FNN)	UNIT 24	B	37
	3	(FNN)	UNIT 23	B	36
	2	(FNN)	UNIT 22	B	35
	0171	21	(FNN)	B	34
	0170	20	(FNN)	B	33
	9	(FNN)	UNIT 19	B	32
	8	(FNN)	UNIT 18	B	31
	7	(FNN)	UNIT 17	B	30
	6	(FNN)	UNIT 16	B	29
	5	(FNN)	UNIT 15	B	28
	4	(FNN)	UNIT 14	B	27
	3	(FNN)	UNIT 13	B	26
	2	(FNN)	UNIT 12	B	12
	0161	11	(FNN)	B	11
	0160	10	(FNN)	B	10
	9	(FNN)	UNIT 9	B	9
	8	(FNN)	UNIT 8	B	8
	7	(FNN)	UNIT 7	B	7
	6	(FNN)	UNIT 6	B	6
	5	(FNN)	UNIT 5	B	5
	4	(FNN)	UNIT 4	B	4
	3	(FNN)	UNIT 3	B	3
	2	(FNN)	UNIT 2	B	2
	0151	1	(FNN)	B	1

"A" side MDF records

Vertical B

Cable Details	Pair No.	Service Number or Address Number	Name or other Particulars of Service	Jumpered to	
				Vertical	Pair
25 PAIR CABLE TO 2ND FLOOR	50				
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
	41				
	40				
	9				
	8				
	7		UNIT 24	A	24
	6		UNIT 23	A	23
	5		UNIT 22	A	22
	4		UNIT 21	A	21
	3		UNIT 20	A	20
	2		UNIT 19	A	19
	31		UNIT 18	A	18
	30		UNIT 17	A	17
	9		UNIT 16	A	16
	8		UNIT 15	A	15
	7		UNIT 14	A	14
	6		UNIT 13	A	13
	5				
	4				
	3				
	2				
	21				
	20				
	9				
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	4				
	3				
	2				
	11		UNIT 12	A	12
	10		UNIT 11	A	11
	9		UNIT 10	A	10
	8		UNIT 9	A	9
	7		UNIT 8	A	8
	6		UNIT 7	A	7
	5		UNIT 6	A	6
	4		UNIT 5	A	5
	3		UNIT 4	A	4
	2		UNIT 3	A	3
	1		UNIT 2	A	2
	1		UNIT 1	A	1

"B" side MDF records

NOTES:

- The installer of the building cabling supplies the MDF record book and marks in the "B" side details, which should include details of the units pre-jumpered at the floor distributors, as shown above (see also Figure 5).
- Telstra marks the "A" side details in the MDF record book, as follows:
 - lead-in cable details including "O" side or main pairs marked against the corresponding MDF vertical pairs;
 - individual service number (FNN) details (there is no need to include this number in the "B" side MDF records); and
 - jumpering details (the "B" side jumpering details shall also be marked in the records, as shown above, so that the jumper can be traced backwards).

Figure 4 - Typical building main distribution frame (MDF) records

Vertical A

Cable Details	Pair No.	Service Number or Address Number	Name or other Particulars of Service	Jumpered to	
				Vertical	Pair
	50				
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
	41				
	40				
	9				
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