

Topic	Sub-Topic	S009	3084	14763.2
PATHWAYS AND SPACES INFRASTRUCTURE - OVERVIEW				
	General overview			7.6.1
	Multi-storey building, single tenant		2.1	
	Multi-storey building, multi-tenant		2.2	B.1
	Single storey large footprint buildings-single tenant		2.3.2	
	Single storey large footprint buildings-multi tenant		2.3.3	
	Campus of single storey buildings		2.3.4	
BUILDING ENTRANCE FACILITIES				
	Entrance pathway approvals and permits		5.4.1	
	Water/vermin/insect/fluid ingress avoidance, sealing	18.1.4.4	5.5, 9.2.2	7.7.1.3, 8.7.2.1
	Termination of incoming outdoor cable	16.1 Note 2		7.7.1.3
	Entrance pathways (including multi-tenant)	18.3.5.4/Table 3	5.6, 9.2.1	B.7.6.2.2
	Support for multiple carriers		5.6 (a)	B.7.6.3.2
	Carrier services entrance pathway diversity		5.6 (b)	C.7.6.2.1.3, E.7.6.2.1.4
	Carrier services entrance pathway capacity		5.3.3, 5.6(a), 9.2.4	C.7.6.2.2.3, E.7.6.2.3.3
	**NB: See also Pathways-Aerial and Pathways-Underground Pit and Pipe for generic requirements also applying to campus backbones			
ENTRANCE ROOMS				
	Scope of stakeholders			B.7.8.1.1
	Main terminal space, access, egress	13.8	5.2, 5.3.7.3, 5.7	B.7.8.1.1, B.7.8.1.2
	Entrance room purpose, location constraints		5.3.1	B.7.8.1.2, B.7.8.2.1
	MDF location, security, clearances, height	13.1-13.7, App.D	5.3.1, 5.3.5	
	Entrance room size, termination wall/floor space		5.3.6	Table B.1
	Antenna entrance room (radio carrier/WAN services)		5.3.4, 5.4.2, 5.8	B.7.8.1.1, B.7.8.2.1
	Carrier/WAN provider equipment space		5.3.2, 5.9	Table B.1, B.7.8.1.2, B.7.8.2.1
	Room construction and finishes		5.3.7.2, 5.3.7.4	
	Lighting levels	13.9	5.3.7.1	
	Electrical power and earthing		5.3.7.5, 5.3.7.6, Appendix A6	
TELECOMMUNICATIONS ROOMS				
	Location		3.1.2	7.7.1.1
	Unrelated services and storage not allowed		3.1.3, 3.4.8.3	7.7.1.4
	Room size (single tenant)		3.2.3, 3.2.4, Appendix A3	7.7.2.3, E.7.7.2.2
	Spacing of rooms		3.2.1	
	Pathways to link TRs/CTRs on the same floor		3.2.2	
	Ceiling height and restrictions		3.2.5, 3.4.3	7.7.2.3
	Room layout		3.2.7	7.7.2.3
	Flood risk avoidance		3.4.10	7.7.1.1
	Security			7.7.1.1
	Door access		3.4.2	7.7.1.4
	Lighting Level		3.4.1	7.7.1.4
	Fire protection		3.4.7	
	Access floor minimum height (if provided)			7.7.1.4, 7.7.2.3
	Environmental control (HVAC)		3.4.8.1	7.7.1.4
	Positive air pressure			7.7.2.1
	Dust sealing and room finish		3.4.4	7.7.2.3
	Vertical and horizontal room penetrations		3.4.6	
	Vibration		3.4.8.2	
	Seismic considerations		3.4.9	
	Structural floor loading			7.7.1.4
	Mains (electrical) power		3.4.5	7.7.2.1
	Equipment mounting provisions		3.2.6	
	Operations and maintenance			13.2.2
	Common TR multi-tenant location		3.5.2	
	Common TR multi-tenant general, layout			B.7.8.1.4
	Common TR multi-tenant size		3.5.4.1	B.7.8.2.3
	Common TR multi-tenant serving area			B.7.8.2.3
	Common TR multi-tenant electrical power		3.5.6	
EQUIPMENT ROOMS				
	Purpose		4.1.2	
	ER for a campus		4.1.3	
	Location		4.2.4, 4.2.7, 4.2.8	
	Door access		4.4.12	7.7.1.4, C.7.7.1.2, E.7.7.1.2
	Clear height			C.7.7.1.2, E.7.7.1.2
	Floor plan size, expansion capability		4.2.1, 4.3	C.7.7.2.1, E.7.7.2.1, E.7.7.2.2
	Layout		4.4.1	
	Suspended ceilings not recommended		4.4.3	
	Lighting (level, control)		4.4.10	7.7.1.4
	Environmental control (HVAC)		4.4.8	7.7.1.4, E.7.3, E.7.7.2.1
	Energy efficiency		Appendix C	
	Positive air pressure, battery ventilation		4.4.8.7	7.7.2.1
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	Seismic considerations (earthquake survival)		4.4.15	
	Fire resistance and protection		4.2.9, 4.4.7, 4.4.14	
	Mains (electrical) power		4.4.11	7.7.2.1
	Equipotential bonding	8.4, 20.17, 20.19	4.4.13	E.7.11
	Room access and security		4.2.2, Appendix A4	B.7.6.2.1
	Water ingress risk treatment		4.2.6, 9.2.2	C.7.7.1.1, E.7.7.1.1
	Power / ICT pathways layout, separation, aisles		4.4.5.2	C.7.9, E.7.6.2.2.5, E.7.9
	Common ER (multi-tenant), general and layout		4.5.1-4.5.4	B.1, B.7.8.1.3
	Common ER (multi-tenant) size			Table B.1, B.7.8.2.2
	Common ER (multi-tenant) electrical power		4.5.6	
	Access floor tile opening below cabinets			C.7.7.1.3, C.7.7.2.2, E.7.7.1.3, E.7.7.2.3
	Pathway coordination with services, cabinets			C.7.6.2.1.1, E.7.6.2.1.1
	Pathway structural coordination			E.7.6.1.2, E.7.6.2.3.1
	Pathway capacity (DC)			E.7.6.2.1.3, E.7.6.2.3.2
	Pathways under access floors			E.7.6.2.3.4
	Overhead pathways			E.7.6.2.3.5
	Optical fibre trunking		4.4.6	
	Backbone pathways linking to other rooms/spaces		4.4.5.1	
	Distributor enclosure (in racks)			C.7.8.1.1
	Cabinets containing active equipment			C.7.8.1.2, C.7.8.2.2, E.7.8.1.1, E.7.8.2.2
	Cabinet placement			C.7.8.2.1, C.7.8.2.2, E.7.8.1.1
	Cabinet vertical cable management			C.7.8.2.1, E.7.8.1.1
	Documentation			E.9.2
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PATHWAYS - GENERAL				7.6.2
	Brownfield asbestos hazard		7.1.6, 8.1, 9.2.5.3	
	Mechanical protection in publicly accessible areas			7.6.3.2.1
	Outdoor-take into account other services			7.6.3.1
	Pathway capacity (maximum fill factor)			C.7.6.2.2.2
	Spare capacity in new installs			7.6.1.3.2
	Space for service loop / slack storage		7.13 (f)	7.6.2.1.1
	Minimum bend radius of installed cables to allow			7.6.2.1.2, 7.6.3.2.4
	Load rating & structural coordination			C.7.6.1.2.1, C.7.6.2.2.1
	Coordination with architects & other services			C.7.6.2.1.1
	Provision to remove cable without damage to others			8.7.1.2
	Avoid catch points, sharp edges, burrs	8.6		8.7.1.1
	Fire resistance of penetrations, firestopping	16.2	8.5.3	8.7.1.1
	Records - Inclusion in administration system			9.2.2.4.1, Table 20
	Labelling and identifiers			9.2.4.2.1
	Building and campus floor plan showing routes			9.2.5.5
	Draw boxes, pits, access holes & access security		7.13	C.7.6.2.1.2, E.7.6.2.1.2
	Access/security in multi-tenant building		7.1.3	B.7.6.2.1, B.7.6.3.3
	Pathways between CERs, CTRs, ERs, TRs		8	B.7.6.2.3, B.7.6.3.3
	Overhead cable management systems (general)			C.7.6.2.2.5
	Trunking and metallic conduits in hazardous areas	7.1.3.4-5, 7.1.3.8	7.5.2.3	
	Earthing of metallic pathways	8.4, 20.17, 20.19	7.1.5, Appendix A6	
	LV/comms shared pathway segregation/barriers	8.5, 16.3.3	6.2.4, 7.1.4	
	LV/comms shared enclosure segregation/barriers	9.1.2		
	HV pathway and enclosure separation from comms	9.1.3		
	Distributor enclosure	12.5		
PATHWAYS POWER/COMMUNICATIONS EMC SEGREGATION				7.9
	Metallic communications cables from EMI sources		6.2.4, 10.2	7.9.1
	LV and solar power cables from metallic comms cables		6.2.4, 7.1.4	7.9.2
	Conditions for zero segregation		6.2.4	7.9.2.2
PATHWAYS - WORK AREA				6
	Planning, brownfield asbestos hazard awareness		6.1	
	Furniture pathways		6.2	7.6.2
	Consolidation point access, administration		6.3	9.2, Tables 17 and 18
	MUTO location and access		6.4	9.2, Tables 17 and 18
PATHWAYS - HORIZONTAL DISTRIBUTION				
	Access floor		7.2, Appendix A2	C.7.6.2.2.4, Table 20
	Cable trays and wireways		7.3	7.6.2.1.3, Table 20
	Ceiling pathway (incl catenary)	19.4	7.4, 7.1.3, 8.3	7.6.2.1.3, Table 20
	Conduit distribution systems		7.5	7.6.2.1.4, 7.6.2.2.3, Table 20
	Under Floor Pathway		7.6	

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	Perimeter pathways (eg skirting trunking)	16.3.3	7.8	
	In-floor trunking and ducting	16.3.3	7.9	
	In-wall cabling	16.3.2	7.10	
	Non continuous support systems (eg "J-hooks")		7.11	7.6.2.1.5, 7.6.2.1.3
	Under Carpet	16.3.4	7.12	
	Provisions for lifts		10.1	
PATHWAYS - BUILDING BACKBONE				
	General and firestopping		8.1	
	Vertical backbone (incl alignment on plan, slot, sleeve)		8.2	
	Cable support and spacing (ties to tray, catenary)		8.3	
	Lift shafts (avoid for backbone)	16.6.1	8.4	
	Design capacity and spare capacity		8.5.1, 8.5.2, 8.5.4, 8.5.5	7.6.1.3.2, C.7.6.2.2.2
	Firestopping	16.2	8.5.3	
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PATHWAYS - AERIAL				
	General	Appendix M	9.3	
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	Poles and support structures general	19.1		
	Pole stress and span, sag			7.6.3.2.3
	Bearer attachment to building or pole	19.4	Appendix A5	8.5.3.2.1
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	Cable and bearer properties	19.3		
	Crossings and pole sharing with power	19.5		
	Separation from other telecommunications cabling	19.6		
	O/H power line approach limit (exclusion zone) safety	19.8		
PATHWAYS - CONDUIT GENERAL				
	Pull point (draw box, pit) spacing	18.3.5.3		7.6.2.1.4, 7.6.2.2.3
	Number of bends	18.3.5.2		7.6.2.1.4
	Conduit bend radius	18.3.5.2		7.6.2.1.4
	Maximum conduit fill		7.5.2.2	7.6.2.1.4, 7.6.3.3.2
	Spare capacity in new installs		7.5.2.2	7.6.1.3.2
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	Hazardous areas restrictions	7.1.3.3		
	Prohibited colours (general)	8.3.1, 8.3.2		
	Sharing conduit with hazardous services (sub-duct)	8.3.3		
	Flame propagation prohibitions	16.5		
PATHWAYS - UNDERGROUND PIT AND PIPE AND CAMPUS BACKBONE				
	Campus (interbuilding) general principles and options		9.1	7.6.3
	Service tunnels		9.1.5	
	Requirement for conduit	18.3.1, 18.3.2		
	Layout design (selection, capacity, bends, co-ord))		9.2.5	
	Existing services location		9.2.5.2	
	Trenchless conduit installation		9.2.6	
	Pit design, selection		9.2.7	
	Access hole design and installation		9.2.8	
	Trenched conduit installation and testing		9.2.9	
	Depth of cover	18.6	9.2.5.7, 9.2.7.3 (f)	
	Conduit standards compliance	18.3.3	9.2.9.2	
	Conduit size (diameter)	18.3.5.1	9.2.5.4 - 9.2.5.6	7.6.3.3.2
	Spare conduits			7.6.3.3.2
	Sub-ducting			7.6.3.3.2
	Marker tape (including if optional)	18.3.1, 18.3.2	9.2.9.3	8.7.3.2
	OHS gas hazards in access holes			8.2.6
	Access holes and pit covers (incl replace after install)			7.7.1.2, 8.2.7
	Joint sealing	18.3.5.4	9.2.9.6	8.5.3.1.2, 8.7.1.1
	EPR zone avoid, pits/access holes for metallic cable	6.1.1-6.1.3, 18.1.6	10.3	
	HV & LV cables traversing same pit as comms	18.1.5		
	Pit and access hole identification and marking	18.1.1		
	Pit and access hole strength/lids in driveways	18.1.2	9.2.2	
	Pit & access holes in locations subject to heavy loads	18.1.3	9.2.2	
	Pit install, conduit entry & termination into pits	18.1.4.1-18.1.4.2	9.2.10, Appendix B	
	Drainage of conduits, pits and access holes	18.1.4.5	9.2.5.8, 9.2.10.1	
	Crossing other services	18.7	9.2.5.10, 9.2.7.4	
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