

SECTION 27 05 28 PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide pathways and cable support systems for communications cabling as required to complete the Work.
- B. Conduit and raceway material requirements are specified under Division 26 and the Contract Documents. Provide communications pathways using Division 26 conduit/raceway systems where required and coordinate locations, sizes, and quantities with the Electrical Contractor and General Contractor.

PART 2 – PRODUCTS

2.1 CABLE SUPPORTS (CORRIDORS / GENERAL PATHWAYS)

- A. J-hooks / cable supports: Provide listed/recognized communications cable supports (J-hooks) with a smooth bearing surface, sized so the installed cable bundle does not exceed the support's rated capacity and provides a minimum of 25% spare capacity for future cabling, and suitable for the installation environment (including plenum spaces where applicable). Do not use supports with sharp edges that may damage cable jackets.
- B. Bridle rings: Provide listed/recognized bridle rings with a smooth bearing surface and appropriate fasteners/attachments to building structure.
- C. Cable tray (where used): Provide cable tray systems (ladder tray and/or wire basket tray) with fittings, supports, and accessories suitable for communications cabling support. Metallic tray systems shall be bonded/grounded in accordance with ANSI/TIA-607 and applicable codes.
- D. Fasteners/attachments: Provide hardware and anchors suitable for the building substrate (concrete, steel, wood, or structural members). Attachment to suspended ceiling grid is not permitted. Coordinate attachment methods with the General Contractor.

2.2 CONDUIT SLEEVES

- A. Provide minimum 2-inch conduit sleeves for pathway crossings through rated corridor partitions and other rated assemblies, and provide a larger sleeve size where required so the installed cabling does not exceed ANSI/TIA-569 fill limits and provides a minimum of 25% spare capacity. Sleeve material, fire rating, and raceway requirements shall comply with Division 26, the Contract Documents, and the listed firestopping system used for the penetration.

2.3 FIRE-RATED PATHWAY DEVICES (RE-ENTERABLE)

A. At designated main pathway crossings and riser penetrations (see Part 3), provide re-enterable, engineered fire-rated pathway devices in place of conduit sleeves sealed with field-applied putty or wrap. A fire-rated pathway device is a listed assembly that incorporates its own intumescent sealing and maintains the fire rating of the penetrated assembly across its full listed range of cable fill — so that cables may be added, removed, or changed within the device's listed capacity without re-applying firestop material or invalidating the listed system.

B. KU campus standard: Specified Technologies Inc. (STI) EZ-Path fire-rated pathway, or Legrand/Wiremold fire-rated pathway, project-specific deviation meeting the requirements of this Paragraph. Devices shall be UL-classified to UL 1479 / ASTM E814 (and, for smoke, UL 1784) for the assemblies and ratings in which they are installed, and shall be listed for the direction(s) of penetration used (wall and/or floor).

C. Provide devices sized so that installed cabling does not exceed the device's listed visual fill limit and retains not less than 25 percent spare capacity for future cabling. Gang or group devices where the Drawings or field conditions require additional capacity, in accordance with the listing.

D. This Paragraph specifies the pathway device as a product; the listed firestop installation, inspection, and any Division 07 penetration-firestopping requirements are coordinated under §3.3 and remain as assigned by the Contract Documents.

PART 3 – EXECUTION

3.1 GENERAL PATHWAY AND SUPPORT REQUIREMENTS

A. Provide continuous, accessible pathways and cable support systems sized for the installed cabling plus a minimum of 25% spare capacity for future cabling of the same type. In no case shall installed cabling exceed the maximum fill permitted by ANSI/TIA-569 and applicable codes. Required spare capacity shall be calculated within the applicable ANSI/TIA-569, NEC, manufacturer, and code fill limits; spare capacity shall not be interpreted as permission to exceed the applicable maximum fill. Coordinate pathway routing with other trades to avoid congestion.

B. Support communications cabling using J-hooks, bridle rings, and cable tray systems in corridors and general building pathways unless a telco-style runway system (see Section 27 11 23) is specifically indicated on the Drawings.

C. Maintain required clearances from sources of electrical interference and do not route communications cabling parallel to power feeders in close proximity without separation. Cross power at 90 degrees where practicable.

3.2 SLEEVES / PATHWAYS (RATED CORRIDOR PARTITIONS AND OTHER RATED ASSEMBLIES)

Note: Coordinate pathway submittals and penetration/firestopping submittals with Division 01 procedures and Division 07 requirements.

A. Where cable tray or conduit systems are not installed, provide above-ceiling conduit sleeves as required to route communications cabling across rated corridor partitions (fire/smoke barriers) and other rated assemblies, and elsewhere as required to complete cabling routes.

B. Install conduit sleeves sized in accordance with Part 2 of this Section for the pathway crossing and installed cabling. Provide pull strings in all sleeves.

C. Coordinate sleeve locations and quantities with the Electrical Contractor and General Contractor. Maintain pathway access for future cabling where practical. Within telecommunications rooms, riser sleeve and pathway locations shall be coordinated with the rack/cabinet layout and runway routing (Sections 27 11 00 and 27 11 23) and shown together on the Drawings before bid, so that riser pathways land where cable can be routed to the racks without violating bend radius, blocking access, or crossing the room; a sleeve cast or cored in a floor or wall cannot be relocated to suit a rack layout developed later at submittal. D. Use of communications sleeves and pathways: Sleeves and pathways provided under this Section are for the permanent communications cabling of the Work. For purposes of this Division, permanent communications cabling of the Work means all cabling installed under Division 27, regardless of which system it ultimately serves, together with any other cabling the Drawings show in these pathways. Cabling installed under Division 27 that serves a system specified in another Division is Division 27 cabling for purposes of this Paragraph and belongs in these pathways; examples appear elsewhere in this Division and are illustrative, not a limitation on the systems Division 27 may serve. The governing test is whether the cabling is installed under Division 27 or shown on the Drawings in these pathways — not which system it serves. Where the Contract Documents require cabling of another system to share these pathways, it shall be shown on the Drawings and included in the fill and spare-capacity calculations of §3.1.A and §3.2.B. Temporary construction cabling shall not be installed in Division 27 sleeves, pathways, or telecommunications rooms except as coordinated in advance under Division 01 and with KU IT; where so coordinated, it shall be labeled with the responsible party and the words TEMPORARY — REMOVE BEFORE COMPLETION, shall be installed and firestopped so the listed system of §3.3 is maintained, and shall be removed and the penetration restored to its listed condition before Stage 1 acceptance under Section 27 08 00 §1.1.E. Any penetration of a sleeve or its firestop system, by any party and whether or not the cabling is described as temporary, requires restoration of the listed firestop system per §3.3; a rated assembly does not recognize a temporary penetration.

E. Fire-rated pathway devices at main crossings (re-enterable): At the main communications pathway crossings of rated assemblies — the building rated-corridor and fire/smoke-barrier crossings carrying the communications pathway backbone, and the telecommunications-room floor and wall riser penetrations — provide the engineered, re-enterable fire-rated pathway

device of §2.3 in place of a conduit sleeve sealed with field-applied putty or wrap, unless the Drawings direct otherwise. These are the penetrations that are re-entered for moves, adds, and changes over the life of the building, where a field-applied firestop must be restored on each entry and is frequently left unrestored; the fire-rated pathway device maintains the listed condition of the assembly as cabling is added or removed within its listed capacity, so no re-application of firestop material is required for subsequent cabling changes within that capacity. Firestopping of these penetrations remains coordinated with Division 07 under §3.3. Elsewhere, conduit sleeves under §2.2 with a listed firestop system remain acceptable. Identify the pathway type (engineered device or sleeve) at each rated crossing on the Drawings.

3.3 FIRESTOPPING

- A. All penetrations through fire-rated or smoke-rated walls, floors, and ceilings (including sleeves) shall be firestopped and sealed using a listed and labeled firestopping system.
- B. Firestopping shall be installed in accordance with the tested system design for the specific assembly rating, penetrant type, and annular space. Seal all floor, ceiling, and wall penetrations in fire or smoke barriers and in telecommunications rooms/closets.