

**SECTION 27 60 00
OPEN WIRING**

PART 1 GENERAL

1.1 CONDITIONS

- A. Open wiring or wiring installed without the use of raceways is permitted in existing buildings only when specifically approved by Palm Beach School District Building Department and shown on the approved drawings.
- B. Installation of open wiring shall meet the following requirements and restrictions of this section.

1.2 REFERENCES

- A. ANSI/EIA/TIA 569
- B. NFPA 70 – National Electric Code

PART 2 PRODUCTS

2.1 Not Used

PART 3 EXECUTION

3.1 INSTALLATION

- A. Open wiring may be installed only for the following systems: data, telephone, ITV, security, video, card access, weather bug, and other non-life safety control voltage wiring as approved by Building Department.
- B. Open wiring not allowed for life safety systems such as fire alarm and voice alarm systems.
- C. Open wiring not allowed for power and light systems.
- D. Open wiring not allowed where in violation of applicable NFPA codes and standards.
- E. Open wiring allowed only above accessible ceiling spaces.
- F. Conductors installed within walls, on walls exposed to view, and on the exterior surfaces shall be in approved raceways:
 - 1. Conductors shall be within walls in raceways.
 - a. Raceways shall be supported on top to an approved junction box located above ceiling and on the bottom to a 2/1/2" deep outlet box flush mounted into the wall at required height.
 - 2. Conductors may be installed on walls exposed to view in surface raceways (wiremold) upon obtaining approval from School District Project Manager.
- G. All cables installed shall be parallel or at right angles to the building walls or other construction lines in a neat and orderly manner.
- H. Suspend J-hooks and bridal rings cabling supports from or attached to the structural ceiling or walls with hardware specifically designed to support their weight.
 - 1. Supports shall be structurally independent of the suspended ceiling.
 - 2. Maintain a minimum 12" separation between cables supports and suspended ceiling.
 - 3. Horizontal cables shall not rest directly on ceiling panels of the suspended ceiling or any equipment.
 - 4. Separate systems using same J-hooks shall be grouped by tie wire or different color conductors
- I. Install J-hook or bridal ring hanging supports located within 5 feet centers maximum.
 - 1. Provide supports as required to adequately support and distribute the weight of the cable.
 - 2. Utilize supports specifically designed to support the required cable weight and volume.
 - 3. Provide a minimum of two hangers or bridal rings at all 90" bends.

4. Provide a hanger to support the extra cable loop at the outlet location.
5. Submit the installation details for review and approval to the building department.
- J. Do not install or use trapeze hangers as cable supports.
 1. Tie wraps shall not be used as cable supports
- K. Utilize flex tray or cable tray where the cable quantity exceeds the design amount for a J-hook.
 1. Any area with 40 or more cables shall utilize a cable tray.
 2. The school district project manager shall approve the use of multiple J-hooks.
 3. Do not exceed the cable installation area of the J-hook or bridal ring.
 4. Support the cable where it comes off the cable tray.
 5. Use of ceiling tiles and ceiling grid hanger wires for support of cables is prohibited.
- L. Route station cables and tie cables installed within ceiling spaces through these spaces at right angles to electrical power circuits and supported only from the structure.
- M. The contractor shall adhere to the manufacturer requirements for bending radius and pulling tension of all systems cables.
 1. Minimize cable tensions in suspended cable runs by using suitable equipment and practices.
 2. Comply with the ANSI/TIA/EIA cable tension requirements
- N. Ensure to maintain the proper firestopping at all fire rated walls, floors, and ceilings.
 1. All conduit sleeves and penetrations shall be firestopped using an approved system
- O. Cables installed above ceiling spaces that are being used for air plenum shall be UL listed and labeled as plenum rated cables.
 1. Contractor shall verify existing ceiling spaces before ordering cables.
- P. Flexible metal conduits may be used within existing interior walls to extend cables from above ceilings down to outlets on the walls.
 1. Terminate flexible conduits above ceilings in approved junction.
- Q. Provide conduits from terminal cabinets in the systems and electrical rooms to within corridors.
 1. Locate conductors above corridors ceilings for extended runs.
 2. Only conductors that terminate in classroom or other instructional space or office may be installed above same room ceiling
- R. Installers must consider electromagnetic interference (EMI) as outlined in Section 10.4 of ANSI/EIA/TIA 569. Pathways shall avoid sources of EMI
 1. Separate open wiring on pathways by at least 12" from fluorescent light fixtures.
 2. Separate open wiring pathways by at least 12" from electrical power and lighting conduits.
 3. Pathways shall cross perpendicular to fluorescent lighting and electrical power conduits.
 4. Open wiring pathways shall be separated at least 4' from HVAC equipment motors and electrical transformers.
 5. Open wiring shall be separated and routed away from any cable that passes through or is adjacent to the outside of the building or subject to lightning strikes or power surges.
- S. The penetration of partitions and/or horizontal assemblies with open wiring must confirm with the appropriate following conditions:
 1. Through penetrations of walls/partitions and horizontal fire assemblies whether fire-resistant rated or non-fire resistant rated (including smoke partitions) shall be sleeved with electrical metallic tubing (EMT) sleeves.
 2. Membrane penetrations or through penetrations of fire resistant rated partitions or horizontal assemblies shall be protected by an approved through penetration fire stop system.
 3. Regarding the penetration or smoke partitions, fill the space around penetrations with an approved material to limit the free passage of smoke.

The School District of Palm Beach County

Project Name:

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4. Regarding the penetration of non-fire resistant rated horizontal assemblies: penetrations that connect not more than 2-stories are permitted provided the annular space is filled with an approved material to resist free passage of flame and products of combustion.

3.2 INTERFACE WITH OTHER PRODUCTS

- A. Identify other systems and equipment above ceiling before installing new wires.

END OF SECTION