When to Use Plenum

In building construction **Plenum** is a separate space provided for air circulation for heating, ventilation, and air-conditioning. It is commonly found in the space between the structural ceiling and a drop-down ceiling or under a raised floor. In commercial settings such as schools or office buildings, the plenum space is often used to house connecting communication cables. Because ordinary cabling introduces a toxic hazard in the event of fire, special plenum cabling is required in plenum areas. Plenum rated cable has a special insulation that has low smoke and low flame characteristics.

Temperature-tolerant products, like plenum-rated cable, reduce the need for costly metallic conduit. The ability to utilize air-handling spaces for cable and equipment installation without conduit lowers cost. Yet, products installed in those air-handling spaces must conform to a higher safety standard. Experience gained from the grim aftermath of building fires lead to standards directing the minimum quality and type of products that may reside within air-handling spaces. Only products specifically tested for compliance with NFPA 262 (formerly UL 910) and UL 2043 are legal for installation within air-handling spaces while requiring little or no additional fire barrier, such as conduit or other baffles.

Local building codes govern the type, approval, and placement of cables and devices mounted within environmental air handling spaces of building structures. The local code authority, which is typically the city where construction occurs, adopts various fire safety codes generated by the National Fire Protection Association, or NFPA. The most well known code is NFPA 70, the National Electrical Code (NEC).