



Edge Colocation Cage Construction Standard

Frontier Communications

Effective Date: 8/1/2021



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Purpose

Frontier offers a caged solution option for increased equipment security as part of the Edge Colocation product. Each Customer requesting a caged solution is required to adhere to the design and construction standards and requirements set forth by Frontier in this document with respect to these cages.

Based on the contractual agreement, it may be the responsibility of the Customer to install this caged structure. This publication provides the building construction standards and requirements for installation of wire-mesh partition cages and the associated electrical components within Frontier facilities. These standards and requirements specify the process, roles, and responsibilities of Frontier and the Customer with respect to the design and construction of these cages.

It is the intent of this document to define the process, facilitate communication, and dictate proper design and construction. These standards are based on other Frontier documents and governance publications such as the Frontier Collocation Service Guide, Building Officials & Code Administrators (BOCA) National Building Code, National Electric Code (NEC) and local building codes. As applicable, these publications are to be used in conjunction with these standards.

Process

The Frontier Edge Colocation Program Management Team shall provide the central control for the information flow between Frontier and the Customer. The Frontier Engineering Team shall determine the placement of the cage, assign the space, and communicate this information to the Frontier Edge Colocation Program Management Team for provision to the Customer in accordance with the contractual agreement.

The Customer may hire any Frontier approved contractor to conduct cage construction within the Frontier Central Offices. It is the Customer's Responsibility to verify with Frontier prior to construction that their cage will comply with established criteria.

The Customer must contact Frontier at the conclusion of the cage construction for a closeout inspection at which time Frontier will confirm site compliance. Occupancy may not be obtained prior to completion of the closeout inspection.

Roles and Responsibilities

| Role | Responsibilities |
|---|--|
| Customer Project Manager/Contractor | <ul style="list-style-type: none"> ▪ Procure Contractor ▪ Secure required permits ▪ Verify cage complies with Frontier standards prior to build ▪ Adhere to established Frontier standards while onsite ▪ Submit for closeout inspection with Frontier ▪ Provide two (2) copies of the cage door key to Frontier |
| Frontier Edge Colocation Program Management | <ul style="list-style-type: none"> ▪ Single point of contact between Frontier and the Customer for site specific issues ▪ Forward all appropriate documents to the required entities ▪ Coordinate all required activities between the Customer and Frontier ▪ Coordinate Customer access to the building |
| Frontier Engineering | <ul style="list-style-type: none"> ▪ Assign and mark space for cage placement ▪ Confirm Frontier obligations for room construction are met ▪ Conduct final closeout inspection of the Customer cage ▪ Notify Edge Colocation Program Management upon satisfactory cage installation ▪ Distribute the Customer cage keys as required |



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General Construction

Cage Design

Frontier's preference for cage construction is use of woven wire mesh or galvanized welded wire partitions. These partitions should be constructed of bolted wire-mesh panels composed of 10-gauge steel with 1-1/2" X 1-1/2" pattern or equivalent with factory applied finish and must be designated for the earthquake zone where the requested central office resides. Alternative cage materials must be reviewed and approved by Frontier Engineering prior to build.

The cage should be constructed with a 3'-0" sliding gate. Hinged doors may be allowed if space restrictions exist or cage dimensions are less than 100 SQFT. The Customer may elect to install a cage ceiling composed of wire-mesh panels for added security.

All equipment in the Customers common area, within the cage, and the cage itself, shall be grounded as a part of the integrated (building's) ground plane. All grounding must meet the requirements of the latest version of the National Electric Code (NEC). The dimensions and installation of the Customer cage ground bar will be in accordance with the NEC. The bus bar should be labeled "Edge Colocation Cage Ground Bar". The ironwork of the Customer cage and applicable grounding wire must be bonded to the Customer cage ground bar.

Electrical Requirements

The Customer has the option of having a Frontier approved electrical contractor perform all electrical installation activities within the designated cage space based on the contractual agreement. All other electrical requirements outside of the designated cage area are considered room construction and will be provided by Frontier. This includes all required life safety devices such as emergency egress lighting and fire detection equipment.

Lighting

The lighting should be two lamp fluorescent fixtures equipped with approved electronic ballast, lamps and guard/lens. Frontier will provide a junction box with the lighting circuit. The Customer's contractor is to run required conductors in EMT conduit with steel fittings from the junction box to the light fixtures. It is permissible to use flexible conduit for vertical run with final connection to the fixtures. The flexible conduit is to be properly secured to the rod fixture.

The placement of the fixtures shall not interfere with existing or future placement of cable racking, HVAC ductwork, fire detection equipment, or other auxiliary equipment or structure designated by Frontier prior to construction. The control for the fixtures will typically be via motion sensors installed by Frontier. Frontier may provide permission for individual switched control for locations currently not deploying motion sensors. The maximum number of fixtures should be two (2) per 100 square feet of assigned space. The Customer may install additional fixtures only with approval from Frontier.

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