CORNING

Façade FlexNAP™ Cable Assembly Installation Instructions

p/n 005-117, Issue 1

1. General

1.1 This document describes the procedure for handling Corning's Façade FlexNAP Cable Assembly. Specifically the document addresses placement and testing.

1.2 These instructions are intended as guidelines only, as each installation will be influenced by local conditions and customer requirements. The reader should be experienced with the basics of fiber optics.
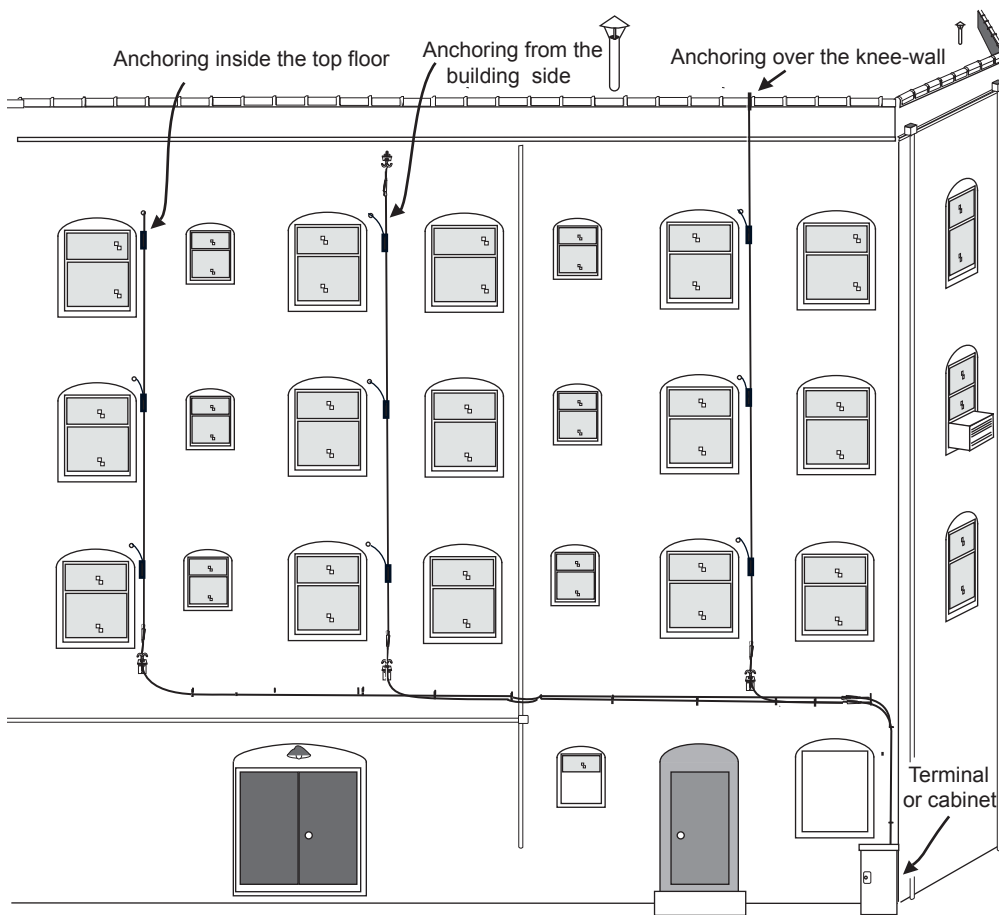
Anchoring inside the top floor   Anchoring from the building side   Anchoring over the knee-wall

Terminal or cabinet

Figure 1

1.3 Corning's Façade FlexNAP Cable Assembly is designed to feed fiber vertically in a 1-12 floor MDU building, where indoor risers aren't available for use or aren't preferred. The cable hangs on the outside of the building and fibers are fed into the hallways through a hole drilled through the building wall, typically near a hallway window (Figure 1).

1.4 As with any fiber optic cable installation, proper planning is critical. Fiber optic cable installers must always follow the following basic cable placement considerations which include: ensuring sufficient slack, monitoring tension, maintaining bend radius, and protecting the cable.

1.5 If this procedure is reissued, a summary of the changes will appear in this paragraph

2. Precautions

2.1 General Safety Precautions

⚠	**CAUTION:** Before starting any Façade FlexNAP cable assembly installation, all personnel must be thoroughly familiar with all applicable Occupational Safety and Health Act (OSHA) regulations, the National Electrical Safety Code (NESC), state and local regulations, and company safety practices and policies. Failure to do so can result in life-threatening injury to employees or the general public.

2.2 Personal Protective Equipment

⚠	**CAUTION:** To minimize the chance of accidental injury, use safety glasses (spectacles) conforming to ANSI Z87 for eye protection, safety gloves, protective head gear, and all other personal protective equipment required by your company and applicable federal and state OSHA regulations.

2.2 Cable Handling Precautions

NOTE: *Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend the cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable; the cable may have to be replaced.*

2.3 Laser Handling Precautions

☀	**WARNING: Never look directly into the end of a fiber that may be carrying laser light.** Laser light can be invisible and can damage your eyes. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

3. Tools and Materials

3.1 The following tools and materials are required for this procedure:

- Scissors
- Electrical tape
- Façade RPX Dead-end clamps (Two (2) are provided with each Façade FlexNAP Cable Assembly)
- Two (2)- 5/16 x 3-inch tensioning bolts and fasteners
- Two (2) - Ram's horn/eye bolts
- Two (2) - Wall mount brackets
- Drill
- 3/4-inch masonry drill bit

Tools and Materials - continued

- D-rings or cable support hardware approved by your company
- Bend radius limiters (Two (2) are provided with each Façade FlexNAP Cable Assembly)
- 100 lbf pull string/hand-line
- Cable ties suitable for FlexNAP cable

4. Planning and Preparation

4.1 Prior to placing the Façade FlexNAP Cable Assembly outside the building

a) Verify the type of installation to be used:

- Anchoring over the knee-wall,
- Anchoring from building side
- Anchoring inside the top floor
- Using the PLP hoist system and anchor.

b) Conduct a survey of the cable route.

c) Inspect the knee walls (parapets) of each building (if present) to make sure they are tall enough for use without a harness, otherwise arrange for a harness to be used. Also check to see if your company has any safety guidelines for working over a knee wall.

d) Verify that the appropriate number of D-rings or other support hardware are installed to horizontally support the cable assembly.

5. Cable Assembly Installation

NOTE: If you are using the PLP® Hoist System for installation and anchoring, refer to the PLP installation document for Steps 1-7.

Pull-line

5.1 Lower the pull-line from the roof to street level (Figure 2).
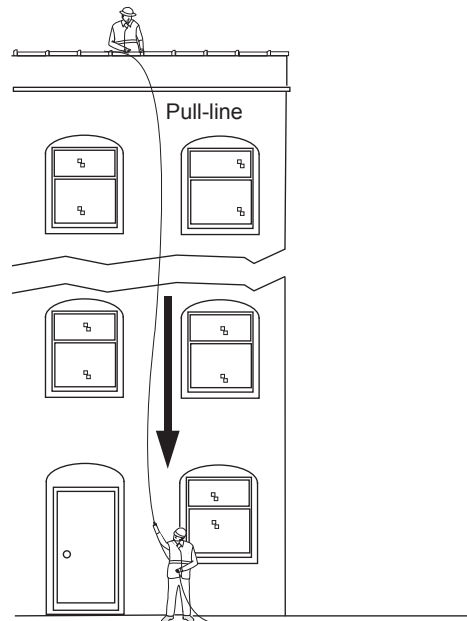
Figure 2

5.2   Secure the pull-line to the lead-in portion of the cable. This can be done using standard cable pulling grips of the appropriate size.

5.3   Pull the cable assembly until the leader reaches the top of the building.

5.4   With guidance from the ground-level technician, align the markers 5 feet above the hole drilled for the tether or the top of the hallway window, at the corresponding floors (Figure 3).
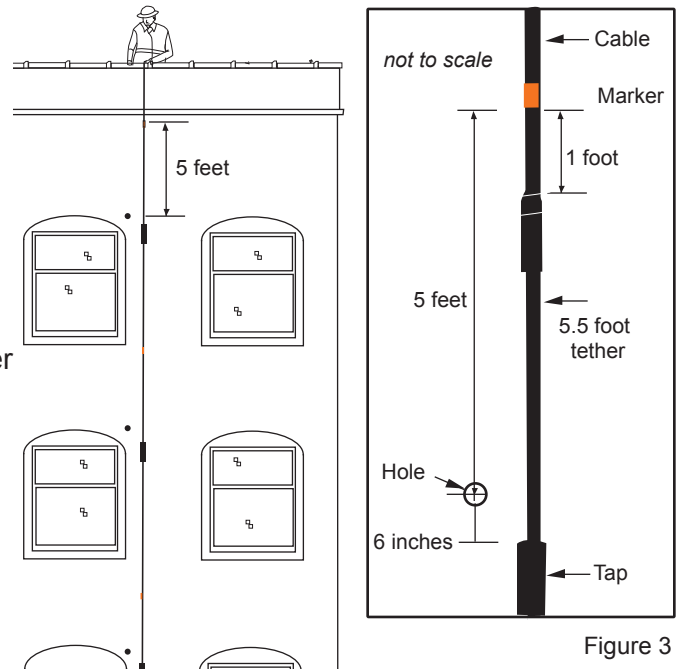

Figure 3

5.5   Once the TAPs are aligned, mark the location on the lead-in portion of the cable for top dead-end clamp placement.

5.6   Before securing the cable to the building, verify that the TAPs are facing the building. If they are not, rotate the cable as necesary (Figure 4).
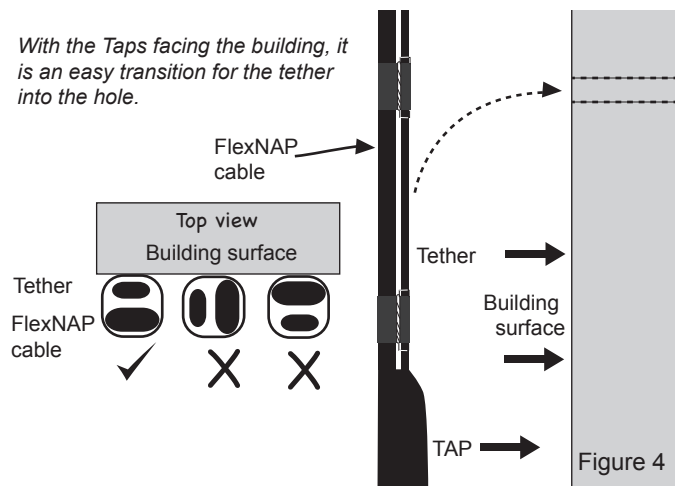

With the Taps facing the building, it is an easy transition for the tether into the hole.

Figure 4

NOTE: If you are anchoring the cable assembly...

- over a knee wall, use Steps 5.7-5.8.
- on the building side, use Step 5.9.
- inside top floor, use Step 5.10.

Knee Wall Installations

5.7   Place the bend limiters on the knee wall and position the cable across the knee wall in the grooves of the bend limiters (Figure 5). The bend-limiters have slots for cable ties which can be used to secure the cable in place.
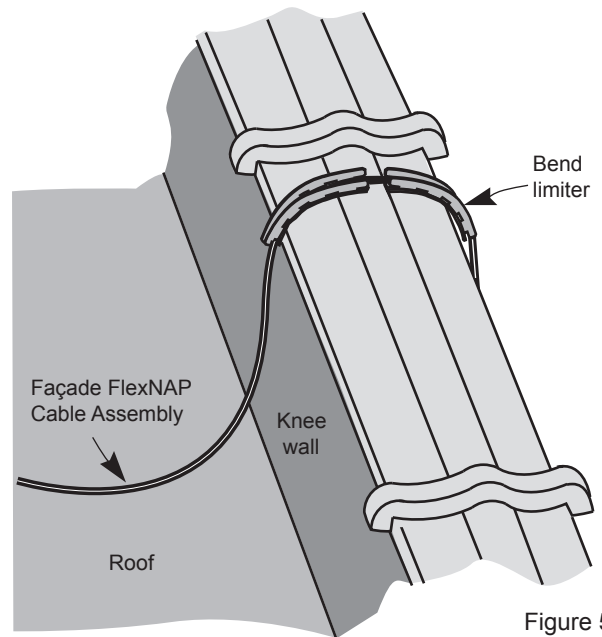

Bend limiter

Façade FlexNAP Cable Assembly

Knee wall

Roof

Figure 5

5.8   Secure the cable leader to the inside of the knee wall with a ram's horn/eye bolt and a dead-end clamp (Figure 6). After the clamp is secured, cut off any excess cable slack and seal the end of the cable per your company's standard practices.

Proceed to Step 5.13

Dead-end clamp

Ram's head/eye bolt

Figure 6

"L" bracket

Ram's horn

RPX cable
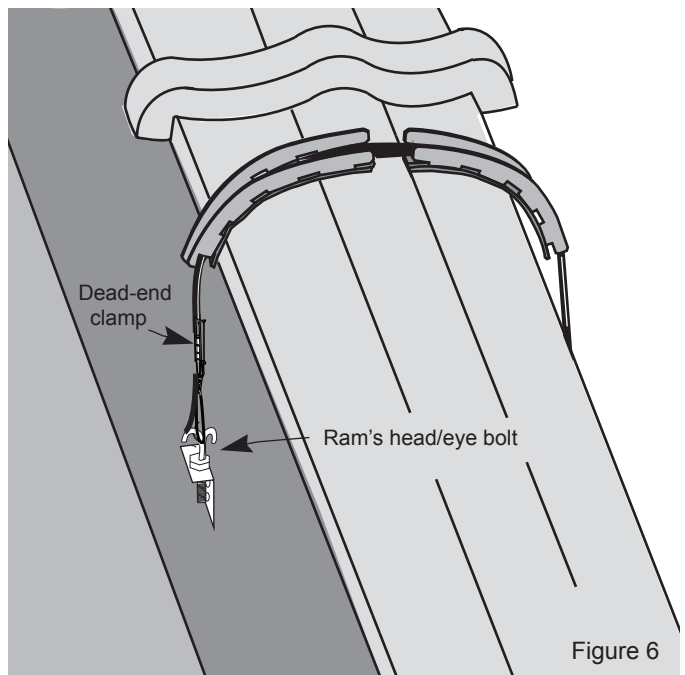
Dead-end clamp

Figure 7

Building Side Installations

5.9   Secure the RPX cable leader to the building wall with a ram's horn/eye bolt and dead-end clamp. After the clamp is secured cut off any excess cable slack (Figure 7).
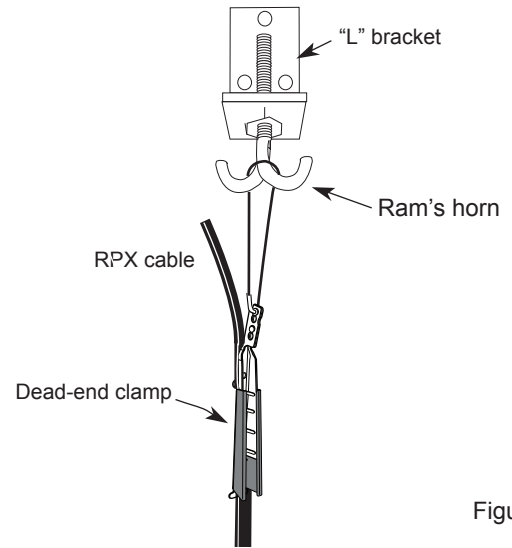
Proceed to Step 5.13

Inside the Top Floor Installations

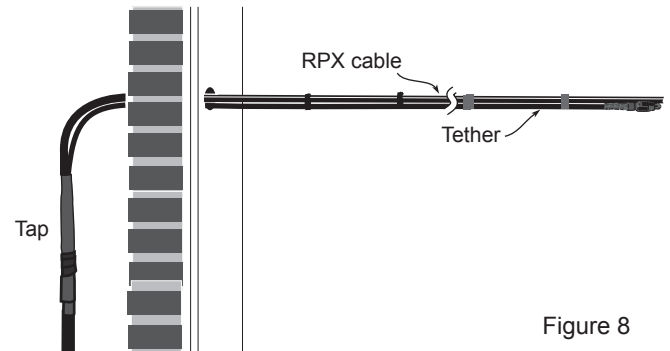**5.10**   Feed the lead-in section of the RPX cable and tether through the hole drilled in the building wall (Figure 8).

RPX cable

Tether

Tap

Figure 8

5.11   Release the tether from the RPX cable as described in Step 6.3

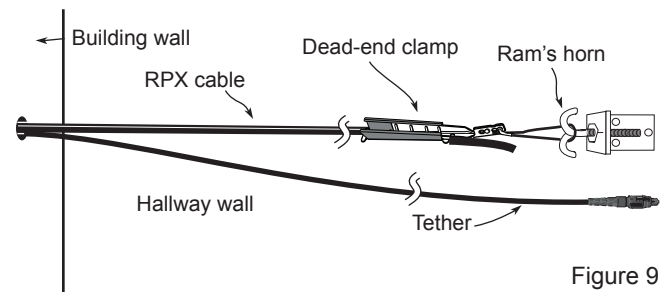**5.12**   Secure the RPX cable to the hallway wall using a ram's horn/eye bolt and dead-end clamp (Figure 9).

Building wall

Dead-end clamp

Ram's horn

RPX cable

Hallway wall

Tether

Figure 9

Securing at Ground Level

5.13   At ground level, secure the cable to the base of the wall using the ram's horn/eye bolt and dead-end clamp combination (Figure 10). Tension the cable to approximately 50 lb$_f$ by tightening roughly one inch of the bolt.
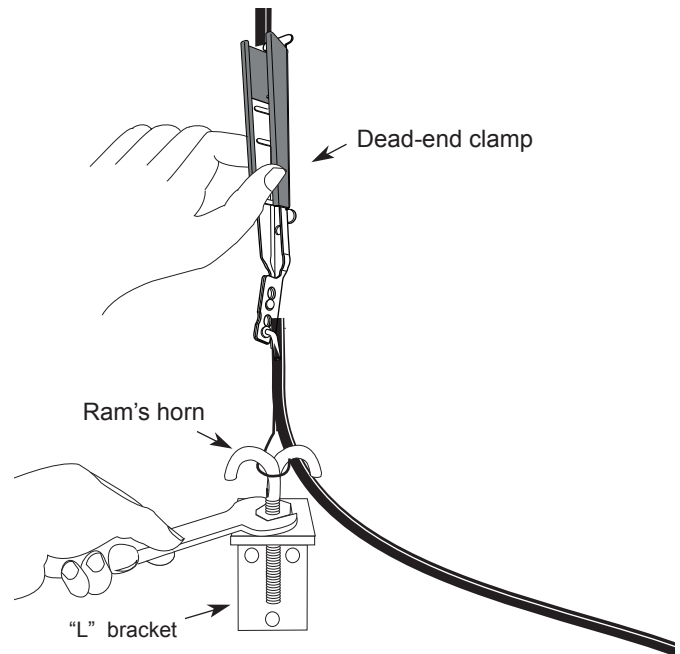

Dead-end clamp

Ram's horn

"L" bracket

Figure 10

5.14   Run the balance of the cable assembly tail to the terminal/cabinet, placing D-rings for lateral support and using dead-end clamps to manage slack where appropriate (Figure 11)
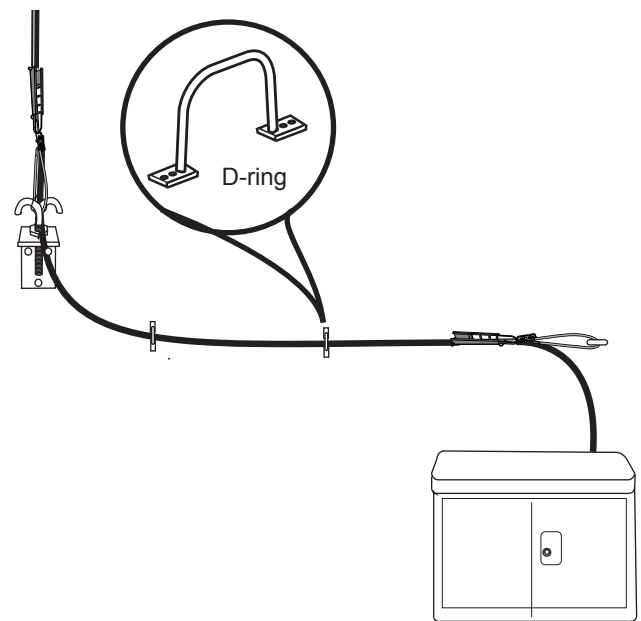

D-ring

Figure 11

6.   Tether Installation

6.1   It is recommended to install all tethers during the initial installation. This will ensure that the entire assembly is properly adjusted for all tethers. Also, installing the tethers gives the assembly lateral stability. However, if necessary, tether installation can be deferred as the tether connector is weather-proof.

6.2 Since the tether will enter from the outside of the building into the hallway, a ¾-inch hole will need to be drilled near the top corner of the window. The recommended location is in-line with the cable path and just above the top of the window (see Figure 3).
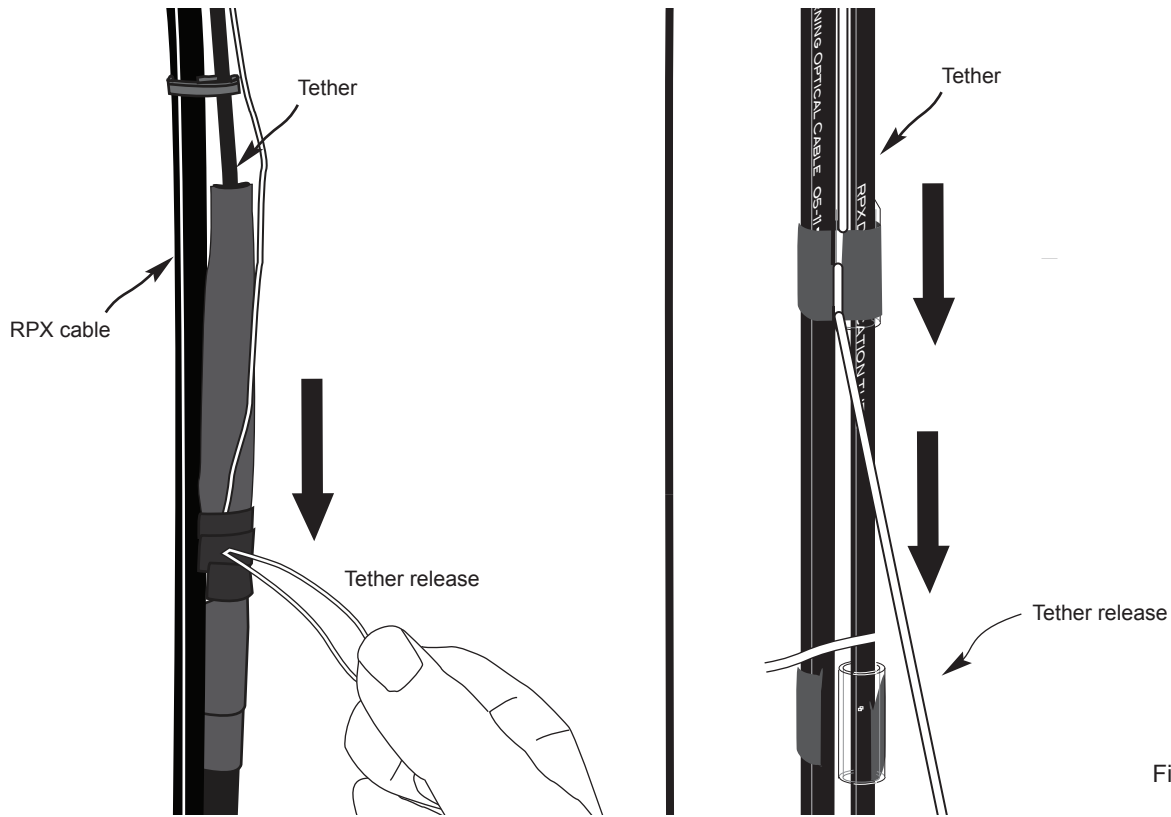

Figure 12

6.3 Once the hole is drilled, open the window and pull down on the tether release mechanism to allow the tether to come free from the host RPX cable (Figure 12).

6.4 Free the tether by sliding it out of the black mesh sock.

6.5 Use scissors to remove the end of the tether release line from the OptiTip connector's dust cap.

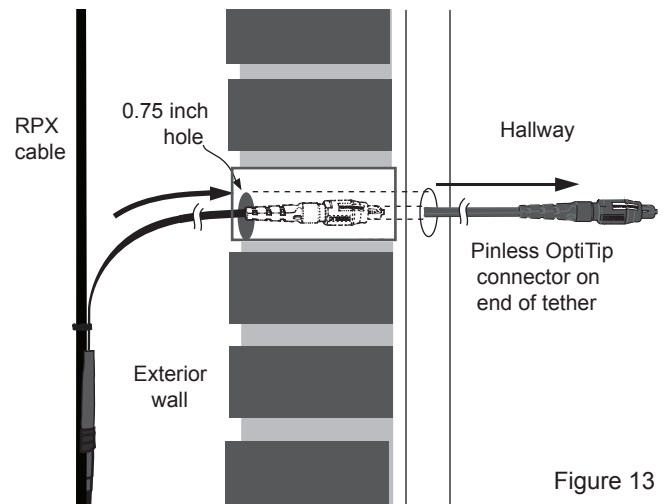**6.6** Feed the OptiTip connector through the hole and into the hallway (Figure 13).

Figure 13

6.7   If molding or duct is required, feed the tether through to its final location Be sure to maintain proper bend radius and not place the tether under tension.

6.8   Route the OptiTip connector and mate with corresponding MTP adapter/housing. Refer to that hardware's SRP for proper routing and mating instruction.

6.9   Once the tether installation is complete, seal the cable-entry hole per your company's standard practices.

7.   Pigtail Preparation

7.1   Check the work print and determine which fibers are to service the living units requested.

7.2   Excess RPX cable slack can be cut-off or routed in a coil around the terminal or on the side of the building.

7.3   Access the RPX cable pigtail per Corning SRP-006-120.

7.4   Route the cable end and bare ribbons into the terminal or cabinet where it is to be spliced and follow the recommended procedures for that piece of hardware for proper strain relief and fiber routing.

8.   Post Installation Inspection

8.1   Perform a walk through to ensure that D-rings, dead-end clamps, and ram's horns/eye bolts are secure and installed properly.

8.2   Inspect the cabinet/terminal and ensure that the fiber ends from the Façade FlexNAP cable assembly are prepared and assigned to the appropriate ports per the work print drawings.

8.3   Remove all packaging and dispose of properly.

9.   Optical Testing

9.1   Follow your company's guidelines to assure that the vertical and horizontal plant is installed to specification. Typically, one-way OTDR traces taken at 1310 nm and 1550 nm from the terminal/cabinet out to measure insertion loss and reflectance of the Façade FlexNAP Cable Assembly. This will also verify continuity to the cable end.