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Draka Elevator Products, Inc. reserves the right to improve, enhance and modify the features and specifications of Draka EP products without prior notification.

Important! Please read!

Warranty and safety information

SUPER-FLEX® traveling cable is designed to be used in most vertical transportation applications. This guide has been prepared to instruct installers in the safe and efficient installation of Super-Flex traveling cable. **FAILURE TO FOLLOW THESE PROCEDURES WILL NOT ONLY INVALIDATE PRODUCT WARRANTY, BUT COULD ENDANGER PUBLIC SAFETY.**

If you have any questions regarding installation procedures, please do not hesitate to call Draka Elevator Products at 877.372.5237.

Hanging lengths:

Jute center Super-Flex.....200 ft • 61 m or less
Steel center Super-Flex.....required for hanging lengths
greater than 200 ft • 61 m

Never exceed maximum recommended hanging lengths.

Recommended operating temperatures:

Standard PVC-jacketed cables..... 5°F to 140°F
(-15°C to +60°C)
Polyurethane (PUR)-jacketed cables..... -4°F to 140°F
(-20°C to +60°C)

If operating below 32°F (0°C), call Draka for assistance.

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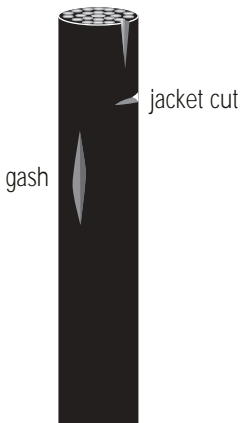
Initial Inspection

Look for obvious damage

DRAKA ELEVATOR PRODUCTS OFFERS COMPLETE KITS WITH ALL OF THE COMPONENTS NECESSARY TO SAFELY INSTALL SUPER-FLEX®. CALL 877.372.5237 OR 252.972.6000 FOR DETAILS.

Inspect the cable immediately upon arrival.

A cut or gash in the jacket could mean an unsafe cable. Damaged reels or boxes are a sign of rough handling in transit and may indicate cable damage.



DO NOT INSTALL POTENTIALLY DAMAGED CABLE.

Call Draka Elevator Products if you have any questions regarding damaged cable.

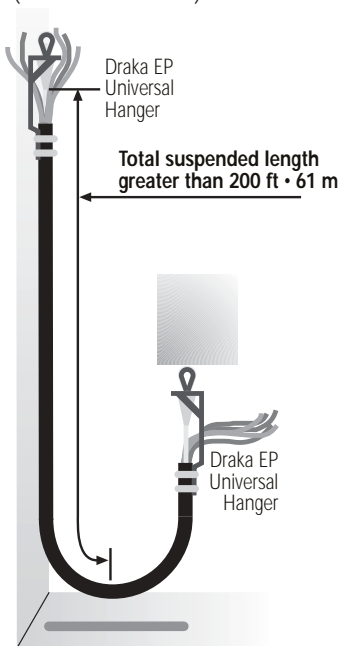
Super-Flex Steel Center Cables

Description and hanging recommendations

Super-Flex steel center cables are **REQUIRED** for use in installations where the suspended length of the cable exceeds **200 ft • 61 m** (NEC Article 620-41)

although they may be used for shorter runs.

They are supported by their steel centers in a Draka EP Universal Hanger and secured by clamps around their jackets.



**USE OF THE DRAKA EP UNIVERSAL HANGER
IS STRONGLY RECOMMENDED WITH
STEEL-CENTER SUPER-FLEX.**

Super-Flex Jute Center Cables

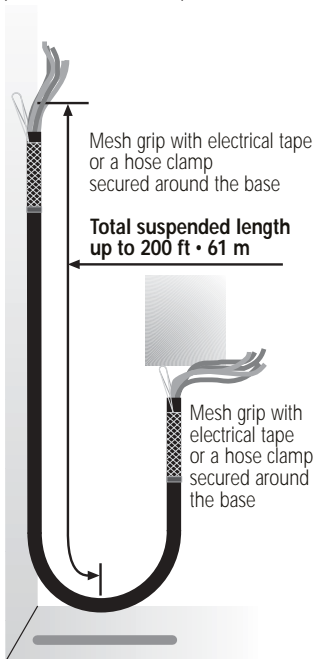
Description and hanging recommendations

Super-Flex jute center cables are designed for use in installations where the suspended length of the cable is **up to 200 ft • 61 m** (NEC Article 620-41).

They are supported by self-tightening mesh grips. Always secure the lower end of the grip with electrical tape or a stainless steel hose clamp.

Do not let the cable bend within the grips. Make sure the grips hang vertically.

If you are working in a shallow pit (such as a hydraulic), use shorter double-eye mesh grips.

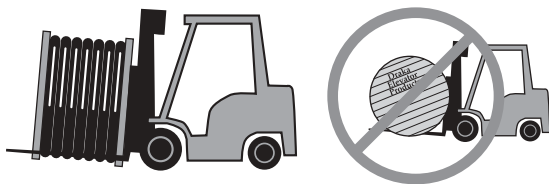


**BE SURE TO USE THE PROPER SIZED MESH GRIP.
CALL DRAKA EP FOR RECOMMENDATIONS.**

Transporting the Reels

Move and store cable safely

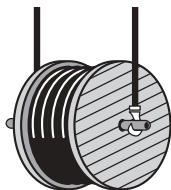
Super-Flex cable may be moved by forklift.
Lift the reel by the wood, not by the cable.



The reel may be rolled on a firm surface.



If a hoist is being used, place a strong rod through the reel and lift it by that.



Store the cable in a clean, dry area. Seal the cable end with electrical tape to keep moisture from entering.

Prepare the Cable End

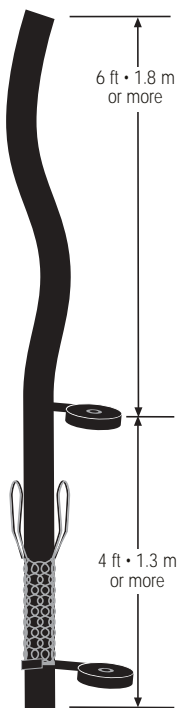
Measure and mark your stripping point

Determine how much jacket you need to remove in order to have enough exposed conductors to meet their termination points. Most installations require 6 ft • 2 m or more.

Wrap a band of electrical tape around the cable at the cutting point to act as a guide.

Mesh grips are used to permanently support jute center cables and are used to hoist steel center cables during prehanging.

Place the grip about four feet below the tape wrap. Secure the base of the grip with several windings of electrical tape or a hose clamp.

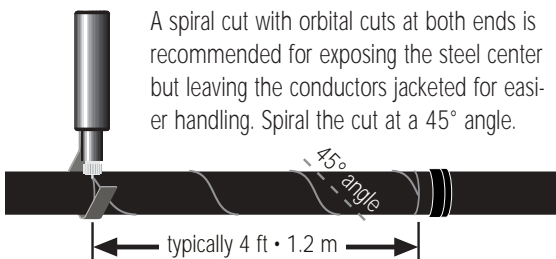
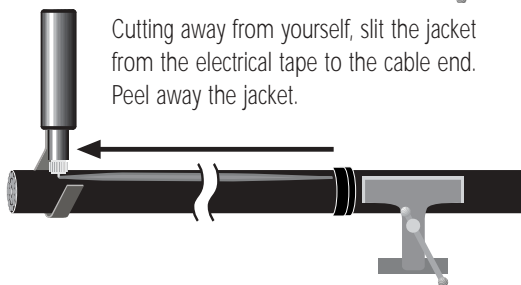
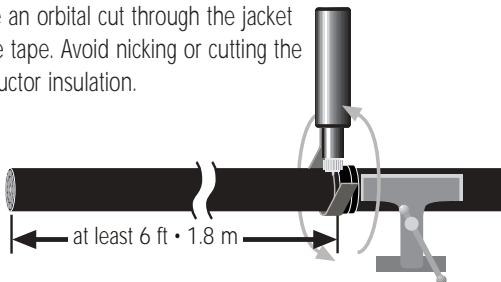


BE SURE TO USE THE PROPER GRIP FOR YOUR APPLICATION.

Remove the Jacket

Cable end and mid-point jacket removal

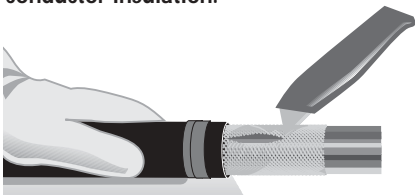
Clamp the cable in a vise or place it on the floor. Using a Super Peeler, a Roto-Peeler (shown) or a razor knife, make an orbital cut through the jacket at the tape. Avoid nicking or cutting the conductor insulation.



Prepare the Cable End

Remove the filler and expose the conductors

Use a pair of scissors or several short strokes with a knife to cut away the braid. **Be careful not to nick any of the conductor insulation.**



Using the same tools, cut the binder in several places and remove it.

Separate the jute fillers from the conductors layer by layer as you move from the end of the cable.

Use scissors or wire cutters to remove the excess jute.



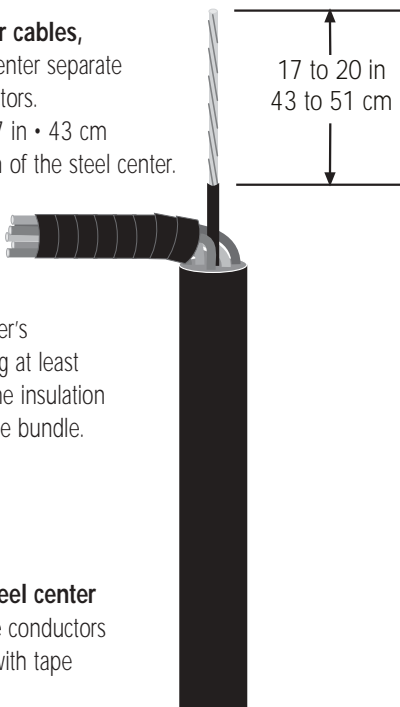
Prepare the Cable End

Bind the conductors for easier handling

For steel center cables, keep the steel center separate from the conductors. Cut off all but 17 in • 43 cm to 20 in • 51 cm of the steel center.

Remove most of the steel center's insulation, leaving at least 2 in • 5 cm of the insulation at the base of the bundle.

For jute and steel center cables, bind the conductors tightly together with tape to aid handling.



Pre-Hang the Cable

Determine your pre-hanging point

PRE-HANGING IS ESSENTIAL FOR THE SMOOTH OPERATION OF TRAVELING CABLE. FAILURE TO PRE-HANG THE CABLE WILL AFFECT PERFORMANCE.

Choose a secure point in the hoistway (usually above the mid-hoistway junction box) that will allow the entire length of the cable to hang without touching the wall or floor. This is the ***pre-hanging point***.

If it is not possible to pre-hang the cable without it touching the floor of the pit, use the alternate method described on page 16.



Pre-hanging point with temporarily attached Draka EP Universal Hanger



Junction box

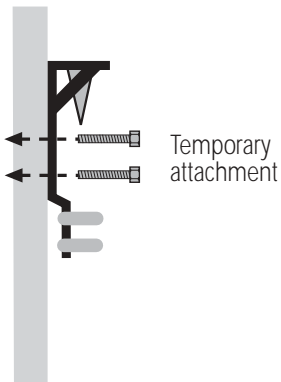


Permanent hoistway hanging point (hanger not yet attached)

Pre-Hang the Cable

Prepare your prehanging point

For steel center cables, temporarily bolt or otherwise attach the proper-sized Draka EP Universal Hanger at the pre-hanging point to a secure location in the hoistway (wall, structural member, etc.)



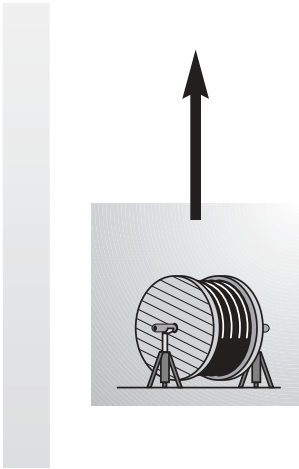
For jute center cables, locate a place where the eyes of a double-eye mesh grip can be securely attached.

Install the Cable: Preferred Method

Use the cab to lower the reel

Prior to unreeling the cable, remove any hoistway obstructions that may be in the cable path. If they cannot be moved, pad them to avoid abrasion.

Place the reel on reel rollers or jackstands in the car. Make sure the reel can rotate freely.



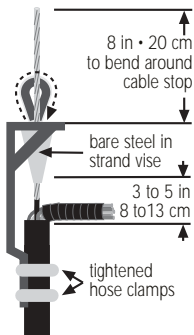
Move the cab up to the pre-hanging point.

Install the Cable Preferred Method

Attach the cable to the pre-hanging point

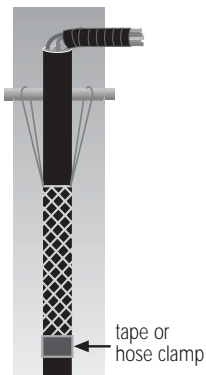
THE CABLE CORE AND JACKET MUST BE PREVENTED FROM TWISTING DURING PRE-HANGING.

For steel center cables, run the steel center through the strand vise until it protrudes about 8 in • 20 cm from the top of the vise. Do not let the conductors get trapped between the steel center and the hanger. Set the vise by pulling down on the cable. Tighten the hose clamps to secure the cable. Pass the steel center through the fender washer and bend it around the thimble. Secure it at the base with a wire rope clip to form a cable stop.



For jute center cables, use a double-eye mesh grip to support the cable. Keep the eyes on opposite sides of the cable to prevent twisting.

The base of the grip should be secured by several windings of electrical tape or a hose clamp.



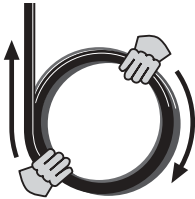
USE THE PROPER GRIP FOR YOUR APPLICATION.

Install the Cable Preferred Method

Lower the cab to pay out the cable

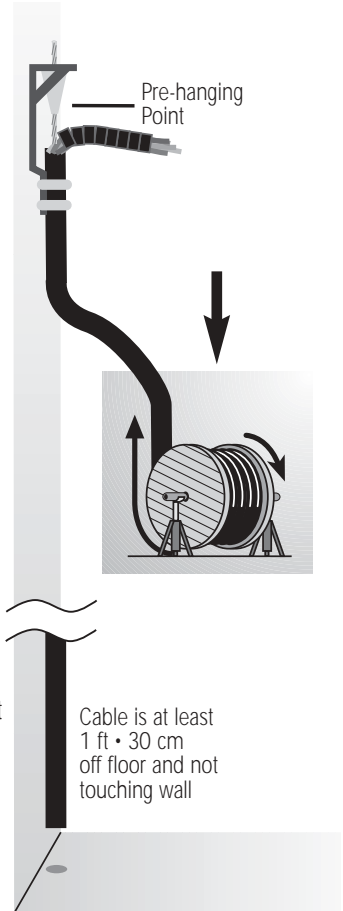
Slowly lower the cab while paying the cable out the top or side of the car. Pay the cable out from the bottom of the reel to minimize stress.

When paying out coils of Super-Flex, uncoil it as if it were on a reel, rotating it with your hands.



The cable end should now be hanging freely from the pre-hanging point and at least 1 ft • 30 cm above the floor of the pit.

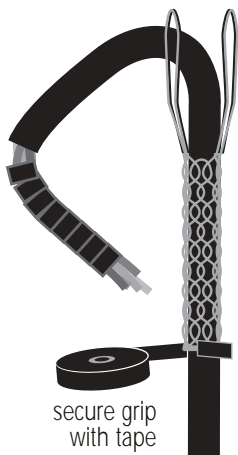
Allow the cable to hang and "relax" for 24 hours.



Install the Cable: Alternate Method

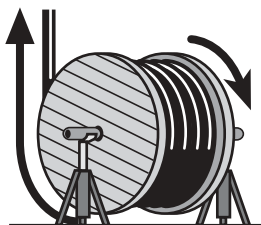
Use the cab to raise the cable

Locate and prepare your pre-hanging point as outlined on pages 9 - 10. You should have already placed on the prepared cable end a mesh grip and secured it with tape (see page 5). If you have not, do so now.



DO NOT tie a rope or wire around the cable as this could crimp and damage the conductors.

Place the Super-Flex reel on the floor of the pit or on the lowest landing. Make sure the reel can rotate freely. Pay the cable out from the bottom of the reel.



**BE SURE TO USE THE PROPER GRIP
FOR YOUR APPLICATION.**

Install the Cable: Alternate Method

Use the cab or hoist to raise the cable

Attach the cable to the outside of the car by the eyes of the mesh grip and raise it to the prehanging point. The cable may also be taken up to the pre-hanging point with a hoist.

If the cable will be permanently supported by a Draka EP Universal Hanger, it is recommended that the mesh grip be of stainless steel double-eye, double-weave design of either the split-laced or split-rod construction.



**IF YOUR INSTALLATION REQUIRES AN ALTERNATE
INSTALLATION METHOD TO LOWER THE CABLE
DOWN THE HOISTWAY, CALL DRAKA EP'S
APPLICATION ENGINEERING DEPARTMENT AT
877.372.5237 OR 252.972.6000 OR
FAX TO 252.972.6001 FOR ASSISTANCE.**

If Standard Pre-Hanging is Not Possible

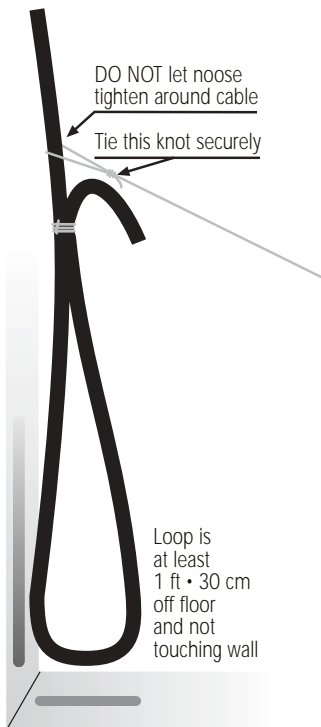
Alternate method to “relax” the cable

If it is not possible to pre-hang the cable without it touching the floor of the pit, attach the cable securely at its permanent termination point using the Draka EP Universal Hanger or a mesh grip.

Make a loose knot with a light rope and pull the cable away from the wall so as to permit proper orientation of the cable. Allow the cable to hang and “relax” for 24 hours.

Loop the cable back up the hoistway and tie it off to itself. Make sure the bottom of the loop is at least 1 ft • 30 cm from the floor of the pit.

After 24 hours, untie the cable end. Avoid twisting the cable when you install it on the car.



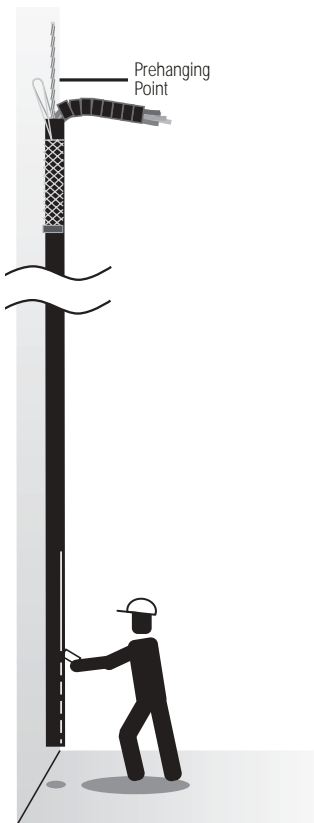
Mark the Pre-Hung Cable

Prevent twisting when terminating the cable at the cab

If you have used the preferred pre-hanging method, use a grease pencil or white-out to mark the hanging end of the cable with a straight line several feet in length.

This will be used for reference to keep the cable from twisting during attachment to the cab.

Do not use the manufacturer's markings as guides for the orientation of the cable.



Move the Pre-Hung Cable

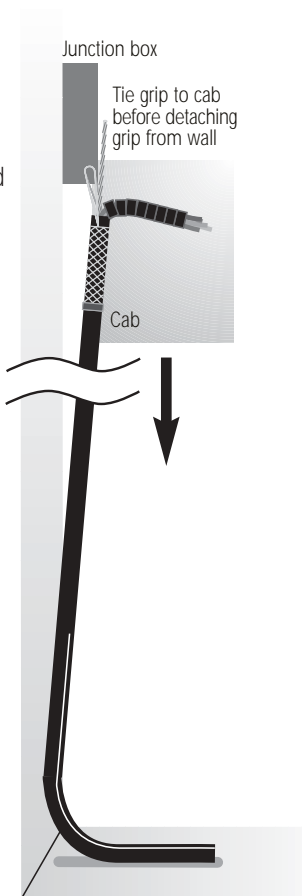
Install the cable at its permanent termination point

Move the cable to its permanent hoistway hanging point.

For long, heavy runs of cable, it is recommended that you *first* attach the grip to the cab with a strong line.

Then detach the grip from the hoistway wall and move the cab down to the termination point.

Keep the cable from twisting or coiling as it moves downward in the hoistway



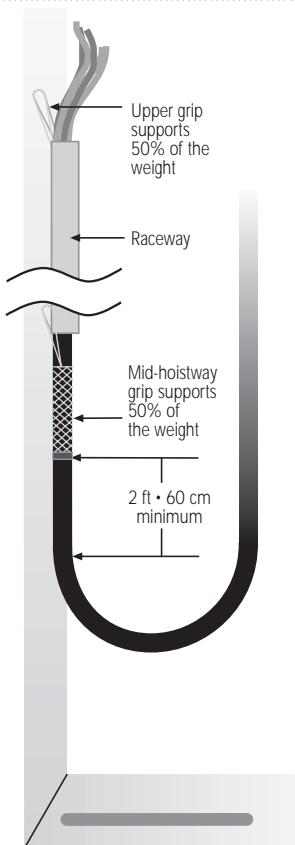
Use of a Mid-Hoistway Grip

Sometimes used with jute-centered cables

Super-Flex may be routed directly to the motor room. With longer jute center cable runs, an additional grip may be placed just above the hoistway midpoint to help support the weight of the cable.

The mid-hoistway grip must be at least 2 ft • 60 cm above the uppermost moving point of the cable.

The stationary portion of the cable needs to be enclosed in a raceway (NEC Article 620-44).

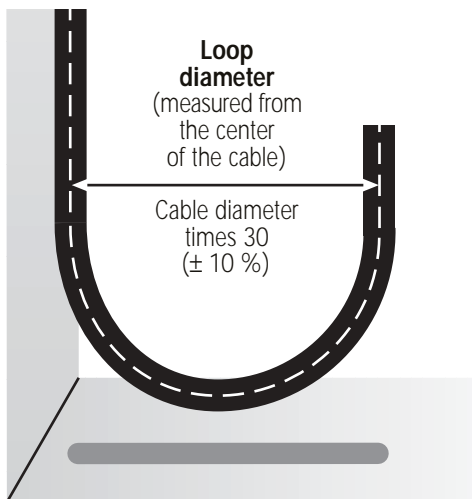


Determine the Loop Diameter

Prepare the cable for attachment to the cab

The loop diameter is the centerline distance between two parallel cable legs when the cable is raised underneath the cab. This distance determines the position of the termination point on the cab.

Multiply the cable diameter by 30. The size of the loop diameter should be within 10 % of that figure. Adjust the cable so that the ends of the loop remain parallel.

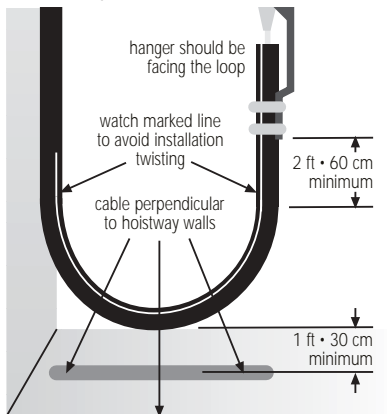


Prepare the cable end for termination as before, stripping away the jacket, braid, binder, jute, excess steel core and insulation.

Attach the Cable to the Cab

Measure before you permanently secure the cable

Bring the elevator cab down until the buffer is compressed. The cab attachment point should be on the same plane with the hoistway attachment point.



Attach the cable at the car hanging point using the proper hanging device (mesh grip or Draka EP Universal Hanger). Use the marked line as a guide to insure proper orientation of the cable and to prevent twisting.

Adjust the hanger location to get the correct loop diameter. The loop bottom must be at least 1 ft • 30 cm from the floor. The loop curvature must start at least 2 ft • 60 cm from the base of the hanger or grip. The hanger should be facing the loop. Once the loop is correctly sized and positioned, secure the cable with either hose clamps (Universal hanger) or electrical tape (Kellems grip).

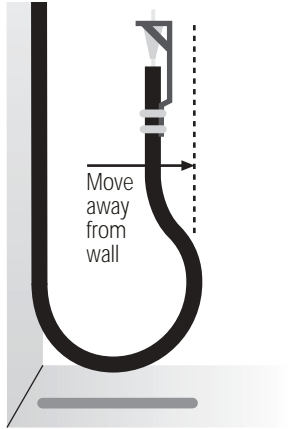
Correcting Problems

Eliminate bell-out and off-plane operation

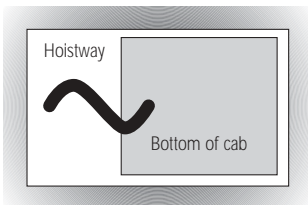
Properly prehung and installed Super-Flex will maintain a U-shaped loop perpendicular to the wall from which it hangs.

Should the cable 'bell out,' the cab attachment point has to be moved farther from the hoistway attachment point. Recalculate the loop diameter and move the cab hanging point accordingly.

Should the cable shift off-plane, the cable needs to be relieved of installation stress.



Looking up from the bottom of the cab, if the cable is bent to the side, loosen the grip on the cab end of the cable and twist it until it relaxes and hangs vertically. Re-secure the cable.



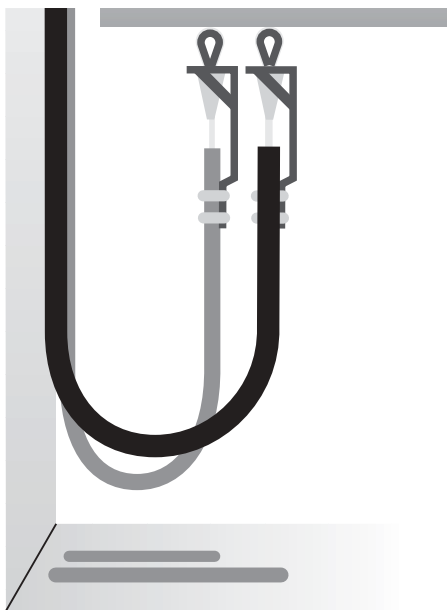
Multiple Cable Installations

Notes on using different size cables

Use cables of the same diameter whenever possible. Install them with the same loop diameters.

If using cables of different diameters, adjust your cab attachment points accordingly.

Make sure the smaller cable (with the smaller loop diameter) hangs below the larger one.



Final Inspection

Check all points prior to operation

A ROUTINE INSPECTION PROGRAM SHOULD BE IMPLEMENTED TO MAXIMIZE PRODUCT SAFETY AND PERFORMANCE.

Give your installation a final inspection. Make sure that:

- the cable hangs vertically and freely.
- the cable has not been nicked or cut during installation.
- all termination points are secure.
- all mesh grips are secured at their bases with electrical tape or hose clamps.
- the cable does not bend inside a cable grip.
- if using Draka EP Universal Hangers, the strand vise is seated firmly in its bracket and bears the weight of the cable. Do not over-tighten the cable clamps as that may damage the cable.