

Extension-With-Helix Application

Generally there are 2 reasons when an extension-with-helix is used with either a helical pile or anchor (tension):

- Insufficient installing equipment drive shaft-to-ground clearance to accommodate the full length of the lead and tool and so shorter anchor lengths are required
- During installation and or site inspection, it become evident the helix or combination of helices on the lead will not be sufficient to develop the required load and additional helices are required

An extension-with-helix or helices can be added to meet the required number and sizes for the application as well as length consideration.

When using an extension-with-helix:

- Only use one extension-with-helix to be assembled with a lead
- Install the extension-with-helix only to the lead.
- All helices must have a 3d (helix positioned 3 x the previous helix diameter) and oriented so the leading edge of all helices are concentric
- Do not insert an extension only between the lead and the extension-with-helix
- Do not use more than 6 helices for any helical foundation pile or tension anchor

If it is determined during installation that the selected lead will not develop the required holding strength and not practical to install to a greater depth, then the following must take place:

- The anchor extensions and lead must be recovered. Do not add an extension-with-helix to an extension only already installed.
- Relocate the anchor a sufficient distance from the initial installation – the reinstalled lead should be 5d (5 x the helix diameter) from where the initial helices were installed.
- Install the lead and then the selected extension-with helix
- Add extensions only as required.

Extension-With-Helix Application

Correct Combination



Lead Helices Diameter (inches)	Extension-with-helix Diameter (inches)
8-10	12
8-10	12-14
10-12	14
10-12	14-14
8-10-12	14
8-10-12	14-14
10-12-14	14-14
8-10-12-14	14
8-10-12-14	14-14
10-12-14-14	14
10-12-14-14	14-14

Do not place an extension-only between the lead and extension-with-helix as there is no assurance the helices will “track” or all follow the same path. This may result in reduction in load capacity of the helical pile /anchor

Not Acceptable Combination



Extension-With-Helix Application

Correct Combination



Metric Helix	
Lead Helices Diameter (cm)	Extension-with-helix Diameter (cm)
20.3 – 25.4	30.5
20.3 – 25.4	30.5 – 35.6
25.4 – 30.5	35.6
25.1 – 30.5	35.6 – 35.6
20.3 – 25.4 – 30.5	35.6
20.3 – 25.4 – 30.5	35.6 – 35.6
25.4 – 30.5 – 35.6	35.6 – 35.6
20.3 – 25.4 – 30.5 – 35.6	35.6
20.3 – 25.4 – 30.5 – 35.6	35.6 – 35.6
25.4 – 30.5 – 35.6 – 35.6	35.6
25.4 – 30.5 – 35.6 – 35.6	35.6 – 35.6

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