

# Foundation uplift

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## How do I model bearings with uplift?

**Answer:** Bearings with uplift may be modeled using [nonlinear](#) gap (compression-only) [link](#) objects. In that these objects demonstrate nonlinear behavior, nonlinear analysis must be specified in the [load case](#). Additional details are available in the [CSI Analysis Reference Manual](#) (The Link/Support Element - Advanced > Gap Property, page 258) and in Verification Example 6-003, available through Help > Documentation > Analysis Verification > Links.

## How do I model a tension pile when uplift forces exceed dead load?

**Answer:** To model a pile for the case in which it resists only tension, and not compression, two options are available, described as follows:

- **Frame object** – Model a [frame](#) object with a zero compression limit.
- **Link object** – Model a [link](#) object using the nonlinear hook property.



**NOTE:** A nonlinear [load case](#) must be applied to activate the nonlinear properties of these structural objects, and to characterize uplift behavior.

## How do I know if uplift occurs?

**Answer:** Review the bearing pressure for various uplift cases to determine whether or not uplift occurs. Regions with zero bearing pressure will indicate uplift.