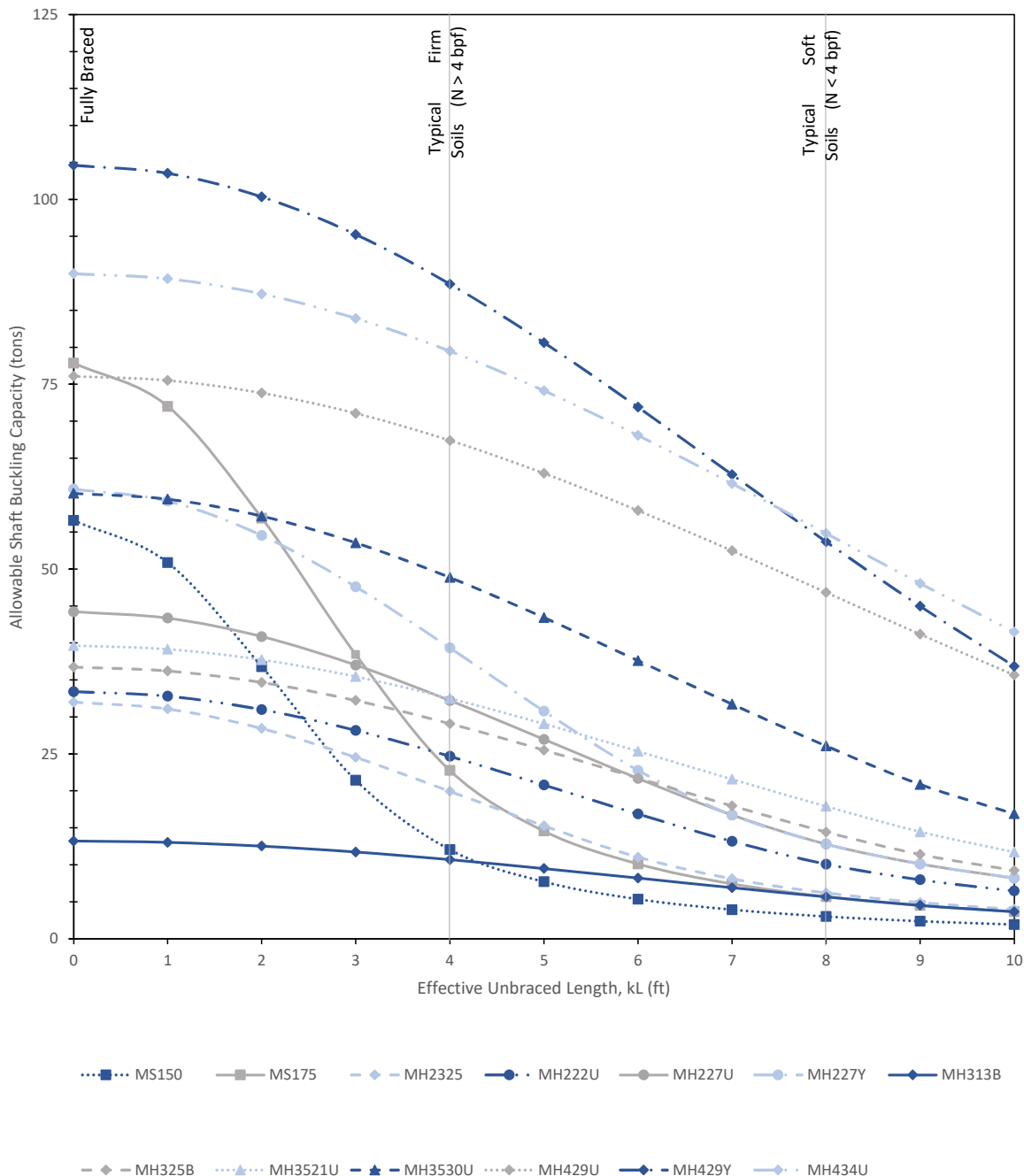


Magnum® Helical Shaft Buckling Buckling Capacity* vs. Effective Unbraced Length**

Per IBC 2015, any pile standing unbraced in air, water, or fluid soils shall be designed as a column. Helical piles generate a small annular space around the top of the pile during installation. To be conservative, Magnum typically recommends helical piles be checked for buckling.



* Buckling Capacity refers to structural capacity of steel only, per AISC 360-10 Chapter E. Pile capacity may be governed by geotechnical capacity.

** Effective unbraced length should be calculated using effective length factor, k, per AISC 360 multiplied by the actual unbraced length (unbraced length in soil should be accounted for per IBC 2015, see below). Typically, k = 0.65 is used for fixed head, k = 0.8 is used for pinned head, and k = 2.1 is used for free head conditions.

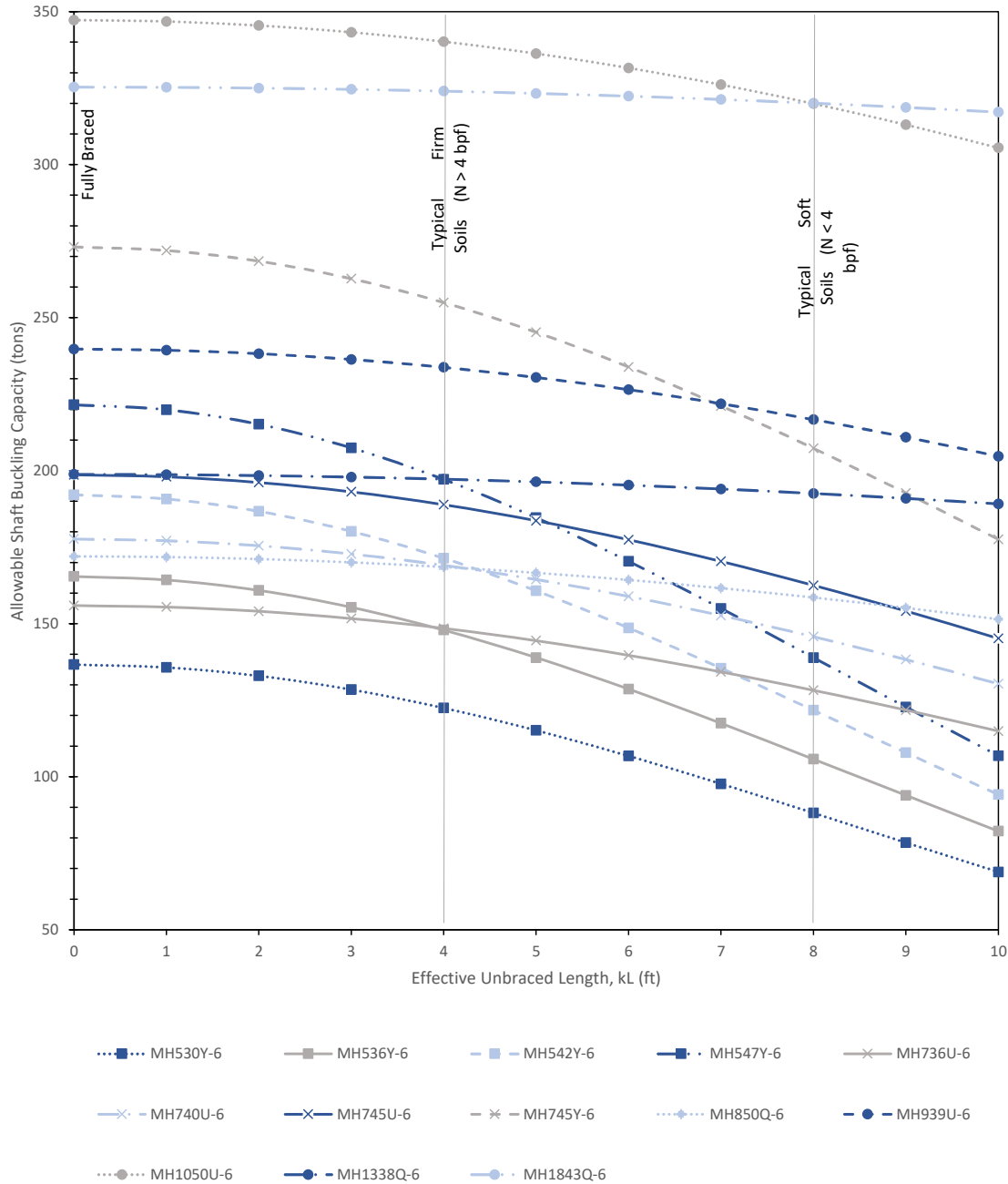
*** If fluid soils occur at some depth below ground surface, some codes suggest piles be considered pinned at 4 pile diameters and the greater unbraced length should be used for capacity. Firm and soft soil lines shown on graph accounts for effective length coefficient of 0.8 for pinned head condition.

*Limitations: These capacity tables are based on axial compressive load applied concentrically to the pile shaft with no eccentricity and bare shafts with 75 years corrosion in non-severe corrosive conditions. Contact Magnum® technical support professionals for axial capacity when loads are applied eccentric to the pile shaft or for other corrosion conditions.

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