INTECH ANCHORING SYSTEMS

TIP Technical Information Paper

Product Family	-	MAGNACORE
Subcategory	-	ELEMENT
TIP Category	-	DESIGN
Tags	-	LOAD CAPACITIES, TYPICAL BIT SIZES, TYPICAL STRENGTH

TIP Description:

This TIP is intended to demonstrate the order of magnitude capacities that a typical Magnacore element can withstand, accounting for grout column diameter.

Instructions for Use:

1. Determine the Anticipated Compression and/or Tension Design Load.
2. Determine the Soil and Rock Profile.
    a. Assess whether the profile will require a clay, cross-cut, or button style bit to efficiently penetrate the soil or rock materials
3. Based on the Bit Type, find the corresponding Max Compression Load that is sufficient to withstand the Design Load. Select the Bar to the left on that row as the design bar section.

Special Notes:

1. Loading conditions such as unbraced length, lateral loads, moments, etc., should be evaluated by a competent person.
2. The capacities on this table are dependent on the soils. This table should only be used to make an initial bar selection, and fully designed by a competent person.

If you need more assistance...

Please reach out via email at info@intechanchoring.com or at our Office Phone at 888.7555.4255

MAGNACORE
Typical Load Capacities

MAGNACORE® SELF-DRILLING ANCHORS

INTECH® ANCHORING SYSTEMS

Bar Type	Outside Diameter (mm)	Inside Diameter (mm)	MAX. TYPICAL BIT DIAMETER[4]			MAX. COMPRESSION LOAD[1,2]			MAX. TENSION LOAD[1,3]
			Clay Bit	Cross Cut	Button	Clay Bit	Cross Cut	Button	
R32S	32mm	15mm	115mm	100mm	100mm	53 kips	46 kips	46 kips	27 kips
T40/20	40mm	20mm	150mm	150mm	130mm	83 kips	83 kips	71 kips	38 kips
R38N	38mm	18mm	150mm	150mm	130mm	85 kips	85 kips	73 kips	40 kips
T40/16	40mm	16mm	200mm	150mm	130mm	127 kips	91 kips	79 kips	47 kips
R51N	51mm	29mm	200mm	175mm	150mm	136 kips	117 kips	100 kips	56 kips
T52/26	52mm	26mm	200mm	175mm	150mm	145 kips	125 kips	109 kips	65 kips
T76/45	76mm	45mm	200mm	200mm	200mm	211 kips	211 kips	211 kips	135 kips

1. The loads shown here are design loads and are intended to show an approximation of the strength of these materials. These estimates are based on the products that Intech currently supplies, and should not be used for other suppliers' materials. Maximum test loads, and appropriate material strength reductions should be factored into the full structural capacity design. Do not use this table in lieu of a full structural design, which should be evaluated by a Professional Engineer. There should be a complete a structural design per project and element in accordance with the required design methodology, such as FHWA, PTI, IBC, AASHTO, and/or the methodology prescribed for the project. The loads are also based on a minimum f'c for the grout of 5,000 psi.

2. These loads are based on a Test Load Factor of Safety of 2.0 x DL, and a maximum grout column diameters based on the bit diameters shown in the last three columns. Lower acceptable Test Load Factors of Safety may result in a lesser material section being required for the same strength. The actual structural capacity will be a function of the Magnacore steel bars, any steel casing, and grout column diameter actually used, as prescribed in a full design methodology.

3. These loads are based on a Test Load FOS of 2.0 x DL. Lower acceptable Test Load Factors of Safety may result in a lesser material section being required for the same strength. The design will be controlled by the steel section and methodology chosen for design—it is not affected by the bit size or grout column diameter.

4. The bit diameters shown here are typical recommended maximums for each type of bar that Intech carries. If a larger bit diameter is desirable for a specific bar size, Intech can obtain larger bit sizes than shown here. These maximums are based on typical industry practice and material stock. There can also be some instances where softer materials allow for larger bit diameters to be used, and instances where dense to hard materials may require a smaller bit diameter be used for penetration. The system will be advanced with energy from the Top of the Hole, which needs to transfer energy through the drill string—sometimes this can control the selection of bit or material size.