

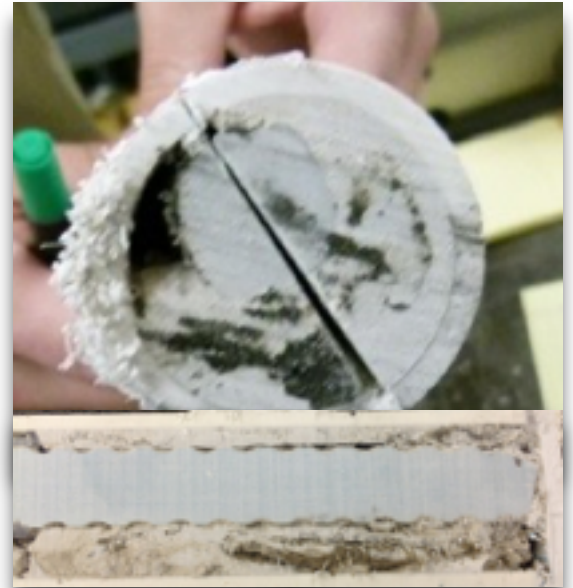


Resin bolting has traditionally been an in-exact science where pull testing is typically the only means to verify installation quality. Variables such as: spin time, age of resin, temperature, hole diameter variation, and different bolter operators can affect the resin mix.

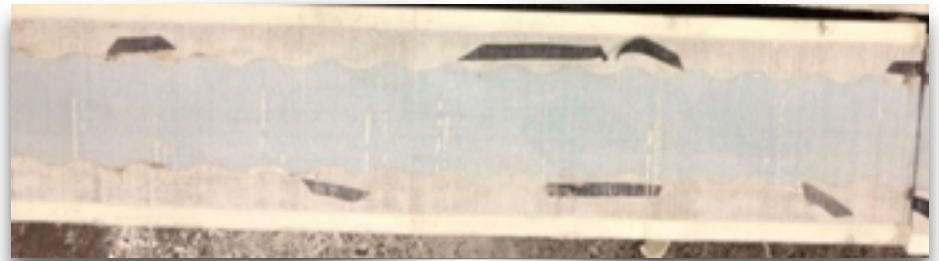
This can lead to over spun, under spun, cartridge gloving, non centered bolts, voids, etc.

When bolts are pull tested, the location of the competent grouted column is not exactly known since it only takes 12 - 18 inches of resin to develop the strength of a bolt.

The SIGMA MIXING SLEEVE is the only retro fit solution that economically reduces resin bolting uncertainty! It eliminates gloving, better centers the bolt in the hole, eliminates auguring, and can mix resin in oversized and standard sized holes!



7/8" fiberglass bolt in oversized hole (1.5").



Same 7/8" fiberglass bolt in oversized hole (1.5") with the Sigma Mixing Sleeve