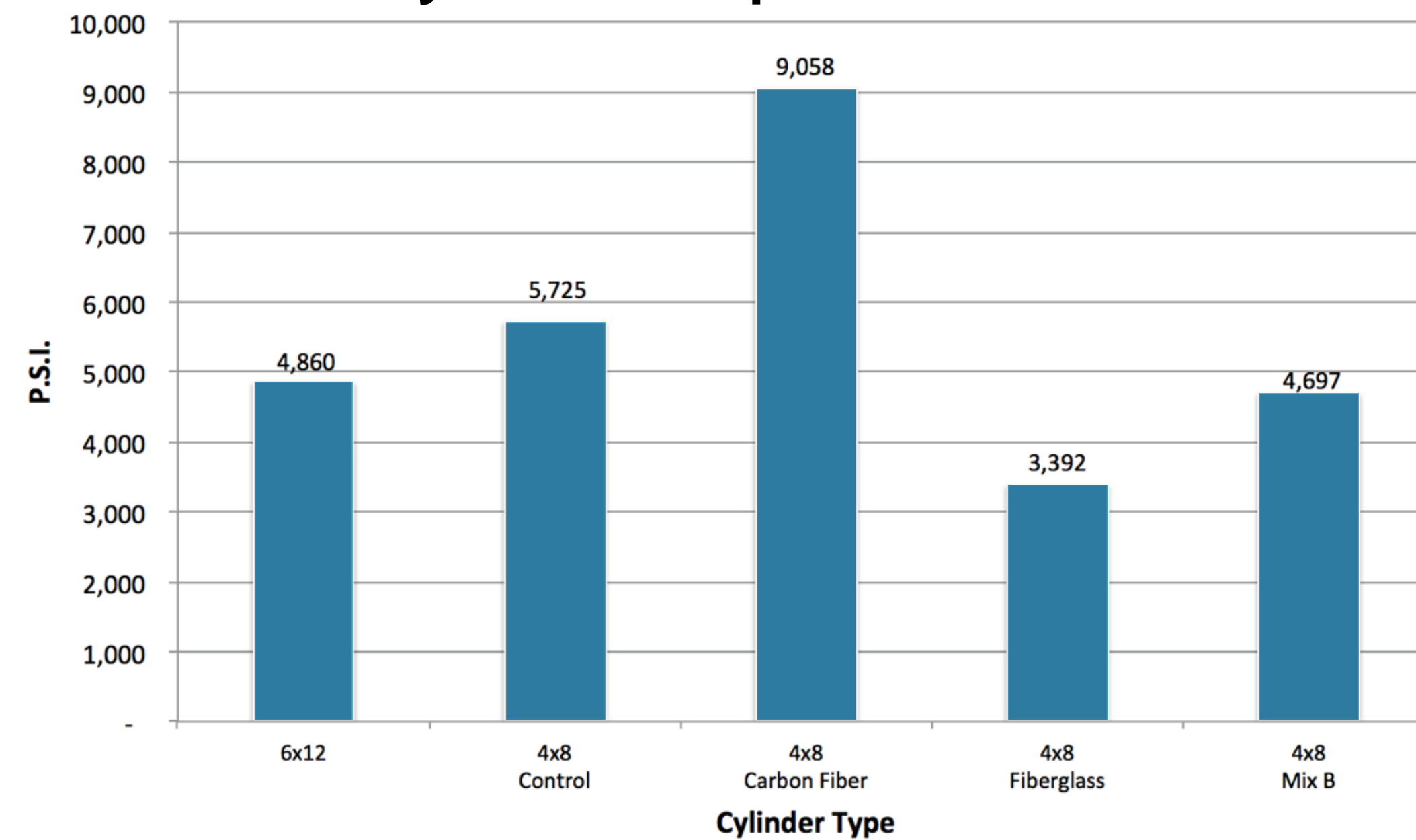


Comparison of Carbon Fiber and Fiberglass on Concrete Strength



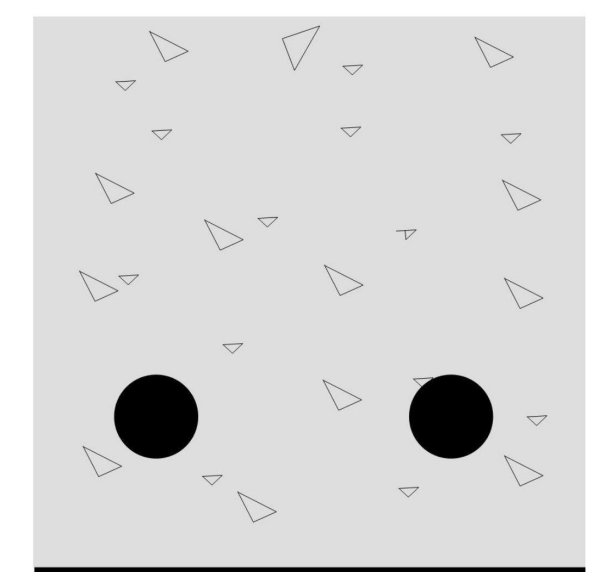
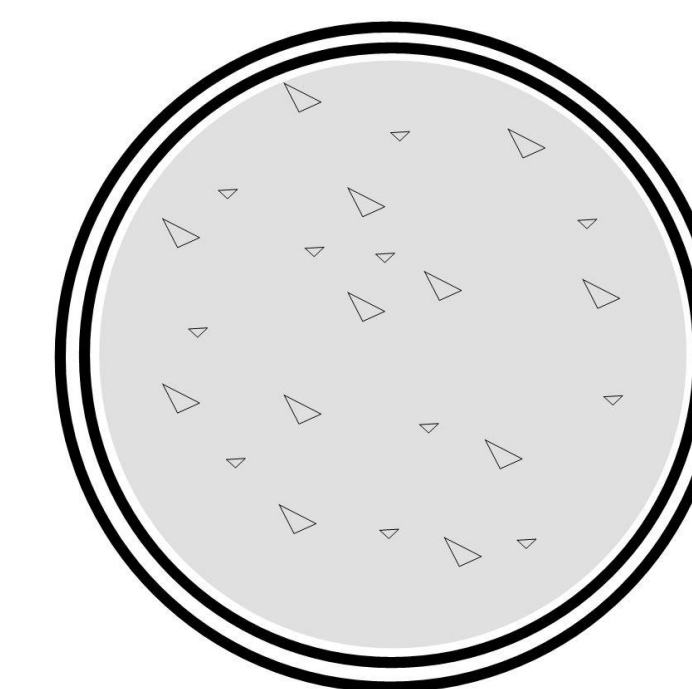
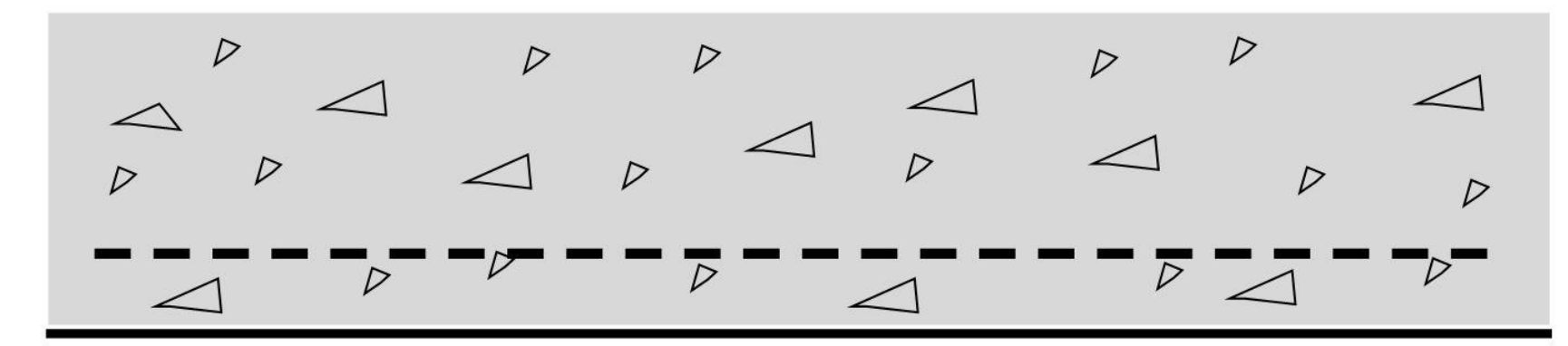
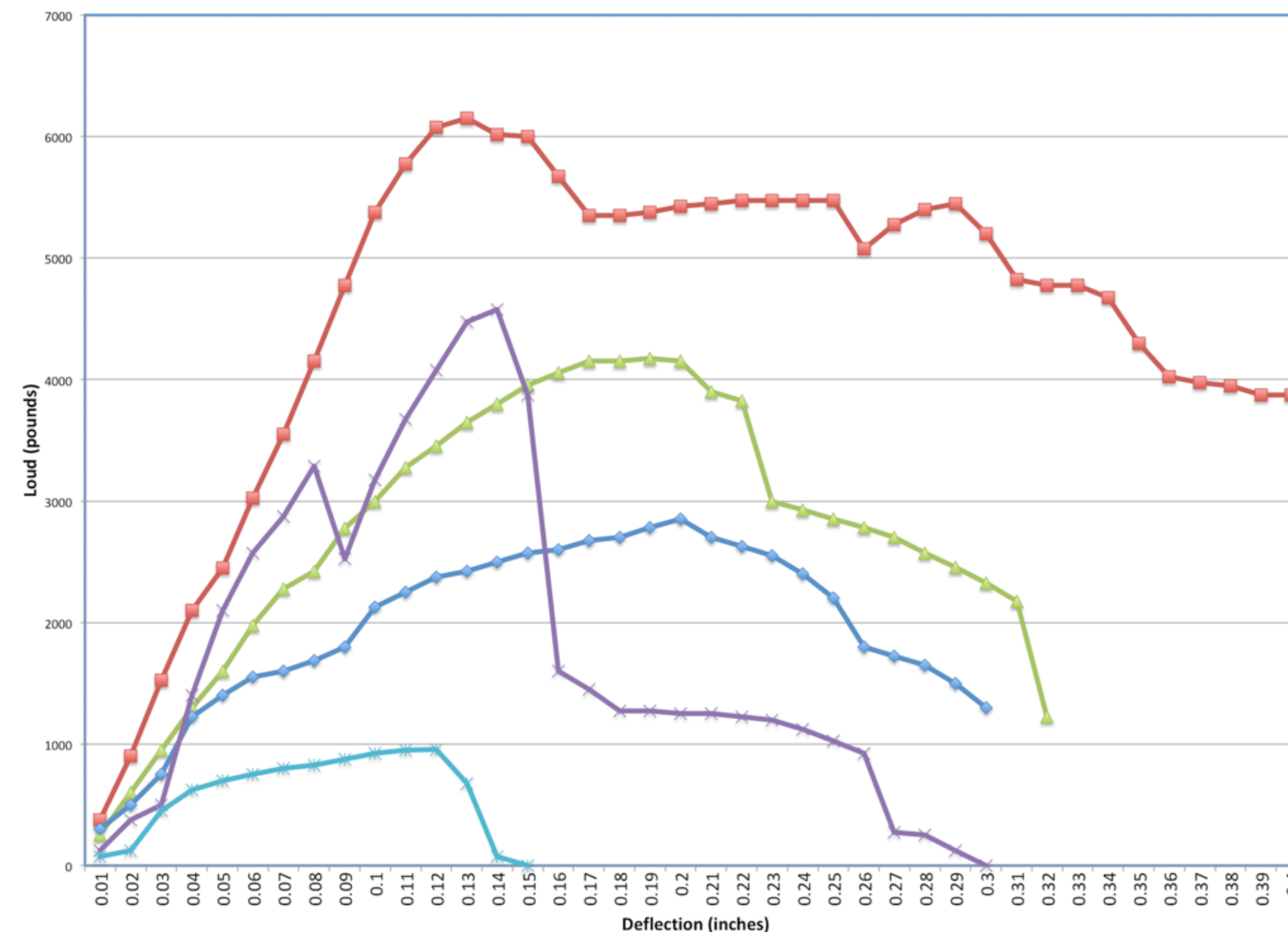
Cylinder Compression Test



The purpose of this project is to compare two common polymers of the construction industry and determining if there are benefits of using them in concrete application to increase overall strength. The goal of the project is to complete a full experiment, utilizing concrete cylinders and beams to test the compressive and tensile properties of fiberglass and carbon fiber. This project provides data from the experimentation of the compressive and tensile tests of carbon fiber and fiberglass to prove that these polymers are superior and aid in overall concrete strength. While both fibers increased the tensile strength, only carbon fiber increased compressive strength when comparing the results to the control cylinder.

Key words: concrete, carbon fiber, fiberglass, reinforcing, testing

Beam Load Test



Column	Maximum Load (pounds)	P.S.I.
6"x12"	137,440	4,860.0
4"x8" Control	71,940	5,740.8
4"x8" Carbon Fiber	113,820	9,057.5
4"x8" Fiberglass	42,620	3,391.6
4"x8" 'Mix B'	59,020	4,696.7

Beam	Maximum Load (pounds)
Reinforced + Carbon Fiber	6,150
Reinforced + Fiberglass	4,175
Reinforced control	2,850
Unreinforced + Carbon Fiber	4,575
Unreinforced + Fiberglass	955

