ACI Cylinder competition

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Team Information:
The team consisted of two students

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Introduction about the competition:

• The competition is developed by ACI.

• The objective of the competition is creating a cylinder with average compressive strength of 48.3 Mpa, surface dry density of 2.39 Kg/m^3, highest cementitious efficiency and lowest price.

• Three specimens had to be prepared and tested.

• A report had to be generated.

• The specifications for the materials used were specified by ACI.
Introduction about the importance of the competition:

• An eye opening experience.

• A way to challenge yourself and use critical thinking, “self recognition”.

• A way to utilize previous experiences.

• Opens new opportunities for those who participated in this competition.
Brief description about the procedure:

- The experiment was carried out in Qatar university’s laboratories.
- Calculations for large scaled materials were carried out, only to be brought into smaller ones for the experiment to be practically feasible.
- Materials were collected, maximum aggregate size is 19 mm.
- Silica fume was selected as an admixture.
- Water cement ratio: 31%.
- Slump test: 35 mm, Air content: 1.7%.
- The mixing went on for three minutes, then it was casted in a cylindrical shape.
- The mixture was cured in water for 28 days.
Brief description about the results:

• Predicted compressive strength was 50 Mpa.

• Average compressive strength for the 3 specimens was 48 Mpa.

• Total cost per ton was calculated to be $116.69.
Ending:

• Unforgettable experience.

• Honored to have participated and won such a competition.

• Grateful for being able to attend this conference.

• The willing to go places with this competition.
Thank You..