



## Department of Civil Engineering

Eastern Mediterranean University

Spring 2022-2023

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# HIGHEST CONCRETE STRENGTH COMPETITION 2023

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**Design & make your own concrete! Impress your friends! Break stuff!**

**Apply until 31<sup>st</sup> March 2023**

Participants will be from Civil Engineering Department Undergraduate students of EMU. Teams can be up to 3 persons. Registration forms and related documents will be collected from <http://civil.emu.edu.tr> and filled forms should be sent to **Prof. Dr. Ozgur Eren** until 31<sup>st</sup> March 2023 (by 17:00 hours) by MS Teams.

Evaluation will be based on highest concrete compressive strength among all results after 28 days of casting concrete cube. Certificates (first rank, second rank, third rank, and all participants) will be given during Civil Engineering Week of 2023.

### Rules

- Limit 1 specimen per entry, a 150 mm x 150 mm cube mold will be provided.
- Limit 1000 g Portland cement, to be provided by EMU Department of Civil Engineering.
- Limit 1 batch per specimen (do not waste your cement!).
- Concrete must be mixed by hand-tools, supervised in the Materials of Construction Lab.
- Curing:
  - Any curing method in lab.
  - Cube must be at or near room temperature at the time of testing (28 days after casting).
  - No external loads may be applied during curing.
- Laboratory materials available: BEM Cement class 42,5, crushed fine and coarse limestone aggregates, water.
- Any other materials (admixtures, fibers, etc.) will not be allowed.
- The properties of aggregates are presented in figure 1, figure 2 and table 1.

# Aggregate Properties

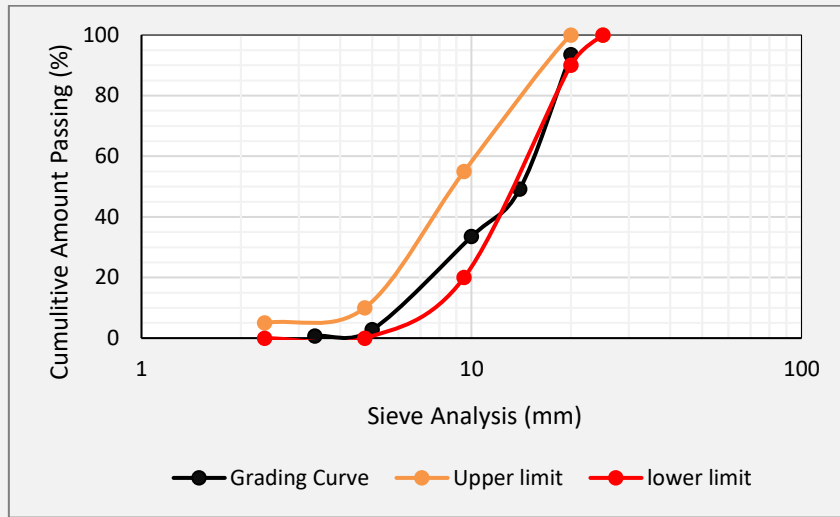


Figure 1: Grading curve of fine aggregate

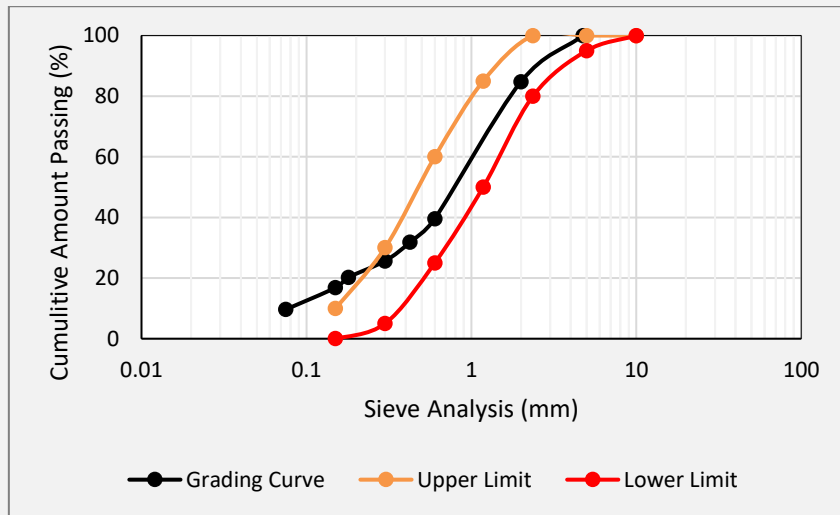


Figure 2: Grading curve of fine aggregate

Table 1: Properties of Aggregates

	Coarse Aggregate	Fine Aggregate
Aggregate Type	Crushed limestone	Crushed limestone
Relative Density (SSD)	2.7	2.75
Absorption (%)	0.47	0.56
Total Moisture (%)	0.13 <sup>a</sup>	1.07 <sup>a</sup>
Percentage passing 600-micron sieve (%)	-	40

<sup>a</sup>There is no constant value for total moisture (it changes with the change of weather)