



## Department of Civil Engineering

Eastern Mediterranean University

Spring 2024-2025

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# HIGHEST CONCRETE STRENGTH COMPETITION 2025

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

**Apply until 02 / May / 2025**

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. Khaled Marar** until 2 May 2025 (by 17:00 hours) by Email ([khaled.marar@emu.edu.tr](mailto:khaled.marar@emu.edu.tr)) please write in email subject "**Highest Strength Concrete**"

Evaluation will be based on highest concrete compressive strength among all results after 7 days of casting concrete cube. Certificates (first rank, second rank, third rank, and all participants) will be given during Civil Engineering Week of 2025.

### 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.
  - Curing Cube must be at or near room temperature at the time of testing (7 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

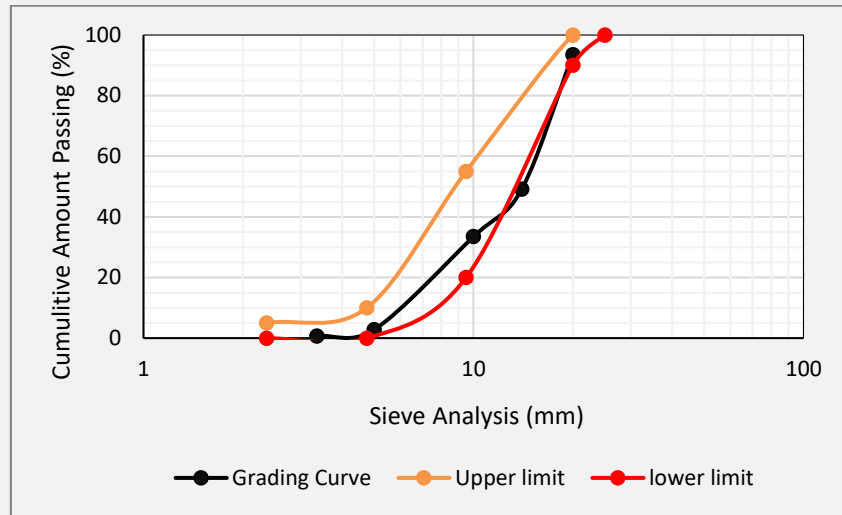


Figure 1: Grading curve of fine aggregate

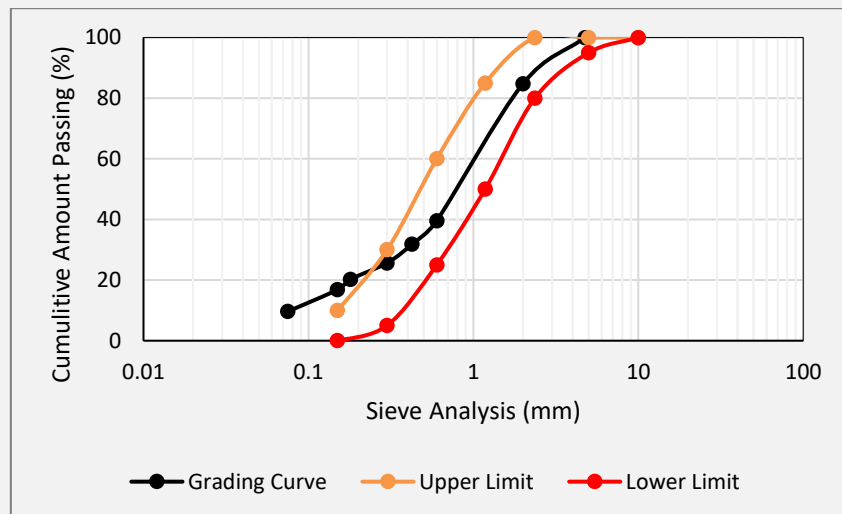


Figure 2: Grading curve of fine aggregate

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	4
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)