



Ministry of Housing, Utilities
& Urban Communities



Housing & Building National Research Center
International Conference

Future Vision & Challenges for Urban Development

Green Smart Sustainable Building between Present & Future

Cairo – Egypt, December 2024



Housing & Building National
Research Center

Template NO. (1)

Workshop Title: Behavior of RC Elements Reinforced with Different Steel Grades According to ECP203 Requirements

ABSTRACT:

Egyptian Code for Design and Construction of Concrete Structures, (ECP203), Code presents the requirements necessary to guarantee the integrity and robustness of the structures and parts thereof that can ensure safety against distress, collapse, and instability. The code also provides adequate control of deformations and cracking of concrete structures. In the last decade, new types of steel reinforcement with high capacity are manufactured in Egypt, which has led to the necessity of specifying special requirements for the design and construction using these new types. Increasing the steel yield stress increases the corresponding strain, where it reaches 0.35% for steel grade 700. This increase in the strain affects the service load level in concrete flexural members, which leads to an increase in the crack width and deflection. In addition, reinforced concrete members subjected to compressive stresses may not reach yield stress before concrete crushing when steel with high-grade is used.

Objectives:

Assessing the use of high-grade steel types for reinforced concrete structures.

Suggested Speakers with related presentation:

Professor Dr. Tamer Hassan Kamal Elafandy

Professor Dr. Hadad Saied Hadad

Assistant Professor Dr. Eslam Mousa Ali

Expected Attendees:

Professors of concrete structures, structural designers, construction engineers, construction companies, and reinforcement steel manufacturing companies