COMPARING ACI, BS, EUROPE CODE USING LATERAL FORCES ON SHEAR WALLS EFFECT

ALFAT AL-WAWI *(Researcher, Iraq)*
Scientific supervisor: Marwan F.S.H. AL-Kamali, Ph.D., Associate Professor

Relevance– This research compares planned concrete constructions in Baghdad and Cairo and considers the influence of seismic maps on the structural system. Principles, seismic maps, analytical methodologies, and case study conclusions were provided. Shear walls can change a structure's mass center and stiffness. Asymmetry is improbable. Gravity and the object's mass center cause this. When the shear wall brings the structure's mass and stiffness closer, the requirements are met. Shear walls absorb lateral loads, making structures stronger and more stable.

Goal of the work – To provide an overview of shear reinforcement provisions in codes of practice for reinforced concrete beams and to draw

attention to the knowledge, tasks, and techniques that are required to comprehend the fundamental philosophy and principles of building design code documents for reinforced concrete structures.

Result analysis –the software analyzes the structure as many times as there are static and dynamic loading scenarios (Load Cases), and then collects data from each analysis, including forces, moments, and other internal activities for each part of the structure. In addition, there are load cases that include both static and dynamic loading. When the necessary conditions for structural analysis are met, such as those listed in (Conditions of Structural analysis), the (Principle of Superposition) states that "when a set of external forces are applied to the structure,

their actions in the structure are equivalent to the actions of the forces forming them in the various elements of the structure.".

Conclusion. Notably, The position of a shear wall can affect a structure's mass center and stiffness. Asymmetric models are unlikely. Gravity and an object's center of mass cause this effect. Shear walls meet the standards because they bring the structure's mass and stiffness closer together. Shear walls fortify buildings by absorbing lateral loads. Shear walls are common in construction. A response spectrum investigation on the structure shows improved functioning and decreased X and Y displacement. Finite element software like ETABS is a helpful tool for simulating large-scale infrastructures when real research or simulations would be too costly or complex to handle. This is a good use of finite element software (e.g. high rise buildings).