Chapter E. Typical post-treatment in Civil Engineering

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Introduction

In civil engineering there is a great variety of quantities of interest because of the numerous subjects that can be studied:

- The nature of the construction considered and its functionalities (for example the sealing of dams, water tanks, or nuclear power plants, crack opening, stress state, residual deformations, ...)
- The limit states considered (ultimate or serviceability, ...)
- The nature of loading (dynamic, static, delayed, ...)
- The constituent structural elements (reinforced concrete, prestressed concrete, steel, wood, masonry, ...)

Moreover, the quantities of interest may be directly or indirectly accessible when performing FE calculations. They can be obtained from primary results later processed to provide a given quantity of interest. The latter is then compared to some criterion or used as data for the next steps (reinforcement area, rebar orientation, ...).

The Eurocodes enables us to know the quantities that should be analyzed according to the various situations mentioned above. However, the way to obtain these values is not established in the codes and standards. This chapter highlights the maneuvers to access those quantities and the mistakes to avoid.

E.1 Generalities

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E.2 The quantities of interest in dynamics

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E.3 The particularities of reinforced concrete

E.3 Particularities of the reinforced concrete

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