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Study of the origins and mechanisms responsible for the occurrence of faults in reinforced concrete structures

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Failures in the planning and execution of a work reduce the useful life of the structure, so bring on excessive expenses with corrective maintenance. The life of a building can be divided into four phases, being: design, execution, preventive maintenance and corrective maintenance. Throughout their useful life, systems and construction elements require maintenance actions to be able to maintain their safe conditions. However, pathologies can originate in the conception stage, execution or use of the structure, the causes being linked to characteristic, superficial factors and physical processes. In this context, it was noticed the need to carry out scientific studies on the behavior of structures and the problems they may cause in them, emerging then to the area of pathology in the context of civil engineering. In this research, look for understand the relationship between the materials used, the transport mechanisms of aggressive agents, the deterioration mechanisms and the environment, with the appearance of pathological symptoms in reinforced concrete structures. For this purpose, will be used a bibliographical study and a survey of the types of pathologies in reinforced concrete structures, the identification of causes, the techniques used to correct problems and the materials recommended for use in repairs. Furthermore, the analysis of some case studies will be adopted, with photographic records of the problems found, where the causes of anomalies will be exposed, and measures that were taken in order to solve the pathologies. It is expected with the results to understand the origins and mechanisms responsible for the occurrence of faults and pathologies in reinforced concrete structure.

Keywords: reinforced concrete; structures; pathology.

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