

## Applying FRAM to the construction of concrete frame structures

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So far the FRAM has been applied to different sectors of high risk and complexity such as aviation, including air traffic control, health care, nuclear power plants, chemical and petrochemical industry, railways, maritime sector... obtaining very positive results, which have led to an improvement in safety management in them. However, its application to the construction sector has not yet been developed in depth. In the European Union, the construction sector is the sector with the highest number of accidents, so safety in construction is a priority. Structures construction is one of the most hazardous construction phases or activities. For this reason, the project "Composite Leading Indicators for the improvement of the resilience of occupational safety, in the activities of design and execution of structures" (BIA2016-79270-P) aims to improve the management and monitoring of occupational safety in these activities using novel vision of Safety II developed by the Resilience Engineering. In this way, the FRAM approach has been applied to know the work-as-done, that is, to identify the adjustments and variability of daily performance. For this purpose, observations and interviews at the place of work have been carried out. With the information collected and the help of the FRAM Model Visualiser (FMV) the functions of the FRAM model have been defined. Thus, the FRAM analysis for the construction of concrete frame structures is presented. Based on these results, leading indicators will be designed to monitor and control these activities adequately in the next phase of the project.

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