**Title:**

Experimental campaign of horizontal cladding wall panels connection in industrial precast reinforced concrete buildings

**Brief description of the dataset:**

The connections of cladding wall panels to precast reinforced concrete (PRC) buildings were identified as the source of several non-structural damages reported after recent earthquakes in Europe, highlighting their critical importance. The inadequate performance of these connections often leads to the collapse of cladding panels, resulting in significant economic losses and societal impacts. To better understand the seismic behavior and capacity of these connections, an experimental campaign was conducted to characterize the most common connection configuration between cladding panels and the main structure in Portugal. Quasi-static in-plane and out-of-plane cyclic tests were performed to simulate the effects of seismic actions. The research focused on bolt tightness, a key parameter influencing the seismic performance of these connections. The experimental investigation provided valuable insights into the behavior of these connections, offering indications of their seismic performance and essential data for calibrating numerical models.

**Keywords**

PRC buildings, cladding panels connections, experimental campaign, seismic behavior

**Experiment Type**

Quasi-static cyclic Test

**Experiment Scale**

Full scale

**Experiment Test Taxonomy**

Cladding panel (CP)

Connection tightening (CT)

Increase (I)

Sinusoidal (S)

In-plane (IP)

Out-of-plane (OOP)

**How to Cite This Work**

Ostetto, L., Fonseca, J., Sousa, R., Fernandes, P. & Rodrigues, H. (2025) Experimental campaign of horizontal cladding wall panels connection in industrial precast reinforced concrete buildings. Engineering Structures, 322 (Part A), 119106. <https://doi.org/10.1016/j.engstruct.2024.119106>.

**Dataset PI(s)**

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**Years of Experiments**

2023-2024

**Image**

A machine in a room

Description automatically generated

A large machine in a factory

Description automatically generated