

PROTECT



100
precast
walls
with a height of 6.75 meters

Almost
3,000
square meters
of precast pre-slabs

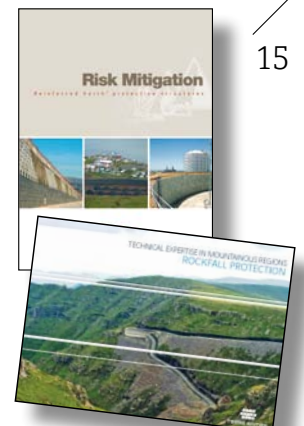
4 month
of work

Installation of protective
walls on a mountainside.

The partners

- **Client** Ministerio de Fomento. Demarcacion de Carreteras
- **Project Manager** Copisa-Arian-EASA-Ceinsa Joint Venture
- **Specialized contractor** Tierra Armada

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PROTECTING A ROAD FROM ROCKFALL

In Spain, the A-23 expressway, also known as the Autovía Mudéjar, connects the Mediterranean coast with the central Pyrenees. Shortly after it was opened, the major artery had to be closed due to a landslide blocking the roadway. Tierra Armada won the contract to secure the area against rockfall by offering a reliable solution that could be installed within a very short period of time.

A natural geological phenomenon

Rockfall occurs naturally. Rapid, discontinuous and sudden rock movements driven by gravity affect rigid and fractured materials such as limestone and crystalline sandstone, which can tilt, collapse or slide from cliffs or steep slopes.

Emergency work on a busy expressway

Following a landslide onto one of its roadways, the Spanish Ministry of Public Works issued a call for tender covering emergency work on the Nueno-Congosto del Isuela section in Huesca province. The project was designed to protect an area adjacent to the major highway from rockfall.

The vital safety work in the high-risk area included in building a 232-meter cut-and-cover structure using precast sidewalls, piers, lintels and pre-slabs.

A comprehensive rockfall protection solution

Tierra Armada designed, produced and installed the precast elements in a period of four months.

The essentials

In the Pyrenees, Tierra Armada secured an area affected by a landslide.

- **Start of work** October 2012
- **Completion** February 2014