Canal de Isabel II

Lozoya basin

Pinilla reservoir

Pinilla reservoir

Since its construction in 1967, the Pinilla reservoir, located in the upper course of the Lozoya river has been the top reservoir of the five that control the basin of this river. It was conceived as a quick and affordable solution to the pressing need to increase water supply capacity to the region until the El Atazar and Pedrezuela dams could be completed.

The water that reaches the potable water treatment plant of the same name at the foot of the dam is diverted from this reservoir. The rest is spilled into the river, and it reaches the Riosequillo reservoir after a six-kilometre stretch.

It is a straight gravity dam built in vibrated concrete. It is formed by nineteen blocks, separated by flat joints. The roadway width at the crest is of five metres. There are two one-metre pavements, one on each side of the roadway. The spillway is on the dam axis.

A hydroelectrical plant was installed in 1991. Its turbines are driven by the flow that is discharged to the river.

Capacity
38.1 hm^3

Surface
480 ha

Type
Straight gravity dam

See table of reservoirs

Reservoir

Capacity:	38.1 hm^3
Average flow:	172 hm^3/year
Basin surface:	259 km^2
Maximum reservoir surface:	480 ha
Length of banks:	16 km
Length of river at the reservoir:	5 km

Dam

Classification:	type A
Type:	gravity. Straight
Height above foundations:	33 m
Crest length:	295 m
Crest width:	7 m
Face slope:	upstream: 0.05 downstream: 0.72
Volume of masonry:	91,500 m^3
Galleries:	1 perimeter gallery in horizontal sections

Operating elements

Spillway

Number of spans:	3
Total length:	24 m
Operating mechanism:	class: sector gate height: 3.60 m
Spilling capacity:	350 m^3/s

Outlets

Location:	bottom
Number of ducts:	2
Operating device:	class: upstream: sliding gate downstream: hollow jet valve
Dimensions:	upstream: 125 x 150 cm downstream: Ø 150 cm
Dewatering capacity:	56 m^3/s

Monitoring elements

- 18 joint meters
- 41 topographical bases for levelling and collimation
- 5 points of area gauging
- 4 piezometers

Automated monitoring elements

- Reservoir point gauge
- Thermometer
- Rain gauge
- 4 joint meters
- 5 liquid level gauges
- 4 piezometers

See tapping video

See tapping PDF

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