

Shapai Hydropower Project

Shapai arch dam is located in Caopo River, Branch of Min River in Wenchuan County, Sichuan Province. Shapai RCC Dam is a three-centered arch dam, with a height of 130 m, bottom width of 28 m, crest width of 9.5 m, crest El of 1,867.5 m, and crest arc length of 258 m. The whole dam is structurally simple, with 4 joints only (2 induced and 2 transverse joints),

galleries at 3 levels, and an elevator shaft, which is suitable for high-speed construction. Most of the dam is constructed with RCC except local area near galleries and foundation. The total volume of RCC is 365,000m³.

Main features of Shapai project is shown in Table.1.

Table.1 Main Features of Shapai Project

Location	Wenchuan County, Sichuan Province
River	Caopo River
Dam type	RCC arch dam
Catchment area (km ²)	239.2
Capacity at Normal WL (10 ³ m ³)	1.8
Installed capacity (MW)	2×18
Basic seismic intensity / Design intensity	VII
Dam height (m)	132
Dam crest length (m)	230.14
Max. central angle	92.48
Thickness-height ratio	0.238
Dam volume (10 ³ m ³)	383
Powerhouse	Ground powerhouse
Dimension of powerhouse (L×W×H)	26×18.5×31.55m
Discharge structure	discharge tunnel & bottom outlet
Discharge flow (m ³ /s)	453
No. of discharge tunnel / type	2/ Pressure tunnel
Length of discharge tunnel (m)	415.64 (1 [#]), 275.28 (2 [#])
Maximum discharge flow of tunnels (m ³ /s)	242 (1 [#]), 211 (2 [#])

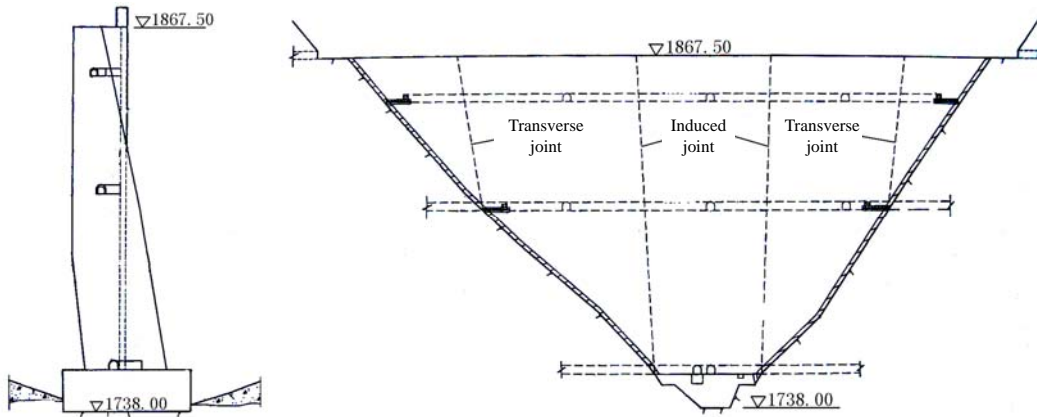


Fig.1 Cross section and joints of Shapai RCC arch dam



Fig.2 Construction of Shapai RCC Arch Dam