



Manufacturing

Sourcing and quarries

For more than 160 years, in the Chartreuse mountain range in France, an exceptional source of stone has been mined for the manufacture of *Prompt* natural cement. This limestone mountain range to the north of Grenoble in France is part of the sub-Alpine mountain range. It is made up of sedimentary strata which were folded and deformed during the Alpine orogeny.

This exceptional source is made up of a single geological layer. This is argillaceous limestone with very precise and consistent chemical and mineralogical compositions which are suitable for the manufacture of natural cement, because they require no other additive.

This layer of "Prompt" stone, which is inclined at a 30 to 40 degree angle, is mined using the chamber and pillar method in two underground quarries. The miners, with their vast experience, know the source intimately, and are able to follow the seam using the naked eye.

The stone is extracted in several entirely mechanised phases:

- blasting using explosives in horizontal tunnels, linked by a helicoidal ramp;
- transportation to jet wells;
- collection at the foot of these chimneys to load wagons, which take it outside.

Other operations are also necessary, such as securing the galleries using fencing and fastenings; constructing a workshop in the quarry to maintain equipment; setting up a radio system that allows personnel to remain in contact.

