



## Case Study

# Faster, lighter and built for high loads: reclaim tunnels for automated quarry operations in Gudmont, France

Four arch reclaim tunnels enable automatic discharge of multiple stockpiles at the CEMEX quarry in Gudmont, France, combining fast installation, lower weight, high load capacity and safer access for maintenance.

## The Challenge

At the CEMEX quarry in Gudmont, France, the project called for a reclaim tunnel solution that would allow stockpiled material to be discharged automatically while still providing enough internal clearance for maintenance of the conveyor belt and feeders, cleaning in the event of blockages, and the passage of small motorised equipment.

The solution also had to perform under demanding structural conditions. The arch bases were embedded in a reinforced concrete slab, and the tunnels had to maintain perfect alignment

over very long distances — three structures of 139.2 metres and one of 194.4 metres. Any deviation along these lengths could have created adverse effects because of the significant load from stockpiles reaching approximately 20 metres above the crown.

In addition to structural performance, the client also needed a solution that supported safe day-to-day operation in an industrial quarry environment.

## The Solution

ViaCon delivered four arch reclaim tunnels using a VA Special profile, together with two circular escape tunnels. The reclaim tunnels were designed to allow stockpiles of 4/20, 0/60, 60/105, 0/90 and 20/300 to be automatically discharged.

The arched configuration provided the internal space needed for maintenance access, cleaning operations, and movement of small equipment. At the same time, the design allowed feeders and the conveyor belt to be fixed at the vault, helping reduce the risk of collisions with pedestrians inside the structure.

Compared with a concrete alternative, the ViaCon steel solution offered several clear advantages:

- reduced weight of both structural elements and handling equipment
- faster installation through simplified assembly
- a structurally efficient design capable of withstanding very high loads
- significant economic advantages,
- and a lower carbon footprint

The project was completed with hot-dip galvanised corrosion protection according to EN ISO 1461, and total net assembly time was three months.

## The result

The finished installation gives the quarry a durable and efficient reclaim tunnel solution adapted to demanding operating conditions and high loads from the stockpiles above. It supports automated material discharge while also enabling practical access for maintenance and cleaning.

For the client, the project demonstrated the benefits of ViaCon CSS solutions in this type of application: a lighter structure, faster installation, economic advantages compared with heavily reinforced concrete, lower environmental impact, and improved operational safety.

## Technical specification

Key technical specifications of the tunnel include:

**Project:** GUDMONT (51) – CEMEX Quarry

**Location:** Gudmont, France

**Application:** 4 x Arch Reclaim Tunnels (RT) with 2 x circular Escape Tunnels (ET)

**Profile:** RT = VA Special / ET = Circular

## Technical specification

Key technical specifications of the tunnel include:

**Span:** 4.11 m / Ø2.17 m

**Height:** 3.49 m / Ø2.17 m

**Length (bottom/top):** 3 x 139.2 m + 1 x 194.4 m / 1 x 45.6 m + 1 x 13.2 m

**Slope:** 1% / 36% & 100%

**Angle:** 90° / 90°

**Plate thickness:** 6.00 - 5.00 - 4.00 - 3.00 mm / 3.00 mm

**Corrosion protection:** HDG (EN ISO 1461)

**Corrosion reserve:** 0 mm

**Net assembly time:** 3 months (total)

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