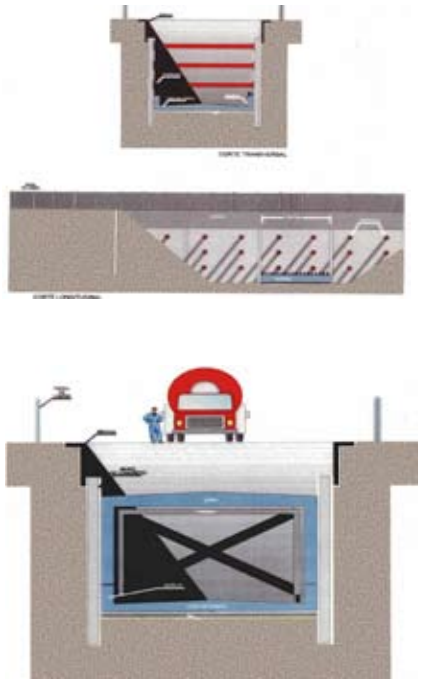
PROJECT PROFILE

Client: Mexico City Subway System – Line No. 12
Construction Consortium:

- ICA Infrastructure
- Multiaaccerorios de Monterry



Subway project built to demanding standards

Powers Fasteners' PE1000+ outperforms the competition underground, even in unstable conditions

MEXICO CITY, MEXICO — Creating the subway system in the Mexican capitol has more challenges than most. A recent expansion of Line No. 12 is a prime example. The 25km of underground track has to be built on a bed of often unstable clay in an area subject to frequent earthquakes.

Construction includes installing "Muro Milan" (Milan Walls) — digging parallel trenches filled with bentonite clay where a rebar cage is built. Concrete is poured into the same space, displacing the clay and forming a reinforced wall. The space between these two walls is excavated for create the tunnel for the subway. Reinforcing bars are added horizontally for more stability, and a U-shaped floating concrete floor system is installed over the clay base at the bottom. A U-shaped top caps the tunnel.

Within the Muro Milan is a "floating" concrete box protecting trains and riders from seismic activities— a recent tremor measured 7.9 in magnitude!

Four horizontal reinforcing bars are placed in every square meter of the Metro Line's 36km of tunnel as an added backup wherever this technique is used. The original plan for the Line No. 12 expansion was to use a competitor's epoxy product to anchor these bars on the 24-meter high walls. But, after extensive on-site testing and evaluation Powers Fasteners' PE1000+ was proven to be easier to work with and stronger for this critical application — and, preliminary specifications indicate that the required amount of PE1000+ will be about 30 percent less expensive as well.

PE1000+ is a two-component, high-strength adhesive anchoring system that includes the injection adhesive in a plastic cartridge, mixing nozzles, dispensing tools and hole cleaning equipment. Used throughout the world, it can be applied either manually or pneumatically. It is designed to bond threaded hardware into drilled concrete base materials, and has been tested to the new International Building Code for use in both cracked and uncracked concrete. A complete ICC-ES report can be found at www.Powers.com, or at www.ICCES.org — reference report number 2583.