



INNOVATIVE. FIRE. SYSTEMS
PASSIVE. FIRE. PROTECTION

MONACO TUNNEL (Under the Rock)



**FIRE PROTECTION – PRESTRESSED BEAMS AT THE
INTERSECTION of TWO TUNNELS T2 and T5**

To meet the requirements of circular 2000-63 of 25 August 2000, the Tunnel owner, "Les Services des Travaux Publics" (Public works department) of Monaco, assisted by the engineering SCETAUROUTE, wanted to improve the fire resistance of the pre stressed beams at the intersections of tubes in the tunnel under the rock. The pre stressed cables with limited covering (less than 2 cm) had to be protected, with a temperature lower than 100 degrees after two hours. SCETAUROUTE therefore recommended the use 65 mm thick Fire Barrier 135, basing its calculations on many fire tests using thick layers of this mortar, already performed in TNO and SITEF laboratories. This work was carried out in April & May 2006.

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**FIRE PROTECTION LEVEL N2 with
65 mm of FIRE BARRIER 135**



Installation of transverse rings to determine the recommended thickness
These rings are also used as a support for smoothing the Fire Barrier 135