



> 4th Elbe tunnel, Hamburg

KAEFER Construction GmbH, Frankfurt

Summary	Innovative fire-protection work for the new, 3.1 km long 4th pipe of the tunnel under the river Elbe, for which the largest tunnelling machine in the world (14.2 m in diameter) was used.
Location	A7 motorway, 4th Elbe tunnel, Hamburg
Build time	December 1999 to September 2002
Client	Federal Transport Ministry, represented by the Urban Planning and Environmental Department of the Free and Hanseatic City of Hamburg, Stadthausbrücke 8, 20355 Hamburg
Architect	Ingenieurbüro Duddeck und Partner, Varrentrappstraße 14, 38114 Braunschweig
KAEFER's role	Smoke extraction duct in the form of a suspended stainless steel frame with twin fire-resistant panels; capable of extracting smoke at a rate of 280 m ³ per second.
Challenge	Planning, design, production, procurement and assembly of the 30,000 sq m fire-resistant ceiling including smoke extraction hatches in a period of less than 20 months.
Our solution	Collaboration with testing and research institutes to ensure optimal design.
Added value for client	Everything from a single supplier, plus extensive KAEFER experience in fire-protection for tunnels.

