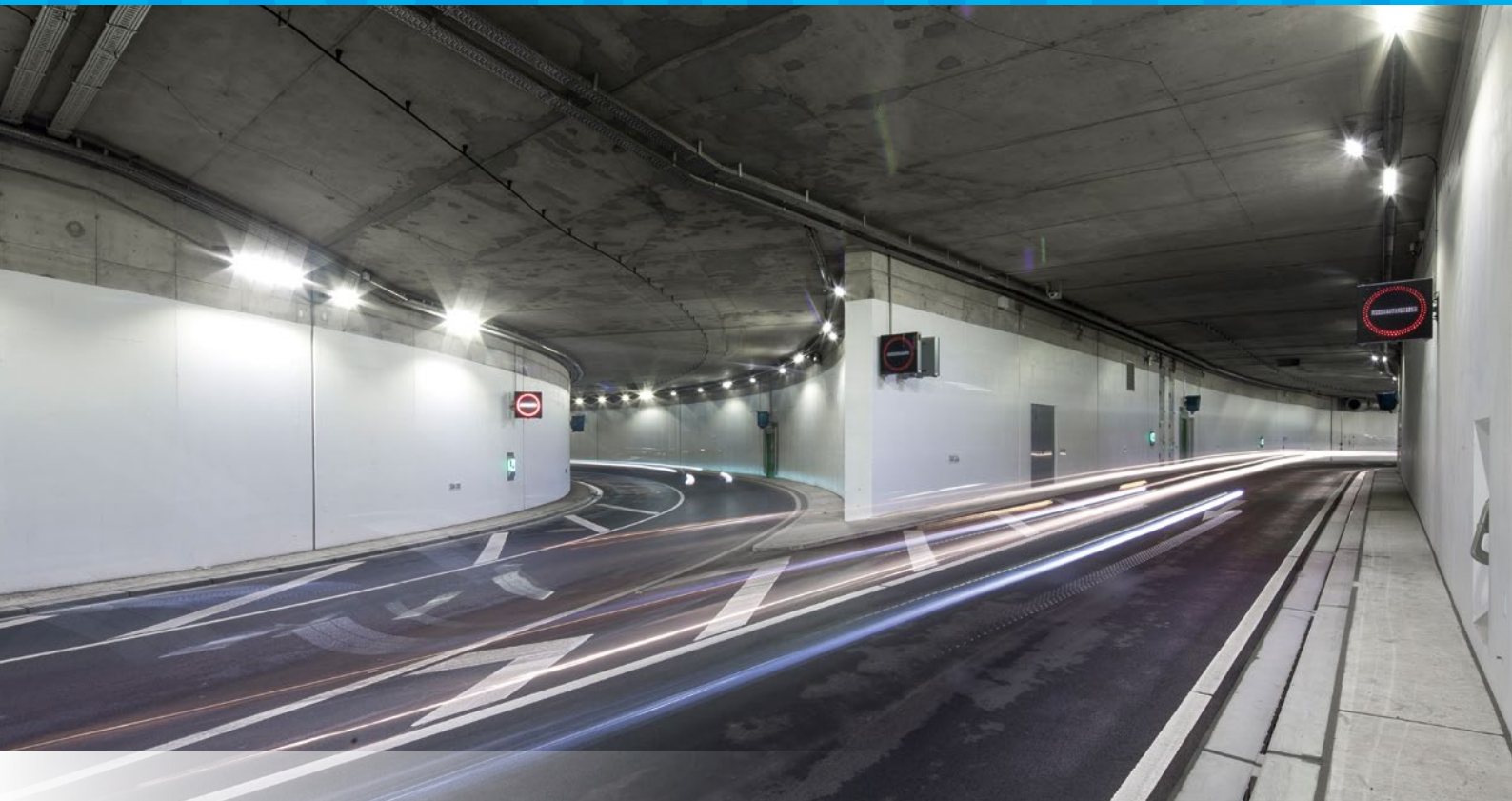


# Nafufill KM 250



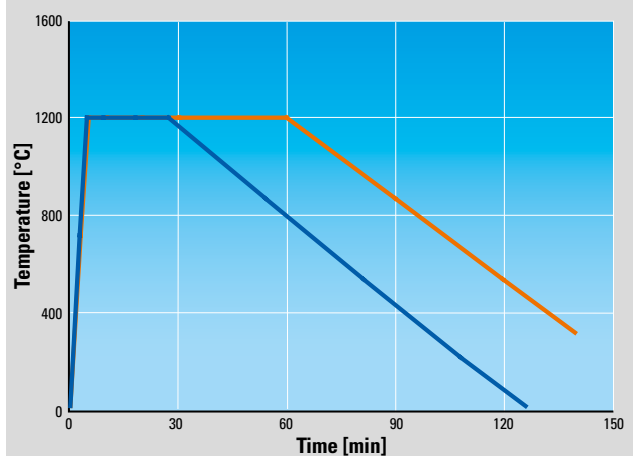
## Structural Fire Protection for Road Tunnels

Since a tunnel behaves like a closed room in the event of fire, the heat generated cannot easily escape. The fire load and the resulting fire duration can, however, vary greatly, depending on the combustible material present. There are two overriding basic requirements that need to be met when upgrading the fire protection of road tunnels: The rise in temperature at the reinforcement must not exceed 300 °C, and the construction materials used must remain damage-free.

The fire-resistant PCC/SPCC concrete replacement Nafufill KM 250 not only verifiably meets these requirements, it comfortably exceeds them to ensure maximum safety for your structures!

In Germany as elsewhere, different fire loads in the form of temperature-time curves have been determined to assess fire resistance for the fire protection design of road tunnels.

- ZTV-ING, Part 5 Tunnel Construction, 25 minutes blazing fire phase at 1200 °C
- ZTV-ING, Part 5 Tunnel Construction, 55 minutes blazing fire phase at 1200 °C



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# Nafufill KM 250



## Illustration of Requisite Minimum Layer Thickness for road tunnels



### ✂✂ Requisite concrete cover to ZTV-ING, Part 5 Tunnel Construction

#### ■ Layer thickness insufficient

Application of Nafufill KM 250 increasing the concrete cover possible.

#### ■ Requisite layer thickness of Nafufill KM 250 (min. 20 mm) as a function of the current concrete cover present



With the extended ZTV-ING tunnel fire curve, the minimum layer thickness required throughout is  $\geq 30$  mm!

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