



Fire protection

for railway vehicles

Fire protection and fire testing of railway vehicles

We offer our customers inside and outside the DB Group extensive railway vehicle fire protection services in the form of preventive material and design measures, providing individual support with:

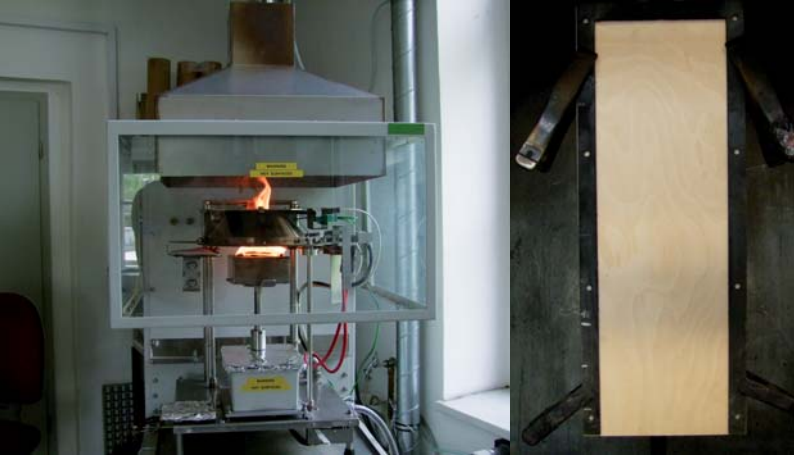
- Calculations and simulations using specialist engineering methods
- Fire testing for component approval
- Damage and accident investigation

We work at the highest quality level in accordance with industrial and other standards.



Our services are certified in accordance with DIN EN ISO 9001.

Our range of services



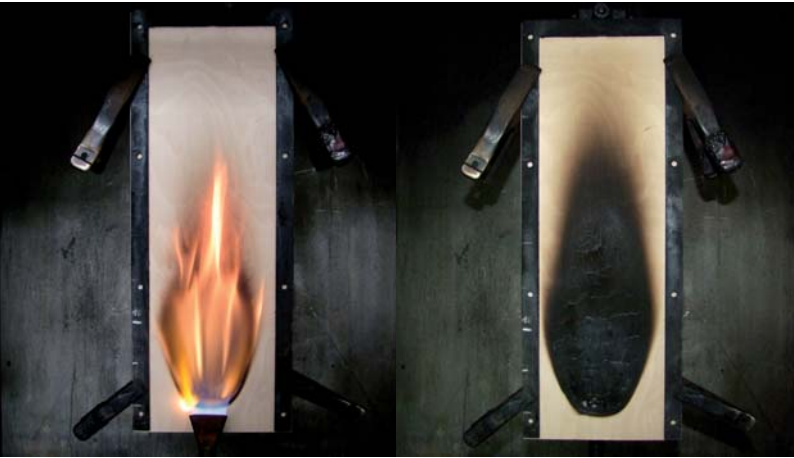
DB Systemtechnik's fire protection experts are highly skilled and offer solutions for a wide variety of fire protection issues:

- Drafting fire protection specifications
- Drafting fire protection concepts and audit of existing fire protection concepts
- Fire risk analyses and proof of equal protection using engineering methods
- Verification of compliance with fire protection regulations
- Specialist consultancy on all aspects of new design, conversion and maintenance projects
- Fire tests in an in-house laboratory recognised by the German Federal Railway Authority (EBA)
- Fire origin and cause investigation

Our fire protection

expertise at your service

Fire test laboratory



Fire test laboratory

Fire protection certificates must be provided for materials to be used on railway vehicles. We offer these tests in accordance with the following standards:

DIN 5510-2:2009

This standard defines technological fire protection requirements of materials in respect of combustibility, smoke density and toxicity, and refers to the following additional standards:

- Determining fire behaviour in “Brandschacht” tests as specified in DIN 54837
- Determining fire behaviour in a burn chamber as specified in DIN 53438
- Measuring smoke toxicity and the smoke gas development by FTIR in the NBS smoke chamber as specified in ISO 5659-2

Investigation of the cause of fires



DIN EN 45545-2:2013

This standard also defines fire protection requirements of materials in respect of testing combustibility, smoke density and toxicity, and refers to the following standards,

- Determining the heat release rate (MARHE) with a cone calorimeter as specified in ISO 5660-1
- Determining floor combustibility (CHF criterion) with a floor radiant panel as specified in EN ISO 9239-1
- Determining lateral flame spread (CFE criterion) using spread of flame apparatus as specified in ISO 5658-2
- Determining fire behaviour as specified in the direct effect of flame as specified in ISO 11925-2

Investigation of the cause of fires

In the event of fire damage to railway vehicles, we can investigate the cause of fire, including the following options:

- Scene of fire investigations to survey and record the damage
- Further laboratory analysis
- Identification of the cause of the fire
- Issue of technical and/or administrative fire protection measures
- Issue of reports and expert opinions

Reference projects

Fire protection concepts

Fire protection concepts are an absolute necessity in the process of approving railway vehicles for operation. They specify implementation of the fire protection requirements on railway vehicles to guarantee the protection of human life and must be kept up to date.

Our services

- Drafting of fire protection plans on the basis of TSI requirements
- Establishing expert opinions to existing fire protection concepts

Our reference projects:

Drafting of fire protection concepts for

- ICE1
- ICE2 (following redesign)
- ICE 3
- IC mod (conversions)

Expert opinions on fire protection concepts for

- ICx
- Dosto (double-deck vehicles) 2010
- Dosto IC

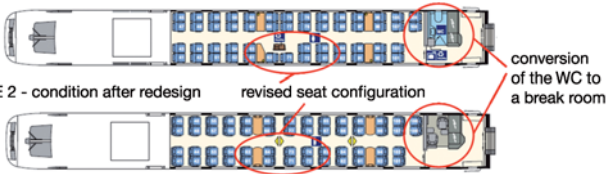
Selected reference project: ICE 2

ICE 2 RD fire protection concept

DB Fernverkehr AG carried out a major redesign programme for its 44 ICE 2 trainsets from 2010 to 2013. The interior of the high-speed trains was substantially modernised in conjunction with scheduled maintenance:

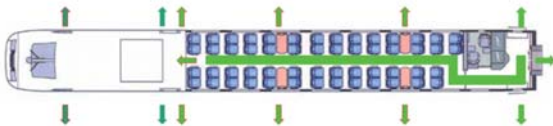
- Use of new materials
- Revised seat configuration
- Conversion of WCs and buffets

ICE 2 - condition before redesign



DB Systemtechnik's fire protection specialists carried out the following tasks during ICE 2 modernisation:

- Performing fire tests of different materials
- Modification of the emergency exit design of the trainset
- Updating of the fire protection concept





Imprint

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