

# Polarteknik Door Systems



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Advanced product development techniques and mutual trust create the foundations of co-operation



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Mutual trust and persistent goal oriented product development constructed a new door product platform for low roof trains. The new product line developed for **Hitachi Rail** provides comfortable travel for future generations.

**Hitachi Rail** is the main partner of The Intercity Express Programme (IEP) with a £6 billion fleet order. The Hitachi IEP train is known for its high quality and reliability targets. Their main objective is to provide best in class travel experiences for their passengers. The collaboration between Hitachi Rail and Polarteknik started in 2005 with Class 395.

Polarteknik was awarded with an IEP project from Hitachi to provide unnoticeable interior doors for trains. The doors should open and close quickly and reliably with the minimum level of noise. When in a closed position, the door system should provide good sound reduction to enable pleasant travelling compartments.

### Solving the execution challenge

The first design challenge in the project was an extremely low space envelope reserved for the door system. Polarteknik developed a new type of door mechanism, which responds perfectly to carriage types with a low floor application. The new product platform and the main components were produced with the high Polarteknik standard which stems from more than 10 years' experience in the field and well proven RAMS and LCC values.

The new door mechanism enables upkeep from the corridor maintenance hatch without removing wall panels, which shortens the maintenance time and optimizes LCC total values even on the lower level.

### Collaborative product development

Managing overall system weight has always been an advantage of Polarteknik door systems. In collaboration with the customer, Polarteknik has invented crashworthy and light products. One example is a product in compliance with GM/RT 2100 that can withstand over 2,5kN point load whilst maintaining a complete system weight low.

The ecological footprint has been considered from the very start. With the recyclability rate exceeding 99,5%, these doors can be easily recycled at the end of their 30 year life cycle.

**Polarteknik Door Systems is the leading European supplier of fire barrier gangway door systems for rail vehicles. These products help increase passenger comfort and safety in modern as well as refurbished passenger coaches.**

### Hitachi co-operation in a nutshell

Collaboration started: 2005

Key factors in the design:

- Unnoticeable interior doors
- Quick and simple maintenance
- Crashworthy and light products

Point load: over 2,5kN

Recyclability rate: exceeds 99,5%

Product lifecycle: 30 years