



## Great Western Railway

### Use Case – Rail Car Cabin Production Parts

#### Customer Profile

Great Western Railway (GWR) is a UK-based rail operator. With a focus on continual innovation, GWR is recycling older Class 230 rail cars to transition them to electrification and updating their interiors to current standards.

#### Challenge

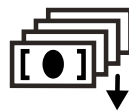
Part of the modernization project includes refurbishing the train's interior. However, replacement parts are no longer available for these older rail cars. Manufacturing a small quantity of these parts with conventional fabrication like injection molding is not economically viable due to the tooling and labor expenses.

#### Solution

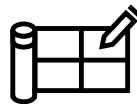
The train's driver-side video display bezel was one specific part that needed replacement for this refurbishment project. As a solution, GWR engineers chose to 3D print the part on a Fortus 450mc™ printer using Kimya PC-FR, a polycarbonate material with fire-retardant properties. PC-FR meets regulatory safety standard EN 45545-2, which is required for materials used in passenger rail cars, making it an optimal choice for this application.

#### Impact

Fabrication of the display bezel with the 3D printed Kimya PC-FR material afforded GWR the following benefits:



- **Significant cost reduction** compared to metal fabrication or injection molding



- **Design freedom** from conventional manufacturability limitations



- **Material that is compliant** with railway safety regulations



- **Timely completion** of the rail car's interior update within a tight deadline



The lighter-colored bezel surrounding the video screen was 3D printed using Kimya PC-FR fire retardant material.