

RAIL PIT BOARDS



The Challenge

Depots can be several hundred metres long with access required across various tracks. Historically, items such as planks of wood were employed as crossing points with no hand rails and kick boards which were potentially hazardous and sometime resulted in accidents. A reliable solution was needed which would ensure the safety of the maintenance engineers while enabling trains to pass without the need for constant removal.

On the open track the pit board must be robust enough to stay in place during train movements but light enough to lift with ease for relocation.

The previous solutions developed had no fall protection such as hand rails which left the engineers vulnerable above a pit system or when access was needed to the front coupling connections between carriages.

Simple wooden board could also not be load tested and issued safe working load values.

Solving the Problem

To address the need for the design to incorporate these requirements, a high strength glass resin polyprop (GRP) board to BS5395 standards was chosen. The light weight of the structure was aided by the cross formation profile which had the added benefit of being non-slip and self draining. A high strength but light weight aluminium edging for the board made an ideal combination.

Rail Pit Boards - Semmco Case Study

Case Study

An adjustable pit board 'foot' design was used to accommodate variations in gauge widths and the structure load tested to a safe working load of 500kg.

For times when access is needed to the pit, removable and interchangeable steps and handrails can be added with spring gate mechanisms. Tapered handrail connections were designed to enable easy insertion/removal in to the pit board hand rail as required.

The safety feature, kick plates were added to the design.

The Benefits

The GRP provides grip for tread while the profile allows self draining for further slip resistance providing safe crossing points. The aluminium edge helps make the overall structure lighter whilst not compromising the strength so making it light enough to be adjustable by the engineer.

The design enables the pit board to stay in position and allow for train movements without the need for it to be removed and replaced.

It is possible to join pit boards together to form larger working areas. The modular construction for the pit enables the equipment to be multifunctional so providing cost savings while the engineers are given complete safety protection.

All pit boards are supplied with a hand rail which is fitted with a 150mm kick plate.