

# 76m Span Modular Pipe Bridge

A 76m clear span pipebridge was required to support 2 No. large steam mains over an existing main line railway. The challenge was to design and construct a suitable bridge that could be installed in a 10 hour weekend shutdown period and was light enough that a mobile crane could be used from the clients compound adjacent to the site.



## Key Points:-

1. Bridge was installed in 3 pre-piped modular sections which were built up on a plot adjacent to the main site. The gross weight of the bridge was 100T.
2. Early accurate lifting studies and pre-booked cranes were vital to the project.
3. The centre section included a fully clad shelter which was required to provide protection to trains from any falling objects.
4. The 2 end sections were installed on the week prior to the shutdown and supported on purpose built temporary towers using heavy duty Jacks to ease loading.
5. A 1000T mobile crane installed the 37m long, 53 Tonne, centre section of the bridge. This required some ground improvement works for crane stability.
6. GRP flooring helped to reduce the overall weight by 5 Tonne.
7. 100mm Pre-Camber was provided to cater for dead load deflections.
8. Close tolerance bolts and reamed holes were used on all the main splices to prevent slippage causing increased deflection.
9. Staggered splice locations and PTFE sliders helped ease installation.
10. Semi ridged strut joints helped erection and reduce differential deflection.
11. Because of the time restrictions conventional construction was not an option. Modular construction proved more economical, safer and caused minimum disruption to the client, the railway and its passengers.

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