

Corrosion Inspection and Structural Capacity Check of a Steel Pipe Rack Gantry

Identifying Severity of Corrosion, Structural Capacity and Recommendations for Strengthening and Repair

Synopsis

The condition of a 430m length of a structural steel piperack gantry was inspected with a view of establishing current and spare carrying capacity. A structural check was carried out to calculate the spare carrying capacity that the gantry can take as plans of expansion would result in additional services being loaded on the gantry in the future. In addition, the 25 year old structure was to be treated of its rust and to be reconditioned through the use of industrial protective coatings.

The works included a detailed condition audit of its structural members and at the connections/welds, which were carrying various services and cables. Recommendations on the treatment of rust and protective coating were specified. Ascent was retained to carry out the project management works to prepare repair specifications and carry out quality control check of the repair works throughout the project.

Owner Glaxo Wellcome Manufacturing Pte Ltd

Consultant Ascent Facilities Engineering Pte Ltd

Sub Consultant Millenniums Consultants
Plant Engineering Construction Pte Ltd

Typical Problems of the Steel Structure

Spot rusting, General rusting, Pin point rusting were identified and methods of corrosion treatment were given. The piperack was found to have failed in structural capacity due to its long span and strengthening methods were provided.

