



**Alumar IMPSA Unloader  
Structural Design Review  
Sao Luis, Maranhao, Brazil**

Liftech provided structural design review of an IMPSA unloader at the Alumar facility in Sao Luis, Brazil.

We reviewed the workmanship of the primary structure, performed finite element analyses, reviewed design drawings, and provided wheel load and stability calculations.

Liftech provided a report of the significant findings of our review and recommendations for improvements. We also provided a comprehensive structural maintenance program based on cumulative fatigue damage analysis.

Client:  
McKay International Engineers  
Benicia, California

Owner:  
Consortio de Alumínio do Maranhão (Alumar)  
Sao Luis, Maranhao, Brazil