

PROJECT SHEET

Port of Ploče, Croatia – Materials Handling System for iron ore and coal port storage and distribution centre

DemcoTECH was contracted by Ivicom Consulting of Croatia to design a bulk cargo import terminal for coal and iron ore. The terminal is located in Ploče on the south western seaboard of Croatia. The terminal is to import coal for a local power plant and iron ore for distribution inland, eastwards.

The terminal consisted of a ship unloading system, a stockpiling operation and a rapid rail loading facility.

DemcoTECH's scope consisted of the detailed design and engineering of the materials handling system, which included five belt conveyors with associated transfer stations, two hydraulically-operated dewatering lifting tables, two rail-mounted loading hoppers for mobile plant reclaim operations and a train loading system.

The import and stockpiling systems were designed for 4 000 tph iron ore or 2 000 tph coal to be conveyed on 2 000 mm wide conveyor belts at 2 m/s and 4 m/s respectively.

Two reclaim systems were provided; one is a conventional bucket-wheel operation while the secondary system comprised two independent rail-mounted motorised reclaim hoppers fed by mobile plant. Each mobile hopper comprised twin loading hoppers, two vibrating feeders and a 3-point centre-pivot chassis arrangement to ensure stability of the sizeable travelling hoppers.

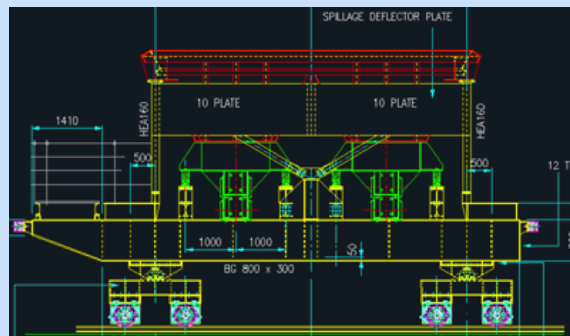
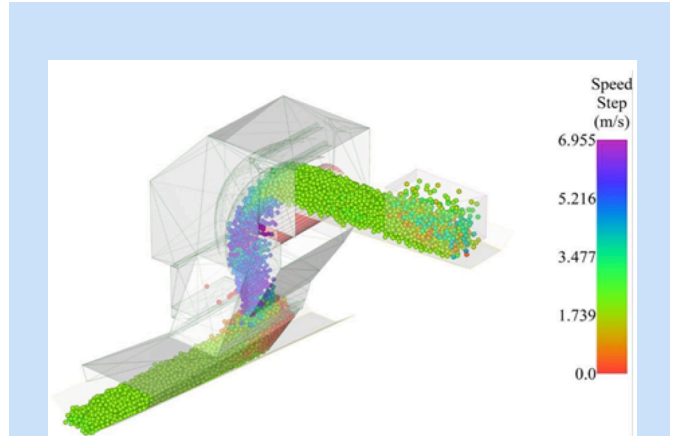
A rapid rail loading facility was designed for 2 400 tph on 1 400 mm wide conveyors with a belt speed of 4 m/s. The rail loading facility comprises a gravity-fed design where a flask on load-cells is used to harmonise the dispatched load to a variety of rail wagon sizes. Hydraulic-operated isolation and dump valves were employed; a retractable loading chute and surge silo were also part of the system. The loading tower measures 33 m tall and comprises a steel structure.

The entire plant is subjected to severe seismic activity and thus the structural design had to incorporate the requisite features to dissipate and resist seismic-related forces and loads.

The conveyor system is required to handle both coal and iron ore interchangeably, through the same chutes. As a result, the conveyor belt speeds and throughput of the two products varied considerably. Also, the chutework designs for coal (free-flowing) versus iron ore (drop box) design required the chutes to be set up for the two products. This was achieved through a series of adjustable features rotated into- or out of the material path.

DemcoTECH is a specialist bulk materials handling and niche process plant company, offering services from concept design through to project completion to the power generation, cement, mining, metallurgical, manufacturing and port handling industries. Services include conceptual design, feasibility studies, design, engineering, procurement, expediting, construction and commissioning.

Plant supplied by DemcoTECH includes troughed conveyors, air-supported conveyors, pipe conveyors, rail-mounted slewing boom stackers, pivot boom conveyors and mobile conveyors.



Client	Ivicom Consulting
Commodity	Coal and Iron Ore
Contract Type	Detailed design and engineering
Duration	2014
Location	Port of Ploče, Croatia