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THE WEAKEST LINK IS OFTEN OF THE LEAST CONCERN

By

Corin Holmes

Jenike & Johanson Pty Ltd Australia

Presenter

Corin Holmes

ABSTRACT

Bulk-solids handling systems dictate the overall operational performance of the entire processing plant but are often the most undervalued components. They are typically the weakest link in a processing plant's value chain.

Liquid handling plant designers consider density and viscosity which are well known and commonly used design parameters. Bulk solids system design is similar however, the relevant parameters in handling bulk solids are instead compressibility, friction (i.e. cohesive strength and wall friction), and permeability. These frequently vary depending on the ore's mineralogy, shape and size distribution, moisture content, storage time-at-rest, temperature, and consolidation pressure.

Measuring flow properties and applying them correctly to design bulk-solids handling systems will reduce project risk, save capital, and increase throughput. This is especially true when handling sticky laterite materials.

Keywords: Bulk Solids, Material characterisation, system design, flow properties, laterites