

completely new main drive, driven idlers can be installed with a reduced downtime. The flow rate is increased while keeping the belt tension constant. Laboratory tests are performed at ITA to provide a comprehensive basis for the design of a belt conveyor with driven idlers. Hereby, main factors for the force transmission between driven idler and belt are investigated. For example the influence of the vertical load is shown to be a main factor for the amount of transferable drive power.

Besides the mechanical design, a main aspect of research at ITA is the development of an intelligent control concept. Here, several hundred driven idlers shall communicate with each other and adjusting their drive power autonomously. A similar concept is also developed at ITA and already working successfully for small-scale multidirectional transport modules used at warehouse logistics.

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