

New technology in panel board production: Low-temperature belt dryer for PB or OSB drying

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Abstract

Stela Laxhuber GmbH; located in Massing, Bavaria, is an international operating company specialized in low-temperature belt drying technology. Continuous developments and customized optimization in various applications, facilitate to be called technology leader in expanding markets as panel board industries. During the company history of more than 95 years, more than 4,000 drying plants have been delivered and commissioned to more than 60 countries. Whether in timber, pellet, pulp and paper industry, in cement industry, as well as the water management, the feed or pet food industry or in waste disposal industry – stela's low-temperature belt dryers are applications in a wide range of industrial processes. One of the greatest benefits using high efficiency belt dryers reflects by using waste heat or other low-temperature sources. Lowest temperatures from 30°C can be used reasonably in the belt dryer. Usual heat transfer media are e.g. hot water of cogeneration plant (CHP, ORC) or flue gas condensation, low-pressure steam or thermic oil.

Long standing state of the art in the energy sector - now demanding in the panel board industry.

Low-temperature belt drying systems for pre- and final drying of fibres, chips and OSB strands in panel board productions. Based on branch experiences stela has been working intensively on waste wood drying for many years, customers can now benefit from stela know-how through their drying systems: Belt dryers score points in having an indirect heating and a low temperature process, with a specific heat demand of 0,90 – 1,10 MW/to water evaporation and a specific electrical demand of 20 – 30 kW/to water evaporation, reduced fire and explosion risk, long maintenance cycles, efficient consumption figures, a highest level of drying quality, and the fully automatic controllability of the drying process. Belt dryers are characterized by lowest dust and VOC emission values, by low thermal and electrical consumption through optimally synchronized components. Characteristic features of stela dryer lines are e.g. closed construction, easily accessible through wide inspection doors, enabling outdoor installation at temperatures down to -40°C, insulated dryer body, covering individual adaptations according to customer requirements by designing various

belt widths and length; the modular lining concept easily allows expansions. Product turning devices ensure a homogenous final moisture scatter, energy-saving ventilators with directly coupling, low-noise radial fans for continuous air distribution with minimal pressure loss and noise emissions. The high safety and emissions standards are ensured by indirect drying system and low specific electrical consumption. The dust emission of stela belt dryers can be kept beneath $10\text{mg}/\text{Nm}^3$ without the installation of additional filters. Subsequent minimized product warming by lowest process temperatures neither wet electrostatic filters (WESP) nor thermal post- combustion (RTO) are needed to meet stringent EU emission limits.

Best-in-class companies rely on stela drying systems:

Swiss Krono (PL – Zary), Kronospan (LUX – Sanem), Swiss Krono (D – Heiligengrabe), I-PAN (IT – Coniolo), Invernizzi (IT – Solarolo), Tokyo Board Industries (JP – Sakura), Fengyuan (CHN – Zaozhuang City)

