〈技術資料〉

Inductive Strip Dryers Easy to Use

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20 years ago, precisely on 16 Juni 1992 at the Electrotech92 in Montreal, Inductotherm introduced on the market a breakthrough technology for inductive paint dryers (single turn heating coil located externally to the tunnel and fed through high frequency transistorized Statitron[1])

That first introduction was followed in 1993 with the very successful commissioning of the LERO line by ArcelorMittal in Belgium (Ligne Expérimentale pour Revêtements Organiques). That coil coating line is still in use today[2])

Unicoat technology has been a 20 year success in progress. This paper gives the status of the Unicoat Gen5 technology in 2012

1. Introduction: Dryers using low and high energy radiations

Curing with low energy radiation, also called thermal curing, does not break molecules. Convection, Induction, Infra and Near Infrared are examples of thermal curing.

Curing with high energy radiation, also called radiation Curing, breaks molecules links. Ultra-Violet and Electron beam are examples of radiation curing.

With induction, by nature, the drying process starts at the interface between the strip and the organic coating. It gives the warranty on the quality of that interface. For the same reason it allows the shortest drying time.

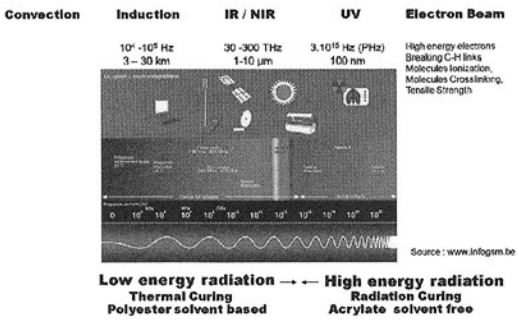

Fig. 1 The frequency spectrum

2. The LERO line: the starting point of the Unicoat technology by Inductotherm

With its length of 21.4 meter, the Lero line gives a total drying time of 6.4 sec at 200 m/min. Due to the limited length of the inductors, it corresponds to a total heating time of 2.25 sec. The

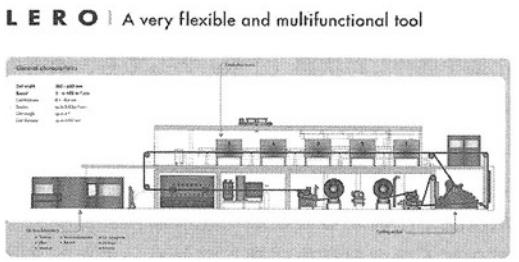

Fig. 2 The Lero line (Source ArcelorMittal)

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