Infrared Systems cure powder coating on MDF boards flexibly and at high quality

An infrared oven from Heraeus Noblelight is ensuring brilliant surface quality of kitchen door fronts at Kempa in Belgium. There is a wide range of requirements for kitchen fronts in terms of design and surface properties. As well as the variety of colours and shapes, other properties such as scratch-resistance, chemical resistance and water resistance also play an important part. This is where the benefits of powder coating come into effect, as, as well as a seamless coating, powder coating also provides excellent mechanical and chemical properties. The precisely accurate process and the curing of the powder on the various kitchen fronts is ensured by the flexibility of the Heraeus gas catalytic oven.

Kempa Products nv is based in Herentals, Belgium and manufactures fronts for kitchens, tables and chairs. Since 1992, it has used both solid wood and MDF for its products. Kitchen fronts in MDF are enhanced with a coating and for this both liquid and powder coating systems can be used. Kempa supplies kitchen fronts exactly to customer specifications in batches from one upwards. Consequently, in order to meet the powder coating requirements, the drying and curing oven must be flexible enough to meet all situations.

Heraeus has supplied Kempa gas catalytic infrared heating systems for the pre-heating and for the curing itself. Powder coating on MDF boards is significantly more homogenous if the boards are pre-heated. This increases electrical conductivity, which then helps the powder to be distributed more homogenously. The second gas catalytic infrared oven serves to gel and cure the powder coating. Generally, powder absorbs infrared radiation very well, heats up very quickly and is gelled in significantly shorter time than in a conventional convection oven. As there is no circulation of air, dust inclusion is eliminated and the powder is not swirled around. A fast melt improves the coating quality and increases the production line speed. Infrared heat is transferred faster and at higher power than hot air, so that in most cases the oven is shorter than a convection oven or the production line speed is faster.

The oven at Kempa has an implemented zone control that allows adjustment of every temperature profile according to the requirements of MDF board dimensions or powder type used. Heraeus application specialists established with Kempa the required oven settings. Finally, various programmes to meet the different requirements were incorporated in the control system and these can be called up on demand.

Features
- MDF powder coating for kitchen fronts
- IR pre-heating enhances conductivity
- Gelling and curing of powder coating by gas catalytical infrared oven
- Implemented zone control for special temperature requirements

Technical Data
- Gas catalytical infrared oven
- 12m long
- Line speed of around 2m per minute