The Swedwood Group is a fully integrated international industrial group of IKEA with primary task to ensure production capacity of wood based furniture for IKEA. Swedwood was established in 1991 with head office in Ängelholm, Sweden. They’ve operations and offices in Sweden, Russia, Latvia, Lithuania, Poland, Germany, Slovakia, Hungary, Ukraine, Portugal, China and the USA. Their organization is divided into Business Sectors with focus on specific operational and production concepts. Swedwood group in Sweden have operations in Älmhult, Tibro and Hultsfred. This project is located in Älmhult plant, sector kitchen doors.

How to secure high-end quality levels when planning to increase the output in your production line up to around ten million boards per year? And, furthermore, how to handle production of more than one hundred different sizes working in three different shifts seven days per week. The question was fluttering around Swedwood plant in Älmhult and corporate headquarters for a while. Using Paint Robots became the answer. For high finish quality, ABB Paint Technology ensured to Swedwood a uniform film build with a specified thickness over the entire object. On top of this, another advantage of using robotics for paint application is the reduction of paint consumption by monitoring the spraying process. Here, again, ABB helped Swedwood to considerably improve transfer efficiency.

Turnkey solution
ABB provided to Swedwood a complete solution from the barrel of paint to the painted surface. Our complete painting line included 5 Robots for painting, sanding and manipulation. But also comprehends spray and sanding booths, ovens and cooling boxes, conveyors, paint preparation, paint distribution, and paint application equipment. All in all, full scope of supply including project management, installation, commissioning and ramp-up production assistance of the system.
Process description
As input to the paint line, stacks of MDF boards are loaded into the in-feed conveyor. Underneath them, a base board with pins is placed (used to avoid destruction of last board in the stack during transport and, at the same time, to avoid paint contamination of the conveyors). Then the stack enters into the first spray booth where the base coat is painted and, after a visual control in an inspection station, the product is cured inside the oven and proceeds afterwards to a cooling tunnel. Next step in the process is to carry on the sanding of the stacks before they are transported to the part of the line where the second layer of paint, or top coat, will be applied. At the end of the line, the already painted stacks of base boards are leaving through an out-feed conveyor. Remarkable in this line is the fully automatic parametric program and the 3D recognition by mean of cameras.

Customer feedback
ABB has finished the project on-time, reaching an average cycle-time 10% better than specified and a technical availability above 99% (which is more than ABB’s contractual commitment). The complete paint line is designed to run just with one supervisor, which was also one of the key requirements of Swedwood. And the concerns about achieving constant quality now totally disappeared.

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