

berkvens Student Challenge

*Design the Factory of the Future
and win a year's tuition!*

Who are we?

We are Berkvens door systems. A family-run business from Brabant with 450 employees that has been designing, developing, selling, manufacturing and installing interior door systems for more than 85 years. Our production facility in Someren consists of four factories. More than 450,000 doors and 360,000 frames are produced in these factories annually. The products are used for both residential and non-residential purposes. We mainly produce for the Dutch market, but we are also regularly involved in fantastic projects abroad.

Our production process

Approximately 165 passionate production employees and more than 300 different machines are at work in the production facilities where our doors are produced, making sure that we can deliver our diverse range of residential and utility doors to our customers on time and in great condition. Due to the changing compositions required for our customised orders, product flow in our door factories is more complex than ever before. Berkvens currently produces doors with approximately 60,000 different specifications and this level of complexity is expected to increase each year. More than 10,000 doors are produced per week, which not only have to meet the visual requests of our customers but also all of the functional requirements. This includes factors such as fire, smoke, noise, radiation and moisture resistance.

In order to be able to produce these volumes on a weekly basis, most workstations are designed to handle 16 hour production schedules (2 shifts). The current production process for doors consists of different process steps based on the specifications and applications requested by the customer.



A visual overview of the door construction and the related process steps is shown in the figure below.

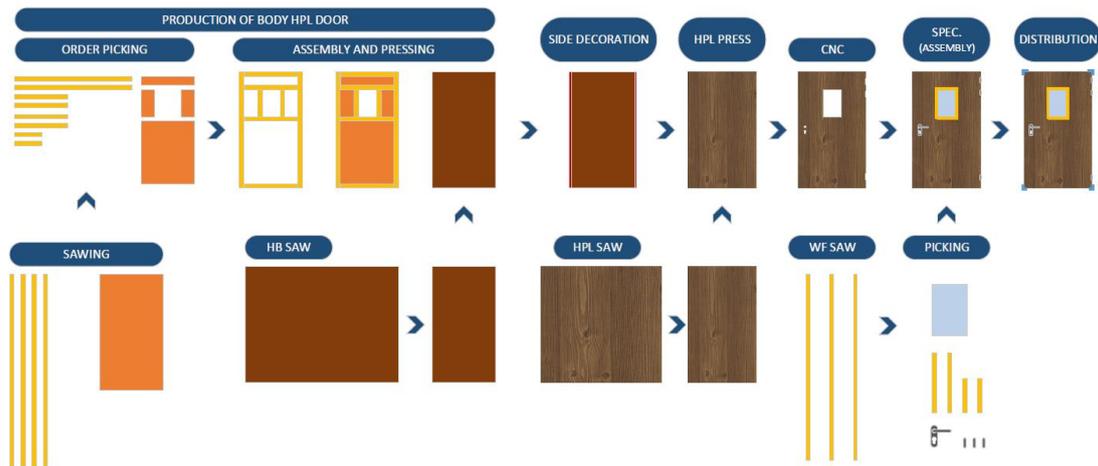
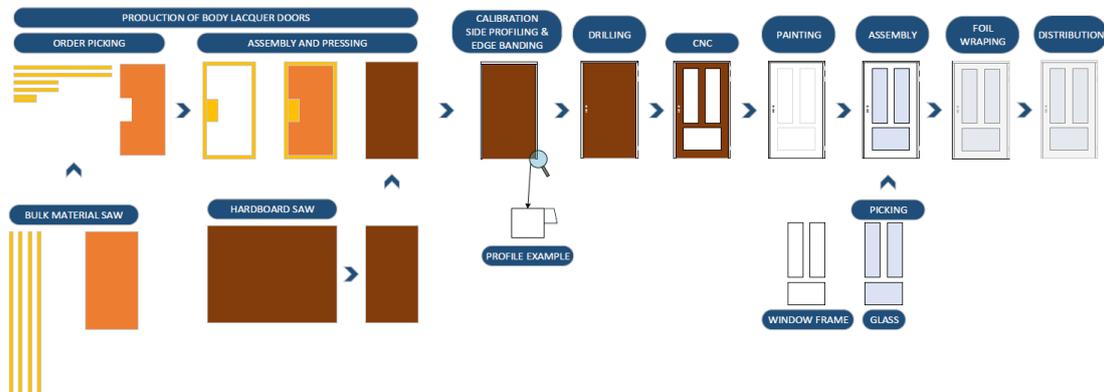


Figure 1. Production process of HPL doors

Figure 2. Production process of lacquer doors



Essentially, door production begins with picking and sawing rails, jambs, panels and core materials. Depending on the type of door, these parts are assembled into a frame, which is then glued together to the panels with a press. After this step, you have the body of the door. After pressing, the body of the door is then transported to the next production step. Different process steps may also be required here based on the functional and visual requirements of the door. The most common production steps include: edge processing, gluing or painting the HPL, CNC milling, drilling, final assembly and packaging.

An open outlook towards the future

This is how the production process is currently designed. There are already significant differences as compared to 20 or even 10 years ago. The complexity of the products and the changing demand in the market will only continue to increase. Along with changing market demand, there are also additional external factors that we have to take into account when looking towards the future. Consider, for example, demographic changes, accelerated urbanisation, climate change, the scarcity of resources and a myriad of technological changes. All of these developments, trends and technologies happening in rapid succession ensure that the future will remain elusive to us. But we will not wait around to see what happens next. Our aim is to lead the way and constantly remain pioneering and ahead of the trends.

The Berkvens student challenge: design the Factory of the Future

Considering all that may happen around us, what smart investments can we make in the factories of the future? We have to endeavour to take a critical look at our processes so that we can determine whether they are flexible enough for the future. Where can the processes be more efficient? In 10 years' time, will we still be producing doors as we are currently? What will doors look like in the future? All of these questions are important for us to think about. But not only in a few years. No, we have to prepare ourselves as much as possible for what the future may hold. The large size of our company can make changes sluggish, and it would be beneficial for us to be more flexible as we look towards the future and to be able to adapt more quickly to what is happening around us.

That is why we have started working internally on the *factory of the future*. It is important not to limit ourselves when it comes to the future and what it means for Berkvens. In other words, we should not hold fast to how we do things now or to how we have always done them. What does the future really have in store for us? And how can we become and remain future-proof? These are concepts that we cannot solve alone and for which we are very happy to enlist the help of students. Students who go the extra mile, who truly dare to think out of the box and who can help take our company into the future.

We want to challenge you! Imagine you have an unlimited budget, no restrictions and all resources at your disposal. What do you think Berkvens would look like in the future? We're challenging you to conceive, design and pitch our factory of the future.



Figure 3. Our production facility in Someren consists of four factories