

Problem veneer-moisture

(please have a look on the German advertisement „BM“)

Production advice for processing softforming and wrapping with veneers

That the flexibility of wood increases when having more moisture is today well known and was realised by Michal Thonet more than 150 years ago. Due to this the chair number 14 was established – the epitome of the wood bending technique.

Even the flexibility of veneers depends on the moisture and therefore a high moisture is desired by wrapping. Too much moisture however leads to problems when gluing and can make problems in the following production processes.

Today for standard wrapping and softforming processing with veneers everywhere in the world it is assumed that the best veneer moisture is 9 to 11 %! At the same time it offers an optimum in adhesion in the gluing process and even a relative high flexibility of the veneers in bending around small curves.

If the moisture is higher than 11 % it can happen that the hotmelt glue which is applied by approximately 200 °C is not getting a good adhesion, because the moisture is steaming out.

Even if the gluing and softforming or wrapping seems to be good, it can happen, that if the moisture of the veneer decreases of about 5 %, tears can occur which can't be seen direct in or after the processing!

Otherwise if the veneer is too dry the veneers are not flexible enough, so it can happen that you will find such tears direct in the bending process. These tears are always going through the whole wrapping veneer thickness and only stop at the backfleece.

These problems become larger if the material becomes thicker. As a result of this, veneers for softforming and wrapping are specially controlled in thickness through sanding. The smaller the radius is, which had to be wrapped, the more flexible the veneer has to be! So there are three possibilities to make veneer more flexible:

1. Use the material only moister controlled (9 – 11 %)
2. Use thinner veneers
3. Use different back fleeces and sizing sanded thicknesses!

The most flexible veneer we can produce today, is a special double fleece backing „poly +1“, which only makes sense together with a sizing sanded surface. (minimum thickness approx 0,3 mm).

This very high flexible wrapping/softforming veneer is having a real veneer thickness (without backfleece) of approximately 0,1 mm! Due to this, there is no way to sand such a material after the wrapping/softforming process! This is the reason why this type of wrapping veneer is mainly used prefinished lacquered, or if this profiles/mouldings are very complicated.

Everywhere we are looking to run wrapping veneers in a maximal thickness to have the possibility for sanding after, and to have enough thickness to get no other effects like the shining through of the substrate, which is wrapped on, or the typical „orange-skin-effect“.

To change something like the fleece or the thickness, it is always necessary to do this only together with moisture controlling!

In a large softforming test we achieved the following result:

Veneer, fleece backed, sanded 0,43/0,45 mm at a moisture of approx. 10 % is similar in processing than the same veneer, fleece backed, sanded 0,38/0,40 mm with approximately 5 % moisture.

This shows that moisture controlling is necessary everywhere in wrapping or softforming. Due to the problem of directly measuring moisture in such veneers, it is easier to control the humidity in the stocking and in the production area!

If you stock veneers in rolls, there will be a balance between humidity and veneer-moisture within 3 days. So the only thing we have to check is the right humidity, because the temperature if it is between 15 and 30°C, is only changing the situation slightly. Please look at the diagram.

If the humidity is about 55 % the approximate wood moisture is 10 %. If there is no way to reach such high humidity, stock always at the same less high humidity, because then you know, that if you change something in the veneer thickness, that this can be controlled and is understandable in the wrapping process!

Especially larger differences between the humidity in summer and winter are well known, so we will always get in touch about problems between the winter time in Germany or during very high humidity in subtropical areas.

Because of these problems our customers are often in trouble on Monday mornings. The people who run the machines are saying that there is something wrong with the machine, because they had produced without any problem till Friday afternoon, and now on Monday morning it is not running, but they haven't changed anything! The only thing that happened, was, that the veneer rolls were at the machines during the whole weekend and are losing moisture (mainly in centre of Europe) or they are moistured up too much (mainly in subtropical areas) and there is trouble in the gluing process.