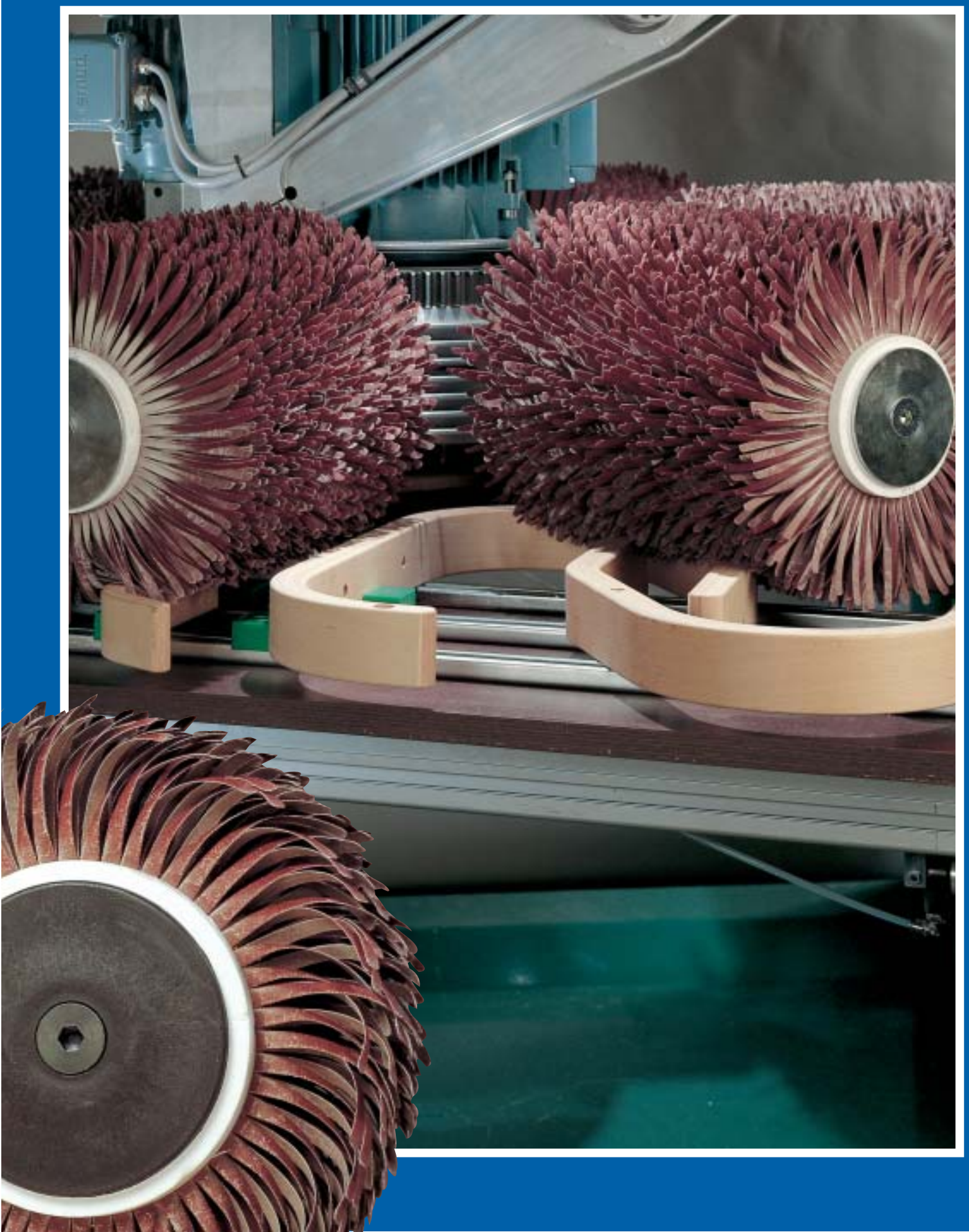
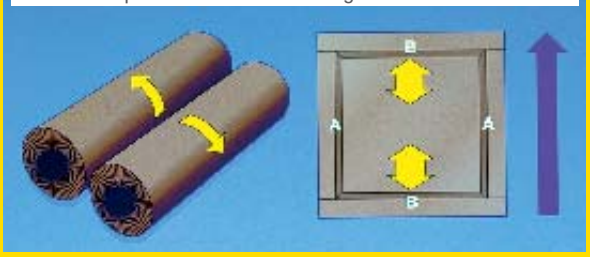
Fladder®

The original wood finishing system



Choose the right sanding method

1. Parallel spindles - counter-rotating.



2. Rotating spindles - rotating in same direction.

3. Rotating spindles - counter-rotating.

4. Rotating spindles - counter-rotating and oscillating.

It is a well-known fact that a wooden surface becomes rough after sealing.

The reason for this is that fine fibres are created by ordinary wood sanding procedures, for instance using a widebelt sander.

Because of the pressure of the abrasive material against the surface, the wood's fibres are severed, resulting in microscopic fibres creating a 'fuzzy' surface.

During the following sealing process, tension is generated in the fibres causing them to rise, and thereby giving the surface a rough feel.

In other words we need to look at the fibres!

The presence of these fibres must be minimised or efficiently removed before or after the sealing process.

The solution is to use the FLADDER® sanding system - an innovative sanding method based on sanding principles which are fundamentally different from those of traditional sanding methods.

Rather than sanding with a constant pressure against the surface, the FLADDER® sanding system is based on a principle by which the sanding aggression is created by the sanding tool's rotating speed.

Figures A and B show a wooden surface sanded in the normal way before and after sanding with the FLADDER® sanding system.

When it comes to choosing the right sanding method there are a number of choices, depending on the desired quality - and of course the allowed budget!

The figures on the left show simplified illustrations of the different sanding methods: spindles are shown with arrows indicating the rotating direction, a dark blue arrow marks the fibre's direction, and the part for sanding is shown with profiles or recesses marked A and B.

Figure 1

Shows a very simple sanding technique: 2 counter-rotating spindles. As a result, part of the sanding action goes along the fibres, and part of it goes across the fibres. In many cases this is a sensible and economical solution, but it is very likely that the A and B profiles will not be uniformly sanded, as the sanding action is performed along the A profile and across the B profile.

It is, however, possible to improve this method by feeding the part into the machine at an angle. However, the wear on the sanding tool will always be uneven, with a tendency for the spindles to wear down most quickly at the middle.

Figure 2

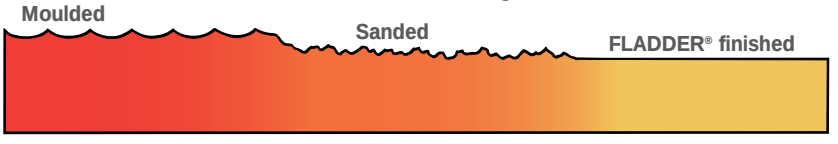
This is a slightly improved method:

The part is sanded in an orbital movement by 6 spindles, all however rotating in the same direction, say, counterclockwise.

The result is a more uniform sanding of the A and B profiles on the part. In addition, there is an even wear on the sanding tool.

However, as appears also from the illustration, the left half of the part will be sanded in one direction, and the other half in a different direction.

This means that the fibres on one half are likely to be merely pressed down against the surface, because the sanding action goes along, rather than against, the fibres.



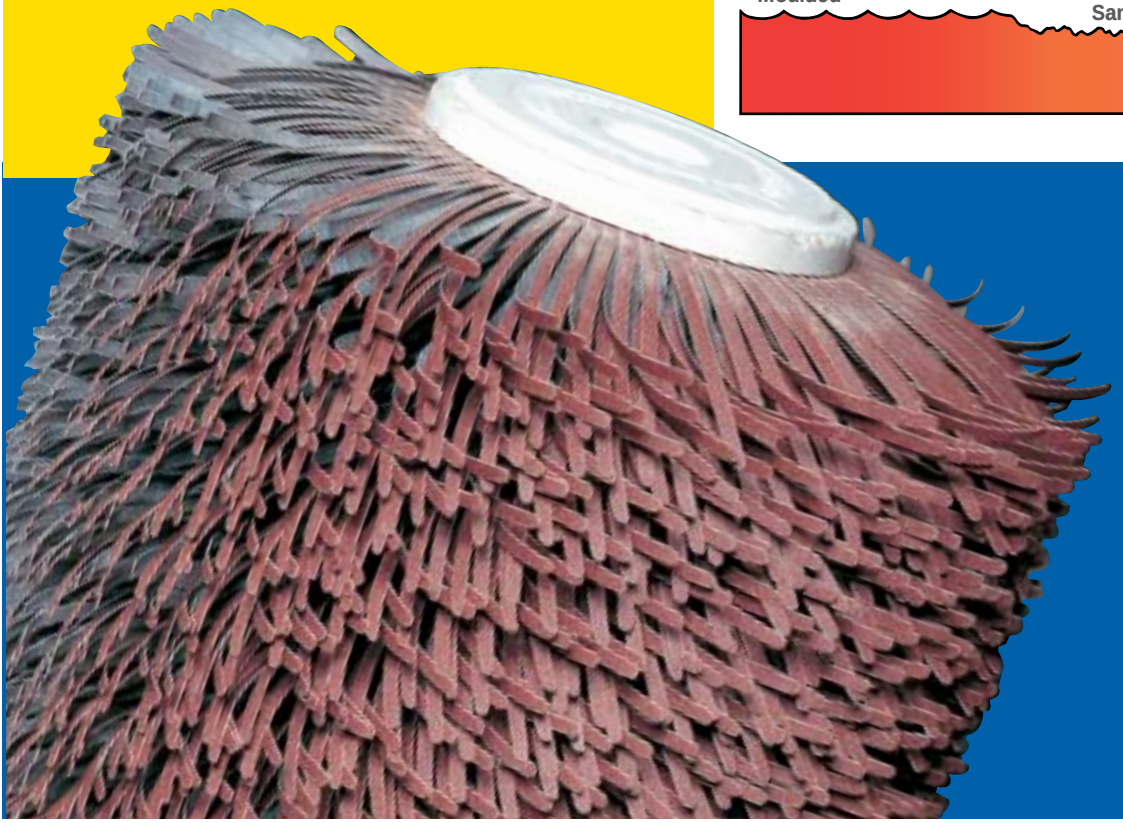


Figure 3

Shows a more perfect method of sanding:

The part is sanded in an orbital movement, but this time with 6 spindles arranged in 3 pairs of counter-rotating spindles.

The entire surface of the part is now uniformly sanded, as well as the A and B profiles.

This is the principle used in the FLADDER® sanding system which has been successfully introduced in numerous companies throughout the world!

Figure 4

Shows a refined version of the above principle used in the FLADDER® sanders:

The part is now sanded in both an orbital and an oscillating movement with 6 spindles arranged in 3 pairs of counter-rotating spindles.

As a result of the added oscillating movement it is possible for instance to feed the parts through the machine side by side, and still be certain that they will be uniformly sanded.

This oscillating method is required for sanding in, say, an automatic finishing line.

Fladder® Finishing

- the way to a better finish

Everybody knows the problems of denibbing after the sealing process.

It is labour-intensive and produces a production bottleneck, resulting in a big waste of sealing material.

The problem is caused by the fine fibres created by ordinary wood sanding procedures, for instance using a widebelt sander.

Because of the pressure of the abrasive material against the surface, the wood's fibres are severed, resulting in microscopic fibre strands creating a 'fuzzy' surface.

This is shown in the microscopy photographs A and B.

During the following sealing process, tension is generated in the fibres causing them to rise, and thereby giving the surface a rough feel, and as a result, a further sanding process is required.

In other words we need to look at the fibres!

Logically, we should be able to reduce the problem by minimising or efficiently removing the presence of these fibres before or after the sealing process.

The solution is to finish the surface using the FLADDER® sanding system - a sanding immediately prior to the sealer coating.

Finishing is a non-aggressive type of sanding which removes the fibres without creating new fibres, preserving the part's dimensions.

This way, you could actually say that the denibbing is performed before the sealing!!

- provides significant benefits:

● Up to 50% reduction in sealer/primer consumption

Figure C below shows the difference between a normal, sealed surface and a surface sealed after a FLADDER® finishing.

On the FLADDER® finished surface, the amount and length of the fibres are reduced. This means that

- less sealer is required to effectively seal the surface,
- less sanding is required, and
- the surface becomes more uniform.

● Sharp edges are rounded slightly

Sharp-edged parts often cause problems in connection with sealing or sealer sanding.

The sealing layer on sharp edges is very thin, and as a result the sanding often penetrates it.

Figure D below shows a profile with sharp edges.

On the surface treated with FLADDER® finishing, the edges have been rounded slightly, but not so much as to cause the part to lose its definition.

As a result, the sealer is able to better enclose the edge, and the risk of sanding-through has thus been minimised.

This problem occurs most often on stained surfaces.

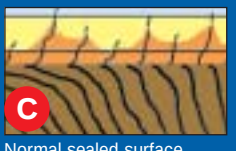
● Stain is more uniformly absorbed

The different fibres on a sanded surface do not always absorb stain uniformly. The look of the surface vary in areas where the stain appears darker.

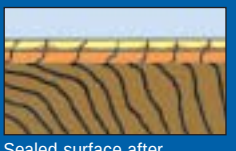
With a FLADDER® finish sanding the material is processed in such a way as to open the wood's surface.

This makes the stain penetrate more evenly into the surface and improves the wood's structure.

This is shown in Figure E below.



Normal sealed surface.



Sealed surface after FLADDER® finishing.

Without FLADDER® finishing.

With FLADDER® finishing.