

## REMOVING THICK LAYERS OF LACQUER / FINISH

In early times a lacquered floor was a sign of wealth. Thus many people wanted this type of floor in their home. Lacquered wood floors grew in popularity. Floors with thick, old layers of lacquer can still be found in many old houses today.

Sanding this type of floor can often be a challenge. For one, such coatings tend to heat up and smear quickly during sanding, and there is a large amount of material that needs to be removed.



**Pic. 1** A thick layer of lacquer on floor boards.

With floors like these it is important to carefully construct a working plan in order to obtain the best results with minimal effort.

You can read about the renovation of a layered lacquered floorboard in the following field report of a LÄGLER® project.

## FIELD REPORT: DESCRIPTION OF THE PROJECT

### July 29<sup>th</sup>, 2015 Field report on the removal of a thick layer of lacquer

Project name: Thick layer of lacquer  
Floor: Floor boards screwed onto sub floor  
Wood: Spruce  
Surface: 270 sq. ft. (25 m<sup>2</sup>)



**Pic. 2** Sanding a thick layer of lacquer with normal sanding material.



**Pic. 3** Easy to see: serious cupping of the floor.



**Pic. 4** Carbide blades of the IGEL milling drum. Works with the HUMMEL® or ELF.

### Theme of the project:

Thick layers of lacquer of wood floors can often cause problems during renovations when using conventional sanding materials (see pic. 2). They quickly become clogged, which leads to higher costs for sanding material.

This is especially true with old lacquer, oxblood mixtures, shellac coatings and waxes are also problematic.

This project is about the removal of such coatings.

### Starting Point

A solvent-based 2 component lacquer was applied to cupped flooring (pic. 3) made of soft wood (spruce).

The goal is to remove the lacquer and then finish the sanded surface with natural oil.

### Deciding of the procedure

Of course, the main problem is the removal of the thick layer of lacquer. It is extremely difficult to remove when sanding with conventional sand paper.

This is why the engineers at LÄGLER® decided to mill the layers with the HUMMEL® and the IGEL milling drum. In order to protect the relatively soft spruce wood, the TRIO will be used for the finish sanding.

The FLIP® will be used on the edges using course sanding materials.

## FIELD PROJECT: REMOVAL OF THE LACQUER

### Step 1: Preparations

Before milling the lacquer with the IGEL milling drum it is important to know the following points for safe operation and a successful finished floor:

- Face nails / screws must be countersunk in order to not damage the milling drum.
- The wood needs to have sufficient thickness for milling.
- Check to make sure the floor is in good condition (no rot, decay, etc.).
- The person operating the machine must have training / experience with this particular machine (HUMMEL® / ELF) as well as the milling drum.

### Step 2: Milling the floor

Changing the milling drum on the HUMMEL® only takes a few minutes. For this, the sanding drum as well as the drive unit are removed and replaced by the milling drum and cutting depth adjustment tool (pic. 5). This is done without the need to use special tools.

**Setting the milling drum:** The unplugged machine is rolled over the surface with the milling drum lowered (pic. 6). The cutting depth adjustment is set so that the milling drum barely touches the surface and turns on its own.

**Milling the surface:** The floor is milled in a backwards motion using the milling drum, this prevents splintering of the wood (pic. 7).

The 40 carbide blades (pic. 4) can take off up to 0.12" (3 mm) thickness in a quick and efficient manner all without damaging or clogging the milling drum. To get the same results with conventional sanding material would require multiple sanding belts that would be quickly worn out.

**Vacuuming the surface:** The surface is vacuumed after milling and after each sanding step.

There is almost no lacquer remaining on the surface (pic. 8).



**Pic. 5** Installing the milling drum on to the HUMMEL®.



**Pic. 6** Adjusting the machine.



**Pic. 7** Milling the surface.

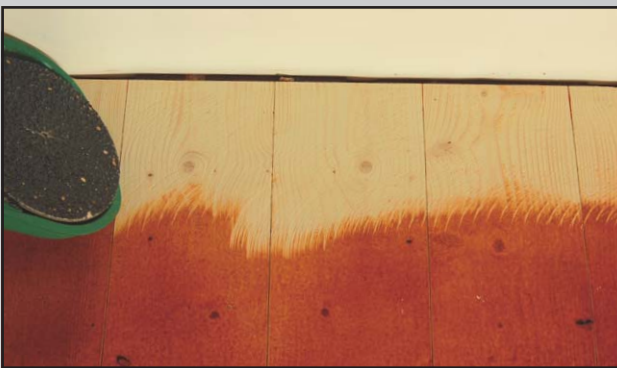


**Pic. 8** The vacuumed floor after milling.

## FIELD PROJECT: ROUGH SANDING OF THE EDGES AND FIELD



**Pic. 9** Setting the FLIP® wheels with a ruler.



**Pic. 10** Testing the edges with 24 grit.



**Pic. 11** Sanding the edges with 24 grit.



**Pic. 12** Removing the milling marks with the TRIO.

### Step 3: Rough sanding of the edges with the FLIP®

The edge area is problematic as the milling drum cannot be used. Using an abrasive with fine grit would heat up and melt the lacquer and load up the sanding disc (pic. 2). Therefore a rougher grit is used with the FLIP®.

**Setting the machine:** First, the machine is set to a steep and aggressive setting for rough sanding (pic. 9).

**Test sanding:** The test sanding shows that the FLIP® can completely remove the lacquer in the edge area with grit size 24 without removing too much wood (pic. 10).

**Sanding the edges with a rough grit:** Because the surface area around the edges is relatively small and because the 24 grit has large grains there is barely any clogging: The first edge sanding with 24 grit (pic. 11).

### Step 4: Sanding of the surface with the TRIO

The marks from the IGEL milling drum are very prominent on the floor. Because the lacquer free spruce is very soft, the TRIO can easily remove the milling marks and remaining finish with zirconia sanding materials.

**Test sanding:** Depending on the quality of the surface and the number and depth of the milling marks, a test sanding with the TRIO with fine grits is done (e.g. 60 grit). The milling marks in our project are removed successfully with 40 grit.

**First sanding:** The surface is first sanded with the TRIO using 40 grit (pic. 12). After that, there are only the marks from the 40 grit remaining.

**Second sanding:** The floor is sanded once more using 60 grit. This builds the base surface for further fine sanding according to **PST®**.

## FIELD PROJECT: FINE SANDING AND FINISHING

### Step 5: Further treatment of the edges

The remaining lacquer has now been removed from the edges with 24 grit, and now these marks must be removed with 60 grit using the FLIP®.

**Fine sanding:** A sanding on a flat machine setting and grit 100 follows. As the surface is being oiled later, the last sanding step is done with 120 grit.



Pic. 13 Sanding with the corner attachment.

### Step 6: Sanding the corners

In order to finish the edges, the corner attachment is used on the FLIP®. Because of its aggressiveness and high speed there is no need for rough grits. The corners are sanded using grit 80 and 100 (pic. 13).

### Step 7: Finishing using PST®

Finishing with the TRIO using the PST® method is a must when the goal is to achieve high quality. Therefore the floor is sanded using every grit from 60 onwards not skipping any grits. Sanding with TRIO grits 80 and 100.

**Last sanding step:** When natural oil is used, the structure of the surface must be finer than when lacquer or water base is used. Therefore additional sanding with the TRIO using 120 grit screens is needed (pic. 14).



Pic. 14 Final sanding with the TRIO.

### Step 8: Treating the surface with oil and padding with the SINGLE

**Roll on the oil:** After the last sanding step with the TRIO and 120 grit sanding screens, the oil is applied to the floor. To control the amount of oil used, it is rolled on. This way the amount of oil that goes in-between the boards is minimal. An even application is important (pic. 15).

**Padding:** After the roll application, the oil is worked into the surface with the SINGLE and beige pad (pic. 16).



Pic. 15 Rolling on the oil.



Pic. 16 Padding with the SINGLE.

## FIELD PROJECT: CONCLUSION

### Despite bad starting conditions a nice finished surface

After the oil has dried it becomes clear that milling off the lacquer was the right choice. The cupping has been removed and the floor is now even. There are no flaws and the surface is even with a silky matt finish.

The difference between the untreated and finished surface is enormous (pic. 17 + pic. 18).



**Pic. 17** Cupped, lacquered surface prior to treatment.



**Pic. 18** Finished, oiled surface.

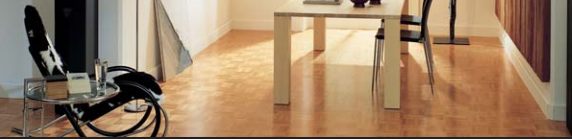
### Video of the project

There is a video of the project that can be viewed on our homepage under "videos" in the category "projects". You can also view other LÄGLER® projects videos there as well. The name of this video is "Floor milling".

You can also click the green button below (It may not work with older browsers).

**CLICK HERE:**

[to LÄGLER® project videos](#)



## LÄGLER® WELCOMES THE NEW COLLEAGUES FROM PALO DURO HARDWOODS

As previously reported in various industry publications, LÄGLER® is taking over its long-time US business partner Palo Duro Hardwoods.

Both companies are characterized by long-term supplier, customer and employee relationships according to Palo Duro future President, Jeff Fairbanks. "The new company will continue to reinforce and build on these relationships, as well as our outstanding customer service" he says. "Everyone involved is looking forward to our continued mutual success".



**Pic. 19** Showroom at Palo Duro Hardwoods in Denver, Colorado.



**Pic. 20** Jeff Fairbanks, future President of Palo Duro Hardwoods.

### More about Palo Duro Hardwoods and LÄGLER®

Palo Duro Hardwoods, a wholesale distribution company, was founded in 1985 by Bruce Whisenhunt and his wife, Cathy. Through their insight and leadership, the company has grown to become one of the nation's largest distribution companies.

Another husband and wife team, Eugen and Gerda Lägler, founded Eugen Lägler GmbH in 1956. The company invented the first belt sander which revolutionized the industry. LÄGLER® continued to improve on its design over the years, and made the first HUMMEL® in 1969. That machine still runs. To date, the company manufactured more than 50,000 HUMMEL®, and more than 18,000 of them have been distributed through Palo Duro Hardwoods.

# We welcome our new colleagues from the USA!