

Technical Information – Fleece for Veneer Backings 2009

There are many different purposes of use for fleece for veneer backings. In the field of edges, softforming, and veneer wrapping, a large variety of fleece types has been offered since many years. Already in the year 2000, Furwa developed a fleece backing which met the requirements of the 3D shapings of the **automotive industry**, whereas this tested type is offered under the name **P50/D4** for fixed lengths as well as for untrimmed figured veneers in widths up to 480 mm.

Since 2008, we have already produced the fleece backing **VC300** onto king-size fixed lengths (3.4 m x 0.9 m), and in 2009, we have come to the conclusion to further adapt the sanding process necessary for 3D veneers in their widths. Meanwhile, we are able to sand any fixed lengths modified in thickness up to 630 mm by means of a new **4-belt sanding machine**.

Nowadays, fleece is the most secure veneer backing, even if there are still simple anti-splitting coats as well. Fleece types are partly offered on the market, too, which leave a lot to be desired regarding temperature stability and cleaving resistance. Trust our standard.

All fleece backings can be offered by us FSC certified. Currently, the following fleece types are mainly used.

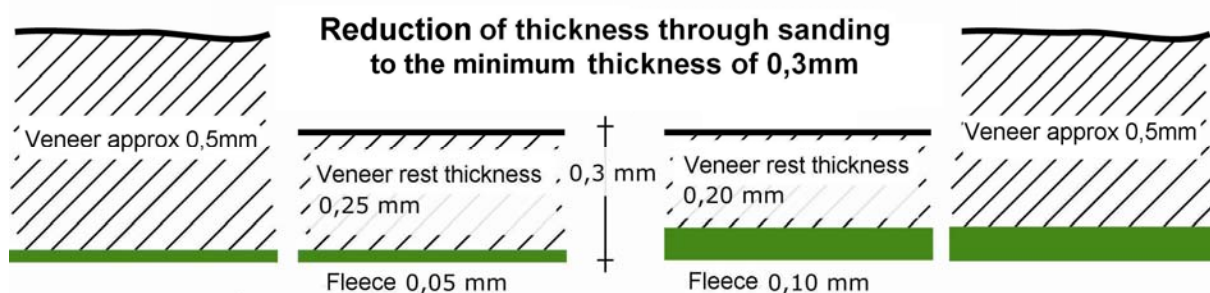
Fleece standard	(23/20)	for rolls	thickness approx. 0.05 mm
Fleece 30 g	(30/30)	for rolls	thickness approx. 0.07 mm
Fleece P50	(50/30)	for rolls	thickness approx. 0.10 mm
Double Fleece	(23/20 double)	for rolls	thickness approx. 0.10 mm
Fleece P50/D4-Automotive		for rolls and fixed length	thickness approx. 0.12-0.14 mm
Fleece VC300	(90/70)	for fixed length	thickness approx. 0.15mm

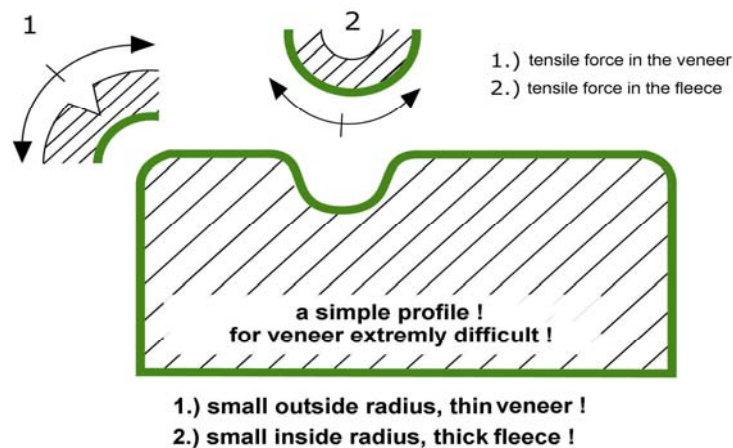
Standard fleece types are glued by us exclusively with **D3 PVAc dispersions**. For special purposes of use there is also the possibility of applying **D4 PVAc adhesive**. We point out that the pure use of corresponding dispersions does not yet lead to a corresponding quality of the conglutination of the fleece veneer compound. We are in the position to grant a guarantee for D3 conglutinations or D4 conglutinations, and are able to produce them, if such requirements are requested.

A special field of use is our **Fleece P50/D4 Automotive** for which we guarantee **resistance to boiling water** as well as to **UV rays**. This fleece is currently used in series in the **automotive industry** as well as for profile wrapping of solid wood and aluminium (**windows, doors**). It can even be used in the textile and plastic industry. This fleece type is suitable for **plastic injection rear moulding**.

The fleece type **VC300** reaches higher values regarding **tearing strength** than the fleece type **P50/D4 Automotive**; however, it is not as **viscoplastic**. VC300 is also used for D4 requirements by users, even if we cannot give the corresponding guarantees for this usage.

The necessary **flexibility** for deformation processes at the outer radii are exclusively influenced by the veneer itself in case of **2-dimensional shapings**, i.e., the thinner the remaining thickness of the veneer, the more flexible the fleece veneer compound. For this reason a thicker fleece provides higher flexibility after sanding because of the remaining thickness of the veneer. The use of thicker fleece is not obligatory at an outer radius; the remaining thickness of the veneer alone determines the degree of flexibility. However, if we wrap inner radii, we additionally need a correspondingly high tearing strength. This tearing strength increases more or less in direct proportion to the thickness of the fleece.





As there are additional inner shearing forces and tensile forces, and as especially when profiles are cut to size, but also when they are used later on, forces act vertically onto the fleece surface, the cleaving resistance of the fleece is a decisive factor for the application as well.

This is why double fleece was always used formerly, when tearing resistance and material thickness was necessary. In the meantime, this method has been replaced by fleece type P50. Then the development of a high cleaving resistance in case of thick fleeces made it also possible to develop the type VC300 for the fleece lamination of fixed lengths.

3D shaping of veneers:

In case of the 3-dimensional deformability of veneers, the **tearing resistance** as well as the **viscoelastic properties** of the reverse side are decisive. In the process of 3-dimensional shapings rejects result from cracking and fissuring as well as from buckling. For this reason the processing characteristics and features need to be chosen in a different way compared to 2D shapings. On that account **3D fixed lengths of veneers** are often equipped with thick fleece on the one hand, such as **P50/D4 Automotive** or with **VC 300**; however, on the other hand, the item is then not sanded extremely thin, because when shaped the veneer has to absorb shearing forces in order to counteract buckling.

Regarding their flexibility fixed lengths of veneers can additionally be influenced by a flexing process without reducing the stability regarding the shearing forces. Please inquiry specifically in this case.

Apart from the remaining wood thickness, the wood moisture is, of course, also responsible for the flexibility. Regarding wood moisture there is a separate and detailed technical report of Furwa available.

The following applies as a rule of thumb for increasing the flexibility:

An increase in moisture of + 5 % is comparable to a veneer's thickness reduction of approximately 0.05 mm with regard to the increase in flexibility. This means that veneer, fleece-laminated, sanded 0.38/0.40 mm achieves a comparable flexibility at a wood moisture of 10 % as does a material thickness of 0.33/0.35 mm at a wood moisture of 5 %.

Processability at a wood moisture higher than 12 % always needs to be tested, as gluing problems as well as dry cracks might occur. Nevertheless, in practical operation 3-dimensional shapings are effected at much higher wood moistures during the shaping process. We would be glad to inform you about these facts, however, we should know your applications.

Regarding the gluing process, standard fleeces as well as fleece P50/D4 Automotive, and type VC300 can be used with EVA hot melts, Polyolefine hot melts, PUR hot melts, and PVAc dispersions. In the case of 3D processing, PVAc dispersions, 2-component PUR hot melts and even solvent-based contact adhesives are still in use. Furthermore, as there is a multitude of gluing possibilities, the user always has to make own tests. We would be glad to be of help to you.

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