

Processing & Design Manual

Acoustic Textile Felt



Really.

List of contents

Colour	3
Handling	3
Storage	3
Tools and equipment	3
Assembly and increasing stiffness	4
Increasing sound absorption	4
Cutting	4
Engraving	6
Three-dimensional pressing	7
Surface treatment	8
Product properties	9
Safety	10

Introduction

These guidelines can be used as inspiration and a reference tool for fabricators working with Acoustic Textile Felt by Really.

The recommendations in these guidelines are based on current knowledge on how to work with Acoustic Textile Felt, but other tools and machine settings may work just as well.

Colour

Acoustic Textile Felt is made from natural materials without the use of additional dyes. Therefore, slight colour differences may occur.

Handling

A pallet with 180 Acoustic Textile Felts weighs approximately 648 kg. One full size felt weighs approximately 10.8 kg.

Storage

Acoustic Textile Felt should always be stored on a perfectly level plane to avoid any warp. The material must be stored under dry conditions.

Tools and equipment

In general, Acoustic Textile Felt can be processed with knives, saws, hot wire or laser cutter. The best result is achieved by using good quality tools and always ensuring that the tools are sharp.

Most common processes for working with Acoustic Textile Felt are cutting, assembly, surface print, and 3D pressing.

Assembly and increasing stiffness

The felts interact very well with traditional wood glue (PVA). Therefore, when multiple felts should be assembled, PVA is a great option, ensuring that the felts are closely interconnected. Though, if modularity is a priority, allowing the felts to be assembled and disassembled over and over again, the processor should experiment with other solutions than PVA. Such solutions could be fastening press studs, bolts, or anything alike.

Stiffness will increase when multiple felts are assembled. Though, if the design or installation needs to be sturdy, the felts could be applied on the Solid Textile Board or other board materials of your choice. Depending on the board material, of which the felt will be applied, the use of PVA could be favourable. Again, if easy disassembly is preferred, the processor should experiment with the examples given above or any other alike.

Increasing sound absorption

The Acoustic Textile Felt in cotton with a thickness of 10 mm has a NRC of 0.45. Though, if you are seeking a higher NRC for your design or installation, multiple felts can be assembled, resulting in a higher NRC. The table below presents the tested values when thickness varies.

Standard	Coefficient	Cotton ATF	Standard
One felt / 10 mm	NRC	0.45	ISO 354:2003
Two felts / 20 mm	NRC	0.75	ISO 354:2003
Four felts / 40 mm	NRC	0.95	ISO 354:2003

Cutting

For cutting the Acoustic Textile Felt, Really would advise the processor to either use knives, saws, hot wires or laser cutter.

For simple production it is recommended to use:

- hobby knife with a fresh blade
- electric foam cutter
- table saw
- band saw
- hot wire cutter

Though, when using a table saw or band saw, the teeth of the blade should be small and positioned close to each other.

Hot wire cutting can be done with a traditional hot wire foam cutter. The temperature has to be slightly higher than with cutting in EPS.

More advanced production can be carried out on a digital cutting plotter equipped with special cutting knife.



Example of letters cut with a digital plotter

Mass production of felt objects can be carried out by die cutting. The cutting is done by steel rule dies.



Example of cut-off by die cutting

With a laser cutter, it is possible to both cut the felt and do engraving. Really encourages processors to experiment with the settings of the laser cutter. Please be aware, that the edges will burn by laser cutting and change to a brown colour.



Laser cutting

Engraving

Text and symbols engraved with a laser will always appear brown.



Laser engraving

Three-dimensional pressing

Acoustic Textile Felt can be pressed into three-dimensional structures in a heated press. The hardness and strength of the pressed product is comparable to Solid Textile Board. Depending on the required thickness of the finished product, several layers of Acoustic Textile Felt can be placed in a press, and heated to approx. 130 - 145 °C. The pressing time depends on the thickness, but for a 10 mm thick pressed product the pressing time will be approx. 10 minutes with a pressure of 85 bar.

Due to the heat, the high pressure and the material's tendency to stick to metal surfaces, the pressing tool has to be manufactured in hardened steel with a low friction treatment, e.g. a low friction nickel surface.



3D pressed chair

Surface treatment

Acoustic Textile Felt is not made for traditional full sealing surface treatment like lacquering, wax or oil treatment.

Ink printing on the surface is possible by traditional ink-printers for 10 mm materials.



Ink print on felt

Product properties

Specifications

Felt	Thickness	Length	Width	Density
Cotton White	10 mm ± 1 mm	3000 mm	1100 mm	100 kg/m ³
Cotton Blue	10 mm ± 1 mm	3000 mm	1100 mm	100 kg/m ³
Wool Slate	10 mm ± 1 mm	3000 mm	1100 mm	100 kg/m ³
Wool Natural	10 mm ± 1 mm	3000 mm	1100 mm	100 kg/m ³

Colour fastness

Test	Scale	Cotton	Wool	Standard
Colour fastness to artificial light	1 – 8	White 4 Blue 5	Slate 6 Natural 4	ISO 105-B02:2014

Fire properties

Test	Scale	Cotton	Wool	Standard
Fire behaviour category	A – F	E-d2, d2	E-d2, d2	EN 13823:20101

Safety

To avoid inhalation of formaldehyde and other organic compounds, which might be released during the processing of Acoustic Textile Felt, it is recommended that dust and vapours are removed through mechanical ventilation. In case of insufficient ventilation, respiratory equipment with filter P and AX should be used. This also applies if it is uncertain if the concentration of formaldehyde in the air at a workplace exceeds the occupational exposure limit defined by the local legislation.

To avoid skin contact with formaldehyde in the dust from Acoustic Textile Felt, it is recommended to wear work gloves as well as work clothes with long sleeves and long pants or a protective suit.

**Upcycled
textiles
Engineered
materials
Designed for
circularity**

Really.