

Lacus

FELT

LEADERS IN ACOUSTIC FELT
MANUFACTURING

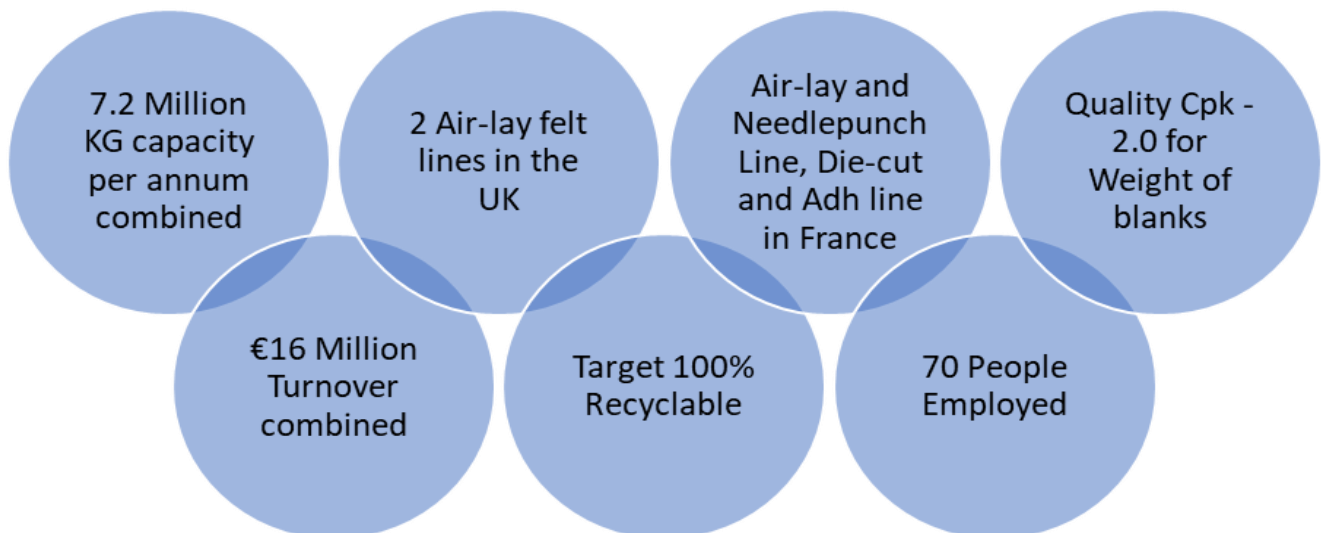


About



Lacus Felt, part of the Lacus group, is the leader in acoustic felt manufacturing, dedicating itself to the design, development and production of felts holding a variety of acoustic properties to be implemented within the automotive industry, as well as household and agriculture industries.

The Lacus Felt product range includes a wide variety of felts, characterized by different processes, fibres and resin mixes. These products are used in a vast range of applications within the automotive industry and the manufacture of household appliances supplied by customers throughout Europe.





The Environment



- Raw material is 70% from recycled material.
- Lacus Felt products work towards helping the environment
- Production waste is recyclable
- End of life is recyclable.

Lacus felt have a strong environmental management System (EMS) focussed around the core targets and objectives of the companies environmental policy.

- Environmental aspects, objectives and targets.
- Pollution prevention and control.
- Property and processing operations.
- Environmental management.
- Packaging, design and recycling.
- Animal welfare and bio-diversity.

BSI ISO 9001 & BIS ISO 14001 Certified



CSR assessment



REACH Compliant: - Registration, Restriction, Evaluation and Authorisation of Chemicals



Location

Lacus Felt UK

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Langar

Nottingham

NG13 9HY

UK

Tel: +44 (0) 1949 861020



- 2.2M Air lay lines x 2

- Felt cut via guillotine

- Automatic weighing systems

- 80% recyclable

Lacus Felt France

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Z.I. La Rougearié

81200 AUSSILLON

France

Tel : +33 (0)5 63 98 85 13

- 2.5M Air Lay line

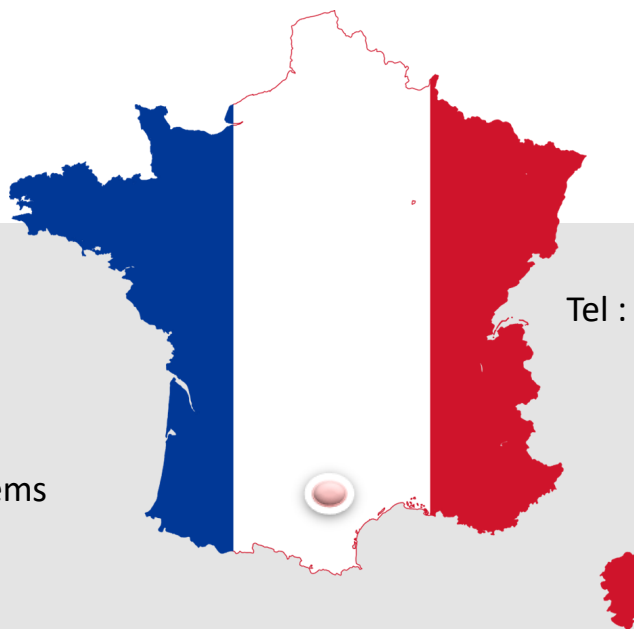
- 2.5M Carding line

- Die-cut, ADH lines

- Felt cut via guillotine

- Automatic weighing systems

- 80% recyclable



Services

Bespoke quotes and production

Each product that is produced by us has gone through a customised quote system considering customer requirements.

Quotes will be based on current raw material prices, and will factor in costs of packaging and a delivered price when necessary using the latest transportation prices.



Die cut and Lamination.



Felts can be die-cut into a variety of shapes based on customer demand, tools are manufactured to customer specifications and cut as per. As well as die-cut, felts also have the option for adhesive lamination if needed.



Bale and Roll formats

We can produce products in bale formats, roll format, or if required for cutting, then we can arrange for these to be packaged in returnable containers or cardboard boxes. All organized within the quote stage and made to meet customer requirements.

Thermoplastic

Thermoplastic type felt is a combination of recycled textile fibres, bonded by thermoplastic fibres or resin to give a firm felt with rigidity depending on the customer specified composition. Thermoplastic + epoxy resin is also an option. This felt can be heated in an oven for cold mould press or 2D die-cut and coated depending on the specific requirements.



Material weight from 550 G/M² to: 2000 G/M² (weight increase by gluing sheets together to achieve higher weight spec)

Fibre content from: 60% to 90%

Binder Content from: 10% to 40%



Thickness from: 5mm to 40mm

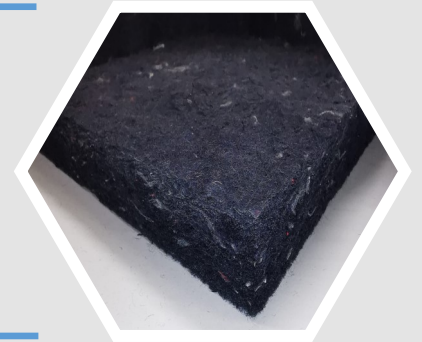
Resin Content from: 15% to 40%



Flame retardant Non phenolic Felts

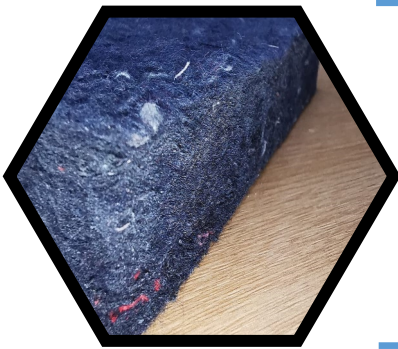
Flame retardant Non phenolic Felts are designed to give high resistance to flame while offering acoustic performance. Produced using recycled fireman clothing and / or recycled army uniform clothing bonded with a duro-plastic epoxy resin and/or polyester bi-component fibre. These high performance felts offer flame resistance against UL94 Standards as well as DNI against FMVSS 302

Material weight from: 600 G/M² to 2000 G/M²



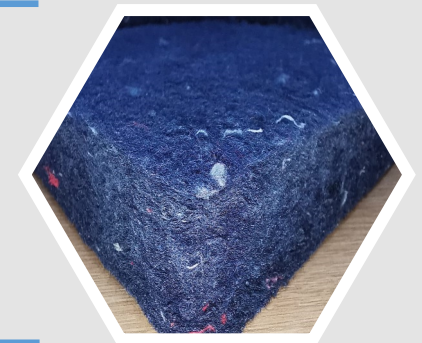
Fibre content from: 60% to 85%

Resin from: 15% to 40%



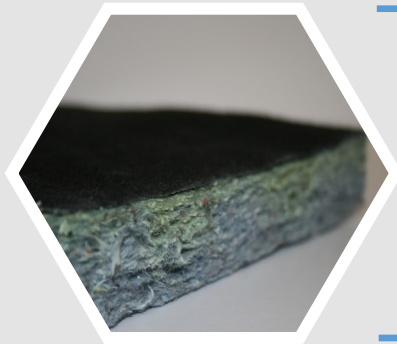
Thickness from: 6mm to 60mm

Rolls or Batts



Semi-cured Phenolic Optional Glass fibre

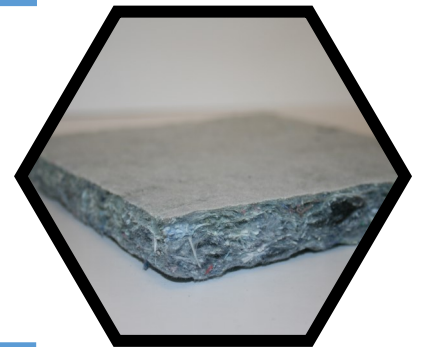
Semi-cured phenolic felt is a combination of recycled textile fibres, semi-bonded by a permanent thermoset flame retardant phenolic resin. It's semi-bonded condition allows this felt to be hot press moulded and shaped into its desired format. Mostly used within the automotive industry for sound absorption within trucks, cars and agriculture vehicles. This felt offers great sound absorption, flame resistance and rigidity. Boosted further with glass fibre inclusion.



Material weight from 550 G/M² to: 2400 G/M²

Fibre content from: 60% to 76%

Resin Content from: 24% to 40%



Thickness from: 10mm to 50mm

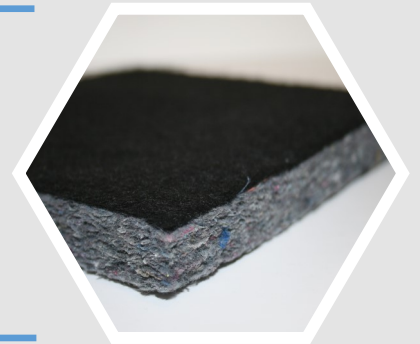
Optional glass content from: 10% to 53%



Semi-cured Non phenolic

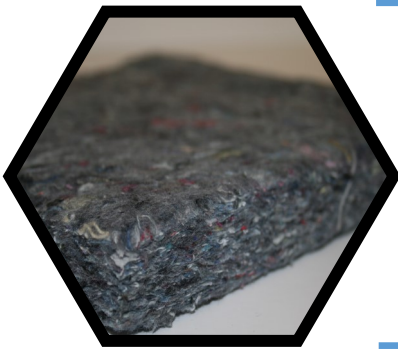
Semi-cured type felt is a combination of recycled textile fibres, semi-bonded by cured duro-plastic epoxy polyester resin. It's semi-bonded condition allows this felt to be heated in a contact oven and cold press moulded and shaped into its desired format. Mostly used within the automotive industry for sound absorption within trucks, cars and agriculture vehicles. This felt offers great sound absorption, with limited flammability resistance and rigidity.

Material weight from: 550 G/M² to 2400 G/M²



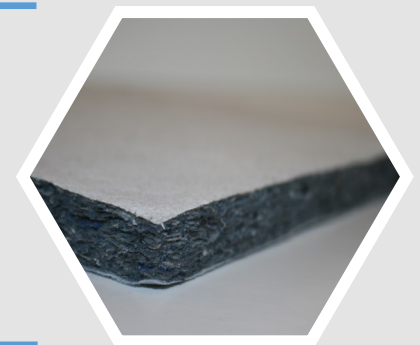
Fibre content from: 60% to 76%

Resin from: 24% to 40%



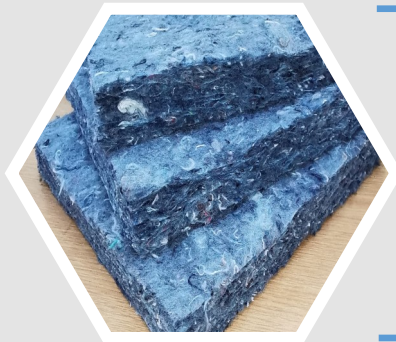
Thickness from: 10mm to 50mm

Optional FR fibres can be included



Denim Felt

Denim felt is a thermoplastic felt produced consisting of recycled denim fibre bonded with a polyester Bi-component fibre. Typically used for its acoustic and thermal properties within walls and floors. This felt can also be found within packaging for impact protection and thermal insulation.



Material weight from 550 G/M² to: 2000 G/M² (weight increase by gluing sheets together to achieve higher weight spec)

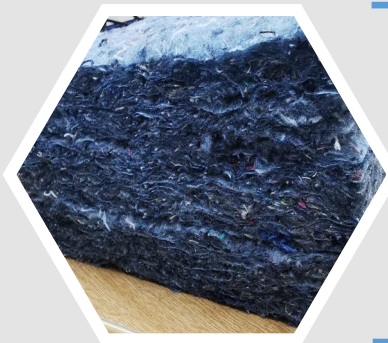
Denim content from: 85% to 90% (bespoke variations can be produced)

Bico Content from: 10% to 15% (bespoke variations can be produced)



Thickness from: 5mm to 60mm

Roll or Batt format

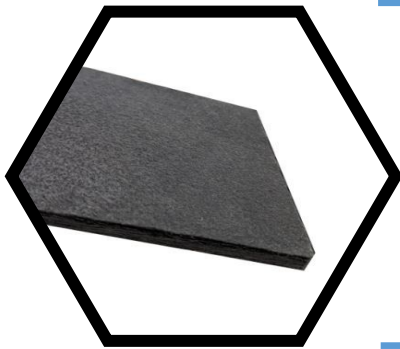


Polyester felt



High polyester content felt produced using recycled Polyester fibres from bottles and clothing bonded with a polyester bi-component binder. This felt can be produced in a wide range of variations and used for a wide range of applications. Great for sound absorption, stability and thermal conductivity. Variations include White, Black, Black & White. Soft / Rigid, with or without a smoothed face cloth.

Material weight from: 600 G/M² to 2000 G/M²



Polyester content: 100%

Polyester Binder content: 15% - 60%

Thickness from: 5mm to 60mm

Roll or Batt format.



Fully-cured Phenolic

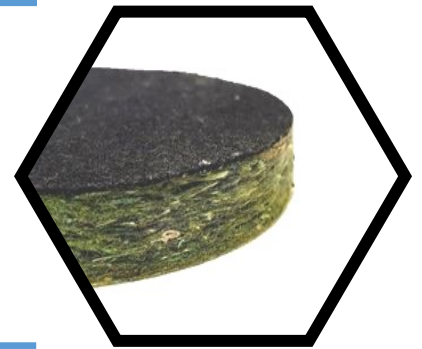
Fully-cured Phenolic felt is a combination of recycled textile fibres, bonded by a permanent thermoset flame retardant phenolic resin. Rigidity determined by resin percentage and production conditions, this felt is a great sound absorber which is currently used within white goods and automotive applications. Typically used for Adhesive coating and 2D Die-cut. Typically a green colour, Yellow achieved through use of white cotton.



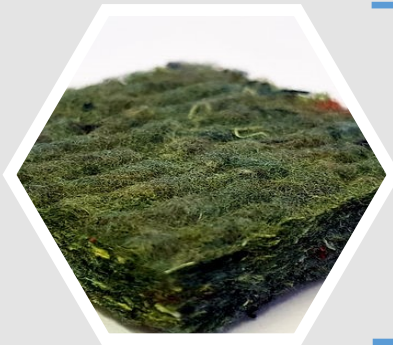
Material weight from: 550 G/M² to 2400 G/M²

Thickness from: 7mm to 40mm

Resin from: 20% to 40%



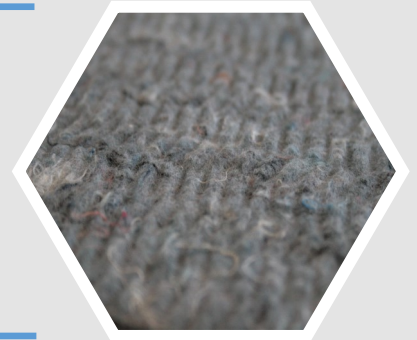
Fibre content from: 60% to 80%



Fully-cured Non Phenolic

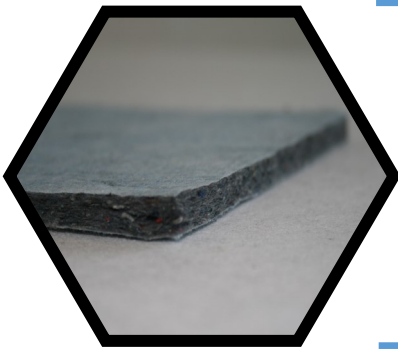
Fully-cured Non Phenolic felt is a combination of recycled textile fibres, bonded by a duro-plastic non-phenolic resin. Rigidity determined by resin percentage and production conditions, this felt is a great sound absorber which is currently used within white goods and automotive applications. Typically used for Adhesive coating and 2D Die-cut. Can also be produced with a Polyester bi-component binder to give additional rigidity.

Material weight from: 600 G/M² to 2400 G/M²

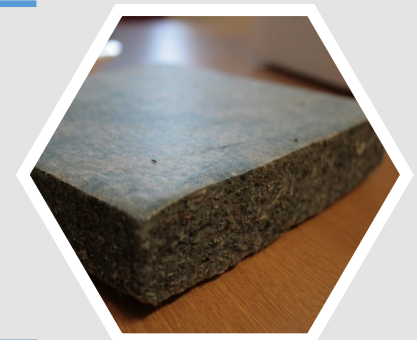


Thickness from: 7mm to 40mm

Resin from: 20% to 40%



Fibre content from: 60% to 80%



Polyester Glass fibre

Polyester Glass fibre felts are produced with recycled glass fibre, recycled polyester fibre and bonded with a polyester bi-component fibre. Designed to be contact oven heated and pressed in a cold mould to give a firm moulded part. This felt offers great acoustic performance with enhanced flammability resistance due to the glass fibres.



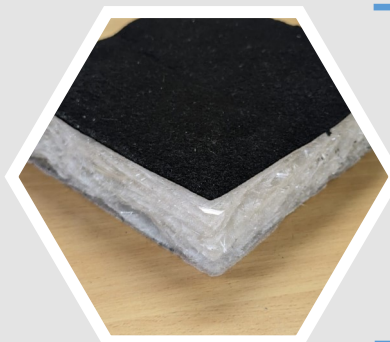
Material weight from: 550 G/M² to 1700 G/M²

Thickness from: 5mm to 60mm

Binder content: 15% - 60%



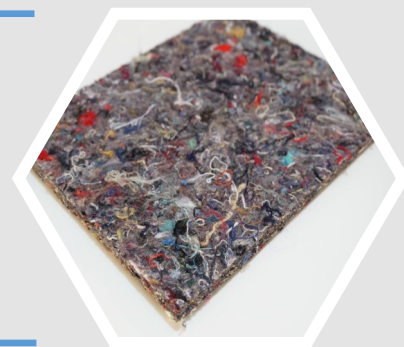
Fibre content from: 40% to 85%



Needlepunch

Felt made of textile fibres and thermoplastic needle punched fibres, optional with non woven. Raw material for parts shaped in a cold mould after heating. **This felt type is made at our French facility.**

Material weight from: 600 G/M² to 2000 G/M²



Thickness from: 7mm to 40mm

Resin from: 20% to 40%



Fibre content from: 60% to 80%



Natural fibre insulation

Natural fibre insulation felt produced using natural fibre such as , but not limited to: Hemp, Jute, Sisal, Flax. Bonded by a bi-component polyester fibre with its own recycled content. These felts are alternatives to the current insulation materials being used and offer great thermal conductivity values.

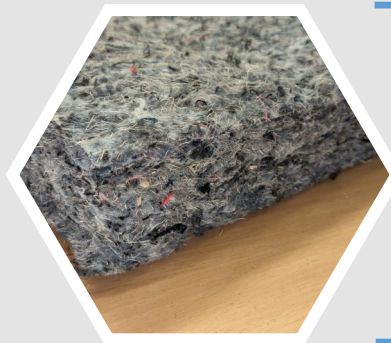


Fibre content from: 70% to 85%

Binder content from: 15% to 30%

Material weight from: 600G/M² to 2000 G/M²

Thickness from: 10mm to 60mm (100mm produced in France)



Rolls or batt format

Can be mixed with other fibres

Fibres, Binders and Resins

Felts can be produced using a range of raw materials including, but not limited to the below mentioned. Consisting of a wide range of bespoke compositions all designed to enable felt characteristics through customer request.



Cotton, Polyester, Wool

Glass

Jute, Hemp

Plus more

Felts are bound together during the thermobonding process by using fibres such as low melt polyester or duro-plastic phenolic / epoxy powered resins.

Epoxy Resin

Phenolic Resin

FR Phenolic Resin

Plus more

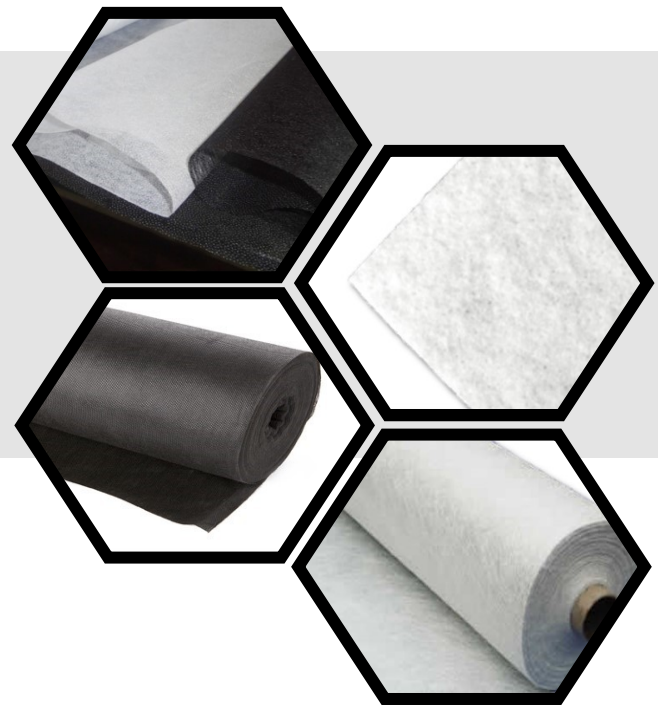


Non-woven & Films

Felts can be laminated with a variety of light scrims or thick non-woven. From 17g + 5g coating black/white scrim, to 130G Black Hydrophobic, Oleophobic with S.E / DNI flammability properties.

These non-woven are added before the thermobonding process allowing for a clean bond between felt and non-woven.

- Variety of weights
- Hydrophobic / Oleophobic
- Flame retardant (S.E, DNI)
- Plus more



Felts can be laminated with a variety of plastic films depending on customer specification and desired application. Films can also have a Non-woven attached.

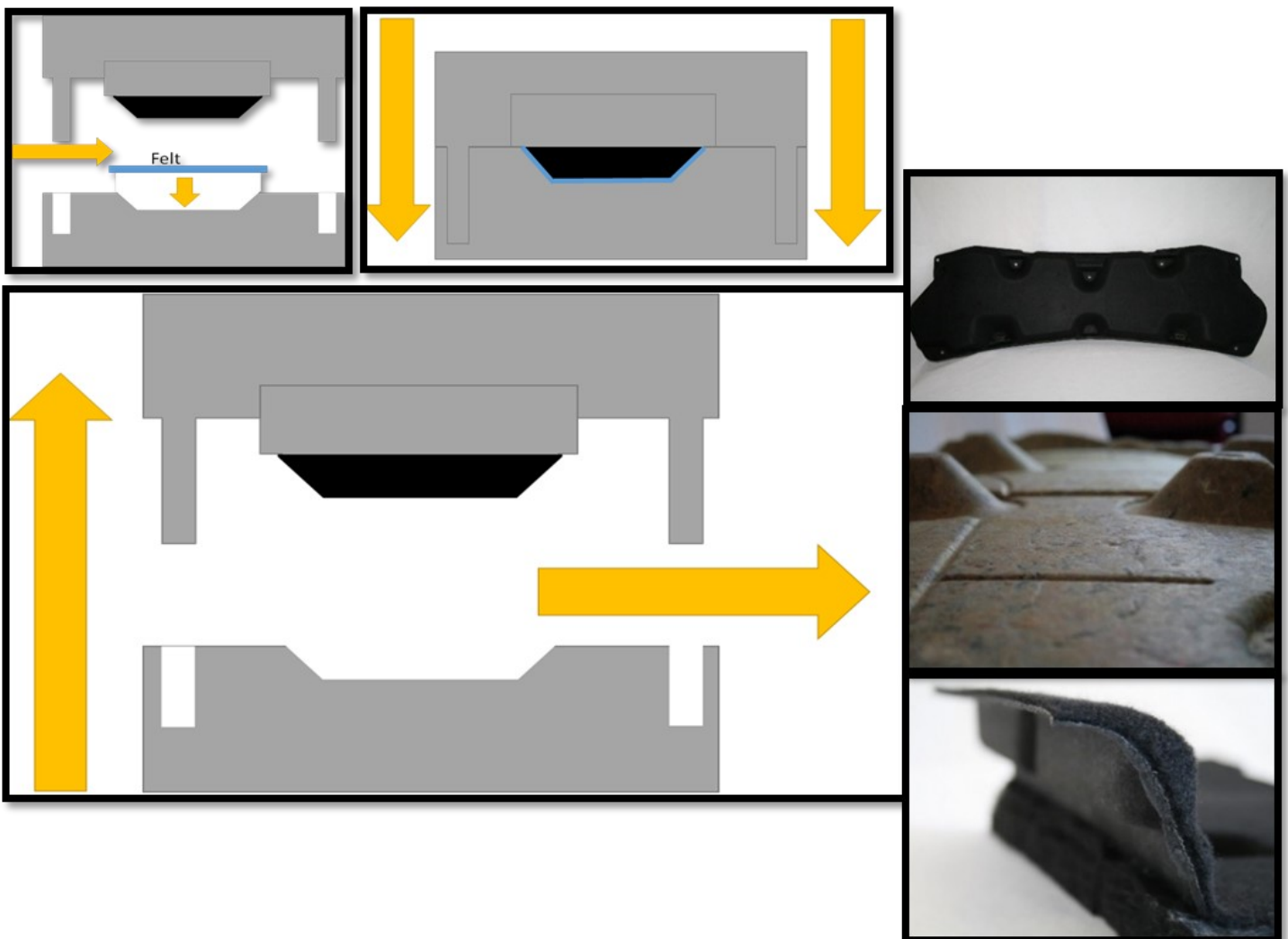


- Variety of weights / Microns
- PE/PA/PE Films
- High-density polyethylene
- Low-density polyethylene

Moulding Process

Moulding is one of the last processes our felt will see before its implementation into its intended vehicle. The felt blank will be placed within a compression moulding machine, fitted with the desired tool shape. The blank is then re-heated and cold (110°C -180°C) or hot moulded (180°C - 220°C) depending on customer spec and desired rigidity and then left for the necessary time for the shape to take. Once complete the part is then ready to be put into stock ready for its shipment to the OEM.

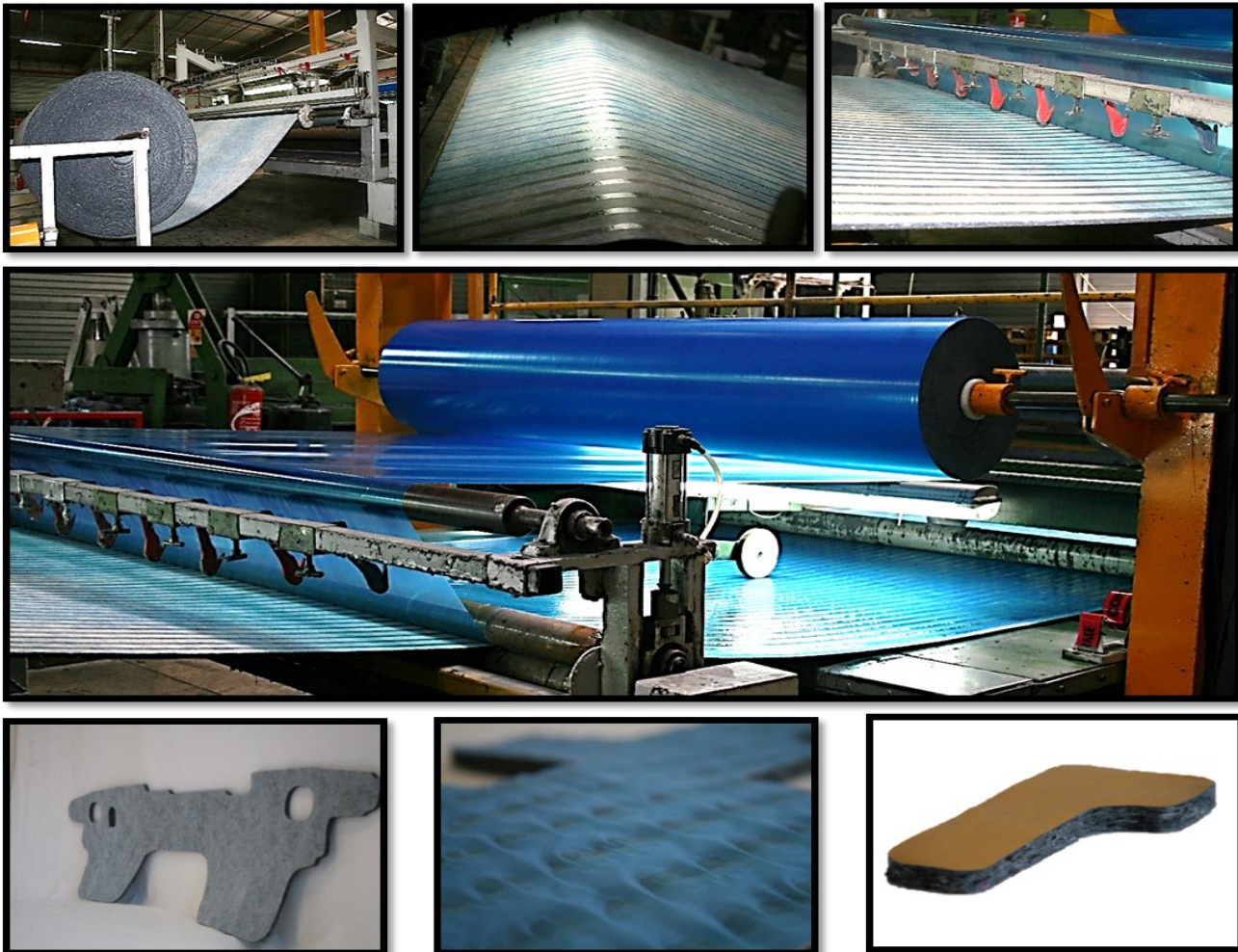
Moulding Process (*Customer level*)



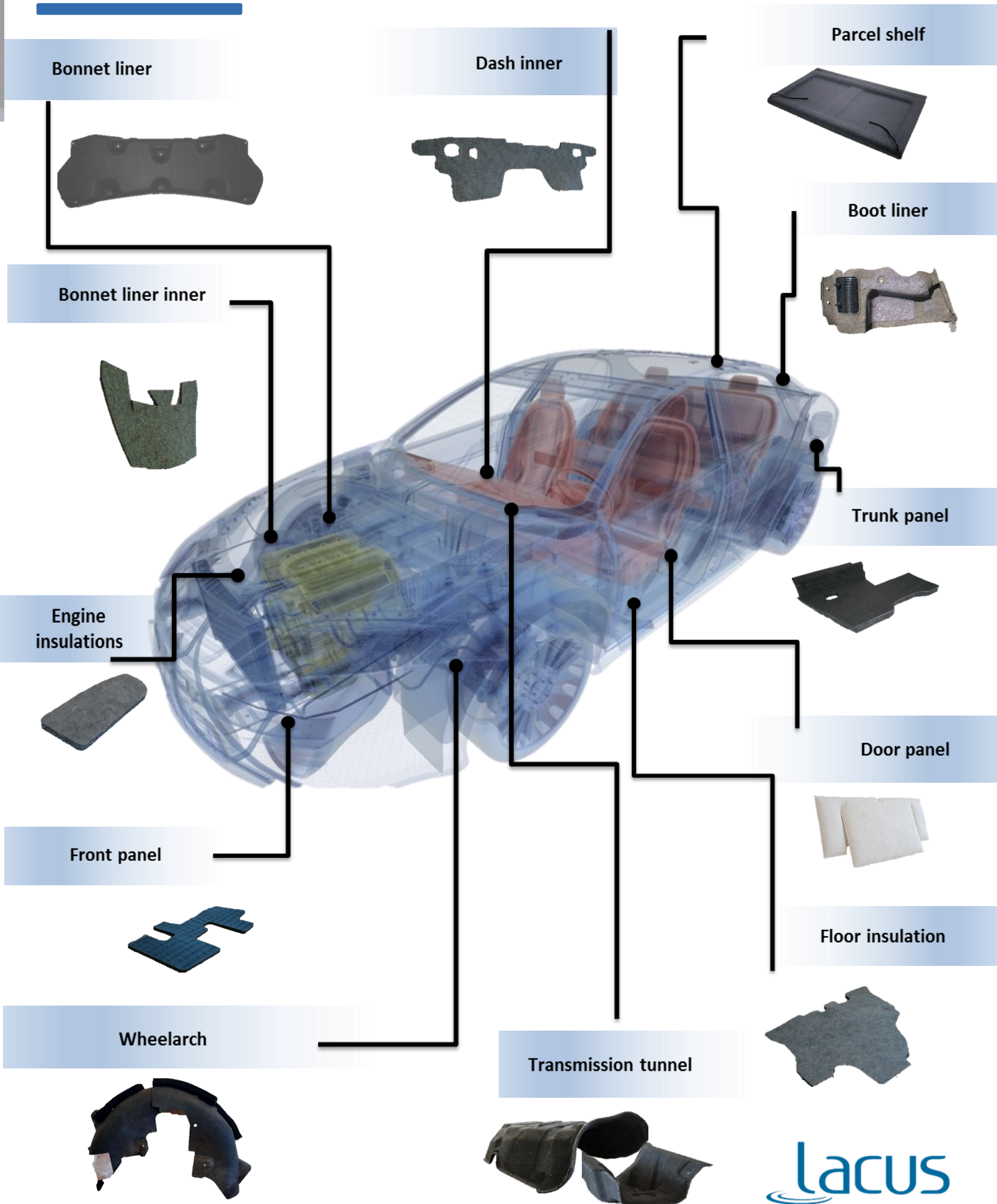
Adhesive coated and die cut

Felt produced has the option (dependant on customer specification) to have an adhesive coating applied so enable it to meet particular needs within its intended vehicle. A variety of glue characteristics can be used and also full adhesive coverage or striped adhesive. As well as adhesive lamination, the felt can be finished ready for vehicle implementation by being cut into the desired shape and sizes all digitized and mechanically cut to ensure minimal waste.

Lamination



Automotive application



Household and Agriculture application

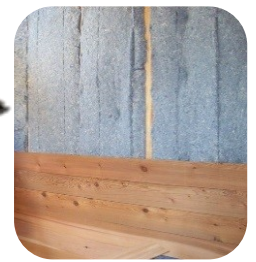
Outer roofing



Inner roofing



Wall interior



Bedding



Agriculture



Appliances



Bedding

Lacus felt France specializes in the manufacture of protective textile felts for the mattress and manufactures two types of felt from a mixture of textile and thermoplastic fibres mechanically bonded (cross-fibre) and thermosetting at oven temperature.

FLEXEL:

Hard and strong felt on both sides to protect against the hardness of the springs.

BICOMPOSE:

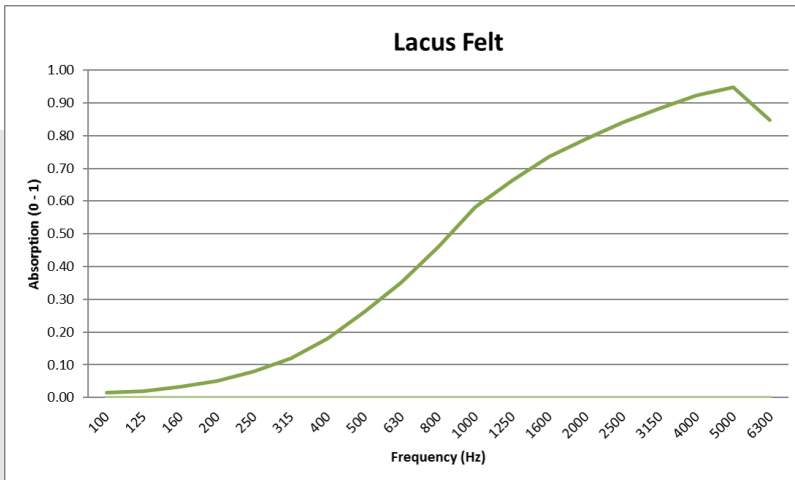
Hard and durable felt on one side for the protection of the springs and soft and soft on the other to give more comfort to the person on the mattress.

Needled punched felt is made out of various cotton recycled textile fibres. It is used for the filling of the mattresses for economical types.



Assembly of different layers by the customer

Testing



Impedance Tube

Acoustic absorption can be evaluated using the impedance tube method, ranging from 100hz to 6300hz.

Absorption curves can be displayed graphically and several curves can be compared with each other.



Flammability

The FMVSS 302 is manufactured according to the Federal Motor Vehicle Safety Standard No. 302.

< 100mm /mm

<80mm/mm

S.E—Self Extinguishing

DNI—Does not ignite



Materials can also be tested against other standards such as UL 94

Laboratory



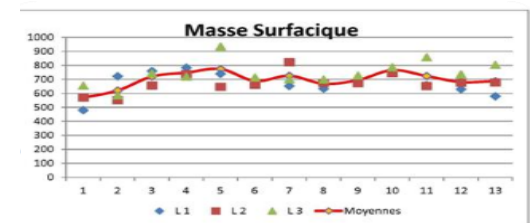
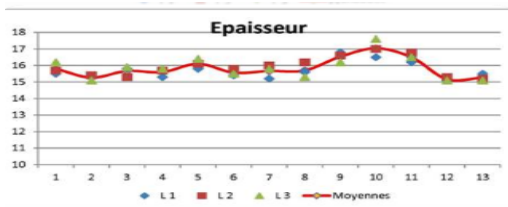
Internal material testing

Products are checked on a regular basis to ensure material composition are as required. Tests such as :

- Acetone extraction to determine resin content
- Determination of Formaldehyde through extraction
- Various fibre content tests

Weighing balance micrometre

On-process product checks are carried out on the weight and weight per unit area of the product, to ensure correct weight and homogenous distribution of weight.



Dynamometer



Tensile strength, elongation & peel strength can all be tested up to a force of 1KN on our dynamometer.



www.Lacusfelt.com



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Part of the

