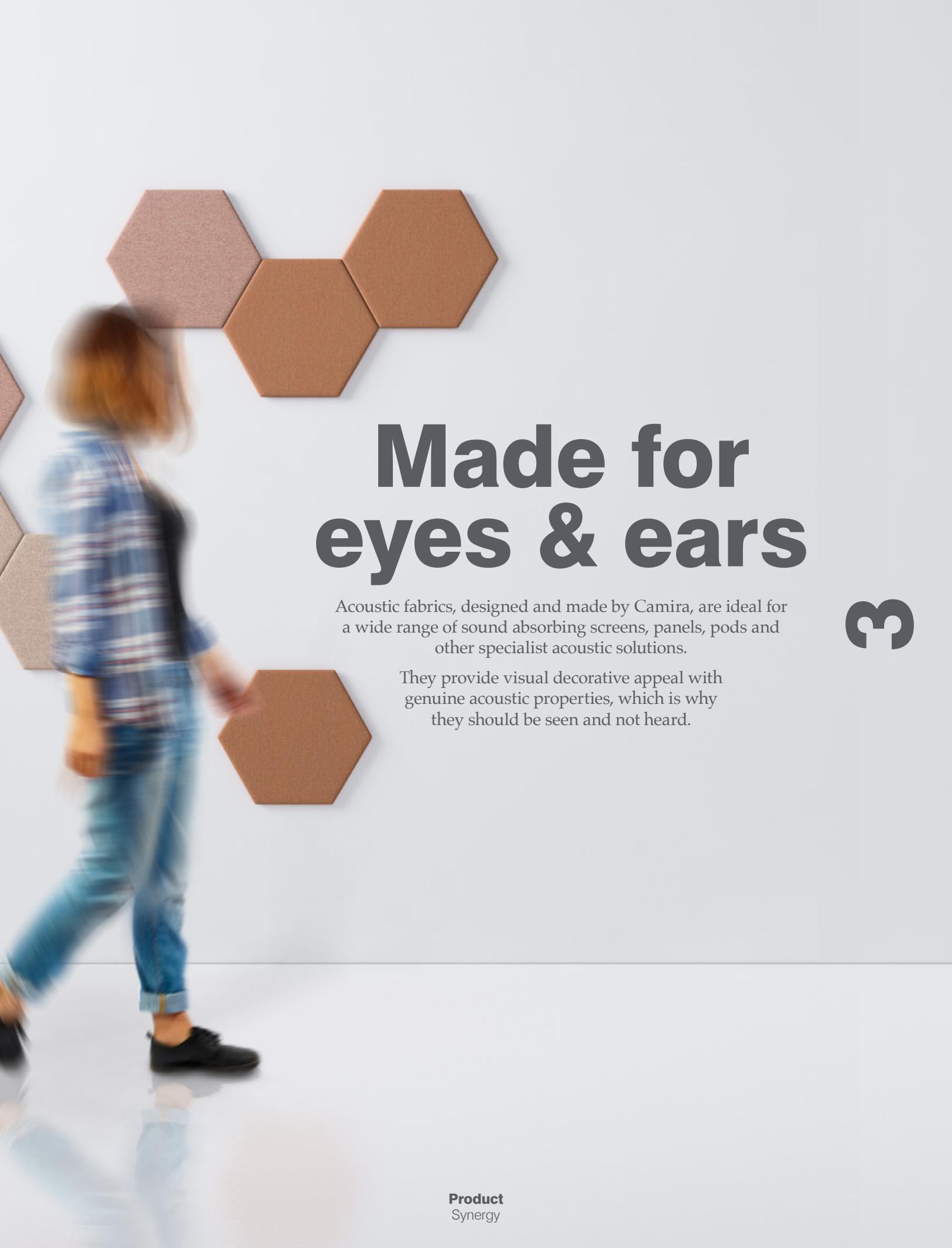


Acoustic Fabrics. **Made by Camira.**

camira





Made for eyes & ears

Acoustic fabrics, designed and made by Camira, are ideal for a wide range of sound absorbing screens, panels, pods and other specialist acoustic solutions.

They provide visual decorative appeal with genuine acoustic properties, which is why they should be seen and not heard.





Product
Blazer Lite

Product
Racer

5





Why do we need acoustic fabrics?

The acoustics of a room are one of the most important, yet often overlooked, features of its environment. In the same way that light is a key consideration when designing a space - identifying where it should be maximised, minimised, and reflective surfaces avoided – sound should be given the same concern.

As with light, when sounds hits a surface, part of its energy is absorbed and part is reflected back into the room. So, just as we may install a blind in front of a window to control its brightness, similarly, acoustic solutions are necessary to effectively manage sound and the effect it has upon noise and echo within an interior as it bounces off hard, reflective surfaces.

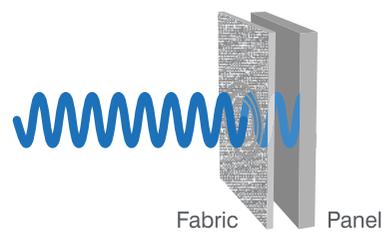
Acoustic solutions take various forms – wall divider screens, hanging panels for ceilings, acoustic bricks – all of which can be incredibly effective in absorbing sound. However, the fabric these solutions are covered in must be conducive to its purpose; if they don't possess the necessary acoustic properties, they may reflect the sound back into the room before the panel behind has the chance to do its job.

So, whilst an element of noise certainly brings a sense of liveliness and energy to a room, if it is not properly controlled, it can have a negative impact on a wide range of spaces:

- **Offices:** With a number of studies revealing that excessive noise is one of the most disruptive factors to our workplace productivity and wellbeing, it is crucial that sound is kept to an appropriate level in any office. In fact, it has been established that we care more about acoustics than we do about cleanliness or comfort.
- **Hospitality:** Sound can have such a pronounced impact on our enjoyment of a social space that acoustics now play a part in many restaurant critics' reviews, with Tom Sietsema of The Washington Post even introducing a decibel reading alongside his food critique.
- **Education:** Everything from students' concentration and motivation to learning ability has been proven to be significantly affected by poor acoustics, illustrating that there is a pronounced need for sound to be effectively managed in order to prevent placing learners at a disadvantage.

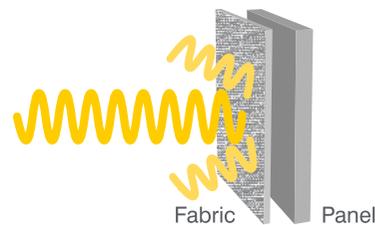
Acoustically transparent

Good



Sound reflection

Bad



What is an acoustic fabric?

An acoustic fabric allows sound waves to pass through without any interference, neither reflecting or absorbing. In effect, it is transparent – with the most highly transparent acoustic fabrics being used for loudspeaker coverings as result of the minimal impact they have upon the sound that is being transmitted.



Products
Era 170 and Carlow



Product
Lucia CS



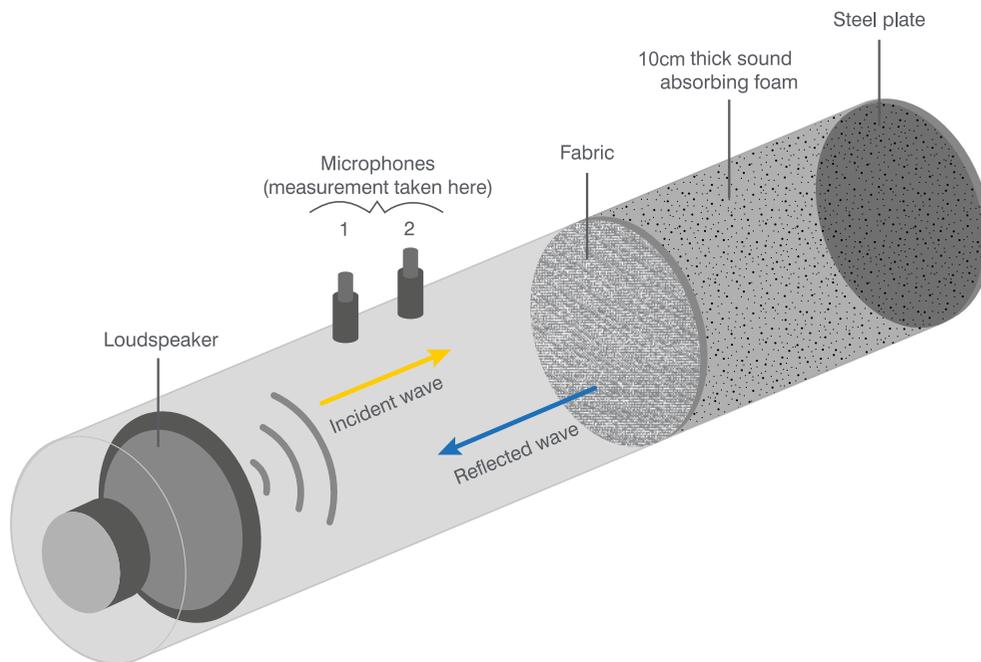
Product
Cara

How is an acoustic fabric tested?

ISO 10534 Part 2

As an acoustic fabric is designed to be paired with an acoustic panel, this test measures the sound absorption of a fabric when it is applied to a 10cm thick sound absorbing foam. The results are then compared to the absorption of the foam in isolation, therefore demonstrating how well the fabric will complement the performance of the acoustic panel.

The data will illustrate that the sound passes through a transparent fabric and is absorbed by the foam, or that it is partially absorbed by the fabric before passing through to the foam.



Glossary

Frequency

The number of sound waves repeated in a set time, measured in Hertz (Hz).
One Hertz equals one cycle per second.

Absorption

How much a given material can convert sound energy into heat/mechanical energy, therefore reducing the levels of sound within an environment.

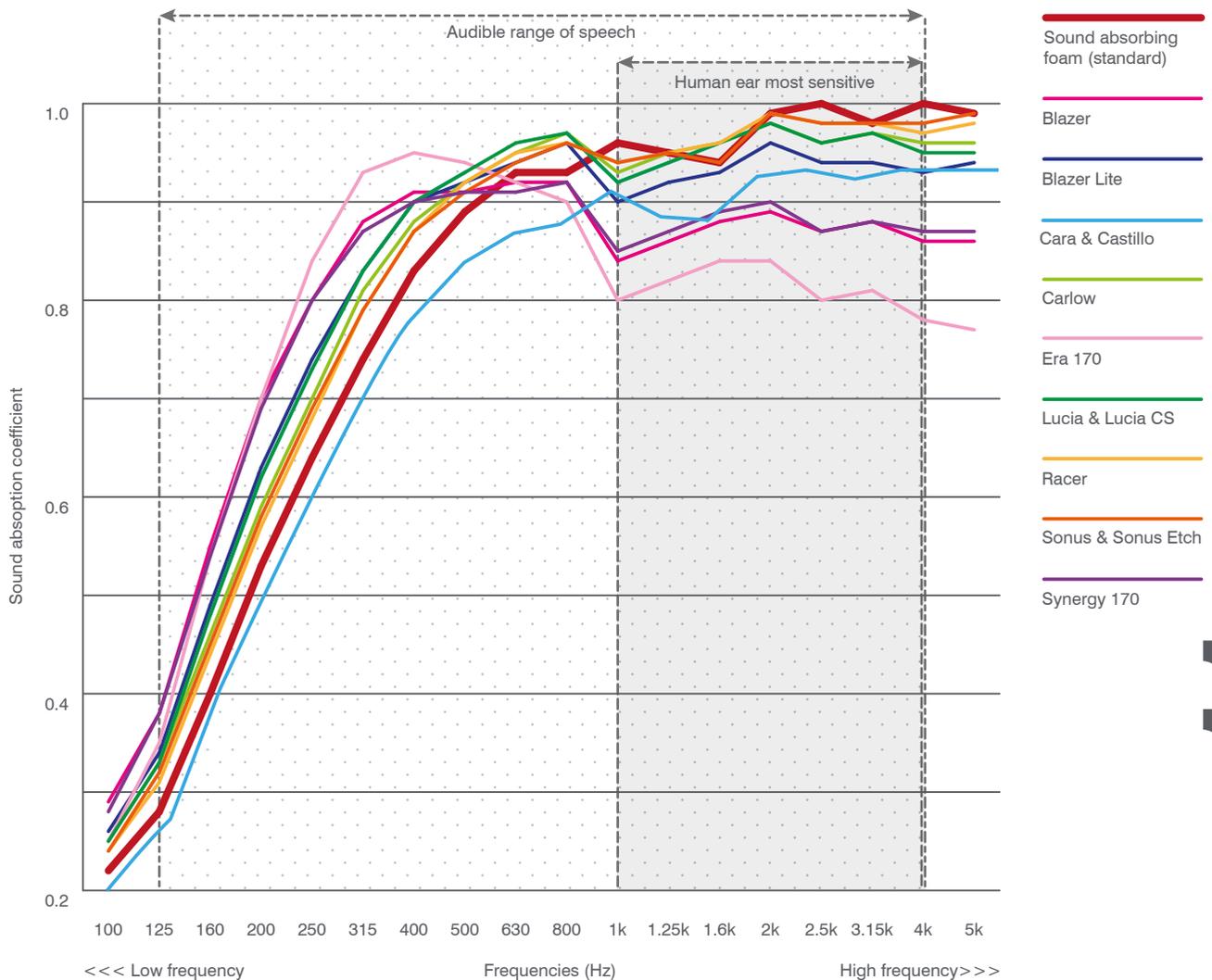
Reflection

The redirection of sound waves when they hit a given surface. Residual sound waves will continue to bounce around a room until they have lost all their energy. Repeated reflection leads to reverberation which can cause an echo effect.

Transparency

How easily a material allows air, and therefore sound, to pass through.

Our results



All fabrics featured in the graph demonstrate transparency and reflect very little sound. The sound absorption capabilities of each product vary however according to the frequency of the sound waves:

- **Low frequencies (e.g. deep voices, bass notes):** At this sound level, the graph shows that the addition of all Camira fabrics actually improves the performance of the foam – as illustrated by the sound absorption of the fabrics appearing slightly higher than that of the foam alone. Although only minor, wool fabrics, such as Blazer, Synergy, and Blazer Lite, demonstrate a degree of extra absorption capabilities.
- **High frequencies (e.g. a child’s voice, shrill whistle):** At higher frequencies, transparency becomes much more important. As we can see in the graph, the most transparent fabrics are those closest to the red line, such as Lucia, Carlow, Racer and Sonus, and these can therefore be considered as having very high transparency.

In short, whether it’s about transparency or transparency plus a touch of absorbency, these Camira fabrics will allow specialist acoustic systems to do their job.

Acoustic fabric specification guide

All the products in the below table can be specified as being acoustically transparent for use in conjunction with an acoustic panel, and have been tested to the relevant flammability standards in both Europe and North America.

Camira Product	Acoustic testing ISO 10534 Part 2	Flammability test EN 13501-1 Adhered	Flammability test EN 13501-1 Un-adhered
Blazer	✓	Class D, s1, d0 (untreated) Class B, s1, d0 (with FR treatment)	Class D, s2, d0
Blazer Lite	✓	Class C, s1, d0 (untreated) Class B, s1, d0 (with FR treatment)	Class D, s2, d0
Cara	✓	Class B, s2, d0	N/A
Carlow	✓	Class B, s1, d0	Class C, s1, d0
Castillo	✓	Class B, s1, d0	Class B, s1, d2
Era 170	✓	Class B, s1, d0	Class C, s1, d0
Lucia	✓	Class B, s1, d0	Class B, s1, d2
Lucia CS	✓	Class B, s1, d0	Class B, s1, d0
Racer	✓	Class B, s2, d0	Class B, s1, d0
Sonus	✓	Class B, s1, d0	N/A
Sonus Etch	✓	Class C, s1, d0	Class C, s1, d0
Synergy 170	✓	Class D, s1,d0	N/A



Baudot | Allermuir



Acoustic panels | Soundhush Ltd



Panel Tex wall panels by DFB | LinkedIn

Note: Results accurate at time of print. For most recent results visit www.camirafabrics.com.

Flammability test ASTM E 84 Adhered	Flammability test ASTM E 84 Un-adhered
Class 1 or A	Class 1 or A
Class 1 or A	Class 1 or A
N/A	N/A
Class 1 or A	Class 1 or A
N/A	N/A
Class 1 or A	Class 1 or A
Class 1 or A	Class 1 or A
N/A	N/A
Class 2 or B	Class 1 or A
Class 1 or A (Beat) Class 2 or B (Music)	Class 2 or B
Class 2 or B	Class 1 or A (Scribe) Class 1 or A (Carve)
Class 2 or B	Class 2 or B



Teeside University, UK | Photography by
Kier Construction Ltd

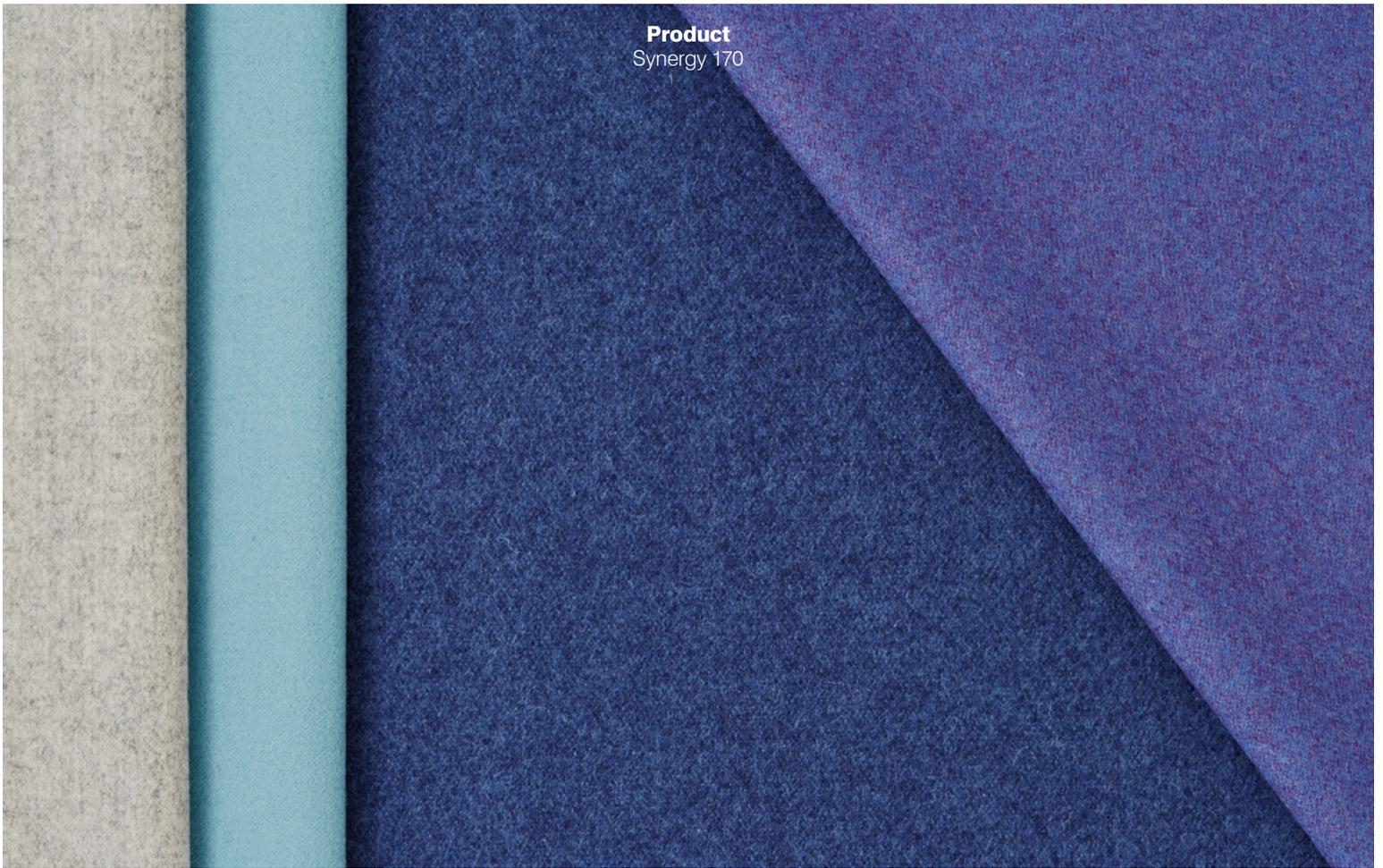


Swell Panels manufactured and installed by DFB | Volunteers of America



Carnival Pyramid | Era

Product
Synergy 170



Product
Lucia



Product
Lucia

15



