

News n°3



Accomplishment

Chauray aquatic centre: A 3D swimming pool by Mermet



The noise of children screaming, people diving, echos... swimming pools are normally very noisy public areas. Reducing sound resonance, without spoiling the atmosphere, is often a major requirement, but difficult to achieve because of the humidity level.

Mermet, with its Acoustis®50 fabric provides a simple yet effective solution, as it once again demonstrates when installed in a tensile structure at the Chauray aquatic centre.

Tested by an acoustician, there has been a demonstrable improvement in the acoustic correction of the "pool hall" since April 2009. Over the summer months, swimmers will really feel the benefit!

Constructed from a three-dimensional framework, both aesthetic and hi-tech, the Chauray swimming pool structure required complete refurbishment. The old solution using a fabric covered with mineral wool was successful from the acoustics point of view, but has suffered significant deterioration over time (eventually the mineral wool had to be removed).

The product sought after by the acoustician needed to be a decorative, non-fibrous and durable fabric, with acoustic properties at least equal to those of the original solution (average reaction time $\leq 1.5s$); See the comments of Mr Bonnefous (acoustician) in section « interview ».

The installation of Acoustis® 50 by Mermet was always going to prove successful thanks to:

- its coated glass fibre weave and special patented acoustic weft which enable it to absorb sound waves without the addition of fibrous materials or foam, i.e.:
- a light acoustic solution, very thin, which is easy to install,
- obvious decorative advantages with 12 different colours available.
- its rot-proof qualities and lack of thermal resistance which enable it to be installed indoors or outdoors, guaranteeing a healthy atmosphere in even the most humid environments,
- its high mechanical resistance to breaking, tearing or folding and its perfect dimensional stability, enabling it to be installed in a tensile structure,
- its safety guarantee. With a non-flammable fire classification, certified to Greenguard® and Oeko-tex standard 100, and bearer of the Enduris™ Glass Core quality label, Acoustis® 50 meets all the requirements for use in public areas.

In total, 108 triangles (3m x 3m x 3.90m) of Mermet® panels, that's 670m², were used.

Measures taken before work started, with a perforated tank and a tensile ceiling textile (minus the already-removed rock wool), showed a reverberation duration of 1.9s, i.e; a relatively good performance level for this type of building.

After work was complete, the reduction in average reaction time was significant with a **final reverberation level of just 1.4s**, way exceeding expectations!



Aesthetic and hi-tech, the Acoustis® 50 fabric, launched in 2006 and once again featuring in the new Mermet® 2009-2012 collection, is continuing to make inroads into the market where it remains a quite unique reference product.

Technical data

Acoustic absorption factor α_w	0,35 to 0,8
Composition	Coated fibreglass fabric
Fire, smoke classification and other official test reports	M1 (F) BS (GB) Euroclass B,s3,d0 (EU) IMO F4 (F)
UV Screen	Up to 98%
Width	250 cm
Weight/m ²	430 g \pm 5 %
Thickness	0,55 mm \pm 5 %



Product in the limelight

Mermet® 2009-2012 collection : intelligent fabrics



After the Modulight® collection 2006-2009, it's now the turn of the **Mermet® collection 2009-2012** to take up the baton.

With this collection, Mermet is active in **4 main markets: solar protection, tensile structures, signage and acoustics.**

Specialized in the weaving of coated glass yarns, Mermet offers a collection based on **4 main product families:**

- The **Sunscreen® range** has been strengthened. This large product family of exterior and/or interior fabrics (12 products available in over 400 combinations) has stood the test of time and now includes a real innovation: **Natura** (fabric based on a 2-tone yarn for a completely natural effect) and fabrics which offer increased protection against heat and glare, including the new **K2** fabric and the **M-Screen 8501**.
- The launch of the **Greenscreen® range**. Designed for interior use, it is made up of two "green" products: the standard version **Viso** and a metallic version **Viso Met**. Guaranteed PVC-free, significantly they are now available in larger widths (300cm).
- **Blockout**. This "blockout" family is comprised of 5 products in over 70 combinations, from 100% blackout to semi-translucent or translucent.
- **Acoustics**. Acoustis® 50 combines acoustic and solar protection performance.

Alongside the "standard" range, Mermet is launching a **new service** for large projects, consisting of a **"Mermet tailor-made solutions"** which will offer new and innovative products specifically designed for each architectural project: personalized yarn colours, a large choice of weaving possibilities, specific coatings (interferential effect, metallic coating or coating to equip the inside of hospitals facilities...)

Additionally, from February 2009 Mermet® fabrics made of coated glass yarns will benefit from the new **Enduris™ Glass Core quality-label** (for more details, please see section « regulation/standards »). It's another stamp of approval and a guarantee of performance for Mermet, who at the same time is pursuing an HQE (high environmental quality) approach, a safety programme with **non-flammable fabrics** and a quality initiative with fabrics which conform to the **Oeko-tex Standard 100** and the **Greenguard®** eco-labels.

Long-lasting with a 5-year guarantee, offering a wide range of colours and textures for an enhanced decorative effect, professionals and public alike are convinced by the exceptional qualities of Mermet® fabrics.

**Interview****Mr Bonnefous, Acoustician from the company Acoustex**

9 questions to Mr Bonnefous, an engineer of Habitat and Life Environment Physics, working in the design department at Acoustex Engineering in Niort.

For how long have you known about and been recommending the acoustic absorption fabric Acoustis®50 from the company Mermet?

I discovered this product in 2008 through a press advertisement.

As a reminder, acoustic absorption reduces the reflection of sound waves thereby limiting sound propagation within a room. Absorbent materials reduce sound levels because sound goes through them repeatedly, each time losing some of its energy.

For which projects have you already recommended the fabric Acoustis® 50?

The Chauray Aquatic Centre

La Rochelle Swimming Pool

What are the main applications you recommend?

Aquatic building complexes

Are you satisfied with the results you have obtained from the fabric Acoustis® 50?

Unless proven otherwise, the before and after measurements we have taken on projects using panels of ACOUSTIS® 50 have given entirely satisfactory results.

Guaranteed results at the Chauray aquatic centre

Is it straightforward to treat a swimming pool for acoustic problems?

To improve the acoustic correction of a building with high levels of reverberation is usually relatively easy. This is generally the case in a swimming pool with little or even no initial acoustic treatment.

What were the particular characteristics of the Chauray aquatic centre?

The Chauray aquatic complex had from the very beginning a very effective acoustic treatment. Even though this effectiveness had declined due to the removal of some of the original treatment (mineral wool pads on the originally fitted tensile panels), they remained quite effective for this type of building (average RT prior to the works: 1.9s).

What were your selection criteria for choosing a suitable product?

The objective for the installation of a new treatment was to apply a durable system (corrosive environment), to steer clear of fibrous absorbent materials and to re-establish the original levels of performance, in the knowledge that reverberation before work began was already fairly low.

What results did you obtain from the fabric Acoustis® 50?

We observed after the completion of work that the reduction in the average reverberation time (RT) was substantial, which was all the more impressive as the average RT before work began was already relatively low.

The absorption coefficient α_w of the stretched panel itself is ≥ 0.7 seconds.

The acoustic correction objective at this site was to obtain an average RT of ≤ 1.5 seconds. Before the works, the average measured RT was 1.9 seconds; after the works, it is 1.4 seconds.

What are your conclusions regarding the use of this fabric for this project?

The fabric Acoustis® 50, by significantly reducing the acoustic reverberation (absorption coefficient $\alpha_w \geq 0.7$), enables us to limit ambient sound levels and thereby to improve communication through improved intelligibility of the spoken word.

Measurements taken before work began with a perforated tank and a fabric for a tensile ceiling (without the already-removed rockwool) suggested a reverberation period of 1.9s, i.e. rather good levels of performance for this type of building. After works were completed, the reduction in the average RT was substantial with a final reverberation level of just 1.4 s, which was exceeding expectations!

The before and after study supplies the proof that the fabric Acoustis® 50 has improved the acoustic comfort at the Chauray aquatic centre



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Regulations and Standards

Mermet® fabrics Enduris™ Glass Core certified

Since February 2009, Mermet coated fiberglass yarns fabrics are with Enduris Glass Core technology. This label guarantees the technical characteristics of Sunscreen® fabrics: mechanical resistance, dimensional stability and high-level durability.

At the origin of this technology: glass fibre at the core of the yarn

Glass is lightweight but extremely strong. Sunscreen® fabrics are endowed with its outstanding stability and offer very little elongation which is a basic requirement for large dimension blinds. Glass has high resistance to heat and is totally non-flammable; these are significant qualities for the Sunscreen® fabrics which have to meet the strictest regulations in the building industry. Chemically inert, glass, unlike some synthetic compounds based on petroleum, is essentially a pure mineral. It does not interact with its close environment and for this reason it has been traditionally selected by the medical sector.

Enduris™ Glass Core expertise lies in an entire production process including:

- High quality glass fibre
- Specific formulation
- Expertise in yarn coating
- Superior weaving technique
- ISO certified production and quality management systems
- Commitment to customer satisfaction
- Research and development at the cutting edge of technology



Enduris™ Glass Core falls in the field of a sustainable development approach with high performance Sunscreen® solar protection fabrics:

- Energy efficiency of buildings
- Reduced environmental impact
- Better use of natural resources
- No impact on the health or safety of the users.

Enduris™ Glass Core quality label is a mark of reliability with accreditations from independent testing laboratories, another stamp of approval and a guarantee of performance for Mermet.

Discover more about Enduris Glass Core at www.EndurisGlassCore.com

Did you know
The world of Textinergie

Released online in February 2008, the internet site www.textinergie.org is a simple tool which in just a few clicks enables you to **calculate potential energy savings by using solar protection made out of textiles**. This site was set up by the SNFPSPA with the active support of Mermet.

As a reminder, the user selects the climatic zone, the aspect of the building's facade, the type of premises and glazing, the position of the blind and the colour of the textile. Two levels of results are offered:

- **Simplified results:** % of energy savings associated with reduced air conditioning and other requirements (air conditioning + heating + artificial lighting),
- **Detailed results:** calculated temperature (°C); consumption (kWh) and % of energy saving for each unit (air-conditioning, heating and lighting); luminosity (lux).

This site was originally designed for France only, but since March 2009 it has been **upgraded with data from 16 cities around the world** (New York, Melbourne, Dubai, Berlin, London...) in order to increase possible simulations. **Translated into English**, Textinergie is available for use worldwide.

