





DECOUSTICS SEFAR LIGHTFRAME®

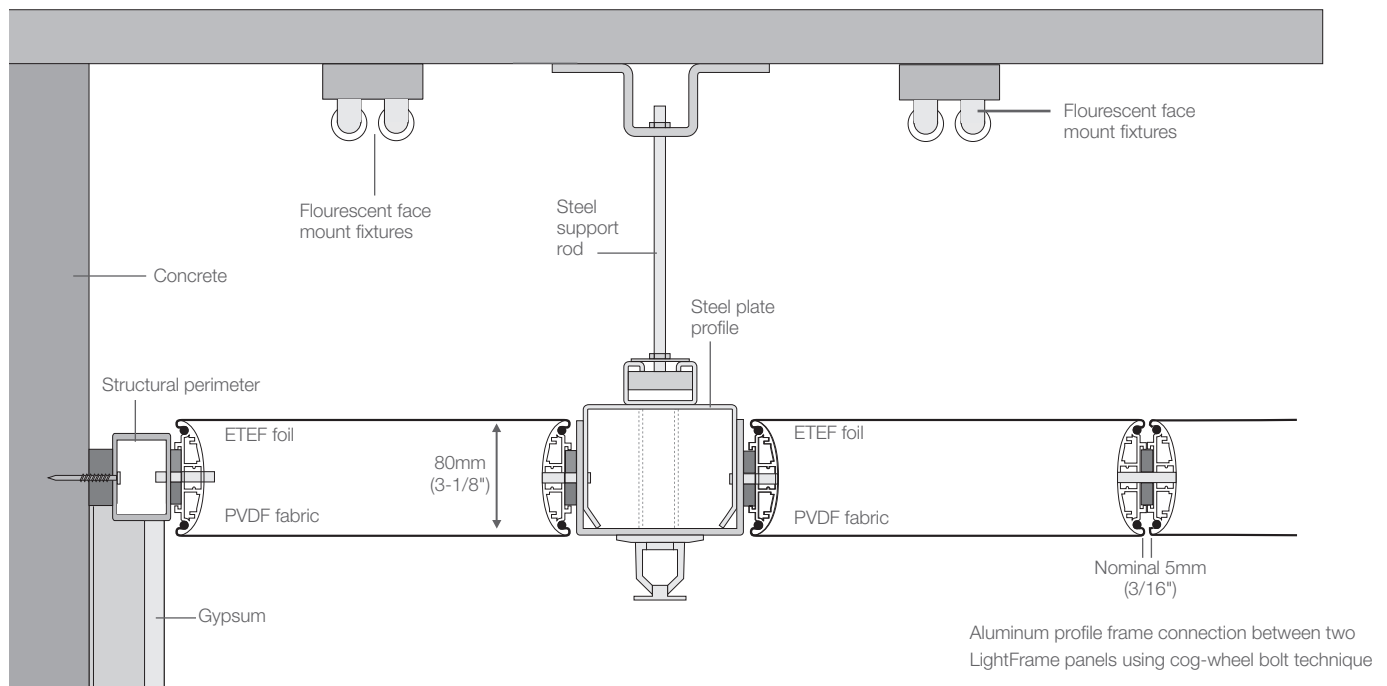
LIGHTFRAME is a translucent fabric ceiling and wall system that provides accessible panels with light transmission rates up to 83% and NRC values up to 0.9. The precision monofilament fabric optimizes artificial or natural light transfusion without color shift, giving an even illumination. Extremely narrow seams and an elliptic profile ensure illuminated surfaces are practically shadow-free.

Unique finishing and coating techniques ensure a high UV durability without fading, while the materials remain extremely tough and long-lasting. All fabrics used in LightFrame panels have a Class A fire performance according to ASTM E84, and carry a 10 year warranty.

Technical attributes

- Assembly and pre-stressing technology concealed in a light, metal frame
- Narrow half-elliptical profile for minimized shadows and loss of light
- Extremely small gap between the panels (less than 5mm [3/16"])
- Wrinkle-free, pre-stressed, smooth membrane fabric
- Complete access to plenum
- Free of plasticizers; low VOC's
- Resistant to dirt

Installation Details



The system at a glance

Construction

The LightFrame consists of single panels that can be installed in either butt joint or reveal layouts. The frames are tightly spanned with fabric and secured with a spline. A second layer is attached to the reverse side of the frame to optimize the light transmission and acoustic properties. This layer is either a translucent or opaque ETFE-foil, or a second layer of SEFAR fabric.

Size

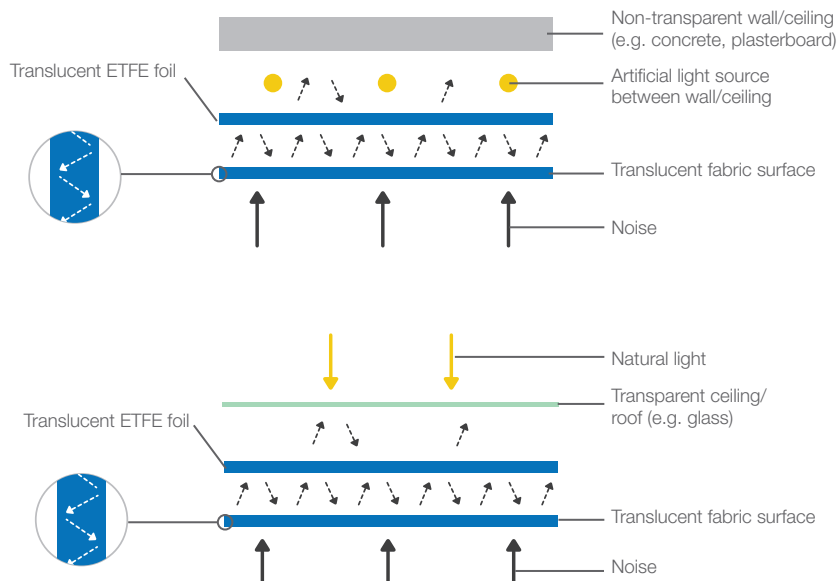
Panels are manufactured to the dimensions specified. The optimal maximum panel width is 1.5m (5ft) and optimal maximum length is 3m (10ft). The available fabric width and installation site accessibility may limit the maximum panel size.

Perimeter options

The LightFrame system requires a structural rigid perimeter that the panels attach to. Typical materials to construct the perimeter frame include: structural steel shapes (consisting of angles, square profile, channels, S and W shapes), aluminum tubes (including square and rectangular shapes) and engineered wood structures.

The perimeter structure must meet all local codes and engineering requirements. It is recommended that the perimeter be designed/reviewed by a qualified engineer. The LightFrame ceiling system will allow sprinkler heads, lighting and air diffusion by incorporating utility channels into the ceiling design.

Photo: Zürich Airpotrt, Switzerland



Light transmitting fabrics

Light that penetrates a membrane is affected by many factors. The parameters governing the reflection and absorption properties of a membrane directly influence the light transmission (ASTM D1003) through it.

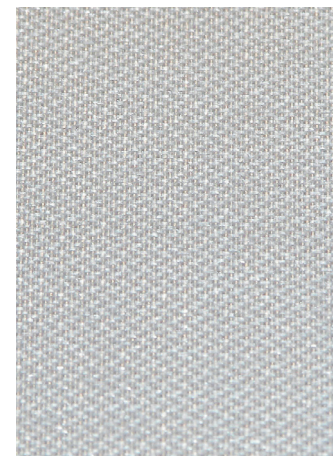
PVDF is a high light transmitting fluoropolymer deployed in photometric fabrics which permits a high degree of diffusion of both artificial and natural light without color displacement.

Acoustic fabrics

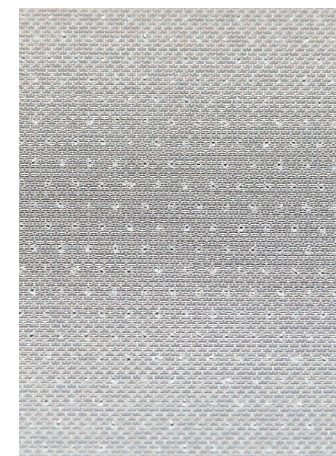
Compared with traditional, hard building products on the interior surfaces like concrete, glass and metal, SEFAR fabric is light, soft and reminiscent of natural materials. LightFrame can influence Environmental Acoustics™ and workplace efficiency.

| Spatial acoustics (NRC & SAA) | | | | | | |
|-------------------------------|---|------|--|------|---|------|
| Fabric options | Fabric to foil (distance membrane to ceiling: 9") | | Fabric and foil with 2" acoustical material in plenum (distance from acoustical material: 7") | | Fabric and fabric (distance fabric to ceiling: 9") | |
| | NRC | SAA | NRC | SAA | NRC | SAA |
| IA-85-OP | 0.55 | 0.58 | 0.75 | 0.74 | 0.75 | 0.75 |
| IA-80-CL | 0.65 | 0.66 | 0.80 | 0.81 | 0.90 | 0.88 |

NRC: Noise Reduction Coefficient (ASTM C423)
SAA: Sound Absorption Average (ASTM C423)



IA-80-CL
Woven pore structure



IA-85-OP
perforated pore structure

For fabric samples and system information, please contact a local Decoustics representative or visit <http://www.decoustics.com>.



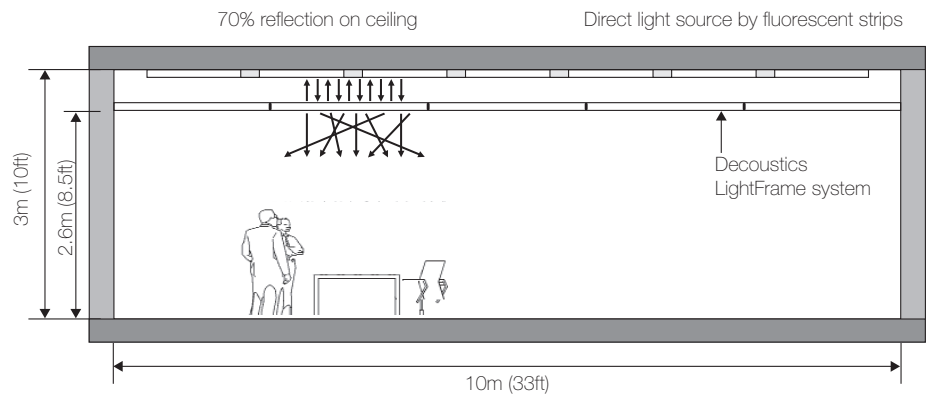
Photo: Acrevis Bank in Gossau, Switzerland

Diffuse light

The Decoustics LightFrame system achieves light transmission rates up to 83%. The transmitted light contains a high proportion of diffused light, also known as scattered light. This gives a balanced illumination by reducing contrasts, especially in shaded areas. The fabric gives the impression of being a light source yet functions as a light diffuser for both natural daylight and artificial lighting.

| Lighting technology | | | | | | | | | | | | |
|---------------------|---------------------------------|----|----|--|----|----|--|----|----|--|----|----|
| Fabric options | Light transmission | | | Footcandles at 3ft. | | | | | | | | |
| | | | | Fluorescent strips 4ft/28W | | | Fluorescent strips 5ft/49W | | | Fluorescent strips 5ft/80W | | |
| | Fabric and opaque foil (%) | | | Fabric and opaque foil Fabric and translucent foil Fabric and fabric | | | Fabric and opaque foil Fabric and translucent foil Fabric and fabric | | | Fabric and opaque foil Fabric and translucent foil Fabric and fabric | | |
| | Fabric and translucent foil (%) | | | | | | | | | | | |
| | Fabric and fabric (%) | | | | | | | | | | | |
| IA-85-OP | 26 | 83 | 72 | 15 | 31 | 27 | 25 | 51 | 45 | 30 | 60 | 54 |
| IA-80-CL | 24 | 78 | 64 | 15 | 30 | 27 | 25 | 50 | 44 | 30 | 59 | 53 |

Example of possible layout



Installation Details

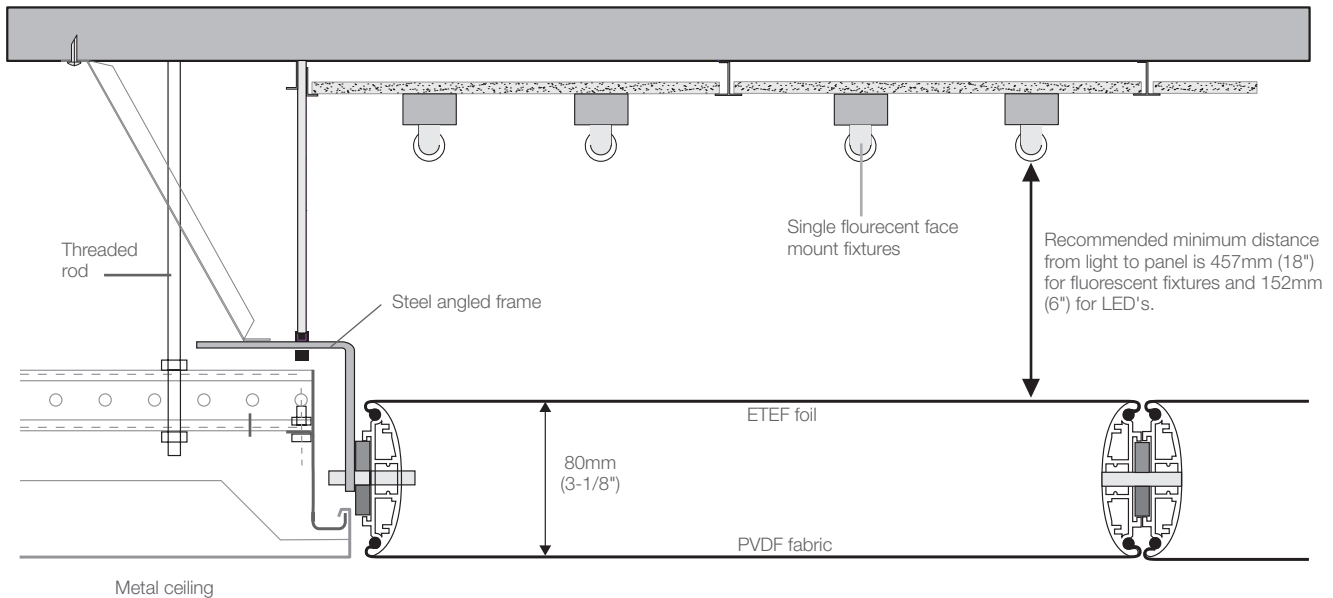


Photo: Service Center, Rund ums Auto, Frankfurt, Germany

Case Study: Building lobby

The entrance hall and lobby of this building was designed to have an open and airy feel. This was achieved with a glass curtain wall at the front of the space and Decouolics' LightFrame panels across the center of the room's ceiling. The LightFrame panels achieve a standard of illumination not possible with other materials. Each panel was suspended separately within its own structural perimeter. The individual panels are easily accessed by the building's maintenance team in order to change the lights above.

LightFrame panels are incorporated into the anthracite-colored expanded metal grid ceiling. The metal ceiling also has selectively placed, circular illumination spots. No shadows are cast by the LightFrame panels, which integrate seamlessly into the ceiling structure. The double-layer covering assists acoustic absorption in a predominantly reverberant architectural design.

The LightFrame system gives light transmission rates up to 83 percent and noise reduction coefficient (NRC) values up to 90 percent. This eliminates the dilemma of choosing between light transmission and sound reduction when selecting ceiling and wall finishes. The fabric optimizes artificial and natural light transfection without color shift, giving an even illumination.



Photo: John Muggenborg / Muggphoto

Case Study: Audi Manhattan Dealership

The architect wanted to create the look of lighted glass walls and ceilings when transforming a 256,000 square foot former Manhattan GM dealership into a modern Volkswagen and Audi showroom. The lighted surfaces needed to be sound-absorbent though in order to counteract sound-reflective surfaces in the room. Decoustics' LightFrame system created modular, accessible panels which were custom engineered to fit the space. The wall and ceiling panels were aligned to maintain continuous lines through the horizontal and vertical surfaces.

The designer used fabric on both the back and the front of the panel in order to maximize noise reduction. With the wall panels very close to the fluorescent lighting behind them, the double layer of fabric helped to reduce heat spots. Since LightFrame panels cannot be penetrated, a utility track was used in the ceiling to allow for sprinklers.

The room is used as a vehicle handover space once a client has made a purchase. This means that the room has limited traffic. LightFrame panels are not recommended in high-traffic, reachable wall applications.



Photo: John Muggenborg / Muggphoto

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