



Project Profile: Commercial Center Carrefour, Southwest France

Description: Translucent vault over a shopping mall in Southwest France.

Project: Replacement of ten-year-old roof vault constructed from double-skin multiwall polycarbonate sheet with an air space between the skins but no solar heat gain protection. In order to reduce the high temperatures inside the building during warm weather, a white coating had been applied to the existing roof, but this was considered unsatisfactory. In addition, gaps around the smoke extractors were causing down-draughts and water leaks.

Solution: Following an engineering study by Alcaud SA, it was decided to replace the daylighting and smoke extraction systems completely and upgrade the air conditioning system, which increased the need for better thermal insulation and solar heat gain protection. Lumira® aerogel-filled multiwall polycarbonate sheet was identified as the optimum 'one-pack' solution.

Product and dimensions:

- Lumira® aerogel-filled multiwall polycarbonate sheet, 25 mm thick
- Distance between frames: 1050 mm
- Total surface area: 1000 m²
- The 'Monaco MC[®]' vault is 4.80 m wide x 135 m long x 6.50 m high
- The roof vault includes a pyramid (6.10 m x 6.10 m) and four 'Eura[®]' smoke extractors, each measuring 1.50 m x 2.50 m, NF-CE certified, also constructed from 25 mm-thick Lumira® aerogel-filled multiwall polycarbonate sheet

Technical details:

- Thermal insulation achieved (U value): 0.89 W/m².K

Nanogel partner:

