

## Project Description

Two private enterprises in Egypt were interested in using Methyl Formate (ecomate®) systems instead of their current HCFC systems as part of their country's HCFC Phase-out Management Plan (HPMP). Egyptian experts traveled to Italy to one of the largest producers of discontinuous panels to witness a demonstration of fully formulated ecomate® systems using Cannon high-pressure equipment.

## Company Description

The Italian firm Manni Press is the largest company wholly dedicated to the engineering and manufacturing of machinery used in the production of discontinuous insulating panel plants.

## Equipment Used

Cannon A-Compact 100FC  
 Press Manni PMC 3000mm X 1400mm  
 Sandwich Panel Size 2400 X 1200 X 100mm  
 Sheet Metal Thickness 1mm

## Trial Methodology

The panels were foamed using an ecomate® system supplied by Resichem South Africa at 40kg/m<sup>3</sup> and 42.5kg/m<sup>3</sup>. Tests were carried out using the FPL18 head and the JL 24 head. The adhesion of foam to skins was the same if not better than using the HCFC-141b based system as shown in the pictures on page two.

## Results

|           | Nominal Density        | Core Density            |                         |                         |
|-----------|------------------------|-------------------------|-------------------------|-------------------------|
|           |                        | Left Side               | Center                  | Right Side              |
| Panel "a" | 40 kg/m <sup>3</sup>   | 34,35 kg/m <sup>3</sup> | 39,70 kg/m <sup>3</sup> | 36,82 kg/m <sup>3</sup> |
| Panel "b" | 42,5 kg/m <sup>3</sup> | 39,27 kg/m <sup>3</sup> | 39,12 kg/m <sup>3</sup> | 39,57 kg/m <sup>3</sup> |

Compressive Strength      180 kPa  
 Closed Cell content        >95%  
 K-Value                        0.023W/mK

## Conclusions

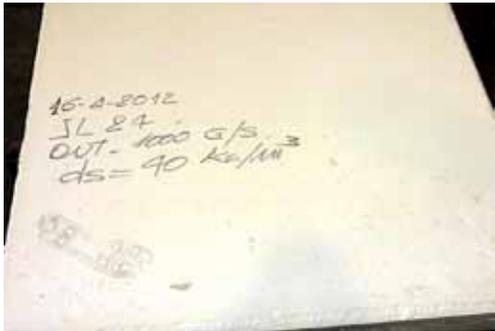
The trial concluded that the results obtained in the demonstration were similar to those using an HCFC-141b based system, despite the fact that it used an ecomate® system that was not optimized for application with the equipment used for the trial. When the optimization occurs, results are likely to be better or improved on the already acceptable performance. Representatives from Cannon believed that the foam quality and cell structure resulting from the use of the ecomate® system in their Cannon high pressure machine was excellent.



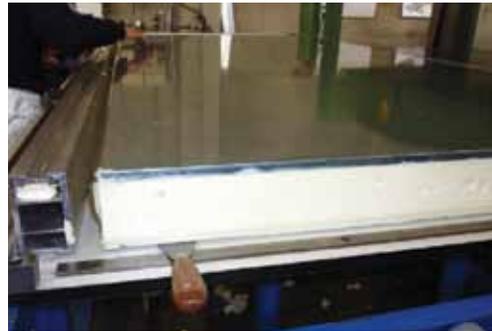
Cannon Head at Manni Press



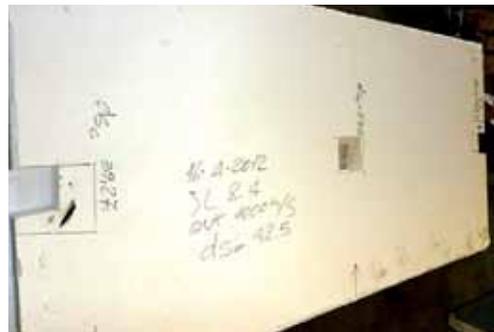
ecomate® panel at 40 kg/m<sup>3</sup> density



Panel without skins



ecomate® panel at 42.5 kg/m<sup>3</sup> density



Panel without skins