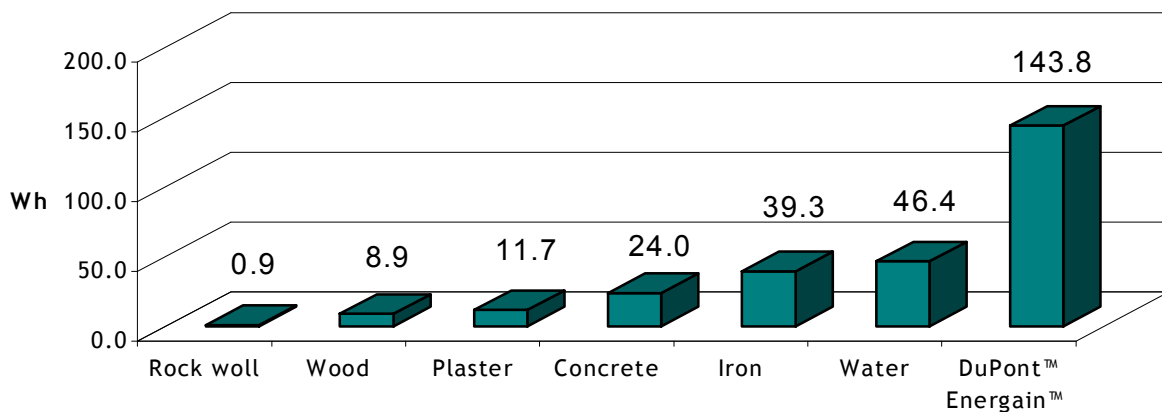


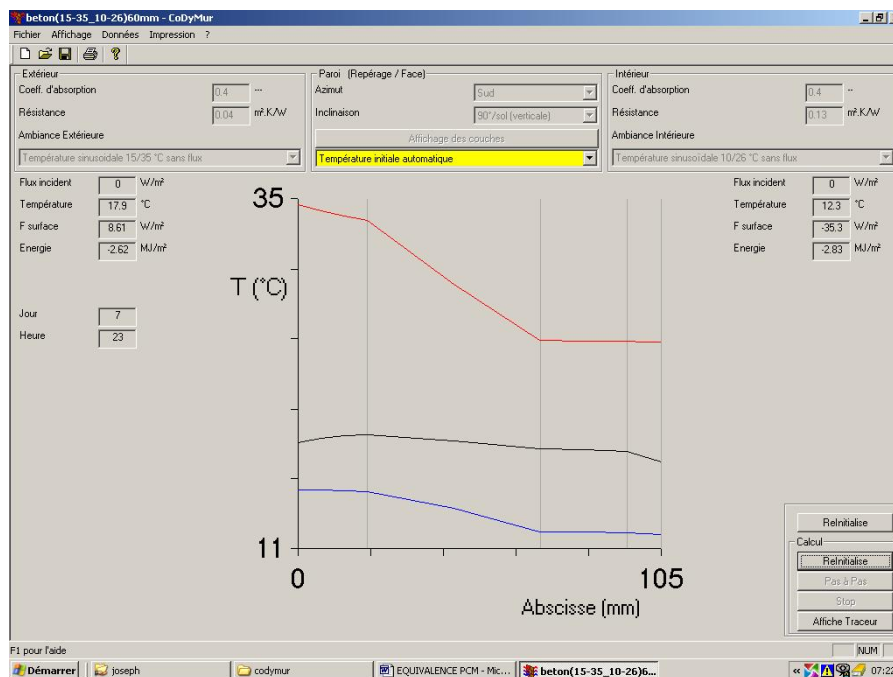
Equivalence DuPont™ Energain™ - Concrete

The graph below shows a ratio of 5 (143.8/24) between the energy stored by DuPont™ Energain™ and the concrete (2400 kg/m³) for a temperature change between 18°C and 24°C. Comparing strictly the energies it is true that the equivalent thickness is between 2.5 and 3 cm depending on the temperature variations chosen.

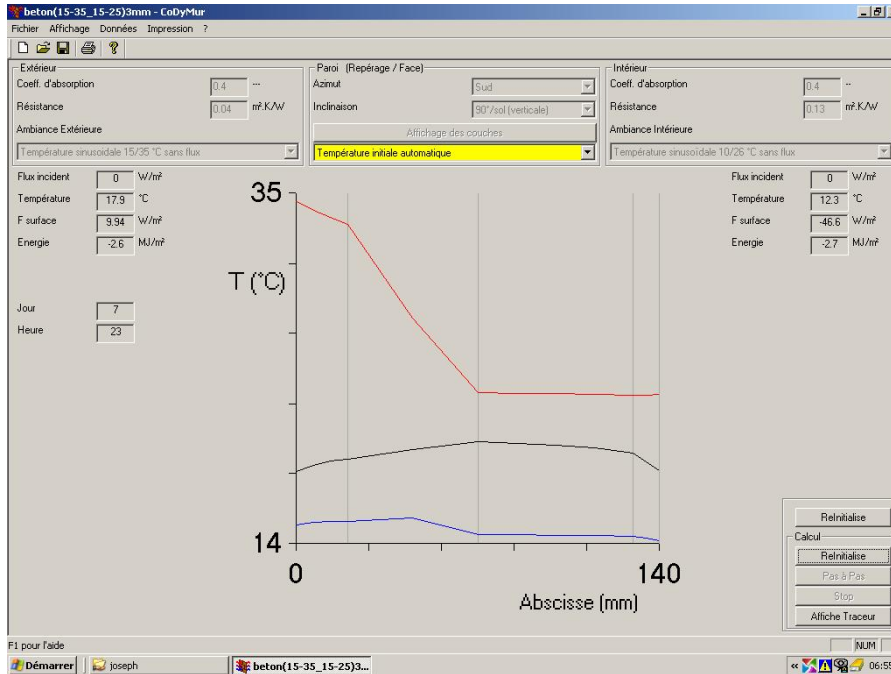
Total heat exchanged for 5mm thickness with the temperature between 18°C and 24°C



However, for the same temperature change inside a room, the variation span of concrete is smaller than for DuPont™ Energain™ which is sensibly thinner.

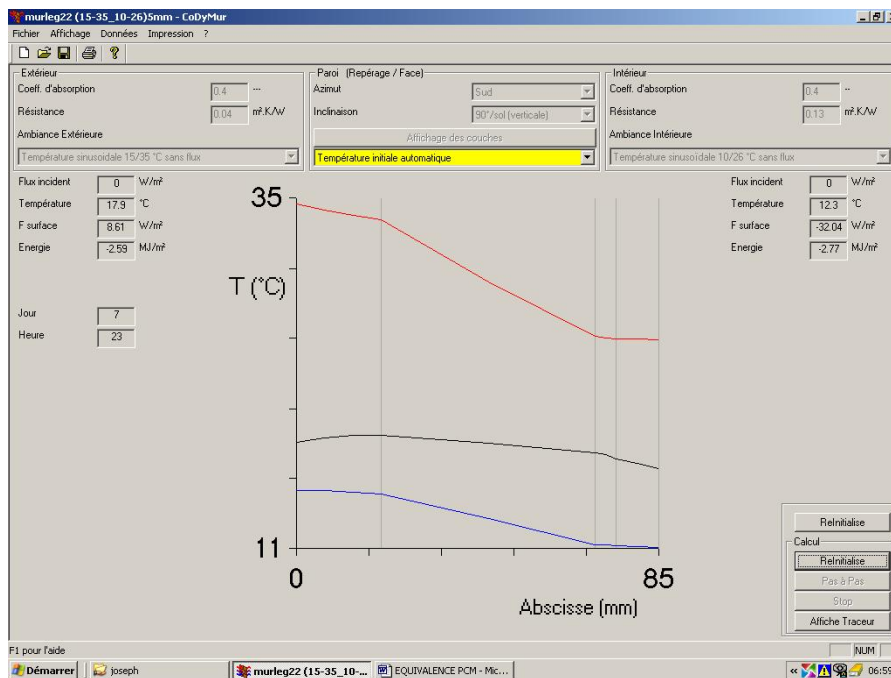


For 25 mm of concrete, the variation goes from 12 to 25°C corresponding to a delta T of 13°C.

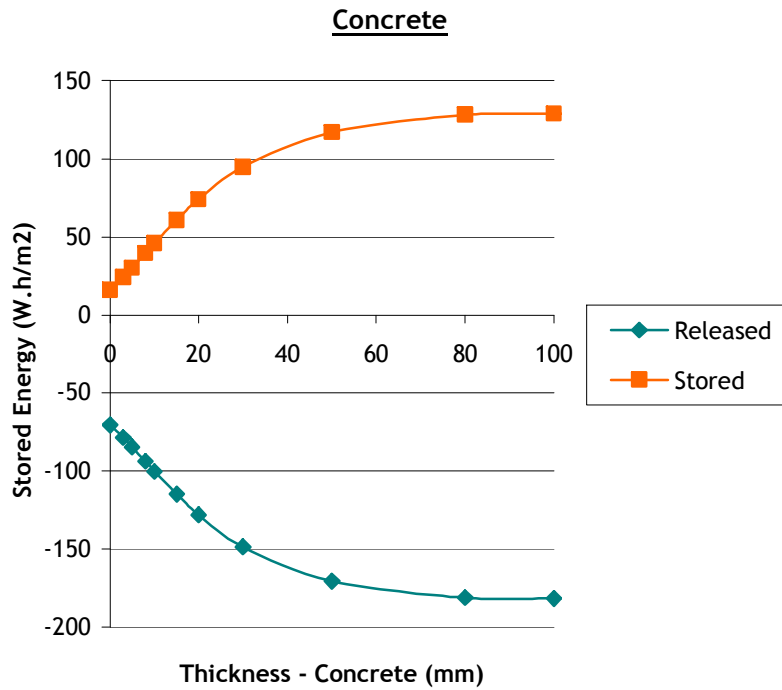


With 6 cm of concrete, a change in the inside temperature over a day from 10 to 26 °C will induce in the concrete a variation of the temperature from 15 to 24 °C (Delta T = 9 °C). This temperature variation has reduced by a factor (-)1.44 with the increase of the thickness by a factor (+) 2.4:

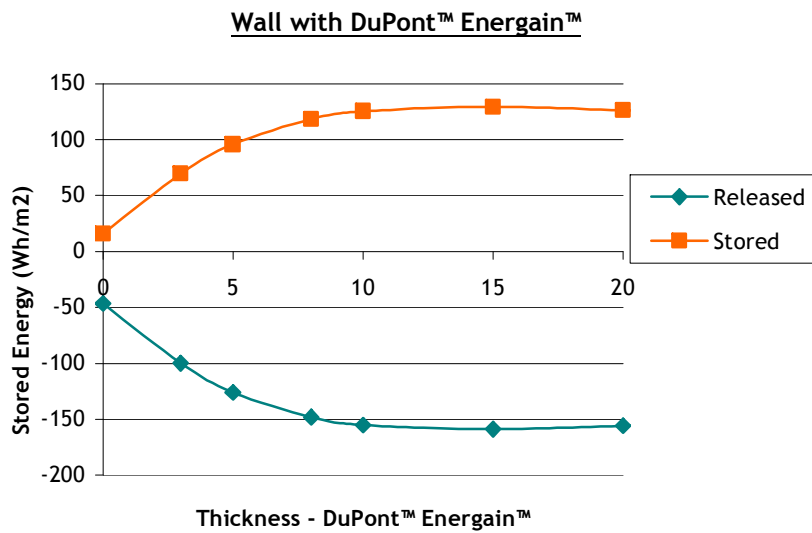
This means that the phenomena are not linear:



For 5 mm DuPont™ Energain™ the variation goes from 11 to 25 °C (Delta T = 14 °C)



The optimum is obtained with 8 cm of concrete with an energy of 130 Wh/m² with basically no additional gain between 25 and 80 mm of concrete



With DuPont™ Energain™, the optimum is obtained with 10 mm, with a stored Energy of 130 Wh/m². Here also the additional gain between 5 and 10 mm is reduced. As a conclusion, one should say rigorously that 10 mm of DuPont™ Energain™ is equivalent to 80 mm of concrete knowing that with 5 mm of DuPont™ Energain™ one will reach 75% of the performance obtained with 10 mm.

Joseph Virgone

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