Construction guide

Principles and use of the solar cooker

The solar cooker has been developed by Mr J. Dierkx, in Ermelo, the Netherlands in 1982. It has been adjusted for The Recycle Center (Het Kringloopcentrum) in Sliedrecht, the Netherlands. The technical drawings have been made by Mr. A. de Kluiver in 1994.

The design of J. Dierkx is different from other designs for solar cookers because his design will create a hot air circulation within the (solar) cooking box. This because:

A. The glass cover is inclined, the box being higher at the rear.
B. The bottom is somewhat lower in the front.
C. The grate on the bottom, with the lathes from the front to the rear. This enables the hot air to flow underneath the cooking pans.
D. The reflecting plate does direct the sun-rays towards the sloping front part of the innerbox, which causes an additional warming up of the circulating air.
E. Seal the bottom of the glass steamtight with rubber strip rubber tape and clench this tightly to the box with butterfly-nuts (wingnuts) or fasteners

Innerbox

Preferably made from thin metal. Solder the seams. Using loose, seperate sides use a flange of 1,5 centimeters, popnails , put SILLICONENKIT in the seams and edges and cover the metal on the inside with silver paper (heatproof). Cover the metal with dull black paint in order to absorb the sun-rays.

Isolation

Either use glass wool, stone wool, raw cotton or wool, or feathers (fluff).

Outside box

Use light materials so the cooking box can be easily moved. For safety it is recommended to paint the outside white, so that the box will be noticed at night.

Reflecting plate

This is needed for 4 reasons:

1. To catch more sun-rays and direct them to the box.
2. To determine the time that the food will be ready. The reflecting plate can be put in three different positions, this way it is possible to stipulate the time that the sun will enter the cooking box.
3. By putting the reflecting plate down, the glass cover will be protected during rain and at night.
4. To keep the food warm for a long time. When the reflecting plate is put down the food will cool down only 15 degrees Celcius per hour.