SolarOSE - Guide 6: Absorber tube

This is the fifth tutorial for building the solar concentrator of Open Source Ecologie (French branch of Open Source Ecology). Here we are going to build the absorber tube.

Difficulté **Moyen** | Durée **2 heure(s)** | Catégories **Énergie** | Coût **11 EUR (€)**

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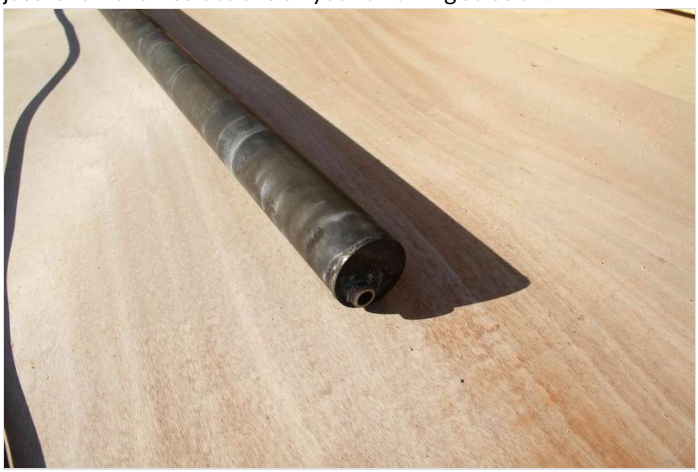
Étape 1 - Absorber Tube

Cut a brass tube with an exterior diameter of 55 mm and a length of 1900 mm. The pipe is originally shiny.
Weld the fittings on the edges, according to the photo. Make sure one fitting is at the bottom, and the other one at the top: this enables to feed liquid water from the lower part and extract water vapor from the top.
Once the pipe is welded, you need to darken its external surface, so it becomes as absorptive (black) as possible. This is very important as we want as much solar light to be absorbed on the pipe to heat the water inside. Apply an oxidizing solution suitable for brass (easily available on the market). Let the oxidizing solution dry for a couple of days if possible. Remove the traces of the oxidizing solution with a wet paper. Or just follow the instructions on your oxidizing solution.



Étape 2 - Elements of hydraulic circuit

Cut the copper pipes: + 3 m length for the water alimentation + 15 cm for the south connection (water) + 15 cm for the north connection (steam)
Arrange the connection to the edges of the tubes, as seen on the schema/photos of the hydraulic circuit.
The plumbing complementary elements depend on the application connected to the solar boiler.