

SPECIFICATIONS OF BOX TYPE SOLAR COOKER

The box type solar cooker-

- Should be as per **BIS (IS 13429:2000)**, with size **550mmx550mmx170 mm ± 20 mm**
- With **four matt black coated** cooking pots (with lid)(**made of stainless steel IS 4536 Part-I, II/ IS 5522**)
- Solar cooker must have **thermal performance (F1) not less than 0.12** (ie, Grade A)
- The cover plate should be double glazed made of **toughened glass** with over all transmittance of not **less than 65%**.
- The body of the solar cooker should be **1.00 mm thick UV resistant FRP**.
- The gaskets must be made of **neoprene/EPDM** on minimum **2 mm** thickness
- Mirror reflectivity** should **not be less than 75%**.
- Each solar cooker must be provided **with four castor wheels** as per **BIS 13429**
- All parts of the cooker must be made of **rust/ corrosion free materials**.
- The solar cooker must carry a label indicating manufacturers name, complete address, telephone numbers and **HAREDA 2009 Supply** mark.
- BIS [certificate](#) / Test report** from MNRE approved test centers must be enclosed for conformity of the product **with above specifications**.
- In case of Solar cooker with electrical back up, the cooker should be with **[thermostatically](#) controlled electrical backup of min.200 W to 400 watt (± 10%)** with arrangement for **low and high setting** and **on/off switch** and **min. 6' cord with all necessary safety controls**.
- Specifications not included here shall be as per **IS 13429:2000**.

SPECIFICATIONS OF DISH TYPE SOLAR COOKER

Reflecting Bowl	
<input type="checkbox"/>	Parabolic dish made of single/multiple reflectors fixed firmly to a rigid frame . The size and shape of the reflectors will be such that when joined/fixed they automatically form a perfect parabolic dish which when exposed to the Sun in the normal direction a point focus is formed.
<input type="checkbox"/>	Dish diameter : 1.4 m minimum
<input type="checkbox"/>	Reflector Material : Bright anodized aluminium sheets of thickness 0.4 mm.
<input type="checkbox"/>	Reflectivity : >80% with a maximum degradation of 10% in 5 years
<input type="checkbox"/>	Useful life : 5 years minimum
<input type="checkbox"/>	Tying cords : the reflector fins should be tied with the supporting rings with a metallic cord so that it does not wear out over a span of time
<input type="checkbox"/>	Focal spot : It will be of a size such that all the reflected rays are exactly focused at the bottom of the vessel (5 litre pressure cooker for 1.4 m dia. Dish.)
<input type="checkbox"/>	Thermal/ optical efficiency : min 40%
Bowl supporting frame	
The outer frame of the dish should be made of powder coated aluminum channel. The supporting frame for the reflecting bowl will be made of a grid of at least three MS rings supported by MS strips or FRP material/thick MS wire-mesh structure. It will be rigid enough to avoid any deformation of the bowl shape during manual handling or under wind pressure. The MS structure will have epoxy/anti-rust coating.	
Bowl stand	
<input type="checkbox"/>	Of mild steel, epoxy/power coated
<input type="checkbox"/>	With arrangement to hold cooking vessels of different sizes (pot holder).
<input type="checkbox"/>	With suitable provision for securing the cooker to the ground
Tracking Mechanism	
<input type="checkbox"/>	Manual or automatic
<input type="checkbox"/>	Designed to enable unrestricted 360 degree rotation of parabolic dish around its horizontal axis passing through its focal point and center of gravity and also around its vertical axis, for adjustment of the cooker in the direction of the sun.
<input type="checkbox"/>	With simple locking arrangement to hold/fix the bowl at a particular position.
<input type="checkbox"/>	With vertical pointer arrangement to facilitate users positioning of the bowl exactly in the direction of the Sun.
Cooking vessel	

ISI marked pressure cooker of 5 litre capacity with high temp. resistant black powder coated bottom.

Other requirements

- The entire structure should be able to withstand wind speed of 60 kmph without any damage .
- All parts/components should be of weather resistant design specifications to withstand natural weathering outdoors under local climatic conditions for a minimum period of 15 years (except for reflecting mirrors which may require replacement every 5 years).
- The cooker will be supplied with accessories like cap, hand gloves, goggles, manual for its installation and proper use and tool kit for installation.
- The supplier will give two year guarantee/warranty of the cooker wherein he will provide free services for repair/replacement of parts. The reflectors should be guaranteed for a period of five years. A guarantee card duly signed by the supplier with seal and date of supply shall be provided by the supplier.

Note:

1. Any minor equipment and material may not be specifically mentioned in these specifications but the bidders are required to make the system complete in a every respect in accordance with technical specification and the same shall be deemed to have been covered under the scope of these specifications and shall be provided by the tenderer/supplier within the quoted price.
2. Any variation in the specification must be clearly indicated and it will be acceptable by HARED only if it is superior to the DNIT specifications. However, no extra cost on this account would be chargeable.