# **American Solar Supply**

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## EVA- B601



EVA (Ethylene Vinyl Acetate Copolymer) is used as the main raw material for EVA film which is for encapsulating solar modules. EVA film is Produced by thermal processing and forming equipment when EVA is fully mixed With some modified accessory ingredients. EVA film is easy to handle for it is inviscid under room temperature. When encapsulating solar modules, the processing requirements should be followed. From bottom to top, we place glass, EVA, solar cell, EVA and TPT(TPE,PET), then all these will be put in to the preheated Laminator to be laminated and solidified. The solidified solar cell, after being fixed with aluminium alloy frame and terminal box and then being tested and packed, becomes the solar cell module.

#### 1.Laminating and solidifying process conditions:

|             | Fast solidifying(B601)                       |         |  |
|-------------|--|---------|--|
| Laminating  | Temperature of hot plates (°C)               | 138-140 |  |
| and         | Time of the creation of vacuum(min)          | 5       |  |
| solidifying | Time of pressure increasing and keeping(min) | 13-15   |  |

#### 2.Laminating and solidifying operating instructions:

- The laminating process conditions can vary according to the laminator's property. Different laminator may have different laminating process conditions.
- (2) The temperature of laminator's working environment is different from laminating temperature, and accordingly, the process conditions are different. Generally speaking, in summer, the time used to create vacuum is shorter than that in winter.
- (3) The higher the laminating or solidifying temperature is, the shorter the time will be. Contrarily, the lower the temperature is, the longer the time will be. If the temperature of laminator or curing box is even, relatively higher solidifying temperature can save time and cut cost, and also can increase production efficiency.

### 3. Quality Assurance:

ISO9001

ISO14001

SGS

UL/TUV

## 4. Laminating curing process condition:

| Curing mode |                       |                       |      |
|-------------|-----------------------|-----------------------|------|
|             | Hot-plate temp(°C)    | 143-145°C             |      |
| Laminating  | Vacuum time (min)     | 5.5Min<br>(-101.3MPa) |      |
| curing      | Laminating time (min) | -60KPa                | 20s  |
|             |                       | -40KPa                | 10s  |
|             |                       | -20Kpa                | 600s |

## 5.Product test:

| Test Item  |           | Test Standard   | Unit  | Standard<br>Values | Test<br>Values |
|--|-----------|-----------------|-------|--------------------|----------------|
| Density  |           | ISO1183         | g/cm3 |                    | 0.96           |
| Tensile Strength   |           |                 | MPa   | ≥15                | 26             |
| Elongation at break  |           | GBT1040.2-2006  | %     | ≥400               | 450            |
| Optical Transmission   |           | GBT2410-2008    | %     |                    | >91            |
| Shrinkage  | TD        | QB/BJBM-01-2010 | %     | ≤3                 | <2             |
|  | MD        |                 | %     | €3                 | <2             |
| Cross-linking Rate<br>after<br>laminate(143-145<br>°C,16min) |           | QB/BJ-03-152    | %     | ≥75                | 82-86          |
| Dielectrical strength  |           | GBT1408-2006    | Kv/mm | 1                  | 60             |
| Volume Resistance  |           | GBT1410-2006    | Ω     |                    | 7.8*1014       |
| Peeling<br>strength  | Backsheet | GB/T2790        | N/cm  | ≥60                | >80            |
|  | Glass     |                 |       | ≥40                | >80            |
| UV cutoff<br>wavelength                                      |           | GBT2410-2008    | nm    |                    | 360            |
| Water-absorbing rate   |           | GBT1034-1998    | %     |                    | 0.1            |





