

AKALIGHT HBF 185 b

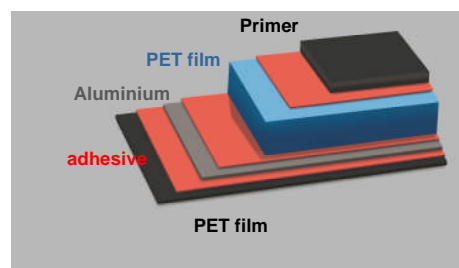
Polyester + Aluminium foil + Polyester + Primer

General

AKALIGHT HBF 185 b is a **black colored** UV-stable and hydrolytic resistant multilayer insulating material. It has been developed for the specific application as a backsheet of a Photovoltaic Module which minimum requirements are described in the International Standard IEC 61730-1.

Electrical, mechanical and optical properties of **AKALIGHT HBF 185 b** remain at high level when exposed to UV radiation or to rough combined temperature/humidity conditions (e.g. 2000 h, 85%rh, 85°C). The **UV stabilized** black Primer of HBF 185 b gives improved adhesion to the encapsulating polymer. The very low water vapour permeability meets the particular requirement of thin film technology (TF) and organic photovoltaic modules (OPV).

All tests including accelerating tests are performed on plane back sheet.



TEDLAR® PVF film is a polyvinyl fluoride film from DuPont

Required properties in accordance to IEC 61730-1

| Property | Unit | Test method | Results | Testing laboratory |
|---------------------------------|-----------------|---------------|----------------------|--------------------|
| Maximum system voltage (in air) | V _{DC} | IEC 60664-1 | 1157 | VDE, Offenbach |
| UV resistance | - | EN 4892-3 | Passed ¹⁾ | KREMPEL |
| Flame spread index | - | ASTM E 162-02 | dpd | UL |
| Relative Thermal Index (RTI) | °C | IEC 60216-5 | 105 ²⁾ | UL |
| Relative Thermal Index (RTI) | °C | UL 746B | 130 ³⁾ | UL |

1) 2000h UV exposure with 0.68 W/m² at 340 nm; 60°C; 500 min. wetting; 1000h condensation. Total exposure time 3000h. Tested on both sides.

2) Generic thermal index according UL 746B table 7.1.

3) RTI tested as electrical temperature rating of PET film (airside outer layer). Mechanical temperature rating is 105°C impact/130°C strength.

Additional properties

| Property | Unit | Test method | Typical values |
|---|----------------------|---|----------------------|
| Thickness | mm | EN 60674-2 | 0.33 |
| Area weight | g/m ² | EN 60674-2 | 440 |
| Water vapour permeability 23°C/85%rLf 38°C/90%rLf | g/m ² · d | ISO 15106-3 Test condition 4 Test condition 2 | ≤ 0.0005 ≤ 0.0005 |
| Dimensional stability, MD + TD (30 min. / 150 °C) | % | EN 60674-2 | ≤ 0.05 |
| Reflection of visible light (380 – 780nm) ¹⁾ | % | EN 410 | 5.0 |
| Reflection of radiation (280 – 2500nm) ¹⁾ | % | EN 410 | 4.9 |

1) Tested at Primer side = cell side; direct solar radiation. Test equipment: Perkin Elmer Lambda 900 (Ulbrichtkugel)