



Specialty Polymer for Adhesive Film in ACP

PRODUCT APPLICATION NOTE

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INTRODUCTION

Aluminium composite panels or Aluminium plastic composite panel (ACPs) is a new type of cost effective environment friendly construction material which is used in many applications such as wall cladding, decoration, advertising, and furniture manufacturing. These aluminium composite panels are laminates made of low density polyethylene core layer sandwiched between two sheets of aluminum, jointed with the help of **Adhesive Layer polymer**. This adhesive layer of polymer can be applied by direct extrusion coating process or in the form of films.

CHARACTERISTICS OF BindEX E-165

About BindEX E-165

BindEX E-165 is a chemically modified polyethylene adhesive resin with enhanced adhesion characteristics. It is the recommended adhesive resin to bond polymer core with aluminum sheets in Aluminium composite panels. It is preferably used as outer layer in 3- layer coextruded blown film structure. It is this layer which faces aluminium sheet during lamination process. It can be processed on normal extruders used for processing of polyethylenes.

Properties

- Appearance : White color granules
- Bonded MAH : Low-Medium
- MFI* : 2.0 g/10min
- Density : 0.923 g/cm³

*190°C/2.16Kg

How does it work?

BindEX E-165 has suitable pendant functional groups to bond to aluminium metal on one side, while its polyethylene backbone has natural affinity with the non-polar polyolefinic layer on the other side in the Aluminium panel structure.

Suggested Formulation: BindEX E-165 is recommended to be used as outer layer in 3- layer coextruded blown film structure. A typical blown film construction would be:

Layer Type	Composition	Typical Thickness (µm)
Outer Layer	BindEX E-165	10
Middle Layer	In-house Re-LLDPE	20
Inner Layer	Virgin LLDPE	20

Processing

BindEX E-165 can be processed on standard extrusion equipment designed to process conventional polyolefins. Maximum processing temperature should not exceed 280°C. Extrusion temperatures for BindEX E-165 are typically kept between 200-230 °C.

Advantages

- **Strong adhesion** - BindEX E-165 bonds strongly to metals such as Aluminium and steel under heat and pressure. It has natural affinity with PE due to its polyolefinic nature.
- **Easy Processability** – It is available in pellet form and can be processed on all conventional extrusion equipment suitable for polyolefin processing.

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