



## PRODUCT APPLICATION NOTE

### Functional polymers for adhesive film in ACP

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### Introduction

Aluminum composite panels or Aluminum plastic composite panels (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 aluminum composite panels are laminates made of low-density polyethylene core layer sandwiched between two sheets of aluminum, joined 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 recommended adhesive resin to bond polymer core with aluminum sheets in aluminum composite panels. It is preferably used as outer layer in 3- layer coextruded blown film structure. This layer faces the aluminum sheet during lamination process. It can be processed on polyethylene processing extruders.

### Properties

Appearance	: White color granules
Bonded MAH	: Low-medium
MFI*	: 2.0 g/10min
Density	: 0.923 g/cm <sup>3</sup>

\*190°C/2.16Kg

### How does it work?

BindEX E-165 has suitable pendant functional groups to bond to aluminum metal on one side, while its polyethylene backbone has natural affinity with the non-polar polyolefin layer on the other side in the aluminum 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 aluminum and steel under heat and pressure. It has a natural affinity with PE due to its polyolefin 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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#### Disclaimer:

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