Global Packaging Dunnage Standard Manual

30 November 2018

inalfa roof systems

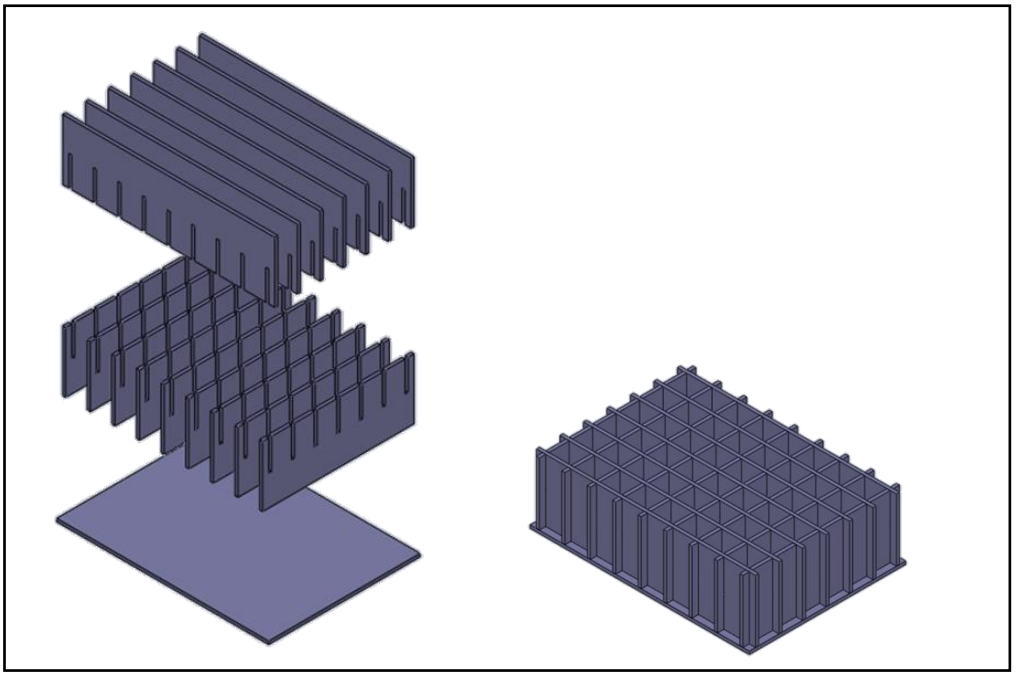
Contents

1. REQUIREMENTS FOR DUNNAGE

1.1 Dunnage design rules

Design rules for plastic bin are listed below:

- Dunnage should be avoided whenever possible and only used when part–to–part contact must be eliminated to prevent damage in shipping and handling, or when parts need to be located and avoid movement.
- The internal dunnage should be designed for minimal set up, maximized density; loading and unloading labor, and allow for ease of recycling.
- The use of partition or cell type dividers is preferred.
- The use of dunnage produced from non-recyclable material is prohibited.
- Any dunnage material should be returnable for returnable container.
- Individual plastic bags and small individual boxes are not allowed.



Picture 1. Dunnage example (separated and assembled)

1.2 Dunnage materials

Acceptable and forbidden material for internal dunnage can be found in table 1.

Material	Acceptable	Forbidden
composite materials	Composite materials are forbidden	
paper, disposable	Kraft paper, Testliner paper	Kraft paper without wax cover, easily absorbing the water
plastics, disposable	PE, PP, PS, PET	PUR, PVC,EPS and PC only after special release
plastics, re-usable	EPP, EPS, XPE, PE, PP, PS, ABS	PUR, PVC
film-bags and sacks	PE	Adhesive tapes and labels made from other material
tightening straps	PET, PP	Metal

Table 1. Acceptable and forbidden internal dunnage materials table.

Materials description for table 1:

- PET – Polyethylene Terephthalate
- PE – Polyethylene
- PS – Polystyrene
- PC – Polycarbonate
- PUR – Polyurethane
- PVC – Polyvinyl Chloride
- EPS – Expanded Polystyrene
- EVA – Ethylene Vinyl Acetate
- PP – Polypropylene
- ABS – Acrylonitrile Butadiene Styrene
- EPP – Expanded Polypropylene
- EPS – Expanded Polystyrene
- XPE – Cross-linked polyethylene

1.3 Dunnage quality standard

All dunnage used for material delivery to Inalfa must represent proper quality and function. Supplier is responsible for delivery of parts in good quality dunnage. Most common dunnage quality issues are listed below:

- Dunnage is damaged and cannot perform its function.
- Dunnage is deformed so part protection is affected or designed pack density of container cannot be achieved.
- Dunnage coating is damaged so part protection is affected.
- Dunnage is punctured or torn so part protection is affected.
- Incomplete or missing element of dunnage so part protection is affected.
- Dunnage is dirty so part protection is affected.

2. ADDITIONAL PROTECTION REQUIREMENTS

2.1 Corrosion prevention and VCI

Appropriate measures are essential when developing a corrosion protection system for parts with anti-corrosion requirements. Most common acceptable corrosion protection materials are shown in table 3.

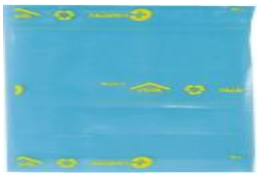
Material	Picture
VCI Bag	
VCI Film	
Desiccant	

Table 3. Corrosion protection materials

2.2 ESD protection

Inalfa requests ESD packaging for selected electronic parts. Supplier must ensure ESD according to INALFA requirements. Most common acceptable ESD protection materials are shown in table 4.

Material	Picture
ESD Bag	
ESD Foam	

Table 4. ESD protection materials