

## HANDLING, STORAGE, INSTALLATION CONSIDERATIONS OF SINGLE SKIN OR POLYURETHANE INSULATED SANDWICH PANELS THAT ARE MADE OF PREPAINTED GALVANIZED STEEL AND ALUMINUM

Dalal Steel Industries sandwich panels that are made of prepainted galvanized steel or aluminum will be out of our company's liability according to the following statements:

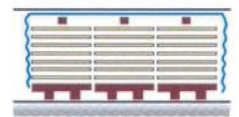
- 1 Brightness loss or discolor of paint because of dust and other ambient conditions.
- 2 Damage on metal, caused by extraordinary conditions (sandstorm, flood, hurricane, damage by lightning, tornado, heavy hail, earthquake, explosion, sabotage, terror attacks) and environmental factors (radiation, industrial pollution, acid rains, smoke, sea water or salty water effects).
- 3 Damaged caused by the contact of corrosive materials (acid, base, detergent, the metal particles that stay on the surface of the prepainted galvanized steel material, copper comprising materials).
- 4 Brightness loss or corrosive damage caused by the contact of back coated surface with outside weathering conditions.
- 5 Damage caused by using the prepainted galvanized steel out of the temperature range  $-30^{\circ}\text{C}$  /  $+100^{\circ}\text{C}$  (polyester coatings are best used under continuous temperatures. Other types of coatings will be advised by Dalal Steel Industries for temperatures out of this range according to the project).
- 6 Peeling of coating or darkening of metal caused by outspreading of wetness through metal surface (even if there is a protective polyfilm) during carriage, unloading, storage.
- 7 Damage caused by storage of the goods in non-suitable conditions (daily temperature difference of the storage yard more than  $\Delta T=20^{\circ}\text{C}$  and humidity more than 70%). The goods stacked in the warehouse more than 1 months' time, without protection against water and humidity, storage of the goods without palette/wood-block/polystyrene-block under package.
- 8 Damages on open atmosphere, non-coated parts by protective paint (edge cut, sliced or drilled parts).
- 9 Damage caused by cleaning the metal surface with unsuitable materials.
- 10 Damage caused by wrong assembly of the panels according to the usage area (inadequate roof slope, unsuitable span length, not removing metal particles that stay on the surface of the materials).
- 11 Damage caused by application or storage of the goods in regions closer than 2km to the sea (for closer than 2km to the sea, type of coating will be advised by Dalal Steel Industries).
- 12 Damage on goods caused by carriage and assembly.
- 13 Aluminum based goods must be carried with closed trucks, must be installed immediately in good weather conditions. The goods shall not get in contact with water. Damages when the reverse case applied.
- 14 Materials should never be directly in contact with acidic, salty materials and concrete. The insulation material inside must be protected from water entry. Continuous standing water must be taken out. Damages when reverse case applied.

- 15 In case of not protecting the cutting points (window, door, chimney, etc.) from standing water, not arranging the water insulation.

- 16 In case of not using galvanized or stainless steel material as connection elements on the material (screw, hook, etc.).

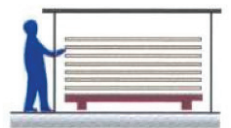
- 17 In case of making wrong assembly, not suitable installation according to the calculations and statements advised by Dalal Steel Industries.

- 18 Keep the bundle of panels at a job site or warehouse. Put 10 cm height wooden or polyethylene block through the long side to prevent the bundle from collecting water at the base. Stacking yard must be open to air circulation.



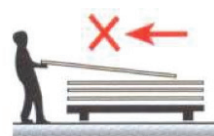
- 19 If the bundle of sheets at a jobsite cannot be stored inside, be sure to wrap the bundles with polyethylene covering. The covering needs to be applied in a manner that does not allow water to accumulate in the bundle.

At a minimum, cover the bundles with a tarp. Keep the tarp covering open at the bottom so that water can flow away freely and so that the bundles can have free airflow to allow the bundles to dry if for some reason condensation does occurs.



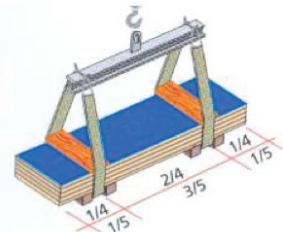
Put the bundles with 2% slope, in order to prevent the water collection between the sheets.

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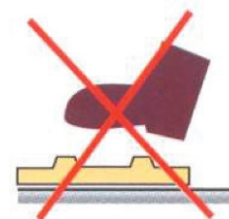


Do not sweep the panels from the bundle/pile, or on the roof purlins. Hold from both sides, lift by pushing the one long side onto the other side. Pulling and sweeping the panels may cause scratches on the panels.

- 21 Protect the bundle from being damaged by the lifting sling.



- 22



Worker's footwear can cause scratching damage, it is important that shoes or boots do not allow small stones, steel drillings, etc. to be embedded into the soles.