



## LINER INSTALLATION GUIDELINE

### I. LINER STORAGE

The fabricated panels of liner are accordion folded in both directions and banded on a wooden pallet or accordion folded in the width and rolled on a core in length then banded on a wooden pallet. Prior to shipping, the product is covered with plastic water repellent stretch wrap. Upon arrival at the jobsite, the material is to be unloaded with a forklift type of equipment with a 5,000 pound minimum capacity. Fabricated panels are to be stored in a central location for field deployment. Pallets must not be stacked. In the event of long term outdoor storage, it may be necessary to cover the product with a opaque, water proof material such as visqueen to protect from exposure.

### II. LAYOUT

The onsite installation manager will determine the layout sequence to facilitate and expedite the installation process. Overall coordination between all concerned parties is essential, to minimize conflicts in operations and schedules.

Panel installation should be performed only under reasonably calm conditions with ambient temperatures in excess of 40 degrees F. Installation is possible in colder climates with the aid of heaters, pre-heating panels prior to deployment, etc. It should be noted that cold weather installations are considerably slower. Liner installation should not be attempted during precipitation.

Liner installation should not begin until the subgrade has been inspected. All concerned parties will be notified immediately if substandard areas exist. As a general guideline; the installed geomembrane liner is a direct reflection of the substrate it is placed upon. Base material shall be free from angular rocks, roots, grass and vegetation. Foreign materials and protrusions shall be removed, and all cracks and voids shall be filled and made level. The surface shall be smooth and well compacted. It shall be the responsibility of the General contractor to maintain the subgrade in the event of heavy rain, etc. Anchor trenching must be completed prior to liner placement.

After subgrade acceptance, the panel layout can begin. A general rule of thumb is: only place the number of panels that can be seamed together on the same day, however adverse weather conditions will dictate planning. Potential wind damage to the installed product is minimized when the panels are adhered and adequately ballasted, it is recommended for all keyways to be backfilled immediately after liner placement.

### III. SEAMING

Prior to the start of seaming, the installer will review seaming operations and procedures with each crew. Safety procedures will be discussed and equipment will be issued. A sample seam will be constructed to verify field conditions. A sample seam will be made on a daily basis or in the event that weather conditions change drastically during field seaming operations.

The seaming crews will construct a nominal 2" wide fully bonded seam without wrinkles or voids. If wrinkles (fish mouths) occur, they will be cut and patched with a minimum 4 inches of material beyond the cut in all directions.

### IV. TESTING

All field seams will be air lance tested per ASTM Method D4437. The air lance test consists of directing a flow of pressurized air through a 3/16 inch orifice regulated at 55 psi. The air lance wand shall be held 4" away from and perpendicular to the seam. Where visual or audible signs occur, which indicate unbonded seam areas; they will be repaired by a technician.

### V. FINAL INSPECTION

At the completion of the project, LCS will conduct a final inspection or walk through with Owner and General Contractor.



Headwater Construction Inc