

General Installation Procedures

Onsite storage of RCR rolls:

- A smooth, compacted, raised base of free draining aggregate shall be constructed for a storage pad for RCR rolls on site.
- Timber dunnage can be evenly spaced to fully support rolls and allow fork tine access or lifting by slings.
- RCR rolls to be “pyramid” stacked and no higher than 4 stacked rolls.
- RCR rolls to be covered with waterproof sheeting and ballasted to prevent wind uplift and exposure to rain
- RCR roll packaging to be inspected for damage when placed for stacking.

Subgrade surface preparation:

- A base shall be prepared on the bottom and slopes of the area to be lined. This base shall be free of all sharp objects, roots, grass and vegetation. Rocks or stones greater than 1½” should be removed.
- The base (subgrade) material shall be native materials or materials obtained from a borrow source compacted to a minimum 95% compaction which will provide a finished sub grade suitable for geosynthetic concrete composite mat.
- The surface on which the RCR is to be placed is to be firm, clean, smooth and unyielding foundation without abrupt changes in profile and free of vegetation, stones, rocks, metal, shells, and other debris
- The sub grade shall be prepared immediately prior to the placing of the RCR.
- Anchor trench excavation and any structure seal preparation should be completed before the lining installation begins.
- RCR rolls can be installed in wet conditions if the roll is installed prior to hydration and the roll seam overlaps are dry to enable heat sealing using a hot propane torch.

Lifting RCR rolls:

- The lifting of the RCR rolls for unloading/loading and transport of rolls from a trailer or stockpile can be carried out by two lifting slings provided with each roll. Lifting slings should be inspected for damage prior to use.

Deployment of RCR rolls;

- The deployment or unrolling of RCR rolls requires a certified steel spreader bar and axle. A pipe axle is inserted through the RCR roll core. The end lifting lugs of the pipe axle are chained to the spreader bar. Chains secure the spreader bar to a 22 ton excavator or All Terrain 3.85 ton fork lift.
- RCR rolls are hoisted by lifting equipment and positioned over the perimeter anchor where experienced installers unwrap RCR’s protective packaging, secure mechanical clamps to the RCR material and pull the material into position down an embankment, spillway, along channels, drains, or placed over bunds.
- The deployment of RCR rolls are placed so that the 6 inches seam overlaps are orientated down the embankment slope or oriented longitudinally along the drainage channels of the RCR sheet with sufficiently laps upon the channel floor and not across the slope. Inland Tarp & Liner can provide advice as to RCR sheet panel and seam overlap orientation for correct installation and minimize wastage.
- The deployment/unrolling of the RCR rolls can be orientated so that seams are overlapping perpendicular to the channel length (across the width of the channel) with the overlaps orientated in a “roof tile” shingle effect with the water flow direction to avoid water infiltrating between the overlaps.
- RCR can be installed longitudinally along the embankment if there is sufficient material secured within the perimeter anchor trench and lapping onto the toe of the embankment by 3 feet. Request Inland Tarp & Liner advice.
- RCR material cross seam overlaps are allowable if the overlap is oriented in a “roof tile” shingle to shed water from the overlap fully heat sealed.
- RCR rolls are 16.4 feet wide by 65.6 feet long. Custom sized rolls are available on request.
- The longitudinal edge length of the last roll installed at the end of the day must be covered with plastic sheeting to ensure the area overlap is dry for the following workday’s heat sealing.

Anchor Trench:

- RCR material is typically secured into a perimeter anchor trench being 18 inches wide x 18 inches deep subject to the slope length, slope ratio and application.
- RCR material placed into the anchor trench must be hydrated prior to backfilling and compaction. Backfilled material must be placed and compacted into the anchor trench.
- For steep batters, temporary anchor stakes can be driven through RCR until engineered backfill material is compacted into the anchor trench.

Anchor stakes/staples:

- In such instances where anchor trenches as outlined above are not suitable, anchor stakes and staples may be used to secure RCR.

Sealing of RCR overlaps:

- Apply a propane hot torch with a flared attachment nozzle to ensure a continuously full width heat seal between the material overlap.

Hydration of RCR:

- RCR must be hydrated after deployment and seam overlap sealing so that the cement/sand mix can commence curing.
- RCR requires a minimum 1 gallon of fresh water to hydrate for every three square feet or until RCR material is fully hydrated.
- A water spray nozzle provides the best results. Do not use a high-pressure jet water directly onto the material.
- RCR material will be approximately 60% cured at 24 hours after hydration and will continue to gain strength.
- Do not traffic over the RCR during hydration until after setting.
- Monitor wetting if hot conditions re-apply hydration.

Termination of RCR to concrete structures:

- RCR materials can be mechanically fixed to concrete structures prior to hydration by fixing stainless steel flat bar drilled at 6-inch centers and secured by 1/2" or 3/8" expansion bolts.
- RCR overlaps are to be heat sealed prior to installation of mechanical fixing. RCR is to be hydrated after installation of the mechanical fixing.

Termination of RCR to pipe penetrations:

- RCR can be cut to suit a "boot & sleeve" seal termination to a pipe penetration. The end edge of RCR is secured using a band clamp, then hydrate RCR.

Repairing RCR material:

- Damage to RCR material can be repaired (pre-hydration) by re-cutting RCR material rip or puncture into a circular hole to minimize further potential ripping.
- The damaged area of the RCR material is to be covered with a new and larger circular patch of RCR material cut in size to at least 200mm overlap beyond the extent of damage around all sides of the damaged area.
- The RCR patch material is heat sealed over the damaged area.

RCR CQA procedures:

- Inspect the RCR material for any damage after installation
- Visually inspect RCR for full hydration
- As-built drawings to include RCR material panel layout and location referencing RCR roll number and MQA documentation. Label can be found attached to each individual roll of RCR.

Curing time for hydrated RCR:

- RCR material will be approximately 60% cured at 24 hours after hydration.
- Concrete curing time is typically 28 days.
- See specifications.

Weather Conditions:

- Dry conditions are preferable but installing in wet conditions is achievable.
- Temperatures will vary curing time.

Placing RCR over other geomembranes:

- RCR can be installed directly over smooth or textured geomembranes and can be terminated into the same anchor trench.
- The selection of the appropriate geomembrane is determined on specific site conditions.

Fire rating:

- Class A2-s1,d0

Color:

- RCR can be colored to enhance safety issues or colored for aesthetic reasons.