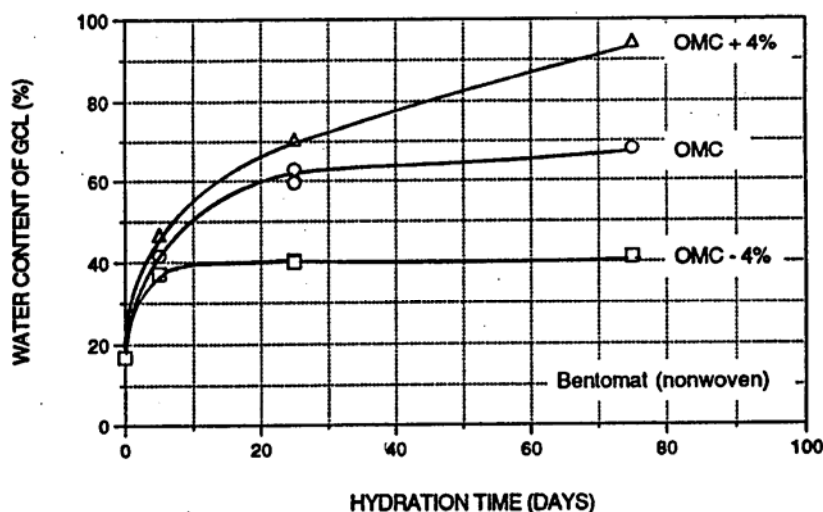


LEAVING GCLs COVERED WITH ONLY A GEOMEMBRANE

Geosynthetic Clay Liners (GCLs) and geomembranes are frequently used as a composite liner or cap systems in landfills. The geomembrane is placed above the GCL. The GCL should always be covered before the end of the day to preclude any excessive hydration from overnight precipitation. This is because experience has shown that it is difficult to place a cover over the GCL when it is in excess of 100% moisture content without squeezing of the bentonite occurring.

In many cases involving composite liner systems the 'cover' will be a geomembrane. The question then arises as to how long can a composite GCL/geomembrane lay before the cover soil is placed. The concern being moisture uptake by the GCL from the subgrade. Again, we can use the maximum 100% hydration as a guide. Daniel has performed a study of the increase in GCL moisture content due to contact with compacted subgrade soil. Only the subgrade compacted at 4% above optimum moisture came close to reaching 100% moisture content of the GCL after 75 days.

Based upon this research it should be safe to leave the composite liner uncovered for several weeks.



Increase in GCL moisture content due to contact with compacted subgrade soil: Bentomat® with nonwoven geotextile against soil.

Reference:

"Geosynthetic Clay Liners (GCLs) for Waste Containment", a short course by Dr. Dave Daniel, University of Illinois at Urbana-Champaign, 1998.