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FACTORY FABRICATION QA/QC PROCEDURE

The Fabricated Geomembrane Institute (FGI) has developed a guideline for the testing frequency of factory seams and specifies requirements for qualification and production factory seams as follows:

- Pre- and Post-Qualification Seam Testing Trial seams shall be at least 6 feet long using the same equipment, operator, and conditions anticipated during production welding. Trial seams will be tested in both shear and peel strength.
- Production Seam Testing During production the testing frequency is once every shift change or every 4 hours of production, whichever is more frequent. Trial seams shall be at least 6 feet long using the same equipment, operator, and conditions anticipated during product welding.

Trial seams will be tested in both shear and peel strength. As expected, this guideline does not recommend any destructive samples to be taken from the middle of a production panel.

As a result, the welding equipment and settings can be verified both at the beginning and end of a typical shift instead of during the actual welding of panels together.

This is due to factory conditions basically staying the same as opposed outdoor weather conditions, which can change quickly (i.e., temperature, humidity, rain, snow, etc.). If both pre and post production weld seams are of consistent quality and meet the design criteria, this would eliminate the need to make a destructive test in the middle of a factory fabricated panel.

Using prefabricated geomembranes in a typical project can speed up installation time dramatically due to the lower amount of field seams required. Some common applications include baffle curtains, canal liners, landfill caps, water/wastewater lagoons, floating covers, tank liners and secondary containment dikes.

In addition, less field seams allow for less destructive testing in the field as compared to rigid liners that need welding every 22.5 feet. Lower installation costs in addition to less CQA/CQC testing can be expected on projects with prefabricated geomembrane panels due to the reduced man-hours from inspectors, field personnel and contractors.

Prefabricated geomembranes also have more consistent welded seams as compared to geomembranes where all of the welds are done in the field. This is due to most of the welded seams being made in a factory environment with clean and dry conditions, in addition to a humidity controlled area. Less field seams in a typical geomembrane application allows for fewer destructive tests with less patches and an overall better looking installation.