



Featured Technical Topic Summary **FGI Monthly Members Meeting** **Friday, April 4, 2025**



TOPIC: Hail Damage and Extreme Weather Installations

Each month Tim Stark introduces a new technical topic for discussion and possible action. This month's topic is: "**Hail Damage and Extreme Weather Installations**". This topic generated significant discussion with the main "take-aways" listed below:

Hail Damage

- Pat Elliott showed photos of numerous dimples in an exposed geomembrane caused by hail damage
- Dimples can be location of future stress cracking

Extreme Weather Installations

- Pat Elliott showed photos of wind damage
- Geomembrane could end up leaving site and impacting power lines
- Pat Elliott also showed photos of cold crack problem with a 12 year old HDPE Geomembrane – if GM remained on subgrade cold crack may have been prevented
- Participants claim climate is getting more inconsistent - **Examples**
- Lightning strike caused shredded tire fire in landfill drainage layer which melted the bottom liner system
- Liners in tanks – high temperatures in Arizona with 200 to 250F – with LLDPE and HDPE becomes soft and loosed some mechanical properties – crews are starting to measure surface temperate of geomembrane – Layfield added a white patch over the area to lower the temperature of the geomembrane by reflecting the UV exposure – Summer months = night installations or white geomembrane color, which affects the welding windows
- In Arctic and Alaska installing geomembranes at -30F for a Diamond Mine – move away from HDPE to flexible materials that can be factory fabricated – but need chemical resistance and cold crack so using LLDPE
- Can use Welding Tents that are heated and prequalify welds at room temperature
- Material is hardening due to cold temperatures
- Tim Stark also showed photos of wind damage (see photos below)
- Wind Quiz?
- Remove the sheet? Yes or No?
- Yes remove sheet because geomembrane is creased, which can stress crack because unreinforced
- Any material (HDPE, LLDPE, fPP, PVC) lost in the wind should be tested and possibly replaced
- If displaced and flapped in wind, must prove GM is still viable – most likely remove that sheet
- Can never have too much ballast – Ballast design is important – GOOD Webinar Topic
- Wind whipped geomembrane was left in – now has gas migration problem



