



Featured Technical Topic Summary **FGI Monthly Members Meeting** **Friday, August 2, 2024**



TOPIC: Terminology and Applications for Used Geomembrane Polymers

Each month Tim Stark introduces a new technical topic for discussion and possible action. This month's topic is: **"Terminology and Applications for Used Geomembrane Polymers"**. This topic generated significant discussion with the main "take-aways" listed below:

Terminology for Thermo-Plastics and not Thermo-Set Plastics

- **Thermo-Set Plastics** can't be reworked or recycled due to reinforcement so repurpose them
- **Reworked** = material from like product internal to the manufacturing process but not after field/external usage; could be wrong formulation or scarp material so a "prime product"
- **Reground** = edge trimmings, startup scraps that from manufacturing process and has not left the factory
- **Recycled** = material from like product after field/external usage, melted and reformed thermos-plastics but properties degrade with every re-use
- **Repurposed** = after field application – same product cleaned and using it in a different application, e.g., billboard film being used as a wood pile cover
- **Reprocessed** = after field application - cleaned, reground, and remanufactured for less critical application - landfill geomembrane reprocessed for a less critical application, e.g., use in an agricultural application, e.g., weed control film
- **Post-Consumer Products** – plastic bottles are usually polyester (PET) and are not typically used for engineered geomembranes, but could be used for other geosynthetics
- **IGS website has information on sustainability:**
<https://www.geosyntheticssociety.org/sustainability/>;
<https://www.geosyntheticssociety.org/wp-content/uploads/2022/10/Fontana-Bologna-2022.pdf>

Applications

- Short-term applications due to changes in applications
- Not permanent applications
- Applications driving amount of reworked material
- Agricultural applications
- Old billboards used for tarps
- Non-critical applications
- If the reprocessed material meets GM-17 for LLDPE, it may be suitable
- Water v. potable water – not viable for potable water unless it meets NSF specifications
- PFAS applications=? Probably not viable and must prove chemical resistance with new formulation
- Use for core of multi-layer materials

Amount of Rework Material

- Usually 5 to 10% for new geomembranes
- Can be as high as 50% for repurposed applications, i.e., less critical applications