

## Geosynthetic Supply Chain Disruptions & Rising Costs

There are a number of challenges that keep geosynthetics industry executives up at night, but supply chain chaos is almost certain to be among them.

And 2022—like the previous two years—is shaping up to be a difficult one for those looking to ship products and secure materials.

This GNA Feature will help break down shipping and logistics challenges and sort through what to expect in the months ahead.



***“Supply chains have really broken down globally”***

Project delays and supply chain issues continue to wreak havoc in the global geosynthetics industry. Re-routing of the supply chains has caused delays with most geosynthetic construction projects.

Supply chain delays and the soaring cost of polymer resins and other raw materials such as carbon black are combining to slow the advance of major projects in Australia and elsewhere, a leading insurer and industry groups say.

Clogged ports, expensive cargo capacity, and emergency shipments became prevalent during the COVID-19 pandemic. Since then, the conflict in Ukraine has also contributed to product-line closures, transport delays, increased fuel costs and overall spiralling input costs.

It's also difficult to find available vessels to ship the materials and some customers have had to budget for a major spike in container prices — sometimes paying up to \$15,000 a container compared with the average of \$2,000 in 2019. Marine freight has increased greater than 5 times.

These issues have contributed to large increases in material prices and a troublesome spike in inflation and expectations for higher geosynthetic prices around the globe. Globally polypropylene resin costs are up >70% over 2019 prices. Logistics disruptions have occurred across air cargo, ports, road and rail, and shipping. Unfortunately supply chain issues show no sign of improving.

A number of geosynthetic manufacturers have already announced price increases across their full portfolio of geotextile and erosion control products. Significant increases in the prices of the main raw materials for geosynthetics is in response to oil price increases, tightened supply and growing demand globally. These increases have put major geosynthetic players in a position where they are no longer able to maintain their current prices.

Moving resin from Point A to Point B is understandably a priority, but another concern seems to be trending upwards. Counterfeiting has crept into supply chains. Inferior raw materials and resins, pirated designs (see recent Presto Geosystem Press Release), substandard end products, and deceptive products and services are increasing in overseas markets as margins are being squeezed.

More oversight and diligence is required particularly in relation to product quality. Distributors and installers that place orders in good faith — particularly with overseas vendors — may wind up with rolls of geosynthetics they can't use, and no wiggle room in compressed delivery timelines to find alternatives or otherwise rectify errors.

These scenarios could play out more in 2022 if supply and demand continue to collide. Preventing substandard materials and counterfeiting from further disrupting business shines a light on OEM supply chains.

Are your geosynthetic suppliers vetted? Certified? Proven? The supply partners chosen must be all these things — plus experts in materials, processing and engineering — to ensure quality outcomes.

To maintain quality metrics GNA recommends:

- only accepting product datasheets with the producer's name on it — not the distributor — as the distributor has a tendency to change values, especially with partial factors of safety, to show improved performance;
- specifying that all MQA testing is to be done in NATA or GAILAP labs, not any old lab!
- getting letter of certification from the producer (not distributor) that the products made comply fully with the project specification;
- some producers use multiple datasheets — e.g. Strata — for different markets, so which one are you actually getting in your project? — depends on the distributor & they may or may not know, and then may or may not tell you — hence testing is paramount.

### *Return to Onshore Manufacturing*

A lack of consistent product quality is only adding to what many in the industry feel is a resurgence in domestic manufacture known as reshoring.

Placing projects with domestically-based vendors gives OEMs and distributors a measure of control in quality, accessibility, and Total Cost of Ownership (TCO) is absent in many overseas manufacturer relationships, as evidenced in resin shortage missteps.

An added advantage of domestic manufacturer is that you can easily visit the plant during production for a quality audit and this also facilitates and accelerates CQA sampling.

OEMs weighing the cost of higher initial investment in domestic vendors against the debatable savings of overseas vendors will likely continue to opt for reshored, streamlined OEM supply chain management as 2022 unfolds.

## *Use of Substandard Recycled Resins*

Oil price volatility from the war in Ukraine has driven up virgin resin prices, making recycled resins more competitive. However recycled resins have variable quality and their inclusion in geomembranes and geogrids is currently prohibited or highly restricted.

Nevertheless, the temptation to include more recycled resins in prime geosynthetics has increased and with that product quality issues are more likely unless the producer is well advanced in the handling and use of recycled materials, have built up their process over many years and can show no performance difference from product specifications.

Raw materials shortages also increase the likelihood of material substitution where manufacturers substitute their regular input materials with so-called “equivalent” versions. However past experiences has taught that substitution of raw materials is likely to impact product performance and can lead to unexpected failures.

Industry experts see no end to this market situation at present and the high costs and disordered supply chains are expected to remain at a high level at least for the rest of 2022.

GNA Editor 1<sup>st</sup> June 2022