

# The Ingenious Strategies Behind China's Geosynthetics Success

By GNA Editor



China's rise as an emerging player in global geosynthetics manufacturing, particularly geomembranes, is a testament to its inventive and enterprising approach to production. Western geosynthetic companies have long been puzzled by how Chinese manufacturers can sell quality geomembranes at prices seemingly lower than what Western firms pay for raw materials. The secret lies in China's ability to optimize supply chains, leverage innovative purchasing strategies, and utilize cost-effective production methods.

Here are the key factors that contribute to China's remarkable cost efficiency in geosynthetic manufacturing:

## **1. Use of Wide-Specification (Wide-Spec) Resin**

Chinese companies are masters of adaptability. Instead of relying solely on premium resin grades, they use wide-specification resin, which includes off-grade materials or resins with slightly broader property ranges such as MFR and density. By identifying and utilizing resins that meet functional requirements but come at a fraction of the cost, Chinese manufacturers strike a perfect balance between performance and affordability.

This approach requires technical expertise to evaluate resin properties and determine their suitability for specific applications. It also highlights the Chinese manufacturers' deep understanding of polymer science and their willingness to innovate beyond standard practices.

## **2. Spot Buying in Auction Lots**

Another inventive strategy involves spot buying resins in auction lots. These lots often consist of polyethylene resins from mixed manufacturers but fall within the desired range of melt index and density. Chinese manufacturers capitalize on these opportunities, sourcing raw materials at significantly lower prices than Western companies, who often commit to long-term contracts with fixed pricing from just a few suppliers.

By being flexible and opportunistic, Chinese firms can secure high-quality resins at prices far below market averages. This adaptability demonstrates their resourcefulness in navigating global supply chains and market fluctuations.

## **3. Judicious Blending of Polymers**

Chinese manufacturers excel at blending polymers to achieve desired performance characteristics while minimizing costs. Small amounts of performance-enhancing modifiers, such as polybutylene, ethylene-propylene rubber (EPR), and thermoplastic polyolefins (TPO), are carefully added to base polyethylenes. This technique allows them to tailor the properties of their geomembranes—such as flexibility, strength, and stress cracking resistance—without relying on expensive prime HDPE resins.

This judicious blending reflects the ingenuity of Chinese manufacturers, who continuously experiment and refine formulations to optimize performance and reduce production costs.

## **4. Use of Generic Antioxidants and Stabilizers**

Rather than sourcing additives like antioxidants and stabilizers from well-known, high-cost manufacturers such as BASF or Clariant, Chinese companies often turn to smaller boutique producers. These generic alternatives perform the same function but come at a much lower price point.

This cost-saving measure highlights how Chinese manufacturers prioritize practicality and functionality without compromising quality. By fostering relationships with smaller domestic suppliers, they gain access to affordable and effective raw materials.

Chinese geomembrane manufacturers are also known to use barefoot (i.e. unstabilized) geomembrane resins and then add the carbon black and stabilizers via masterbatch themselves rather than buying premium fully-formulated (i.e. pre-compounded) resins.

Similarly with carbon black, Chinese geosynthetic manufacturers source carbon black from lower cost domestic suppliers rather than sourcing from more brand recognition companies such as Cabot or Degussa that regularly jack up their prices. For instance, Cabot raised prices by \$120 per metric ton for all carbon black products in the Europe, Middle East, and Africa (EMEA) region in June 2021. Cabot announced price increases ranging from \$200 to \$400 per ton for carbon black products in North America, effective August 2022.

The ability of Chinese geomembrane manufacturers to outperform Western competitors on cost while maintaining quality is a testament to their entrepreneurial spirit. They combine technical expertise with a willingness to explore unconventional methods, constantly seeking efficiencies in sourcing, production, and material sourcing/utilization.

While Western companies often follow established practices and premium supply chains, Chinese manufacturers excel at thinking outside the box. Their agility in adapting to market conditions, coupled with a deep understanding of material science, allows them to offer competitive products at unmatched prices.

### **Lessons for the Global Market**

The success of Chinese geosynthetic companies offers valuable insights for Western manufacturers. Emulating some of these practices—such as exploring alternative raw material sources, adopting more flexible procurement strategies, and experimenting with polymer blends—could help level the playing field.

China's ability to deliver high-quality geomembranes at low costs is not merely a result of cheaper labour but a reflection of their resourcefulness and innovative mindset in sourcing and blending of the raw materials. The global geosynthetics industry can learn much from their example, adapting similar strategies to remain competitive in an ever-changing market.

### **Conclusions**

In conclusion, China's approach to geosynthetics manufacturing showcases their remarkable ability to adapt, innovate, and thrive in a highly competitive industry. Their strategies not only make them leaders in cost efficiency but also highlight the entrepreneurial ingenuity that drives their success on the global stage.

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