

# Jinseed Environmental Protection Engineering Seepage Prevention System Solution

## Technical Specifications and Standard Data Sheet for Industrial-

In environmental protection projects (such as solid waste landfills, wastewater treatment facilities, and mining tailings ponds), the safety of the waterproofing system directly impacts the ecological integrity of groundwater and soil. Jin seed

Jinshi is committed to providing geosynthetic materials that meet the highest global standards. Our HDPE and LDPE geotextiles are specifically engineered for the most stringent chemical environments and physical stresses.

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### 1. International Certification and Industry Standards Compliance

Our products strictly adhere to the technical specifications established by the International Geosynthetic Institute (GSI), ensuring their authority in engineering acceptance worldwide.

**The GRI-GM13 standard serves as the globally recognized highest industry specification for HDPE geomembranes, specifically high-density polyethylene geomembranes. Jin Seeds HDPE products fully meet or exceed the GRI-GM13 requirements in critical performance indicators such as density, tensile strength, puncture resistance, and ultraviolet aging resistance (OIT).**

- **The GRI-GM 17 standard is specifically designed for LLDPE geomembranes for applications requiring enhanced flexibility and adaptation to uneven settlement (e.g., site closure coverings). Our LLDPE products maintain excellent elongation while ensuring robust core impermeability reliability.**

### 2. Core Quality Control and Testing Methods

To ensure the materials performance under extreme operating conditions, we conduct batch-by-batch testing in the laboratory in accordance with ASTM (American Society for Testing and Materials) standards.

- **Thickness testing per ASTM D5199: Ensure uniform material thickness with no weak points, which forms the foundation for puncture resistance and long-term impermeability.**
- **Stretch performance (ASTM D6693): Test yield strength and elongation at break to ensure the material can withstand stresses caused by foundation pit settlement or waste pile loading.**
- **Density test (ASTM D1505): Verify the use of 100% premium virgin resin; reject inferior recycled materials.**
- **Environmental Stress Cracking Resistance (ASTM D5397): Ensures the HDPE film does not develop brittle cracks under prolonged chemical exposure.**

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### 3. Typical Application Fields Applications

- **Urban solid waste landfills (MSW Landfills): Used for bottom impermeabilization and site coverage, effectively preventing leachate contamination.**
- **Sewage treatment and industrial wastewater tank: Features high resistance to acid and alkali corrosion, suitable for equalization tanks, anaerobic tanks, and sludge treatment areas.**
- **Mining Engineering: Seepage prevention for leaching ponds and tailings dams to withstand erosion from strong acids, alkalis, and heavy metal ions.**
- **Secondary Seepage Prevention (Secondary Containment): Seepage prevention measures for petrochemical storage tank areas and safe disposal of hazardous waste.**

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### 4. Typical technical parameters for HDPE smooth geotextile membrane

Test Item Properties	Test Standard Method	1.0 mm 40mil	1.5 mm 60mil	2.0 mm 80mil
Minimum average thickness (mm)	ASTM D5199	1.0	1.5	2.0
density g/cm <sup>3</sup>	ASTM D1505	≥0.940	≥0.940	≥0.940
Yield tensile strength: kN/m	ASTM D6693	15	22	29
Fracture tensile strength: kN/m	ASTM D6693	27	40	53
Yield elongation rate	ASTM D6693	12	12	12
elongation at break	ASTM D6693	700	700	700
Tear resistance strength N	ASTM D1004	125	187	249
Puncture resistance strength N	ASTM D4833	320	480	640

Carbon black content	ASTM D4218	2.0-3.0	2.0-3.0	2.0-3.0
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## 5. Why choose Jinseed?

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Excellence in quality, protecting the environment.

- **Original raw materials:** Only use original polyethylene resins from global leading brands such as Chevron Phillips, Dow, or ExxonMobil.
  - **Technical Support:** Provides comprehensive services ranging from project consultation and material selection to on-site technical guidance.
  - **Long-term warranty:** Tailored material lifespan predictions and warranty solutions are provided for various engineering environments.
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