

# **ASTM D1505 HDPE Geomembranes Specifications**

## **DIN 16726 HDPE Geomembranes Specifications**

### **Overview**

DIN 16726 is a German standard that specifies the requirements for high-density polyethylene (HDPE) geomembranes. This standard covers the physical, mechanical, and chemical properties of HDPE geomembranes, ensuring their performance and durability in various containment applications.

### **1. Scope**

This standard covers the requirements for HDPE geomembranes used in applications such as landfills, ponds, canals, and other containment projects. The specification includes criteria for physical, mechanical, and chemical properties, ensuring the geomembranes meet the necessary performance standards.

### **2. Significance and Use**

DIN 16726 provides a comprehensive set of requirements that ensure HDPE geomembranes have the durability, strength, and chemical resistance needed for effective containment. Adherence to this specification helps in maintaining the quality and reliability of geomembranes in critical environmental and industrial applications.

### **3. Physical Properties**

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The following physical properties are specified in DIN 16726:

- Thickness: Varies based on application, typically 0.5 mm to 3.0 mm.
- Density: Minimum of 0.940 g/cm<sup>3</sup>.
- Melt Flow Index: Less than or equal to 1.0 g/10 min.
- Carbon Black Content: 2-3%.
- Carbon Black Dispersion: Categories 1 or 2.

### **4. Mechanical Properties**

The mechanical properties specified in DIN 16726 include:

- Tensile Strength at Yield: At least 16 kN/m.
- Tensile Strength at Break: At least 30 kN/m.
- Elongation at Yield: At least 12%.
- Elongation at Break: At least 700%.
- Tear Resistance: At least 125 N.
- Puncture Resistance: At least 240 N.

### **5. Chemical Properties**

The chemical properties specified in DIN 16726 include:

- Stress Crack Resistance: At least 500 hours.
- Oxidative Induction Time (OIT): At least 100 minutes (Standard OIT) or at least 400 minutes (High Pressure OIT).
- UV Resistance: At least 90% retained strength after 1600 hours.

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## **6. Testing Frequency**

DIN 16726 specifies the frequency of testing to ensure consistent quality and performance. The testing frequency varies depending on the property being tested and the production volume. Regular testing helps in identifying any deviations from the specified standards.

## **7. Warranties**

DIN 16726 recommends warranties that cover manufacturing defects and ensure the geomembranes perform as expected over their intended lifespan. Warranties typically cover a period of up to 20 years, depending on the application and environmental conditions.

## **8. References**

For detailed information on DIN 16726 and related specifications, refer to the German Institute for Standardization website and the official DIN 16726 documentation. Additional references may include technical papers, industry guidelines, and manufacturer specifications for HDPE geomembranes.