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Hohenstein Establishes Soil-Based Testing Framework for Biodegradable Tree Shelters

New DIN SPEC 35808 framework defines requirements for bio-based materials that must biodegrade completely and disintegrate under simulated forest conditions.

BOENNIGHEIM, Germany, May 5, 2026 – Plastic tree shelters protect young tree seedlings from browsing animals – but left in the ground after use, they gradually break down into macro- and microplastics. DIN SPEC 35808 is the first standardized framework specifically designed to verify whether a bio-based alternative will biodegrade completely under conditions that replicate forest environments.

Hohenstein developed the framework in collaboration with Rottenburg University of Forestry, forestry authorities and industry partners. The standard establishes binding requirements and testing procedures for tree shelters made from renewable raw materials – addressing a gap and building on frameworks for mulch films, such as DIN EN ISO 17033 and ISO 23517.

"The challenge is to develop materials that are durable enough to reliably protect young trees while leaving no harmful trace in the soil," said Mihaela Szegedi, project manager at Hohenstein. "Our testing methods allow us to specifically identify such materials."

The framework applies to forest owners, forestry operations and manufacturers of tree shelters. For buyers, it provides a verifiable basis for selecting materials that break down into natural components without leaving harmful substances behind. For manufacturers, it establishes clear quality and testing criteria for product development and proof of claims. Products meeting the framework's requirements are designed to be left in place after use, eliminating the need for manual removal.

U.S. manufacturers of tree shelters and bio-based materials can submit products for testing against DIN SPEC 35808 through Hohenstein Americas.

Learn about Hohenstein's biodegradability testing at [Hohenstein.US/Biodegradation](https://www.hohenstein.us/biodegradation)

About Hohenstein

Hohenstein is a family-owned company specializing in independent testing, research and certification for textiles, medical devices and consumer products. With more than 80 years of scientific expertise and involvement in developing international standards, Hohenstein provides manufacturers, brands and retailers with reliable data for safety, quality, performance and sustainability. The company is a founding member of OEKO-TEX®, a CPSC-accepted third-party laboratory for CPSIA compliance and GLP certified for medical device testing. Services include chemical and physical testing,

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Hohenstein project manager Mihaela Szegedi inspects tree shelters in the field. DIN SPEC 35808 was developed using real forest soils to ensure test conditions reflect what materials actually encounter in the ground.

Photo: Hohenstein



Biodegradation testing under DIN SPEC 35808 requires materials to achieve 90% or greater mineralization within 24 months under controlled soil conditions – the strictest threshold in the two-stage process.

Photo: Hohenstein



Before and after: Test samples embedded in forest soil show the disintegration DIN SPEC 35808 requires – materials must break down faster than untreated pine heartwood within 12 months.

Photo: Hohenstein

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