



SKZ Testing GmbH: Cracked Round Bar Tests (CRB) According to ISO 18489 for PE Pipes

SKZ
Das Kunststoff-Zentrum

Zwick / Roell

SKZ - Testing GmbH: Accredited Testing Laboratory for Quality, Safety and Certification in the Plastics Industry

SKZ - Testing GmbH, based in Würzburg, is an accredited testing laboratory that supports companies in the plastics industry with independent material and product testing, product monitoring and product certification. With state-of-the-art testing technology and many years of experience, the laboratory guarantees the highest quality and safety standards. The comprehensive testing services - from mechanical and thermal tests to environmental and longterm weathering tests - help manufacturers certify their products in accordance with national and international standards and make them marketable.

SKZ - Testing GmbH currently owns ten testing machines from ZwickRoell, which are used to test a wide range of properties of plastics, including tensile, flexural, compression and sliding/friction properties. The company not only carries out short-term stress tests such as impact bending or impact tensile tests, but also quasi-static and longterm tests, such as creep and relaxation tests. Dynamic tests complete the spectrum. The testing lab also runs comprehensive mechanical-technological tests on plastic specimens and component-related tests, as well as investigations based on physical-chemical methods such as spectroscopy and microscopy. In addition, they perform rheological, optical and electrical tests as well as fire and diffusion tests. A significant area is dedicated to the aging testing and lifespan estimation of plastics.

In addition, SKZ - Testing GmbH is involved in the areas of research, continuing education and the certification of management systems in order to support companies in the plastics industry not only in quality assurance, but also in the sustainable ongoing development of their products and processes. As a reliable partner to the plastics industry, the company plays a key role in driving forward innovative and sustainable solutions in plastics processing and supporting companies in complying with regulatory requirements.



The task

Cracked round bar tests (CRB) in accordance with ISO 18489 for stress crack testing of PE pipes.

Traditional methods for determining the stress cracking resistance of polyethylene pipes such as FNCT (full notch creep test), PENT (Pennsylvania edge notch tensile test) and NPT (notched pipe test) often reach their limits with modern PE 100-RC grades. These methods are time-consuming, often require over 10,000 hours without usable results and are heavily dependent on wetting agents, which influence the results and are environmentally questionable. The cracked round bar (CRB) test according to ISO 18489 offers a more efficient alternative by eliminating harmful wetting agents and extremely high temperatures, making it a more environmentally friendly and practical test method.

The ZwickRoell solution

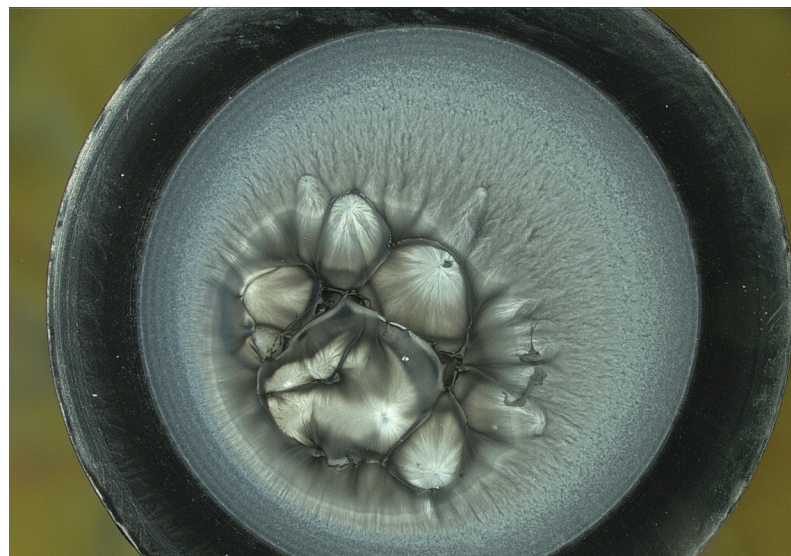
Use of the LTM electrodynamic testing machine at SKZ Testing GmbH.

SKZ Testing GmbH has opted for the LTM electrodynamic testing machine from ZwickRoell to meet the challenges of modern materials testing. The machine offers high dynamic performance and is low maintenance, making it ideal for advanced material testing. The LTM is characterized by its enclosed design, lack of temperature control, and a 3 kN force sensor, which enables a precise, oil-free, and low-noise testing environment.

The result

Outstanding results since the implementation of the cracked round bar test (CRB).

The introduction of the cracked round bar test (CRB) according to ISO 18489 at SKZ - Testing GmbH shows outstanding results. Accreditation by DAkkS and optimized test performance, including standard-compliant specimen preparation, have led to a reliable and energy-efficient testing process. Since January 2022, the testing machine has not recorded any days of downtime due to defects, which underlines the high level of machine reliability.



Learning More About How ZwickRoell is Unlocking New Possibilities in Material Testing

ZwickRoell is a global leader in materials testing and offers deep expertise on automated testing systems.

We take pride in our ability to match the right testing solution to each client's unique business requirements, providing tailored solutions backed by a long-term service and support partnership.

We carefully engineer every component for every testing solution, carefully evaluating the complex interactions between components. This meticulous approach is the only way to ensure the accurate, precise, reliable, repeatable test results that underpin success in all materials and components testing.

If you are interested in learning more about finding the right solution for your materials testing challenges, we encourage you to **reach out to our team**.

> **Contact Form**

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