

Recycled Polyvinyl Chloride (PVC) Testing

What Is Recycled Polyvinyl Chloride (PVC) Testing?

Recycled Polyvinyl Chloride (PVC) Testing comprises a series of specialised analytical procedures to thoroughly assess the **quality, composition, physical characteristics, and conformity** of **PVC materials recovered from various waste streams**.

Why Is Recycled Polyvinyl Chloride (PVC) Testing Important?

This essential testing ensures that **recycled PVC (rPVC)** meets specific industry requirements and standards, such as those outlined in **UNE-EN 15346**, making it suitable for a wide range of secondary applications including **pipes, window profiles, flooring, cables, and various construction products**.

Applus+ Laboratories holds **ENAC accreditation (LE 1680)** for polymer testing, highlighting our commitment to delivering **high-quality and precise materials characterisation**. We also hold COFRAC and NADCAP for density and thermal stability and cofrac for tensile tests.

What Compulsory Recycled Polyvinyl Chloride (PVC) Testing Do We Perform?

Applus+ Laboratories provides a comprehensive suite of **testing services for Recycled Polyvinyl Chloride (PVC)**, meticulously designed to ensure your materials meet stringent **quality, performance, and regulatory demands**.

Our expert services assess the critical **physical, mechanical, thermal, and compositional properties** that dictate the successful application and processing of **recycled PVC**. While our core focus is on characterisation, we support the evaluation process from **raw material reception through to detailed material analysis**. (Note: Applus+ Laboratories characterises rPVC; processing of PVC itself is not performed in our facilities).

Our **Recycled PVC testing capabilities** are aligned with the characterisation requirements detailed in **UNE-EN 15346** and other relevant international standards.

Mandatory Recycled PVC Characterisation (According to UNE-EN 15346)

These tests focus on fundamental properties essential for baseline **quality assessment** and ensuring the consistency of **recycled PVC materials**.

Physical and Compositional Properties:

- **Visual Inspection (Colour and Shape):** Assessment of the material's general appearance, including **colour consistency** and the physical form of the recyclate (e. g., granules, powder).
- **Ash Content:** Determined according to **EN ISO 3451-5 (Method A)**. This test measures the amount of inorganic residue (fillers, contaminants) after controlled incineration.
- **Hardness:** Measured using Shore durometers according to **ISO 868**. This test is **COFRAC and ENAC accredited**.
- **Size Distribution:** Analysed as per **UNE-EN 15346 Annex D** (for micronised particles) or **Annex E** (for other recycled forms) to determine particle size range and distribution, which affects processing and homogeneity.
- **Apparent Density:** Determined according to **UNE-EN 15346 Annex B**.
- **Impurity Content:** Assessed based on **UNE-EN 15346 Annex C** to identify and quantify the level of undesirable foreign materials.

Optional and Further Recommended Testing for Comprehensive PVC Evaluation

This extended suite of tests provides a more in-depth understanding of the **recycled PVC's properties**, crucial for specific applications, enhanced quality control, or meeting particular regulatory/performance criteria.

Advanced Physical and Mechanical Properties:

- **Density:** Measured according to **EN ISO 1183-1 (Method A)** using techniques like the pycnometer method. This test is **COFRAC/NADCAP accredited**.
- **Tensile Properties (Strength and Elongation):** Determined as per **EN ISO 527-1 and EN ISO 527-2**. These tests measure the material's resistance to pulling forces and its ability to stretch. This test is **COFRAC accredited**.
- **Flexural and Compression Properties:** Further mechanical tests to understand behaviour under bending and compressive loads.

Thermal and Processability Characteristics:

- **Thermal Stability (DSC Analysis):** Using Differential Scanning Calorimetry (DSC) to determine transition temperatures (e.g., glass transition, melting if applicable to specific PVC formulations) and assess overall thermal stability. This test is **COFRAC /NADCAP accredited**.
- **VICAT Softening Temperature:** Measured according to **EN ISO 306 (Method A)** to determine the temperature at which the **PVC softens under a standard load**.

Composition and Purity:

- **Residual Humidity (Moisture Content):** Determined using methods like **EN 12099** (e.g., Karl Fisher).
- **Volatile Content:** Analysis to determine the amount of volatile substances present.
- **Contamination Analysis (Broader Scope):** More detailed investigation into specific contaminants beyond the basic impurity check.

Durability and Suitability:

- **Artificial Ageing:** To simulate long-term performance and resistance to environmental factors.
- **Suitability of PVC for Recycling:** Assessed according to **UNE-EN 15346 Annex F** or **Annex G**.

What Are the Benefits of Recycled Polyvinyl Chloride (PVC) Testing?

Engaging in **Recycled Polyvinyl Chloride (PVC) Testing** with Applus+ Laboratories offers substantial advantages for your organisation and products:

- **Ensure Product Quality and Regulatory Adherence:** Verifying **rPVC properties** against standards like **UNE-EN 15346** upholds high material and product **quality**, ensuring reliability and customer satisfaction, and facilitating compliance with construction and industry regulations.
- **Boost Market Confidence and Material Credibility:** Providing **certified test reports** for your **recycled PVC** significantly enhances its **trustworthiness**, making it a more dependable option for manufacturers and end-users.
- **Support Circular Economy and [Sustainability Objectives](#):** By rigorously testing and validating the **quality of recycled PVC**, your organisation actively contributes to the **circular economy**, reducing plastic waste, conserving virgin resources, and promoting the use of [sustainable building materials](#).
- **Optimise Processing and Product Performance:** Detailed characterisation of your **rPVC** allows for better control over manufacturing processes and helps ensure the final products meet desired performance specifications.
- **Facilitate a Streamlined Certification Pathway:** A key advantage is having both **recycled PVC testing** and relevant product **certification services** expertly managed by the Applus+ team, simplifying processes and accelerating [market access](#).

Why Choose Applus+ Laboratories for Recycled Polyvinyl Chloride (PVC) Testing?

Selecting [Applus+ Laboratories](#) for your **Recycled Polyvinyl Chloride (PVC) testing** signifies a partnership with a globally recognised leader in [materials testing](#), inspection, and certification. We offer distinct advantages:

- **Recognised Expertise in Polymers:** Advanced analytical capabilities and deep knowledge of polymer science to address the unique challenges of **recycled PVC characterisation**.
- **Integrated Testing and Certification:** Coordinated **rPVC testing and certification services** from a single, expert source, simplifying compliance and market entry.
- **Accurate and Reliable Results:** Meticulous **PVC testing** with robust quality control, ENAC accreditation (LE 1680), and specific method accreditations (ISO 868, EN ISO 1183-1, EN ISO 527, DSC), ensuring dependable data for confident decision-making.
- **Client-Focused Approach:** Tailored testing plans designed to meet your specific **recycled PVC material requirements**, application needs, and regulatory challenges.
- **Global Recognition and Market Support:** Internationally respected reports and certifications that enhance the market standing of your **recycled PVC products** and support global trade.

By partnering with Applus+ Laboratories, you gain access to **world-class testing facilities, unparalleled expert insights, and a steadfast commitment** to helping you achieve your **quality, compliance, and sustainability objectives for recycled Polyvinyl Chloride**.