



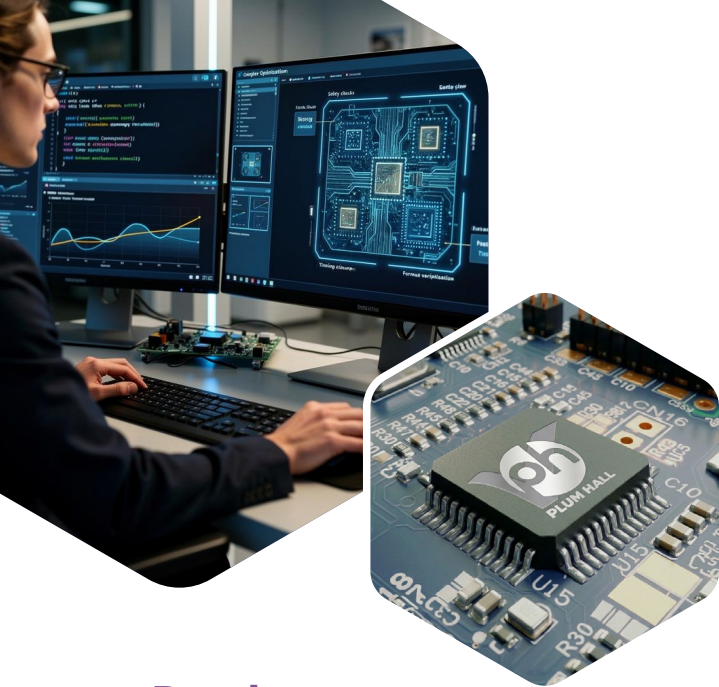
PLUM HALL

Test Suites for Compiler and Library



A world built on code needs Confidence by Design™

Solid Sands B.V. | Amsterdam | The Netherlands | www.solidsands.nl



Preview

The Plum Hall test suites* are validation suites for C and C++ compiler and standard library developers. It covers C up to version C23 and C++ up to C++23.

The suites consist of both positive and negative tests. Positive tests contain correct programs that should compile and execute successfully. Negative tests cover cases where the language specification requires the compiler to diagnose the program as ill-formed and fail compilation.

The suites are complete validation environments with:

- A large volume of hand-crafted tests
- A configurable test driver to run validation for any combination of compiler, compiler options, and target architecture
- A report generator that provides a detailed overview of validation results in HTML
- Portable tests designed to validate any conforming implementation

Quality Assurance

The Plum Hall test suites support rigorous quality assurance for the validation of C and C++ compilers and libraries during development and maintenance. They are best suited for regression testing, and teams that value stability, continuity, and proven workflows. They are designed for established development environments where correctness and consistency of compiler and library behavior must be continuously verified.

Three Suites

Plum Hall C Base is a C compiler and library validation suite. It includes positive and negative tests for any compiler and library implementations:

- Language conformance tests for the preprocessor and language behavior
- C Standard Library tests to verify behavior against library specification
- Undefined behavior tests to validate the compiler's response to syntactically correct programs with no defined behavior
- Implementation limits tests
- Tests for the optional bounds-checking (Annex K) library tests
- A large body of generated tests for permutations of operators and data types, in addition to arbitrarily nested expressions
- Coverage of all compiler internals, such as the front-end, back-end, optimizations and code generation
- Selection of tests specific for different versions of C

Plum Hall C++ is a C++ compiler validation suite for verifying the implementation of the C++ Language. As C++ is built on top of C, this suite includes the C Base suite. Additionally, Plum Hall C++ contains both positive and negative conformance tests.

Plum Hall Lib++ is a C++ standard library implementation validation suite. It helps C++ library developers to ensure conformance of their implementation to the ISO C++ specifications.

* Plum Hall test suites are a product of Plum Hall B.V. All commercial inquiries, maintenance, and support services are managed by Solid Sands B.V.



Plum Hall C Base
C compiler and
library validation
suite

Plum Hall C++
C++ compiler
validation suite

Plum Hall Lib++
C++ standard
library validation
suite

Includes Plum Hall C Base



About Plum Hall

Founded in 1979 by Dr. Thomas Plum and Joan Hall, Plum Hall initially provided a series of popular seminars and courses to commercial C language programmers and developers. Plum Hall expanded their business in 1982 to include publishing technical textbooks on both C and C++.

When the C Standards Committee (WG14) was formed in 1983, Plum Hall became actively involved in that standardization, followed by its involvement in the C++ Standards Committee (WG21).

In 1986, Plum Hall began to support the market demand for validation test suite products. With its first software offering in 1986, the C compiler and library validation suite, Plum Hall won the only technical competition ever held between C test suite products. Plum Hall later introduced the Plum Hall validation suite for the C++ Language, and the Plum Hall validation suite for the C++ Library.

In 2025, the Plum Hall test suite portfolio was taken under the wing of Solid Sands who will now continue the legacy of Plum Hall's founders. Integrating and upgrading these renowned suites within its own portfolio allows Solid Sands to deliver broader test coverage. Customers can expect seamless, ongoing support for the Plum Hall suites, backed by Solid Sands' professional and highly experienced engineering team.

