framatome

CLIVI : Climatic and Vibration Testing

Test facilities for climatic and mechanical qualification of components

A comprehensive testing solution to qualify components for climatic and mechanical stress

Challenge

Mechanical and climatic tests must be performed on components in course of their qualification, such as for safety related components in nuclear power plants, as well as in other industries (e.g., railway branch, for ships, ...) Proper function must be assured over the entire service lifetime of the component for normal operating conditions and for particular load cases (e.g., seismic and shock load).

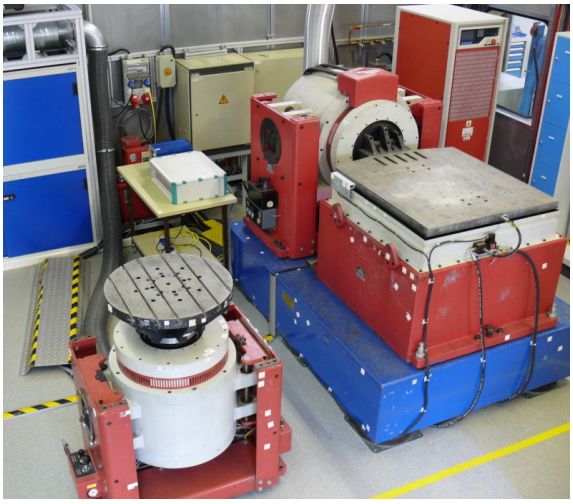
Solution

Framatome offers the full range of services and testing equipment to meet the requirements of qualification campaigns against climatic and mechanical stress. You can benefit from the full scope of our test facilities and our long lasting experience.

We support you by providing professional advice for technical questions concerning climatic and mechanical stress.

Our accredited test laboratories as well as our experienced and qualified personnel offer you all the support required for a qualification campaign:

- Professional advice for technical questions
- Providing rigid test fixations simulating the in-field situation
- Designing and manufacturing of specific test setups (inhouse workshops)
- Electrical and functional testing and monitoring of specimen before, during and after the tests
- Providing calibrated measurement equipment
- Signal analysis and assessments with sophisticated data tools
- Documentation and support for authority discussions



Electrodynamic shaking tables (horizontal and vertical)

Customer benefits

- Efficiency and cost optimization: all tests are performed in one hand. Possibility to extend the qualification to harsh environment conditions.
- Reliable test results through accreditation as test and inspection body in accordance with ISO 17025 and 17020 accepted by ILAC

Your performance
is **our** everyday **commitment**

Technical information

Electrodynamic shaking tables (horizontal and vertical)

Description	Specification
Types of waveform	Profiled sine sweep, fixed frequency, shock, random, ramp
Maximal acceleration	60 g (depending on the specimen)
Maximum payload	180 kg (depending on the specimen)
Maximum frequency	1000 Hz (depending on the specimen)
Maximum displacement	± 15 mm
Maximal force	24 kN

Drop table

Description	Specification
Types of waveform	Half sine
Maximal acceleration	1000 g
Maximum payload	272 kg
Shock duration	11 ms / 20 ms

Climate chamber

Description	Specification
Types of tests	According to national or international standards and individual customer requests
Test volume	up to 1 m^3
Temperature range	-70 °C – +180 °C (resp. 700°C)
Humidity range	10...98 % r.h.

Examples of standards and requirements

- EN 60068-2 standard series
- RCC-M (nuclear)
- RCC-E (nuclear)
- KTA (nuclear)
- DIN EN 50155 (Railway application)
- Type test approval for classification societies such as for Germanischer Lloyd (Ship applications)

Drop table

Climate chamber

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