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A complete system test according to EN 12976 includes performance tests, reliability tests and document inspection.

**Overheating protection according to EN 12976-2, part 5.2:**
The test includes at least 4 days of operation without draw-off and 2 days in a row with total solar irradiation >20 MJ/m².

**Pressure resistance according to EN 12976-2, part 5.3:**
The storage tank and also the collector loop must withstand 1.5 times the maximal operating pressure without deformation or losses.

**Characterization of thermal output:**
The test is performed using the input-output method, or CSTG, following ISO 9459-2, or with the dynamic method, or DST, following ISO 9459-5.

**Final inspection:**
The test ends with detailed inspection of components and documents (freeze resistance, water contamination, reverse flow protection, safety equipment, lightning protection, labeling, and installer and user document.)
THERMAL OUTPUT CHARACTERIZATION TEST ACCORDING TO ISO 9459-5 (DST)

Test sequence with solar input, S-sol
This test includes a number of consecutive test days with significant solar input and consists of 2 different test sequences.

Test sequence with output at low system temperature (Test A)
With 7 draw-offs per day, the draw-off volume depends on system volume and collector area. At least 3 valid days with >12 MJ/m² are required.

Test sequence with output at high system temperature (Test B)
With 5 draw-offs per day, with volume depending on the draw-off temperature. At least 3 valid days with >12 or 15 MJ/m² are required, of which 2 are consecutive.

Store-loss test sequence, S-storage
This test requires 2 consecutive draw-off days following the Test B sequence, then with the system shaded for 36 to 48 hrs until final draw-off.

Test sequence S-aux, for systems with integrated auxiliary heater
Under low solar irradiation conditions, containing 4 days with draw-off and shaded as in Test B and electrical heating at specified times.

LONG-TERM PREDICTION
After characterization of the solar system, the annual system output is calculated for different load volumes at reference locations.