

**Technical Definition**

FATIGUE TEST – 2024 T3 Aluminium

Instructions to participant laboratories

Please read carefully these instructions **BEFORE** starting the tests.

1. Ten specimen blanks are supplied to each participant.
2. The **T-Type** specimens (Kt 2.3) shall be machined following the EN 6072 (2010) with a thickness of 3 mm.
3. Each participant is required to determine the Wohler curve and the following parameters:
 - The maximal net stress corresponding to the fatigue performance of 100.000 cycles (IQF)
 - The maximal net stress corresponding to fatigue limit at 3.000.000 cycles
4. All tests are to be performed at room temperature with $R = 0.1$ in accordance with the requirements of EN 6072 (2010).

The tests shall be performed respecting the following conditions:

- One operator only
- One testing machine only
- Tests performed in sequence

The choice of load levels shall be done in order that test results are regularly positioned on the S-N curve between at least 10^4 and $3 \cdot 10^6$ cycles, so that a Wohler curve can be raise. Cycling shall be stopped at $3 \cdot 10^6$ cycles. In case of non-failure at $3 \cdot 10^6$ cycles, specimen shall be tested again at a higher load level that will lead to failure before 10^5 cycles. Test results must mention that specimen has been tested after a non-failure.

5. The frequency is to be reported.
The Excel S-N curve has to be uploaded in the results form.
The specimen dimensions shall be available on demand.
6. Results are to be reported as follows:
 - IQF (MPa) – to nearest 1MPa
 - The maximal net stress at 3.000.000 (MPa) – to nearest 1 MPa
 - The life duration of each specimen – to the nearest cycle
7. Testing may commence as soon as test specimens are received. All participant laboratories must supply results by 1st May 2017.
8. Instructions for submission of results are detailed on the website:

<https://ptpscheme.com>

9. To ensure the confidential treatment of your results in the final report, you will be allocated a unique identity number when you register for the program.