



## Technical Definition

### Crack propagation – Aluminium 7175 T7351

You shall respect the HSE policy of your laboratory for each performed test.

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

- Five blanks (95 x 99 x 16 mm) are supplied to each participant – 5 results must be provided. The notch direction will be identified on the blank.  
In case of :
  - loss or deterioration of PTP sample(s) please contact your sponsor for a replacement kit.
  - A decision to exclude the results of one of the samples, you shall provide a short root cause analysis to explain.
- The test specimen shall be machined in accordance with the requirements of **ASTM E647-15e1** – advised geometry CTW75B12.
- All tests are to be performed in accordance with the requirements of **ASTM E647-15e1**.

**Test parameters :**

Temperature	Room Temperature
Ratio	0,1
Frequency	10 – 20 Hz
Yield Strength	449 MPa
Young's modulus	72 GPa

The parameters of the  $da/dN=f(\Delta K)$  curve (in **mm/cycles**) shall be determined between  $\Delta K=13 \text{ MPa}\sqrt{\text{m}}$  and  $\Delta K=25 \text{ MPa}\sqrt{\text{m}}$ .

The tests shall be performed respecting the following conditions:

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

- The following characteristics are to be reported:

Characteristic	Unit	Significant digits	Mandatory / Not mandatory	Evaluated Yes/no
Specimen dimensions	mm	X,XX	Mandatory	No
Test method	N/A	N/A	Mandatory	No
C (coefficient of Paris' law)	N/A	X,XXX.10 <sup>-x</sup>	Mandatory	<b>Yes</b>
m (coefficient of Paris' law)	N/A	X,XXX	Mandatory	<b>Yes</b>
Graphical representation	N/A	N/A	Mandatory	No

All evaluated characteristics will be analysed according to the algorithm A (ISO 13528 – 2015) and evaluated using z-score. The algorithm will be applied to the logarithm of the results.



## Technical Definition

### Crack propagation – Aluminium 7175 T7351

5. Testing shall start **as soon as test specimens are received**. Please contact the following e-mail address for any technical or administrative query.

<b>Submission date :</b>	<b>May 1<sup>st</sup>, 2019</b>
<b>Technical and administrative support :</b>	<a href="mailto:info@ptpscheme.com">info@ptpscheme.com</a>

6. Instructions for submission of results are detailed on the website:  
<https://ptpscheme.com>
7. 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.
8. Collusion and falsification of your PTP results are totally forbidden. In case of identification or suspicion of collusion or falsification, the laboratory will be excluded from the program and the sponsors will be immediately informed. The sponsors could ask you proofs of your records and analyses, so be sure to conserve data, curves and specimens.
9. The tested specimens do not need to be sent back to the PTP office.

#### APPENDIX : Instructions for IRR participation

The Internal Round Robin participation (IRR) is **optional** and **independent** from your PTP participation.

Confidentiality : The IRR results and reports are confidential and only accessible by your laboratory. They are not shared with the scheme sponsors or any other accreditation or certification bodies.

The extra samples shall be tested according to the following table:

	<b>Operator 1</b>	<b>Operator 2</b>	<b>Operator 3</b>	<b>Operator 4</b>	<b>Operator X</b>
<b>Test machine 1</b>	PTP kit (5 samples)	1 sample	1 sample	1 sample	1 sample
<b>Test machine 2</b>	1 sample				
<b>Test machine 3</b>	1 sample				
<b>Test machine Y</b>	1 sample				

**Operator 1** (OP1) is to be the most experienced operator currently conducting tests on a regular basis and shall perform tests on all machines (TM1, TM2, TM3...)

**Test Machine 1** (TM 1) is to be the most utilised machine for this test in your laboratory and shall be tested by all operators (OP1, OP2, OP3...)

Example: A laboratory has 2 operators and 3 test machines. They receive a PTP kit and 3 extra specimens.

Operator 1 shall test the PTP kit on TM1, 1 specimen on TM2 and 1 specimen on TM3.

Operator 2 shall test 1 specimen on TM1.

The IRR results have to be submitted on a separate results form available on the PTP website.

**Technical Definition**

## Crack propagation – Aluminium 7175 T7351

The identification of operators and test machines you provide will appear on the IRR final report. These identifications will not be seen by other laboratories.

The IRR results will be classified against the acceptance classes of the kit 4-2-2019.

**Reminder: Laboratories are not permitted to switch specimens between the PTP kit and IRR samples. The traceability of the samples will be checked during the evaluation. Laboratories found to have switched samples will invalidate their PTP participation.**

## REVISION HISTORY

Issue Date	Issue N°	Changes
03/01/2019	1	Document creation