

Version No. 2	Page 1 of 4	<div>Technical Definition</div> <div>In Plane Shear</div> <div>Carbon Fiber Composite</div>
<div>ptp.</div>		
<div>Kit 33-3-2023</div> <div>In Plane Shear</div>		

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

Instructions to participant laboratories

Please read these instructions carefully BEFORE starting the tests.

- Five specimens (250 x 25 x 1,44 mm) are supplied to each participant – 5 results must be provided.
If one result is missing, your test will be considered as an outlier. A RCA shall be completed.
- The specimens have to be dried during 48 hours (0/+10) at 70°C (+/- 3) and tested within the next 8 hours after the drying.
- All tests have to be performed at room temperature in accordance with the requirements of **ISO 14129 (1997)**.
(This test kit has to be performed according to ISO standard but the participation will also covers the In Plane Shear method according to AITM 1-0002 issue 3.)

The tests shall be performed respecting the following conditions:

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


- The following information need to be reported:

Characteristic	Unit	Significant digits	Mandatory / Not mandatory	Evaluated Yes/no
Specimen thickness	mm	X,XX	Mandatory	No
Specimen width	mm	X,XX	Mandatory	No
Shear Modulus G calculated between 0,001 and 0,005 shear strain	GPa	XX,XX	Mandatory	Yes
Shear Strength at shear strain 5% - $[\tau_{5\%}]$	MPa	XXX,X	Mandatory	Yes
Shear Strength at maximum load - $[\tau_{max}]$	MPa	XXX,X	Mandatory	Yes
Shear Strength at 0,2% offset - $[\tau_{0,2\%}]^*$	MPa	XXX,X	Mandatory	Yes
Failure mode	N/A	N/A	Mandatory	No
Upload of the official test report	N/A	N/A	Mandatory	No

All evaluated characteristics will be analysed according to the algorithm A and S (ISO 13528 – 2022) and evaluated using z-score.

*** Only Shear strain (γ) must be used for the calculations**

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

Version No. 2	Page 2 of 4	
		Technical Definition In Plane Shear Carbon Fiber Composite
Kit 33-3-2023 In Plane Shear		

Submission date :	1st September, 2023
Technical and administrative support :	info@ptpscheme.com

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 PTP.

Annex:

Longitudinal Modulus:

The longitudinal modulus is the slope of the straight line in a longitudinal stress/strain (σ/ϵ_0) diagram through the points corresponding to two longitudinal strain values. Unless otherwise defined these longitudinal strains shall be $(\epsilon_0)_1 = 500 \times 10^{-6}$ and $(\epsilon_0)_2 = 2500 \times 10^{-6}$ (see figure).

Offset Shear Strength:

The offset shear strength value is the shear stress value necessary to obtain a permanent longitudinal deformation (offset). Unless otherwise defined the offset value shall be 0,2% of longitudinal strain [$(\epsilon_0)_1 = 2000 \times 10^{-6}$].

Longitudinal Modulus:

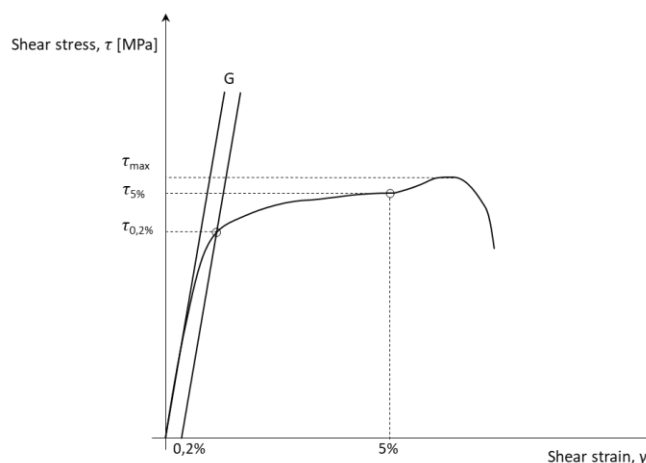
$$E_0 = \frac{\Delta P}{wt \Delta \epsilon_0}$$

$$\Delta \epsilon_0 = 2000 \times 10^{-6}$$

$$\Delta P = P_{(\epsilon_0=2500)} - P_{(\epsilon_0=500)}$$

Version No. 2	Page 3 of 4	<div>Technical Definition</div> <div>In Plane Shear Carbon Fiber Composite</div>
<div>ptp.</div>		
<div>Kit 33-3-2023</div> <div>In Plane Shear</div>		

0.2% Offset Shear Strength:



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:

	Operator 1	Operator 2	Operator 3	Operator 4	Operator X
Test machine 1	PTP kit (5 samples)	3 samples	3 samples	3 samples	3 samples
Test machine 2	3 samples				
Test machine 3	3 samples				
Test machine Y	3 samples				

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 (TM1) 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 9 extra specimens.

Operator 1 shall test the PTP kit on TM1, 3 specimens on TM2 and 3 specimens on TM3.

Operator 2 shall test 3 specimens on TM1.

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

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.

Version No. 2	Page 4 of 4	<div>Technical Definition</div> <div>In Plane Shear Carbon Fiber Composite</div>
<div>ptp.</div>		
<div>Kit 33-3-2023</div> <div>In Plane Shear</div>		

The IRR results will be classified against the acceptance classes of the kit In Plane Shear-2023.

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.

VERSION HISTORY

Issue Date	Issue N°	Changes
10/05/2023	1	Document creation
08/08/2023	2	Shear strain (γ) must be used for Shear Strength at 0,2% offset