Technical Definition

Rockwell/Brinell Hardness Test – PH 17-4

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

Please read these instructions carefully BEFORE starting the tests.

1. One specimen (Ø 60 x 10 mm) is supplied to each participant – 4 results must be provided. If one result is missing, your test will be considered as an outlier. A RCA shall be completed.

2. No additional machining of the specimen is required. However, it is allowed to prepare the surface of the specimen if needed.

3. Each participant is required to determine the hardness at four **single** positions on the specimen.
   Measurements shall be performed at **mid-radius**.

4. All tests are to be performed at room temperature in accordance with the following requirements:
   - **ASTM E18-19** or **ISO 6508-1:2016** if performing a Rockwell "C" test
   - **ASTM E10-18** or **EN ISO 6506-1 (2014)**, if performing a Brinell test.

   Participants shall use a force/diameter ratio of 30 for Brinell test.

   The tests shall be performed respecting the following conditions:

   - One operator only

   - One testing machine only

   - Tests performed in sequence

5. The following characteristic is to be reported:

Characteristic	**Unit**	**Significant digits**	**Mandatory / Not mandatory**	**Evaluated** Yes/no
Room temperature	°C	XX,X	Mandatory	No
Force applied	kgf	XX	Mandatory	No
Test force application time	s	XX	Mandatory	No
Rockwell "C" hardness	HRC	XX,X	At least one type of hardness result has to be provided	**Yes**
Brinell hardness	HBW	XXX		**Yes**

All evaluated characteristics will be analysed according to the algorithm A and S (ISO 13528 – 2015) and evaluated using z-score.

Please be aware that laboratories who obtained a standard deviation equal to zero (i.e. who provided 4 times the same result) **will not be included** in the statistical population.

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

Submission date :	**July 1st, 2020**
Technical and administrative support :	info@ptpscheme.com

7. Instructions for submission of results are detailed on the website:

https://ptpscheme.com

8. 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.

9. 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.

10. The tested specimen does 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:

	Operator 1	**Operator 2**	**Operator 3**	**Operator 4**	**Operator X**
Test machine 1	PTP kit (1 sample)	1 sample	1 sample	1 sample	1 sample
Test machine 2	1 sample				
Test machine 3	1 sample				
Test machine Y	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.
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 6-4-2020.

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
07/01/2020	1	Document creation
20/03/2020	2	Modification of the results submission date
27/05/2020	3	Modification of the results submission date