

ISO/PAS 22596:2022-05 (E)

Road vehicles - Brake lining friction materials - Dynamometer metal pick-up generation procedure for disc brakes

Contents		Page
	Foreword	v
	Introduction	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and abbreviated terms	3
4.1	Symbols.....	3
4.2	Abbreviated terms.....	3
5	Test conditions and test preparation	3
5.1	Inertia for the brake testing.....	3
5.2	Pressure ramp rate.....	4
5.3	Maximum pressure.....	4
5.4	Sampling rate.....	4
5.5	Initial brake temperature.....	4
5.6	Brake temperature measurement.....	4
5.7	Cooling air conditioning.....	4
5.8	Cooling air velocity or volume.....	4
5.9	Exhaust conditions.....	4
5.10	Conditioning settings for temperature and absolute humidity (humidity ratio).....	4
5.11	Dynamometer rotational speed between brake applications.....	5
5.12	Orientation of brake set-up.....	5
5.13	Direction of air relative to the brake set-up.....	6
5.14	Wear measurement.....	6
5.15	Disc lateral run-out.....	6
5.16	Caliper, disc or drum and pads condition.....	6
5.17	Hot brake applications.....	6
5.18	Water specification.....	6
5.19	Specification of nozzles for water spraying.....	6
5.20	Saltwater specification.....	6
5.20.1	Recommended solution.....	6
5.20.2	Alternative solutions.....	7
5.20.3	Other solutions.....	7
5.21	Noise and vibration (NVH) measurements.....	7
5.22	Data collection.....	7
6	Test procedures	8
6.1	Basic information.....	8
6.2	Test procedure: “heat and pressure MPU”.....	8
6.3	Test procedures “water and saltwater MPU”.....	9
6.3.1	Procedure 1 (core or early development testing).....	9
6.3.2	Procedure 2 (DVP procedure; can also be used in vehicle testing).....	10
6.4	Test procedure for “low load and pressure”.....	14
7	Test report	15
7.1	General.....	15
7.2	Test conditions.....	15
7.2.1	Disc and lining identification.....	15
7.2.2	Disc surface characterisation.....	15

7.2.3	Photographs of the setup.....	15
7.2.4	Photographs of the test parts	15
7.2.5	Documentation of pad MPU number and area.....	16
7.2.6	Documentation of disc surface profile.....	17
7.2.7	Acceptance criteria	19
7.3	Graphical report.....	20
7.4	Cooling air conditions and water spraying.....	20
7.5	Tabular data for each brake application	20
7.6	Wear measurement; pad and disc appearance.....	21
Annex A (informative) MPU shapes.....		22
Annex B (informative) Template proposal.....		24
Annex C (informative) Reference calculation for cooling air speed and flow		33
Annex D (informative) Specification of salt for “water and salt MPU”		35
Bibliography.....		36