

ISO 5011:2014-04 (E)

Inlet air cleaning equipment for internal combustion engines and compressors - Performance testing

| Contents | | Page |
|-----------------|---|-------------|
| | Foreword | v |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| | 3.1 Terms, definitions, symbols and units..... | 1 |
| | 3.2 Symbols and units..... | 3 |
| 4 | Measurement accuracy and standard conditions | 4 |
| | 4.1 Measurement accuracy..... | 4 |
| | 4.2 Standard conditions..... | 4 |
| 5 | Test materials and test conditions | 4 |
| | 5.1 Test dust..... | 4 |
| | 5.2 Test oil for oil bath air cleaners..... | 4 |
| | 5.3 Absolute filter materials..... | 5 |
| | 5.4 Absolute filter mass..... | 5 |
| | 5.5 Temperature and humidity..... | 5 |
| 6 | Test procedure for dry-type air cleaners for automotive applications | 6 |
| | 6.1 General..... | 6 |
| | 6.2 Test equipment..... | 6 |
| | 6.3 Restriction and differential pressure test..... | 7 |
| | 6.4 Efficiency test..... | 8 |
| | 6.5 Capacity test..... | 9 |
| | 6.6 Filter element pressure collapse test..... | 10 |
| | 6.7 Variable air flow test..... | 10 |
| | 6.8 Presentation of data..... | 11 |
| 7 | Test procedure for dry-type air cleaners for industrial applications | 11 |
| | 7.1 General..... | 11 |
| | 7.2 Test equipment..... | 11 |
| | 7.3 Restriction and differential pressure test..... | 12 |
| | 7.4 Initial efficiency test procedure — Absolute filter method..... | 12 |
| | 7.5 Full-life efficiency and capacity test..... | 13 |
| | 7.6 Presentation of data..... | 15 |
| | 7.7 Scavenged air cleaner performance test..... | 15 |
| | 7.8 Precleaner performance test..... | 17 |
| | 7.9 Secondary element test procedure..... | 17 |
| 8 | Test procedure for industrial applications of oil bath air cleaners | 19 |
| | 8.1 General..... | 19 |
| | 8.2 Test equipment and conditions..... | 19 |
| | 8.3 Restriction and differential pressure test..... | 20 |
| | 8.4 Oil carry-over test..... | 20 |
| | 8.5 Full life efficiency and capacity test..... | 20 |
| | 8.6 Recovery test..... | 20 |
| | 8.7 Presentation of data..... | 21 |

| | |
|--|-----------|
| Annex A (normative) Explanation of restriction, differential pressure and pressure loss of an air cleaner | 22 |
| Annex B (normative) Test equipment | 24 |
| Annex C (informative) Report sheet on performance testing of air cleaner equipment according to ISO 5011 — Automotive application | 33 |
| Annex D (informative) Report sheet on performance testing of air cleaner equipment according to ISO 5011 — Industrial application | 34 |
| Annex E (informative) Presentation of results — Air cleaner restriction/differential pressure versus flow | 35 |
| Annex F (informative) Presentation of results — Air cleaner capacity | 36 |
| Annex G (normative) Airflow and resistance corrections to standard conditions | 37 |
| Bibliography | 39 |