




Performance and Approvals Testing

Classes of Test

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Performance and Approvals Testing

Classes of test

Accreditation in the Performance and Approvals Testing field is described by classes and subclasses of test under class of test 3.

The classes of test shown in this section are a first order description of a facility's accreditation. Most Scopes of Accreditation are described in more detail (refer to Expressing the Scope of Accreditation below).

The Scope of Accreditation serves two functions. Firstly, it defines exactly which calibrations, measurement and tests for which the facility is accredited. NATA endorsed test reports or calibration certificates can only be issued for the accredited tests. Secondly, it provides potential clients with information about available test or calibration services.

Tests performed in mobile laboratories, field laboratories or in-situ will also be described in the Scope of Accreditation. Where a facility wants to be accredited for tests not covered by the existing classes of test, due to new technologies, changing regulatory requirements and client needs, the Accreditation Advisory Committee would consider creating new classes of test and developing new technical criteria for accreditation of such tests.

Expressing the Scope of Accreditation

For all Scopes of Accreditation, the description will be comprehensive and concise without omitting essential information.

Product testing to a published product standard must be identified by having the name or number of the product standard included in the Scope. The use of 'and similar standards' is not acceptable.

Under the classes/subclasses for testing, the following elements are covered:

- identification of type of products, equipment, materials, items or elements of the environment tested;
- inclusion of a product standard when reporting compliance to that standard;
- specific test or property measured and the detection limits if applicable; and
- reference to a standard or in-house test method or to a specification.

Information regarding measurement uncertainty will only be included within Scopes of Accreditation where there is a known regulatory need for such information or where the accredited facility has made specific request for inclusion of such information on the basis of a client or end-user requirement.

NATA accreditation only covers conformity testing to a set of criteria, typically against a sample as received. NATA endorsed reports must not state 'product compliance' to a scheme since such a statement would form part of a product certification activity which is outside of NATA's scope.

Classes of test

- 3.01 Pattern approval and performance testing of metering and trade measurement equipment
 - .01 Non-automatic weighing devices
 - .02 Liquid measuring instruments
 - .03 Liquor dispensers
 - .04 Length measuring instruments
 - .05 Area measuring instruments
 - .06 Farm milk tanks
 - .07 Load cells
 - .08 Weighing-in-motion systems
 - .09 Belt conveyor weighers
 - .10 Totalising hopper weighers
 - .11 Automatic catch-weighing instruments
 - .12 Multi-dimensional measuring instruments
 - .13 Automatic tank level gauges
 - .14 Gas measuring instruments
 - .99 Other measuring systems

- 3.02 Conducting materials, conductors and resistance alloys
 - .01 Resistivity and conductivity
 - .02 Resistance of length of conductor
 - .03 Temperature coefficient
 - .04 Physical properties
 - .99 Other tests

- 3.03 Insulating materials and insulators
 - .01 Electric strength tests
 - .02 Insulation resistance tests
 - .03 Surface and volume resistivity tests
 - .04 Loss tangent tests
 - .05 Relative permittivity tests
 - .06 Direct voltage tests
 - .07 Alternating voltage tests
 - .08 Tracking
 - .09 Dielectric dispersion coefficient
 - .11 Moisture absorption
 - .12 Insulating oils and oil insulated systems
 - .13 Ageing
 - .14 Partial discharge tests
 - .20 Impulse voltage tests
 - .31 Thermal stability tests
 - .99 Other tests

- 3.05 Inductor and transformers
 - .11 Power transformers and reactors
 - .12 Current transformers and protective current transformers
 - .14 Voltage transformers and protective voltage transformers
 - .16 Audio transformers
 - .17 R.F. transformers
 - .18 Pulse transformers
 - .19 Auto transformers
 - .20 Phase shifting transformers
 - .21 Reference ballasts
 - .22 Neutral earthing transformers

- 3.06 Cells and batteries
 - .01 Primary cells
 - .02 Accumulators

- 3.07 Power supplies and stabilisers
 - .01 Power supplies
 - .02 Stabilisers
 - .03 Power conditioners

- 3.08 Electronic components
 - .01 Fixed resistors
 - .02 Capacitors
 - .03 Semi-conductor devices
 - .04 Printed circuits
 - .05 Connectors
 - .06 Relays
 - .07 Integrated circuits
 - .11 Other components and sub-assemblies

- 3.09 Electrical machines and auxiliary apparatus
 - .01 Motors, generators and other rotating machines
 - .02 Starters, controllers, regulators
 - .99 Other equipment

- 3.10 Switching, control and protective equipment for power system
 - .01 Circuit breakers and controllers
 - .02 Protection and control relays
 - .03 Switches and isolators
 - .04 Time switches
 - .05 Fuses and fuse links
 - .06 Surge diverters
 - .07 Dielectric tests

- 3.11 Power supply equipment and systems
 - .01 Electric parameters
 - .02 Waveform characteristics
 - .03 Power system disturbances
 - .10 Temperature rise and thermal rating tests
 - .99 Other tests

3.12 Cables and feeders

- .01 Conductor resistance tests
- .02 Insulation resistance tests
- .03 Capacitance tests
- .04 Direct voltage tests
- .05 Alternating voltage tests
- .06 Spark tests
- .07 Partial discharge tests
- .08 Dielectric tests
- .10 Electric field intensity tests
- .11 Magnetic field flux density tests
- .20 Sequence impedance tests
- .30 Electrical tests on fittings
- .31 Mechanical tests on fittings
- .40 Heat cycle tests
- .99 Other tests

3.13 High voltage testing

- .11 Direct voltage tests
- .12 Alternating voltage tests
- .13 Impulse voltage tests
- .14 Impulse current tests
- .15 Partial discharge tests
- .16 Dielectric tests
- .17 Switching impulse voltage tests
- .99 Other tests

3.14 High power testing

- .01 Short time withstand and peak withstand current tests
- .02 Short circuit making and breaking capacities
- .03 Making and breaking capacities
- .04 Overload performance
- .05 Electrical endurance
- .07 Arcing fault tests due to internal fault
- .08 Determination of cut-off current characteristics
- .09 Determination of joule integral characteristic
- .12 Temperature rise tests
- .99 Other tests

3.15 Electromagnetic compatibility - emission testing

- .01 Conducted interference
- .02 Radiated interference
- .03 Conducted emissions (AMN and voltage probe)
- .04 Conducted telecommunications port emissions (ISN and current clamp)
- .05 Discontinuous disturbances
- .06 Disturbance power
- .07 Radiated emissions
- .08 Mains harmonics and flicker tests
- .99 Other tests

- 3.16 Electromagnetic compatibility - immunity testing
 - .01 Electrostatic discharge
 - .02 Radiated radio-frequency, electromagnetic electric field
 - .03 Electrical fast transient
 - .04 Surge immunity
 - .05 Conducted disturbance, induced frequency fields
 - .06 Power frequency magnetic field
 - .07 Pulsed Magnetic field
 - .08 Voltage short dips and interruptions
 - .09 Ring wave
 - .10 Harmonic and inter harmonics low frequency
 - .11 Voltage fluctuations
 - .12 Common mode low frequency
 - .13 dc input power ripple
 - .14 Damped oscillatory wave
 - .99 Other tests

- 3.17 RF and microwave radiation hazard measurement
 - .01 Specific Absorption Rate (SAR)

- 3.18 RF shielding effectiveness

- 3.20 Workplace electrical safety tests
 - .01 Insulating gloves and tools
 - .02 High voltage operating equipment
 - .03 Insulated platform vehicles
 - .99 Other equipment items

- 3.21 Antistatic materials for industrial applications
 - .01 Flooring
 - .02 Other products

- 3.22 Approval tests on telecommunications equipment

- 3.23 Approval tests on radio communications equipment

- 3.24 Approval tests on electrical appliances and accessories

- 3.25 Performance tests on electrical items and accessories
 - .01 Surface temperature
 - .02 Air temperature
 - .03 Liquid temperature
 - .04 Volumetric flow
 - .05 Electrical performance
 - .10 Boiling time and efficiency
 - .11 Heat loss and heat-up time
 - .12 Temperature control
 - .13 Pull down time
 - .14 Ice making tests
 - .15 Catalytic cleaning tests
 - .17 Thermal shock
 - .18 Temperature limits in dryers
 - .19 Temperature distribution

- .20 Steaming rate
 - .21 Moisture removal and evaporation rate
 - .22 Microwave energy distribution
 - .23 Total heat output
 - .24 Radiant heat output
 - .25 Energy efficiency
 - .30 Electrical voltage, current, power
 - .31 Electrical energy consumption
 - .40 Strength and dimensions of guarding
 - .41 Strength and dimensions of components
 - .42 Surface areas
 - .43 Cabinet and chamber volumes
 - .44 Stability
 - .45 Endurance and life tests
 - .46 Environmental testing of electrical items and enclosures
 - .47 Air flow velocity and volume
 - .48 Load capacity
 - .49 Water consumption
 - .50 Cycle times
 - .51 Washing or soil removal
 - .52 Drying effectiveness
 - .53 Whiteness retention
 - .54 Rinsing effectiveness
 - .55 Water extraction effectiveness
 - .56 Water pressure range
 - .57 Mechanical shock
 - .58 Vibration
 - .59 Pressure measurement
 - .70 Colour chart and grey scale comparison
 - .80 Food preparation and cooking test
 - .99 Other tests
- 3.26 Performance tests on gas appliances and components
- .01 Gas consumption, turndown consumption, maintenance rate
 - .02 Determination of CO/CO₂ ratio
 - .03 Vitiation tests
 - .04 Slip of unburnt gas (catalytic heaters)
 - .05 Flue draft and spillage
 - .06 Emission tests
 - .11 Thermal efficiency, radiant efficiency
 - .12 Temperature hazards
 - .13 Oven baking evenness
 - .14 Heat flux
 - .15 Cooking oil temperature tests
 - .16 Cabinet temperature (refrigerators)
 - .17 Ice-making test
 - .18 Heat resistance, durability
 - .19 Flue gas temperatures
 - .20 Stratification tests
 - .21 Tests on thermostats, regulators, shut-off valves, pressure limit devices
 - .22 Flow rate (components)
 - .23 Voltage variation (components)

- .24 Fan performance (ducted air heaters)
 - .25 Temperature variation (components)
 - .31 Wind generator tests (outdoor and room sealed appliance)
 - .32 Rain test (outdoor appliance)
 - .33 Energy efficiency
 - .41 Static pressure tests (hoses and components)
 - .42 Resistance to kinking, pull, bending, flexing, ageing, ignitability and gas (hoses)
 - .43 Resistance to corrosion, water, drying, vibration and gas (jointing compounds)
 - .44 Cycling durability tests - electrical, thermal, mechanical, pressure
 - .45 Resistance to hydrocarbons, oxygen
 - .51 Visual inspection
 - .52 Gas leakage
 - .53 Ignition and flame safeguard tests
 - .54 Linting tests
 - .55 Drying performance (laundry dryers)
 - .56 Heating up time
 - .57 Safety shut down
 - .61 Mechanical strength and operating effort
 - .62 Mechanical stability
 - .99 Other tests
- 3.27 Performance tests on oil appliances and components
- 3.28 Performance tests on solid fuel appliances and components
- .01 Surface temperatures
 - .02 Heat output, efficiency
 - .03 Fuel consumption
 - .04 Radiant heat output
 - .05 Heat exchangers
 - .11 Clearance tests (installations)
 - .21 Determination of gaseous emissions in flues
 - .22 Particulates in flue gas
 - .31 Performance of components
- 3.29 Performance test on solar appliances and components
- .01 Water heaters
 - .02 Solariums
 - .03 Photovoltaic cells
- 3.30 Performance tests on air-conditioning units and components
- .01 Sensible cooling effect
 - .02 Dehumidifying effect
 - .03 Total cooling effect
 - .04 Sensible heating effect
 - .05 Volumetric air flow rate
 - .06 Electrical energy consumption
 - .07 Thermal capacity check tests
 - .08 Maximum operating tests
 - .09 Freeze-up tests
 - .10 Enclosure sweat tests
 - .11 Condensate disposal tests

- .12 Electrical rating and starting tests
- .15 Energy efficiency
- .99 Other tests

- 3.35 Electrical equipment for explosive atmospheres – explosion protection tests

- 3.36 Approval tests for electromedical equipment

- 3.37 Electrical testing in medical treatment areas
 - .01 Patient equipotential areas

- 3.38 European regulatory requirements
 - .01 Low voltage equipment directive
 - .02 Telecommunications terminal equipment directive
 - .03 Electromagnetic compatibility directive

- 3.39 Luminous flux.
 - .01 Incandescent lamps
 - .02 Other sources

- 3.40 Geometry of optical components and systems
 - .01 Rear view mirrors
 - .02 Distribution photometer mirrors
 - .11 Eye protection wear
 - .12 Sunglasses

- 3.41 Optical quality
 - .01 Windows
 - .02 Windscreens
 - .03 Lenses

- 3.42 Refractive Index
 - .02 Measurement of refractive index

- 3.43 Broad-band irradiance
 - .03 Field measurements of ultraviolet irradiance
 - .04 Field measurements of infrared irradiance

- 3.44 Distribution of luminous intensity
 - .01 Road lighting luminaires
 - .02 Interior lighting luminaires
 - .03 Flood lighting luminaires
 - .04 Emergency evacuation lighting luminaires
 - .05 Traffic signal lanterns
 - .06 Motor vehicle signal lamps
 - .09 Other luminaires

- 3.45 Luminance
 - .01 Measurement of luminance
 - .03 Field measurement of luminance

- 3.46 Illuminance
 - .01 Measurement of illuminance
 - .03 Field measurement of illuminance

- 3.47 Performance tests on luminaires
 - .01 Road lighting luminaires
 - .02 Interior lighting luminaires
 - .03 Flood lighting luminaires
 - .04 Emergency evacuation lighting luminaires
 - .09 Other products

- 3.48 Performance of lighting installations
 - .01 Road lighting

- 3.49 Performance tests on laser and high radiant sources
 - .01 Power
 - .02 Energy
 - .03 Wavelength
 - .04 Spectrum

- 3.50 Other tests on optical systems
 - .01 Ballasts
 - .02 Light sources – endurance and life tests
 - .04 Power a.c. and d.c.
 - .05 Performance of photometers
 - .06 Detector broad-band responsivity
 - .07 Detector spectral responsivity
 - .09 Image intensification devices
 - .10 Optical power of fibre optic systems

- 3.51 Retroreflective performance measurements
 - .01 Reflex reflectivity
 - .02 Chromaticity
 - .03 Orientation and dimensions of retroreflective markings

- 3.52 Spectrophotometry testing
 - .01 Spectral transmittance
 - .02 Spectral reflectance
 - .03 Chromaticity

- 3.53 Broad-band visible light measurements
 - .01 Transmittance
 - .02 Reflectance
 - .06 Haze
 - .10 Chromaticity

- 3.54 Spectral measurements of light sources
 - .02 Spectral irradiance
 - .03 Chromaticity and related metrics
 - .04 Correlated colour temperature

- 3.55 Determination of thermal properties of materials
 - .01 Thermal conductivity
 - .02 Thermal expansion
 - .03 Specific heat capacity
 - .04 Latent heat

- 3.57 Tests on fire detection and protection systems and equipment
 - .01 Control and indicating equipment
 - .02 Detection and warning devices
 - .03 Fire extinguishers
 - .04 Fire sprinkler heads

- 3.58 Fire tests on building materials and structures
 - .01 Combustibility
 - .02 Flammability
 - .03 Early fire hazard properties
 - .04 Tests for fire resistance of building elements

- 3.59 Fire tests on textiles and related materials
 - .01 Ignitability
 - .02 Flammability
 - .03 Flame propagation
 - .04 Smoke release
 - .05 Thermal properties

- 3.70 Acoustic characteristics of materials and structures
 - .11 Reverberation
 - .21 Sound absorption
 - .31 Sound transmission
 - .41 Sound insulation

- 3.72 Field measurement of sound
 - .01 Room acoustics
 - .02 Community noise assessments
 - .03 Occupational noise exposure
 - .04 Noise on board vessels
 - .05 Noise in occupied spaces
 - .06 Noise on building and construction sites
 - .07 Acoustic performance of building elements
 - .08 Long term noise monitoring
 - .09 Blast monitoring

- 3.73 Sound power
 - .01 Free field
 - .02 Free field above a reflecting plane
 - .03 Diffuse field
 - .04 Semi-reverberant field
 - .05 Near field
 - .06 Free field associated with two or three reflecting planes

- 3.74 Acoustic performance
 - .01 Aircraft
 - .02 Motor vehicles
 - .03 Industrial, earthmoving and agricultural vehicles
 - .04 Railway vehicles
 - .05 Vessels
 - .11 Electrical machines
 - .12 Machinery other than electrical machinery
 - .13 Air distribution and conditioning systems
 - .14 Components of air distribution and conditioning systems
 - .15 Fans and blowers
 - .21 Ear protectors
 - .22 Hearing aids
 - .23 Acoustic enclosures and booths
 - .31 Sound recording and reproducing systems
 - .32 Communications equipment
 - .41 Plumbing
 - .42 Domestic appliances
 - .43 Electric power tools
 - .44 Explosive power tools
 - .45 Pneumatic power tools

- 3.75 Vibration characteristics of materials and structures
 - .01 Dynamic stiffness
 - .11 Damping
 - .21 Natural frequencies and modes of vibration

- 3.76 Mechanical vibration
 - .01 Steady state vibration
 - .02 Transient vibration
 - .03 Torsional vibration
 - .04 Vibration surveys
 - .05 Ground-borne vibration

- 3.77 Vibration performance

- 3.78 Dynamic balancing
 - .01 Testing of items in balancing machines
 - .11 Testing of items in situ

Amendments
Deleted classes 3.04 Magnetic materials, 3.71 Audiometric testing
Renamed class 3.01