ISO/IEC 17025 Based Requirements	Guidance	Applicable Program	UL Client Reference Documents
4. MANAGEMENT REQUIREMENTS			
4.1 Organization			
4.1.3 The laboratory management system shall cover the work carried out in the permanent DAP laboratory facilities.	It is important to identify all areas being used for UL testing purposes so these areas can be properly assessed.	TPTDP, PPP, and TCP	
4.1.4 If the laboratory is part of an organization performing activities other than testing, the responsibilities of key personnel that have either an influence or involvement on the testing activities shall be defined so that any potential conflicts of interest can be identified.	Any staff member that has any involvement with the testing activity, and involvement in other activities other than testing, must have these responsibilities defined.		
4.2 Management system			
4.2.1 The laboratory shall establish, implement and maintain a management system appropriate to the scope of its activities. The laboratory shall document its policies, systems, procedures and instructions to the extent necessary to assure the quality of the test results. The system's documentation shall be communicated to, understood by, available to, and implemented by the appropriate personnel.	Compliance of this requirement is determined by the DAP Auditor based upon the assessment of the Entire Quality Management System. Is the QMS functional and effective? How are the changes to the QMS documentation communicated to staff? Also, is the lab staff aware of the procedures, work instructions and other QMS documentation that effect their job?	TPTDP, PPP, and TCP	

4.2.2 The laboratory's management system policies related to quality, including a quality policy statement, shall be defined in a quality manual (however named). The overall objectives shall be established, and reviewed during management review. The quality policy statement shall be issued under the authority of top management. It shall include at least the following: a) management's commitment to good professional practice and to the quality of its testing; b) management's statement of the laboratory's standard of service; c) the purpose of the management system related to quality; d) a requirement that all personnel concerned with testing activities within the laboratory familiarize themselves with the quality documentation and implement the policies and procedures in their work; e) the laboratory management's commitment to comply with DAP criteria; f) assures continued improvement of the effectiveness of management system when the test and/or calibration laboratory is part of a larger organization, some quality policy elements may be in other documents.	A quality manual (or equivalent document) shall be established. Objectives must be established for the lab management system and there must be evidence of review contained in the records of Management Review (4.15). A Quality Policy Statement is to be established that meets the requirements of a-e (as a min).		
4.2.3 Top management shall provide evidence of commitment to the development and implementation of the management system and continually improving its effectiveness.	Compliance generally determined by the assessment of the QMS as a system.		
4.2.4 Top management shall communicate to the laboratory the importance of meeting DAP requirements.	Demonstrate the importance of customer relationships and the need to be aware of statutory and regulatory requirements and to communicate this to the Laboratory staff.		

4.2.5 The quality manual shall include reference to the supporting procedures including technical procedures and describe the structure of the documentation utilized in the laboratory.	A list of supporting documents (if applicable) or a reference, should be included in the quality manual. The intent is to provide a "road-map" to all supporting documents.		
4.2.6 The quality manual shall define specific roles and responsibilities of the technical management and the quality manager.	The quality manual must contain roles and responsibilities for the quality manager and technical management.		
4.2.7 Top management shall ensure that the integrity of the management system is maintained when changes to the management system are planned and implemented.	Compliance generally determined by the assessment of the QMS. When changes have been made to the QMS, did the integrity remain? DAP Auditors will ask if any changes have been made since the last DAP Assessment.		
4.3 Document control			
4.3.1 General			
The lab shall have a documented procedure (paper based, electronic or a combination) to control all documents that form the quality management system.	A documented procedure(s) is/are required to control all documents of internal and external origin that form the QMS.	TPTDP, PPP, TCP, and CTDP	
4.3.2 Document approval and issue			
4.3.2.1 • The laboratory shall assure that all documents (including Standards) issued to or used by personnel in the laboratory as part of the management system are reviewed and approved for use by authorized personnel prior to issue. • A master list or an equivalent document control procedure identifying the current revision status and distribution of documents in the management system shall be established and be readily available to preclude the use of invalid and/or obsolete documents.	A master list or equivalent is required, which will include the revision status and distribution of all documents in the QMS System. Records of reviews and approvals are needed to support compliance.	TPTDP, PPP, TCP, and CTDP	
4.3.2.2 The procedure(s) adopted shall ensure that:			

a) authorized editions of appropriate documents are available at all locations where operations essential to the effective functioning of the laboratory are performed;	Document Procedures must address items a-d.	TPTDP, PPP, TCP, and CTDP	
b) documents are periodically reviewed and, where necessary, revised to ensure continuing suitability and compliance with applicable requirements;	There must be records to demonstrate the periodic review of documents. Maximum of 2 years is an acceptable time period		
c) invalid or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use;	DAP auditors will audit how the lab prevents the use of old revisions of QMS documents.		
d) obsolete documents retained for either legal or knowledge preservation purposes are suitably marked.	Typical examples of "suitably marked" might be "Obsolete", "For reference only", "Historical Reference Only", etc.		
4.3.2.3 Management system documents generated by the laboratory shall be uniquely identified. Such identification shall include the date of issue and/or revision identification, page numbering, the total number of pages or a mark to signify the end of the document, and the issuing authority(ies).	QMS Documents will be reviewed to verify compliance. Examples: Document Control Procedure, issued 2009/1/1, revised 2010/2/14, 10 pages, each page marked 1 of 10, 2 of 10, etc. Also, approved by B. Smith, Quality Manager.		
4.3.3 Document changes			

4.3.3.1 Changes to documents shall be reviewed and approved by the same function that performed the original review unless specifically designated otherwise. The designated personnel shall have access to pertinent background information upon which to base their review and approval.	Records of reviews and approvals are needed to support compliance.	TPTDP, PPP, TCP, and CTDP	
4.3.3.2 Where practicable, the altered or new text shall be identified in the document or the appropriate attachments.	This can be done by any method, but must be able to identify what was changed.		
4.3.3.3 If the laboratory's document control system allows for the amendment of documents by hand pending the re-issue of the documents, the procedures and authorities for such amendments shall be defined. Amendments shall be clearly marked, initialed and dated. A revised document shall be formally re-issued as soon as practicable.	If hand amendments are allowed, a documented procedure is required to define the process. It may be part of the overall document procedure or an individual work instruction. If hand amendments are allowed, records of these amendments and their review and approval are needed to support compliance.		
4.3.3.4 Procedures shall be established to describe how changes in documents maintained in computerized systems are made and controlled.	A documented procedure is required to define the process. It may be part of the overall document procedure or an individual work instruction.		
4.6 Purchasing services and supplies			
4.6.1 The laboratory shall have a procedure for the selection and purchasing of services and supplies it uses that affect the quality of the tests.	A documented procedure required. Reference to DAP Client Guide 00-OP-C0033 (Consumables) and 00-OP-C0037 (Acceptance of Thermocouple Wire) for specific requirements.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0033 (Consumables) and 00-OP-C0037 (Acceptance of Thermocouple Wire)

4.6.2 • The laboratory shall ensure that purchased supplies and reagents and consumable materials that affect the quality of tests are not used until they have been inspected or otherwise verified as complying with standard specifications or requirements defined in the methods for the tests concerned and also per 00-OP-C0033 (Critical Consumables). • These services and supplies used shall comply with specified requirements. Records of actions taken to check compliance shall be maintained. Records may include Certificate of Conformances, Validation of Thermocouple Junctions, Validation records that the laboratory has reviewed their equipment calibration certificates for compliance with (00-OP-C0032), etc. If the laboratory utilizes thermocouples in testing, please validate compliance to 00-OP-C0037 (Acceptance of Thermocouple Wire).	Reference to DAP Client Guide 00-OP-C0033 (Consumables) and 00-OP-C0037 (Acceptance of Thermocouple Wire) for specific requirements. Records of the verification of consumables are needed to support compliance. Calibration certificates must be reviewed upon receipt to confirm equipment was received by calibration house 'in-tolerance'. Also, calibration certificates will also need to be reviewed to ensure all requirements of Client Guide 00-OP-C0032 (Calibration Certificate Analysis) have been met.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0033 (Consumables), 00-OP-C0037 (Acceptance of Thermocouple Wire) and 00-OP-C0032 (Calibration Certificate Analysis)
4.9 Control of nonconforming testing and/or calibration work			
4.9.1 The laboratory shall have a procedure that shall be implemented when any aspect of its testing or the results of this work, do not conform to its own procedures or the agreed requirements of the customer (UL). The procedure shall ensure that:	A documented procedure is required and must address items a-e.	TPTDP, PPP, TCP, and CTDP	
a) the responsibilities and authorities for the management of nonconforming work are designated and actions (including halting of work and withholding of test reports, as necessary) are defined and taken when nonconforming work is identified;			
b) an evaluation of the significance of the nonconforming work is made;			
c) correction is taken immediately,			

together with any decision about the acceptability of the nonconforming work;			
d) where necessary, UL is notified and work is recalled;			
e) the responsibility for authorizing the resumption of work is defined.			
4.9.2 Where the evaluation indicates that the nonconforming work could recur or that there is doubt about the compliance of the laboratory's operations with its own policies and procedures, the corrective action procedures given in 4.11 shall be promptly followed.	The Control of Nonconforming Testing Procedure must reference the Corrective Action Procedure and in what circumstances it should be followed.		
4.11 Corrective action			
4.11.1 General			
• The laboratory shall establish a procedure and shall designate appropriate authorities for implementing corrective action when nonconforming work or departures from the policies and procedures in the management system or technical operations have been identified. • All DAP generated NCR's must be placed into the laboratory's internal Corrective Action System.	A documented procedure is required. All DAP generated NCR's must be placed into the laboratory's internal Corrective Action System. Corrective action records are needed to support compliance.	TPTDP, PPP, TCP, and CTDP	
4.11.2 Cause analysis			
The procedure for corrective action shall start with an investigation to determine the root cause(s) of the problem.	Root Cause can be determined by using different approaches, one such approach is the 5-Why approach. Asking the question why something happened 5 times, typically you will get to the true root cause.	TPTDP, PPP, TCP, and CTDP	
4.11.3 Selection and implementation of corrective actions			

• Where corrective action is needed, the laboratory shall identify potential corrective actions. It shall select and implement the action(s) most likely to eliminate the problem and to prevent recurrence. • Corrective actions shall be to a degree appropriate to the magnitude and the risk of the problem. The laboratory shall document and implement any required changes resulting from corrective action investigations.	Many corrective actions have simple solutions and it may not be necessary or possible to identify more than one corrective action. Will the selected Corrective Action taken likely eliminate the problem?	TPTDP, PPP, TCP, and CTDP	
4.11.4 Monitoring of corrective actions			
The laboratory shall monitor the results to ensure that the corrective actions taken have been effective.	There may be several actions that could be taken to address a problem. If the first corrective action selected does not address the problem or creates unintended problems elsewhere, repeat the corrective action process until the problem has been addressed without creating additional problems elsewhere in the QMS. Records must provide support that effectivenss check was completed.	TPTDP, PPP, TCP, and CTDP	
4.12 Preventive action			
4.12.1 Needed improvements and potential sources of nonconformities, either technical or concerning the management system, shall be identified. When improvement opportunities are identified or if preventive action is required, action plans shall be developed, implemented and monitored to reduce the likelihood of the occurrence of such nonconformities and to take advantage of the opportunities for improvement.	If preventive actions are initiated, records are needed to support compliance.	TPTDP, PPP, and TCP	
4.12.2 Procedures for preventive actions shall include the initiation of such actions and application of controls to ensure that they are effective.	A documented procedure is required.		
4.13 Control of records			
4.13.1 General			

4.13.1.1 The laboratory shall establish and maintain procedures for identification, collection, indexing, access, filing, storage, maintenance and disposal of quality and technical records. Quality records may include reports from management reviews as well as records of corrective and preventive actions.	A documented procedure is required. Quality and technical records include Test Datasheets, Original Observations, Cal Certs, Training Records, Purchase Orders, Corrective Action, Nonconformity Reports, Software Validation, etc.	TPTDP, PPP, TCP, and CTDP	
4.13.1.2 • All records shall be legible and shall be stored and retained in such a way that they are readily retrievable in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss. Retention times of records shall be established. • The laboratory shall retain records of calibration, quality and original observations for a minimum period of 5 years from the date the signatory signs the datasheet cover page.	CTDP, TCP, TPTDP and PPP participants are to keep Quality and Technical records for 5 years to ensure the ongoing validity and repeatability of the data from the date of the signature of the authorized signatory on the data package.		
4.13.1.3 All records shall be held secure and in confidence.	Auditor's will verify that records are held secure and in confidence		
4.13.1.4 The laboratory shall have procedures to protect and back-up records stored electronically and to prevent unauthorized access to or amendment of these records.	A documented procedure is required. Records are needed to support that back-ups are occurring as planned.		
4.13.2 Technical records			

4.13.2.1 • The laboratory shall retain records of original observations, derived data and sufficient information to establish an audit trail, calibration records, staff records and a copy of each test report or calibration certificate issued, for 5 years. • The records for each test shall contain sufficient information to facilitate, if possible, identification of factors affecting the uncertainty and to enable the test to be repeated under conditions as close as possible to the original. The records shall include the identity of personnel responsible for the sampling and performance of each test and checking of results.	Original observations are not required to be attached to each datasheet submittal unless requested by UL, but must be kept as a record.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0025 (Data Recording & Reporting) & 00-OP-C0038 (In-house Calibration)
4.13.2.2 Observations, data and calculations shall be recorded at the time they are made and shall be identifiable to the specific task.	Compliance is determined by review of records.		
4.13.2.3 When mistakes occur in records, each mistake shall be crossed out, not erased, made illegible or deleted, and the correct value entered alongside. All such alterations to records shall be signed or initialed by the person making the correction. In the case of records stored electronically, equivalent measures shall be taken to avoid loss or change of original data.			
4.15 Management review			

4.15.1 In accordance with a predetermined schedule and procedure, the laboratory's top management shall periodically conduct a review of the laboratory's management system and testing activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements. The review shall take account of: * The suitability of policies and procedures; * Reports from managerial and supervisory personnel; * Corrective and preventive actions; * Assessments by external bodies; * Changes in the volume and type of the work; * Other relevant factors, such as quality control activities, resources and staff training.	A documented procedure and schedule are required. The management review record shall indicate that all of the required items were addressed and taken into account during the review.	TPTDP, PPP, and TCP	
4.15.2 Findings from management reviews and the actions that arise from them shall be recorded. The management shall ensure that those actions are carried out within an appropriate and agreed timescale.	Action items resulting from the management review shall be recorded. Typically these are included as part of the management review minutes or the action items are placed into the corrective and / or preventive action system.		
5 Technical requirements			
5.2 Personnel			
5.2.5 The management shall authorize specific personnel to perform particular types of sampling, testing, to issue test reports, to give opinions and interpretations and to operate particular types of equipment. The laboratory shall maintain records of the relevant authorization(s), competence, educational and professional qualifications, training, skills and experience of all technical personnel, including contracted personnel. This information shall be readily available and shall include the date on which authorization and/or competence is confirmed.	Compliance is supported by training records.	TPTDP, PPP, TCP, CTDP, and WTDP	

5.3 Accommodation and environmental conditions			
5.3.1 • Laboratory facilities for testing, including but not limited to energy sources, lighting and environmental conditions, shall be such as to facilitate correct performance of the tests. The laboratory shall ensure that the environmental conditions do not invalidate the results or adversely affect the required quality of any measurement. Particular care shall be taken when sampling and tests are undertaken at sites other than a permanent laboratory facility. The technical requirements for accommodation and environmental conditions that can affect the results of tests shall be documented. • If applicable, the PQA should have been conducted in accordance with 00-OP-C0036 (Laboratory Power Quality) within the last 3 years or when the power system changed.	If the standard in which testing is being conducted identifies certain environmental conditions, those conditions must be monitored. Power quality must be assessed per DAP Client Guide 00-OP-C0036 (Power Quality), as applicable.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0035 (Environment - Laboratory Ambient Conditions) & 00-OP-C0036 (Power Quality)
5.3.2 • The laboratory shall monitor, control and record environmental conditions as required by the relevant specifications, methods and procedures or where they influence the quality of the results. Due attention shall be paid, for example, to biological sterility, dust, electromagnetic disturbances, radiation, humidity, electrical supply, temperature, and sound and vibration levels, as appropriate to the technical activities concerned. • Tests shall be stopped when the environmental conditions jeopardize the results. Client Guidance Document 00-OP-C0035 (Environment - Laboratory Ambient Conditions) may also apply.	Records should be available for applicable monitoring of conditions. These may include chart recordings, datasheets, data collection output, etc.		

5.3.3 There shall be effective separation between neighboring areas in which there are incompatible activities. Measures shall be taken to prevent cross-contamination.	Auditor's will determine on case-by-case basis. For example, you would not want an air ventilation system too close to a test bench when conducting a product surface temperature test.		
5.3.4 Access to and use of areas affecting the quality of the tests and/or calibrations shall be controlled. The laboratory shall determine the extent of control based on its particular circumstances.	Auditor's will verify access to test areas		
5.4 Test and calibration methods and method validation			
5.4.1 General			
• The laboratory shall use appropriate methods and procedures for all tests within its scope. These include sampling, handling, transport, storage and preparation of items to be tested. • The laboratory shall have instructions on the use and operation of all relevant equipment, and on the handling and preparation of items for testing, where the absence of such instructions could jeopardize the results of tests. • All instructions, standards, manuals and reference data relevant to the work of the laboratory shall be kept up to date and shall be made readily available to personnel. Deviation from test methods shall occur only if the deviation has been documented, and technically justified.	Labs must have access to all standards within their DAP Scope of participation. Use of UL or internally generated datasheets does not meet this requirement.	TPTDP, PPP, TCP, and CTDP	
5.4.2 Selection of methods			

• The laboratory shall use test methods, including methods for sampling, which meet the needs of the customer and which are appropriate for the tests it undertakes. Methods published in international, regional or national standards shall preferably be used. • The laboratory shall ensure that it uses the latest valid edition of a standard unless it is not appropriate or possible to do so. When necessary, the standard shall be supplemented with additional details to ensure consistent application.	Labs must have access to all standards within their DAP Scope of participation. Use of UL or internally generated datasheets does not meet this requirement.	TPTDP, PPP, TCP, and CTDP	
5.4.7 Control of data			
• If the laboratory transfers data and/or conducts calculations to generate data, these processes shall be subjected to appropriate checks in a systematic manner. • When computers, or automated equipment are used for the acquisition, processing, recording, reporting, storage or retrieval of test data, the laboratory shall ensure that: a) computer software developed by the user is documented in sufficient detail and is suitably validated as being adequate for use; b) procedures are established and implemented for protecting the data; such procedures shall include, but not be limited to, integrity and confidentiality of data entry or collection, data storage, data transmission and data processing; c) computers and automated equipment are maintained to ensure proper functioning and are provided with the environmental and operating conditions necessary to maintain the integrity of test and calibration data.	If applicable, a process should exist for calculation and data transfers checks, and records available.	TPTDP, PPP, TCP, and CTDP	
5.5 Equipment			

5.5.1 • The laboratory shall be furnished with all items of measurement and test equipment required for the correct performance of the tests. • In those cases where the laboratory needs to use equipment outside its permanent control, it shall ensure that all applicable requirements of UL's Data Acceptance Program are met.	The auditor will verify that all required equipment is available. If Equipment is borrowed and/or rented does the lab perform a verification of the calibration and functional status of the equipment prior to use?	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.2 • Equipment and its software used for testing shall be capable of achieving the accuracy required and shall comply with specifications relevant to the tests concerned (if not specified in the standard, meets the accuracy requirements of 00-OP-C0034). • Calibration programs shall be established for key quantities or values of the instruments where these properties have a significant effect on the results. • Before being placed into service, equipment that has a significant effect on the results shall be calibrated and complies with the relevant standard specifications.	The lab must verify their equipment, used to conduct the tests contained within their DAP Scope of Participation, meet the accuracy requirements in the product standards. If no accuracy is required or defined by the product standard(s), equipment must meet the accuracy requirements of DAP Client Guide 00-OP-C0034 (Equipment Selection). Records are required to verify this check has been made (see Clause 5.5.5(c)).	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.3 • Equipment shall be operated by authorized personnel. • Up-to-date instructions on the use and maintenance of equipment (including any relevant manuals provided by the manufacturer of the equipment) shall be readily available for use by the appropriate laboratory personnel.	A lab must determine how personnel are authorized to use equipment. A lab may consider the authorization to conduct a test as authorization to operate the associated equipment for that test.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration

			Intervals)
5.5.4 Each item of equipment and its software used for testing and significant to the result shall be uniquely identified.	Equipment is to be uniquely identified (examples: serial number, asset tags, barcodes, or other internally generated ID)	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.5 Records shall be maintained of each item of equipment and its software significant to the tests performed. The records shall include the following:a) the identity of the item of equipment and its software;b) the manufacturer's name, type identification, and serial number or other unique identification;c) checks that equipment complies with the specification (see 5.5.2);d) the current location, where appropriate;e) the manufacturer's instructions, if available, or reference to their location; f) dates, results and copies of reports and certificates of all calibrations, adjustments, acceptance criteria, and the due date of next calibration;g) the maintenance plan, where appropriate, and maintenance carried out to date;h) any damage, malfunction, modification or repair to the equipment.	Records for each piece of equipment are to be available and must contain the items required by a-h below, as applicable. An equipment record is different than a calibration record/certificate since it requires location information, accuracy confirmation, instruction manual information and maintenance and repair history. Calibration records/certificates do not typically contain this information.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)

5.5.6 The laboratory shall have a procedure for safe handling, transport, storage, use and planned maintenance (if applicable) of measuring equipment to ensure proper functioning and in order to prevent contamination or deterioration.	A documented procedure is required.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.7 • Equipment that has been subjected to overloading or mishandling, gives suspect results, or has been shown to be defective or outside specified limits, shall be taken out of service. It shall be isolated to prevent its use or clearly labeled or marked as being out of service until it has been repaired and shown by calibration or test to perform correctly. • The laboratory shall examine the effect of the defect or departure from specified limits on previous tests and shall institute the "Control of nonconforming work" procedure (see 4.9).	A process should be in place to address this requirement. Records of equipment issues are needed to support compliance (see Clause 5.5.5(h)).	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.8 All equipment requiring calibration shall be labeled, coded or otherwise identified to indicate the status of calibration, including the date when last calibrated and the date or expiration criteria when recalibration is due and in accordance with 00-OP-C0045.	Lab equipment labels are to contain the required information.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)

5.5.9 When, for whatever reason, equipment goes outside the direct control of the laboratory, the laboratory shall ensure that the function and calibration status of the equipment are checked and shown to be satisfactory before the equipment is returned to service.	Equipment used within the lab is to be properly functioning and within its calibration cycle.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis); DAP Client Guide 00-OP-C0034 (Equipment Selection); DAP Client Guide 00-OP-C0045 (Equipment Calibration Intervals)
5.5.10 When intermediate checks are needed to maintain confidence in the calibration status of the equipment, these checks shall be carried out according to a defined procedure.	If applicable, a documented procedure is required. Equipment manuals may provide sufficient guidance to conduct an intermediate check. This requirement applies if a lab uses equipment with a one-time calibration (See 00-OP-C0045).		
5.5.11 Where calibrations give rise to a set of correction factors, the laboratory shall have procedures to ensure that copies (e.g. in computer software) are correctly updated.	If applicable, a documented procedure is required. Equipment manuals may provide sufficient guidance to apply correction factors.		
5.5.12 Test equipment, including both hardware and software, shall be safeguarded from adjustments which would invalidate the test and/or calibration results.	Equipment safeguards may be tamper seals, lockouts, paint seals, etc. Software safeguards may be passwords or other means of protecting code.		
5.6 Measurement traceability			
5.6.1 General			

• All equipment used for tests and/or calibrations, including equipment for subsidiary measurements (e.g. for environmental conditions) having a significant effect on the accuracy or validity of the result of the test, calibration or sampling shall be calibrated before being put into service. • The laboratory shall have an established program for the calibration of its equipment.• The laboratory shall have an established procedure for the calibration of its equipment.	Equipment used for DAP Testing, must be calibrated, as appropriate.	TPTDP, PPP, TCP, and CTDP	
5.6.2 Specific requirements			
5.6.2.1 Calibration			
5.6.2.1.1 • When using external calibration services, traceability of measurement shall be assured by the use of calibration services from laboratories that can demonstrate competence, measurement capability and traceability. • The calibration certificates issued by these external laboratories shall contain the measurement results, including the measurement uncertainty and/or a statement of compliance with an identified metrological specification, and in accordance with 00-OP-C0032.	Calibration certificates need to be in compliance with the requirements of 00-OP-C0032 (Calibration Certificate Analysis). Is the accreditation logo from the accreditation Body (e.i. A2A, PJL, ACLASS)? on the Calibration cert. Is the Accreditation Body an MRA Signatory of ILAC, APLAC or EAC, etc. Does the calibration certificate include calibration results for each measurement that will be used. For example if the time function in a dielectric tester will be used to measure time then the calibration certificate needs to include results for both voltage and time.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis)

5.6.2.1.2 There are certain calibrations that currently cannot be strictly made in SI units. In these cases calibration shall provide confidence in measurements by establishing traceability to appropriate measurement standards. Metrological traceablity is the property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisions, all having stated uncertainties. Calibration equipment is deemed traceable through an accredited calibration service provider.a) the use of certified reference materials provided by a competent supplier to give a reliable physical or chemical charaterization of a material;b) the use of specified methods and/or consensus standards that are clearly described and agreed by all parties concerned.c) Participation in a suitable program of interlaboratory comparisons is required where possible.	If equipment cannot be calibrated to SI Units, UL should be contacted to confirm the acceptability of calibrations to other measurement standards. UL's confirmation of acceptability needs to be kept as a record.	TPTDP, PPP, TCP, CTDP, and WTDP	
5.6.2.2 Testing			
5.6.2.2.1 For testing laboratories, the requirements given in 5.6.2.1 apply for measuring and test equipment with measuring functions used, unless it has been established that the associated contribution from the calibration contributes little to the total uncertainty of the test result. When this situation arises, the laboratory shall ensure that the equipment used can provide the uncertainty of measurement needed.	The requirements of Clause 5.6.2.1.1 that address the use of external calibration providers apply.	TPTDP, PPP, TCP, CTDP, and WTDP	DAP Client Guide 00-OP-C0032 (Calibration Certificate Analysis)

5.6.2.2.2 Where traceability of measurements to SI units is not possible and/or not relevant, the same requirements for traceability to, for example, certified reference materials, agreed methods and/or consensus standards, are required as for calibration laboratories (see 5.6.2.1.2).	If equipment cannot be calibrated to SI Units, UL should be contacted to confirm the acceptability of calibrations to other measurement standards. UL's confirmation of acceptability needs to be kept as a record.	TPTDP, PPP, TCP, CTDP, and WTDP	
5.6.3 Reference standards and reference materials			
5.6.3.2 Reference materials			
• Reference materials shall, where possible, be traceable to SI units of measurement, or to certified reference materials.• Internal reference materials shall be checked as far as is technically and economically practicable.	Use DAP Client Guide 00-OP-C0033 (Consumables) and 00-OP-C0037 (Acceptance of Thermocouple Wire) as guidance, as applicable.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0033 (Consumables) & 00-OP-C0037 (Acceptance of Thermocouple Wire)
5.6.3.4 Transport and storage			
The laboratory shall have procedures for safe handling, storage and use of reference standards and reference materials in order to prevent contamination or deterioration and in order to protect their integrity.	If in-house calibration is used, a documented procedure is required.	TPTDP, PPP, TCP, and CTDP	
5.8 Handling of test and calibration items			
5.8.1 The laboratory shall have procedure for the transportation, receipt, handling, protection, storage, retention and/or disposal of test items, including all provisions necessary to protect the integrity of the test item, and to protect the interests of the laboratory and the customer.	A documented procedure is required.	TPTDP, PPP, TCP, and CTDP	

5.8.2 The laboratory shall have a system for identifying test items. The identification shall be retained throughout the life of the item in the laboratory. The system shall be designed and operated so as to ensure that items cannot be confused physically or when referred to in records or other documents. The system shall, if appropriate, accommodate a sub-division of groups of items and the transfer of items within and from the laboratory.	The method used for identification of test samples must ensure that the ID method is unique and the ID tag or other ID method is not likely to come off resulting in a mis-identification or confusion with other samples.	TPTDP, PPP, TCP, CTDP, and WTDP	
5.8.3 Upon receipt of the test item, abnormalities or departures from normal or specified conditions, as described in the test method, shall be recorded. When there is doubt as to the suitability of an item for test, or when an item does not conform to the description provided, or the test required is not specified in sufficient detail, the laboratory shall consult the customer for further instructions before proceeding and shall record the discussion.	Records are needed to support compliance, as applicable.	TPTDP, PPP, TCP, and CTDP	
5.8.4 The laboratory shall have procedures and appropriate facilities for avoiding deterioration, loss or damage to the test item during storage, handling and preparation. Handling instructions provided with the item shall be followed. When items have to be stored or conditioned under specified environmental conditions, these conditions shall be maintained, monitored and recorded. Where a test item or a portion of an item is to be held secure, the laboratory shall have arrangements for storage and security that protect the condition and integrity of the secured items or portions concerned.	A documented procedure is required.		
5.10 Reporting the results			
5.10.1 General			

The results of each test, or series of tests carried out by the laboratory shall be reported accurately, clearly, unambiguously and objectively, and in accordance with any specific instructions in the test methods. The results shall be reported, usually in a test report and shall include all the information requested by the customer and necessary for the interpretation of the test results and all information required by the method used and in accordance with 00-OP-C0025. In the case of a written agreement with the customer, the results may be reported in a simplified way. Any information which is not reported to the customer shall be readily available in the laboratory which carried out the tests.	Please refer to DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements) for guidance on datasheet requirements. Please refer to DAP Client Guide 00-OP-C0038 (In-house Calibration) for guidance on in-house calibration records.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements); 00-OP-C0038 (In-house Calibration); 00-OP-C0401 (Authorized Signatory Responsibilities)
5.10.2 Test reports and calibration certificates			
Each test report shall include at least the following information:a) a title (e.g. “Test Report”);b) the name and address of the laboratory, and the location where the tests and/or calibrations were carried out, if different from the address of the laboratory;c) unique identification of the test report (such as the serial number), and on each page an identification in order to ensure that the page is recognized as a part of the test report, and a clear identification of the end of the test report;d) the name and address of the customer;e) identification of the method used;f) a description of, the condition of, and unambiguous identification of the item(s) tested;g) the date of receipt of the test item(s) where this is critical to the validity and application of the results, and the date(s) of performance of the test or calibration;i) the test results with, where appropriate, the units of measurement;j) the name(s), function(s) and signature(s) or equivalent identification of person(s) authorizing the test report;k) where relevant, a statement to the effect that the results relate only to the items	Please refer to DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements) for guidance on datasheet requirements. Please refer to DAP Client Guide 00-OP-C0038 (In-house Calibration) for guidance on in-house calibration records.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements); 00-OP-C0038 (In-house Calibration); 00-OP-C0401 (Authorized Signatory Responsibilities)

tested.			
5.10.3 Test reports			
5.10.3.1 In addition to the requirements listed in 5.10.2, test reports shall, where necessary for the interpretation of the test results, include the following: a) deviations from, additions to, or exclusions from the test method, and information on specific test conditions, such as environmental conditions; b) where relevant, a statement of compliance/non-compliance with requirements and/or specifications; d) where appropriate and needed, opinions and interpretations; e) additional information which may be required by specific methods, customers or groups of customers.	Please refer to DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements) for guidance on datasheet requirements. Please refer to DAP Client Guide 00-OP-C0038 (In-house Calibration) for guidance on in-house calibration records.	TPTDP, PPP, TCP, and CTDP	DAP Client Guide 00-OP-C0025 (Data Recording and Reporting Requirements); 00-OP-C0038 (In-house Calibration); 00-OP-C0401 (Authorized Signatory Responsibilities)
General Notes:			
Witness Test Data Program (WTDP)			
Client Test Data Program (CTDP)			
Total Certification Program (TCP)*			
Third Party Test Data Program (TPTDP)			
Preferred Partner Program (PPP)			
* TCP requires CTDP participation, but additional requirements of ISO/IEC 17025 apply, so TCP is called out separately from CTDP in this document. TCP additionally requires Quarterly Engineering			

Assessments to applicable product safety standards.