

Cable, Power, Electrical, Portable
General Specification For

This amendment forms a part of AS5756, dated 2004-06

1. Present Requirement: Non-government Publications (2.2)

None

Change Requirement: Non-government Publications (2.2, add end of paragraph)

NATIONAL CONFERENCE OF STANDARDS LABORATORIES (NCSL):

NCSL Z540-1 General Requirements for Calibration Laboratories and Measuring and Test Equipment

Application for copies should be addressed to National Conference of Standards Laboratories, 2995 Wilderness Place, Suite 107, Boulder, CO 80301-5404, www.ncsli.org

Rationale for Change: Add specification reference

2. Present Requirement: Quality Assurance Provisions (4.1, 4.1.1, 4.1.2, 4.2, 4.2.1, 4.3.1-4.3.5, Table III)

As shown in AS5756

Change Requirement: Quality Assurance Provisions (4.1, 4.1.1, 4.1.2, 4.2, 4.2.1, 4.3.1-4.3.5, Table III)

4.1 Responsibility for Inspection

Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all contract inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the supplier may use any qualifying activity approved facilities suitable for the performance of the inspection requirements specified herein. The purchaser and qualifying activity has the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for Compliance

All items must meet all technical requirements of the product specification. The inspection set forth in this specification shall become a part of the supplier's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the supplier of the responsibility of assuring that all products comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the purchaser to acceptance of defective material.

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4.1.2 Test Equipment and Inspection Facilities

Test and measuring equipment and inspection facilities of sufficient accuracy, quality, and quantity to permit performance of the required inspection shall be established and maintained by the supplier. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with NCSL Z540-1 or equivalent standards approved by the qualifying activity.

4.1.3 Classification of Inspections

The inspections conditions specified herein are classified as follows:

- a. Initial Qualification Inspection (see 4.3)
- b. Retention of Qualification Inspection (see 4.3.2)
- c. Quality Conformance Inspection (see 4.4)

4.2 Inspection Conditions

The conditions for the inspections are specified as applicable and all test data shall be compiled in accordance with qualifying activity authorization letter.

4.3 Initial Qualification Inspections (see 6.3)

Initial qualification inspection shall be in accordance with Tables III and IIIA. Sequential testing is not required except as specified. A request for initial qualification shall be made to the qualifying activity prior to initiating testing. Testing cannot begin until the supplier has received an authorization letter. The supplier is recommended to provide the qualifying activity a test plan based on the authorization letter to ensure the supplier and qualifying activity maintain communication and document changes as needed. The qualifying activity has the authority to modify the specification test requirements to resolve test failures/discrepancies and to wave testing to verify specific product manufacturing changes or qualifications by similarity. For each component tested, the supplier shall use the same materials, manufacturing procedures, and methods of inspection as would be used to provide the component to a purchaser. Any material, design or significant change in the supplier's process control inspections, quality conformance inspections, or manufacturing control drawings (editorial changes are acceptable) without the express approval of the qualifying activity may result in loss of qualification for that product. The qualifying activity shall perform the tests specified in Table III and supplier shall perform the tests specified in Table IIIA in a laboratory of their choice. All test laboratories requires qualifying activity approval.

TABLE III - QUALIFYING ACTIVITY TEST REQUIREMENTS

Examination or test	Requirement Paragraph	Examination or Test Paragraph
Conductor stranding <u>1/</u>	3.4.1	4.5.1
Dimensions	3.1	4.5.1
Weight	3.1	4.5.1
Marking	3.6	4.5.1
Length of lay <u>2/</u>	3.4.1.3	4.5.1
Color coding <u>2/</u>	3.4.6	4.5.1
Insulation thickness	3.4.3	4.5.10
Jacket thickness <u>2/</u>	3.4.5	4.5.11
Spark test	3.5.1	4.5.2.1
High potential	3.5.2	4.5.22
Insulation resistance	3.5.8	4.5.8
Cold bend	3.5.9.1	4.5.9.1
Cold impact	3.5.9.2	4.5.9.2
Conductor resistance <u>1/</u>	3.5.11	4.5.13

1/ Not required for multi-conductor cable

2/ Not required for single conductor cable

TABLE IIIA - SUPPLIER TEST REQUIREMENTS

Examination or test	Requirement Paragraph	Examination or Test Paragraph
High temperature test	3.5.3	4.5.3
Impact shock	3.5.4	4.5.4
Abrasion resistance	3.5.5	4.5.5
Fluid immersion	3.5.6	4.5.6
Ozone resistance ^{1/}	3.5.10	4.5.12
Bending endurance	3.5.12	4.5.14

^{1/} When required by the detail specification

4.3.1 Initial Qualification Test Report

The supplier shall furnish the qualifying activity one certified test report containing the following information:

- The quantitative results for tests specified in Table IIIA and the authorization letter. Upon request from the supplier, the qualifying activity will provide certified Table III test results for the test report.
- A tabulated comparison of the dimensions specified herein and each manufacturing control drawing for components qualified by similarity.

4.3.2 Retention of Qualification Inspection

At 36-month intervals, the qualifying activity shall authorize the supplier to begin Retention of Qualification. The qualifying activity may established an alternate due date to accommodate testing schedules. The supplier shall provide a retention of qualification test report (see 4.3.3). The qualifying activity shall perform the Table III tests on samples, which have passed the quality conformance inspection (see 4.4). The qualifying activity will provide certified data to the supplier upon request. Failure to submit to Retention of Qualification shall result in loss of qualification for that product.

4.3.3 Retention of Qualification Test Report

The supplier shall furnish the qualifying activity one certified test report containing the following information:

- A summary of the results of quality conformance tests, including corrective actions performed during the retention period indicating as a minimum, the number of lots that passed and the number that failed.
- A tabulated comparison of the dimensions specified herein and each manufacturing control drawing for components qualified by similarity.

4.3.4 Initial and retention qualification similarity sample lot

The test sample lot size for initial and retention of qualification tests shall be a 200 minimum foot specimen of each type or size indicated below:

- Single conductor cable: Qualification of size 14 shall qualify sizes 18, 16, 14, 12 and 10. Qualification of size 6 shall qualify sizes 8, 6, 4 and 2. Qualification of size 1/0 shall qualify sizes 1, 1/0, 2/0, 3/0, 4/0 and 250.
- Multi-conductor cable: Qualification of a 3-conductor cable shall cover all multi-conductor cables in the sizes specified in (a. above). Unless otherwise specified by the qualifying activity, a separate multi-conductor cable for each size of construction shall be used to qualify cables containing wire of different sizes.

Additional qualification by similarity may be authorized by the qualifying activity when justified by the supplier. The supplier and qualifying activity shall perform all tests on samples from the same lots.

4.3.5 Qualification Non-compliance

Failure to pass all qualification requirements shall result in disapproval of the components that failed and the family of components represented by the failed components.

4.3.6 Forwarding of qualification test report and specimens

Unless otherwise specified by the qualifying activity, fifty feet of untested cable for each size range and type to be qualified, and the manufacturer's certified test report shall be forwarded to the qualifying activity (see 6.4). The specimens shall be stamped by the Government inspector as representative sample lot of the manufacturer's normal production capability. Specimens submitted without the stamp will not be accepted. Tags shall be attached to specimens with the following information:

- a. Manufacturer's name or CAGE number
- b. Specification part number for each construction
- c. Description of insulating and jacketing materials
- d. Thickness of insulation and jacket
- e. Description of fillers, separator, etc. (if used)

Rationale for Change: Needed to define the qualifying activity requirements

Amendment 1 07-2004

1. Present Requirement: 3.4.1 Conductors: Table I, Page 6

Not required

Change Requirement: 3.4.1 Conductors: Table I, Page 6

Add to the column 3 header, "Lay-up of strands", the footnote symbol "2/".

Add at the bottom of Table I, "2/ Other stranding constructions may be used provided they contain the minimum number of strands, and are of equivalent flexibility".

2. Present Requirement: 3.6 Identification of product: Page 10, First Sentence

All cables manufactured in accordance with this specification shall be identified by surface printing.

Change Requirement: 3.6 Identification of product: Page 10, First Sentence

All cables shall be identified by surface printing on the outside of the jacket or combined insulation and jacket in addition to any marker tape which may be used".

3. Present Requirement: 3.6 Identification of product: Page 10, second paragraph

"Military specification part number of the cable" (see 3.1)

Change Requirement: 3.6 Identification of product: Page 10, second paragraph

"Military specification part number of the cable" (see 3.1) except the dash number is not required to be printed on the surface of the cable".