

### § 1204.3

#### § 1204.3 Requirements.

All omnidirectional CB base station antennas are required to comply with the following requirements.

(a) *Field joints.* Parts or accessories intended to protect a field joint so that it will meet any other requirement of this standard, and that must be put into place by the person assembling the antenna system, shall be integral with, or not readily removable from, at least one of the antenna sections or parts involved in the joint or shall be necessary in order to complete the joint.

(b) *Feed cable.* When compliance with the requirements of this standard depends on the insulating or other properties of the feed cable, at least 50 feet of the cable shall be supplied by the manufacturer with the antenna system.

(c) *Electrical protection.* Antenna systems shall be manufactured so that if all points within the protection zone of an antenna system were tested by the Insulating Material Effectiveness Test of §1204.4(d) of this subpart, and the Antenna-Mast System Test of §1204.4(e) of this subpart, the current measured by the current monitoring device connected to the mast would be no greater than 5.0 milliamperes rms and no electrical breakdown of the antenna system's insulating material would occur.

#### § 1204.4 Electric shock protection tests.

(a) *Safety precautions.* For tests involving high voltage, the following recommended minimum safety precautions should be followed:

(1) At least one test operator and one test observer (preferably one with cardiopulmonary resuscitation (CPR) training) should be present at every test.

(2) The test area (outdoors or indoors) should secure against accidental intrusion by other persons during tests.

(3) Test areas located indoors should be ventilated to avoid buildup of potentially hazardous concentrations of gaseous byproducts which may result from the tests.

(4) Fire extinguishers should be easily accessible in case materials on the test specimen ignite.

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(5) "High Voltage Test" warning devices should be activated before start of a test.

(6) Emergency phone numbers should be posted.

(b) *Test conditions*—(1) *Specimens.* All specimens shall be tested as supplied by the manufacturer, following assembly in accordance with the manufacturer's instructions except as provided in paragraph (e)(2) of this section.

(2) *Temperature.* Ambient temperature shall be in the range from 32 °F (0 °C) to 104 °F (40 °C)

(3) *Relative humidity.* Ambient relative humidity shall be in the range of from 10 to 90 percent.

(4) *Voltage.* Voltage, phase to ground, of the power line or test probe shall be 14.5 kilovolts rms, 60 hertz.

(5) *Conditioning.* Prior to testing, all specimens shall be exposed for at least 4 hours to the ambient test area environment.

(c) *Test equipment.* (1) High voltage source capable of delivering at least 15 mA rms at 14.5 kV rms, 60 Hz. The source should have an automatic internal cut-off actuated by a preset current level.

(2) Instrumentation to measure the rms voltage applied to the antenna system.

(3) Current monitoring device to indicate hazardous components of the total rms current flowing to ground through the mast. One configuration of the circuitry for the current monitoring device (shown in Figure 1) consists of three parallel branches as follows. One branch consists of a resistor in series with a true-rms milliammeter with a maximum error of 5% of the reading in the frequency range of 50Hz to 10MHz (the total of the resistor and the internal resistance of the milliammeter is to be 1000 ohms). A parallel branch consists of a 1000 ohm resistor in series with a 0.08 microfarad capacitor. Another parallel branch should consist of a spark gap rated at 50 to 100 volts as a meter protection device. A different current monitoring device may be used if the measured value of the rms current corresponds to that indicated by the configuration described above.

(4) For the Insulating Material Effectiveness Test: