

Dielectric strength

CAD, CAO, CAX and CAY series antennas manufactured by Oy CompleTech Ltd are based on hermetically sealed IP67 grade water and dust proof construction where all electromechanics is molded inside of closed cell PU-foam and covered by UV-protected fiberglass or ABS plastics. The radiator (1) is enclosed within a protective radome (2). The antenna feed point (3) is DC shorted providing basic antenna circuit overvoltage protection. Integrated RF choke (4) prevents common mode currents and unwanted feedline radiation. Antenna mounting hardware (5) is made of corrosion free Al alloy and acid proof stainless steel.

Full fiberglass versions of these antennas have a round fiberglass boom (6) of 32.2/29 mm and a radome of 12/10 mm in diameter. The wall thickness is 1.6 mm for the boom and 1 mm for the radome accordingly.

According to manufacturer the material used for above mentioned composite profiles is Polyester resin (thermoplastic) with 55-60% of glassfiber in volume and the closest corresponding index value of 20 kV/mm for dielectric strength for similar material with 40% of glassfiber in volume shall be applicable.

The space between the radiator / pig tail (7) / RF choke and the profile is filled with two-component Polyurethane foam having an index value of 25.4 kV/mm for dielectric strength.

Due to these electromechanical facts the breakdown voltage between antenna dielectric boom/radome and mounting hardware/pig tail shall exceed 10 kV with sufficient safety margin.

