barrel temperature recorded during the
cooling test.

(Secs. 313(a), 601, 603, 604, and 605 of the Fed-
eral Aviation Act of 1958 (49 U.S.C. 1354(a),
1421, 1423, 1424, and 1425); and sec. 6(c) of the
Dept. of Transportation Act (49 U.S.C.
1655(c)))

§ 29.1045 Climb cooling test proce-
dures.
(a) Climb cooling tests must be con-
ducted under this section for—
(1) Category A rotorcraft; and
(2) Multiengine category B rotorcraft
for which certification is requested
under the category A powerplant in-
stallation requirements, and under the
requirements of §29.861(a) at the steady
rate of climb or descent established
under §29.67(b).
(b) The climb or descent cooling tests
must be conducted with the engine in-
operative that produces the most ad-
verse cooling conditions for the re-
mainning engines and powerplant com-
ponents.
(c) Each operating engine must—
(1) For helicopters for which the use
of 30-minute OEI power is requested, be
at 30-minute OEI power for 30 minutes,
and then at maximum continuous
power (or at full throttle when above
the critical altitude);
(2) For helicopters for which the use
of continuous OEI power is requested,
be at continuous OEI power (or at full
throttle when above the critical alti-
tude); and
(3) For other rotorcraft, be at max-
imum continuous power (or at full
throttle when above the critical alti-
tude).
(d) After temperatures have sta-
bilized in flight, the climb must be—
(1) Begun from an altitude not great-
er than the lower of—
(i) 1,000 feet below the engine critical
altitude; and
(ii) 1,000 feet below the maximum al-
titude at which the rate of climb is 150
f.p.m.; and
(2) Continued for at least five min-
utes after the occurrence of the highest
temperature recorded, or until the
rotorcraft reaches the maximum alti-
tude for which certification is re-
quested.
(e) For category B rotorcraft without
a positive rate of climb, the descent
must begin at the all-engine-critical
altitude and end at the higher of—
(1) The maximum altitude at which
level flight can be maintained with one
engine operative; and
(2) Sea level.
(f) The climb or descent must be con-
ducted at an airspeed representing a
normal operational practice for the
configuration being tested. However, if
the cooling provisions are sensitive to
rotorcraft speed, the most critical air-
speed must be used, but need not ex-
ceed the speeds established under
§29.67(a)(2) or §29.67(b). The climb cool-
ing test may be conducted in conjunc-
tion with the takeoff cooling test of
§29.1047.

§ 29.1047 Takeoff cooling test proce-
dures.
(a) Category A. For each category A
rotorcraft, cooling must be shown dur-
ing takeoff and subsequent climb as
follows:
(1) Each temperature must be sta-
bilized while hovering in ground effect
with—
(i) The power necessary for hovering;
(ii) The appropriate cowl flap and
shutter settings; and
(iii) The maximum weight.
(2) After the temperatures have sta-
bilized, a climb must be started at the
lowest practicable altitude and must be
conducted with one engine inoperative.
(3) The operating engines must be at
the greatest power for which approval
is sought (or at full throttle when
above the critical altitude) for the
same period as this power is used in de-
termining the takeoff climbout path
under §29.59.
(4) At the end of the time interval
prescribed in paragraph (b)(3) of this
section, the power must be changed to
that used in meeting §29.67(a)(2) and
the climb must be continued for—
(i) Thirty minutes, if 30-minute OEI
power is used; or