



DSA Structural Amendments under review are highlighted in GRAY

Template 19-40

2001 CBC - Chapter 19A
CONCRETE

Section - 1918A - PRESTRESSED CONCRETE

Subsection(s) - 1918A.19.5

1 **1918A.19 Posttensioning Anchorages and Couplers.**

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4 1918A.19.5 Posttensioned anchorages and couplers for un-
5 bonded tendons shall be prequalified for use in prestressed con-
6 crete. Data shall be submitted by the posttensioning materials
7 fabricator from an approval independent testing agency to show
8 compliance with the following dynamic test requirements:

9
10 A dynamic test shall be performed on a representative specimen
11 and the tendon shall withstand, without failure, 500,000 cycles
12 from 60 percent to 66 percent of its minimum specified ultimate
13 strength and 50 cycles from 40 percent to 80 percent of its mini-
14 um specified ultimate strength. The period of each cycle involves
15 the change from the lower stress level to the upper stress level and
16 back to the lower. The specimen used for the second dynamic test
17 need not be the same used for the first dynamic test. Systems utiliz-
18 ing multiple strands, wires or bars may be tested utilizing a test
19 tendon of smaller capacity than the full-size tendon. The test ten-
20 dons shall duplicate the behavior of the full-size tendon and gener-
21 ally shall not have less than 10 percent of the capacity of the
22 full-size tendon.

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24 The above test data must be on file at the enforcement agency
25 for posttensioning systems to be used. General approval will be
26 based on satisfactory performance. Tests shall be required for pre-
27 stressing steel and anchorages.

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29 The average bearing stress, P/A_b , on the concrete created by the
30 anchorage plates shall not exceed the following:
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At service load

$$f_{cp} = 0.6f'_c \sqrt{A'_b/A_b}$$

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but not greater than f'_c

At transfer load

$$f_{cp} = 0.8f'_{ci} \sqrt{A'_b/A_b} - 0.2$$

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but not greater than $1.25 f'_c$ where:

f_{cp} = permissible compressive concrete stress.

f'_c = compressive strength of concrete.

f'_{ci} = compressive strength of concrete at time of initial prestress.

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A'_b = maximum area of the portion of the concrete anchorage surface that is geometrically similar to and concentric with the area of the anchorage.

A_b = bearing area of the anchorage.

P = prestress force in tendon.