

Specification for
CONCRETE CONSTRUCTION

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AMENDMENT No. 2

March 1993

EXPLANATORY NOTE – Amendment No. 2 is issued to maintain consistency with NZS 3101 in which changes have been made to reinforcing steel requirements resulting from changes of steel grades in the 1989 revision of NZS 3402. Provision is also made for the use of Portland-limestone filler cement to NZS 3125:1991.

APPROVAL

Amendment No. 2 was approved on 8 March 1993 by the Standards Council to be an amendment to NZS 3109:1987 pursuant to the provisions of section 10 of the Standards Act 1988.

RELATED DOCUMENTS

Delete "NZS 3104:1983" and substitute "NZS 3104:1991"

Delete "NZS 3122:1974 *Portland cement (ordinary, rapid hardening and modified)*" and substitute:

"NZS 3122:1990 *Portland cement (ordinary, rapid hardening, moderate heat and sulphate resisting)*"

Add "NZS 3125:1991 *Portland-limestone filler cement*".

Delete "NZS 3402P:1973 *Hot rolled steel bars for concrete reinforcement*" and substitute:

"NZS 3402:1989 *Steel bars for the reinforcement of concrete.*"

Add "ASTM A497-86 *Welded deformed steel wire fabric for concrete reinforcement.*"

(Amendment No. 2, March 1993)

2.1

Delete the defined term "ANCHORAGE PRESTRESSING" and substitute "ANCHORAGE (when referring to prestressing)."

Add the following definition:

"LOWER CHARACTERISTIC YIELD STRENGTH (of reinforcing steel). The value of yield strength below which not more than 5 % of the production tests in each size falls, denoted by the symbol f_y . (Refer NZS 3402)."

(Amendment No. 2, March 1993)

3.1.2

Delete "NZS 3402P" and substitute "NZS 3402."

(Amendment No. 2, March 1993)

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3.1.3

In line 1, after "Welded" add "smooth".

Add a new clause:

"3.1.4 Welded deformed wire fabric shall conform to NZS 3422 or ASTM A497."

(Amendment No. 2, March 1993)

Table 1

Delete the table and substitute the following:

"Table 1 MINIMUM FORMER PIN DIAMETERS 'D' FOR BENDING REINFORCING BARS (mm)

(Refer also to figure 1)

Bar size	Main steel $f_y = 300$ or 430 MPa	Stirrups and ties $f_y = 300$ or 430 MPa	
		Round bars	Deformed bars
mm			
6	30	12	24
10	50	20	40
12	60	24	48
16	80	32	64
20	100	40	80
24	144	72	144
28	168	84	168
32	192	96	192
40	240	120	240

Delete NOTE (3) to Table 1.

(Amendment No. 2, March 1993)

Table 2

Change the column headings to the following:

Bar designation	Lower characteristic yield strength	
	$f_y = 300$ MPa	$f_y = 430$ MPa

(Amendment No. 2, March 1993)

3.6.3

Delete items (b) and (c) and **substitute**:

"(b) Welds shall not be made closer than 10 bar diameters from any bend.

(c) Bars manufactured to NZS 3402 may be welded providing the welding meets the requirements of NZS 4702. Appropriate account shall be taken of the process of manufacture.

(d) Bars which do not conform to NZS 3402 shall not be welded except with the approval of the engineer supervisor. He shall be satisfied prior to approval that the welding technique and control (preheating, electrode type, storage and other factors) have been demonstrated by tests to produce welds that have the required mechanical and metallurgical properties. Such established technique and control shall be maintained for the duration of the welding operation."

(Amendment No. 2, March 1993)

3.8.1

In item (b), line 1, **delete** "or" and **substitute** "on".

(Amendment No. 2, March 1993)

6.3.1

Delete the clause and note and **substitute** the following:

"6.3.1 Cement used shall comply with NZS 3122 (Portland cement), or NZS 3123 (Portland-pozzolan cement), or NZS 3125 (Portland-limestone filler cement). The use of any cement other than ordinary portland cement (NZS 3122, Type O) shall be subject to the approval of the engineer supervisor.

NOTE –

(1) Designers and specifiers are advised that rapid-hardening portland cement (NZS 3122, type RH) is not always readily available and that the supply of moderate-heat portland cement (NZS 3122, type MH), sulphate-resisting portland cement (NZS 3122, type SR), and/or portland-pozzolan cement (NZS 3123, type PP) normally requires prior arrangements to have been made with the cement manufacturer.

(2) Where a minimum cement content is specified, the granting of any approval for the use of a portland-limestone filler cement should clearly identify whether the same figure still applies; in the case of marine structures, and for any other circumstance where the durability of contained reinforcement is seen to be at special risk from the prevalence of a high-chloride environment, it is recommended that the contribution to the "cement content" deriving from the presence of the limestone filler component be discounted.

(Amendment No. 2, March 1993)