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Hunter Water Corporation A.B.N. 46 228 513 446
Standard Technical Specification for:

**CONCRETE CONSTRUCTION
(MINOR CIVIL WORKS)**

CONTENTS

1. GENERAL	1
1.1 Scope.....	1
1.2 Interpretation.....	1
2. MATERIALS	1
2.1 Concrete	1
2.2 Cement	1
3. APPLICATION OF STANDARDS AND SPECIFICATIONS	1
4. SPECIFIC REQUIREMENTS	1
5. SURFACE FINISH	2

AMENDMENTS FROM THE PREVIOUS EDITION - JANUARY 1997

Clause	Amendment
All	General formatting and referencing changes to improve clarity but no change to technical requirements
2.1	Third party certified quality system required in lieu of the Hunter Water Concrete Quality Assurance Scheme
2.2	Reference to NSW Government Cement Quality Assurance Scheme dropped.

1. GENERAL

1.1 Scope

This Standard Technical Specification details the technical requirements for the construction of minor concrete civil engineering works.

1.2 Interpretation

Headings are for the convenience of the reader and shall not be used in the interpretation of this Standard Technical Specification.

Unless the context requires otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by the Principal or Purchaser.

2. MATERIALS

2.1 Concrete

Supply concrete manufactured in compliance with Section SP45 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices. WS-Spec is available from Standards Australia.

Supply concrete from plant(s) with third party certified Quality Systems for the manufacture and supply of concrete.

2.2 Cement

Use only one of the following cements:

- Fly Ash Blended Cement conforming to the requirements of Type SR to AS 3972 and containing 20% fly ash to AS 3582 Part 1, "fine grade" only, or
- Blended Cement, other than fly ash, conforming to the requirements of Type SR to AS 3972.

3. APPLICATION OF STANDARDS AND SPECIFICATIONS

Construct concrete civil engineering works to the requirements of Section TR10 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices. WS-Spec is available from Standards Australia.

4. SPECIFIC REQUIREMENTS

		CLAUSE (TR10 of WS-Spec)	CLASS AND GRADE			
			S40	S32	S25	N20
OTHER	Curing Compound Accepted Yes/No	6.9	No	No	No	No
	Minimum Period Between Adjacent Pours (Days)	6.1	2	2	2	2
SURFACE FINISH - FORMED	Surfaces exposed to sewage, effluent, or sewage gases.	6.7	F3	F3	F3	
	Surfaces of water retaining structures exposed to water.		F3	F3	F3	
	Internal surfaces and all exposed surfaces, except trafficable surfaces.		F2	F2	F2	F2
	Internal trafficable surfaces.		F2	F2	F2	F2

	External trafficable surfaces.		F2	F2	F2	F2
	Concealed surfaces.		F1	F1	F1	F1
SURFACE FINISH - UNFORMED	Surfaces exposed to sewage, effluent, or sewage gases.	6.8	U3	U3	U3	
	Surfaces of water retaining structures exposed to water.		U3	U3	U3	
	Internal surfaces and all exposed surfaces, except trafficable surfaces.		U2	U2	U2	U2
	Internal trafficable surfaces.		U5*	U5*	U5*	U5*
	External trafficable surfaces.		U4*	U4*	U4*	U4*
	Concealed surfaces		U1	U1	U1	U1

See clause "Surface Finish" for Class U4 and Class U5.

		CLAUSE OF SP45	CLASS AND GRADE			
			S40	S32	S25	N20
MATERIALS AND MIX	Cement Type	3.1	*	*	*	SR
	Minimum Cement (kg/m ³)		390	330	280	
	Maximum Cement (kg/m ³)		410	370	340	
	W/C Ratio Maximum		0.45	0.50	0.55	
	Laboratory Trial Mix Required	4.2	Yes	Yes	Yes	No
STRENGTH GRADE	F'c at 28 days (Mpa)	2.1	40	32	25	20
OTHER	Nominal Slump (mm)	2.1	80	80	80	80
	Drying Shrinkage (strain x 10 ⁻⁶) at 3 weeks or {8 weeks}	2.1	500 {3}	500 {3}	500 {3}	
	Air Content (%)	2.1				
	Pumped Concrete Accepted		Yes	Yes	Yes	Yes

Note: * Cement Type is to be selected from Clause "Cement"

5. SURFACE FINISH

Class U4 - (Broom finish)

Wood float finish Class U2 to be lightly broomed at right angles to the alignment of the pavement.

Acceptance criteria

- Abrupt irregularities less than 5 mm
- Gradual irregularities less than 5 mm

Class U5 - (Sponge Float - Trafficable)

Steel trowelled finish Class U3 to be sponge floated.

Acceptance criteria

- Abrupt irregularities less than 2 mm
- Gradual irregularities less than 5 mm

[END OF STS404]