



## **SPECIFICATION**

**REGPRO222021**

**for**

**Supply and Delivery Ready Mix Concrete**

**SPECIFICATION**  
**SUPPLY AND DELIVER READY MIX CONCRETE**  
**REGPRO222021**

**CONTRACTORS TO NOTE.**

All vehicles, plant and equipment over 5t GVM which enter the Principal's (Council's) work site/s are to meet RMS requirements with regards to having at least one operational 'AMBER FLASHING LIGHT' whilst travelling on or operating near a work site. The flashing light is to be mounted as near as possible to the top of the plant and be clearly visible in normal daylight at a distance of 200 metres in all directions.

No deliveries shall be permitted without prior arrangements being made with the Principal's Job Site Staff and under no circumstances shall deliveries be made without a Principal's representative being on site to instruct, receive and document condition of supply.

**1. SCOPE**

This Specification covers the requirements for the quality, materials, mixing, transporting, inspection, testing and acceptance for the supply and/or supply and delivery of ready-mixed concrete to work sites within the participating council's various supply zones.

The following councils are participating;

- **Liverpool Plains Shire**
- **Walcha**
- **Gunnedah Shire**

The estimated combined spend of the participating councils is approximately \$150K p.a.

\*\* Regional Procurement gives no guarantees or assurances that this figure will be achieved or exceeded during this contract.

**2. MATERIALS AND WORKMANSHIP**

Unless varied by this Specification, materials and workmanship shall be in accordance with all relevant Australian Standards including: -

AS 1012.1:2014 Methods of testing concrete. Sampling of Concrete

AS 1141.1-1999 Methods for sampling and testing aggregates. List of methods

AS 1379-2007 (R2017) Specification and Supply of Concrete.

AS 1478.1-2000 (R2018) Chemical admixtures for concrete, mortar and grout. Admixtures for Concrete

AS 2758.0-2009 Aggregates and rock for engineering purposes Definitions and classification

AS 2876-2000 Concrete kerb and channels (gutters) - manually or machine placed.

AS 3582.1-1998 Supplementary Cementitious materials for use with Portland and blended cement  
(Fly Ash)

AS 3582.2-2001 Supplementary Cementitious materials for use with Portland and blended cement  
(Slag – Ground granulated iron blast furnace)

AS 3600-2009 Concrete Structures

AS 3972-2010 Portland and blended cements.

**3. READY MIX CONCRETE**

Concrete shall be composed of water, cement, fine aggregate and coarse aggregate, and of any admixtures that may be specified or approved.

The Service Provider shall be wholly responsible for producing concrete that will have the properties specified, and be within the limits set out in Appendix "A".

All materials shall be measured by mass, except that water may be measured by volume, by an approved adjustable water measuring and discharging device.

All concrete shall be to the respective grades, maximum aggregate sizes and slump, together with any special requirements as detailed in Appendix "A".

#### **4. DESIGN AND CONTROL OF CONCRETE MIX**

Details of mix design shall be submitted with the tender, together with all admixture data sheets (See Clause 7.4) and coarse aggregate N.A.T.A. registered laboratory test results (See Clause 7.5).

All mix designs shall satisfy the minimum requirements set out in Appendix "A".

To secure the optimum strength and durability of all specified grades of concrete, within the limits of this Specification, the quantity of water to be used in mixing the concrete shall be the minimum which will give satisfactory workability and consistency having regard to the mix, and the conditions and manner of placing the concrete in the work.

#### **5. PRODUCTION ASSESSMENT & PROJECT ASSESSMENT**

##### **5.1 Production Assessment**

The Service Provider must have and maintain a system of production assessment that complies with AS1379 (R2017) Specification and Supply of Concrete, for the plant or grouped plants that supply concrete to the Principal during the contract period.

The cost of Production Assessment shall be borne by the Service Provider.

The Principal will require Production Assessment for various projects during the contract period.

The Service Provider shall register the respective Principal's representative (as shown in Appendix B) as "the registered nominee" for specified projects, in accordance with Section 6 of AS1379, and send copies of reports of Production Assessment information within 15 working days of the end of the reporting period for the nominated projects.

The Service Provider shall notify the respective Principal's representative on the nominated Facsimile Number (as shown in the respective tender price schedules) within two working days of the information becoming available to it, of potentially low strength concrete produced by their plant.

The Service Provider shall, at its expense, where requested by the respective Principal's representative, provide test results in accordance with Section 6.4.2 of AS1379 to the Principal in the manner, frequency and place nominated by the Principal's representative.

##### **5.2 Project Assessment**

The respective Principal may specify Project Assessment for ready mixed concrete supplied to designated works during the contract period. The respective Principal's representative shall notify the Service Provider of projects requiring Project Assessment. Both parties shall discuss this requirement, and if additional charges apply for the Project Assessment, agree on these charges on each occasion.

##### **5.3 Additional Testing**

The respective Principal may engage a third party to conduct testing for a specific project. The Service Provider shall afford the respective Principal and its agent all reasonable facilities, without charge, for securing samples to determine whether the concrete is being furnished in accordance with this Specification. All tests and inspections will be conducted so as not to interfere unnecessarily with the manufacture and delivery of concrete. The cost of additional testing shall be borne by the respective Principal.

##### **5.4 Testing of Cylinder Specimens**

Provided that the respective Principal's Representative, Service Provider and Testing Laboratory reach prior agreement, it shall be permissible for the testing procedure to utilise rubber cap(s) in lieu of sulphur capping for nominal compressive strengths in the range of 10MPa to 80MPa.

## 6. ACCEPTANCE OF CONCRETE

The Service Provider must supply plastic concrete in accordance with the requirements of this Specification. The concrete shall be accepted providing it meets the requirements of this Specification and the stated Australian Standards.

### 6.1 Determination of 28 Day Compressive Strength

The 28-day compressive strength of the concrete used shall be determined from test cylinder specimens complying with AS1379 (R2017) Section 5.3.

Should the averaged 28-day strength of the concrete as indicated by test specimens fail to reach the specified 28-day strength, the Service Provider may elect, if approved by the respective Principal's Representative, to submit specimens cut from the completed work for testing.

### 6.2 Testing of Hardened Concrete

In accordance with Clause 6.1 of this Specification, the respective Principal may direct the Service provider to test the hardened concrete. The cost of cutting specimens from the work and of restoring the work from which the specimens have been cut shall be borne by the Service Provider.

The specimens shall be taken by means of a core drill, in accordance with AS1012, Part 14.

Assessment for compliance of hardened concrete shall be in accordance with AS3600.

Should any test cylinder, or specimen cut from the finished work be tested at any age (i.e. number of days after placing) greater than 28 days, its strength shall be adjusted to the equivalent 28 days strength by dividing the actual strength by the factor given in Table 1: -

**TABLE 1**

FACTOR		
Age of test specimen in days at time of testing	Cement Type General Purpose	Cement Type General Purpose Blended
28	1.00	1.00
35	1.02	1.03
42	1.04	1.06
49	1.06	1.09
56	1.08	1.12
70	1.10	1.15
84	1.12	1.18
112	1.14	1.21
140	1.16	1.24
168	1.18	1.27
196	1.20	1.30
224	1.22	1.33
308	1.24	1.36
365 and greater	1.25	1.38

\* For intermediate ages the factor shall be determined on a pro-rata basis.

**6.3 Non- Compliance**

Concrete supplied to the respective Principal's works shall be deemed not to comply if either: -

- (a) The Production Assessment mean grade strength representing that concrete is less than the mean grade strength in accordance with AS1379 Section 6.3.

OR

- (b) If the Project Assessment average strength of any set of samples is less than the appropriate required minimum average strength defined in AS1379 Section 6.5. All concrete supplied to the respective Principal's works during the "appropriate production interval" (defined in Section 5.1 of this Specification) represented by this set of samples shall be deemed not to comply.

Notwithstanding the above, at the absolute discretion of the respective Principal's Representative, for any deficiency of up to 20%, a deduction may be made with the schedule rate in lieu of deeming the concrete not to comply. Any deduction will be made with the following: -

- (a) A deficiency shall be defined as the departure in the value of the mean grade or average strength of a set of sample strengths below the appropriate required minimum strength.
- (b) Any deduction to the schedule rate of payment shall apply to all concrete supplied to the respective Principal's works represented by the set of sample strengths possessing the deficiency.
- (c) Any deduction will be in accordance with Table 2.

**TABLE 2**

DEFICIENCY	DEDUCTION
Up to 10%	2% of the schedule rate for each 1% (or fraction thereof) deficiency
Over 10%	20% of the schedule rate for the first 10% deficiency plus 3% of the schedule rate for each additional 1% taken to the nearest 1%.

Any concrete that is deemed not to comply shall be rejected.

Concrete not manufactured and supplied in accordance with this Specification may be rejected. Concrete that does not comply with the slump specified may be rejected.

Any concrete which is rejected, either for non-compliance with this Specification, the specified slump, or for a deficiency in the attained 28-day compressive strength, shall be removed from the site, at no cost to the respective Principal, within any reasonable time nominated by the respective Principal's Representative.

The Service Provider shall, at its expense, replace all concrete rejected by the respective Principal. Replacement of rejected concrete shall include the replacement of any formwork and reinforcing steel affected by the non-compliance and all labour costs for the dismantling or demolition and reconstruction of rejected concrete.

The cost of saw cutting, removal, transportation and disposal of rejected concrete shall be borne by the Service Provider. The Service Provider shall also be responsible at its expense for the repair /reinstatement of any structure or works which may be affected by the removal of non-complying concrete.

**7. MATERIALS****7.1 Cement**

Cement shall be Portland cement: -

- i) Type GP - General purpose Portland cement or
- ii) Type GB - General purpose blended cement  
in accordance with Clause 4.1.1 of AS3972 "Portland and Blended Cements" or
- iii) Type SL Shrinkage Limited Special Purpose Cement  
in accordance with Clause 4.1.2 of AS3972 "Portland and Blended Cements".

The Service Provider shall furnish documentary or other acceptable evidence of the quality of the Cement if required by the respective Principal's Representative.

## 7.2 Supplementary Cementitious Materials

Fly ash and/or granulated iron blast-furnace slag shall comply with AS3582.

The Service Provider shall furnish documentary or other acceptable evidence of the quality of the supplementary Cementitious materials if required by the respective Principal's Representative.

## 7.3 Water

Water shall be free from quantities of deleterious materials that may in any part diminish the integrity of the concrete or its constituents and be neither salty nor brackish. Water shall be measured accurately and water carried by the aggregate, except that held by absorption, shall be considered as part of the requisite mixing water. Water shall also comply with the requirements of Clause 7.10 limiting the total content of deleterious materials in the concrete.

Water is not to be added to premixed concrete once it has left the batching plant unless specifically instructed to do so or approved by The Superintendent.

## 7.4 Admixtures

Admixtures, or combinations of admixtures, if used, must be in accordance with this specification. The use of added calcium chloride, admixtures containing chlorides and having a detrimental air entraining effect are not permitted.

Chemical admixtures and their use shall comply with AS1478 - Chemical Admixtures for Concrete. In addition, for any admixture not already precluded by this specification, shrinkage and dosage sensitivity characteristics will be considered if relevant.

Admixtures shall not be used for reducing the cement content of the mix approved by the respective Principal.

## 7.5 Aggregates - General

Certification from NATA registered laboratory for all aggregates used shall be submitted with the tender, showing compliance with this Specification, including Appendix "A".

Additionally, if directed, aggregate samples for testing shall be supplied, placed in clean containers and despatched to the nominated location (as indicated in the tender schedules), at the Service Provider's expense. The containers shall clearly display the Service Provider's name, material description and be marked "SAMPLES" to the attention of "City Works Manager". Such aggregates shall not be used until the approval of the respective Principal's Representative has been obtained and then only so long as the quality of the materials remains the same as that of the test samples.

Sampling procedures and minimum quantities of aggregates supplied for grading tests shall be set out as in AS1141.

If so directed, additional quantities of aggregates shall be forwarded for the preparation of trial mixes.

## 7.6 Fine Aggregate

Fine aggregate shall consist of clean, hard, tough, durable, uncoated grains, uniform in quality. It shall comply with the requirements of AS2758.1 - Concrete Aggregates, in respect of bulk specific gravity, unit mass, water absorption, soundness, deleterious materials and grading.

Blast furnace slag is not permitted as fine aggregate except for Sustainable Concrete Mixes

## 7.7 Coarse Aggregate

Coarse aggregate shall consist of clean, hard, durable, crushed rock or river gravel. Blast furnace slag is not permitted as coarse aggregate except for Sustainable Concrete Mixes. It shall comply with the requirements of AS2758.1 - Concrete Aggregates, in respect of bulk specific gravity, unit mass, water absorption, durability, stability, soundness, materials finer than 75 microns, deleterious materials, sulphur content, physical properties and particle shape and grading.

If required, aggregates shall be washed to satisfy these requirements.

Unless stated otherwise, the maximum nominal size of aggregate shall not exceed 20mm.

## 7.8 Fibremesh

Where Fibremesh is to be added it shall be the 19mm Fibrillated Fibres at a rate of 0.9 kg/m<sup>3</sup> or at the rate nominated by the respective Principal.

## 7.9 Fibrecrete concrete

The nominated fibrecrete will be F5.5 / 62.5 (5.5 MPa Flex strength at 28 days with Fibre steel content of 62.5 kg/m<sup>3</sup>) with 20mm aggregate and 80 or 40mm slump. The Principal will call separate prices for special projects where the quantity or strength characteristics required are beyond the scope of this tender.

## 7.10 Limitations on Chemical Content of Concrete

- i) **Chloride content.** The acid-soluble chloride-ion content of the concrete from all mix sources shall not exceed 0.8 kg / M<sup>3</sup> of concrete, unless otherwise specified.
- ii) **Sulfate content.** The acid-soluble SO<sub>3</sub> -ion content of the concrete from all mix sources shall not exceed 50g / kg of cement.

## 8. SUSTAINABLE CONCRETE MIX

Sustainable concrete also known as Eco Friendly or Green Concrete, shall be manufactured utilising a range of industrial waste products including but not limited to recycled water, fly ash, ground granulated iron blast furnace slag, waste paper and any other sustainable admixtures that may be specified or approved.

The Service Provider shall be wholly responsible for producing sustainable concrete that will have the same specified properties as traditional concrete, and be within the limits set out in Appendix "A".

All materials shall be measured by mass, except that recycled water may be measured by volume, by an approved adjustable water measuring and discharging device.

All sustainable concrete shall be to the respective grades, maximum aggregate sizes and slump as traditional concrete, together with any special requirements as detailed in Appendix "A".

*To differentiate from traditional concrete mixes, all deliveries of sustainable concrete must be clearly specified on all delivery dockets and invoices, as well as verbally communicated to Council staff at the work site.*

## 9. DESIGN AND CONTROL OF SUSTAINABLE CONCRETE MIX

Details of mix design shall be submitted with the tender, together with all admixture data sheets (See Clause 7.4) and coarse aggregate N.A.T.A. registered laboratory test results (See Clause 7.5).

All mix designs shall satisfy the minimum requirements set out in Appendix "A".

To secure the optimum strength and durability of all specified grades of concrete, within the limits of this Specification, the quantity of water to be used in mixing the concrete shall be the minimum which will give satisfactory workability and consistency having regard to the mix, and the conditions and manner of placing the concrete in the work.

## 10. PREPARATION OF EQUIPMENT

Concrete shall be mixed with mechanically operated batch mixers complying with the requirements of AS1379 relating to Mixers and Agitators. The inner surfaces of measuring, mixing, transporting and placing equipment shall be clean at the commencement of mixing operations, and kept thoroughly clean and free of hardened concrete or mortar.

## 11. MIXING

Concrete shall be mixed in separate batches in concrete mixing machines of a type and rating approved by the respective Principal's Representative. The time of mixing shall not be less than 1.5 minutes after all the ingredients are in the machine.

### 11.1 Consistency of Mix

For non-slurry kerb mixes the manufacturer shall, in the design of the mix, consider the cement content and correct combination of fine aggregates necessary to produce a machine extruded profile with a minimum of subsequent manual finishing.

## 12. TRANSPORTING

Concrete shall be transported in an approved watertight agitator in which segregation will not take place and from which the concrete can be discharged freely. Agitation shall be maintained from the time that the concrete is placed in the agitator until the concrete is fully discharged. The concrete shall be agitated at the rate specified by the machinery manufacturer as agitating speed.

Without limiting the generality of other transport and traffic legislation which applies:

The following provisions apply to the cartage of materials for the works:

- i) Vehicle axle weights, gross weights and trailer weight ratios must conform to the requirements of sections 108, 112 and 235 of the Roads Act 1993 and the Road Transport (Mass, Loading & Access) Regulation 2005.
- ii) The loading being carried on any vehicle must be secured in a manner which meets the standards set down in the Road Transport Legislation Amendment Act 1999 No.19 or the Road Transport (Mass, Loading & Access) Regulation 2005.

The Service Provider shall ensure that the delivery vehicles comply with the registration requirements of the NSW RMS.

## 13. HEAVY VEHICLE NATIONAL LAW – CHAIN OF RESPONSIBILITY

Every party in the heavy vehicle (gross vehicle mass greater than 4.5 tonnes) transport supply chain has a duty to ensure the safety of their transport activities. In practical terms, this primary duty represents an obligation to eliminate or minimise potential harm or loss (risk) by doing all that is reasonably practicable to ensure safety. Service Providers are to ensure that safety management systems and controls are in place, such as business practices, training, procedures and review processes that:

- i) identify, assess, evaluate, and control risk.
- ii) manage compliance with speed, fatigue, mass, dimension, loading and vehicle standards requirements through identified best practice.
- iii) involve regular reporting, including to executive officers.
- iii) document or record actions taken to manage safety.

## 14. AGITATOR WASHING

Excess concrete and/or mixing bowl washings shall not be permitted to enter any street gutter or drainage system.



Wastewater from washing equipment may be disposed of only where a designated washdown facility has been established.

Excess concrete may be left at the work site for recycling only when expressly permitted by the respective Principal's Representative.

## **15. MEASUREMENT OF CONCRETE**

The unit of measurement shall be cubic metre of plastic concrete. The volume of plastic concrete in a given batch shall be determined from the total mass of the batch divided by the mass per cubic metre of the concrete. The total mass of the batch shall be calculated as the sum of the mass of all materials including water entering the batch expressed in kg. The mass per cubic metre shall be determined in accordance with the method given in AS1012, Method 5 - Determination of mass per unit volume of Freshly Mixed Concrete. The mass per unit volume shall be calculated to the nearest 10kg/M<sup>3</sup>.

## **16. SUPPLY**

### **16.1 Performance**

The Service Provider shall be prepared to commence supply of the ready mixed concrete at the commencement of the contract period and maintain thereafter the supply of ready mixed concrete to the requirement of the respective Principal's Representative for the duration of the Contract.

### **16.2 Orders for Supply & Delivery**

The Principal's staff may place orders verbally with the Service Provider quoting Council's job or purchase order number and specifying the mix type, quantity, delivery amounts and the rate (frequency) of deliveries, the delivery day & times and the delivery location. Requests for supply and delivery are usually on the working day that supply is required. Where possible, orders may be placed on the working day preceding the day supply is required by Council.

The Service Provider shall be required to, at the time of the request, verbally confirm their acceptance to the request for the supply and delivery of ready mixed concrete. If the Service Provider is unable to, for whatever reason, supply the requested material the Principal's staff will withdraw the request and request the material from an alternate Service Provider.

### **16.3 Supply & Delivery**

Upon verbal agreement to supply the ready mixed concrete the Service Provider shall deliver the ready mixed concrete to the nominated work site on the day and at the time and at the rate (frequency) specified by the respective Principal.

The Service Provider shall notify the respective Principal's staff on the number shown in the respective tender schedules, of any possible delay in the supply no later than 45 minutes prior to the agreed delivery time.

The Service Provider shall provide with each load an identification certificate containing the respective Principal's job number or purchase order number in addition to all information specified in AS1379 Clause 1.8.3.

### **16.4 Deductions for Late Delivery**

The delivery is to arrive at the agreed time, and in the event of late arrival, the respective Principal may set off and deduct from payments due to the Service Provider, an amount to cover the extra labour cost to the respective Principal, calculated at the rate of \$15.00 for each period of 15 minutes, or part thereof.

For ready mixed concrete scheduled for delivery prior to 3.00pm and actually arriving on the job after that time, the above rate will be increased by 50% to cover the respective Principal's overtime rates.

### **16.5 Supply only**

The respective Principal may require ready mixed concrete on a Supply only basis. The respective Principal has delegated the authority to verbally order and "pick up" ready mixed concrete to various operational staff. Requests for pick up are usually on the working day that supply is required.

The respective Principal's staff shall require the ready mixed concrete to be discharged directly into the Council work truck. The Service Provider shall have the facilities to supply the required mix and measure and discharge the quantity ordered.

The Service Provider shall provide with each load an identification certificate containing the respective Principal's job number in addition to all information specified in AS1379 Clause 1.8.3.

Tenderer's who do not have the facilities to provide material on a "supply only" basis should mark this item on the Schedule Tender Price as "Not Tendered".

#### **16.6 Discharge Time – Supply & Deliver**

The rates specified in the Schedule of Pricing shall include a discharge or waiting time of up to 20 minutes or 5 minutes per cubic metre (whichever is the greater). Surcharges for periods in excess of those included in the pricing are to be stated in Schedule A1 Surcharge for Non-Standard Deliveries.

#### **17. DELIVERY ZONES**

The attached Delivery Zone Maps detail the various delivery zones that constitute each participating Council's areas. The applicable Schedule Tender Price allows for separate prices to be offered for supply to within each of the various zones.

#### **18. PRICING**

Please refer to Clause 3 Goods and Pricing in the Deed of Agreement.

The Service Provider must ensure that the prices tendered comply with the requirements of this Specification and the notes contained on the Schedules.

Payment will be made per cubic metre of concrete, determined as detailed in Clause 12 of this specification.

#### **18.1 Surcharge for Delivery outside the normal hours of work**

The respective Principal may request deliveries outside the normal hours of work during the contract period. The respective Principal shall pay to the Service Provider those fees and surcharges in accordance with Schedule A1 that apply to these deliveries e.g. surcharge on the price per m<sup>3</sup> of concrete, fee to open plant on weekends, public holidays or after hours, minimum charges etc.

#### **19. NORMAL HOURS OF WORK**

The respective Principal's normal hours of work are generally between 6.00 am to 3.30 pm Monday to Friday excluding public holidays and roster days. Deliveries to site shall be between the normal hours of work unless otherwise directed by the respective Principal's Representative.

#### **20. CANCELLATION OF ORDERS**

The respective Principal may without penalty cancel orders for deliveries not later than 45 minutes prior to the time specified for delivery in the event of bad weather or, at the respective Principal's discretion, due to any unforeseen circumstances.

#### **21. TENDER ACCEPTANCE**

The respective Principal may accept many conforming tenders. The respective Principal will evaluate the tenders in accordance with the nominated assessment criteria based on the principle of value for money and rank the tenders in preferential order for each mix. The respective Principal will give initial preference during the contract period to the Service Provider ranked number 1 for each mix.

#### **22. CONTRACT PERIOD (not used, refer Clause 2.3 of the Deed of Agreement)**

## **23. WORK HEALTH & SAFETY**

### **23.1 Site Safety Requirements**

The respective Principal advises that some of its work sites under this contract are associated with high risk construction activities, as defined under the WH&S Regulation e.g. construction work near traffic or mobile plant.

The Service Provider must comply with the current WH&S legislation and the respective Principal's Site safety requirements.

#### **23.1.1 Deliveries to Construction Sites**

The respective Principal's representative shall appoint a Site Supervisor for each construction site. The Site Supervisor shall have responsibility for site safety and may issue instructions regarding site safety requirements to the drivers of delivery vehicles.

### **23.2 No unauthorised persons**

The Service Provider must ensure that no persons, other than employees of the Service Provider, accompany their employees during the performance of the Service without the prior written approval of the respective Principal.

### **23.3 Personal Protective Equipment**

The Service Provider shall ensure that its employees wear the Personal Protective Equipment and Clothing as necessary for the work to be performed. This shall include, but not be limited to, High Visibility Clothing or a fluorescent safety vest for all employees working on roadworks or near mobile plant and equipment. The Company name is to be clearly identified on this clothing.

## **24. ENVIRONMENTAL AWARENESS**

The Service Provider must have an Environmental Management Plan (EMP) for its operations. The EMP shall include the Service Provider's commitment to environmental responsibility and the process to achieve this (including waste minimisation, pollution prevention and training of staff). The EMP shall cover all aspects of the Service Provider's operations including the batching plant and product delivery.

The concrete batch plant shall have provision for appropriate washdown facilities for agitator trucks upon their return, as well as receptacles for excess concrete. This will provide a contingency where excess concrete cannot be recycled and / or a suitable wash down area cannot be provided on-site.

## **ATTACHMENTS**

Appendix A: Allowable Limits for Mix Designs

Appendix B: Nominated Principal Representatives by Council

Delivery Zone Maps

**APPENDIX A**  
**ALLOWABLE LIMITS FOR MIX DESIGNS**

CONCRETE DESCRIPTION	NORMAL REQUIREMENTS				ADDITIONAL SPECIAL REQUIREMENTS
	COARSE AGGREGATE		WET STRENGTH & WET/DRY STRENGTH VARIATION CLASSIFICATION (AS2758.1)	SLUMP	
	MAXIMUM NORMAL SIZE (mm)	(mm)			
Normal Class	Strength Grade N40 & N50 20mm Aggregate 80mm Slump	20	Severe	80 ± 15	-----
	Strength Grade N40 & N50 10mm Aggregate 80mm Slump	10	Severe	80 ± 15	-----
	Strength Grade N20, N25 & N32 20mm Aggregate 80mm Slump	20	Moderate	80 ± 15	-----
	Strength Grade N20, N25 & N32 10mm Aggregate 80mm Slump	10	Moderate	80 ± 15	-----
Special Class	High Early S20 Strength 20 MPa at 3 Days Paving Mix/10mm Aggregate/80mm Slump	10	Moderate	80 ± 15	Suitable for Ease of Finishing in Paving Works
	Strength Grade S20 Paving Mix/10mm Aggregate/80mm Slump	10	Moderate	80 ± 15	Suitable for Ease of Finishing in Paving Works
	Strength Grade S20 Paving Mix Exposed Aggregate/10mm Agg 80mm Slump	10	Moderate	80 ± 15	Suitable for Ease of Finishing In Paving Works Not Less Than 1200kg/m <sup>3</sup> Of 10mm Crushed
	Strength S20 Blockwork Grout 150mm Slump 7mm Aggregate	7	Moderate	150 ± 30	7mm Aggregate Shall Be Rounded River Gravel
	Strength Grade S25 Extruded K & G Mix Non-Slurry	7	Moderate	0 To 15	Manufacture & Supply in Accordance with AS 2876- Concrete Kerbs & Channels (Gutters). A Minimum of Or Equivalent to 320 Kg of Cement/m <sup>3</sup>
	20:1 Sand Cement Mix	-----	-----	-----	20:1 Sand: Cement
	14:1 Sand Cement Mix	-----	-----	-----	14:1 Sand: Cement
	10:1 Sand Cement Mix	-----	-----	-----	10:1 Sand: Cement

**NOTES:**

1. The use of slag aggregates is not permitted (refer cl 7.6 & 7.7). Sustainable Concrete Mixes excepted.
2. All concrete shall be manufactured and supplied in accordance with the remainder of this Specification.

**APPENDIX B**

PRINCIPAL'S REGISTERED NOMINEE FOR SPECIFIED PROJECTS (refer Section 6 AS1379)

Walcha Council: Luke Andrews 02 6774 2500
Gunnedah Shire Council: Richard Baxter 02 6740 2100
Liverpool Plains Shire Council: Paul Isaac 0428 117 499