

PART E
SPECIFICATIONS

PART E - SPECIFICATIONS

GENERAL

E1. GENERAL

E1.1 These Specifications shall apply to the Work.

E2. CONCRETE MIXES

E2.1 The concrete mixes identified in (Concrete Mix Specifications), shall be supplied in accordance with the City of Winnipeg Standard Construction Specifications, CW3310 R7 and CW2160 R4. All products supplied under this Contract shall be products approved for use in The City of Winnipeg at the time of closing of Bid Opportunity, as per the City of Winnipeg Standard Construction Specifications - Division 3, Approved Products. This information is available in Adobe Acrobat (.pdf) format at The City of Winnipeg Materials Management internet site <http://www.winnipeg.ca/matmgt/info.stm>;

E2.2 The Bidder shall supply prices for every mix as indicate on Form B: Prices.

E2.3 Flow able Fill

(a) Flow able cement-stabilized fill shall be a blend of fine aggregate, Type 10 cement, supplementary cementing materials and water, conforming to the requirements of specification CW2160-R4 and the following physical requirements:

- | | | |
|---------------------------------|---|----------------|
| (i) 28-Day Compressive Strength | - | 0.3 to 0.7 MPa |
| (ii) minimum air content | - | 20% |
| (iii) minimum slump | - | 200mm |

E2.4 Foaming agents shall conform to the requirements of ASTM C869, specification for Foaming Agent used in marking preformed foam for cellular concrete.

E3. DELIVERY

E3.1 The City of Winnipeg will use approximately eight (8) transit mixers to pick up concrete daily. The daily requirement will range from none required to approximately four hundred (400) cubic depending on job demand and weather. The City of Winnipeg will employ the transit mixers from May to October of 2004 inclusive.

E3.2 At the request of the Contract Administrator, the Contractor shall supply up to four (4) transit mixers for delivery of concrete to job sites. The transit mixers are intended to complement the City of Winnipeg's transit mixers should the daily requirement exceed the capacity of the trucks supplied by the City, to deliver concrete to job sites on any days when the City transit mixers are not available or to deliver concrete during winter operations. The Contract Administrator will provide twenty-four (24) notice, where possible.

E3.3 In addition to the Bid prices for concrete, the Contractor will receive payment for the delivery of concrete at the rate per cubic metre bid in Item 9 – Form B: Prices.

E3.4 The Contractor shall be responsible for all delivery of concrete from November to the end of the Contract or as required by the City of Winnipeg.

E4. SURCHARGES

- E4.1 In addition to the Bid prices for the supply of concrete and delivery, the Contractor shall receive payment for applicable surcharges at the Bid rate for each load that the Contractor delivers with its own truck. Under-load surcharges may apply only for individual loads of 0.2 to 2 cubic metres or less (Item 10 on Form B: Prices) or for individual loads of 2.25 to 4 cubic metres (Item 11 on Form B: Prices).
- E4.2 Bid prices for delivery of concrete by the Contractor's trucks shall include one (1) hour for unloading from the time of arrival at the job site. For each 15 minute (.25 hour) interval or portion thereof in excess of 1 hour, the Contractor will be paid standby time at the unit price bid in Item 14 on Form B: Prices.
- E4.3 The Contractor shall obtain approval for all applicable surcharges at the time the load is delivered from the City of Winnipeg's crew on a form acceptable to the Contract Administrator. A copy of the form shall be left with the City crew and a copy returned to the City dispatchers on a daily basis.
- E4.4 Bid prices for winter surcharge shall include all additional costs of a winter operation. The bid price for surcharge on Saturday, Sunday or Statutory Holidays for winter operations in Item 12 on Form B: Prices and the Bid price for winter surcharge in Item 13 on Form B: Prices shall be in effect from November 1, 2004 to April 30, 2005 inclusive.
- E4.5 No other surcharges other than those identified on Form B: Prices will be paid.

E5. PLANT TYPE AND CAPACITY

- E5.1 The Contractor's plant shall be of sufficient capacity so as to supply concrete for City orders at the rate of 75 cubic metres per hour on demand. The Contractor shall make provisions for a suitable, approved back-up plant, capable of supplying the specified mixes.
- E5.2 The Contractor's plant shall be of sufficient capacity so as to supply concrete for the City of Winnipeg orders at a rate of seventy-five (75) cubic metres per hour on demand.

E6. PLANT FACILITIES

- E6.1 The Contractor shall provide at no additional cost to the City the following facilities at the location of the plant for the duration of the Contract:
- (a) area to dispose of surplus concrete returning from the job sites and end of day washout. The handling and disposal of concrete from this area is the responsibility of the Contractor;
 - (b) water supply to fill side tanks on mixers and for mixer drum washout;
 - (c) access to the Contractor's mixer wash bay for the acid wash of City mixer exterior;
 - (d) secure overnight parking for ten (10) transit mixers;
 - (e) parking area for 12 City employee vehicles;
 - (f) suitable area to place a crew trailer and availability of electricity and phone line;
 - (g) suitable lunchroom and washroom facilities for employees;
 - (h) workstation for the City Dispatcher located strategically near the Contractor's Dispatcher. The workstation shall include a desk, chair and lighting with a minimum area of 3.0m by 4.0m. The Contractor shall make provisions to locate the workstation in a smoke free, dust free and air-conditioned environment. The Contractor shall provide a minimum of two phone lines and power for computer hook-up;

- (i) the Contractor shall provide access to a fax machine and photocopier for the City Dispatcher;
- (j) the dispatcher's office shall have a clear view of the mixer staging and loading area; and
- (k) the Contractor shall provide suitable dust control in the yard area.

E7. ACCEPTANCE OF CONCRETE

- E7.1 The Contractor shall ensure that the concrete meets all specification requirements including, but not limited to slump and air content, until the concrete has been inspected and/or tested at the job site. Should the concrete be found to not meet the specification requirements in its plastic state, the load will be returned to the Contractor's plant and unloaded. No payment will be made unless the load can be corrected in a manner acceptable to the City and then continue to meet the specifications.
- E7.2 The payment of the invoice for a load of concrete does not constitute final acceptance of the load of concrete. The Contractor shall ensure that the concrete meets all applicable specifications in its hardened state including design strength, air void system and resistance to spalling. Should the concrete not meet these performance specifications for a period of one year from the date of placement, the Contractor shall remedy the concrete to the satisfaction of the Contract Administrator at no additional cost to the City.

E8. HOURS OF OPERATION

- E8.1 The City of Winnipeg will normally require concrete to be supplied between 07:00 and 19:00 hours, Monday to Friday, excluding statutory holidays.
- E8.2 The Contractor shall supply and deliver concrete outside of these hours, such as on weekends or statutory holidays, on an "as-required" basis.
- E8.3 No premiums will be paid for overtime, weekend, or statutory holiday Work, other than those allowed for winter operations.

E9. DISPATCHING OF TRUCKS

- E9.1 The City will install and maintain, at its expense, communication equipment at the workstation for the City Dispatcher, which may include telephone and a base station radio and antenna.
- E9.2 The City Dispatcher will communicate with Contractor dispatcher on an ongoing basis. A written material ticket will constitute an order and shall include the quantity and type of concrete, location of delivery and city ticket number.
- E9.3 Upon receiving the City order, the Contractor's dispatcher will arrange for the loading and dispatching of trucks in an orderly and timely manner. A copy of the City material ticket shall be given to the delivery truck along with the Contractor's delivery ticket. The Contractor's ticket numbers and the City's ticket numbers must appear on the invoices.
- E9.4 The Contract Administrator shall approve modifications to the dispatching method to accommodate situations associated with the Contractor's office arrangements and computerized systems.

E10. BATCH RECORDERS

- E10.1 The Contractor's plant shall be equipped with a recording device that permanently records the quantity of all ingredients (aggregates, cementitious materials, water and admixtures), as described in the Manitoba Ready Mix Concrete Certification Check List B: 5 Recorders.

- E10.2 The Contractor shall keep recorded batch information for a period of two years from the Date of the Certificate of Total Performance.
- E10.3 The Contractor shall supply the Contract administrator the recorded information regarding any batch within 2 Working Days of the request being made.

CONCRETE MIX SPECIFICATION SUMMARY - 2004

Item	Name	Portland Cement Type	Fly Ash Type	Maximum Aggregate Size (mm)	Maximum Water/Cement Ratio	Minimum Portland Cement/ Fly Ash (kg/m ³)	Air Content (%)	Slump (mm)	Minimum Compressive Strength@ 28 days (MPa)
1	Type 1 Concrete – Slip Form Paving								
	i) No Fly Ash	10	-	20	0.45	340 / 0	5.0-8.0	50 +/- 20	32
	ii) With Fly Ash	10	Class C	20	0.45	290 / 50	5.0-8.0	50 +/- 20	32
2	Type 1 Concrete – Hand Placement								
	i) No Fly Ash	10	-	20	0.45	340 / 0	5.0-8.0	70 +/- 20	32
	ii) With Fly Ash	10	Class C	20	0.45	290 / 50	5.0-8.0	70 +/- 20	32
3	Type 2 Concrete –								
	i) No Fly Ash	10	-	20	0.49	300 / 0	5.0-8.0	80 +/- 20	30
	ii) With Fly Ash	10	Class C	20	0.49	255 / 45	5.0-8.0	80 +/- 20	30
4	Concrete for Early Opening								
	i) 24 Hour	10	-	20	0.45	550	5.0-8.0	70 +/- 20	20 ³
	ii) 72 Hour	10	-	20	0.45	550	5.0-8.0	70 +/- 20	20 ³
5	Un-shrinkable Fill –								
	i) 30 kg	10	-	40	-	30 ¹	-	-	0.2-0.6 ²
	ii) 70 kg	10	-	40	-	70 ¹	-	-	0.5-1.5 ²
	iii) With Fly Ash	10	Class C	40	-	20 / 119 ¹	-	-	0.2-0.6 ²
6	Sulphate Resistant Mix								
	i) 20/30	50	-	20	0.45	320 / 0	4.0-7.0	80 +/- 20	30
	ii) 20/20	50	-	20	0.55	240 / 0	4.0-7.0	100 ⁴	20
7	Paving Stone Mix	10	Class C	20	-	150 / 15 ¹	5.0-8.0	75 ⁴	5 – 10 ²
14	Flow able Fill	10	-	5	-	-	20.0	200 ⁵	0.3-0.7

- Notes: 1 Not minimum, but actual cement content
 2 Not minimum, but actual compressive strength
 3 Not 28 days, but 24 hours
 4 Maximum slump
 5 Minimum slump