

PART E

SPECIFICATIONS

PART E - SPECIFICATIONS

GENERAL

E1. GENERAL

E1.1 These Specifications shall apply to the Work.

E2. EQUIPMENT AND TRUCK CLASS GROUPINGS

E2.1 Minimum Specifications for Dump Trucks

Spec.	CLASS CODES		
	A1	A4	A7
	Single Axle Dump Truck	Tandem Axle Dump Truck	Semi-Trailer Truck
GVW	10,866 kg (24,000 lbs.)	21,318 kg (47,000 lbs.)	36,287 kg (80,000 lbs.)
<u>Box Size</u>			
Length	3.05 metres (10')	3.70 metres (13')	6.09 metres (20')
Width	2.25 metres (7'3")	2.25 metres (7'3")	2.25 metres (7'3")
<u>Height</u>			
Sides	46 cm (18")	77 cm (30")	92 cm (36")
Sides w/Planks	77 cm (30")	92 cm (36")	122 cm (48")
Hinge	77 cm (30")	107 cm (42")	138 cm (54")
Front	102 cm (40")	117 cm (46")	122 cm (48")

E2.2 Single Axle and Tandem Axle Dump Trucks these trucks may be required to be equipped with the following:

- (a) Light and brake hook-up to facilitate City of Winnipeg trailer hook-ups.
- (b) Combination pintle/ball trailer hitch.
 - (i) Must be .76 metres (2'6") from ground to top of pintle hitch.
 - (ii) Must be .30 metres (1') clearance bottom of box to pintle hitch.
 - (iii) Set back no more than .45 metres (1'6") from end of box to pintle hitch.

E2.3 Rubber-Tired Backhoe Loaders are described by the Class Code in the attached Table:

CLASS CODES		
C2	C3	C4
50-80 Net H.P. 16'+ Over Depth Rubber Tired Backhoe With Extend-A-Hoe	81-99 Net H.P. 16'+ Over Depth Rubber Tired Backhoe	100+ Net H.P. 17'+ Over Depth Rubber Tired Backhoe
Case 480 E, F Case 580 D, E,K,L	Case 590 SL Case 680 K,L	CASE 590 SM Case 780

Case 580 SK,SL,SM		
CAT 416 CAT 426	420 D CAT 426B,C,IT CAT 428B CAT 436	CAT 446
John Deere 310 C,D,SE John Deere 410C	310 SG John Deere 410D John Deere 510 C,D John Deere 610C	John Deere 710 B,C
Ford 555 B,C,D Ford 655 A,C,D	NEW HOLLAND 575 E	Ford 755B
---	JCB 214, 214S JCB 215S JCB 217, 217S JCB 1400B	---

E2.4 Hydraulic Excavators as described below:

- (a) D1 Rubber-Tired (Truck-Type) Carrier-Mounted
 Minimum reach 17 ft.
 Must be equipped with remote travel control
- (b) D2 Rubber-Tired Single Engine - 4 Wheel-Drive (Drott 40 Cruz-Air Type)
 Minimum reach 17 ft.

E2.5 Hydraulic Excavator, Tracked as described below:

- (a) E1 Minimum rated bucket capacity 1 1/4 cu. yd.
 Minimum operating weight 49,600 lbs.
 Minimum reach 18 ft 6 in. with 8 ft. level bottom
- (b) E2 Minimum rated bucket capacity 2 cu. yd.
 Minimum operating weight 74,900 lbs.
 Minimum reach 23 ft. 4 in. with 8 ft. level bottom.

E2.6 Street Sweepers - F2 to F9 as described below:

- Minimum 3 cu. yd. capacity
- Minimum 10 ft. sweeping width
- Minimum 4 ft. 6 in. pick up broom width

E2.7 Street Sweeping - Spring Cleanup

- (a) All double gutter broom street sweepers acceptable Classes F2, F3, F4, F5, F6, F7, F8 and F9.

E2.8 Street Sweeping - Regular and Fall

- (a) Acceptable classes are F3, F5, F7, and F9. All double gutter broom, high dump are acceptable, no low dump units are acceptable.

E2.9 Street Sweeping - Centralized Services

- (a) Acceptable classes are F5, F7 and F9 only. Please note that Centralized Services sweeps all types of granular material and some rough road surfaces. Units bid must have hydraulic down pressure on pick up broom in order to keep a constant ground pressure, plus no restrictions to prevent lowering back pick-up brooms.

E2.10 The street sweeper Class Codes are as follows:

- (a) F2 Mechanical Drive Double Gutter Broom
3-Wheel (Rear Steering)
- (b) F3 Mechanical Drive Double Gutter Broom
3-Wheel (Rear Steering) High Dump
- (c) F4 Mechanical Drive Double Gutter Broom
4-Wheel Truck Type (Front Steering)
- (d) F5 4 Wheel Truck Type (EAGLE TYPE) Double Gutter Broom
with independent motor to High Dump, drive brooms and conveyor
- (e) F6 Hydrostatic Drive Double Gutter Broom
3-wheel
- (f) F7 Hydrostatic Drive Double Gutter Broom
3-Wheel High Dump
- (g) F8 4 Wheel Truck Type Double Gutter Broom
Hydrostatic
- (h) F9 4 Wheel Truck Type Double Gutter Broom
Hydrostatic High Dump

E2.11 Sidewalk Sweepers as per Class Code noted below:

- (a) G1 Minimum 18 Horsepower/Minimum Sweeping width 48"
- (b) G2 Minimum 35 Horsepower/Minimum Sweeping width 48"
- (c) G3 Minimum 35 Horsepower/Minimum Sweeping width 48"/Hi-Dump Model
- (d) G4 Minimum 55 Horsepower/Minimum Sweeping width 60"
- (e) G5 Minimum 55 Horsepower/Minimum Sweeping width 60"/Hi-Dump Model.

E2.12 Rates quoted shall be inclusive of:

- (a) Suitable means of transporting sweeper(s) to job sites.
- (b) Ramps or other suitable devices for climbing curbs when required.

E2.13 Boulevard Sweepers must be a Class Code G7 as noted below:

- (a) Agriculture type tractor (similar to John Deere 300) of sufficient size to climb curbs and drive rear sweeper broom. Minimum 6' (feet) sweeper broom.
- (b) Will be required to work in close proximity to buildings, trees, and sign poles.
- (c) Must meet safety specs. D16.
- (d) Back broom must be minimum 6' (feet) wide
- (e) Able to be angled left or right from driver's seat.

E2.14 Crawler Loaders as noted by the Class Code below:

- (a) H1 Less than 70.0 Drawbar Horsepower
- (b) H2 70.0 to 88.9 Drawbar Horsepower
- (c) H3 89.0 to 117.9 Drawbar Horsepower
- (d) H4 118.0 to 142.9 Drawbar Horsepower
- (e) H5 143.0 to 174.9 Drawbar Horsepower
- (f) H6 175.0 to 209.9 Drawbar Horsepower
- (g) H7 210.0 to 249.9 Drawbar Horsepower
- (h) H8 250.0 to 294.9 Drawbar Horsepower

- (i) H9 295.0 & over Drawbar Horsepower

E2.15 Crawler Tractors/Dozers as noted by the Class Code below:

- (a) I1 Less than 70.0 Drawbar Horsepower
- (b) I2 70.0 to 88.9 Drawbar Horsepower
- (c) I3 89.0 to 117.9 Drawbar Horsepower
- (d) I4 118.0 to 142.9 Drawbar Horsepower
- (e) I5 143.0 to 174.9 Drawbar Horsepower
- (f) I6 175.0 to 209.9 Drawbar Horsepower
- (g) I7 210.0 to 249.9 Drawbar Horsepower
- (h) I8 250.0 to 294.9 Drawbar Horsepower
- (i) I9 295.0 & over Drawbar Horsepower

E2.16 All refuse land compactors and crawler tractors used at landfill sites, quarry-type operations shall be equipped with R.O.P.S. cab or canopy and back up alarms, and equipped with an amber oscillating or strobe beacon.

E2.17 Rubber-Tired Front End Loaders as noted below:

- (a) J1 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower 65 - 99 H.P.
Operating Weight 9,000 lbs. to 14,500 lbs.
Bucket Size 1 - 1 ½ cu. yd.
- (b) J2 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower 75 - 125 H.P.
Operating Weight 15,000 lbs. - 20,000 lbs.
Bucket Size 1 ½ - 2 ¼ cu. yd.
- (c) J3 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower 100 - 150 H.P.
Operating Weight 21,000 lbs. - 25,000 lbs.
Bucket Size 2 ¼ - 3 cu. yd.
- (d) J4 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower Minimum 135 H.P.
Operating Weight 26,000 lbs. - 30,000 lbs.
Bucket Size 2 ¾ & over cu. yd.
- (e) J5 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower Minimum 150 H.P.
Operating Weight 30,000 lbs. - 38,000 lbs.
Bucket Size 3 & over cu. yd.
- (f) J6 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower Minimum 200 H.P.
Operating Weight 38,000 lbs. - 45,000 lbs.
Bucket Size 4 ¼ & over cu. yd.
- (g) J7 Rubber-Tired - 4-Wheel Drive Loader
SAE Net Horsepower Minimum 250 H.P.
Operating Weight 45,000 lbs. & over
Bucket Size 5 cu. yd. & over

E2.18 All units quoted that are assigned WORK in a pit or quarry type operation must have an SAE approved ROPS cab or canopy, and have back-up alarms.

E2.19 Motor Graders as noted below:

- (a) K3 Minimum 125 Flywheel Horsepower
- (b) K4 Minimum 140 Flywheel Horsepower
- (c) K5 Minimum 160 Flywheel Horsepower
- (d) K6 180+ Horsepower

E2.20 Truck/Air Compressor Combination Class Code L1 as noted below:

- (a) The above combination unit will be utilized in joint sealing operation on City streets and lanes, and other areas as may be directed. The purpose of this unit is to:
 - (i) provide compressed air for City crews engaged in cleaning pavement joints and cracks prior to sealing;
 - (ii) to transport (by means of towing) a joint sealing machine to job locations as directed; and
 - (iii) to transport pails/drums of joint sealing compound to job locations as directed.
- (b) Air Compressor shall be:
 - (i) deck or box mounted to a suitably-sized truck.
 - (ii) minimum 125 CFM and capable of continuous duty. Air supply must be oil free and equipped with a moisture separator. Air supply shall be routed to the front, centre, of the carrier truck in a manner that the air supply is easily accessible.
 - (iii) Air hose/pipe shall be equipped with "Thor" type couplings.
- (c) Truck shall be:
 - (i) have a gross vehicle rating capable of carrying a minimum 125 CFM air compressor (approximate weight 3500 lbs./1590 kg) twenty-five - 50 lb./23 kg pails of joint sealing compound, two - 100 lb./46 kg propane tanks, trailer tongue weight of approximately 200 lbs./91 kg and 2 City of Winnipeg personnel.
 - (ii) The deck shall have brackets to secure propane tanks in an upright position.
 - (iii) The deck shall be of a size to accommodate, in addition to the above mentioned compressor, up to twenty-five 50 lb./23 kg pails of joint sealing compound. Dimension of pails approximately 12" diameter by 18" in height. Height of deck shall be approximately 44" from ground level.
 - (iv) Adequate sides and tailgate or other suitable means of containing the aforementioned pails shall be provided. If the compressor is mounted in a location on the deck that restricts rear loading of the above mentioned pails, truck sides shall be easily lowerable or removable to facilitate easy loading.
 - (v) equipped with a rear-mounted pintle hitch capable of towing a trailer mounted joint sealing machine weighing approximately 6500 lbs./2950 kg.
 - (vi) The hitch shall be mounted at a height of 24" from ground level.
 - (vii) equipped with a female trailer electrical connector compatible with City of Winnipeg male connectors. Should the truck be equipped with a voltage higher than the 12 volt system used by the City, the truck owner will be responsible for all costs incurred to make both systems compatible. This must also allow for using different City joint sealer machines.

E2.21 Rubber-Tired Backhoe Loader/Hydraulic Pavement Breaker (Hoe-Mounted) Class Code M1 as noted below:

- (a) The above combination to be utilized for breaking pavement and/or frost on City of Winnipeg construction sites as directed.
- (b) Backhoe shall be :
 - (i) a minimum C2 class for the M1 category.

- (ii) The hydraulic pump output shall be of sufficient volume and pressure to operate the attached breaker at the optimum performance level as specified by the manufacturer of the breaker.
 - (iii) The hydraulic supply (hoses) to the breaker shall be fitted with "quick" couplers to facilitate easy bucket/breaker changeover.
 - (c) Pavement-Breaker shall be:
 - (i) have a minimum rating of 700 ft. lbs. impact per blow, and 600 blows per minute.
 - (ii) pin-mounted to the backhoe and equipped with hydraulic "quick" couplers and be capable of rotating 90 degrees to the left and right of centre.
- E2.22 All waiting time for this class shall be paid at the backhoe rate.
- E2.23 Rubber-Tired Loader/Backhoe Class Code M2 Hydraulic Pavement Breaker as equipped:
 - (a) Backhoe
 - (i) Hydraulic pump output shall be of sufficient volume and pressure to operate the attached breaker at the optimum performance level as specified by the manufacturer of the breaker.
 - (ii) Hydraulic supply (hoses) to breaker shall be fitted with "quick" couplers to facilitate easy bucket/breaker changeover.
 - (b) Pavement-Breaker
 - (i) The breaker shall be pinmounted to the backhoe and equipped with hydraulic "quick" couplers.
 - (ii) The breaker shall have a minimum rating of 1300 ft./lbs. and 550 blows/min.
- E2.24 Excavator Hydraulic Breaker Class Code M3 as equipped:
 - (a) Excavator
 - (i) Hydraulic pump output shall be of sufficient volume and pressure to operate the attached breaker at the optimum performance level as specified by the manufacturer of the breaker.
 - (b) Pavement-Breaker
 - (i) The breaker shall be pinmounted to the excavator. The breaker shall have a minimum rating of 2000 ft./lbs. and 450 blows/min..
- E2.25 Hi-Pressure Sewer Cleaner/and Closed Circuit Class Code N1, N2 Television Equipment With Flushing/Cleaning Equipment
 - (a) The above shall provide for:
 - (i) The cleaning of sewers with high pressure water jet equipment.
 - (ii) Television inspection of sewers and associated documentation. In the event that sewer debris is impeding the ability to properly televise the sewer, the company hired to do the televising shall be given the option of the cleaning/flushing the sewer even if is cheaper for cleaning from a N1 bid. It is not feasible to call out another contractor just for cleaning and then call the television equipment back.
- E2.26 Hi-Pressure Sewer Cleaning Equipment –Class Code N1
 - (a) Shall provide a minimum operating pressure of 900 psi. Pressure shall be variable upwards, but not to exceed 1600 psi. If requested, any material loosened from the sewer shall be removed and hauled to an approved disposal site by the Contractor. Subject to supplementary regulation, including but not limited to back flowpreventing, water required for the cleaning operation may be obtained from a designated City water hydrant at no

charge. Clearance for designated hydrant must first be arranged with Water Works Department.

E2.27 Closed Circuit Television – Class Code N2

- (a) Shall provide a television image of the interior of designated sewers for observation by a City representative on site. The image shall be sufficiently clear so that the condition of the sewer and appurtenances can be determined and assessed.
- (b) Shall provide, when requested, photographs of all locations as specified by a City representative.
- (c) Shall provide written reports, suitable to the City representative as to form and detail.
- (d) Measurements shall be provided in feet and/or metres as requested, and to be accurate to plus or minus 2 feet (.6 metres).
- (e) Shall provide complete videotapes of all sewers inspected; tapes shall become the property of the City. Tapes must be compatible with the VHS format of video reproduction.
- (f) The Contractor shall be responsible for providing proper signing and barricades as defined in the current edition of the Manual of Temporary Traffic Control in work areas on City streets and shall comply with all applicable By-laws and Regulations.

E2.28 Catch Basin Cleaner – Class Code N3

- (a) Shall provide for the cleaning of debris from catch basins, catch basin connections from the curb inlet box, culverts, manholes, water valve boxes and valve pits, and any other related WORK as may be required.
- (b) Shall provide sufficient length of hose and attachments, and have the capability of drawing up debris from manhole depths of up to twenty feet.
- (c) Shall provide a minimum debris storage capacity of thirteen cubic yards. Collected debris material will be disposed of as directed by the City Supervisor, Foreman, or other official of a user group.
- (d) The Contractor shall be responsible for providing proper signing and barricades as defined in the current edition of the Manual of Temporary Traffic Control in work areas on City streets and shall comply with all applicable By-laws and Regulations.

E2.29 Water Distributor

- (a) The water distributor is fed by gravity or by pump as shown below:
 - (i) 1000 – 2000 Imperial Gallons Single Axle Water Distributor
 - 1) 01 Gravity Flow - 1,000 - 2,000 Imperial Gallons.
 - 2) 01A Pumped through Main Spray Bar- 1,000 - 2,000 Imp.Gallons.
 - 3) 01B Pumped through 1.5" x 25' hose- 1,000 - 2,000 Imp.Gallons
 - (ii) 2200 – 3000 Imperial Gallons Tandem Axle Water Distributor
 - 1) 02 Gravity Flow - 2,200 - 3,000 Imperial Gallons.
 - 2) 02A Pumped through Main Spray Bar- 2,200 - 3,000 Imp.Gallons.
 - 3) 02B Pumped through 1.5" x 25' hose- 2,200 - 3,000 Imp.Gallons.
 - 4) 02C Flusher with Adjustable Swivel Heads 2200 - 3000 Imperial Gallons.
 - (iii) 3200 – 4000 Imperial Gallons Trailer Mounted Water Distributor
 - 1) 03 Gravity Flow - 3,200 - 4,000 Imperial Gallons.
 - 2) 03A Pumped through Main Spray Bar- 3,200 - 4,000 Imp.Gallons.
 - 3) 03B Pumped through 1.5" x 25' hose- 3,200 - 4,000 Imp.Gallons.
 - 4) 03C Flusher with Adjustable Swivel Heads 3200 - 4000 Imperial Gallons.

- (iv) All water distributors must be equipped with an air gap system located on the water supply outlet line as a backflow prevention.
- (v) Spray bar must be minimum of 3" diameter and holes must be spaced to provide an even coverage and spray must overlap to avoid dry gaps on roadway surface.
- (vi) Spray bar shall be full width of truck with provision to add 2' extension to the right hand side of spray bar (passenger side).
- (vii) Shut off valve shall be controlled from cab.