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Descriptive Report and Test Results

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Supplement to Certificate of Compliance – Page 1
Description and Tests – Pages 1 to 10
Appendices A (69 pages), B (8 pages), C (15pages), D (21 pages), E (9 pages), F (3 pages), G (17 pages), H (4 pages), I (4 pages), Appendix J (21 pages), Appendix K (34 pages)

PRODUCTS

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CLASS 6921 01 - PLUMBING FIXTURES - Septic and Sewage Holding Tanks for Plumbing Systems

Fibreglass Reinforced Polyester Tanks:

Septic Tank with pump, Models: P750, P875, P1000, P1250, P1500, P1750, P2000,
Septic Tanks pump out, 3.058M (10' burial) Models: P750-DB, PB750, PB1000 and PB1000-FLNG.

Septic Tank with Siphon, Models: S750, S875, S1000, S1250, S1500, S1750, S2000.
Septic Tanks siphon, 3.058M (10' burial) Models: SB1000, SB1000-FLUNG

Septic Tank,Trickle – Type, Models: T750, T875, T1000, T1250, T1500, T1750, T2000.
Septic Tanks Trickle, 3.058M (10' burial) Models: TB1000, TB1000-FLNG, TB1100 and TB1100-FLNG.

Sewage Holding Type Models: H750, H875, H1000, H1250, H1500, H1750, H2000, B2000, B2500, B2500LP, B3000, B3500, B4000, B5000, B6000, B7000, B8000, B8500, B9000, B10000, B11000, B12000, B13000, B14000, B15000, B16000, B17000, B18000, B19000, B20000, BX5000S, BX6000S, BX7000S, BX8000S, BX9000S, BX10000S, BX11000S, BX12000S, BX13000S, BX14000S, BX15000S, BX16000S, BX17500S, BX20000S, BX22000S, BX26000S, BX30000S and BX34000S.
Septic Tanks Holding, 3.058M (10' burial) Models: HB750, HB 1000, HB1000-FLNG, HB1100, HB11000-FLNG, BX5000S-DB, BX6000S-DB, BX7000S-DB, BX8000S-DB, BX9000S-DB, BX10000S-DB, BX11000S-DB, BX12000S-DB, BX13000S-DB, BX14000S-DB, BX15000S-DB, BX16000S-DB, BX17500S-DB, BX20000S-DB, BX22000S-DB, BX26000S-DB, BX30000S-DB and BX34000S-DB.
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Sewage Holding Tanks Above Ground Models: AGS150-RD, AGS250-RD, AGS300-RD, AGS450-RD, AGS500-RD, AGS750-RD, AGS1000-RD, AGS150-OV, AGS350-OV, AGS450-OV, AGS500-OV, AGS625-OV, AGS1000-OV, AGS1250-OV, AGS1500-OV, AGS1750-OV, AGS1875-OV, AGS1500-L, AGS2000-L, AGS-2000-OV, AGS-2500-OV, AGS2500-L, AGS2700-L, AGS3000-L, AGS3500-L, AGS5000-L, AGS5400-L, AGS7700-L, AGS10000-L, AGS12500-L, TOIL375, TOIL500, TOIL750 and TOIL1000.

APPLICABLE REQUIREMENTS

CSA Standard CAN/CSA-B66-05 - Prefabricated Septic Tanks and Sewage Holding Tanks

MARKINGS

Each fully assembled tank shall be plainly and permanently marked black letters on white good quality bond paper label and sealed and affixed with a light application of resin with the information specified below. Each marking or label shall be located on top of the tank near the access opening or at the end of the tank near the inlet. In addition, the inlet and outlet shall be marked. (See Appendix H).

All applicable information required under Clause 10.1, 10.2 and 10.3 of CSA Standard B66-05 is shown on this label as follows:
(a) manufacturer's name or trademark;
(b) year of manufacture;
(c) the working capacity of the tank (in litres);

(d) the type of tank, ie., sewage holding tank (H), trickle-type septic tank (T), septic tank with siphon (S), septic tank with pump (P), effluent chamber with siphon (ES), or effluent chamber with pump (EP);
(e) the volume per flush (in litres);
(f) the maximum burial depth (in metres) for which the tank is designed;
(g) liquid depth (in millimetres) of the septic tank if less than 900mm;
(h) if concrete, whether it is suitable for sulphate or nonsulphate soils;
(i) "above ground installation not permitted" or "AGINP" (where applicable); and
(j) the CSA Mark.

Each tank shall incorporate a permanent warning advising against entry into the tank and the word "DANGER". The warning shall be in English and French and shall be located on the access opening lid(s).

ALTERATIONS

(a) Marking as per above.
(b) Markings shall comply with Clause 10.3 of CSA Standard B66-05 as shown on amended label attached as Appendix H.

COMPLIANCE CONTROL

There shall be adequate facilities for producing subsequent products identical to the listed products and provision for tests and inspection of assembly and components necessary to ensure uniform products on a continuing basis.

QUALITY CONTROL

Certification of the tanks covered by this report is contingent upon compliance with the "Factory Assessment Evaluation" carried out on December 7, 2001. (See Appendix I).

The finished laminate shall be free as practicable from visual defects such as foreign inclusions, dry spots, air bubbles, pinholes, pimples, and delamination. The inner surface shall be free from cracks and crazing and have a smooth finish. Pits less than 3mm in diameter and not more than 0.8mm deep shall be covered with sufficient resin to avoid exposure to inner surface fabric. Visual acceptance level 3 (ASTM Standard D2563) shall be the minimum standard for acceptance.

All cut edges shall be coated with resin so that no glass fibres are exposed and all voids are filled. Structural elements having edges exposed to the chemical environment shall be made with chipped strand glass reinforcement only.

Thickness of each layer shall be measured using a thickness gauge and compliance recorded for each component section selected at random during the day's production. Records shall be retained on file and made available upon request by CSA staff. In addition, the weights of each section shall be measured and their compliance checked against target weight and recorded. (See IFE on Appendix I).

DESCRIPTION

Fibreglass Reinforced Polyester Tanks: (See Appendices A).

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
P750	Pump-out	2270	726	2.137

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
P875	Pump-out	2905	726	2.137
P1000	Pump-out	3224	726	2.137
P1250	Pump-out	4177	726	2.137
P1500	Pump-out	5130	726	2.137
P1750	Pump-out	6083	726	2.137
P2000	Pump-out	7037	726	2.137
S750	Siphon	2270	726	2.137
S875	Siphon	2905	726	2.137
S1000	Siphon	3224	726	2.137
S1250	Siphon	4177	726	2.137
S1500	Siphon	5130	726	2.137
S1750	Siphon	6083	726	2.137
S2000	Siphon	7037	726	2.137
T750	Trickle	3410	-	2.137
T875	Trickle	3980	-	2.137
T1000	Trickle	4545	-	2.137
T1250	Trickle	5680	-	2.137
T1500	Trickle	6820	-	2.137
T1750	Trickle	7955	-	2.137
T2000	Trickle	9092	-	2.137
H750	Holding	3410	-	2.137
H875	Holding	3980	-	2.137
H1000	Holding	4545	-	2.137
H1250	Holding	5680	-	2.137
H1500	Holding	6820	-	2.137
H1750	Holding	7955	-	2.137
H2000	Holding	9092	-	2.137
B2000	Holding	9092	-	2.137
B2500	Holding	11365	-	2.137
B2500LP	Holding	11365	-	2.137
B3000	Holding	13638	-	2.137
B3500	Holding	15911	-	2.137
B4000	Holding	18,184	-	2.137
B5000	Holding	22730	-	2.137
B6000	Holding	27277	-	2.137
B7000	Holding	31823	-	2.137
B8000	Holding	36,368	-	2.137
B8500	Holding	38642	-	2.137
B9000	Holding	40,194		2.137
B10000	Holding	45461	-	2.137
B11000	Holding	50,006	-	2.137
B12000	Holding	54553	-	2.137
B13000	Holding	59,098	-	2.137
B14000	Holding	63,644	-	2.137
B15000	Holding	68191	-	2.137
B16000	Holding	72,736	-	2.137

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
B17000	Holding	77282	-	2.137
B18000	Holding	81,828	-	2.137
B19000	Holding	86,374	-	2.137
B20000	Holding	90,920	-	2.137
BX5000S	Holding	22,273	-	2.137
BX6000S	Holding	27,276	-	2.137
BX7000S	Holding	31,822		2.137
BX8000S	Holding	36,368	-	2.137
BX9000S	Holding	40,914	-	2.137
BX10000S	Holding	45,460	-	2.137
BX11000S	Holding	50,060	-	2.137
BX12000S	Holding	54,552	-	2.137
BX13000S	Holding	59,098	-	2.137
BX14000S	Holding	63,644	-	2.137
BX15000S	Holding	68,190	-	2.137
BX16000S	Holding	72,736	-	2.137
BX17000S	Holding	79,555	-	2.137
BX20000S	Holding	90,920	-	2.137
BX22000S	Holding	100,012	-	2.137
BX26000S	Holding	118,196	-	2.137
BX30000S	Holding	136,380	-	2.137
BX34000S	Holding	154,564	-	2.137

*Volume per flush 340L

Prefabricated Septic Tanks (fibreglass), burial depth 3053mm (10 feet) Appendix J:

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
P750-DB	Pump-out	2270	726	3.058
PB750	Pump-out	2500	523	3.058
PB1000	Pump-out	4319	841	3.058
P1000-FLNG	Pump-out	4319	841	3.058
HB750	Holding	2500	-	3.058
HB1000	Holding	5100	-	3.058
HB1000FLNG	Holding	5100	-	3.058
HB1100	Holding	5100	-	3.058
HB1100FLNG	Holding	5100	-	3.058
SB1000	Siphon	4319	841	3.058
SB1000FLNG	Siphon	4319	841	3.058
TB1000	Trickle	4319	841	3.058
TB1000FLNG	Trickle	4319	841	3.058
TB1100	Trickle	4973		3.058
TB1100FLNG	Trickle	4973	-	3.058
BX5000S-DB	Holding	22,273	-	3.058

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
BX6000S-DB	Holding	27,276	-	3.058
BX7000S-DB	Holding	31,822	-	3.058
BX8000S-DB	Holding	36,368	-	3.058
BX9000S-DB	Holding	40,914	-	3.058
BX10000S-DB	Holding	45,460	-	3.058
BX11000S-DB	Holding	50,060	-	3.058
BX12000S-DB	Holding	54,552	-	3.058
BX13000S-DB	Holding	59,098	-	3.058
BX14000S-DB	Holding	63,644	-	3.058
BX15000S-DB	Holding	68,190	-	3.058
BX16000S-DB	Holding	72,736	-	3.058
BX17500S-DB	Holding	79,555	-	3.058
BX20000S-DB	Holding	90,920	-	3.058
BX22000S-DB	Holding	100,012	-	3.058
BX26000S-DB	Holding	118,196	-	3.058
BX30000S-DB	Holding	136,380	-	3.058
BX34000S-DB	Holding	154,564	-	3.058

Prefabricated Septic Tanks (fibreglass), ABOVE GROUND, test to a burial depth of 600mm (2 feet) Appendix K:

Model	Type	Septic Chamber (Litres)	Effluent Chamber (Litres)	Maximum Burial Depth (m)
AGS150-RD	Holding	682	-	0.600
AGS250-RD	Holding	1137	-	0.600
AGS300-RD	Holding	1364	-	0.600
AGS450-RD	Holding	2046	-	0.600
AGS500-RD	Holding	2273	-	0.600
AGS750-RD	Holding	3410	-	0.600
AGS1000-RD	Holding	4546	-	0.600
AGS150-OV	Holding	682	-	0.600
AGS350-OV	Holding	1364	-	0.600
AGS450-OV	Holding	2046	-	0.600
AGS500-OV	Holding	2273	-	0.600
AGS625-OV	Holding	2841	-	0.600
AGS1000-OV	Holding	4546	-	0.600
AGS1250-OV	Holding	5683	-	0.600
AGS1500-OV	Holding	6819	-	0.600
AGS1750-OV	Holding	7956	-	0.600
AGS1875-OV	Holding	8523	-	0.600
AGS-2000-OV	Holding	9,092	-	0.600
AGS-2500-OV	Holding	11,365	-	0.600
AGS1500-L	Holding	6819	-	0.600
AGS2000-L	Holding	9092	-	0.600

AGS2500-L	Holding	11,366	-	0.600
AGS2700-L	Holding	12,274	-	0.600
AGS3000-L	Holding	13,640	-	0.600
AGS3500-L	Holding	15,911	-	0.600
AGS5000-L	Holding	22,730	-	0.600
AGS5400-L	Holding	24,548	-	0.600
AGS7700-L	Holding	35,004	-	0.600
AGS10000-L	Holding	45,460	-	0.600
AGS12500-L	Holding	56, 826	-	0.600
TOIL375	Holding	1705	-	0.600
TOIL500	Holding	2273	-	0.600
TOIL750	Holding	3410	-	0.600
TOIL1000	Holding	4546	-	0.600

Laminate Construction Description					
Laminate Production Method	The Manufacturing method consists of a thermosetting resin system reinforced with glass fibre materials and moulded into the required shape by spray-up methods. All materials being used in their lamination and assembly of section process and their material composition are described below. Tanks are manufactured by using a spray-up system of chopped glass and polyester resin over a rotating waxed polyester mould. Pigment is not added during production of any of the laminate's layers. A catalyst is added at all stages of production of the laminate at 1 to 2% by mass.				
Interior Chemical-Resistant Layer	This layer consists of a resin-rich material and is typically between 0.13 and 0.30 mm thick. Manufacturer's construction is normally at 0.37mm thick minimum. There is no filler used in this layer in accordance with Clause 7.2.2.				
Anti-Wicking Barrier	The anti-wicking barrier consists of resin with not less that 20% and no more than 30% of glass roving material. There is no filler material used in this layer in accordance with Clause 7.2.3. This layer combined with the interior chemical-resistant layer cannot be less than 2.5 mm. The manufacturer's production target is normally at 2.29mm thick minimum.				
Structural Layer	The structural layer consists of layers of chopped glass at not less that 20% and not more than 22% by mass. Filler material is added at 50% by mass of resin. Tanks made with and without filler are marked as such.				
Exterior Surface Layer	This layer consists of a resin-rich flood coat that may be filled or unfilled and is typically between 0.13 and 0.30 mm thick. Manufacturer's construction is normally at 0.37mm thick minimum. The manufacturer adds filler in this layer at not less than 50%by mass of resin. This layer cannot have chopped glass materials.				
Laminate Raw Materials		Interior Chemical-Resistant Layer	Anti-Wicking Barrier	Structural Layer	External Surface Layer
Resin (Appendix D)	Valspar, 5761C10207 *	Yes	Yes	Yes	Yes
	Eastman 171-7977	Yes	Yes	Yes	Yes
	1. Valspar, 5767C10208 2. Lilly, 5761C00208	Yes	Yes	Yes	Yes

	3. Ashland, AROPOL K2287 -18/-25/-38 4. Ashland AROPOL K1828 -111 5. AOC, H834-AQV Series 6. AOC atek H834-G 7. AOC C544 8. AOC H834-AQV				
Glass Roving (Appendix C)	Fiberex, RSU605 *	No	Yes	Yes	No
	1. PPG Fibreglass, Hybon 6400 2. PPG Fibreglass, Hybon 6700 3. Fibreglass Centre, GR 298 4. Owens Cornong, 360RR 5. Vetrotex, 298 6. PPG, Fiberglass, Hybon 6000 7. PPG, Fiberglass, 6313 Roving 8. Admark, N721 Sitek	No	Yes	Yes	No
Filler (Appendix F)	IMASCO, Fine ground Calcium Carbonate	No	No	Yes	No
Catalyst (Thixotropic Agent) (Appendix E)	AKZO NOBEL, Cadox D-50 *	Yes	Yes	Yes	Yes
	1. AKZO NOBEL, Cadox M50a 2. AKZO NOBEL, Cadox L-50a 3. Ashland, Lupersol DDM-9	Yes	Yes	Yes	Yes
Pigment (Not used)	Not used	No	No	No	No

Other Materials (See Appendix B)

Fastner	Leland, SAE J429-Grade 2
Bolt Kit	Ainless Steel products
Gasket	Tremco, ET 675

FACTORY TESTS

The following representative samples of the sewage Holding and pump-out type septic tanks were examined (Covered under Project No 1193080, March 2001):

A. Sewage Holding Tank Model B3500
B. Septic Tank, Model P750

Each tank was assembled by the manufacturer in accordance with their manufacturing instructions as per Section 8 of CSA Standard B66-00 and tested at the submittor's factory for:

∃ Strength Test (Vacuum test as per Clause 8.2.1 for a burial depth of 2.137 m.
∃ Water tightness Test, Clause 8.3
∃ Volume check (measured from flowmeter to check capacity, Clause 8.1
∃ Chamber Divider Test, Clause 8.3

Both tanks passed all tests.

Edition 5, Project 1846081

No tests were deemed necessary as report updated to B66-05 and material is same as previously tested.

Edition 6, Project 1902641

The following representative samples of the sewage holding, pump-out and siphon type septic tanks were examined

Models tested: SB1000, HB1200, P750 and AGS500

Tank were assembled by the manufacturer in accordance with their manufacturing instructions as per of CSA Standard B66-05 and tested at the submittor's factory for:

Strength Test - Vacuum test as per Clause 9.2.2 for Models: SB1000, HB1200, P750 a burial depth of 3.058 m, Model AGS500 burial depth of 0.600mm.

Water tightness Test, Clause 9.4

Siphon test, clause 9.5

Edition 7, Project 2002617

The following representative samples of the sewage holding and pump-out type septic tanks were examined

Models tested: BX10000S, BX10000S-DB and HB750

Tank were assembled by the manufacturer in accordance with their manufacturing instructions as per of CSA Standard B66-05 and tested at the submittor's factory for:

Strength Test - Vacuum test as per Clause 9.2.2 for Model: BX10000S a burial depth of 2.137 m, Models: BX10000S-DB and HB750 burial depth of 3.058m.

Water tightness Test, Clause 9.4, due to volume of tank the tank was pressurized to 6 PSI for 30 minutes and tested for air leaks – none occurred.

TEST RESULTS

[Click **here** and type]