



Mastercart™

MOLD N°

60216

VOLUME

240L / 64 US GAL (MC1012)



COLLECTION BIN FOR SEMI-AUTOMATED

- Type B American grips
- Type C European grips
- Type G fully automated collection.

	CM	PO
Lenght	69.9	27 1/2
Width	62.2	24 1/2
Height	109.9	43 1/4
Wheel Diameter	20/25/30	8/10/12
Axle	1.9	3/4
Wear Strip	0,95	3/8
	KG	LBS.
Loading Capacity	109	240
Weight with Wheels	15 to 17	32 to 36
Recycling Code	2	
WIND TUNNEL TEST	KM/H	MPH
Test made with	Rubber Wheels 12"	
Front	89	55
Side	101	63
Back	105	65
Test made with	Plastic wheels 12"	
Front	72	45
Side	89	55
Back	89	55
RESIN WEIGHT	KG	LBS.
Lid Hinge	0,06	0,13
Cart	10,03	22,11
Lid Hinge	1,18	2,59
Total	11,27	24,83
Euro Type	Euro Type	
Lid Hinge	0,06	
Cart	9,875	
Lid Hinge	1,175	
Total	11,11	
WALL THICKNESS	CM	PO
LID THICKNESS		
64 gal/240L - 63546	0,279	0,110
CART THICKNESS	CM	PO
64 gal/240L - 60216	0,445	0,175
WHEELS WEIGHT	KG	LBS.
8" Plastic	0,33	0,73
8" Rubber	1,10	2,43
10" plastic	0,65	1,43
10" Bi-Mat.	0,70	1,54
12" plastic	0,80	1,76
12" Bi-Mat.	0,68	1,50
10" Rubber	1,32	2,91
12" Rubber	2,30	5,07
AXLE	KG	LBS.
3/4" Axle	1.267	2.793
240L / 64 US GAL • (MC1012)		
Standard • ANSI Z245.30		Yes
Standard • ANSI Z245.60		Yes
100 % recyclable (Code 2)		Yes
10 years warranty		Yes
Standard color	Pantone	363,285,447,462,099
Capacity	KG / LBS.	109 KG / 240 LBS.
Volume - Cart body	Liters / US Gal	234,7 L / 65.2 US Gal
Rubber tread (width)	CM / IN	2.54 CM / 1 IN (8" wheel) - 5.08 CM / 2 IN (10" & 12" wheel)
Vent on the side		Yes
Vent on the lid		Yes
Metal grate		Yes
ASSEMBLED QUANTITY		
Qty/T/L - 53'	unit / T.L.	792
Qty/pile		11
Rows		72
UNASSEMBLED QUANTITY		
Qty/T/L - 53'	unit / T.L.	1012
Qty/pile		11
Rows		92
Production Capacity	unit/ month	25500

TESTING REPORT

Testing of IPL 60216 cart according to ANSI Z245.30-2008 and
Z245.60-2008 standards

By Benoit Talbot B. Ing.

Atlantest

May 12th, 2014

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **VOLUMETRIC LOADING CAPACITY (ANSI Z245.30 APPENDIX A)**

TEST DESCRIPTION: To determine the volume of a container

MINIMUM PERFORMANCE STANDARD: The volumetric loading capacity of the container should be measured according to ANSI Z245.30. ANSI Z245.60 establishes dimensional requirements for the cart.

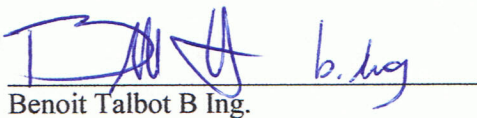
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The volume of the cart is measured using the tank (immersion) method.
2. The empty cart is placed inside a tank with sufficient capacity to receive the container to be tested. The container must be level (that is, not inclined).
3. Simultaneously fill the tank and the container with water at a standard temperature (65 °F).
4. Measure the volume of water inside the container and the lid to an accuracy of ± 2 percent.
5. Repeat the capacity method and determine the volumetric capacity of the lid.

TEST RESULTS:

The cart had a capacity of **247 liters (65.2 US gal)**. The lid had a capacity of **13 liters (3.4 US gal)**.

SUMMARY: The carts **passed** the test at or above minimum requirements as specified in ANSI Z245.30 and Z245.60.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **SLOPE STABILITY (ANSI Z245.30 APPENDIX B)**

TEST DESCRIPTION: This test checks the static stability of an empty and loaded cart on a defined slope (5 degrees).

MINIMUM PERFORMANCE STANDARD: ANSI Z245.30 requires that the cart must stand, without tipping or moving, in three different orientations on a defined slope. ANSI Z245.60 establishes dimensional requirements for the cart.

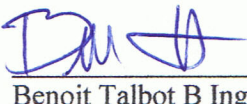
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. Prepare a ramp with a slope of 5 degrees. The ramp must be of sufficient size that a cart can be moved onto the cart with no portion of the cart overhanging the edges of the ramp.
2. There is to be no wind.
3. Move an empty cart onto the ramp and orient the cart with the front of the cart facing up the ramp. Note any tipping or movement. Turn the cart so that the front of the cart is facing sideways on the ramp. Note any tipping or movement. Turn the cart so that the front of the cart is facing down the ramp. Note any tipping or movement.
4. Repeat step two with the cart loaded to the standard loading as specified in the ANSI standard. The loading material to occupy at least 70% of the capacity of the cart.

TEST RESULTS:

	<u>Orientation</u>	<u>Result</u>
Empty	Front facing upward	Stable
	Front facing sideways (right)	Stable
	Front facing sideways (left)	Stable
	Front facing downward	Stable
Filled (240 lbs load)	Front facing upward	Stable
	Front facing sideways (right)	Stable
	Front facing sideways (left)	Stable
	Front facing downward	Stable

SUMMARY: The carts passed the ANSI Z245.30 and Z245.60 standards since non-movement in four orientations is met.

 b. talbot
Benoit Talbot B Ing.

Atlantest
1580 Principal Avenue
St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **DURABILITY DURING PULLING (CURB TEST)**
(ANSI Z245.30 APPENDIX C)

TEST DESCRIPTION: This test determines whether the cart's handles, wheels, and axles will withstand the repeated pulling forces experienced during normal 10-year useful life.

MINIMUM PERFORMANCE STANDARD: The ANSI standard Z245.30 requires that after testing the handles, wheels, axles, their attachments to the container, and the container itself must remain functional. ANSI Z245.60 establishes dimensional requirements for the cart.

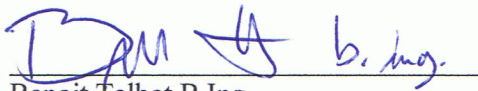
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is loaded with a standard load (according to the ANSI standard) with the volume of material occupying at least 70% of the total capacity of the cart.
2. Using the cart's handles, the loaded cart is pulled off a curb. The curb height to be 5.5 inches with a 1 inch radius. The cart is then repositioned at the top of the curb. The test is repeated for 520 cycles (drops).
3. Using the cart's handles, an unloaded (empty) cart is pulled up a curb. The curb height to be 5.5 inches with a 1 inch radius. The cart is repositioned at the bottom of the curb. The test is repeated 520 cycles (lifts).
4. The carts are set down onto a concrete surface.
5. The temperature to be normal room temperature (73 degrees F).

TEST RESULTS:

Test Condition	Result (240 lbs load (rated at 3.5lbs/gal = 240 lbs))
Push off of full cart	No significant damage.
Pull up of empty cart	No significant damage

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **LOADING AND UNLOADING (CYCLE TEST) — FULLY AUTOMATED (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a fully-automated truck. This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

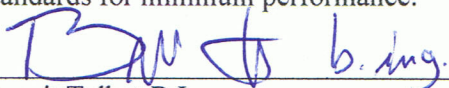
1. The test is conducted at room temperature.
2. A standard fully automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the automated method.

Note: Tested with Labrie Environment loading arm model #BCB01100-06 s/n #0909RH00022_1

TEST RESULTS:

	Cycles	Comments on Performance (240 lbs load (rated at 3.5lbs/gal = 240 lbs))
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **LOADING AND UNLOADING (CYCLE TEST) — SEMI-AUTOMATED AMERICAN MODEL (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a semi-automated truck (American model). This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The test is conducted at room temperature.
2. A standard semi-automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the semi-automated method.

Note: Tested with a truck from the company RCI truck # 228 plated L516940

TEST RESULTS:

	Cycles	Comments on Performance (240 lbs load (rated at 3.5lbs/gal = 240 lbs))
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **LOADING AND UNLOADING (CYCLE TEST) — SEMI-AUTOMATED EUROPEAN MODEL (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a semi-automated truck (European model). This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

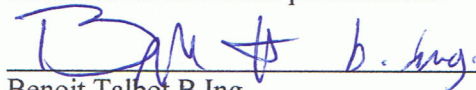
1. The test is conducted at room temperature.
2. A standard semi-automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the semi-automated method.

Note: Tested with RCI truck # 228 plated L516940

TEST RESULTS:

	Cycles	Comments on Performance (240 lbs load (rated at 3.5lbs/gal = 240 lbs))
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **CENTER OF BALANCE POSITION (ANSI Z245.30 APPENDIX E)**

TEST DESCRIPTION: To determine the height of the handle of a two-wheeled container at the center-of-balance position. This height affects the ease of operation of the cart.

MINIMUM PERFORMANCE STANDARD: According to the ANSI standard Z245.30, when in the center-of-balance position, the minimum height is to be 29 inches. The maximum height is to be 40 inches when in the center-of-balance position. ANSI Z245.60 establishes dimensional requirements for the cart.

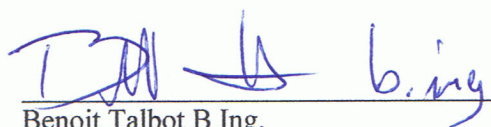
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The test to be conducted on a hard, flat surface.
2. Block the wheels so that the cart will not roll.
3. Tip the cart slowly, rotating the cart on the wheels, to the center balance position. This position is determined as the position where the cart has a tendency to remain in a balanced (neutral) position, not tipping forward or backward.
4. When in the center balance position, place blocks under the container to maintain in balanced position.
5. Measure the distance vertically from the ground plane to the center line of the handle of the cart. The accuracy of measurement is to be ± 0.25 inches.
6. Repeat steps 3, 4 and 5 two more times and then average the results for the three determinations.

TEST RESULTS:

The result is: Average = **35.3 inches**

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **FORCE TO TIP (ANSI Z245.30 APPENDIX F)**

TEST DESCRIPTION: To measure the strength required to start container movement to the balance point and to ensure that the force is not greater than an established limit. This force relates to the ease of operation of the cart.

MINIMUM PERFORMANCE STANDARD: According to ANSI Z245.30, the force must not exceed 120 pounds force. ANSI Z-245.60 establishes dimensional requirements for the cart.

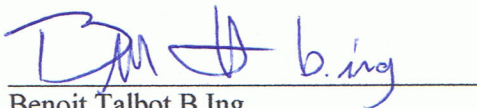
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is to be loaded with a standard load. The load to occupy at least 70% of the capacity of the cart.
2. The ground to be level and with a smooth horizontal surface having less than a 1° slope.
3. The cart is to be blocked to prevent movement of the wheels.
4. A spring scale device is attached to the handle of the cart. (The force-measuring device to have an accuracy better than $\pm 3\%$.) The cart is then tipped by pulling on the force-measuring device, until the cart is in the balanced position. The angle of pull, that is, the tipping force direction, is to be horizontal with less than $\pm 2^\circ$ to all sides. (The position where the cart does not tend to move either forward or backward but remains in a balanced position.) The maximum force during the pull is noted.
5. Repeat step 4 so that three determinations are made. These results are averaged.
6. The test is to be conducted at room temperature.

TEST RESULTS:

The tipping forces were as follows: Average = **42 pounds**.

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards at or above the minimum requirements.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

Atlantest

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60216

TEST: **LID TEST (ANSI Z245.30 APPENDIX G)**

TEST DESCRIPTION: To determine if a container lid will sustain the weight of an average child (approximately 80 pounds) without collapsing into the container.

MINIMUM PERFORMANCE STANDARD: According to ANSI Z245.30, the lid of the cart must withstand a load of 80 pounds during a period of at least 15 minutes without collapsing or allowing the loading weight to fall into the container. ANSI Z-245.60 establishes dimensional requirements for the cart.

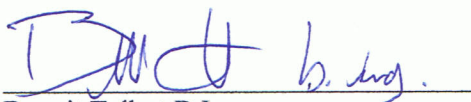
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is placed on a smooth, level, horizontal surface.
2. An 8 inches rigid disk is placed on top of the lid of the cart in its center position and a weight of 80 pounds is placed on top of the disk.
3. The test is to be conducted at room temperature.

TEST RESULTS:

The lid did not collapse or excessively deflect during the test.

SUMMARY: The carts **passed** the test at or above minimum requirements as specified in ANSI Z245.30 and Z245.60.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0



Mastercart™

MOLD N°

60269

VOLUME

360L / 95 US GAL (MC594)



COLLECTION BIN FOR SEMI-AUTOMATED

- **Type B** American grips
- **Type C** European grips
- **Type G** fully automated collection.

	CM	PO
Lenght	87.3	34 3/8
Width	63.8	25 1/8
Height	113	44 1/2
Wheel Diameter	25 / 30	10 / 12
Axle	1.9	3/4
Wear Strip	0,95	3/8
	KG	LBS.
Loading Capacity	152	335
Weight with Wheels	18 to 20	39 to 45
Recycling Code	2	
WIND TUNNEL TEST	KM/H	MPH
Test made with	Rubber Wheels 12"	
Front	84	52
Side	69	43
Back	88	55
Test made with	Plastic wheels 12"	
Front	90	56
Side	58	36
Back	82	51
RESIN WEIGHT	KG	LBS.
Lid Hinge	0,06	0,13
Cart	12,18	26,85
Lid Hinge	1,82	4,01
Total	14,06	30,99
EURO TYPE	EURO TYPE	
Lid Hinge	0,060	0,132
Cart	11,963	26,374
Lid Hinge	1,819	4,010
Total	13,842	30,516
WALL THICKNESS	CM	PO
LID THICKNESS		
95 gal/360L - 63562	0,330	0,130
CART THICKNESS	CM	PO
95 gal/360L - 60269	0,419	0,165
WHEELS WEIGHT	KG	LBS.
10" plastic	0,65	1,43
10" Bi-Mat.	0,70	1,54
12" plastic	0,80	1,76
12" Bi-Mat.	0,68	1,50
10" Rubber	1,32	2,91
12" Rubber	2,30	5,07
AXLE	KG	LBS.
3/4" Axle	1.267	2.793
360L / 95 US GAL • (MC594)		
Standard • ANSI Z245.30		Yes
Standard • ANSI Z245.60		Yes
100 % recyclable (Code 2)		Yes
10 years warranty		Yes
Standard color	Pantone	363,285,447,462,099
Capacity	KG / LBS.	152 KG / 335 LBS.
Volume - Cart body	Liters / US Gal	360L / 95 US Gal
Rubber tread (width)	CM / IN	5.08 CM / 2 IN (10" & 12" wheel)
Vent on the side		Yes
Vent on the lid		Yes
Metal grate		Yes
ASSEMBLED QUANTITY		
Qty/T/L - 53'	unit / T.L.	513
Qty/pile		9
Rows		57
UNASSEMBLED QUANTITY		
Qty/T/L - 53'	unit / T.L.	594
Qty/pile		9
Rows		66
Production Capacity	unit/ month	25500

TESTING REPORT

Testing of IPL 60269A1 (euro grip) and 60269A3 (US grip)
carts according to ANSI Z245.30-2008 and Z245.60-2008
standards

By Benoit Talbot B. Ing.
Atlantest
May 12th, 2014

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **VOLUMETRIC LOADING CAPACITY (ANSI Z245.30 APPENDIX A)**

TEST DESCRIPTION: To determine the volume of a container

MINIMUM PERFORMANCE STANDARD: The volumetric loading capacity of the container should be measured according to ANSI Z245.30. ANSI Z245.60 establishes dimensional requirements for the cart.

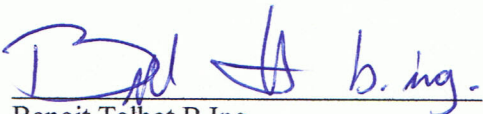
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The volume of the cart is measured using the tank (immersion) method.
2. The empty cart is placed inside a tank with sufficient capacity to receive the container to be tested. The container must be level (that is, not inclined).
3. Simultaneously fill the tank and the container with water at a standard temperature (65 °F).
4. Measure the volume of water inside the container and the lid to an accuracy of ± 2 percent.
5. Repeat the capacity method and determine the volumetric capacity of the lid.

TEST RESULTS:

The cart had a capacity of **95 US gallons**. The lid had a capacity of **4.7 US gallons**.

SUMMARY: The carts **passed** the test at or above minimum requirements as specified in ANSI Z245.30 and Z245.60.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **SLOPE STABILITY (ANSI Z245.30 APPENDIX B)**

TEST DESCRIPTION: This test checks the static stability of an empty and loaded cart on a defined slope (5 degrees).

MINIMUM PERFORMANCE STANDARD: ANSI Z245.30 requires that the cart must stand, without tipping or moving, in three different orientations on a defined slope. ANSI Z245.60 establishes dimensional requirements for the cart.

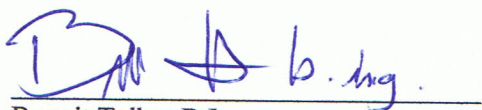
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. Prepare a ramp with a slope of 5 degrees. The ramp must be of sufficient size that a cart can be moved onto the cart with no portion of the cart overhanging the edges of the ramp.
2. There is to be no wind.
3. Move an empty cart onto the ramp and orient the cart with the front of the cart facing up the ramp. Note any tipping or movement. Turn the cart so that the front of the cart is facing sideways on the ramp. Note any tipping or movement. Turn the cart so that the front of the cart is facing down the ramp. Note any tipping or movement.
4. Repeat step two with the cart loaded to the standard loading as specified in the ANSI standard. The loading material to occupy at least 70% of the capacity of the cart.

TEST RESULTS:

	<u>Orientation</u>	<u>Result</u>
Empty	Front facing upward	Stable
	Front facing sideways (right)	Stable
	Front facing sideways (left)	Stable
	Front facing downward	Stable
Filled (350 lbs load)	Front facing upward	Stable
	Front facing sideways (right)	Stable
	Front facing sideways (left)	Stable
	Front facing downward	Stable

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards since non-movement in four orientations is met.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **DURABILITY DURING PULLING (CURB TEST)**
(ANSI Z245.30 APPENDIX C)

TEST DESCRIPTION: This test determines whether the cart's handles, wheels, and axles will withstand the repeated pulling forces experienced during normal 10-year useful life.

MINIMUM PERFORMANCE STANDARD: The ANSI standard Z245.30 requires that after testing the handles, wheels, axles, their attachments to the container, and the container itself must remain functional. ANSI Z245.60 establishes dimensional requirements for the cart.

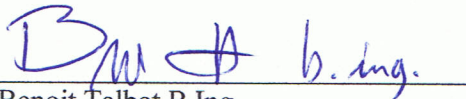
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is loaded with a standard load (according to the ANSI standard) with the volume of material occupying at least 70% of the total capacity of the cart.
2. Using the cart's handles, the loaded cart is pulled off a curb. The curb height to be 5.5 inches with a 1 inch radius. The cart is then repositioned at the top of the curb. The test is repeated for 520 cycles (drops).
3. Using the cart's handles, an unloaded (empty) cart is pulled up a curb. The curb height to be 5.5 inches with a 1 inch radius. The cart is repositioned at the bottom of the curb. The test is repeated 520 cycles (lifts).
4. The carts are set down onto a concrete surface.
5. The temperature to be normal room temperature (73 degrees F).

TEST RESULTS:

<u>Test Condition</u>	<u>Result (350 lbs load (rated at 3.5lbs/gal = 349 lbs))</u>
Push off of full cart	No significant damage.
Pull up of empty cart	No significant damage

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **LOADING AND UNLOADING (CYCLE TEST) — FULLY AUTOMATED (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a fully-automated truck. This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

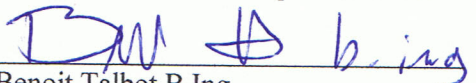
1. The test is conducted at room temperature.
2. A standard fully automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the automated method.

Note: Tested with Labrie Environment loading arm model #BCB01100-06 s/n #0909RH00022_1

TEST RESULTS:

	Cycles	Comments on Performance (350 lbs load (rated at 3.5lbs/gal = 349 lbs))
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.


Benoit Talbot B Ing.

Atlantest
1580 Principal Avenue
St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A3 (US grip) carts

TEST: **LOADING AND UNLOADING (CYCLE TEST) — SEMI-AUTOMATED AMERICAN MODEL (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a semi-automated truck (American model). This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

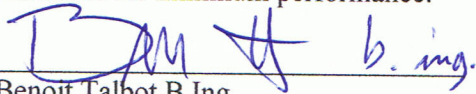
1. The test is conducted at room temperature.
2. A standard semi-automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the semi-automated method.

Note: Tested with a truck from the company RCI truck # 228 plated L516940

TEST RESULTS:

	Cycles	Comments on Performance (350 lbs load (rated at 3.5lbs/gal = 349 lbs))
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart passed the ANSI Z245.30 and Z245.60 standards for minimum performance.


Benoit Talbot B Ing.

Atlantest
1580 Principal Avenue
St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) carts

TEST: **LOADING AND UNLOADING (CYCLE TEST) — SEMI-AUTOMATED EUROPEAN MODEL (ANSI Z245.30 APPENDIX D)**

TEST DESCRIPTION: The loading and unloading test is designed to approximate the useful life of a cart (10 years) in the actual lifting that is performed when emptying the cart into a semi-automated truck (European model). This test is useful in assessing the overall design (such as the lid fit, handle material and hinge mechanism, wheel assembly strength, etc.) and overall durability.

MINIMUM PERFORMANCE STANDARD: ANSI standard Z245.30 requires that after testing the cart should not suffer any damage or permanent deformation such that it cannot be safely used in normal operation. ANSI Z245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):


1. The test is conducted at room temperature.
2. A standard semi-automated cart lifter is used. This lifter is compatible with all currently used carts. The lifting mechanism is attached to the frame of a waste collection truck which allows the cart to be emptied and then reloaded on each cycle.
3. The cycle time is greater than eight seconds, as required in the standard.
4. The cart is loaded with inert material at the standard load capacity as indicated in ANSI standard according to the rated size of the container. The loading material is to occupy at least 70% of the volume of the cart.
5. The cart is positioned in front of the lifting mechanism and is then lifted by the lifting mechanism to empty the cart into a bin. The cart is set down onto a concrete surface and the cycle start over again.
6. Inspections are made whenever any change is noticed and after every 100 lifts.
7. Failure is judged to be cracks, holes or other induced defects or deformations in the cart that would prevent the cart's use as a waste cart and be emptied by the semi-automated method.

Note: Tested with RCI truck # 228 plated L516940

TEST RESULTS:

	<u>Cycles</u>	<u>Comments on Performance (350 lbs load (rated at 3.5lbs/gal = 349 lbs))</u>
	100	No significant damage
	200	No damage
	300	No damage
	400	No damage
	500	No damage
	520	No significant damage – cart operates acceptably

SUMMARY: No significant damage was seen and so the cart **passed** the ANSI Z245.30 and Z245.60 standards for minimum performance.

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Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0

TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **CENTER OF BALANCE POSITION (ANSI Z245.30 APPENDIX E)**

TEST DESCRIPTION: To determine the height of the handle of a two-wheeled container at the center-of-balance position. This height affects the ease of operation of the cart.

MINIMUM PERFORMANCE STANDARD: According to the ANSI standard Z245.30, when in the center-of-balance position, the minimum height is to be 29 inches. The maximum height is to be 40 inches when in the center-of-balance position. ANSI Z245.60 establishes dimensional requirements for the cart.

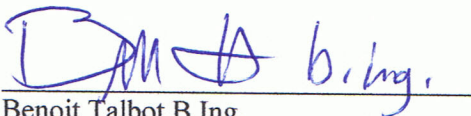
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The test to be conducted on a hard, flat surface.
2. Block the wheels so that the cart will not roll.
3. Tip the cart slowly, rotating the cart on the wheels, to the center balance position. This position is determined as the position where the cart has a tendency to remain in a balanced (neutral) position, not tipping forward or backward.
4. When in the center balance position, place blocks under the container to maintain in balanced position.
5. Measure the distance vertically from the ground plane to the center line of the handle of the cart. The accuracy of measurement is to be ± 0.25 inches.
6. Repeat steps 3, 4 and 5 two more times and then average the results for the three determinations.

TEST RESULTS:

The result is: 60269A1 Average = **33 inches**
60269A3 Average = **33.25 inches**

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards.



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1580 Principal Avenue

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TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **FORCE TO TIP (ANSI Z245.30 APPENDIX F)**

TEST DESCRIPTION: To measure the strength required to start container movement to the balance point and to ensure that the force is not greater than an established limit. This force relates to the ease of operation of the cart.

MINIMUM PERFORMANCE STANDARD: According to ANSI Z245.30, the force must not exceed 120 pounds force. ANSI Z-245.60 establishes dimensional requirements for the cart.

TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is to be loaded with a standard load. The load to occupy at least 70% of the capacity of the cart.
2. The ground to be level and with a smooth horizontal surface having less than a 1° slope.
3. The cart is to be blocked to prevent movement of the wheels.
4. A spring scale device is attached to the handle of the cart. (The force-measuring device to have an accuracy better than $\pm 3\%$.) The cart is then tipped by pulling on the force-measuring device, until the cart is in the balanced position. The angle of pull, that is, the tipping force direction, is to be horizontal with less than $\pm 2^\circ$ to all sides. (The position where the cart does not tend to move either forward or backward but remains in a balanced position.) The maximum force during the pull is noted.
5. Repeat step 4 so that three determinations are made. These results are averaged.
6. The test is to be conducted at room temperature.

TEST RESULTS:

The tipping forces were as follows: Average = **81 pounds**.

SUMMARY: The carts **passed** the ANSI Z245.30 and Z245.60 standards at or above the minimum requirements.



Benoit Talbot B Ing.

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1580 Principal Avenue

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TESTING REPORT

DATE: May 12th 2014

SUBJECT: Waste carts

PRODUCT IDENTIFICATION: IPL 60269A1 (euro grip) and 60269A3 (US grip) carts

TEST: **LID TEST (ANSI Z245.30 APPENDIX G)**

TEST DESCRIPTION: To determine if a container lid will sustain the weight of an average child (approximately 80 pounds) without collapsing into the container.

MINIMUM PERFORMANCE STANDARD: According to ANSI Z245.30, the lid of the cart must withstand a load of 80 pounds during a period of at least 15 minutes without collapsing or allowing the loading weight to fall into the container. ANSI Z-245.60 establishes dimensional requirements for the cart.

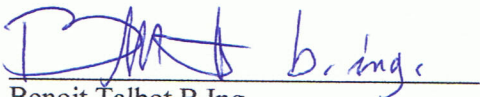
TEST PROCEDURE (Meets the requirements of ANSI Z245.30):

1. The cart is placed on a smooth, level, horizontal surface.
2. An 8 inches rigid disk is placed on top of the lid of the cart in its center position and a weight of 80 pounds is placed on top of the disk.
3. The test is to be conducted at room temperature.

TEST RESULTS:

The lid did not collapse or excessively deflect during the test.

SUMMARY: The carts **passed** the test at or above minimum requirements as specified in ANSI Z245.30 and Z245.60.



Benoit Talbot B Ing.

Atlantest

1580 Principal Avenue

St-Malachie, QC G0R 3N0