

### GRABBER TEST

#### PURPOSE:

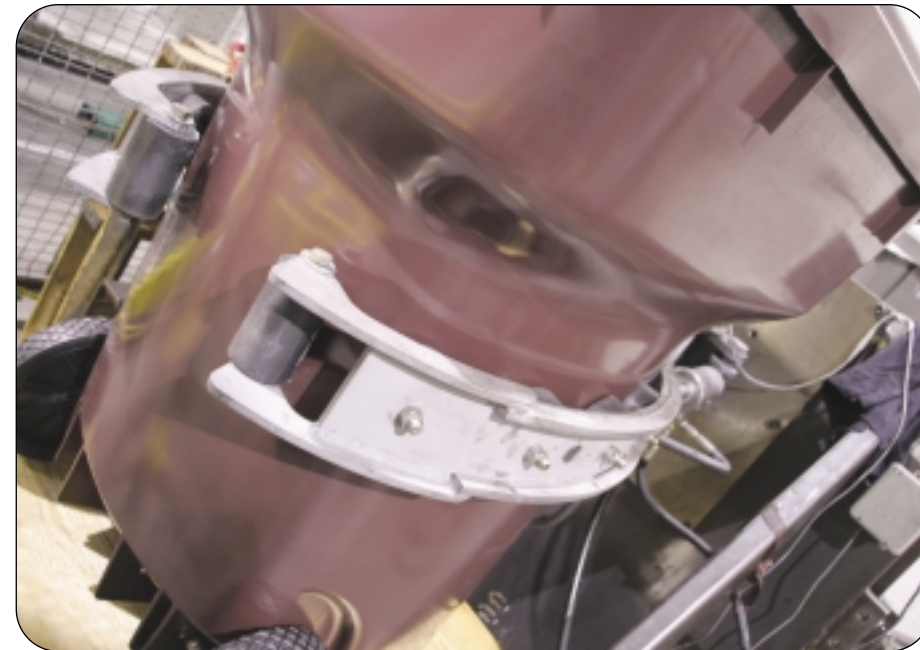
- Determine cart durability with fully automated system

#### PROCEDURE:

- Test cart empty
- Set hydraulic pressure to 1800 psi (well over manufacturers' recommendations)
- Cycle 1650 times minimum (3 lifetimes)

#### PASS CRITERIA:

- Cart must remain functional
- Cart must be able to hold water



Grabber Test

### WHEEL TEST # 2

#### PURPOSE:

- ANSI Z245.30-1999 Appendix C; Durability During Pulling Test for Carts

#### PROCEDURE:

- Attach ramps to drums
- Set handles at center of balance
- Load cart with rated load
- Cycle 520 times

#### PASS CRITERIA:

- Cart and all components must remain functional



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We provide innovative solutions to the increasingly difficult challenges faced by our customers. We accomplish this through a marriage of technological advancements and strong personal and corporate relationships, both of which are built on a commitment to excellence. Most important, we offer this faster than expected, because speed to market is a crucial factor for all of our clients.

At Cascade Engineering, we are continually shaping ideas in plastics through materials development, engineering and manufacturing of plastics products, support materials and services for the solid waste industry. We look forward to the opportunity to create solutions that make sense for you, and for your bottom line.



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# SHAKE, RATTLE AND ROLL



Wheel Test # 1

Cascade Engineering uses an extensive research, development and testing laboratory that meets and exceeds all ANSI standards. This in-house testing ensures our customers are provided with the highest quality, most durable containers available in the solid waste industry.

In addition to the ANSI-Z245.30-1999 requirements, our internal laboratory currently performs the following durability and performance tests for our 35, 64 and 96 Gallon Universal and 96 Gallon Fully Automated containers.

## WHEEL TEST # 1

### PURPOSE:

- Simulates rolling cart down 75-foot driveway and dropped off curb

### PROCEDURE:

- Attach speed bumps to drum
- Set handles at center of balance
- Load cart with rated load
- Roll 15 miles and drop every 75 feet

### PASS CRITERIA:

- Wheels and axles must remain functional and roll freely



Drop Test

## DROP TEST

### PURPOSE:

- Determine cold impact of carts (10 carts)

### PROCEDURE:

- Condition carts and weight for 24 hours at negative 22 degrees F
- Load cart with 160 pounds
- Attach cart to hoist
- Lower cart to 15 feet and release (carts are dropped one time)
- If cart passes, increase drop height by one foot
- If cart fails, decrease drop height by one foot
- Continue until all ten carts have been dropped

### PASS CRITERIA:

- Carts must be able to hold water

## TWO-BAR LIFT TEST

### PURPOSE:

- Determine cart durability with semi-automated systems

### PROCEDURE:

- Test cart at rated load (max. 335 pounds)
- Seal cart lid
- Set lift time to 2.4 to 2.6 seconds
- Double pump at top of cycle
- Cycle 1650 cycles (3 lifetimes)

### PASS CRITERIA:

- Cart must remain functional
- Cart must be able to hold water



Two-Bar Lift Test

## GRABBER LOAD/UNLOAD TEST

### PURPOSE:

- Determine cart durability with fully automated system

### PROCEDURE:

- Test cart at rated load (max. 335 pounds)
- Cycle 520 times minimum

### PASS CRITERIA:

- Cart must remain functional
- Cart must be able to hold water



Grabber Load/Unload Test

## TIPPER LOAD/UNLOAD TEST

### PURPOSE:

- Determine cart durability with semi-automated system

### PROCEDURE:

- Test cart at rated load (max. 335 pounds)
- Cycle 520 times minimum

### PASS CRITERIA:

- Cart must remain functional
- Cart must be able to hold water

Featured on this DVD you'll find testing demonstrations on both the Universal/Commercial 96 Gallon Cart and the Fully Automated 96 Gallon Cart.

