

CALIBRATION CHART (US)

Agency: _____

Location: _____

Truck No: _____

Date: _____

Spreader No: _____
By: _____

Control Setting	Gate Opening (Hopper Type Spreaders)		DISCHARGE RATE (pounds discharged per mile)									
	A	B	C	5 mph (x 12.00)	10 mph (x 6.00)	15 mph (x 4.00)	20 mph (x 3.00)	25 mph (x 2.40)	30 mph (x 2.00)	35 mph (x 1.71)	40 mph (x 1.50)	45 mph (x 1.33)
	Shaft RPM (Loaded)	Discharge per Revolution (pounds)	Discharge per Minute (lb) x B)	TRAVEL SPEED AND COMPUTATION MULTIPLIER ()								
1			-									
2			-									
3			-									
4			-									
5			-									
6			-									
7			-									
8			-									
9			-									
10			-									
11			-									

THE ACTUAL APPLICATION RATE (POUNDS PER LANE MILE) ON THE HIGHWAY IS THE DISCHARGE RATE DIVIDED BY THE NUMBER OF LANES BEING TREATED

Different materials will spread at different rates at the same setting, so spreaders must be calibrated with the material that will be used.

Spreader Calibration Procedure

Calibration of spreaders is simply calculating the pounds per mile discharged at various spreader control settings and truck speeds by first counting the number of auger or conveyor shaft revolutions per minute, measuring the salt discharged in one revolution, then multiplying the two and finally multiplying the discharge rate by the minutes it takes to travel one mile. With hopper-type spreaders, specific gate openings must be calibrated. Measure from floor of conveyor to bottom edge of gate. Each spreader must be calibrated individually; even the same models can vary widely at the same setting.

Equipment needed:

1. Scale for weighing.
2. Canvas or bucket/collection device.
3. Chalk, crayon or other marker.
4. Watch with second hand.

1. Warm truck's hydraulic oil to normal operating temperature with spreader system running.
2. Put partial load of salt on truck.
3. Mark shaft end of auger or conveyor.
4. Dump salt on auger or conveyor.
5. Rev truck engine to operating RPM (at least 2000 RPM).
6. Count number of shaft revolutions per minute at each spreader control setting, and record.
7. Collect salt for one revolution & weigh, deducting weight of container. (For greater accuracy, collect salt for several turns to get the weight for one revolution.) This can be accomplished at idle or very low engine RPM.
8. Multiply shaft RPM (Column A) by discharge per revolution (Column B) to get discharge rate in pounds per minute (Column C), then multiply discharge rate by minutes to travel one mile at various truck speeds to get pounds discharged per mile.*

Calibration steps:

*For example, at 20 MPH with 30 RPM and 7 lbs. discharge— $30 \times 7 = 210$ lbs. discharged per mile.

1. Remove or turn off spinner.
2. Set auger on given number, such as No. 2.
3. The sack or heavy canvas under charge chute.
4. Mark specific distance, such as 1,000 feet.
5. Drive that distance with spreader operating.
6. Weigh salt collected in sack or container.
7. Multiply weight of salt by 5.2 (in case of 1,000 feet) or 52.8 (in case of 100 feet) to get pounds per mile. This will be the amount of salt discharged per mile, which remains constant regardless of speed, but calibration must be done for each control setting.

CALIBRATION CHART

Agency: _____
 Location: _____
 Truck No.: _____
 Date: _____
 By: _____
 Spreader No.: _____

GATE OPENING (HOPPER TYPE SPREADERS)

Control Setting	Shaft RPM (Loaded)	Discharge Per Revolution (Pounds)	Discharge Rate (Lbs/Min)	5 mph x 12.00	10 mph x 6.00	15 mph x 4.00	20 mph x 3.00	25 mph x 2.40	30 mph x 2.00	35 mph x 1.71	40 mph x 1.50	45 mph x 1.33
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

MINUTES TO TRAVEL ONE MILE

Control Setting	Shaft RPM (Loaded)	Discharge Per Revolution (Pounds)	Discharge Rate (Lbs/Min)	5 mph x 12.00	10 mph x 6.00	15 mph x 4.00	20 mph x 3.00	25 mph x 2.40	30 mph x 2.00	35 mph x 1.71	40 mph x 1.50	45 mph x 1.33
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

This weight remains constant