

CIF Project #737 - (Density Study Phase 1)

Project Background

In the summer of 2014, bin and truckload weight data from 16 municipalities were assessed to estimate “in the field” average densities and standard deviations of various recyclable materials and bin and truck sizes.

Phase 1 of this project was designed to gather as many data points (truck and bin weights) as possible to attempt to minimize geographic, weather and local operational idiosyncrasies. The resultant spreadsheet permits readers to identify the bin/truck size of interest and reference it to a payload weight of a specific recyclable material.

Summary of Results

The spreadsheet attached is not an attempt to identify target weights/densities, ideal weights/densities or the truth of manufacturers’ payload claims. The data displayed is considered reliable; however, this density study is a work in progress and is intended to be updated from time to time.

Changing material mixes, especially packaging, and local variables such as operations, equipment, climate, scheduling, compaction settings, etc. can all significantly affect the density of materials observed in the field, therefore, CIF assumes no responsibility or liability for any use made of the data provided herein and reserves the right to change said data anytime without notice as new information becomes available.

Notwithstanding the above disclaimer, municipalities are encouraged to review the spreadsheet and compare their own results to the densities reported. Significant differences, either above or below the reported weights, may prompt further investigation and be of financial value to the local municipality as well as Province wide. Therefore, municipalities observing significant differences in weights compared to their own similar sized bins/trucks are requested to contact CIF who will assist with investigating the difference and may recommend a variety of options up to and including financial assistance, if appropriate/available.

Material	Fibre + OCC			Fibre No OCC			OCC			Containers + Glass			Containers			Glass			Single Stream			Single Str. No OCC		
	Average			Average			Average			Average			Average			Average			Average					
Bin Size yd ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³	t/load	kg/m ³	t/m ³
20 compacted 20	1.22	83.10	0.08				0.61	39.10	0.04				0.61	39.40	0.04	5.97	392.00	0.39	1.22	82.60	0.08	1.38	89.00	0.09
30 compacted 30													0.92	41.70	0.04	7.80	343.40	0.34						
35 compacted 35							0.54	17.20	0.02															
40 compacted 40	3.36	106.90	0.11	3.36	110.60	0.11	1.22	41.60	0.04	1.83	64.40	0.06	1.22	39.80	0.04				1.53	52.60	0.05	3.06	98.40	0.10
40 compacted 40	5.20	166.90	0.17	4.89	198.91	0.16				3.67	118.80	0.12												
Truck Size yd ³																								
35 compacted 35				2.41	93.20	0.09				1.07	40.70	0.04							4.01	154.20	0.15			
37 compacted 37																			5.66	200.70	0.20			
38 compacted 38	1.16	44.50	0.04							1.83	64.40	0.06												
38 compacted 38	4.94	0.17	4.94							3.20	118.80	0.12												
40 compacted 40																			5.50	178.40	0.18			
42 compacted 42	1.28	44.80	0.04							1.28	44.00	0.04							1.93	59.40	0.06			
43 compacted 43	2.37	64.50	0.06							1.15	35.11	0.04												
48 compacted 48																			1.83	53.00	0.05			
49 compacted 49																			1.87	47.30	0.05			