



California Mattress and Foundation Size and Type Counting Project
December 2021

The Mattress Recycling Council California, LLC (MRC) commissioned a mattress type and size counting project to identify the frequency and proportion of mattresses and foundations of the most common sizes and unit types received by the California mattress recycling program. The data from this project will serve MRC's goals of better understanding the recycling materials stream and tracking changes in it over time. It will also provide baseline data for a life cycle assessment (LCA) study MRC is undertaking to understand the major contributors to environmental impacts arising from end-of-life management of discarded mattresses. The LCA will evaluate the environmental performance of the current baseline process for receiving, transporting and recycling discarded mattresses as well as several proposed or emerging recycling processes. The data generated from the LCA will produce numerical indicators of potential environmental burdens.

This report makes references to mattresses, foundations and units:

- Foundation – Commonly known as a box spring, foundations may be manufactured using only a wooden structure or wood structure with a metal spring supports.
- Mattress – Mattresses may be manufactured from all foam or a combination of foam and metal springs. Two types of springs are common in mattress construction. Bonnell coils are interconnected hourglass-shaped steel wire coil structures. Pocketed coils are individual steel coils encased in polypropylene or woven cotton sleeves that are sewn or adhered together.
- Unit or Units – Refers to either a mattress, a foundation or combination of both.

MRC enlisted a mattress recycler to count and categorize over 3,200 units as they entered their facility. Inbound loads of units selected for the project mimic the percentage of units collected from primary sources (retailers, solid waste facilities etc.) by MRC in California in 2020. For each load that was evaluated, the source was recorded, along with the size (king, queen, full, twin), and unit type (all foam, inner-spring, futon, foundation) of each unit. Table 1 shows the results of this count, including a percentage frequency for each size/type combination.



Table 1: Frequency of Each Size and Type Observed in MRC's Counting Project

		Size				Combined by Unit Type
		Twin	Full	Queen	King	
Type	Inner-spring mattress	14%	12%	20%	9%	54%
	All-foam mattress	2%	2%	3%	2%	9%
	Foundation	17%	7%	13%	N/A	37%
	Futon mattress	0%	0%	0%	N/A	0%
Combined by Size		33%	21%	36%	10%	

The recycler measured the frequency of each of these subcategories over several days as units were deconstructed. The sample size was over 800 additional units. Table 2 shows the percentage of units for each unit type and size present in the recycling stream. These percentages were determined by applying the ratio of the subcategories to the counts shown in Table 1.

Table 2: Estimated Frequency of Each Size and Type Including Subcategories

		Size				Combined by Unit Type
		Twin	Full	Queen	King	
Type	Bonnell Spring Mattress	7%	6%	10%	4%	27%
	Pocket Coil Mattress	7%	6%	10%	4%	27%
	Metal & Wood Foundation	10%	4%	8%	N/A	22%
	All Wood Foundation	7%	3%	5%	N/A	15%
	All Foam Mattress	2%	2%	3%	2%	9%
	Futon Mattress	0%	0%	0%	N/A	0%
Combined by Size		33%	21%	36%	10%	



Figures 1 and 2 show the percentages of units sizes and unit types present in the recycling stream.

Figure 1: Frequency of Unit Sizes Observed

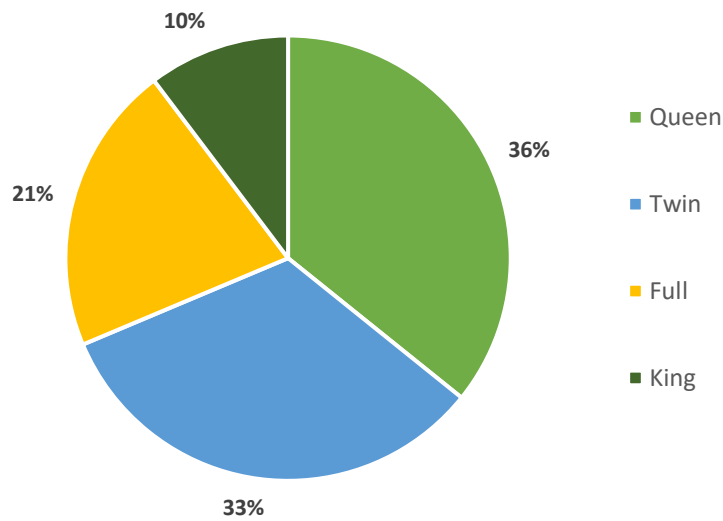


Figure 2: Frequency of Unit Types

