



May 17, 2021

Mr. Clark Williams
CalRecycle
1001 I Street
Sacramento, CA 95812

Re: Weight per Square Yard Update

Dear Clark:

As required by CalRecycle and per our approved Plan, CARE has completed the 2020 annual confidential industry survey to compute the average weight of broadloom (residential and commercial) carpet and carpet tiles sold in the U.S. This letter documents the 2020 mill survey and sets the discards calculation parameters effective January 1, 2021. No survey was conducted for the year 2020 (2019 annual data) due to the pandemic. This year we elected to have Aprio conduct both the survey and the analysis.

CARE recognizes how important the denominator parameters are to the calculation of our Recycling Rate (RR). At the same time CARE is continuing to work with Cascadia on the discards study, which has also informed the State's 2018 waste characterization study. Because any consequential change in the discards formula will require careful consideration and discussion due to the importance of consistency year over year, and the critical nature of the recycling rate for tracking performance growth, CARE supports CalRecycle's position to make such denominator changes commensurate with implementation of the next Plan anticipated January 1, 2023.

As we have discussed, making any change in the discards formula beyond the update of the existing parameters, would require a modification to the legislated mandate of 24% since it is based on the current formula. We would like to schedule another update on this topic with CalRecycle.

Methodology

76 mills were requested to fill out a survey and 70 responded. The 6 unresponsive mills were small and would not have influenced the outcome. Mills detailed their weight per square yard sold of residential and separately commercial broadloom and commercial tile. We asked mills to breakdown their split among the three categories so CARE could calculate percentages in each market segment due to known weight variations. Data was used from 69 of the mills and we note the top 10 mills represent 95% of all carpet sold in the State of California. The responses from one small mill were believed to be in error due to mixed units. As a result of this analysis, the following average weight per square yard will be used in our formula calculations of discards beginning Q1, January 2021.

Weight/ Square Yard (P) decreased to 4.11 pounds

The average weight per square yard is down from 4.48 pounds from the last update cycle (2018). CARE notes this is a significant drop in the average weight. Thus, an analysis of factors driving the change was conducted. The analysis showed weight changes across all segments. In addition, the ratio of sales among the three segments changed significantly with residential and commercial broadloom sales dropping while sales of commercial tile increased.

The bulk of the drop in average weight is driven by significant decreases in 2 of the Top 10 mills. This is considered dematerialization from a design perspective. Such a shift has an obvious impact on the denominator calculation. In addition, while the sale of tile was up, the average weight of tile dropped significantly by approximately 22.7% since the 2018 survey. This is another good example of dematerialization.

Additionally, based on 2020 analysis received from the independent firm Market Insights (Confidential Report Table CA4-a dated March 13, 2021) the following data will be used in the discards calculation formula:

Replacement (R) rate rose to **86%** from 83%

Demolition (D) rate increased to **1.2%** from 0.6%

Deselection (DS) was calculated at 29%, a significant increase vs. 2018 at 0.75%. However, such a major adjustment would disrupt the current calculations, skew the trend line, and raise questions for which definitive and defensible answers are not available. Since this number is still under active analysis by Cascadia, CARE cannot make such a major shift without achieving the final Cascadia report and ensuing dialog with CalRecycle on the impact, both quantitatively in the Recycling Rate and the legal implication of the 24% statutory and 26% Plan goals. Cascadia is in full agreement that the quantification of this factor is challenging. In addition and based on recent work, everyone generally accepts DS was higher in the past, that we are past "Peak Deselection" and that the true number is likely 4-5% today, based on verbal communications with recyclers. Thus, CARE will use the 2018 factor of **0.80%** until a more accurate and agreed to DS factor is in hand. This also provides consistency in calculating and comparing the Recycling Rate for trend purposes.

The currently approved formula in Plan v97 December 2018 is:

$$\text{Discards} = ((\text{Sales} * R) * P) * (1 + D + DS)$$

Thus, the discards formula will be updated with the latest parameters to give a better estimate of total discards based on known sales.

CARE refers CalRecycle to the Cascadia generated Discards analysis report to be submitted on June 30, 2021. This work has been reviewed on several occasions with CalRecycle and is set again for June 10th. Cascadia has pointed out that the term (1 + D + DS) is incorrectly calculated as it looks at only the replacement sales vs. all sales for carpet. Replacement sales do not reflect those volumes that were being displaced by hard surfaces. However, the split between hard vs soft surface is estimated by

Market Insights as 53 to 47. The ratio is so close to 50 50 and is thus within estimating errors, so this factor does not have a major impact on the total discards calculated. Clearly the DS factor is the single largest contributor to any adjustments.

Here are the definitions used for reference:

The factors used to calculate the amount of carpet available for diversion include:

S= Carpet Sales into California for the reporting period (square yards) (note 1)

R= Percent of carpet that is replacement, or carpet replacing existing carpet. Replacement carpet is the carpet destined for the landfill. (This data is supplied annually by outside market research firm Market Insights).

P= Average weight of carpet per square yard (note 2)

D= Pounds of carpet from demolition projects not replaced (this data is supplied by the outside market research firm). D is converted to pounds by multiplying the percentage by the product of Sales x R x P.

DS= Percent of carpet that is removed but not replaced by carpet. Rip out for deselection is carpet destined for the landfill. (DS=Sales x rate) (note 3)

Notes:

1. Sales data comes from the independent accounting firm Aprio who collect the confidential sales data quarterly from the carpet manufacturers (mills) registered with CARE. An analysis of the raw sales data show that 95% of all carpet sold in CA is sold by the top 10 mills. Cascadia has subsequently validated the accuracy and veracity of the sales data.

2. Average weight was based on a confidential survey of all mills by Aprio. Cascadia has subsequently validated the accuracy and veracity of the weight data via independent field sampling.

3. Deselection continues to be a challenge to accurately determine. More recent analysis points to a higher rate of DS than has been used in the past. However, recent data from the field suggests we are well past "peak DS". Efforts continue with Cascadia on how best to estimate this number.

Note that the term demolition represents the teardown of a building. Continued efforts working with Cascadia have found it exceptionally difficult to get any accurate estimates on the demolition rate in CA. In addition, there is no way to know the actual square yards of carpet coming out of such a demolition process. By using the demolition rate obtained from Marketing Insights and assuming 100% of the area is carpet, we are obviously overestimating the total volume of carpet sent to landfill via this source as not all square footage would be covered by carpet. However, this is a tiny fraction (<1%) of overall sales, is considered within the statistical variance, and does not significantly alter the flow of PCC to landfill in CA.

The SPC reviewed and approved these changes to implement the updated information and calculation as expected by CalRecycle effective with the January Q1 2021 data analysis (which will take place during early May after the end of the Q1 reporting period).

CARE will calculate the Recycling Rate in Q1 using the new and old parameters for comparison for review with CalRecycle.

CARE will implement the changes effective Q1 2021 as usual.

Sincerely,

A handwritten signature in cursive script that reads "Robert Peoples".

Robert Peoples, Ph.D.
Executive Director, CARE