

# Reducing the Cost of Inventory Counting with Improved Raw Material Storage



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Industry Partners: Ken Gaines (CEO) and Louis Jaramillo (Operations Director)

## Concerns Regarding Steco's Inventory Management

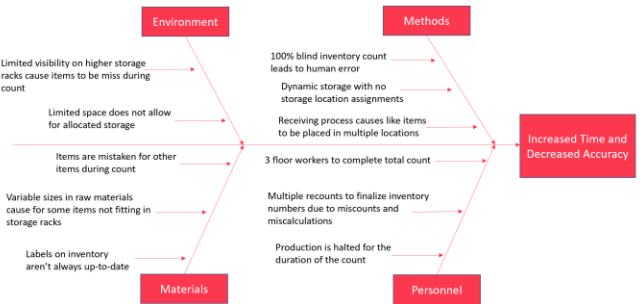
Stecco Corporation is a small cutting fluids manufacturer located in Little Rock, AR that operates with only 7 employees. Stecco produces a line of cutting fluids called Tap Magic that helps to reduce friction on tools for various machine processes. Their main concern brought to our attention involves their raw material inventory management. At the end of each month, limitations force Stecco to halt production and perform a 100% blind count of all raw material inventory that takes 2-4 days and results in a 91% inventory accuracy. We have been tasked with providing a better inventory counting process that will minimize the time it takes to perform the count and increase overall inventory accuracy.

## Stecco's Current Inventory Counting Process

Stecco monitors their raw materials and finished goods inventory by doing a physical count at the end of each month.



Stecco's inventory management concerns include the limited dynamic storage and the time required of and accuracy of the physical count.

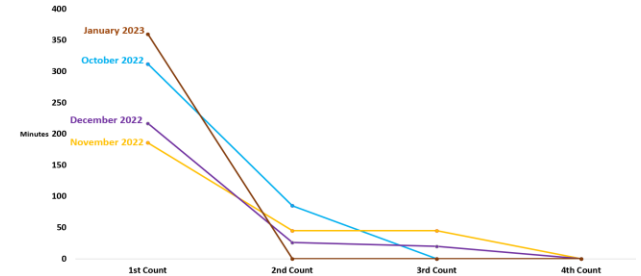


## Time and Accuracy Analysis of Current Process

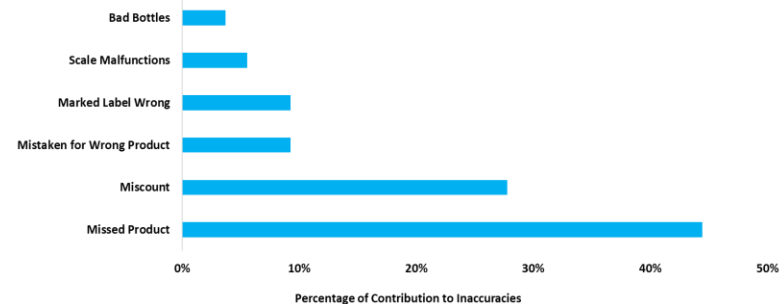
No data was available for item accuracy and time per count, so we developed an inventory counting sheet to further analyze Stecco's counting process.

November Inventory Count	Item	Item Type	Expected Count	Date	1st Count	Was the item in multiple locations in the warehouse?	Reason for Discrepancy	Date	2nd Count	Was the item in multiple locations in the warehouse?	Reason for Discrepancy
Containers	Printed 4L	M									
	Printed 4L	M									
	Printed 4L Nano	M									
	4oz Mfg Bottle	Ca									
	Printed 5 Gallon 4L	M									
	2oz Non-Floor	M									
	2oz Blank Floor	Ca									
	2oz Blank non-Floor	M									
	2oz TME Floor	M									
	2oz TMT Floor	M									
	4oz Blank Bottle	Ca									
	1.5 Gallon Bottles	Ca									
	55G Plastic Drum	Ca									
	55G Plastic Lid	Ca									
	55G Plastic Pail	Ca									
	300G Drum	Ca									
	300G Drum	Ca									
	275 Gallon Tank	Ca									
	55G Plastic Lid (F)	Ca									
	55G Plastic Pail (F)	Ca									

From the new data obtained from the inventory counting sheet, we determined the count times for the months of October 2022 to January 2023.



Using the data collected from our Excel sheet, we determined the main contributions of inaccuracies to be items in multiple locations and missed product during the count.



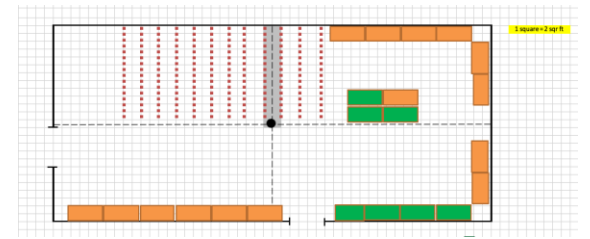
## Results from our Cost Analysis

We performed a cost analysis and determined that Stecco spends an average of \$16,845 annually performing their raw material inventory count.

\$5,000.00	= Lost sales due to occasional stockouts due to inventory errors, annually
\$2,000.00	= Additional taxation from increased inventory due to error, annually
\$4,500.00	= Cost of Sage, Annually
\$2,750.00	= Amount of items written off as a loss per year
5000	= Raw material warehouse space in square foot
25%	= Percentage of warehouse dedicated to inefficient storage
\$0.75	= Loss of space due to inefficient storage, \$/sf (empty racking, items stacked on top of one another)
\$150.00	= Labor cost per hour for physical inventory issues after 1st count
55.25	= Average minutes spent per month after 1st count
0.92	= Average hours spent per month after 1st count
11.05	= Average hours spent per year after 1st count
\$1,657.50	= Labor cost per year for additional counts = \$150/hr * 11.05 hr
\$937.50	= Loss of space due to inefficient storage, total dollars per year = \$0.75/sf * 5000 sf * 25%
\$16,845.00	= Total annual amount spent towards inventory counting process
\$16,845.00	= \$5,000 + \$2,000 + \$4,500 + \$2,750 + \$1,657.50 + \$937.50
	denotes cost
	denotes cost given to us from industry partners

## Implementation of Dedicated Storage and RFID System

After analyzing the accuracy data for the four months, we determined 9 inventory to use dedicated storage to increase accuracy.



Implementing an RFID System for Stecco's raw material inventory would result in an annual savings of \$9,645.

$$ROI = \left( \frac{\$16,845 - \$7,200}{\$7,200} \right) \times 100 = 133.96\%$$

$$Payback\ Period = \frac{\$7,200\ investment}{\$16,845\ savings}$$

$$Payback\ Period = 0.427\ years = 5.13\ months$$

