Comparison Test between the Mat Tag and a Standard Tag when Embedded in Mats

Scope of the document is to compare the reading in bulk of mats, using first normal uhf textile tags that have been put inside the mat, and then sticking more or less, in the same position of the textile tag, the new Mat-tag, properly designed for this specific type of product.

For this test, we used a metal trolley with several types of mats inside (from small size to very large size mats that reach almost 4mt in length). Obviously, all the mats were rolled up to be placed inside the trolley and we used the Portal Plus reading system as it is the most suitable for this type of large trolley. Unfortunately, it was not possible to test the Light Cabin (which would surely be more accurate in the readings, as it is a closed system), because the trolley, and therefore the mats, were too long to fit in it.

The tag inside the mats, is positioned close in the corners, parallel to the direction of rolling.

We tested 3 levels of loading, first with only 15 pieces, then with 30 pieces, and finally with the full amount of 40 mats that we had at our disposal. Each loading was carried out with 10 readings.

Below is the setup of the test and the result of the readings.

Expert M8 portal +	Reading system Portal + expert M8					
	15 Mats		30 Mats		40 Mats	
	Mattag	MIX population no mattag	Mattag	Mix population no mattag	Mattag	Mix population no mattag
Run_1	15	10	30	24	40	30
Run_2	15	10	30	24	40	31
Run_3	15	10	30	24	40	31
Run_4	15	10	30	24	40	31
Run_5	15	10	30	24	40	31
Run_6	15	10	30	24	40	31
Run_7	15	10	30	24	40	31
Run_8	15	10	30	24	40	31
Run_9	15	10	30	24	40	30
Run_10	15	10	30	24	40	31
Average	15.00	10.00	30.00	24.00	40.00	30.80
Max	15	10.00	30	24.00	40	31.00
Min	15	10.00	30	24.00	40	30.00
Percentage reading	100.00%	66.67%	100.00%	80.00%	100.00%	77.00%

Conclusion

We have impressive repeatability with both tags. With the mat tag, we always have 100% readings, while with the textile tag, we have 67% to 77% readings.