



Outline of ASTM TMC Rating Workshop Data Analysis Method

1. Calculate the mean and standard deviation of all rated zones for all parts.
2. Convert each individual rating result to a standardized result (Y_i):

$$Y_i = (\text{rating} - \text{mean}) / \text{standard deviation}$$
3. Assess distribution of data using histogram of Y_i results. Investigate causes for any distribution that is not statistically normal and reject data where no resolution is possible.
4. Summarize standardized results for each rater across all parts and determine the following:

number of Y_i values where $-1 < Y_i \leq 1$
 number of Y_i values where $-2 < Y_i \leq 2$
 number of Y_i values where $-3 < Y_i \leq 3$
 overall standard deviation of the Y_i s

5. Compare and group according to the criteria below:

| Group | n* | Within $\pm 1 Y_i$ | Within $\pm 2 Y_i$ | Maximum Std. Dev. |
|--------|----|--------------------|--------------------|-------------------|
| Blue | 6 | 85% | 98% | 0.75 |
| Red | 6 | 80% | 95% | 0.85 |
| White | 6 | 60% | 90% | 1.20 |
| Yellow | - | - | - | - |

* Varies by test area