

COLOR EVALUATION OF PAINTS**Application**

This procedure is used to measure small differences encountered in color matching of paints and in color fastness evaluation.

Scope

This procedure employs the use of a tristimulus filter colorimeter. The spectral responses obtained closely approximate the C.I.E. tristimulus specifications of Illuminant C (Standard Artificial Daylight), thus the readings of the instrument and the derived color differences correlate with visual judgment made in average daylight.

Apparatus Required**Colorimeter***

A "Colormaster" differential colorimeter is used to measure the color of paint when applied to steel panels.

Three filters - green, red and blue - are supplied with the instrument. The reflectance or transmission readings obtained successively through each of the filters are labeled G (green, R (red) and B (blue). G and B are proportional to C.I.E. tristimulus values, Y and Z respectively, of the sample measured. The transmission of the red filter closely matches the red portion of the C.I.E. value "X" and the blue component is obtained as described in the Adams Coordinate Manual supplied with the instrument.

This instrument may be obtained from the Meeco Instrument Mfg. Co., Hatboro, PA.

Two white glass standards are provided with the instrument. The calibration values of G, R and B are marked on the back of these standards. The standards should be kept clean by occasionally washing with soap and water.

Equivalent apparatus may be used which will provide the tristimulus values X, Y and Z as indicated above.

Date	Action	Revisions
2001 03 13	Revised	Editorial – no technical change A. Cockman
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Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

Standardization of Instrument

1. Place a white glass standard over the sample and reference ports of the instrument.
2. Set the reflectance control to read the "G" value of the white glass standard over the left hand or sample port. Set the green control to the middle of its range (1 1/2 turns from end). Turn the filter switch to "G". Adjust the Zero control to make the meter read zero, making the final adjustment with the sensitivity switch depressed for high sensitivity.
3. Turn the filter switch to "R" and set the reflectance control to read the "R" value of the white glass standard. Set the red control to make the meter read zero, making the final adjustment with the sensitivity switch depressed for high sensitivity.
4. Turn the filter switch to "B" and set the reflectance control to the "B" value of the white standard. Set the blue control to make the meter read zero, making the final adjustment with the sensitivity switch depressed for high sensitivity.

Note: The above controls should not be disturbed further, except when standardization is being repeated.

5. Sensitivity Check

With the white standards on the sample and reference ports and the instrument standardized as in Steps 1 through 4, check the sensitivity by determining the number of meter divisions that correspond to a change in reflectance dial reading of 0.1 %. Sensitivity should be at least as large as the values below:

	G	R	B
Sensitivity Ua/0.1 %	5	3	3