



National Institute of Standards & Technology

Certificate

Standard Reference Material 1006c

Smoke Density Chamber Standard

Non-flaming Exposure Condition

This Standard Reference Material (SRM) consists of sheets of cotton-linter paper (principally α -cellulose). It is intended primarily for evaluating the operation of smoke density chambers under non-flaming exposure conditions. SRM 1006c must be used according to the prescribed calibration and standardization techniques outlined in the ASTM Standard Test Procedure, E662-83.

The certified value for maximum specific optical density is:

$$D_m (\text{corr.}) = 178 \pm 20$$

The maximum specific optical density, D_m , uncorrected for window deposit is 188 ± 19 .

The certified value is the mean of results from 31 tests on two layer thicknesses of representative samples of a lot 0.51 mm (0.020 inch) thick cotton-linter paper (principally α -cellulose). The two layers of paper produce a test specimen with a nominal thickness of 1.01 mm (0.040 inch). The indicated imprecisions are expressed as one standard deviation for a single measurement and include both sample and measurement variability.

All tests were performed in a commercial smoke density chamber. Smoke density measurements were made under non-flaming exposure conditions in accordance with the detailed procedure presented in American Society for Testing and Materials (ASTM) Standard E662-83, "Test Method for Specific Optical Density of Smoke Generated by Solid Materials," and in National Fire Protection Association (NFPA) 258-1987, "Standard Research Test Method for Determining Smoke Generation of Solid Materials."

NOTE: Prior to test, the material must be dried for 24 hours at 60 °C and then conditioned to equilibrium at 23 \pm 3 °C and 50 \pm 5 percent relative humidity.

Smoke density chamber testing and statistical analysis leading to the certification of this SRM were performed by J.R. Lawson and A.M. Perez of the Center for Fire Research, National Engineering Laboratory.

The support aspects involved in the certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by R.W. Seward.

Gaithersburg, MD 20899
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