

DIVISION OF ELECTRONIC MEASUREMENTS AND DEVICES

**TEST REPORT**

NO. 950070650 of 05 JULY 2005

***Alpha-Beta-Gamma ( $\alpha$ - $\beta$ - $\gamma$ ) RESIDUAL RADIOACTIVITY TEST***

**SAMPLES:** Tree Samples of ECOGLO Photoluminescent Strip E2071c

**TEST RESULTS:** ***1. NO INTEGRAL ALPHA, BETA AND /OR GAMMA (A, B AND/OR G) RADIATION ABOVE THE BACKGROUND NOISE RADIATION LEVEL.***  
***2. THE SAMPLES OF THE MATERIAL MARKED E2071c ARE NON-RADIOACTIVE AS TESTED TO 6 NYC BC REF.STD. 6-1, para. 4.1 to 4.4 and ASTM D3648.***

**TEST DESCRIPTION**

1. The test per NYC BC Ref. Std. 6-1A and ASTM 3648. Test conditions: T=22°C, RH=44%, P=101.1 kPa.
2. The radiation intensity readings were taken at nine different points on the surface of each of three specimens of each of the three samples tested located inside and outside of the radiation insulating chamber and under twelve angles between the normal to the sample surface and the direction of the field of gravity. The signal for each of the test runs relates only to the magnitude of the background noise.
3. The experimental error evaluated by the partial derivatives and least squares methods does not exceed 6%. The data on the standard deviation are kept on file at CIEMS.
4. INSTRUMENTS AND DEVICES USED
  - Geiger Counter Model SGM-49C PRI (2.5  $\mu$ R/hr per div.)
  - Nuclear Radiation Monitor Model DX-1 ITS (1  $\mu$ Sv/h per div.)
  - Scintillation Counter Model 111 PRI (0.5  $\mu$ R/hr per div.)
  - Survey RA Instrument Model HP-370 Eberline with  $\alpha$ - $\beta$ - $\gamma$  Proportional Counter Model 4314 LND
  - Envirothermocryostat Model 510 GRE with Programmed Temperature/Humidity Controller Model 100B CII
  - Digital Hydrothermometer Model 63-844 MI, Barometer Model 602650 SB
  - Starrett Dial Indicator Model 25-109 (1.270  $\mu$ m/div.).
5. The standard reference materials used for the test setup calibration:
  - NIST SRM 4320 (Cm-244)
  - NIST SRM 4326 (Po-209).
6. The equipment used in the test meets the applicable NIST, ASTM, ASME, OSHA and State requirements and was calibrated with the standards traceable to the NIST. The calibration was performed per ANSI/ISO/ASQ Q9004-2000, ANSI/ASQC M1-1996, ISO 10012:2003, ISO 10012-2:1997, MIL-STD-45662, MIL-I-45208, NAVAIR-17-35-MTL-1, CSP-1/03-93 and the instruments manufacturers' specifications.
7. The equipment passed a periodic accuracy test in June 2005. Next test - June 2006. The linear measure equipment will be calibrated in December 2005.

**TEST ENGINEER: 29**

**DIVISION MANAGER:** *Cynthia Smythe*