2.73   **Surface Coating of Plastic Parts for Business Machines**

2.73.1   Applicability and Designation of Affected Facility

(a)   The provisions of this source category apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b)   This source category applies to any affected facility for which construction, modification, reconstruction, begins after January 8, 1986 (NSPS sources) **OR** which is required by the Director to determine compliance with other regulations or standards.

2.73.2   Nomenclature

(a)   All symbols used in this source category not defined below are given meaning in the Clean Air Act of 1970 (as amended) or the Georgia Air Quality Act (as amended) or in published regulations pertaining thereto.

D_c =   density of each coating as received (kilograms per liter)

D_d =   density of each diluent VOC (kilograms per liter)

L_c =   the volume of each coating consumed, as received (liters)

L_d =   the volume of each diluent VOC added to coatings (liters)

L_s =   the volume of coating solids consumed (liters)

M_d =   the mass of diluent VOC's consumed (kilograms)

M_o =   the mass of VOC's in coatings consumed, as received (kilograms)

N   =   the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)

T   =   the transfer efficiency for each type of application equipment used at a coating operation (fraction)

T_{avg} =   the volume-weighted average transfer efficiency for a coating operation (fraction)

V_s =   the proportion of solids in each coating, as received (fraction by volume)

W_o =   the proportion of VOC's in each coating, as received (fraction by weight)

2.73.3   Performance Tests

(a)   Section 1.2 paragraphs 6 and 8 do not apply to the performance test procedures required by this section.

(b)   The owner or operator of an affected facility shall conduct an initial performance test as required under Section 1.2 and thereafter a performance test each nominal 1-month period or at other frequencies (e.g., daily), as specified by the Director for each affected facility according to the

procedures in this section where averaging times different from one month is required, that averaging time is substituted throughout this source category wherever the phrase "1-month" appears.

(1)   The owner or operator shall determine the composition of coatings by analysis of each coating, as received, using Reference Method 24, from data that have been determined by the coating manufacturer using Reference Method 24, or by other methods approved by the Director.

(2)   The owner or operator shall determine the volume of coating and the mass of VOC used for dilution of coatings from company records during each nominal 1-month period. If a common coating distribution system serves more than one affected facility or serves both affected and non-affected spray booths, the owner or operator shall estimate the volume of coatings used at each facility by using procedures approved by the Director.

      (i)   The owner or operator shall calculate the volume-weighted average mass of VOC's in coatings emitted per unit volume of coating solids applied (N) at each coating operation [i.e., for each type of coating (prime, color, texture, and touch-up) used] during each nominal 1-month period for each affected facility. Each 1-month calculation is considered a performance test. Except as provided in paragraph (b)(2)(iii) of this section, N will be determined by the following procedures:

      (A)   Calculate the mass of VOC's used ($M_o + M_d$) for each coating operation during each nominal 1-month period for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci}\ D_{ci}\ W_{oi} + \sum_{j=1}^{m} L_{dj}\ D_{dj}$$

where **n** is the number of coatings of each type used during each nominal 1-month period and **m** is the number of different diluent VOC's used during each nominal 1-month period. ($\sum L_{dj}D_{dj}$ will be 0 if no VOC's are added to the coatings, as received.)

      (B)   Calculate the total volume of coating solids consumed (L_s) in each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci}\ V_{si}$$

where **n** is the number of coatings of each type used during each nominal 1-month period.

      (C)   Select the appropriate transfer efficiency (T) from Table 1 for each type of coating applications equipment used at each coating operation. If the owner or operator can demonstrate to the satisfaction of the Director that transfer efficiencies other than those shown are appropriate, the

Director will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be approved by the Director on a case-by-case basis. An owner or operator must submit sufficient data for the Director to judge the validity of the transfer efficiency claims. The Director may require the determination of actual transfer efficiency on a case-by-case basis.

(D) Where more than one application method is used within a single coating operation, the owner or operator shall determine the volume of each coating applied by each method through a means acceptable to the Director and compute the volume-weighted average transfer efficiency by the following equation:

$$T_{avg} = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} \, V_{sik} \, T_k}{L_s}$$

TABLE 1. TRANSFER EFFICIENCIES

Application Methods	Transfer Efficiency	Type of Coating
Air atomized spray ...	0.25	Prime, color, tex-ture, touch-up, and fog coats
Air-assisted airless spray	0.40	Prime and color coats
		do.
Electrostatic air spray	0.40	

where **n** is the number of coatings of each type used and **p** is the number of application methods used.

(E) Calculate the volume-weighted average mass of VOC's emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$N = \frac{M_o + M_d}{L_s \, T_{avg}}$$

(T_{avg} = T when only one type of coating operation occurs).

(ii) [Reserved]

(iii) [Reserved]

(iv)   If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the Director that the volume-weighted average mass of VOC's emitted to the atmosphere during each nominal 1-month period per unit volume of coating solids applied (N) is within each of the applicable limits because of this equipment, compliance will be determined by the Director on a case-by-case basis.

2.73.5   Test Methods and Procedures

(a)   The reference methods in Appendix A to this text, except as provided under Section 1.2, shall be used to determine compliance as follows:

(1)   Method 24 for determination of VOC content of each coating as received.

(2)   For Method 24, the sample must be at least a 1-liter sample in a 1-liter container.

(b)   Other methods may be used to determine the VOC content of each coating if approved by the Director before testing.