Designation: D605 – 82 (Reapproved 2012)

Standard Specification for Magnesium Silicate Pigment (Talc)[1]

This standard is issued under the fixed designation D605; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers pigments that consist substantially of natural hydrous magnesium silicate, and is restricted to those minerals that conform to the chemical limits prescribed herein and can be suitably processed to what is commercially known as paint pigment quality.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following hazard caveat applies to the test method portion of this specification only. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments

D281 Test Method for Oil Absorption of Pigments by Spatula Rub-out

D562 Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer

D717 Test Methods for Analysis of Magnesium Silicate Pigment

D1208 Test Methods for Common Properties of Certain Pigments

D1210 Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage

3. Composition and Properties

3.1 The pigment shall be made by grinding or otherwise processing natural, hydrous magnesium silicate and shall conform to the following requirements:

	Weight %	
	min	max
Combined magnesium and calcium silicates (MgO plus SiO_2 plus CaO)	88	...
Calcium oxide (CaO)	...	10
Aluminum and iron oxides (R_2O_3)	...	6
Loss on ignition	...	7
Moisture and other volatile material	...	1

3.2 *Color*—The color shall be equal, within agreed upon tolerances, to that of a reference sample agreed upon between the purchaser and the seller.

3.3 *Coarse Particles*—The pigment shall contain no more than 2 % of coarse particles, retained on a 45-μm (No. 325) sieve except as may be agreed upon between the purchaser and the seller.

3.4 *Water-Soluble Matter*—The pigment shall contain no more than 1 % water-soluble matter except as may be agreed upon between the purchaser and the seller.

3.5 *Oil Absorption*—The oil absorption shall be equal, within agreed upon tolerances, to that of a reference sample agreed upon between the purchaser and the seller.

3.6 *Consistency*—When consistency is included in the purchaser's specification, it shall be equal, within agreed upon tolerances, to that of a reference sample agreed upon between the purchaser and the seller.

3.7 *Fineness*—The paint fineness shall be equal, within agreed upon tolerances, to that of a reference sample agreed upon between the purchaser and the seller.

4. Sampling

4.1 Two samples shall be taken at random from different packages from each lot, batch, day's pack, or other unit of production in a shipment. When no markings distinguishing between units of production appear, samples shall be taken from different packages in the ratio of two samples for each 5000 kg (10 000 lb), except that for shipments of less than 10 000 lb, two samples shall be taken. At the option of the purchaser, the samples may be tested separately or after

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

blending in equal quantities, the samples from the same production unit form a composite sample.

5. Test Methods

5.1 Tests shall be conducted in accordance with the following ASTM test methods, where applicable. Test procedures not covered by ASTM test methods shall be mutually agreed upon between the purchaser and the seller.

5.1.1 *Color, Composition, and Coarse Particles*—Test Methods D717.

5.1.2 *Water-Soluble Matter and Loss on Ignition*—Test Methods D1208.

5.1.3 *Oil Absorption*—Test Method D281.

5.1.4 *Consistency*—Use the pigment to prepare a mixture according to the following directions: Weigh 78 g of petroleum spirits and 80 g of linseed oil (viscosity, 21 to 24 P; acid number, 4 to 8) into a pint can and thoroughly mix with a spatula. Weigh in 160 g of magnesium silicate and stir with a spatula to wet all lumps. Stir with a motor-driven propeller-type stirrer for 5 min at approximately 800 r/min. Weigh in an additional 180 g of linseed oil and stir an additional 2 min with the electric stirrer. Determine the consistency in accordance with Test Method D562.

5.1.5 *Fineness*—Test Method D1210. The test mixture may be the same as that used for the consistency test.

5.1.6 *Moisture*—Test Methods D280.

6. Keywords

6.1 hydrous magnesium silicate; magnesium silicate; pigment; talc