

ENGINEERING SPECIFICATION

Hyster-Yale Group, Inc. Title: BLACK PAINT (GLOSS 20 +/- 5 @ 60 DEGREES)	Document Control Number: HCE-51
Page 1 of 2 Document Author: Bob Downey	Effective Date: 01-Jan-2016 Revision No. 2016-01

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OBJECTIVE: To specify a lead and lead chromate free* 20 gloss black paint suitable for application over primer painted parts or bare metal.

SCOPE: Paint per this specification may be used on HYG product.

Note: HCE-148 should be used to indicate the (black) color of various non-painted items such as labels, plastic components, etc.

Note: Polyester Powder Coating and Polyester Full Bake Enamel are allowed per this specification. Specify HCE-116 if ONLY Polyester Powder Coating and / or Polyester Full Bake Enamel are allowed.

CITED: ASTM D523, Standard Test Method for Specular Gloss
 ASTM D609, Preparation of Cold-Rolled Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products
 HCE-116, Black Paint (Gloss 20 +/- 5@ 60 Degrees
 HCE-145, Paint / Finish Functional Requirements
 HCE-148, Black Color

DEFINITIONS: *Lead Free - Paint must contain no added lead or chromates with contamination allowable up to 1 ppm as determined by analysis of the paint solids utilizing EPA method SW 6020 or equivalent.

REQUIREMENTS: Color

Color and color tolerance are per HCE-148 unless otherwise specified on the drawing.

Gloss

Specular gloss of 20 +/- 5 at 60° per ASTM D523. Gloss test shall be made on steel panels conforming to ASTM D609, Type 3 - Method A with a dry paint film thickness that satisfies the functional requirements of this specification.

Composition

The composition of the paint/finish is the responsibility of the vendor, but is limited by the following requirements:

- Paint shall be free of lead*, lead chromate*, and other known toxins. The formulation and its intended application shall comply with all applicable safety and environmental regulations. Material Safety Data Sheet, Product Safety Data Sheet, or local equivalent must be supplied by paint vendor to using facility.

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- The paint vendor will report values for the following parameters in writing to the procuring plant for each batch of paint being shipped.

Total Solids by Weight
Total Solids by Volume
Viscosity as Received: @ 25°C (77°F) with a #4 Ford cup
Delta E value per HCE-148

- Solvents used in as received paint or used for further reduction shall comply with all applicable safety and environmental regulations.

Container Marking

Paint containers shipped to HYG plants must be marked clearly with the letters "HCE-51 BLACK PAINT – GLOSS 20 +/- 5", the vendor name and number, batch number and date of drumming. Vendor shall comply with all applicable packaging and labeling requirements.

Storage

Paint stored above 4°C (40°F) in unopened vendor containers for three months shall not settle, skin or gel enough to affect application or performance. Any settling or separation that does occur must be easily re-incorporated. Other "storage life" may be negotiated between vendor and a HYG plant.

Functional Requirements

Paint per this specification must comply with functional requirements in HCE-145 unless otherwise defined in this specification or on the drawing.

**METHOD OF
SPECIFYING:**

HCE-51 BLACK PAINT