

NAVISTAR, INC.		
Engineering Procedural Standards		<i>NUMBER:</i> EPS-159
<i>TITLE:</i> Material Styling Evaluation (MSE)		<i>CURRENT ISSUE DATE:</i> February 2011
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Introduction

This document describes the process which suppliers of Navistar decorative materials and finishes follow in order to achieve Material Styling Evaluation (MSE) sign-off, as referenced in EPS-158, Visual Component Approval Process (VCAP). Any supplied component or assembly containing decorative materials or finishes, must have a completed / signed MSE form, obtained from this process. Proof of MSE sign-off must be included with the supplier’s Appearance Approval Report (AAR), as part of their VCAP documentation.

The following steps cover the Navistar Material Styling Evaluation (MSE) Process. See also the MSE Flow Chart on the following page:

- Color & Material Exploration
- Color & Material Trend and Strategy Recommendation
- Color & Material Sample Development

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- MSE-Phase I-Visual Mastering
- Production Test run / Material Engineering Sign-Off
- MSE-Phase II (Full) and Appearance Standard Creation / Control / Distribution

Materials and finishes must be resubmitted for appearance evaluation and MSE approval under the following circumstances:

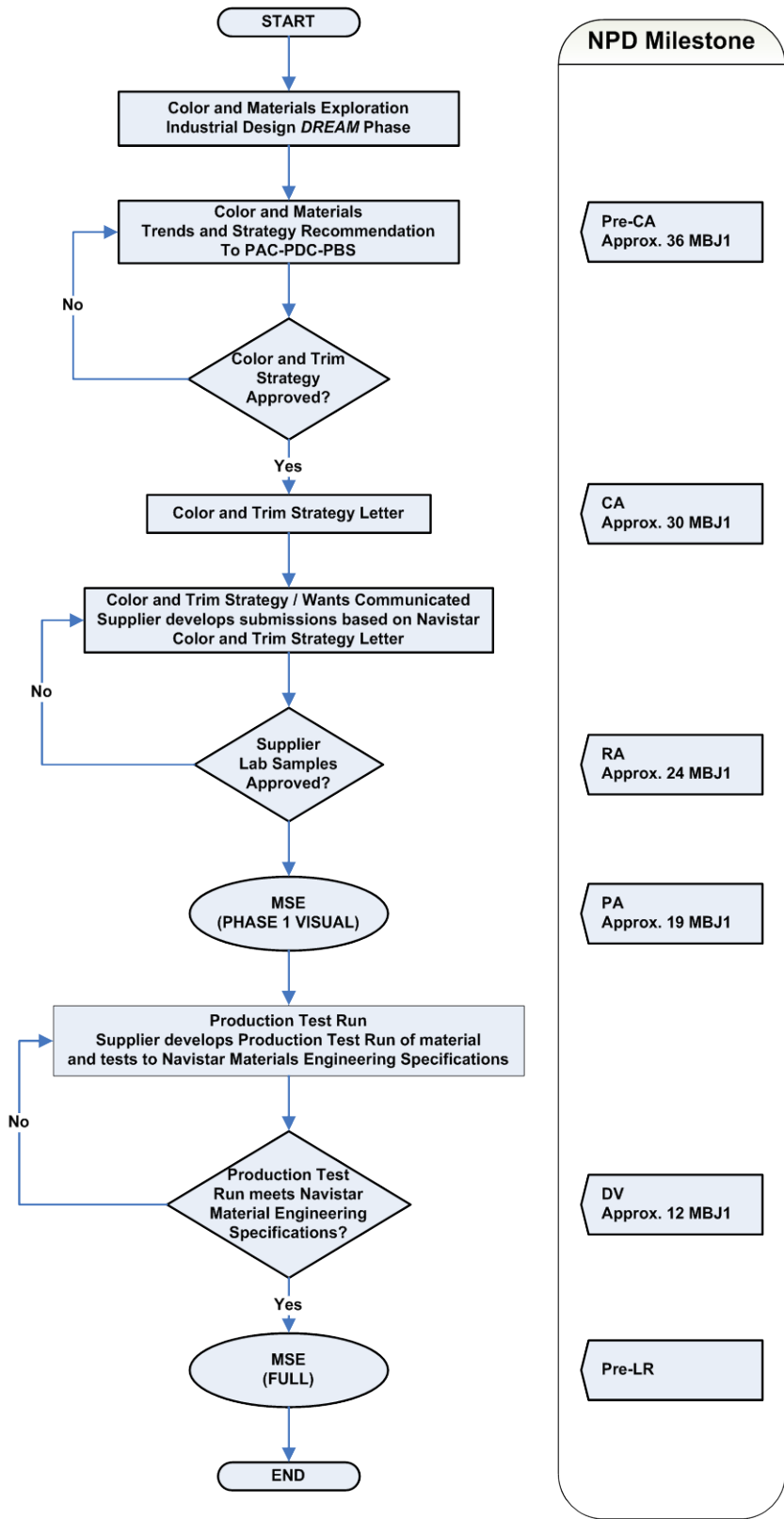
- Material change or raw material source change
- Re-sourcing of part to another supplier (includes Tier 2, 3, etc.)
- Re-location to another manufacturing facility
- Manufacturing process change that affects appearance
- Design change that affects appearance
- Restoration or repair made to a worn or damaged tool
- Capacity tooling (example-New chrome plating source brought online due to volume)

NOTE:

Under certain circumstances, the MSE resubmission can be waived. Upon request of supplier, Navistar Industrial Design /Craftsmanship (IDC) will determine on a case by case basis.

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MSE FLOW CHART



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Key Process Step Descriptions

Generic Timing

The specific events and generic timing for Material Styling Evaluation, are shown in context with the overall Navistar Design Process on Attachment 1. The intent is to provide the program team with key events to ensure a successful launch, with fully approved materials.

Color & Material Exploration

Navistar Industrial Design-Color and Materials, is responsible for the appearance finishes on all commercial (non-military) products related to visual (aka “decorative”) components produced by Navistar, including but not limited to:

- Fabrics and Carpet
- Leather and Vinyl
- Paint Colors and applied finishes
- Mold-In-Color Plastic Colorant
- Hydrographic and In-Mold Decorated patterns and finishes
- All textures associated with visual components, regardless of manufacturing method
- Graphics, Labels and Badging

All such materials and finishes will be reviewed for adherence to design intent and appearance harmony with other materials, both interior and exterior of vehicle.

The Color & Material Exploration phase is conducted pre-Charter Approval. During the Exploration phase, Navistar ID / Color & Material personnel study color, material, and finish trends from a variety of industries. Advanced color, material, and finish strategies are then formulated for management review. Market research data are also studied to determine customer preferences and establish color and trim strategy proposals.

Color & Material Trend and Strategy Recommendations

Trend boards are assembled and Color & Trim Strategy presentations are conducted with Navistar management, using representative samples from any source, creating thematic “Environments” that showcase appearance alternatives from comprehensive systems to single detail items. These presentations are integral with the objectives of Design and Craftsmanship; to create added value for the customer at an affordable cost.

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When all parties are in alignment, a Color & Trim Strategy Letter is drafted, coinciding with Navistar Product Development (NPD) Charter Approval. This letter serves as the kick-off of the MSE process. The C&T Strategy letter directs Industrial Design to pursue the color, material, and finish strategy by engaging the supply base for input. This letter also establishes content and budget parameters for both design and engineering reference.

Color & Material Development

Navistar Industrial Design / Color & Materials will extend invitations to the supply base at the beginning of the Development phase. Color & Trim strategy is shared, along with a list of “Wants and Needs”, based on C&T Strategy Letter direction. Navistar expectations for Quality, Cost and Timing are also conveyed. The CMD phase is iterative in nature; the supply base offers solutions and alternatives using “lab samples”; Samples will be reviewed, corrected, and signed-off using the MSE form, and assigned one of two possible designations:

- APPROVED - Supplier may immediately proceed to production test run for Material Engineering test certification.
- CORRECT AND RESUBMIT - Supplier must correct all appearance deficiencies and submit revised samples for approval.

Color & Materials group reviews and guides the refinement of subsequent sample submissions until appropriate appearance solutions are reached.

MSE (Phase I) Visual Mastering

Lab samples that meet all appearance criteria are assigned *Visual Master* MSE status. Navistar’s MSE approval document (see attachment) tracks the progress of each item submitted for development. This form will follow the material / finish through the MSE process and, once fully approved, will be a required reference document for any component that uses that material / finish. A copy of the MSE, when applicable, must accompany the Appearance Approval Report for a supplier to achieve full appearance approval (AAR).

Navistar Color & Materials Group, at their discretion, may request multiple duplicate Lab samples for program planning and management review purposes. Duplicate visual master samples can be used for color harmony with other visual components within a program. Visual MSE material should be of reasonable size for reference and discussion purposes. During the development and visual mastering processes, it is expected that the supplier will familiarize themselves with Navistar Materials Engineering requirements for the product they will provide.

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NOTE: MSE sign-off of Lab samples is not considered complete MSE. Appearance standards used for production programs must be certified by Navistar Materials Engineering.

Production Test-Run / Material Engineering Sign-Off

Full MSE status is achieved by successful passage of the requirements prescribed by Navistar Materials Engineering. A material / finish not certified by Navistar ME cannot be used for production programs. The supplier is responsible for accessing the specifications and performing all tests (third party test data is acceptable in most cases). Supplier submits both data and samples from a Production-Level Test Run; hand-made lab samples are not acceptable for this process. Navistar Material Engineering staff will review all samples, test data, and may request additional testing if warranted. Upon successful completion of all testing, Navistar Materials Engineering will sign the MSE certifying it as Fully Approved.

Full MSE and Master / Appearance Standard Creation / Control / Distribution


Once certified, a representative sample from the Test Production Run will be tagged and placed in the Industrial Design Color & Materials archive as the master sample for that particular material / finish. As applicable, the supplier will be asked to create and ship a number of representative master samples for distribution to program teams as Appearance Standards. Throughout the production life of a program material / finish, it may be necessary for the original master supplier to provide additional standards for Navistar usage.

All interior masters can be obtained through Navistar Design or Navistar Materials Engineering. The Color / Material / Standards (CMS) Request Form (Attachment 1 on page 7) may be faxed or sent via email to the appropriate Master Distribution contact. Exterior paint masters can be purchased from Navistar paint supplier (Akzo Nobel). Refer to Attachment Y for up-to-date distribution contact information.

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Attachment 1 – Color/Material/Standards (CMS) Request Form (EPS-158-FM004)

		Master Standard Request Form			EPS-158-FM004 Revision: New Revision Date: 29 JUNE 2011
DATE	SUPPLIER NAME	SUPPLIER CONTACT	SUPPLIER CODE	ORDER STATUS (NAVISTAR TO UPDATE) <small>YELLOW = IN PROCESS GREEN = FILLED</small>	
SUPPLIER ADDRESS / SHIP TO					
STREET		FAX NUMBER*			
CITY / TOWN		OFFICE PHONE NUMBER*			
STATE / REGION		MOBILE PHONE NUMBER*			
ZIP / POSTAL CODE		CONTACT E-MAIL			
*For telephone and FAX numbers outside the United States, please include country and city code numbers					
<input type="checkbox"/> LOCAL (supplier pick-up) <input type="checkbox"/> US MAIL <input type="checkbox"/> EXPEDITE - Method					
PROGRAM NUMBER	**MATERIAL TYPE	TEXTURE CODE	COLOR ID CODE	QTY	REQUEST STATUS (NAVISTAR TO COMPLETE)
**MATERIAL TYPES					
PLASTIC: Molded in Color (MIC) Texture Master Standards SOFT TRIM: Fabric / Vinyl / Leather PAINT: Metal Paint Panel Standards					
Paint Standard requests are required by Navistar Industrial Design only to ensure adequate quantities of panels are generated per each color/program. Suppliers shall enter on line requests for standards directly from Navistar's paint supplier Akzo.					
<ul style="list-style-type: none"> • Paint, online requests: http://akzonobel.formbin.com/forms/color 					
<ul style="list-style-type: none"> • Paint, contact Directly: AkzoNobel Car Refinishes 1845 Maxwell Street Troy, MI 48084 Attn: Color Services Phone # - 800-618-1010 Fax # - 248-637-0479 Email: ColorSupport.ANCRNA@akzonobel.com 					

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