

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS P-9540
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TITLE: Quality Requirements for Front Axle and Rear Axle Assemblies		CURRENT REV No.: 1508
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WRITTEN/EDITED BY: W. Cook	APPROVED BY: R. Goluch	SUPERSEDES: 1402 – Feb. 2014
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<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		
Change Notice: Added specific coating requirements for steel axle flanges; Editorial changes		
Reference: File:02	Keywords: Front axles, rear axles, axle assemblies.	

1.0 APPLICATION

This specification covers quality control requirements for purchased front and rear axle assemblies which are purchased from a supplier, provided by a licensee of a NAVISTAR axle design, or provided to NAVISTAR plants as completed units ready for delivery directly to the truck assembly line.

2.0 SCOPE

This specification covers paint requirements, quality requirements, quality control plan, source approval, and shipping and identification requirements.

2.1 Restricted Chemical Substances

Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the MPAPS B-50 specification.

3.0 REFERENCE DOCUMENTS

Unless otherwise specified, the latest issue of all referenced standards shall apply. The following standards, specifications and regulations are referenced in this specification.

Quality System Standard <i>ISO 9001 or TS-16949</i>	NAVISTAR MPAPS G-9009
NAVISTAR MPAPS B-50	NAVISTAR TMS-9543
NAVISTAR Engineering Design Std. A-16	CFR Title 29, Part 1910
NAVISTAR Manufacturing Standard MS-D-13	CFR Title 49, Part 571.121
NAVISTAR TMS-9526	MPAPS G-5, Grade -32

4.0 GENERAL REQUIREMENTS

Product supplied shall be suitable for its intended application.

4.1 Purchased Axle Housings

For axle housings purchased separately for production or service part usage or as part of a purchased axle assembly, the axle housing supplier must provide and warrant the housing free of defects and fully capable of performing to an axle housing capacity rating as established by the manufacturer. Considerations for the supplier include choice of material, actual mechanical properties of the material,

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heat treatment, quality of manufacture including welding, cleanliness, and protective coatings. These considerations are to be the responsibility of the axle housing supplier. Refer to TMS-9526 for axle housing weld requirements.

4.1.1 Cleanliness

All housings shall be clean and free of any material detrimental to the function of the part.

4.2 Protective Coatings

4.2.1 All unmachined surfaces shall be protected by paint (black) which meets the requirements of MPAPS G-9009, Class IIB. Also, this paint shall be compatible for re-coating with chassis paint, Grade - 32, per MPAPS G-5, used as a finish coating in NAVISTAR Assembly Plants.

4.2.2 All steel axle flanges and hub ends shall be prepared to one of the following prior to chassis paint:

- Primer meeting MPAPS G-9009 Class IIP. Color specified as NAV-0001. If parts are received from supplier in primed condition, a suitable Rust Preventative or Rust inhibiting oil should also be applied.
- Clean surface prepared per MPAPS G-1 Type Z1. If parts are received from supplier in prepared condition a suitable Rust Preventative or Rust inhibiting oil should also be applied.

100% of assemblies must be cleaned of contamination and any RP/Rust inhibiting oil removed fully prior to chassis paint; this shall not be an optional process step based on visual inspection. Cleaning and RP/rust inhibiting oil removal process to be defined by Navistar Manufacturing site and trialed / verified effective. Recommended RP removal wipe product: Bonderite Parcosol 263 RP removal wipe from Henkel.

4.3 Lubricants for Spindles

All spindles must be coated with a corrosion resistant lubricant using the approved products listed in Section 9.0. Use of coatings not on this list must be approved by NAVISTAR Drivetrain Engineering prior to use.

5.0 QUALITY

All front and rear axle assemblies supplied must be delivered in a clean and dry condition. All axle assembly/test fluids/greases which may remain or leave a residue in or on the axle must be compatible with NAVISTAR factory fill oils/greases. Spindles shall be free of rust, pits, burrs, gouges, nicks, and scratches, and must be coated with a temporary protective coating. Preservative oils and compounds must provide protection from rust and corrosion for a minimum period of 1 month outdoor storage for production parts and for a minimum period of 1 year unheated inside storage for service parts. Threaded ends shall be free from paint, dirt, or damage which could affect the torque-tension relationship. Kingpin and tie rod joints are to be lubed.

5.1 Compliance to FMVSS 121

All axles supplied with hubs, brakes, and steering arms must comply with the applicable requirements of FMVSS 121. A Compliance Report in accordance with TMS-9543 will be provided.

5.2 Quality Control Plan

A Quality Control Plan for this product will be established by mutual agreement between NAVISTAR and the supplier. The following items, where applicable,* shall be included in the control plan as features for management by statistical process control.**

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