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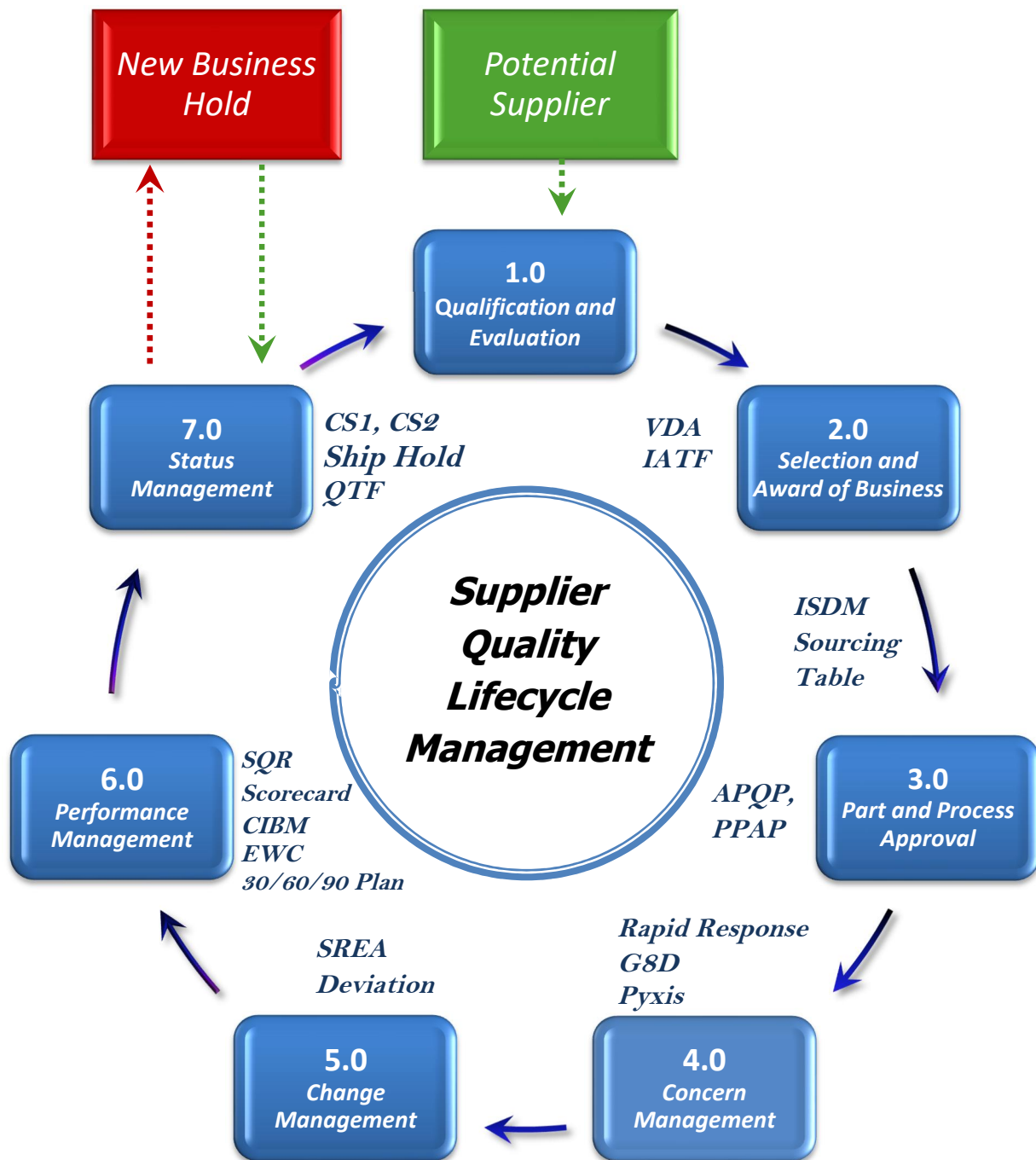


Navistar Supplier Quality Requirements

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ISQ-001-QM
November 21, 2022
Revision K

Supplier Quality Lifecycle Management Diagram



The supplier quality lifecycle management diagram above illustrates the stages of interaction between Navistar and suppliers. It is a continual process that each supplier is expected to embrace and use as a guideline for doing business with Navistar. A learning module for each stage is available upon request at [Navistar's Suppliers Training](#). Supplier representatives responsible for quality and program management are expected to complete all training modules. Navistar evaluates suppliers' performance throughout the lifecycle and uses those evaluations to drive continual improvement of part quality and service.

Foreword for NSQR Revision K

Dear Valued Suppliers:

Navistar and our supply base have come a long way together over the past few years. We have seen significant improvement in PPM levels that have led to better perception and uptime at our customers. I would like to thank all of our supplier partners for the hard work put in to make this happen. As we continue to strive to be the unquestioned leader in Uptime, we must continue to push ourselves to the next level. Since the acquisition of Navistar by TRATON, we also are in the midst of standardizing processes and procedures with the rest of the TRATON brands. With that, Navistar has made some adjustments to our Navistar Supplier Quality Requirements (NSQR)

One of the biggest points of emphasis I would like to place regarding the NSQR is in our Tier 1 suppliers ensuring that they are following the section regarding Pass Thru Characteristics (PTC) and Weak Detection (WD) in a more robust fashion, in particular at the tier 2 through tier N level. As we drive our PPM levels lower, we are seeing an uptick in the number of issues that stem from tiered suppliers passing through to Navistar or our customers. It is of vital importance that all our suppliers cascade these requirements to your supply base and put robust protections in place to ensure any issues are caught before they leave your facility.

In the updated NSQR, you will also see reference to updated training modules that are posted in the Quality tab under NavistarSupplier.com that cover the NSQR. It is our expectation that this training is taken by all cross functional stakeholders in your company where all understand the Navistar requirements. I trust that you will find this training beneficial without taking a substantial amount of time to complete.

Finally, there are a few changes regarding change management, some PPAP updates, and a requirement to include your DUNS number for each of your manufacturing locations in iValua.

As we continue to optimize our processes to better align with the rest of the TRATON Group, we will be moving to one common Quality Requirements document, that being the Formel Q and CVS-10. The goal is for this to be the last revision of this document before that next change.

I appreciate your organization reviewing the changes to this document and refreshing yourself on the existing requirements. Together, with you, we will design and produce the best trucks, buses, and powertrains in the industry; getting better every day.

Sincerely,
Wayne Rygel
Director of Supplier Quality



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Scope

This document describes Navistar's Quality Requirements for suppliers, who provide purchased parts to Navistar, Inc. It is part of the purchasing agreement for parts and materials used in the manufacture and assembly of Navistar vehicles, engines, and service parts. Contractual or other legal provisions shall take precedence over all requirements stated in this document.

Direct suppliers are required to cascade these requirements to lower tiered suppliers throughout the supply chain, a practice often referred to as "flow-down."

Learning modules for the Navistar Supplier Quality Requirements are available through the [Navistar's Suppliers Training](#) link on www.navistarsupplier.com. Navistar suppliers are required to review the training modules, and to flow-down this requirement to their sub-suppliers to review them too. These learning modules are available for all suppliers free of charge.

Purpose

These requirements follow Navistar's Quality Policy: "Navistar, Inc., is dedicated to consistently delivering reliable and durable products with superior value to our customer...throughout the lifecycle." Navistar's goal is to provide customers with the best products and services and expects no less from its suppliers.

The seven sections which follow detail the requirements for suppliers, core tools to be used, and the way results are to be measured and evaluated. The Navistar Supplier Quality Representative will work with the supplier to ensure that any deviation from these requirements does not affect the finished part requirements.

1.0 Supplier Qualification and Evaluation

1.1 Supplier Assessment

During the Quotation phase, suppliers will be requested to enter and/or upload information into Navistar's Ivalua portal. It is important that suppliers include the DUNS number of the intended manufacturing location, when submitting information. The DUNS number will be used to schedule a VDA assessment, if needed. Suppliers must also complete and upload the Supplier Quotation Feasibility Commitment form (ISQ-014-FO) to confirm the product can be manufactured as designed, explain where gaps exist, or offer recommendations for changes. This form is contained within the Ivalua portal, as well as on www.navistarsupplier.com website.

An assessment is a formal examination of a supplier's production quality system and process, conducted by a Navistar Supplier Quality Representative. Participation from all levels of the supplier's organization, including management, is expected during this evaluation. Navistar

reserves the right to conduct an assessment at the supplier location at any time. For new suppliers, the assessment may be completed prior to, or after, the award of business, at Navistar's discretion.

Assessments are performed at supplier locations for various reasons, such as, but not limited to: as a requirement for new business sourcing decisions, assessing Special Product Group prospective and current suppliers, and/or current suppliers with changes in manufacturing location or products, engineering changes which affect the current product or process, or validating corrective actions which addressed a quality impact. The assessment may take several days depending on the complexity of the process under review.

The default assessment is VDA 6.3 (process audit). Suppliers are required to achieve an "A" or "B" classification. A supplier with a "C" classification (not quality capable) will not be considered for award of business.

Navistar Supplier Quality may waive an assessment if the supplier has TRATON Brand or VW Group certified supplier status.

1.2 Quality Management System Requirements

Unless specifically exempted by Navistar Director of Supplier Quality, the supplier is required to be registered to IATF 16949 or VDA Quality Management System. AS 9100 quality system registration is an allowable alternative for suppliers supporting Navistar Defense programs (Refer to Appendix A). If Supplier is currently registered, then Supplier must maintain certification with an accredited registrar, and must furnish a copy of the registration certificate to Navistar. If Supplier is compliant to IATF/VDA, but not certified by a recognized third-party registrar, Supplier agrees to provide evidence of such compliance to Navistar. If Supplier is working towards its quality registration, then Supplier must provide, upon Navistar's request, evidence of such efforts and, upon receipt of its registration certification, inform Navistar and furnish copies of its registration certificates. Suppliers are required to notify Navistar should suspension or loss of certification and/or major system findings in their QMS from any 3rd party Registrar.

Regardless of quality systems registration status, suppliers must have an effective quality management system in place with adequate resources, to comply with all Navistar Supplier Quality Requirements as noted in the *Supplier Quality* and *Supplier Guidelines / Terms and Conditions* sections on www.navistarsupplier.com. Direct suppliers are required to cascade these requirements to lower tiered suppliers throughout the supply chain, a practice often referred to as "flow-down".

1.3 Special Product Group Suppliers

Suppliers of “critical” components that would cause the most damage to Navistar brand, if they failed, are classified as Special Product Group (SPG) suppliers. These suppliers are subject to these additional requirements:

- a. Special Product Group suppliers are expected to achieve an “A” green or “B” yellow classification utilizing VDA 6.3, before award of business.
- b. Special Product Group Suppliers are expected to achieve an “A” green or “robust B” yellow classification (85% or higher) utilizing VDA 6.3, before serial production. For grades below A rating, supplier must provide an improvement action plan to Navistar.
- c. Special Product Group Suppliers are required to conduct annual VDA 6.3 self-assessments and submit the results to Navistar. Beginning calendar 2022, submissions must be uploaded into Ivalua supplier portal by June of each calendar year. Exceptions to be approved by the Navistar Supplier Quality Director.
- d. Special Product Group suppliers are required to submit critical product and process characteristics, SPC data, and other quality data requested by Navistar, into Ivalua supplier portal unless directed otherwise by the Navistar Supplier Quality representative, at the frequency specified by the Navistar Supplier Quality representative. Exceptions to be approved by the Navistar Supplier Quality Director.
- e. Special Product Group Suppliers are required to submit annual PPAPs into Ivalua supplier portal unless directed otherwise by the Navistar Supplier Quality representative, as evidence of ongoing compliance to requirements.
- f. These Special Product Group requirements shall apply to, and flow down to the entire supply chain, including sub-tier manufacturers.

Failure to comply with these requirements is subject to cost reclamation (see Appendix A). Contact the applicable Navistar Supplier Quality representative for additional guidance.

1.4 Special Processes

1.4.1 AIAG Special Processes

Suppliers with internal or outsourced “special processes,” as identified by the Automotive Industry Action Group (AIAG), are required to conform with relevant AIAG Special Process documents: CQI-9 Heat Treat Systems Assessment, CQI-11 Plating Systems Assessment, CQI-12 Coating Systems Assessment, CQI-15 Welding Systems Assessment, CQI-17 Soldering Systems Assessment, CQI-23, Molding System Assessment, CQI-27 Casting System Assessment, and CQI-29 Brazing System Assessment. In addition, CQI-19 Sub-Tier Supplier Management Process Guidelines and CQI-28 Traceability Guidelines or other standards and/or guidelines specified on product drawings/specifications or other contractual provisions must be met.

Ongoing assessments shall be conducted, at a minimum, annually, to ensure continuous compliance.

The supplier shall keep records as evidence of compliance, as well as all appropriate action plans to address any “not satisfactory”, “needs immediate action” or “failed” findings. The results of the assessments and action plans shall be provided to Navistar.

In addition, all suppliers, who provide special process product, must comply with the following requirements:

- Tier 1 suppliers shall pass this Special Processes requirement down to sub-tier suppliers who have special processes, and the Tier 1 supplier shall have evidence of compliance by the sub-tier suppliers.
- Sub-tier supplier annual assessments may be conducted by the Tier 1 supplier, the customer, or third-party assessor, with Navistar Supplier Quality agreement.
- The Sub-tier supplier annual audit and corrective action results shall be provided to Navistar.

1.4.2 Navistar Defense Welding Requirements

Navistar Defense suppliers, with welding processes, must comply with the provisions of Appendix B, unless specific Navistar Customer contractual provisions supersede these requirements.

1.5 Environmental, Health and Safety Certification

Navistar recommends suppliers be certified to the current ISO 14001 Environmental Management standard. Whether certified or not, suppliers are expected to adopt a responsible environmental management system which satisfies all applicable legal requirements.

Navistar expects suppliers to provide a healthy and safe work environment, and to encourage their employees to accept responsibility for working safely. Compliance with, or certification to, the current ANSI Z-10 or OHSAS 18001 Health and Safety Management standard is the recommended way to ensure health and safety remain a top priority.

2.0 Selection and Award of Business

Navistar selects and awards business to suppliers through a cross-functional process utilizing a Category Management Team (CMT). Depending on the extent of the decision, the CMT may request input from Navistar and TRATON executive management. Criteria for selection and award include, but are not limited to, quality and warranty history, financial stability, competitiveness, and supply chain logistics.

VDA / IATF Quality Management Systems Assessments are inputs into supplier selection and award of business. Prior to sourcing, a positive rating (“A” or “B”) must be achieved.

3.0 Part and Process Approval

3.1 Quality Planning

Navistar requires all Suppliers to take ownership of and manage the Advanced Product Quality Planning (APQP) process, utilizing a structured cross-functional approach. During quality planning activities, controlled conditions are identified, implemented, and documented for the manufacture of Navistar products. The activities identified in the APQP documents must include delivery from the manufacturing facility to a local warehouse and/or sub-assembly facility, re-packaging, re-labeling, inspection, and test, as applicable. Suppliers must track progress and ensure on-time completion of critical items during the planning process. Use of the Navistar Ivalua system to document the planning activity is required. Selected new program launch critical suppliers will be required to complete and submit the APQP 30 element plan and completion dates using the Navistar APQP workbook located on www.navistarsupplier.com.

Suppliers are required to use the APQP process to assure controlled conditions are developed and followed, for the duration of the part production cycle. Suppliers are required to conform to the techniques identified in the AIAG "core tools" (APQP, PPAP, MSA, SPC, FMEA), or equal standards such as VDA, to support planning and ongoing quality control efforts.

Suppliers must require APQP from their sub-contractors and have the records available for review by Navistar.

Pass Through Characteristics and Weak Detections (PTC_WD) are required to be identified during the APQP activities (Tier 1 suppliers are required to identify PTC_WD from their sub-tiers). Reference section 3.8 in this manual for additional information.

New product launch quality planning documentation and activities must include a Safe Launch process, to ensure product conformance. See section 3.18 for additional information.

Navistar new product development (NPD) launch cycle includes a series of vehicle builds. These builds are intended to evaluate Navistar assembly plant and supplier manufacturing capability, product quality, and readiness for Job 1 launch. Suppliers must provide on-site support during these build events and beyond (Job 1 + 90 days), if requested by Navistar. Suppliers must designate a specific company representative to lead the immediate containment activities within the Navistar plant, when non-conforming issues are discovered.

Supplier readiness is evaluated through the Phased PPAP process. See section 3.2 (Phased PPAP) for additional information.

The table below aligns the Navistar NPD build events with the minimum Phased PPAP requirement.

KEY:

(P) = Navistar powertrain business (V) = Navistar vehicle business

DV Build = Provide vehicles and engines for design validation. Engineering build. Non-saleable units.

Cert Build = Provide vehicles and engines for certification, final validation, marketing/show, reliability growth and field test. Validate manufacturing processes and exercise production material systems. Manufacturing build. Manufacturing production-intent processes. Non-saleable units.

Q Build = Verify components and assembly processes meet product requirements and intended performance when run at reduced, controlled capacity volumes. Ensure complete manufacturing and supply base readiness to meet normal production expectations of quality. Saleable units.

VC Build = Verify components and assembly processes meet product requirements and intended performance when run at planned capacity volumes. Saleable units.

Job 1 Build = Implement a controlled production start, producing engines and vehicles at volume for final customers.

Build Event	Minimum PPAP Required	Comments
(P) DV Build (V) DV Build	Phase 0	<p>PPAP is required, when a new product DV build is held on a Navistar engine or vehicle assembly plant production line, the production part design is released, and the part is made by the production source. All three conditions must be present.</p> <p>Otherwise, DV Builds are considered Engineering builds and parts used are considered Engineering samples. PPAP is not required in these situations. The supplier must work directly with Navistar Engineering regarding part quality and performance qualification data.</p> <p>The Navistar Supplier Quality representative may request PPAP for any DV build part, if a valid need arises.</p>
(P) SV Build (V) Cert Build	Phase 0	Prototype level part or process. Reference section 3.2 Part and process Qualification and Approval for additional information.
(P) PV Build (V) Q Build	Phase 1	First customer saleable units. Production level parts made from the production process (Home line tool), one stream of multiple planned processes, or a low volume alternate process. Reference section 3.2 Part and process Qualification and Approval for additional information.
(P) VC Build (V) VC Build	Phase 2	Production level parts made from the production process. Reference section 3.2 Part and process Qualification and Approval for additional information.
(P) Job 1 (V) Job 1	Phase 3	Production level parts made from the production process. Reference section 3.2 Part and process Qualification and Approval for additional information.

3.2 Part and Process Qualification and Approval

Supplier Production Part Approval Process (PPAP) documentation defines the methodology and results which demonstrate compliance to Navistar requirements. Navistar uses the Phased PPAP approach, and compliance to Navistar PPAP requirements is mandatory for suppliers, and sub-tier suppliers (through flow-down). The AIAG PPAP Manual is the foundation of Navistar's Phased PPAP process, but Navistar requirements take precedence over the AIAG publication, where differences occur. In addition, certain Customer specific requirements could apply. The Navistar Supplier Quality Representative will provide guidance as necessary. The submission level and the PPAP phase is dependent on the impact to the Navistar plant, expected volume, supplier's manufacturing process, new part / new process, and risk of supplied part failure which would result in warranty costs. The Navistar Supplier Quality Representative will provide guidance.

The tables below indicate the reasons for PPAP submission and the required PPAP Phase for each, as well as an explanation of each PPAP Phase.

PPAP REASON	PPAP PHASE	COMMENTS
Program Launch New Part New Supplier New Location; Current Supplier Additional Production Stream	Phase 0 through Phase 3	All Phases may not be needed, depending on the maturity of the part and process under review. Phase 0 cannot be used on saleable vehicles or engines.
Global 8D Actions Current Product Design Change Current Product Sub-Supplier Change SREA Approval	Phase 3	A change to a part or process that should already have Phase 3 approval
Phase 0		
<p>Prototype level part produced at a Tool / Machine Shop, Prototype facility, laboratory, or within a prototype cell at the production supplier. The process is separate from the production process and not manned by production personnel.</p> <p>Phase 0 parts are not usable on saleable engines or vehicles.</p> <p>Phase 0 status has a limited duration and will expire. Approval can only be granted for the current build event for new program launches, or 60 days max for non-program launch PPAP activity. The non-program launch timing should be reflective of the minimum amount of time the supplier needs to correct the problem, as suppliers are expected to act with urgency to resolve conflicts and move to the required PPAP status.</p>		
Phase 1		
<p>Production level part and process. Tools and equipment used to produce the product are home line and operated by production personnel.</p> <p>Phase 1 is applied when parts are produced on one stream of a planned multiple stream process, a low volume alternate production process within the intended production supplier facility, or at a production supplier other than the intended production supplier. Quality systems and processes support completion of all Phase 1 PPAP elements with sufficient controls to protect Navistar and our customers.</p>		

Phase 2

Production level part and process. Phase 2 is applied when parts are produced on all streams of planned multiple stream processes, or on the only planned production process. The production tools and equipment are home line and operational at the intended production supplier. Processes are manned by production personnel. All Phase 2 PPAP elements are completed.

Phase 3

All streams of planned multiple stream processes, or the planned production process, have been completed. The permanent production tools and equipment are home line and operational at the intended production supplier. Processes are manned by production personnel. All Phase 3 elements of PPAP are completed. Supplier to complete run at rate declaration section on the PSW.

Suppliers are expected to do everything necessary to achieve full approval and meet Navistar PPAP requirements, prior to shipping the product to Navistar. Navistar recognizes situations exist where all elements of PPAP cannot be met, prior to part need, and additional work is necessary to achieve full approval. The Phase 1 Open exception based PPAP category exists to address such situations, and document which Phase 1 or greater PPAP elements are incomplete at time of submission. The Navistar Supplier Quality Representative will determine when this category may be applied.

Phase 1 Open

Parts must be manufactured on a home line production level tool and manufacturing process. Phase 1 Open status cannot be applied to a prototype part or process.

This Phase is an exception status used when all elements of the required Phase cannot be met. This status indicates additional work is necessary to achieve Phase 1 or greater PPAP status. The Navistar Supplier Quality Representative will determine when to apply this status. Parts with deviations cannot be greater than this status. Phase 1 open status has a limited duration and will expire*. *Approval can only be granted for the current build event for new program launches, or 60 days max for non-program launch PPAP activity. The non-program launch timing should be reflective of the minimum amount of time the supplier needs to correct the problem, as suppliers are expected to act with urgency to resolve conflicts and move to the required PPAP status.

As part of PPAP submittal, suppliers must provide a Navistar Phased PSW, signed by a person with responsibility and authority for quality. The signature confirms the content noted in the PPAP submission is correct and indicates acceptance and understanding of Navistar requirements.

The Navistar Supplier Quality Representative will review the PPAP submission to verify conformance to requirements are met. Suppliers are expected to resolve PPAP submission issues discovered during the review, in a timely manner. Suppliers are expected to plan for such possibilities and ensure PPAP approval does not prevent missed material requirement dates (delivery MRD). Suppliers must implement a 100% inspection process for part features, or characteristics, which do not meet Navistar requirements.

After review and acceptance of the PPAP submission, the Navistar Supplier Quality Representative will sign the PSW. Parts may not be shipped to Navistar facilities until the supplier has received a copy of the signed Navistar Phased PSW, unless the Director of Supplier

Quality or his designee has authorized shipment prior to PPAP approval. No requests (e.g. verbal release, email, or any other manner) from any other Navistar functions constitutes authorization.

In the event the PPAP status achieved is less than the required status, the incomplete PPAP elements require immediate corrective action and must be followed-up promptly with full approval submission. The table below, further aligns each element of the Navistar Phased PPAP process, with the corresponding minimum required documentation:

Requirement by PPAP Phase					
PPAP Elements		0 (Proto)	1	2	3
1	Design Record	Y	Y	Y	Y
1.1a	Reporting of Part Material Composition	Y	Y	Y	Y
1.1b	IMDS Declaration (Customer Specific programs)				Y
1.2	Marking of Polymeric Parts (as applicable)		Y	Y	Y
2	Authorized Engineering Change Documents, as applicable (deviation)	Y	N/A	N/A	N/A
3	Customer Engineering approval, if required		Y	Y	Y
4	Design FMEA (reference section 3.4.1)		Y	Y	Y
5	Process Flow Diagrams		Y	Y	Y
6	Process FMEA ***		Y	Y	Y
7	Control Plan ***		Y	Y	Y
8	Measurement System Analysis Studies		Y	Y	Y
9	Dimensional Results	Y	Y	Y	Y
10	Records of Material / Performance Test Results	As noted	As noted	As noted	As noted
10.1	Design Verification Plan (tabulated, as required)	Y	Y	Y	Y
10.2	DVP&R - DV Performance Test Results (if applicable)		Y	Y	Y
10.3	DVP&R - PV Performance Test Results		PV Test Plan	PV Test Plan	Y
10.4	DVP&R - include R&Q Approved Supplier IQA*		IQA Plan	Y	Y
11	Initial Process Studies **		Y**	Y**	Y
12	Qualified Laboratory Documentation		Y	Y	Y
13	Appearance Approval Report (AAR)		Y	Y	Y
14	Sample Production Parts		Y	Y	Y
15	Master Sample		Y	Y	Y
16	Checking Aids		Y	Y	Y
17	Customer Specific Requirements		Y	Y	Y
18	Part Submission Warrant (PSW)	Y	Y	Y	Y
19	Pass Through Characteristics (PTC) and Weak Detection (WD) Analysis *		Y	Y	Y
20	Run at Rate				Y

* Navistar specific requirement

** If volume prohibits statistical capability analysis, supplier must implement 100% inspection until statistical capability can be achieved.

*** (Must include CCs / SCs)

3.2.1 PPAP Documentation

Parts provided to Navistar, which are designed by another TRATON brand (aka the lead brand), will be PPAP approved by the lead brand. The PPAP approved by the lead brand will be accepted by Navistar, however, supplier must complete and submit a Navistar PSW to document the Navistar PN is included in the lead brand approval. If the approved PPAP is less than full approval, the supplier must address all open issues and continue the PPAP process with the lead brand until full approval is achieved. Navistar reserves the right to review, or receive copies of, the PPAP records upon demand.

For all other PPAPs (i.e., not common parts), Suppliers are required to submit the Navistar Phased PSW for each applicable PPAP phase, and Navistar PPAP requirements will apply.

For new program parts, supplier is expected to achieve the greatest Phase possible, regardless of the build minimum requirement. The Navistar Supplier Quality Representative will work with the supplier to determine the correct submission.

For current production part PPAP submissions, the default phase is Phase 3 and the default PPAP submission level is 4.

Similar parts (i.e., same material, similar construction) produced on the same process may be considered a family for PPAP purposes. This is especially beneficial for feature-based components. The highest content part (one with the most features) is selected for full PPAP content (all elements) and considered the master part. The rest of the parts are qualified through material and dimensional verification only, with submission of a PSW linking the lesser content part with the approved master part number. If the PPAPs are occurring at the same time, a single PSW capturing all affected PNs may be utilized. Similar parts with significant differences (I.e., different test and performance requirements, or material) cannot be considered a family.

3.2.2 Record Retention

Suppliers shall maintain complete PPAP documentation, as specified in paragraph 3.2 Phased PPAP. Suppliers must have a method to provide for safe and accessible retention of all PPAP records for the production and service life of the part. PPAP records must be available for Navistar's review at any time.

All documents created as evidence of compliance to PPAP requirements must be submitted in English language, or the local language with English in parenthesis.

Significant changes, as noted in the AIAG PPAP Manual, Table 3.1, must be reported to Navistar through the change management process defined in section 5.0 Change Management prior to implementation, and submitted for PPAP approval prior to shipping parts from the changed process or product.

PPAP records must be maintained for the life of the production part plus one year, unless contractual agreements specify otherwise.

3.2.3 Test Capability

Suppliers must have the capability, or outsource the resources necessary, to carry out the required layout, testing, material analysis, and certifications to generate needed records of conformance to requirements. This is inclusive of prototype, production intent, production, and service parts, at launch, current production, and service stages.

Suppliers must retain complete test information with their PPAP documentation.

3.2.4 Measurement Systems

Measurement systems used for evaluation or qualification of Navistar product must be "calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards" (ISO 9001 7.1.5.2). Gauges listed on the control plan, and those used for test and study purposes, must be evaluated to determine measurement variability. This variability must be acceptable in accordance with the AIAG Measurement System Analysis (MSA) manual. These requirements extend to outsourced processes or external labs.

Supplier must demonstrate the measurement and test equipment used is appropriate for the characteristic being measured. Gauges must be appropriate for the inspection being performed. For precision parts with very tight tolerances, suppliers must inspect those parts on higher level precision equipment to establish high test correlation. Also, suppliers must follow any applicable Navistar engineering or SAE documented test method.

The measurement and test equipment must be maintained, to ensure no loss of equipment performance.

3.2.5 Component PPAP and Sub-Tiered Supplier Flow-Down

Sub-supplier materials and parts must be capable of meeting specifications required by the contractual requirements and design records. Conformance must be verified during PPAP through PPAP approval of sub-tier services, components and assemblies. The Tier I supplier is responsible for obtaining and approving the PPAPs for the components used in the products supplied to Navistar. Navistar PPAP requirements apply to the component sub-supplier product. the Sub-supplier's processes shall be monitored periodically to verify conforming parts continue to be produced under controlled conditions. Suppliers are responsible to flow down all relevant contractual and/or design requirements to their sub-tier suppliers. Tier I suppliers are ultimately responsible for product quality of the assemblies and sub-components they provide. Tier 1 suppliers

must have an effective Supplier Management System to monitor the capability of their supply base thru controlled documented procedures, such as a Supplier Quality Manual.

In the case of Navistar Defense suppliers, flow down includes relevant FAR/DFAR clauses and specific contract quality requirements, such as those related to welding or armor, which are required by Navistar's customer.

3.3 Navistar Drawings/Specifications

Suppliers must ensure that Navistar requirements are defined and understood prior to acceptance of business. When any aspect of the requirements is not understood or agreed, suppliers must provide a written request for explanation of the unclear points to the appropriate Navistar Design Engineer, the supporting Navistar Supplier Quality Representative, and Navistar Procurement Representative. If no questions are raised, Navistar assumes that suppliers understand the performance and timing requirements, can meet the requirements, and will adhere to them.

Manufacturing Feasibility form (ISQ-014-FO) should be submitted by supplier to Navistar Purchasing at the time of quoting.

3.3.1 Engineering Specifications

Suppliers are required to comply with applicable Navistar engineering specifications. IHS Global, www.global.ihs.com, is the approved source for obtaining copies of Navistar engineering specifications and suppliers are required to subscribe to this service as needed.

Outsourcing of processes does not absolve the supplier of its responsibility to conform to all requirements specified in the applicable Navistar engineering specifications.

Suppliers are required to ensure compliance to Federal Motor Vehicle Safety Standards (FMVSS) requirements at the time of PPAP and on an on-going basis.

Once validation testing is complete, a copy of the Design Validation Planning and Report (DVP&R) and/or compliance letter must be sent to Navistar Design Engineering to be reviewed and approved by the Certification and Compliance team.

Suppliers are required to identify all the FMVSS related characteristics in the Design Verification Plan (DVP) and control plan (CP). Evidence of ongoing compliance must be submitted to Navistar Design Engineering upon request.

- Variable characteristic – supplier will monitor the characteristic and maintain Cpk studies. Data will be made available to Navistar Design Engineering upon request.
- Attribute characteristics – supplier will maintain evidence and send data to Navistar upon request.

3.4 Special Tools for Design Responsible Suppliers

3.4.1 Design Failure Mode and Effects Analysis – DFMEA

Design Failure Mode and Effects Analysis (DFMEA) is a systematic review of potential systems, products or process failures. The activity defines the effects and outcomes of each identified failure or action, eliminates or mitigates the failures, and serves as a record of the work performed. Design Responsible suppliers are required to complete a DFMEA for parts procured by Navistar. Design Inputs must include warranty issues, customer concerns, lessons learned, and address past Global 8D concerns. The DFMEA must be reviewed with Navistar to ensure completeness and accuracy of content. A single DFMEA may be acceptable for a family of parts when approved by the Navistar Supplier Quality Representative.

In preparation for, and maintenance of, the DFMEA, refer to the AIAG FMEA 4th edition for guidance. Navistar recognizes the FMEA methodologies formerly prescribed separately by AIAG and VDA have now merged together into a common automotive industry reference manual - the AIAG VDA FMEA Handbook. All initial FMEAs created after November 1st, 2021 shall be based on the latest version of this AIAG VDA Handbook. Current production older FMEAs may use prior versions, but suppliers are encouraged to initiate a program to update those to the latest version also.

CCs/SCs, safety, and regulatory characteristics must be identified by appropriate symbols. These characteristics and identifications must flow to the PFMEA, control plan, work instructions, and flow down to the sub-tier suppliers, as appropriate.

Non-Design responsible suppliers are required to request the DFMEA for parts designed and controlled by Navistar, and consider the potential failures and actions within their own processes and documentation, as applicable. Contact the Navistar SQE for assistance with requesting a Navistar DFMEA.

3.4.2 Design Review Based on Failure Mode – DRBFM

When a design change is made to an existing part where an approved DFMEA is in place, a leaner, focused Design Review Based on Failure Mode (DRBFM) process may be applied. This abbreviated format is created from the original DFMEA, but focuses only on the impact of the change and its impact on interfaces/interactions. If any new items are discovered through the DRBFM process, the original DFMEA would be updated to include the new information. Go to www.navistarsupplier.com for additional information.

3.4.3 Design Validation Plan – Tabulated DVP

Design-responsible suppliers must develop and implement a design validation plan (DVP). Inputs for the test plan should include DFMEA, engineering specifications and design requirements document (DRD), FMVSS / Regulatory standards, and other Navistar or supplier engineering requirements. The tabulated DVP format, must be utilized showing cross reference to Navistar DRD requirements. Contact the Navistar Supplier Quality representative for further guidance.

The proposed tabulated DVP must be reviewed by Navistar Engineering and Supplier Quality prior to the start of testing, and must be signed by Navistar Engineering to indicate awareness and agreement of the tests to be performed.

3.4.4 Design Validation Plan Reporting – DVP&R and DRBTR

Results of the test plan must be reviewed with Navistar Engineering when tests are complete. The completed DVP&R test summary must be signed by Navistar Engineering to indicate awareness and acceptance of the test results.

The supplier is required to conduct a Design Review Based on Test Result (DRBTR) as defined by Navistar engineering in the Design Requirements Document (DRD). This process, conducted after running specific tests, involves identifying and reviewing with Navistar engineering items detected in tested components that may impact Navistar's customers. The supplier must document items in the DRBTR worksheet PVCP-7, which must be signed by Navistar engineering as part of the DVP&R review.

3.4.5 Installation Quality Assurance – IQA

Navistar may require suppliers to provide assistance, and/or documentation, to aid with handling, storage, assembly, installation, and service, of the purchased part. For "major" systems, the audit would follow the suppliers "instruction manual" and best practices for handling and application. As part of any new vehicle product launch EQI, audits and findings will be completed BEFORE J1 as assigned by Navistar ISQ and/or Manufacturing Quality leadership. Series production audits will follow a regular cadence and be hosted by the production facility, supported by the ISQ team. In all cases, **AUDIT** refers to the supplier's review of the Navistar production facilities receiving, handling, application, and production line testing of said components. This partnership activity will identify improvement opportunities for both the supplier and Navistar and reduce customer early life downtime due to assembly related issues. The Navistar Supplier Quality Representative will give guidance, as needed.

3.5 Identification and Control of Restricted Substances

Suppliers must comply with Navistar Corporate Engineering Material Specification MPAPS B-50 concerning usage of certain chemical substances in Navistar products. These restrictions are based on outside regulations and/or requirements of Navistar. Named substances shall be excluded from or restricted in parts, materials, equipment, manufacturing processes, or other goods, supplied to and/or manufactured by Navistar and intended for use in Navistar vehicles, engines, and other branded products. Suppliers will be required to maintain records showing conformance and must demonstrate conformance during the PPAP process.

For components supplied to Navistar for customers who require declaration of material substances, Navistar uses the International Material Data System (IMDS) as the system for suppliers to declare all the substances used in their parts. After Navistar has accepted the MDS, the MDS ID and acceptance date must be included on the Navistar Phased PSW. An accepted MDS is a requirement to receive full PPAP approval. Reference the Restricted Substances Reporting Procedure. The Navistar Supplier Quality Representative will provide assistance when these instances occur.

Suppliers shall maintain records showing on going conformance to GADSL (Global Automotive Declarable Substance List) for all components where IMDS is required.

Certain Navistar customers may have specific restricted material requirements (beyond MPAPS B-50), or use systems other than IMDS which will be applicable to suppliers. The Navistar Supplier Quality Representative will provide assistance when these instances occur.

3.6 Process Failure Mode and Effects Analysis – PFMEA

A PFMEA is a living document which describes the risks to the production process and/or parts produced, and identifies actions taken to mitigate the risks, such as process controls.

In preparation for, and maintenance of, the PFMEA, refer to the AIAG FMEA 4th edition for guidance.

Navistar recognizes the FMEA methodologies formerly prescribed separately by AIAG and VDA have now merged together into a common automotive industry reference manual - the AIAG VDA FMEA Handbook. All initial FMEAs created after November 1st, 2021 shall be based on the latest version of this AIAG VDA Handbook. Current production older FMEAs may use prior versions, but suppliers are encouraged to initiate a program to update those to the latest version also.

PFMEA inputs must include warranty issues, customer concerns, lessons learned and address past Global 8D concerns. It should flow from the DFMEA, if available, for the part or part family. The PFMEA must be reviewed with Navistar to ensure completeness and currency. A single PFMEA may be acceptable for a family of parts when approved by the Navistar Supplier Quality Representative.

CCs/SCs, safety, and regulatory characteristics must be identified by appropriate symbols. These characteristics and identifications must flow from the DFMEA, as appropriate, and on to the control plan, work instructions, and flow down to the sub-tier suppliers, as appropriate.

3.7 Control of Special Characteristics

Special characteristics, such as KCC, KPC, CC, and SC, may be designated on Navistar drawings, engineering standards, design requirements documents (DRD), DFMEA, PFMEA, and/or other product documentation. These characteristics indicate government, FVMSS/safety, environmental regulations, or product function is affected. Suppliers must also consider special Characteristics based on product and/or process knowledge and define the severity rating associated with these Special Characteristics.

Control of Special characteristics are required for all suppliers, including Special Product Group suppliers.

3.7.1 Classifications of Characteristics

Generic Terms: Cp/Pp = Process Potential; Cpk/Ppk = Process Capability

Special Characteristics Identification Criteria for DFMEA and PFMEA

FMEA Type	Class.	To Indicate	Criteria	Actions Required
DFMEA				
	YC	Potential critical characteristic	Severity > 8	▪ Highlight for PFMEA team focus.
	YS	Potential significant characteristic	Severity = 5 – 8 & Occurrence = 4 – 10	▪ Highlight for PFMEA team focus.
PFMEA				
	CC	Critical characteristic	Severity > 8	▪ Use Special controls
	SC	Significant characteristic	Severity = 5 – 8 & Occurrence = 4 – 10	▪ Use Special controls

Suppliers are responsible for reviewing new or revised drawings from Navistar for Key Control Characteristics (KCC) and/or Key Product Characteristics (KPC) and taking the following action as appropriate:

- a. CC/SC/KCC denoted on Navistar prints and/or other product documentation require special quality controls by supplier (Mistake-proof, SPC, 100% test). 100% inspection or test requires Navistar Supplier Quality representative approval. These special quality controls must be identified in the supplier control plan (CP).

The appropriate symbol must be included on all related documents (including control plans, FMEAs, work instructions, process control documents) for the operations which produce special characteristics.

- b. Suppliers are required to develop a PFMEA and identify YC/YS and associated critical characteristics (CC) and significant characteristics (SC).
- c. The supplier must submit initial process studies for the PPAP approval, including normality test results, SPC charts, and photographs of the inspection setup, for review by the Navistar Supplier Quality Representative.
- d. Unless otherwise specified by Navistar Supplier Quality, initial process study results for critical characteristics must demonstrate stability and a minimum capability index (C_{pk}) of 1.67 minimum to be acceptable. Otherwise, for processes with known and predictable special causes and output meeting specifications, performance index (Ppk) should be used.
- e. The supplier must notify the Navistar Supplier Quality Representative, when supplier is not able to meet the critical characteristics capability requirements, after all improvement efforts have been exhausted. In such situations, 100% inspection is required for all non-capable features. 100% inspection plans must be reviewed and approved by the Navistar Supplier Quality Representative.
- f. Suppliers are expected to continue monitoring critical characteristics/significant characteristics throughout the life of the product and ensure the process remains

in control and capable. Capability data and/or SPC must be readily available to Navistar upon request. For on-going process capability, Cpk of 1.33 minimum is acceptable.

Suppliers must ensure their personnel understand the significance of special characteristics, and their necessary impact on manufacturing processes and support functions. Navistar expects that personnel working with operations affecting special characteristics understand what the special characteristic(s) in their operation means, the part function, and the impact of failure to Navistar or its customer.

Navistar reserves the right to add capability, SPC charts, run charts, and process control requirements based on performance history, low capability, or other factors, up to and including 100% containment.

Frequency of capability study activity must be defined in the supplier control plan and agreed to by Navistar. It is recommended suppliers conduct capability studies on higher volume part critical and significant characteristics quarterly, to ensure the process remains stable and capable across the various production runs. Lower volume part critical and significant characteristics should have capability studies performed at least once per year. All capability study results must be recorded and made available to Navistar Supplier Quality upon request, unless explicitly stated otherwise. Suppliers are required to submit critical product and process characteristics, as directed by the Navistar Supplier Quality Representative.

If Navistar has not defined special characteristics for supplier part(s), it is the supplier's responsibility to identify any critical/significant characteristics needed as a result of the supplier's DFMEA and PFMEA activity.

3.8 Pass Through Characteristic and Weak Detection – PTC and WD

Pass Through Characteristics are part characteristics which are not controlled or functionally tested anywhere downstream in the supply chain, are ultimately supplied to an OEM customer (e.g. it will "pass through"), and would have a significant impact on customer satisfaction and/or warranty. A PTC may or may not be a Special Characteristic.

Navistar's approach to pass through characteristics meets the minimum requirement defined in AIAG CQI-19 by using the definitions below. Characteristics must have a PFMEA Severity greater than 4 to be considered.

- Pass Through Characteristics (complete pass through) = PFMEA Detection of 10. A characteristic that will not be detected at any point prior to being delivered to Navistar's plant.
- Weak Detection (WD) (may pass through) = PFMEA Detection of 6-9. A characteristic that does not have robust detection and might not be detected at any point prior to being delivered to Navistar's plant.

- Potential PTC – A characteristic which has no detection within the manufacturing supplier (PFMEA Detection of 10) and has not yet been reviewed to see if it passes through subsequent sub-tiers of the supply chain.
- Potential WD – a characteristic which does not have robust detection within the manufacturing supplier (PFMEA Detection of 6-9) and has not yet been reviewed to see if it passes through subsequent sub-tiers of the supply chain.

All suppliers, including Special Product Group Tier 1 suppliers, are responsible for identifying pass through characteristics, and to put controls / countermeasures in place for those characteristics, with flow down to sub-tier suppliers, as necessary. The supplier and Navistar must reach an agreement on the proper method of control for the identified PTC. Suppliers must complete and submit the PTC form (including PTC_WD identification with their sub-tier suppliers) as part of the APQP and completion is verified as part of the Navistar PPAP approval process. The PTC form is located on www.navistarsupplier.com.

PTC symbols "P" and "WD" must be noted on the PFMEA and Control Plan, and the characteristic controlled with mistake proofing or other suitable means of protecting the Navistar plants and customers.

3.9 Manufacturing Under Controlled Conditions

3.9.1 Control Plan

Control plans identify important part and process characteristics defined during APQP activity, and the control plan must reflect ongoing changes to PFMEA, such as those resulting from corrective action and process improvement. Changes require PPAP re-submission before product is shipped from the revised process. The control plan and PFMEA are living documents always reflecting current controls and measurement systems in use. They must be updated as control methods and measurement systems are changed and improved, and be audited periodically as part of the supplier's internal audit process to assure continued effectiveness. Unless otherwise exempted by the Navistar Supplier Quality Representative, suppliers are expected to use the control plan format referenced in the AIAG APQP manual.

CCs/SCs, safety, and regulatory characteristics must be identified by appropriate symbols. These characteristics and identifications must flow from the DFMEA and PFMEA, as appropriate, and on to the work instructions, with flow down to the sub-tier suppliers, as appropriate.

3.9.2 Job Set-up Verification

Suppliers are required to have a process to verify that the manufacturing job is set-up properly. Inspection of the first good piece is a method to achieve verification, along with use of statistical methods, where applicable. In production lines with frequent part changes, a last-off inspection is also recommended for each run.

3.9.3 Identification and Traceability

Suppliers must identify Navistar product by suitable means through the manufacturing process and in all inventory locations. Suppliers should follow CQI-28 Traceability Guidelines. Suitable means may include cards, tags, signs, lot numbers, or bar codes. It is understood suppliers may have multiple value streams utilizing multiple processes. Regardless of the complexity of the processes used to produce Navistar product, suppliers are required to ensure traceability back to their process (work centers, shifts, batches, measurement or test equipment, etc.). This traceability requirement extends to raw material and sub-tier supplier product, as well.

The status of the product must be identified to mitigate the risk of suspect, nonconforming, or unapproved product being used or shipped to Navistar.

The depth of traceability required must be considered for each part and the amount of detail recorded must be related to the risk. Traceability considerations include permanency and legibility. For Navistar Defense suppliers, some specific examples would include transparent and high-hard armor, heat treat lot traceability, rubber part and other shelf-life items; see your Navistar Supplier Quality representative for further guidance.

3.9.4 Counterfeit Parts

Counterfeiting is growing in alarming proportions with respect to the types of products being counterfeited, industries affected, and potential ramifications caused by counterfeits. Navistar understands the ever-growing concern to the increasing volume of fraudulent/counterfeit electronic parts entering the supply chain, posing significant performance, reliability and safety risks. Navistar requires our supply base to review their quality management systems to ensure it adequately addresses counterfeit items that have the potential to seriously compromise the safety and operational capability of our products. Suppliers should establish/amend existing and maintain a Counterfeit Prevention program that is aligned to an established industry standard such as AS-5553 and/or AS6167 to ensure that counterfeit work is not delivered to Navistar.

Strategies utilized to eliminate counterfeit shall include:

Avoidance – Suppliers shall only purchase parts/materials from authorized/approved sources of supply. This requires exclusive utilization of OCMs/OEMs or their authorized distributors. Suppliers shall institute a plan for a Chain of Custody – PO's should be tied to an unbroken chain of custody from the original source of manufacture for all components provided to Navistar.

Detection and Disposition – Suppliers shall notify Navistar Procurement or Quality of the pertinent facts of a nonconformance. Suspect counterfeit work shall be treated as Nonconforming Items.

Mitigation – Suppliers shall insure traceability to the original component manufacturer (OCM) or original equipment manufacturer (OEM). If circumstances exist that the use of a supplier’s material/parts is not part of the authorized supply chain, approval from Navistar is required. Suppliers need to ensure processes are in place to quarantine parts that require testing and verification until they are verified as authentic.

Communication – Suppliers shall communicate and report issues.

- Suppliers shall provide prompt notification if it is suspected that Counterfeit items are within products delivered to us.
- Suppliers shall report any counterfeit issues in a timely and effective manner.
- Suppliers shall flow-down equivalent counterfeit strategies/provisions to sub-tier supplier/contractors.

3.10 Records

The supplier must maintain routine quality data (e.g., quality indices updates, reliability test results, traceability, etc.) that are required by the design specifications, agreed to during APQP, or established as part of a corrective action plan. Such data shall be made available upon request.

The supplier must maintain capability data for all customer or supplier-designated “special characteristics” and make capability information available upon request. In some cases, suppliers will be required to provide capability on a routine basis (e.g. monthly). The Navistar Supplier Quality Representative will provide guidance in such situations.

All product and process records must be dated, legible, and identify the person who created the record. Records are to be maintained for the life of the product plus one year. Specific contractual requirements will take precedence over these guidelines.

3.11 Equipment Maintenance

The supplier’s production process equipment, including test and measurement equipment, shall be planned, maintained, and monitored to assure process capability is understood and controlled, and the equipment remains in good working order. Such equipment must be maintained in a way that minimizes unplanned downtime, process variation, quality issues, and potential disruption of parts to Navistar manufacturing locations.

The supplier’s maintenance system must ensure that:

- a. Spare parts are readily available for critical manufacturing equipment,
- b. Predictive maintenance methods are utilized.

- c. Navistar owned tooling and equipment is identified, maintained, and preserved. Tool wear shall be identified on the control plan through analysis of (KCC) product feature variation.
 - o For example: a laser surface measurement of a die casting against a math model. This action would identify tool wear conditions.
- d. Test and measurement equipment is readily available and working properly.

3.12 Appearance Approval

Suppliers of interior, exterior, and certain under hood visual components must comply with the Visual Component Approval Process (VCAP) to achieve the appearance sign-off required for PPAP submission. A completed and signed Appearance Approval Report (AAR) must be submitted in the supplier's PPAP package.

3.13 Prototype Parts

A part produced on a non-manufacturing process, such as but not limited to, a tool shop, laboratory, or other non-manufacturing or serial production business.

Prototype parts must be inspected and validated to certify they meet the design intent.

Prototype parts must be visibly identified with container signage stating "prototype parts." Individual parts must be identified in order to prevent mixing with production parts when removed from the container, where required.

See section 3.2, Phased PPAP, for prototype PPAP requirements and allowable usage.

3.14 Manufacturing / Assembly Tools and Fixtures Management

Suppliers must establish a system to track and manage Navistar issued tools, assembly tools, assembly fixtures, and gauges. Individual tool and fixture information shall be readily available and provided to Navistar upon request.

The following are requirements of tools and fixtures management system. This list is not all inclusive, and further guidance can be found in the Navistar Supplier Tooling Guidelines document at www.navistarsupplier.com.

- Label and track each Navistar tool and fixture with unique identifiers
- Ergonomic storage and retrieval system
- Tool and fixture change, repair, calibration and audit schedules
- Record keeping of wear, repairs, calibrations and compliance to QMS
- Startup Shutdown audit records

3.15 Sub-Tiered Supplier Quality Assurance Management

Tier I suppliers are expected to manage sub-tier suppliers to the same contractual requirements as they agreed with Navistar.

Tier I suppliers are expected to review, and disposition sub-tier submitted APQP /PPAP documents, and ensure all Navistar requirements are met.

Tier 1 suppliers are expected to monitor the sub-tier supplier's performance on quality, delivery and other customer satisfaction metrics. If sub-tier suppliers fail to meet the Navistar requirements, the Tier I is expected to notify Navistar, and work with the offending sub-tier supplier to improve performance. In cases where remediation efforts have been completed, and attempts to improve the performance have failed, the Tier I supplier is expected to work with the Navistar Procurement team regarding Navistar intervention and/or exit plan.

3.16 D-13 Packaging and Shipping

Suppliers are required to follow D-13 Packing and Shipping Standard, located on www.navistarsupplier.com. At the time of each bid, suppliers of materials to Navistar locations will detail proposed packing, both returnable (primary) and expendable (alternate) on the CSF - Container Specification Form (SCS-CD-001) and submit to the appropriate delegated Navistar Containerization representative. All packaging must be approved by Navistar, and evidence of approval must be submitted with PPAP to satisfy element 22 (reference PPAP Element table in section 3.2 Phased PPAP).

3.17 Part Identification and Labeling

Suppliers are required to identify components and packaging, per requirements specified in the D-13 standard, and/or part design records.

Suppliers are expected to take a proactive approach, to prevent and eliminate mislabeling error issues.

- Containment: Controlled Shipping CS1/CS2
- Labeling in PFMEA
- Mis-identification error proofing
- Internal Scan capability
- Identity verification in tooling, fixtures and dunnage
- 5S, Plant Layout, Handling
- Address labeling in Layered Process Audits
- Part Commonality – complexity reduction

3.18 Safe Launch Requirements

To support new product launches, suppliers must define and implement a safe launch process, sometimes referred to Extraordinary Quality Initiative (EQI) plan. The EQI plan is not a substitute for the Production Control Plan but is over and above the Production Control Plan and is used to validate it. This process must remain in effect for 90 days after Job 1 minimum, and until all Pyxis and G8D concerns identified during the launch events have been corrected and

verified. The following are the minimum EQI process requirements for start-up and launch. Navistar may add to this list, if circumstances warrant it.

- Pre-launch control plan to identify additional testing, inspection, and dimensional checks based on critical features, PTC_WD, Pyxis/8D issues during development and similar parts.
- Separated containment station (independent of manufacturing process and personnel)
- Implement countermeasures on any non-conformance found in EQI station.
- Daily Layered Process Audits
- Implement Pass Thru Characteristic Countermeasures
- Packaging Evaluation: Verify Labeling, Packaging and Quantity
- Pre-Launch Control exit criteria is zero EQI findings

Failure to execute EQI may result in Controlled Shipping, reference section 7.1, Controlled Shipping. Shipment of discrepant material during the specified EQI period or any other time may result in Controlled Shipping.

3.19 Directed Buy Components

Business conditions arise where Navistar Purchasing may establish commercial relationships with sub-tier suppliers in the supply chain (directed buy components). In such cases, the Tier I supplier is responsible for the directed buy sub-tier suppliers, including APQP launch activity, PPAP dispositions, and quality issue identification and recovery efforts, from issue discovery to resolution (including, but not limited to, Global G8D and/or new product Pyxis Concerns). Navistar will intervene when proprietary or competitive issues are a concern.

3.20 Software Control

Supplier organizations, whose product includes software, embedded as a component in any supplied hardware (as a requirement for hardware functionality), or as standalone software being developed in part or for Navistar shall implement and maintain a process for software quality assurance and traceability. ASPICE, which is the automotive adaptation of ISO/IEC 15504, provides a framework for defining, implementing and evaluating supplier's processes used in the development of automotive software and systems. ASPICE sets out a framework for process assessment and is the tool Navistar assessors will be utilizing to determine an organization's capacity for effective and reliable delivering of software products. It is highly recommended that suppliers earn ASPICE certification to understand their organizations capability level.

Suppliers are required to identify and submit version / revision control, as part of the Navistar PPAP. The current version / revision will be recorded within the PPAP documentation, per PPAP element 23.

Suppliers are required to implement change management controls, for the implementation and communication of software version / revision changes. Supplier initiated changes, which affect fit form and function, require Navistar approval prior to implementation (reference section 5.0 Change Management), and re-PPAP.

This requirement shall apply to Tier I direct supplier and sub-tier supplier products (reference section 3.2.5 Sub-Tiered Supplier Flow-Down).

3.21 Sub-Tiered Supplier PPAP Approval

Tier I suppliers are required to provide evidence of sub-tier supplier component part qualification and approval, with their PPAP submission to Navistar. Tier I suppliers are responsible for sub-tier supplier component approvals, including directed buy suppliers, unless a RASIC signed by Navistar Supplier Quality Director has been issued.

3.22 Self Certified Supplier Status OEM or Service

Per Paragraph 5.1 of the AIAG PPAP 4th edition, suppliers designated as "Self-Certifying" allow the organization to submit Level 1 PPAPs for new parts, with the agreement that the PPAP is accepted upon receipt by the Customer, unless the organization is otherwise notified.

Self-Certification status can be applied to an entire manufacturing location, or to a specific "part family" produced in a manufacturing location.

Self-Certified Suppliers are generally production suppliers with excellent systems and history, or suppliers of families of parts that, once established as conforming and capable, can have additional family parts produced or changed without direct Customer involvement.

If a qualified supplier can demonstrate conformance and capability of supplied products, Self-Certified Status can also be applied to Service Parts manufacturers or distributors.

Self-Certified status cannot be awarded to producers of FMVSS or Critical Application parts that require testing and approval of Engineering prior to PPAP.

Suppliers may apply for PPAP Self-Certifying by submitting a request to their Navistar SQE for consideration and approval. Evidence supporting the request should be submitted with the request.

Following Navistar assigning the classification of Self-Certified Supplier, the supplier is still required to perform all the steps required for PPAP of a new part, or for a part revision.

Steps to meeting Self Certified Supplier status:

1. Supplier attains and maintains an "A" VDA 6.3 rating as evaluated by Navistar, TRATON Brands or VW Group.

2. Supplier attains and maintains a "Yellow" or "Green" Quality quadrant status on the Navistar Supplier Scorecard score, as evaluated for a rolling six month period.
3. Supplier develops appropriate products, and PPAP with documentation to demonstrate conformance and capability of products provided. In the case of a "family of parts" this normally includes generic documents that apply to all parts produced in that part family.
4. Navistar conducts a PPAP audit and a VDA 6.3 P5-P7 audit on one or more parts from the family of parts to be Self Certified.
5. Navistar approving SQE provides assignment of Self-Certified Supplier, specifically identifying the applicable part family in writing.
6. When an additional part is added, or a part change is implemented, the supplier sends a Phase 1 PPAP to the approving SQE. Upon receipt of the PSW by the approving SQE, the part will be considered approved without return of the signed PSW unless otherwise directed by the approving SQE.
7. The Supplier shall retain all PPAP documentation and quality records on file and readily available for review if requested by Navistar.
8. If, due to performance or other business reasons, Self-Certified Supplier status is removed, it will be communicated in writing by either the approving SQE or ISQ management.
9. When additional parts are added to the certified part family, or an authorized change to a part in the part family, the supplier is only required to submit a Level 1 PPAP (PSW only) to the approving Navistar SQE. Unless otherwise advised by the approving Navistar SQE, the PSW is considered to be approved and the supplier can proceed to produce and ship the new or changed part, whether the Navistar SQE does or does not return a signed PSW.

3.23 Service Parts PPAP

Unless otherwise specifically excluded in the supplier contract, all service parts require PPAP submission and approval by an approving Navistar SQE prior to production and shipment to Navistar.

Service parts manufacturers are required to attain and maintain the same level of quality systems as production suppliers, the requirements of which are in the Navistar Purchasing Terms and Conditions and the Navistar Supplier Quality Requirements (NSQR) document.

The preferred method for this approval is as follows:

Individual parts on contract with a Service Parts Manufacturer:

- Requirements are the same as for production parts on contract from a production supplier and are listed in the NSQR.
- Due to the lower volume requirements of service parts, 100% final inspection is required or the use of an approved C=0 Sampling Plan added to the Control Plan to supplement in-process inspections.

Families of parts on contract with a Service Parts Manufacturer:

- Where the service parts can be identified as "families of parts" the methodology used for "self-certified" suppliers can be used if the supplier quality system qualifies. The methodology for approval of "self-certified" supplier families of parts is described in paragraph 3.21 of the NSQR.
- The families of parts strategy is appropriate where products of different sizes, ratings, capacity, color, etc., are produced using common processes, methods and procedures. Examples of such part families are batteries, starters, fasteners, gaskets.
- Due to the lower volume requirements of service parts, 100% final inspection is required or the use of an approved C=0 Sampling Plan added to the Control Plan to supplement in-process inspections.

4.0 Concern Management

When problems arise, suppliers are expected to contain the problem and respond rapidly with permanent corrective action on Non-conforming material.

4.1 Rapid Response

Navistar will notify the supplier when non-conforming parts are discovered at Navistar, or a customer location. Immediate containment of suspect material is required for all parts as a response to any customer concern. Containment must address all suspect parts throughout the supply chain, including:

- Parts at the supplier locations, warehouses, or in transit between locations,
- Parts in transit to Navistar or their using locations,
- Parts on the production floor at Navistar using locations,
- Parts supplied as service parts.

A description of the containment method and the resulting certified product identification method must be provided to the Navistar Supplier Quality Representative.

Suppliers are responsible for coordinating the appropriate activities to identify and quarantine suspect material, record the containment results, and communicate to the appropriate parties when the activity is complete. A “clean point” with the first known conforming part must be communicated to the Navistar Supplier Quality Representative and receiving plant quality personnel.

Navistar may initiate sorting of supplier parts when there is evidence of suspect material in the supply chain. Suppliers are responsible for all sorting activities prior to the point of application and will support Navistar with the sorting activities after point of application.

Suppliers are expected to perform all actions needed to return and replace suspect material and avoid, wherever possible, shutdown of Navistar manufacturing facilities. Navistar reserves the right to charge back the costs associated with supplier caused non-conforming product, including return of material. Additional costs associated with the handling and actions taken within Navistar, including Ship Hold administrative and costs for inspection, reworking, repair, etc., may be charged back to the supplier in line with quality expectations.

If a supplier discovers that they have shipped, or may have shipped, suspect or non-conforming parts, the supplier must notify the Navistar manufacturing location and the Navistar Supplier Quality Representative immediately. The supplier must manage all aspects of the communication to prevent impact to Navistar.

4.2 Appropriate Corrective Action

Navistar Supplier Quality Representatives, plants, engineering locations, and parts distribution centers communicate non-conformances found directly to suppliers with requests for corrective action. Suppliers must address containment and corrective action requests in a timely manner and correct issues to the reporting location’s satisfaction.

New program launch build issues are recorded in the Navistar Pyxis Concern system.

4.2.1 Global 8D

The Global 8D (G8D) reporting process is the standard for issue resolution at Navistar, but may have slight variation at the different Navistar operations. Suppliers must access the Prism Portal website at www.global8d.com/navistar to request an access account. Only supplier individuals who have been listed on a G8D team will be given an account to access the system.

Supplier team members are to utilize the G8D system to address all issues requiring action, including pre-production issues and issues where only a single defect is found. Corrective actions must include formal answer of the issue and use all G8D process steps. A new PPAP package with a Navistar Phased PSW may be required, because of corrective actions taken.

Supplier may receive either D0 8Ds and or Full 8Ds. Both require timely, active, documented actions. Both are considered customer defects that require supplier engagement with immediate corrective action resolution.

Suppliers are expected to take ownership of the process, lead root-cause investigations, and report progress on a timely basis. Suppliers must maintain visibility of the G8D until it is closed and approved by Navistar. Suppliers are expected to obtain training in G8D methodology, if needed.

Suppliers are rated on timeliness of the corrective action responses. These metrics are indicated on the Enterprise Supplier Performance Scorecard.

Within 24 hours of notification, suppliers are expected to complete actions through step D3 of the G8D process. This step includes defining containment actions, coordinating with Navistar, and implementing containment. Other interim containment actions (ICAs) should also be implemented during this time.

Within 14 calendar days of notification, suppliers are expected to complete actions through step D5 of the G8D process. This step includes choosing and verifying permanent corrective actions (PCAs) for root cause and escape point.

Complete closure of the G8D is dependent on the severity of the problem and complexity of the permanent corrective actions required. Suppliers are expected to maintain open communication with the Navistar Supplier Quality Representative, to ensure all steps of the G8D process are completed accurately, timely, and appropriately.

4.2.2 3 Legged 5 Why

Navistar requires suppliers to use the 3 legged 5 Why (3L5W) problem solving tool in conjunction with each G8D. 3L5W is a technique used to create a detailed explanation of where, when, and how the problem occurred, by evaluating three separate areas, which could have contributed to the problem. The purpose of the 3L5W is to arrive at the root cause level, where the failure chain ends at the symptom, or effect, experienced by the customer, and results in three separate conclusions for improvement. Corrective actions shall address all three legs.

Problem solvers ask the question "Why?" five times successively, for each leg of the 3L5W analysis. The root cause will generally present itself by the 4th or 5th Why. Each "Why" must be supported by data, or fact. The known and collected facts from each "Why" lead to the next "Why", as the process continues, concluding when the root cause is found. Actions are typically taken on the last "Why" for each Leg.

The three legs are:

1. **Specific Problem** (Why was this non-conformance created?)
2. **Detection** (Why did this non-conformance reach the customer?)
3. **Systemic** (Why did the system allow the non-conformance to occur?)

Prevention of future problems are addressed in all three legs, with the following:

- Avoidance of the specific root cause through SPC (Statistical Process Control and Process Capability) or **Error / Mistake Proofing** (Poka Yoke)
- Establishment of **Standard Work Practices** to maintain consistency

The 3L5W template is located within the Global 8D portal. Contact the applicable Navistar Supplier Quality representative for additional guidance.

4.3 Control of Reworked/Repaired Product

No reworked/repared product may be shipped without Navistar authorization, except as allowed by the standard rework processes that are documented as part of the PPAP approval process. (Reference section 5.3 Temporary Part/Process Deviation).

Such product shall be subject to re-verification through the normal process controls, to demonstrate conformity to the requirements. Instructions for rework/repair, including re-verification requirements, must be accessible to and used by the appropriate rework and verification personnel. All re-verification results must be documented and made available to Navistar upon request. The supplier is required to maintain traceability of reworked/repared product, and communicate clean point information to Navistar.

4.4 Use of Alternate Process

Suppliers must assure PPAP approved processes are not changed, or bypassed, due to equipment malfunction, or any other reason. If such need arises, an effective alternate process must be established and qualified. Notification to, and PPAP approval by, Navistar is required for any such changes.

Use of alternate processes requires appropriate controls to protect against quality issues. Documentation of the event, and countermeasures for use of the alternate process, is required. Sign off by the part manufacturing location Quality Manager and Plant Manager is required.

4.5 Return Material Authorization (RMA) Policy

All Navistar suppliers must comply with the following Navistar's Return Material Authorization (RMA) policy:

- Suppliers must respond to a request for an RMA number and enter all shipping information in the Prism Portal system, within 24 hours of the request.
 - All information necessary to return domestic or global parts must be provided by the supplier, including shipping information or the name /plan to pick up the material at the Navistar plant.
 - Supplier may make arrangements to pick up the part next business day at the Navistar plant.
- The material may be scrapped and charged back to the supplier, if the supplier does not respond within 72 hours.

- Supplier is responsible for returned part material and transportation costs, including expedited shipments.

5.0 Change Management

5.1 “Controlled Conditions” for Parts and Processes

Parts received by Navistar must always be produced by a production process approved by a Part Submission Warrant, including parts and processes under approved deviations. Suppliers must not ship, and will not be paid for shipments made, without an approved PSW. Supplier PPAP documentation must always reflect the current process as approved by Navistar.

Suppliers and sub-suppliers, regardless of design responsibility, must notify Navistar of all intended changes. Navistar will respect proprietary products and processes. Suppliers must not change the approved production process without prior written authorization by Navistar.

Changes to common brand parts require the approval of the lead brand, and any brand where the changed parts will be used. When making a change request for common brand parts, the supplier must allow sufficient time for all approvals, and must not make the change until all affected brand user approvals are received.

5.2 Permanent Part/Process Change Request

If a supplier wants to make a permanent change, to a current production already PPAP approved part or process, a Navistar Supplier Request for Engineering Approval (SREA) form, located on www.navistarsupplier.com website must be submitted to, and approved by Navistar, before the change is made.

NOTE: SREAs are not to be used for Navistar initiated changes, at time of quote, during new product launch phase, for cost reduction projects, Navistar re-sourcing activity, or for emergency situations (such as termination of sub-tier supplier relationships or to address changes already in process - i.e., a forced change). During these stages, the supplier is expected to work with the Navistar Supply Manager and Engineering, and if the change is accepted by Navistar, release, contract, and PPAP must be completed before the supplier implements and ships the change. Deviation will be required for immediate need situations. Deviation cannot be used to replace PPAP. The requisite level of PPAP must still occur.

The SREA form contains additional checklists, which are intended as a guideline for successful preparation for and implementation of the change. It is not intended that these guideline checklists should be submitted with the SREA.

For changes affecting appearance related items, an Industrial Design Evaluation and Approval Log (IDEAL) Change Request Form is needed in addition to the SREA. Contact the Navistar Industrial Design Engineer for guidance on completing this requirement.

Information which supports a decision by Navistar must be included and submitted with the SREA. Examples include, but are not limited to:

- A request for tolerance relief must be supported by an explanation of what the supplier has done to try to meet the existing tolerance, as well as statistical data showing what the process is capable of meeting.
- A request to change a material must be supported by test results demonstrating the proposed material compliance to Navistar material requirements.
- A change that affects a Navistar specification requirement must be supported by test results demonstrating compliance to the requirement.
- A request for component dual source must be supported by evidence the second source can provide product which meets Navistar requirements and meets or exceeds the current source product quality. Gaps must be identified. Supplier must also present a traceability plan, which demonstrates an issue in the field, or at Navistar plant, can be traced to the source of the part.
- A request to change a CQI process must be supported by evidence of compliance to Navistar CQI process requirements.

Navistar recognizes a change to a current stable and capable validated process may result in unanticipated variation in the new process, and loss of the initial validated baseline. To counter that, and mitigate negative impacts, suppliers who request process changes for critical parts listed in the Material, Parts, and Process Specifications (MPAPs), or defined on part drawings, are required to do the following:

- Conduct a level 5 Exit PPAP from the old process
- Provide a 3D CAD overlay comparison of a part produced on the old process with a part produced on the new process.
- Conduct level 5 PPAP on the new process

In addition, suppliers are required to implement and execute a run at rate and PPAP approval Safe Launch plan, for product/process transitions, including but not limited to, additional shifts added and/or use of same tools and/or techniques from a previously PPAP approved facility.

If an SREA is rejected, the supplier cannot move forward with the proposed change.

5.2.1 Product Change Requests

Suppliers who desire a permanent change to a current product must complete and submit the SREA form to the SQE assigned to the supplier's manufacturing location. The SQE will review for completeness and submit to SREA administrator. The SREA Administrator will log the SREA into the system and forward per the internal flow.

Signatures on a product change SREA do not indicate authorization to proceed with the change. Those signatures represent cross functional awareness and feasibility of the change. The supplier must wait for the resulting Navistar change control board (CCB) review and decision, engineering change release, contract (if applicable), and PPAP approval, before implementing the change and shipping the product. Suppliers are expected to follow the APQP and PPAP processes to implement the change.

5.2.2 Process Change Requests

The Navistar Supplier Quality representative will forward the SREA to the SREA coordinator for cross functional team feasibility review. The supplier will be notified of the cross functional team feasibility review decision.

Signatures on a process change SREA indicate authorization to proceed with the change. Suppliers are expected to follow the APQP and PPAP processes to implement the change.

Suppliers who propose a change for resourced business (i.e., a request to move current production part to a new and different Tiered supplier) must provide evidence they have evaluated the candidate supplier Quality Management System as part of the sourcing activity, have communicated Navistar flow down requirements to the candidate supplier, and confirmed the candidate supplier can and will meet Navistar requirements including all necessary validation testing, before selection and award of business and recommendation to Navistar.

5.3 Temporary Part/Process Deviation

For temporary part and process change requests, suppliers should contact the Navistar Supplier Quality Representative for guidance regarding the Navistar deviation process.

6.0 Performance Management

6.1 Performance Evaluation and Communication

Navistar provides frequent and ongoing feedback to each supplier in the form of an Enterprise Supplier Performance Scorecard. The Scorecard is intended to encourage excellence in terms of, Commercial Expectations, Quality, Delivery Compliance, and Service Parts/Aftermarket Sales.

6.1.1 Supplier Quality Review – SQR

Navistar communicates unsatisfactory performance in the Scorecard or other methods, and the supplier may be required to attend a Supplier Quality Review (SQR). During the SQR, the supplier's senior management and Navistar executive management discusses Navistar's expectations and the suppliers' performance. Immediate systemic corrective action and recommitment to Navistar's expectations is the desired outcome of the SQR.

6.1.2 30/60/90 Day Action Plan

An output to the SQR may include a 30/60/90 day action plan for improvements. The format details the implementation plan and the specified time frame. The Navistar Supplier Quality Representative will monitor progress towards completion and evaluate the effectiveness of the actions taken.

Goals, targets, and timelines are mutually established with the Navistar Procurement Representative and Navistar Supplier Quality Representative, when a supplier cannot immediately meet Navistar's expectations. These goals and targets are continually measured and evaluated until the supplier eventually meets expectations. If expectations cannot be reached in the mutually agreed upon timeframe, the Navistar Procurement Representative and Navistar Supplier Quality Representative will re-evaluate the commercial relationship and take appropriate action.

6.2 Supplier Scorecard

Navistar issues an Enterprise Supplier Performance Scorecard on a monthly basis. Suppliers are expected to access their scorecard at www.navistarsupplier.com to view the results from the previous time period. A Scorecard Coordinator has been designated as the initial point of contact for all inquiries regarding the scorecard, including all reconciliations. Suppliers can contact the Scorecard Coordinator at EnterpriseScorecard@Navistar.com for training, a user-ID and password, or for general questions.

6.2.2 Part Quality Performance

Part quality problems are handled through the Corrective Action Global 8D process. Supplier's quality performance is measured in several ways including:

- Parts per Million (PPM) as received in the manufacturing plant,
- Containment timeliness (time to Global 8D step D3), and
- Resolution identification timeliness (time to Global 8D step D5).

Quality Performance Expectations

<i>PPM</i>	<i>Days to D3</i>	<i>Days to D5</i>
40	Within 1 Day ~ 24 Hours	Within 14 Calendar Days

6.3 Field Performance

6.3.1 Early Warning Call (EWC)

Navistar has implemented an Early Warning Call (EWC) process across all engine and vehicle platforms. EWC is a rapid response mechanism used to identify and contain early onset customer dissatisfaction issues (i.e., complaints directly from end user customers, dealerships, etc., before warranty is impacted).

This rapid response mechanism is in addition to the typical supplier warranty review process, and problem statements are provided to a supplier significantly in advance of warranty data (i.e., 3MIS,6MIS). Suppliers are expected to work cross functionally with Navistar to address each issue through problem solving and containment processes, and respond with escalation and urgency, to minimize the overall impact to warranty and customer dissatisfaction. Containment is expected within 24 hours from notice (to the

supplier) of the issue. If a failed part review is needed, supplier must expedite the part review, once the part is received, and provide immediate evaluation results to Navistar.

6.3.2 Warranty

Part performance quality is monitored after delivery to the Navistar customers through warranty claims. Warranty data is analyzed and reviewed during continuous improvement meetings to drive continual design improvement. Suppliers may be engaged in containment, resolution, and prevention activities to the extent appropriate as determined by the Navistar Reliability & Quality, Supplier Quality, Engineering and/or Procurement functions. Urgency in resolution is expected at all times. Supplier may be required to participate in Supplier Collaboration meetings with Navistar Leadership.

6.4 Supplier On-going Performance Management

6.4.1 Internal Audit Program

Suppliers must have an internal audit program to verify conformance to their quality management system, and ensure that it is effectively implemented and maintained. Navistar expects suppliers to perform system, manufacturing process, and product audits. These three types of audits shall be planned. The supplier must take internal corrective action without undue delay when non-conformances are detected.

To ensure compliance, suppliers are encouraged to incorporate the VDA 6.3 P5-P7 audit in their internal audit program (Reference section 3.9.1 Control Plan).

6.4.2 Management Review Expectations

Suppliers are expected to review Navistar provided performance metrics in their management review process. These performance metrics include quality, delivery, commercial, and parts which are included on Navistar's Enterprise Supplier Performance Scorecard.

The senior management team of the supplier organization is expected to review and respond to Navistar scorecards, corrective actions, and Navistar Assessment actions. Senior management must assure any required action is taken in a timely and effective manner.

6.4.3 Contingency Plan

Suppliers must develop a documented contingency plan to mitigate the potential negative impact to Navistar manufacturing facilities. At minimum, the contingency plan must address part non-conformances, component or material shortages, equipment failure, utilities interruptions, and manpower issues, and include an extended shutdown / startup process utilizing the Navistar Shutdown Startup Process questions located on the supplier website at www.navistarsupplier.com (form ISQ-018-FO). Suppliers are required to ensure flow down of this extended shutdown / startup process throughout the sub-tiered supply chain.

7.0 Status Management

7.1 Controlled Shipping

Suppliers are expected to remain in good standing at all times and provide resources necessary to protect Navistar operations from non-conforming product impacts. When situations occur which adversely affect Navistar's business, Navistar reserves the right to initiate the controlled shipping process.

Controlled shipping can be initiated when a situation has occurred that meets one of the following criteria:

- Failure to resolve a defined non-conformity,
- Broken containment of a previously identified non-conformity,
- Suspected safety hazard to the Navistar using plant or carrier,
- Unauthorized change to a part or manufacturing process,
- Other non-conformity situations as deemed necessary by Navistar.

A formal notification letter is sent to the supplier when placed on controlled shipping. Suppliers remain at the controlled shipping status until:

- Permanent corrective action has been proven effective,
- All exit criteria detailed in the notification letter has been met,
- Formal exit letter has been received.

7.1.1 Controlled Shipping Level 1 – CS1

CS1 requires the supplier to implement an offline part containment process, and report results to Navistar. The inspection personnel must be independent of the approved production process flow. The supplier is responsible for all costs associated with the CS1 activity.

7.1.2 Controlled Shipping Level 2 – CS2

If the CS1 containment is determined to be ineffective, Navistar formally initiates CS2. CS2 requires third-party inspection, utilizing an offline containment process. The supplier is responsible for all costs associated with the CS2 activity.

If performance does not improve, supplier's future business with Navistar may be impacted.

7.1.3 Controlled Shipping Exit

Navistar removes the supplier from controlled shipping status when the supplier has met the controlled shipping exit criteria and continues to supply parts that meet Navistar's requirements.

7.2 Quality Top Focus – QTF

Suppliers unable to reach an acceptable performance level may be placed on Quality Top Focus. During this step, Navistar executive management engages with the supplier and the supplier is required to participate in a specified list of remediation activities to improve quality performance. The Navistar team works with the supplier to determine these activities and monitors progress closely.

The QTF process escalates the awareness of poor performing suppliers throughout Navistar. Supplier's performance must improve to an acceptable level to be removed from this status.

7.2.1 QTF Entry Criteria:

Suppliers may be nominated for QTF status, if any of the following criteria are met:

- 10 G8Ds accrued in a 12 month time frame.
- Impact to Point of Application (POA) due to high PPM, in plant sorting, offline rework and inventory, in-transit disruption
- Warranty failure, and/or uptime erosion due to Customer Field Campaign or impact to Platform Mean Time Between Visits (MTBV) metric - Suppliers >2% MTBV per platform.
- Supplier caused quality impact and resulting in Ship Hold at Navistar plants.
- Supplier whose Controlled Shipping CS1 / CS2 actions are not effective to assure quality of parts
- Unauthorized changes
- Special Product Group suppliers who do not meet the SPG Supplier requirements, including self-assessment responsibilities (reference section 1.3 Special Product Group Suppliers).

7.2.2 QTF Exit Criteria:

Suppliers can exit the Quality Top Focus status by implementing, documenting, and obtaining signoff from the Navistar Supplier Quality Manager on the following exit criteria.

- Nomination of an executive champion
- Notify supplier ISO/TS registrar of Navistar Quality Top Focus status
- Complete PTC workshop, and identify PTC / WD & countermeasures
- Implement Shutdown / Startup process
- Downward trend on PPM & 8Ds over minimum 3 months' time period
- 30/60/90 day action plan tracking (3 panel tracking of failure modes)
- Resolve systemic labeling issues if applicable
- Ship Hold Elimination if applicable
- Customer Field Campaign resolution if applicable
- VDA improvement opportunities implemented which result in acceptable score

Once a supplier has successfully achieved QTF Exit Status, the supplier must continue to achieve stated quality requirements as outlined in this NSQR document.

7.3 New Business Hold

Suppliers who have one or more of the following offenses may be placed on New Business Hold.

- Poor Progress to QTF exit plan
- Unauthorized changes
- Chronic quality issues / Ship Hold /Severe Commercial Issue

Glossary

3 legged 5 Why – A problem solving technique used to create a detailed explanation of where, when, and how a problem occurred, by evaluating three separate areas which could have contributed to the problem.

Advanced Product Quality Planning (APQP) – structured method of defining and establishing the steps necessary to ensure that a product satisfies the customer.

ASPICE - Automotive SPICE “Software Process Improvement Capability dEtermination”. Framework for defining, implementing and evaluating processes used in the development of automotive software and systems.

Calibration – a set of operations which compares values taken from a piece of inspection, measuring, and test equipment or a gage to a known standard under specified conditions. (PPAP)

Capability – the total range of inherent variation in a stable process. (PPAP)

Clean Point – exact point in the production stream with the first known conforming part after the manufacture of nonconforming parts.

Control Plan – written description of the system for controlling production parts or bulk materials and processes. They are written by organizations to address the important characteristics and engineering requirements of the part. (PPAP)

CQI Special Processes – Continuous Quality Improvement Standards published by The Automotive Industry Action Group (AIAG). The standards are listed in the appendix of IATF 16949.

Customer Requirements: All requirements specified by the customer (e.g., technical, commercial, product and manufacturing process-related requirements, general terms and conditions, customer-specific requirements, etc.)

Customer-Specific Requirements: Interpretations of or supplemental requirements linked to a specific clause(s) of IATF 16949 or this requirements document. Examples may include:

- Manufacturing feasibility
- Warranty management

- Development of products with embedded software
- Temporary change of process controls
- Supplier quality management system development
- Second-party audits
- Control plan
- Problem-solving methodologies
- Control of changes
- Total productive maintenance
- Standardized work

Design Responsible Supplier – Supplier with authority to establish a new, or change an existing, part specification. Note: this responsibility includes testing and verification of design performance within the customer’s specified application.

Design Review Based on Failure Mode (DRBFM) - A design review approach focusing only on changes and interactions. Each member compares “good design” to the intentional changes and predicts possible failures.

Design Review Based on Test Result (DRBTR) - A methodology designed to evaluate products after test, regardless of pass or fail. The intent is to look for a bud of a problem before it occurs.

Early Warning Call (EWC) – A rapid response mechanism used to identify and contain early onset customer dissatisfaction issues directly from end user customers, dealerships, etc., before warranty is impacted.

Extraordinary Quality Initiative (EQI) – Strategy / Plan to implement a safe launch process, above and beyond normal control plan activities.

Failure Mode and Effects Analysis (FMEA) – a systematic group of activities intended to: a) recognize and evaluate the potential failure of a part/process and the effects of that failure, b) identify actions that could eliminate or reduce the chance of the potential failure occurring, and c) document the entire process.

Low Volume Process – A design intent part produced on an alternate process / cell for a specific volume or time duration, while longer term tooling and equipment is being developed. The low volume process may contain manual processes with sufficient controls established to ensure good product. A low volume process may be within the direct manufacturers facility, or at a subcontracted alternate serial production manufacturing source.

Measure System Analysis (MSA) – determines the variation of the measurement system in proportion to the variation of the process and/or the allowable tolerance.

MRD – Material Requirements Date. Date suppliers must meet for plant requirements.

MTBV – Mean time between visits. A metric which tracks time between customer visits needed to address quality or product satisfaction issues. Supplier impact to MTBV targets will result in QTF.

Navistar Product Development Build Events

DV - Design Verification Build – verifies the design concept.

SV (Statistical Verification Build) – ensures plant fully understands how to assemble. Produce engines for validation and customer or vehicle builds.

Certification (Certification Build) – provides production vehicles and engines for certification, final validation, marketing/show, reliability growth and field test. Validate manufacturing processes and exercise production material systems. Total manufacturing production-intent processes.

Q (Quality Build) – verifies components and assembly processes meet product requirements and intended performance when run at reduced, controlled capacity volumes. Ensure complete manufacturing and supply base readiness to meet normal production expectations of quality.

PV (Production Validation Build) – verifies components and assembly processes meet product requirements and intended performance when run at reduced, controlled capacity volumes. Ensure complete manufacturing and supply base readiness to meet normal production expectations of quality.

VC (Volume Complexity Build) – verifies components and assembly processes meet product requirements and intended performance when run at increased volumes.

Job 1 – verifies components and assembly processes meet product requirements and intended performance when run at planned capacity volumes.

Navistar Supplier Quality Representative – The Navistar Supplier Quality Representative who works with the supplier to ensure quality requirements are understood and verifies the supplier has met PPAP requirements by signing the Part Submission Warrant (PSW).

Navistar Supplier Assessment (NSA) – a supplier assessment form focused on part and process development, sub-supplier management, manufacturing, and customer satisfaction. Form is located at www.navistarsupplier.com website.

Part Submission Warrant (PSW) – a PPAP approval document used to confirm supplier parts conform to customer requirements. (PPAP)

Pass-through Characteristic (PTC) – characteristics manufactured within the supplier process and used in (Navistar's or Navistar's customer's) process without modification or further validation.

Point of Application (POA) – point where the part is used in the manufacturing process.

Production – any part sourced for use at Navistar facilities intended for use on saleable engines or vehicles built at Navistar sites, plants or facilities and having completed documentation for approval per the Navistar Phased PPAP process.

Production Part Approval Process (PPAP) – a collection of documents providing evidence to Navistar that all requirements have been met.

Production Validation Testing (DVP&R) – test plan that validates the parts made from production tooling and processes meet customer engineering standards including functional, durability, reliability life, environmental and appearance.

Prototype Part – A part produced on a non-manufacturing process, such as but not limited to, a tool shop, laboratory, or other non-manufacturing or serial production process. For business reasons, Navistar may choose to build with a Prototype part, but it cannot remain on saleable engines and vehicles, and requires retrofit with a production level part prior to engine or vehicle release to the customer.

Quality Planning – a structured process for defining the methods (e.g., measurements, tests) that are used in the production of a specific part or family of products (e.g., parts, materials). Quality planning embodies the concepts of defect prevention and continual improvement as contrasted with defect detection. (APQP)

QTF – Quality Top Focus. A series of meetings between supplier and Navistar, initiated by Navistar when a supplier is unable to reach an acceptable performance level. This activity focuses on identification of improvement actions, timing of the actions, and reporting progress to the plan.

Special Characteristic – part and process characteristics designated by the customer or supplier, including governmental regulatory and safety, and/or selected by (Navistar) through knowledge of the part and process.

Special Product Group – Classification of Suppliers who provide “critical” components that would cause the most damage to Navistar brand, if they failed.

Stable Processes – processes that are in statistical control.

Statistical Control – the condition of a process from which all special causes of variation have been eliminated and only common causes remain.

Stream – a term used for a production process that is referenced in the Phased PPAP table. One stream of a multiple stream process indicates that part will have more than one production process. (e.g. the process calls for 3 CNC lathes in parallel, meaning 3 streams.)

Supplier – any contracted individual, group or company having a contract with Navistar to supply parts, services, sub-assemblies or assemblies to Navistar plants, sites and facilities or to support Navistar’s dealers and customers for the purpose of building engines or vehicles.

Sub-Tier Supplier – any contracted individual, group or company providing parts, services, sub-assemblies or assemblies to suppliers, who use them in the parts, services, sub-assemblies or assemblies supplied to Navistar plants, sites and facilities or to support Navistar’s dealers and customers for the purpose of building engines or vehicles.

Supplier Request for Engineering Approval (SREA) – Used when a Supplier requests a change to an already approved production part or process.

Tabulated Design Validation Plan (DVP) - A method in which the requirements of the Design Requirements Document (DRD) are tabulated (cross referenced) on the DVP form by corresponding numbers surrounded by a circle. This is often referred to as a “bubbled” format.

Resources

Information about Navistar Requirements	www.navistarsupplier.com
Enterprise Supplier Performance Scorecard (registration required)	https://evaluate.internationaldelivers.com/supplierscorecard/Corporate.aspx
Scorecard Coordinator	EnterpriseScorecard@navistar.com
Global 8D Process (registration required)	www.prismportal.net
Navistar specifications and standards (registration required with fee)	www.global.ihs.com
AIAG standards and manuals	www.aiag.org
Navistar Supplier Training (New Accounts Request / Support)	Navistar’s Suppliers Training

The documents referenced are available on www.navistarsupplier.com at the Supplier Quality link. These documents are updated as needed and the supplier is responsible to ensure use of the current version at all times.

Cycle Step	Document Name	Document Number
2.0	Supplier Quotation and Feasibility Commitment	ISQ-014-FO
3.0	APQP Workbook	ISQ-005-FO
3.0	Phased PPAP PSW	ISQ-002-FO
3.0	Restricted Substance Reporting Procedure for Navistar Suppliers	ISQ-011-PR
3.0	Corporate Engineering Material Specification (MPAPS B-50)	MPAPS B-50
3.0	Pass Through Characteristics Form	ISQ-016-FO
3.0	Run at Rate Form	ISQ-008-FO

3.0	Design Verification Plan and Report (DVP&R) Template	ISQ-011-FO
5.0	SREA – Supplier Request for Engineering Approval Form	ISQ-003-FO

Revision History

Revisions of this document are planned for November of each year. Subsequent revisions of this document may be released if needed.

Rev	Date	Revision Section	Revision Detail
K	11/21/22	Cover Page	Added TRATON Brand logo; updated rev and publication date
		Foreword	Special Rev K Foreword
		Scope	Added Learning Module information
		1.1 Supplier Assessment	Added DUNS and Quotation Feasibility Commitment requirement
		3.0 Part Qualification and Approval	Removed PPAP elements 21 through 24
		3.2.1 PPAP Documentation	Clarified Lead brand PPAP acceptance
		3.2.5 Component PPAP and Sub-Tiered Supplier Flow Down	Removed ref to PPAP element 24 and clarified sub-supplier PPAP responsibility
		3.24 Inventory levels	Removed non-quality section
		5.2.1 Product Change Requests	Removed DRE from SREA flow
		6.2.1 Delivery Performance	Removed non-quality section
		6.4 Dynamic Control Plan Audit - DCPA	Removed redundant information section
		As noted in document	Removed reference to DCPA

Appendix A – Supplier Cost Reclamation Process

- I. Cost Associated with each Global 8D (Both D0 and Full 8D):
 - \$500 Fee will be charged for opening a Supplier caused Global 8D.
- II. Cost Associated with Quality Top Focus (QTF):
 - \$3,000 assessment fee will be issued when a supplier is placed on QTF status.
 - \$100 per day assessment fee will be issued for every day beyond 120 days a supplier is in QTF status, until QTF exit criteria are achieved.
- III. For any on-site audit activities which are required per the Navistar NSQR, including follow-up activities, reimbursement will be required from the supplier for Navistar travel expenses, as well as a \$500 per day assessment fee.

- IV. In addition to the above items I through III, Special Product Group Supplier reasons for cost reclamation includes:
- If an annual self-assessment cannot be confirmed
 - If annual PPAP cannot be confirmed
 - If the “A” Rating will not be achieved within the agreed time frame, and therefore an additional audit is required
 - If a Supplier relocates already sourced or existing supply content to another Manufacturing site, and therefore a new Assessment of the new Manufacturing site will be required

Appendix B – Navistar Defense Approved Alternate Quality Management Systems and Processes

- I. It is recognized that many small and/or unique supplier’s in support of Navistar Defense programs utilize other methodologies to achieve product and process conformance rather than Navistar’s standard practice of IATF 16949/VDA and ISO certification.
- II. Although these are the preferred methodology of validating a subcontractor’s product and process design requirement, Integrated Supplier Quality (ISQ) shall accept AS9100 quality system registration as a recognized higher quality certification.
- III. All suppliers in use of AS9100, shall maintain a current certification through an approved 3rd party registrar and shall communicate suspension, loss of certification and/or any major system non-conformance.
- IV. Phase 0 PPAP may be accepted, depending on circumstances and need. The Navistar Supplier Quality Representative will provide guidance.

Appendix C – Navistar Defense Welding Requirements

- I. If the Navistar provided drawing does not have sufficient welding information, then the supplier shall create a fabrication drawing(s) based on the Navistar provided model.
- a. All welds shall be specified in accordance with AWS A2.4 - Standard symbols for welding, brazing and non-destructive examination.
 - b. Weld size, length and location shall be taken from the model.
 - c. Weld leg size shall be rounded up to the next US customary (inch) size.
- II. Any welding code violations or welding related errors on a Navistar provided drawing(s) shall be documented with an SREA [ISQ-003-FO].
- III. The following documents shall be submitted to and acknowledged by Navistar ISQ prior to welding production parts:
- a. Welding Procedure Specifications (including prequalified materials and joints).
 - b. Procedure Qualification Records.

- c. Welder Performance Records and/or Welding Operator Performance Qualification records with continuity records.
 - d. Weld Matrix or Map - On complex parts supplier shall provide a chart or annotated drawing indicating which WPS are used for each weld location.
 - e. CWI and CAWI credentials.
- IV. Welding procedures shall not be changed after the start of production without Navistar Defense approval.
- V. Unless otherwise specified, all welded parts shall be welded in accordance with:
 - a. Aluminum – AWS D1.2 current revision.
 - b. Steel (1/8" and thicker and 100ksi and less) – AWS D1.1 current revision.
 - c. Steel (less than 1/8" and 100ksi and less) – AWS D1.3 current revision.
 - d. Stainless Steel – AWS D1.6 current revision.
 - e. Steel (greater than 100ksi) – MIL-STD-3040.
 - f. Aluminum armor - MIL-STD-3057.
 - g. Projection welding – Navistar MPAPS-FT-9553
- VI. All welding inspection shall be managed and approved by an American Welding Society AWS-QC1 or Canadian Welding Bureau Certified Welding Inspector CSA-W178.2. All Certified Welding Inspectors shall have access to the current revision on the applicable code(s).
 - a. Certified Weld Inspector shall ensure proper fit-ups.
 - b. Certified Weld Inspector shall ensure all welds are visually inspected.
 - c. Certified Weld Inspector shall ensure all welds are compliant to the applicable code(s).
 - d. Other inspection duties may be performed by an AWS Certified Associate Welding Inspector or CWB Level I Certified Welding Inspector who works under the daily and direct supervision of the Certified Welding Inspector.
- VII. All 100ksi and greater materials are subject to a (48) hour hold time unless waived by Navistar Defense. The final weld time and final inspection time shall be documented.
- VIII. A Certificate of Conformance (CoC) shall be included in the PPAP submission. The CoC shall meet the following criteria.
 - a. Dated, signed and stamped by the Certified Welding Inspector.
 - b. Acknowledge all welding was in accordance with the applicable WPS.
 - c. Acknowledge all welding and inspections were in accordance with the applicable welding code(s).
 - d. Acknowledge the (48) hour hold time, if applicable, was observed.
- IX. Welded armor shall be traceable to date of final welding and heat number. Acceptable methods of identification are:
 - a. Serialization with supplier retaining records and material certs
 - b. Julian date with supplier retaining records and material certs
- X. Non-welded armor shall be traceable to the heat number. Acceptable methods or identification are:
 - a. Serialization with supplier retaining records and material certs
 - b. Julian date with supplier retaining records and material certs
 - c. Heat number with supplier retaining and material certs