

Supplier Manual

Detroit Thermal Systems 6505 Cogswell Street, Ste. 100
Romulus, MI 48174
Phone: 734.403-6602

REVISION HISTORY

Rev	Date	Description of Changes
1	01/05/2014	Initial Release
2	7/01/2023	Adding IATF 16949 customer specific requirements.
3	7/01/2026	Full revision of the Supplier Quality Manual and addition of document number 880.6002.SOP
4	07/20/2026	Adding link to Purchasing Terms and conditions and acceptance by signing it. Removing email acceptance.

Approved by: DTS Management

INTRODUCTION

Welcome to Detroit Thermal Systems

Detroit Thermal Systems is a manufacturer of HVAC products for the automotive industry. For purposes of this Supplier Manual, the legal operating name used is Detroit Thermal Systems (DTS). The technical knowledge of our staff has supported high-quality products since 2012. Our goal is to meet or exceed customer requirements and, with our suppliers' support, continue building strong, long-term partnerships with customers, suppliers, and employees.

Introduction to Manual

In a manufacturing environment, nonconforming products found at receiving or during production can create significant disruption, increased cost, and risk to delivery performance. Detroit Thermal Systems therefore requires suppliers to implement effective quality controls so that shipped products consistently conform to requirements and do not rely on receiving inspection to assure quality.

This manual describes Detroit Thermal Systems' supplier quality, delivery, change management, and continuous improvement expectations to ensure that purchased materials and services conform to all applicable requirements.

Scope

These requirements apply to all organizations that supply production materials, service parts, outside processing, calibration, laboratory services, tooling, packaging, or other products and services that affect the quality of product supplied to Detroit Thermal Systems, unless otherwise specified in writing.

Acknowledgment

Detroit Thermal Systems shall distribute this Supplier Manual to current and potential suppliers as appropriate. Acceptance of any supply agreement, purchase order, or shipment of products or services to Detroit Thermal Systems constitutes the supplier's agreement to comply with the requirements of this manual, unless otherwise agreed in writing.

Detroit Thermal Systems Commitment

Clear communication of expectations to suppliers—including quality system requirements, material specifications, technical requirements, delivery expectations, cost reduction goals, quality improvement goals, and customer service requirements—is essential. Therefore:

- We will evaluate and select new suppliers based on their ability to meet these expectations.
- We will provide feedback to current suppliers on their performance against these expectations.
- We will establish long-term relationships with suppliers who can meet or exceed these expectations.
- We will act in an open and ethical manner in all supplier interactions.

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1.0 Quality Management System Requirements

1.1 Quality Management System

Each Detroit Thermal Systems supplier shall, at a minimum, maintain an effective quality management system compliant with the latest applicable ISO 9001 requirements. Suppliers of automotive production and service parts are expected to develop their quality management systems with the ultimate objective of becoming certified to IATF 16949, unless otherwise approved in writing by Detroit Thermal Systems. Where a supplier is not yet certified to IATF 16949, the supplier shall have a documented quality management system development plan, including timing, milestones, and management review of progress. Detroit Thermal Systems may accept compliance with a customer-recognized minimum automotive quality management system development approach as an interim step when appropriate. Suppliers shall provide current copies of valid quality management system certificates to Detroit Thermal Systems at PPAP submission and after each surveillance or recertification audit.

1.2 Control of Sub-Tier Suppliers

Suppliers are responsible for the quality of materials and components provided by their sub-tier suppliers and subcontractors, including customer-directed sources unless otherwise specifically defined by contract. Detroit Thermal Systems suppliers shall deploy a risk-based process to select, evaluate, monitor, and develop their sub-tier suppliers so that externally provided products, processes, and services conform to all applicable requirements. Suppliers shall flow down applicable statutory, regulatory, customer-specific, and Detroit Thermal Systems requirements to their sub-tier suppliers and shall retain evidence of effective implementation.

- Evaluation and qualification of sub-tier supplier facilities
- Control to ensure that raw materials used meet Detroit Thermal Systems' requirements.
- Controls to ensure that component sub-tier suppliers are approved by Detroit Thermal Systems where applicable.
- Part qualification, including use of AIAG APQP/PPAP processes, first-part approval, MSA (Measurement System Analysis), and process capability studies, as applicable.
- Control of drawings/revisions

- Control of nonconforming material
- Corrective action and preventive action programs
- A continuous quality improvement program
- Risk-based monitoring of sub-tier supplier performance, including delivered product conformity, delivery performance, disruptions, premium freight, and special status notifications when applicable, with defined escalation and development actions for poor performance.

Detroit Thermal Systems reserves the right to evaluate the quality system and records of such sub-tier suppliers as necessary. Detroit Thermal Systems involvement does not absolve suppliers of ultimate responsibility for the quality performance of their sub-tier suppliers.

2.0 Supplier Qualification Process

All suppliers of production materials to Detroit Thermal Systems must be qualified. The extent of the qualification process depends on the criticality of the purchased product and other factors determined by Detroit Thermal Systems. In its complete form, the qualification process consists of the following steps:

- Quality Management System certification to ISO 9001 or IATF 16949 by an accredited registrar.
- **EVAL assessment** conducted by the DTS SQA team with support from the purchasing team.
- On-site assessment by Detroit Thermal Systems personnel or their authorized agents.

Commodity Checklist assessment conducted by DTS SQA for each new supplier and for current suppliers intended to provide components in a commodity not previously assessed.

EVAL and Commodity Checklist assessments performed by DTS joint venture partners are also applicable and valid for DTS.

- **Signed acknowledgment of DTS requirements** completed by the supplier.
- **Technology assessment**
- **For each project and** component to be purchased, DTS Purchasing will define the list of approved suppliers eligible to receive the RFQ for that business.

2.1 New Supplier Questionnaire (Stage 0)

During the early stages of supplier selection, potential suppliers are sent a questionnaire. The questionnaire requests general company information, such as locations, size, capabilities, and financial stability, as well as detailed information regarding the company's quality management system and quality history.

2.2 New Supplier Self-Assessment (Stage 0 AQP)

When a new supplier is being considered, the supplier receives a quality management system self-assessment survey. The supplier completes the self-assessment and returns it with supporting documentation. Detroit Thermal Systems will review the submission to determine whether the documented quality system meets Detroit Thermal Systems requirements.

2.3 Supplier Selection (Stage 1 AQP)

The purpose of this stage is to define the DTS requirements that shall be communicated to the supplier.

- Definition of DTS requirements
To adequately define DTS requirements for suppliers, the DTS project team, under the responsibility of the DTS buyer, will establish the DTS Requirements File (DTSRF) (Appendix 2).
The DTSRF (PUR-T004.2) will include:

- Product specifications, including functional, technical, and general specifications and SPPCs (Special Product and Process Characteristics)
- Target costs
- Quality and logistics targets
- Applicable terms and conditions

The DTS Sourcing Committee will:

- Compare pre-selected supplier performance and responses against the DTS Requirements File
- Review the quality of responses and robustness of the quotation received.
- Analyze supplier strengths and weaknesses.
- Select the supplier that represents the best overall choice.

2.4 On-Site Assessment (Stage 1 AQP)

For all suppliers' components, high-risk products, special processes, launch programs, or suppliers with performance concerns, an on-site assessment of the supplier's facility may be provided. The on-site assessment may include quality, manufacturing process, product, and business readiness topics based on supplier risk and performance. Where second-party audits are used, the need, type, frequency, and scope shall be defined using a documented risk-based approach and retained as records.

- **EVAL assessment** conducted by DTS SQA with support from the purchasing team in accordance with the EVAL procedure. The assessment must achieve a score of at least 80%, with each mandatory question answered satisfactorily. The supplier must also complete a quality management system self-assessment using the Detroit Thermal Systems supplier assessment survey form.
- On-site assessment by Detroit Thermal Systems personnel or their authorized agents.

The purpose of EVAL is to identify process-management risks at the potential supplier through a full-day evaluation of current processes. The assessment will be conducted by Purchasing and SQA representatives. The EVAL assessment is not scheduled periodically for all DTS panel suppliers; it is used for new suppliers and suppliers included in the Supplier Quality Improvement Program.

- **Commodity Checklist assessment** (Process Audit Questionnaire and Report) conducted by DTS SQA for each new supplier and for current suppliers intended to provide components in a commodity not previously assessed. A minimum score of 80% is required. Any supplier rated below 100% must demonstrate full compliance with the requirements checklist within three months after the initial assessment.
- **Technology assessment** to determine whether the supplier has the required technical resources, including production and inspection equipment, facilities, and engineering resources.

If the assessment team determines that the supplier meets Detroit Thermal Systems requirements, Detroit Thermal Systems qualifies the supplier to bid on new business and supply production materials.

2.5 Periodic Re-evaluation (Stage 2 AQP)

Detroit Thermal Systems periodically reevaluates current production suppliers using quality performance data, scorecards, corrective action responsiveness, delivery performance, premium freight, customer disruptions, and on-site assessments as needed. If requested, the supplier shall make its facility available for on-site process verification by Detroit Thermal Systems personnel with reasonable notice. Suppliers that do not meet performance expectations may be subject to heightened monitoring, supplier development actions, second-party audits, controlled shipping, new business hold, or removal from the Approved Supplier List.

3.0 Advanced Quality Planning for Product and Process

The Advanced Quality Planning procedure supplements supplier quality policies and requirements. Its purpose is to ensure thorough validation of product and process design so the supplier can deliver the expected level of quality in accordance with DTS requirements from the start of production.

The Advanced Quality Planning procedure includes seven stages, excluding Stage 0 for supplier preselection. These stages apply to all customer application projects and to components already used in production when product or process changes occur.

Documentation for Stages 3 through 5 is tracked in the Supplier Quality Module, Supplier PPAP List, in the PLEX Online system.

The PQA process is initiated in PLEX by the DTS buyer, who creates the new component number and assigns project-management responsibility to the supplier's identified contacts.

From that point forward, the supplier is required to complete the deliverables for Stages 3 through 5 in PLEX.

For customer application projects, the seven stages are integrated into the five phases of the DTS project development process and are planned as shown below:

DTS PROJECT PHASES AND SUPPLIER AQP STAGES							
DTS Project Phases	Phase 0	Phase 1	Phase 2	Phase 3	Phase 4a	Phase 4b	
	Competition phase	Product/Process Design	Detailed Design and Design Validation	Production/Process Validation	Launch and Process Stabilization	Volume Production	
Supplier AQP Stages	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
	Supplier preselection	Supplier selection	Supplier nomination	Design Validation	Process validation	Initial Sample validation	Start Of Production / Probationary period
							PQA Management

3.1 Design Intent Validation (Stage 3 AQP)

The supplier is responsible for submitting all PPAP or First Article approval documentation requested by Detroit Thermal Systems for new or changed parts. Unless otherwise specified in the purchase agreement, the default PPAP requirement is AIAG PPAP Submission Level 3, including at minimum a signed Part Submission Warrant (PSW). Full or interim PPAP approval is required before shipping production material to Detroit Thermal Systems. Any exception must be documented and approved in writing by Detroit Thermal Systems. Qualification documents shall be submitted electronically unless otherwise specified and shall be clearly identified to the applicable part number, revision, and change level.

In some cases, Detroit Thermal Systems personnel may request to be present during the initial production run.

The purposes of this phase are to review and approve supplier deliverables to ensure that product and process quality expectations are met and to prepare for tool launch. Upon DTS request, a design review may be organized with the supplier. Any proposal to modify or improve the product or process, including production transfer or relocation of production equipment, must be approved by DTS based on supplier-modified documentation and in accordance with the Product and Process Modification section of this manual.

First-off tool: The component produced from the first-off tool must be evaluated and approved by DTS for dimensional and assembly requirements. Approval at this project phase does not constitute final component approval. Final approval is granted after initial sample submission in Stage 4, based on the full-day production run under serial production conditions.

3.3 Special Product and Process Characteristics

(SPPC) management: The supplier shall follow the SPPC requirements for design and process FMEA. For each Special Product and Process Characteristic (SPPC) identified after FMEA review, the supplier shall implement the applicable controls according to the referenced requirements.

The supplier shall list both of the following:

Customer SPPC characteristics: customer interfaces or characteristics that affect DTS or OEM assembly, visual appearance, product performance, and/or reliability. The intent is to ensure a common understanding between the supplier and DTS.
Internal SPPC characteristics: fundamental supplier product characteristics that could affect the supplier's manufacturing process or compliance with supplier internal standards.

This list shall be approved and signed by the DTS team, including SQA and Engineering.

3.4 Design Validation Plan (Design-Responsible Supplier):

The validation plan is defined by the supplier based on:

- Customer-specific requirements
- DFMEA analysis, PVP, and historical DV results
- Lessons learned

This validation plan shall list all required testing:

- To validate the component during Stage 3 and confirm design validation.

- To validate process impacts on the product using initial samples collected during the full-day production run and approved by DTS.

When required, this validation plan shall be reviewed and signed at minimum by:

- The supplier quality representative
- The supplier engineering representative
- The supplier project coordinator
- DTS R&D

Design validation results:

For design-responsible suppliers, the supplier shall conduct design validation on prototypes.

Validation results that comply with the approved plan shall be reviewed and signed at minimum by:

- The supplier quality representative
- The supplier engineering representative

The supplier project coordinator
DTS R&D

Design Review:

Design-responsible suppliers are responsible for conducting the design review with DTS R&D and SQA in accordance with DTS standards. The review shall confirm design robustness considering supplier manufacturing constraints, DTS and customer interfaces, customer specifications, and SPPC requirements.

3.5 Process Validation (Stage 4 AQP)

The purpose of this stage is to ensure that the process developed by the supplier can produce the defined components in compliance with DTS requirements, that the targets are defined for the Full Production Day, and that the following are demonstrated:

- Capacity verification or run at rate: proving that all committed volumes for DTS and other customers can be met on shared equipment at all operations of the process
- capability of the process
- build correct product in accordance with DTS approved work instructions and control plan.

3.6 Process Audit

- Preparation of DTS FDPR (Full Day Production Run) at supplier plant:

The supplier is required to perform a preliminary Representative Production Run agreed upon with the supplier and SQE.

- Preparation of DTS process audit at supplier plant:

The supplier is required to perform a self-process audit evaluation based on the DTS standard Process Audit Questionnaire.

The self-process audit should achieve a score of at least 80% with no critical CARs (Corrective Action Requests) before requesting DTS SQA attendance at the Process Audit.

3.7 Capacity Verification (run at rate)

The audit is valid only if the audited process is the one that will be used in mass production, including the same equipment and conditions.

- The duration must be sufficient to assess process stability: a minimum of 3 hours of production and 300 components. Depending on the nature of the component, DTS reserves the right to require the supplier to run longer and produce more components than stated here.
- the FPDR should include one or several changeovers of version (include change of production shift)
- for non-audited shift(s), supplier will have to provide training reports and evidence of compliance at run at rate target.

3.8 Process Performance Verification (run at rate)

Following the full-day production run, the following reports must be issued:

- Full Production Day Report: shall list conditions, quantities produced and rejected, production line speed, Total Line Reject calculation, and the acceptance or rejection decision.
- process audit report including capabilities ($C_{pk} > 1.67$, target $P_{pk} \geq 2$) if requested.

Each SPPC will require a capability study performed on at least 30 components.

The results will lead to:

- Confirmation that the statistical analysis complies with AIAG Core Tools requirements.
- DTS SQA will check on supplier site that the control plan:
 - integrates the countermeasures listed in the PFMEA
 - is respected on the shop floor.

The process is qualified by DTS if the FDPR is accepted, and audit results are satisfactory. Otherwise, the supplier must draw up an action plan, and a follow-up audit will be performed by DTS.

Case of rejection of a FDPR by DTS:

An action plan shall be submitted by the supplier for each open CAR (Corrective Action Request). DTS will conduct a new FDPR after each supplier CAR is released.

Action plan must be implemented within 10 days and must be sponsored by the Top Management of the supplier.

3.9 PPAP / First Article (FAI) Initial Samples validation (Stage 5)

For each new or changed part, Detroit Thermal Systems requires PPAP according to AIAG APQP/PPAP requirements.

- Initial samples and DTS FDPR

Initial samples must be taken during the validated Full Production Day Run and delivered in serial production packaging, together with full documentation as specified by DTS SQE requirements.

Initial Master samples must be kept at the supplier according to APQP / PPAP AIAG Requirements.

In the case of several processes at the supplier (e.g.: several cavities inside a plastic injection tool) – the supplier is requested to keep master initial samples per process and have them properly saved and identified.

- DTS validation on Production Trial Runs:

DTS will perform a production trial along with DTS FDPR approved initial samples to measure the conformance of the supplier components in the DTS manufacturing process.

The validation results, in compliance with the approved validation plan defined during stage 3, will be reviewed and signed at least by the:

- quality representative of the supplier
- engineering representative of the supplier
- project coordinator of the supplier
- DTS R&D
- DTS Supplier Quality.

The supplier validation plan is considered completely executed when DTS have completed their internal & external product trial runs.

Therefore, the supplier validation is deemed to be successful when DTS internal and DTS external customer have passed their PVP&R of the validation respectively of the DTS product.

Mass production components must be following Initial Samples approved by DTS: no change on product, nor on process nor on packaging.

Condition of initial sample acceptance

Initial sample report is validated by DTS team if at least the items listed below are approved:

- process audit – validated by DTS
- Full Day Production Run validation – validated by DTS

- dimensional report
- SPPC Characteristics capability
- raw material Conformity
- test on DTS production Line to confirm no assembly issue on DTS line
- functional tests
- packaging validation
- report on subjective requirements (appearance – aspect – Buzz Squeak and Rattle noise) if applicable
- IMDS Database data entry completed

If all the initial sample deliverables have been qualified, DTS SQA will release the Part Submission Warrant (PSW)

3.10 Dimensional Inspection Report (Stage 5)

For dimensional inspection reports, the supplier should consult with Detroit Thermal Systems on the appropriate number of parts to be inspected. The supplier inspects or tests each sample against all dimensions, drawing notes, and specification requirements listed on the current revision of the Detroit Thermal Systems drawing and/or specification. The supplier records the results on the appropriate dimensional layout form using a ballooned copy of Detroit Thermal Systems' drawing and/or specification to correspond with the supplier's results.

For multiple cavity tools a dimension report per cavity number is required.

The dimensional inspection report must include the specification number, specified requirements, and the inspection/test results. A simple statement that the material meets the requirements is not acceptable. Each report must be traceable to the supplier's material, through lot/heat/coil/batch numbers or equivalent and must be signed by the organization that performed the testing. For any requirements that the supplier does not have the equipment to inspect or test, the supplier shall obtain reports from their sub-supplier or other test agency.

3.11 Material Certification/Test Report (Stage 5)

When requested, the supplier must provide a material certification/test report. This report must include the specification number, specified material and/or physical requirements, and the inspection/test results. A simple statement that the material meets the requirements is not acceptable. Each report must be traceable to the supplier's material and must be signed by the organization that performed the testing. Certificate of Analysis (COA) must contain: the product name, the date manufactured, the lot and/or batch number and test results showing conformance to the applicable standard.

3.12 Control Plan (stage 5)

The supplier shall develop and maintain a control plan and submit it for review or approval when requested. The control plan shall describe the process steps used to manufacture the part and the controls used to assure conformity at each step. The control plan shall include in-house processing, outsourced processing, inspection, packaging, labeling, preservation, and shipping, and shall align with the PFMEA, process flow, work instructions, and applicable customer-specific requirements.

The control plan shall identify all special characteristics, critical characteristics, and pass-through characteristics, as applicable. Where detailed instructions are required, the supplier should maintain documented work instructions referenced by the control plan. Inspection methods, sample sizes, and sampling frequencies shall be based on process capability, risk, severity of potential nonconformity, detection effectiveness, and process stability. Characteristics that do not meet Detroit Thermal Systems capability requirements shall be subject to 100% inspection or an alternative control method approved in writing by Detroit Thermal Systems.

It is the supplier's responsibility to identify any Pass Thru Characteristics (PTC) during activities from the APQP process and must be indicated as such on the appropriate PFMEA and Control Plan.

3.13 Material Compliance, Safety Data Sheets, and IMDS (stage 5)

As applicable, suppliers should provide safety data sheets, material disclosures, and IMDS submissions during the PPAP or First Article process and thereafter when updated. Material reporting shall meet applicable statutory, regulatory, customer-specific, and Detroit Thermal Systems requirements.

3.14 Government and Regulatory Compliance (stage 5)

The supplier's manufacturing processes and products, including externally provided products and services, shall comply with all applicable statutory and regulatory requirements in the country of manufacture, the country of receipt, and the country of customer use when identified. Requirements may include, but are not limited to, health, safety, environmental, hazardous substance, conflict minerals, recycling, chemical reporting, REACH, RoHS, and customer-specific reporting obligations. Suppliers shall provide declarations of conformance and support records upon request.

3.15 Delivery

The supplier shall deliver product in accordance with purchase order, release, shipping, packaging, and labeling requirements and shall maintain on-time delivery performance acceptable to Detroit Thermal Systems. Any anticipated missed shipment, short shipment, capacity concern, or premium freight situation shall be communicated immediately. Unless otherwise agreed in writing, expedited freight and other costs resulting from supplier-caused delivery failure may be charged to the supplier.

4.0 Manufacturing Control

4.1 Control of Special Processes

Detroit Thermal Systems suppliers shall identify, validate, monitor, and control all applicable special processes using qualified personnel, approved methods, and applicable AIAG CQI self-assessments or equivalent customer-approved methods. Special processes shall be assessed at planned intervals and re-assessed after significant changes such as new equipment, relocation, tooling changes, software changes where applicable, or major process modifications. Suppliers remain responsible for the conformity of outsourced special processes.

Examples of applicable CQI assessments include the following, where relevant to the manufacturing process:

- **CQI-9** → Heat Treat
- **CQI-11** → Plating
- **CQI-12** → Coating
- **CQI-15** → Welding
- **CQI-17** → Soldering
- **CQI-23** → Molding
- **CQI-27** → Casting
- **CQI-29** → Brazing
- **CQI-30** → Rubber Molding

Periodic special process self-assessments are expected for applicable processes and whenever there is new equipment, a process relocation, a significant tooling change, or a major process change. Assessments shall be performed by competent personnel, and the supplier remains responsible for compliance even when the process is subcontracted.

4.2 Process Control

Detroit Thermal Systems' suppliers shall control all manufacturing processes in accordance with the approved control plan and any applicable work instructions, standards, reaction plans, and customer-specific requirements. Process controls should be maintained and updated when changes occur.

4.3 Statistical Process Control

Where specified by a critical characteristic designation on the Detroit Thermal Systems drawing, the supplier is required to apply adequate statistical process controls to demonstrate process capability of $Ppk > 1.67$ or greater. Sufficient controls must include:

- A minimum data collection of 25 subgroups of 5 individual readings for each critical characteristic must be used to calculate Ppk (Process Capability Index must be $Ppk > 1.67$) also the process must be stable, (No special causes of variation must be included on the process capability calculation, the distribution as a result of the study must be regular and the number of distinct categories of data must be $ndc > 5$)
- The Process control chart is in the process area, visible to the operator, or people who are responsible for controlling the process.
- For each out-of-control condition, actions are taken to bring the process back into control. Actions taken to bring the process back into control are recorded.
- Product produced during any out-of-control condition is sorted, scrapped, reworked or dispositioned through the supplier's material review process
- Before conducting the process capability study the supplier must perform MSA (measurement system analysis) by performing Gage R&R (repeatability and reproducibility) according to AIAG requirements

4.4 Lot Control

A lot consists of products with the same part number and revision that is produced at the same time, under the same processing conditions, and from the same lot of raw materials. Lot identification is used to define the scope of action required when issues arise during manufacturing or at the customer. Each container of material shipped to Detroit Thermal Systems must be identified with the supplier's lot number, and inspection records must be traceable to the applicable lot number.

Typical conditions that require a lot number change include:

- Change to the part number or revision
- Change to the component part number or revision
- Interruption of continuous production, typically for more than a few hours
- Repair or modification of tooling or equipment
- Tooling changes, other than minor adjustments or replacement of consumable tooling
- Change to a different lot of raw materials
- Process changes

4.5 Traceability

Traceability links finished product to the raw materials, components, process history, and inspection status used to produce it. When traceability is required, the identification method shall remain legible and effective throughout manufacturing, storage, shipment, and use, and shall support containment, investigation, and recall activities as applicable.

The supplier shall maintain traceability appropriate to the product and risk, including identification of raw material, components, subcomponents, rework, inspection status, and finished product lot as required by drawing, specification, customer requirement, or law. The supplier shall have a documented traceability plan when traceability is specified and shall

be able to support rapid containment, recall, investigation, and disposition activities. Lot sizes should be controlled to support effective containment.

Traceability: Along with the process audit, DTS supplier quality will verify the supplier system to control traceability and respect the product coding. The supplier requires the ability to trace any component back to the origin batch of material used

4.5 Workmanship

When workmanship standards are not specifically defined on Detroit Thermal Systems drawings or specifications, the supplier shall apply recognized industry standards appropriate to the product and process. When clarification is needed, the supplier shall contact Detroit Thermal Systems before shipment. Nonconforming products may be returned, sorted, reworked, or otherwise dispositioned at the supplier's expense.

4.6 Safety

Suppliers of product-safety related products or processes shall establish and maintain documented controls for the management of product safety, including identification of statutory and regulatory requirements, special approval of safety-related changes where applicable, traceability, retention of documented information, escalation of safety-related concerns, and designation of responsible personnel with defined authority.

At no time should any customer, employee, or person at a Detroit Thermal Systems facility be exposed to hazardous material or situations that are not inherent in a component's intended use or structure. Residues, films, out-gassing products, and packaging materials shall comply with applicable health, safety, and environmental requirements. Where applicable, required safety notices, safety data sheets, and regulatory declarations shall be provided during the PPAP / FAI process.

4.7 Maintenance

The supplier shall maintain facilities, manufacturing equipment, tooling (including Detroit Thermal Systems owned tooling), measuring devices, and other equipment in a condition that supports production continuity and product conformity. Suppliers should identify key process equipment, critical spare parts, maintenance objectives, and planned maintenance activities, and should apply a total productive maintenance approach where appropriate to reduce unplanned downtime and quality risk.

5.0 Supplier Performance

5.1 Supplier Performance Monitoring

The supplier is fully responsible for delivering according to the specifications and in line with the accepted ISR.

Safe Launch Plan

DTS requires in this stage the implementation of a Reinforced Control Plan (RCP) by increasing the frequency of the control plan following the requirements outlined on the SPPC tracking sheet.

In addition, a ramp up Control Shipment Level 1 (CSL1) activity at the supplier plant must be implemented for a period of time agreed with DTS's SQE following the Start of Production (SOP)

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The conditions to end the Safe Launch Plan period are:

- No C1 / C2 incidents (C1 The problem affects DTS external customer or end-user. C2 The problem is discovered in DTS plant)
- No defects detected in CSL1 (Control Shipment Level 1)

- TLR (Total Line Rejects) performance is stable for the last 3 months
- Capability of each SPPC has been verified in accordance with the control plan (number of components measured – frequency) and/or SPPC to be under 100% automatic control.
- All suppliers' 8D's must be closed.

If the conditions above are achieved within a 3-months period, the PQA status is granted and DTS will give the supplier a notification of PQA status achievement allowing the supplier to deliver to DTS with no additional inspection.

If the conditions above are not achieved within a 3-months period, DTS will request the supplier to implement a Control Shipment Level 2 (CSL2) activity for 1 month. This activity will be handled by a DTS panel approved sorting company. If the CSL2 activity is implemented to a component belonging to a Technology Family, Supplier shall provide DTS with the references of all components belonging to such Technology Family and the CSL2 activity shall also apply to all these components.

5.2 Supplier Quality Assurance Management

When a component is granted the Product Quality Assurance (PQA) status, the component is no longer subjected to a Safe launch Plan period.

PQA Management Flow purpose is to ensure that supplier fulfills DTS requirements and supplies quality secured purchased components throughout all the production periods.

Any non-conformity related to the delivery of parts without respecting the requirements agreed must be formalized by the supplier by sending a Supplier Deviation Submission Request.

Annual PPAP-Supplier Product is re-validated on a yearly basis according to the latest engineering revision level change and shall be presented by the supplier to the DTS Site at least 1 month prior the anniversary date of the latest PPAP approval (the year before).

The deliverables requested by DTS for the Yearly re-qualification of the initial samples according to AIAG APQP/PPAP requirements.

DTS will focus on evidence of the:

- Respect of the control plan at the defined and agreed frequencies – especially capability of each SPPC has been verified in accordance with the control plan (number of components measured – frequency).
- Monitoring supplier total line rejects (measured in PPM).
- Respect of rules of escalation as defined in PQA Management Flow Control Shipment (CSL1 or CSL2) implementation if the supplier process for manufacturing the component has been drifted more than acceptable by DTS, as defined in the PQA management workflow
- Declaration from the supplier of continuous compliance with DTS requirements.

Nor respect of the above-mentioned rules will trigger DTS to place the supplier in Alert for New Business On Hold (Alert NBOH) and supplier delivery will continue through Control Shipment Level 2.

Upon request, the supplier must provide DTS with the results of inspections carried out for each batch delivered in line with DTS's requirements.

Case of a product or process modification or transfer of a supplier production line (see Chapter II.5) – the PQA status is therefore lost,

and the PQA status shall need to be re-validated going through the stages 3 to 5 of the AQP.pp as decided by DTS supplier quality.

5.3 Supplier Scorecards

Detroit Thermal Systems may provide supplier scorecards to communicate performance against established targets. Detroit Thermal Systems

Corporation expects suppliers to drive continual improvement in quality, delivery, responsiveness, and risk management. The objective is zero defects, zero disruptions to Detroit Thermal Systems operations, and zero supplier-caused premium freight Detroit Thermal Systems or its customers.

Scorecard metrics may include cost reduction, quality performance, delivery performance, responsiveness, production disruptions, special status, and audit results. Failure to meet expectations may result in performance mitigation actions at the supplier's expense.

- Quality Concerns
- Behind Schedule Delivery
- Communication
- Production disruption
- On-site Assessment (Section 2.3)

6.0 Drawings/Changes

6.1 Drawing and Change Control

The supplier should have a documented system for assuring that the latest Detroit Thermal Systems drawings are in effect at their facility for all parts shipped to Detroit Thermal Systems. Exceptions to this (e.g. raw material, etc.) must be approved by Detroit Thermal Systems' purchasing. The supplier's quality management system should contain a documented procedure that describes the method used for the receipt, review, distribution, and implementation of all changes to drawings and specifications. In addition, the procedure should address control of obsolete drawings and specifications. A documented procedure should also detail the method used to contain new or modified parts until approved by the customer.

6.2 Process Changes, Engineering Changes

Suppliers must have systems in place to control changes to drawings, specifications, software when applicable, processes, manufacturing location, tooling, sub-suppliers, materials, or produced parts. The supplier shall evaluate the impact of proposed changes, update applicable risk analyses and documented process controls, and obtain required Detroit Thermal Systems approval before implementation.

Temporary changes to process controls or production processes shall be identified, documented, risk assessed, and authorized internally before implementation. The supplier shall maintain a record of the temporary change, including reason, duration, affected product, approval, validation activities, and planned restoration to the standard process. Upon expiration or completion, the supplier shall ensure documented restoration of the original process or formal approval of the revised process through the applicable change management process.

NOTE: Suppliers shall not implement changes to process, manufacturing location, material, sub-supplier, tooling, software where applicable, or product design characteristics without required written approval from Detroit Thermal Systems. The supplier shall formally request applicable product or process changes through the ECR process before implementation.

6.3 Supplier Process Change Request (ECR)

A Supplier Process Engineering Change Request (ECN) is used to request a change to a released part, process, drawing, or specification. Detroit Thermal Systems requires ECNs obtain approval by authorized representatives from product engineering and the receiving facility quality function. Notification of ECN disposition (approval or rejection) by Detroit Thermal Systems will communicate any appropriate requirements needed prior to implementation by the supplier (e.g. PPAP/FAI, testing, etc.). If no requirements are identified with approval, it is the responsibility of the supplier to validate the change and update all relative internal process documentation in accordance with the requirements of AIAG PPAP.

The originator of an ECN includes the following information:

The supplier submits the ECN with any applicable supporting documentation to Detroit Thermal Systems purchasing team for evaluation and approval.

6.4 Supplier Deviation Request

A supplier is never permitted to knowingly ship products that deviate from the print, specification limits, or design intent without written authorization from Detroit Thermal Systems. If such a condition exists, the supplier may request Detroit Thermal Systems to allow shipment of the product. This is accomplished by initiating a Supplier Deviation Request sent to the purchasing team to initiate the approval process.

If directed by Detroit Thermal Systems, the supplier must send samples of nonconforming items to Detroit Thermal Systems for evaluation.

The cost of any testing required to determine the acceptability of the product will be charged to the supplier. Detroit Thermal Systems will determine the item's acceptability and any corrective actions required beyond the deviation. If approved, Detroit Thermal Systems will send written deviation approval to the supplier.

The deviation is only intended to be an interim action and **is not** to be construed as an engineering change. The supplier must begin work immediately to correct the conditions in question. This must be accomplished within the time frame stated on the deviation. Failure to comply with the mutually agreed upon closure date for the deviation may result in the supplier's rating being affected.

In all cases, the supplier must fully contain all products suspected of being nonconforming at its facility. In addition, the supplier may be required to sort any suspected product at a Detroit Thermal Systems location.

Any parts sent to Detroit Thermal Systems that have been approved on a deviation must be clearly identified on the box (Stop Sign), container, or other packaging with the markings decided jointly by Detroit Thermal Systems and the supplier.



7.0 Packaging & Labeling

7.1 Packaging

Each supplier must adequately plan for packaging. Detroit Thermal Systems encourage supplier-initiated packaging improvements. Suppliers shall provide packaging according to DTS Packaging Standard that protects product from damage and, where applicable, prevents rust or corrosion on metal parts. Packaging, labeling, and shipping materials shall comply with applicable carriers and customer requirements while supporting effective transport and storage.

Expendable materials and packaging must be legal and safe for standard “light industry” disposal and be compliant to international (customs) transportation standards when necessary.

When more than one-part number or lot number is packaged in a shipping container, each part number and/or lot number must be separately packaged (i.e. bags or boxes) inside the container, with each labeled as to the contents.

In the event that metal parts without surface treatment need to be used, Rust-corrosion protection for metal parts must be included in the approval of expendable or returnable packaging. Transportation of products to Detroit Thermal Systems and the supplier’s plant locations must be conducted using appropriate product corrosion protection bags or paper.

All kits must be individually packaged within the shipping package so that the full content of one kit is inclusive.

All supplier packaging must be approved by the Detroit Thermal Systems receiving location prior to production shipments. Using a DTS’s packaging approval 860. 1070.Form.

7.2 Labeling

All suppliers must adhere to Detroit Thermal System packaging requirements as per the Detroit Thermal Systems’ Labeling standard.

8.0 Corrective Action System

Detroit Thermal Systems utilizes a PLEX Corrective action program that supplier must follow a nonconforming incident occurred and product has been shipped to Detroit Thermal Systems or from DTS to customers

8.1 Corrective Action Process Approach

The corrective action system utilized should be like the process outlined below. The focus should be on identifying the root cause(s) of the problem and taking action to prevent its recurrence.

- Use a team approach
- Describe the problem
- Contain the problem
- Identify and verify root causes(s)
- Implement permanent corrective actions
- Verify corrective action effectiveness
- Close the corrective action

It is supplier’s responsibility to update corrective action at DTS’s PLEX program and per this document.

8.2 Supplier Corrective Action and Responsiveness

Detroit Thermal Systems issues real-time Quality Complaint (SCNR) communications and requires appropriate actions to be taken within a timely manner to ensure supply continuity. The required actions by your company and timing are outlined below.

- **24 Hour Containment.** The supplier is required to provide immediate containment, sorting, and certification activities on all suspect product(s) at the affected Detroit Thermal Systems customer facilities to isolate, insulate and eliminate all nonconforming products from the supply chain. This containment may be done by one or more of your employees or by a Detroit Thermal Systems approved 3rd party containment company at your company's expense.
 - Note: If your company chooses to perform the containment action itself and requires assistance from a temporary labor firm, a representative from your company must be on-site to manage all the temporary firm's activities.
 - Note: Failure to provide certified products within the required 24-hour timeframe may result in containment being initiated by Detroit Thermal Systems at your expense.
 - Note: Detroit Thermal Systems may initiate containment prior to 24 hours at the supplier's expense to sustain immediate production needs.
- **Controlled Shipping – Level 1 (CS1).** CS1 must be implemented at your facility beginning immediately after the Quality Complaint (SCNR) is received and must remain in place until the SCNR is closed. The results of the CS1 inspection should be sent electronically to the Quality Representative who issued the Quality Complaint (Supplier Non-Conforming Report) prior to each shipment of parts for the duration containment is in place. If your CS1 inspection is determined ineffective (e.g. escape of the same defect to Detroit Thermal Systems during the quarantine period), a mandatory Controlled Shipping level 2 (CS2) inspection (CS1 + 3rd party containment action) will be required at your location and expense by a 3rd party.
- **Five (5) working day Root Cause Analysis.** Root cause response must include evidence of analysis in determining both the escape and occur points of the non-conformance as part of the corrective action report (e.g. 8D, 5 Why, Fishbone, etc.). This part of the corrective action report should be completed within 5 working days of the Supplier Non-Conforming Report being issued.
- **Ten (10) days Permanent Corrective Action.** The corrective action plan must be identified and reported on the corresponding corrective action report within 10 working days of the Supplier Non-Conforming Report being issued. The requirement for CS1 inspection will not be removed until implementation of the corrective action plan can be verified and is approved by the issuing plant Quality Representative via e-mail notification.

Thirty (30) day Automatic Return. Material on Quality Hold that does not have an approved mitigation plan by the supplier (e.g. action identified certification, RMA for return, etc.) may be returned to the supplier or scrapped after 30 days from SUPPLIER NON-CONFORMING REPORT issuance at the supplier's expense. The above-mentioned process is a well- established expectation in the industry and is necessary if we are to achieve the high level of supply chain performance required by our customers.

8.3 Cost of Poor Quality (COPQ) Recovery

The supplier shall be responsible for all costs incurred by Detroit Thermal Systems and its customers in conjunction with a corrective action or any failure of the supplier's deliverables. Detroit Thermal Systems may take immediate actions to satisfy customer requirements while notification of the issue is provided to the supplier. A supplier shall respond to any debit notifications within 10 working days. Potential costs incurred include, but are not limited to:

- Incoming inspections
- Necessary sorting activities
- Return shipments or shipments to a third-party location
- Analysis of warranty and field returns

- Rework, repair, or scrap of product at CSM/Capital Stamping & Machine and/or its customer facilities
- Premium Freight Charges
- Process changes for accommodating the product
- Additional inspections or process controls
- Costs to manage action items

Supplier Quality Improvement

A Quality Improvement Plan (QIP) is required by suppliers to achieve the level of PPM (Parts Per Million) that the automotive industry requires. This plan will focus on: • preventive quality • eradication of problem root causes • learning from mistakes with Lessons Learned Cards. This QIP is initiated by the supplier at start of serial production. Its implementation is reviewed every year by DTS. The DTS Requirements File (DTSRF) gives details of suppliers' objectives in terms of Quality and Delivery Performances. The development of new business between DTS and a supplier depends on the achievement of the performance levels and on the definition and the deployment of a formal Quality Improvement Plan (QIP) by the supplier to achieve "Zero defects ". This chapter will focus on: • the incident processing • the quality performance indicators • the supplier Quality Improvement Plan • the supplier development and follow up • the product and process change management rules to be respected by the supplier • the audits and audit schedule.

Incident Processing

Suppliers undertake to use for incident treatment exclusively the 8D methodology.

Definition of Quality incidents

Category	Signification	Example
C1	The problem affects DTS external customer or end-user	Car makers line or end of line rejects (C1). Warranty return (C1WR).
C2	The problem is discovered in DTS plant	DTS end-of-line rejects. Sorting, rework, and line disruption. Non-conformance identified in the manufacturing process.

Costs generated in case of non-conformity

DTSRF provisions related to financial compensation to be paid by Supplier to DTS in case of quality incidents shall apply.

- Incident Category 1– C1 & C1WR incident Any line or end of line reject at the customer or customer complaint that is caused by a component delivered by a supplier is recorded as a C1 incident. Any reject occurring "in the field" that is caused by a non-conformity on a component delivered by a supplier is recorded as a C1WR incident.
- Incident Category 2 – C2 incident Any single component rejected from DTS plant that is caused by a component delivered by a supplier is recorded as a C2 incident.
- Recurrent incident:

C1 or C2: a recurrent incident is on the same component number, the same failure mode, the same reason (suspected root cause or identified root cause) coming from parts belonging to a batch produced after CA validation of the equivalent incident previously declared.

C1WR recurrent incident occurs on the same component number, the same failure mode, and the same reason (suspected root cause or identified root cause) and for which production date is after implemented action plan.

Potential reasons for a recurrent incident:

- Containment was not effective
- Root cause was not properly identified.
- Action plan on root cause was not effective.

9.0 Supplier Monitoring

Detroit Thermal Systems continually monitors its suppliers to ensure they continue to meet requirements and to ensure that the supplier continues to ship conforming products. Supplier monitoring is based on defined criteria and may include product conformity, delivery performance, customer disruptions including yard holds or stop ships, premium freight occurrences, special status notifications, warranty or field concerns when applicable, and responsiveness to corrective actions.

This may consist of:

- A quality management system surveillance audit at the supplier's facility
- An on-site audit of the supplier's control plan
- A random incoming inspection audit of a batch of products
- Source inspection of product at the supplier's facility
- A supplier balanced score card is conducted periodically at Detroit Thermal Systems to review supplier performance and progress

Top Supplier Escalation

Based on supplier score card monthly performance, the 10 top suppliers need to provide to DTS and Improvement plan that include improvement actions with target dates and responsibilities as well as supplier company improvement strategy.

9.1 Supplier Audits

Periodically, Detroit Thermal Systems may audit the supplier's quality management system. The supplier must make their facility available for on-site process verification by Detroit Thermal Systems personnel at any time, with reasonable notice. This may be full or abbreviated documentation and on-site audit. The purpose is to evaluate any changes that may have occurred in the supplier's quality management system, and to assess the supplier's continuing commitment to quality improvement.

Periodically, Detroit Thermal Systems may also audit the supplier's continuing conformance to the control plan approved in the First Article process.

9.2 Inspection Audits

Detroit Thermal Systems expects its suppliers to furnish material that conforms to all requirements, and that does not need to be inspected when Detroit Thermal Systems receives it. Detroit Thermal Systems may use a C=0 statistical sampling plan that rejects the entire lot when a single non-conforming part is found in the sample. Detroit Thermal Systems discretion, to meet production requirements, 100% sorting may be done as necessary at the supplier's expense.

Detroit Thermal Systems may inspect product at the supplier's facility to detect potential problems prior to shipment. Detroit Thermal Systems may also inspect products at sub-tier suppliers.

9.3 Supplier-Furnished Lot Documentation

Detroit Thermal Systems may require the supplier to furnish inspection, test, process performance, or other quality data with each shipment to ensure that the product meets Detroit Thermal Systems' requirements. When data submission is required, the data must accompany each shipment or be e-mailed or faxed to Detroit Thermal Systems at the same time the lot is shipped. All documentation must be clearly identified with Detroit Thermal Systems' part number, and the supplier's lot number.

10.0 Supplier Contingency Plans

Any interruption in supply could result in Detroit Thermal Systems not meeting their delivery requirements. The supplier shall prepare, maintain, review, and periodically test contingency plans to satisfy Detroit Thermal Systems requirements in the event of an emergency such as utility interruptions, cybersecurity incidents, labor shortages, key equipment failure, fire, natural disaster, pandemic disruption, field returns, transportation disruption, or significant sub-tier supplier failure.

When the supplier knows in advance of an impending production interruption, the supplier shall notify Detroit Thermal Systems Purchasing and Operations as soon as practical, preferably at least 72 hours before that interruption when possible. The nature of the problem, actual and potential impact, available inventory, recovery timing, and immediate actions taken to ensure supply shall be communicated.

Production interruptions may include, but are not limited to, natural disasters, political unrest, war, capacity issues, quality issues, labor strikes, utility loss, cyber events, logistics constraints, and other events that prevent the supplier from meeting specified capacity volumes. The supplier is required to advise Detroit Thermal Systems of the recovery plan and work toward minimizing its effect on Detroit Thermal Systems operations. Upon request, the supplier shall provide its contingency plans and evidence of periodic review and testing.

-Supplier Quality manual is linked to Detroit Thermal Systems Long Term Agreement and acknowledgement is agreed upon signing it.