Supplier Quality Requirements Guide

CVTECH-IBC INC., 300 LABONTÉ, DRUMMONDVILLE, QC J2C 6X9, CANADA
TEL: (819) 477-3232 FAX: (819) 477-4705

TABLE OF CONTENTS

INTRODUCTION

1.1 Purpose

CVTech-IBC has embarked on a program that focuses on the quality of supplier support as regards optimization, continuous improvement, cost reduction and product quality improvement. The benefits of this program are to be shared by the end customer, the supplier and CVTech-IBC. This document, which provides CVTech-IBC's quality requirements, will be revised periodically and updated as necessary.

SUPPLIER QUALITY ASSURANCE

2.1 General

CVTech-IBC considers its suppliers as essential partners in ensuring its market position and developing new products. The quality of purchased materials greatly influences production costs, the warranty and the customer's cost price. CVTech-IBC requires that all its suppliers efficiently and effectively meet and maintain an ISO 9001:2000 or TS-16949 quality management system.

2.2 Supplier Certification

All new suppliers must complete the "*Supplier Information Questionnaire*" sent to them by the Purchasing Department. Once the questionnaire is completed, the supplier sends it to CVTech-IBC's Quality Assurance Manager.

Then, CVTech-IBC's representatives may further evaluate the new supplier at his own production site. The purpose of this is to evaluate the supplier's facilities, production possibilities and quality system level. Once the results of this evaluation are in, corrective actions may be required and a follow-up undertaken before the supplier is certified.

To be acknowledged as a CVTech-IBC supplier, the supplier must, as a minimum requirement, be ISO 9001:2000 certified or have committed to and embarked on a quality process with a view to becoming certified.

Once the supplier is certified, it is his responsibility to ensure that produced parts, including those produced by sub-contractors, meet CVTech-IBC's requirements.

2.3 Auditing the Finished Product (Product Audit)

Once production is underway, a supplier may be subjected to a finished product quality audit undertaken by a CVTech-IBC Quality Assurance Representative in an effort to ensure that all the product requirements are met and to improve the supplier's overall performance. Suppliers who do not meet CVTech-IBC's requirements will be audited first.

2.4 Evaluating a Suppliers' Quality Level

Our existing system allows us to evaluate a supplier's general performance. The purpose of such an evaluation is to encourage the supplier's continuous improvement efforts, identify and improve performance that is below required standards and acknowledge the best suppliers.

Evaluation is an ongoing process based on criteria that focus on product quality, delivery time and quantities delivered.

We meet with our main suppliers on an annual basis to report on progress, solve any recurring problems related to quality and further improve our Customer-Supplier relationships and processes.

PRODUCTION ACCEPTANCE REQUIREMENTS

3.1 Production Parts Approval Process (PPAP)

In an effort to meet the requirements of the automobile sector of which our customers are a part, CVTech-IBC has committed to a quality assurance process. The purpose of our new focus is to attain our objectives and assure the quality and continuity of our customer-supplier relationships. The Automotive Industry Action Group (AIAG), ISO/TS 16949 and QS 9000 recommend using the PPAP, and CVTech-IBC and its customers see this process as an effective continuous improvement tool. Detailed information and references can be found on the AIAG Web site at: http://www.aiag.org.

PPAP Level and Content to be Provided

Before starting production, the supplier must ensure that the part or material to be produced has been properly approved. He does this by following CVTech-IBC's Production Part Approval Process.

All parts with critical feature - identified using the ST symbol (ST = STatistical Capability Study) – require a PPAP Level III submission.
Unless otherwise specified by CVTech-IBC, parts with no critical features require a PPAP Level II submission. Other PPAP levels may also be required.

During a major production run, samples of PPAP parts shall be taken directly from the production line. An ideal production run lasts at least one entire work shift, with a minimum of 300 parts being produced during this period. Unless previously agreed upon in writing by CVTech-IBC, smaller amounts shall not require a PPAP submission.

A PPAP Level III submission shall include, at a minimum:

- 3 part samples obtained at random during the production run, along with a COMPLETE dimensional inspection report for each of these. When parts are manufactured in a multi-cavity mould, for example, a dimensional report is required for each cavity. The supplier shall retain the master sample.
- The current production drawing
- A Process Failure Modes Effects Analysis (PFMEA)
- The Flow Diagram
- The Control Plan
- The Material Certificates (casting, surface treatment, thermal treatments, chemical properties …)
- Capability studies on critical features (if applicable) – a minimum of 30 parts
- Gage R&R (gage repeatability and reproducibility) performed on critical features (if applicable)

Once a PPAP is submitted, CVTech-IBC reviews and approves it before granting authorization to deliver the parts. If the PPAP is rejected, CVTech-IBC will require the supplier to carry out the necessary corrective action and re-submit a PPAP to obtain approval to launch production.

Once production has begun, the supplier shall ensure that the produced parts meet ALL the specified requirements. A new PPAP submission is required for any change in the process or the design.

The list of documents to be submitted according to the PPAP level ordered, as well as the standard forms to be used, are available online at http://www.cvtech-ibc.com, in the Providers section, or on demand from the Quality Assurance Representative. (PLEASE NOTE that documents and forms are not controlled). Suppliers may submit their own forms provided the format is comparable and has been approved by CVTech-IBC's Quality Assurance Representative.

The sales order indicates where to send a PPAP submission. PPAP parts and documentation must be addressed to the supplier's Purchasing Representative and include the proper identification (see the sample shipping label in Appendix 5). Unless otherwise agreed upon by the supplier and CVTech-IBC, all costs related to the submission shall be the supplier's responsibility.

3.2 Critical Features and the Statistical Process Control (SPC)

Critical features are those elements of a product or process that significantly impact customer satisfaction (for example: the adjustment, functionality, reliability, quality, assembly, and appearance) or the competence to manufacture the product.
Depending on how they will be used, certain products may have several critical features or none at all.
The 

symbol (ST stands for Statistics) shall be used to identify critical features on the CVTech-IBC production drawing
Statistical Process Control and Gage R&R (gage repeatability and reproducibility) are required to visualize capability, stability and control during the production run. Statistical data shall be submitted with each delivery or available on demand.

Unless otherwise specified by CVTech-IBC, the supplier shall demonstrate Cpk process capability for all critical features:

Capability Criteria

- Acceptable when Cpk > 1.33
- Marginal when Cpk is between 1.0 and 1.33
- Unacceptable when Cpk < 1.0

Marginal values shall be evaluated and handled on a case-by-case basis.

3.3 Gage Repeatability and Reproducibility (Gage R&R)

Gage R&R is a statistical tool used to measure the amount of variation in a measurement system arising from the measurement device and the people taking the measurement. In other words, it is a method of analyzing a measurement system to determine the amount of variation during an inspection. All measurement instruments and equipment shall be verified using a Gage Repeatability and Reproducibility, at the specified frequency.

Repeatibility represents the amount of measurement variation obtained when a person uses the same measurement device to measure the same part. Reproducibility represents the amount of variation in the measurements obtained when 2 or 3 people use the same measurement device to measure the same part.
The resolution of all measurement instruments and equipment must be below or equal to 15% of the specification or of the amount of process variation. Unless otherwise specified, the acceptance criteria for a Gage R&R are as follows:

Acceptance Criteria

- 0 to 15% Acceptable measurement system
- 15 to 30% Marginal measurement system. Requires CVTech-IBC approval
- > 30% Unacceptable measurement system. Replace or improve.

3.4 Product Reliability and Testing

If, once the PPAP has been approved, CVTech-IBC deems it necessary to perform certain tests; the Engineering Department shall perform reliability tests on its product.

- If the assembled product passes the tests successfully and the supplier's part doesn't fail the reliability tests, the part is approved for a pilot run.
- If the part fails during CVTech-IBC's product reliability test or causes some other component to fail, CVTech-IBC shall work with the supplier to determine the cause of the failure and agree on the corrective measures to be implemented.

In such a case, the supplier shall implement all corrective actions and submit a new PPAP for approval. If no tests are required, the part can then be approved as a pre-series production part.

3.5 Pilot Run

CVTech-IBC needs a substantial number of samples to carry out its tests on a pre-series production run. Samples must be obtained from a large continuous production on the production line, as provided for in the APQP (Advanced Product Quality Planning) principles. If no problematic is found during the pre-series production run, products assembled with the new parts are shipped to customers.
If no problems are found during the pre-series production run, the supplier is advised that his part is approved (if applicable).
If problems are found during the pre-series run, CVTech-IBC and the supplier shall try to find the proper corrective actions to take and the supplier shall implement them. CVTech-IBC may required a new PPAP submission or choose to continue testing.

PRODUCTION REQUIREMENTS

4.1 Production Capability

The supplier shall continue to show process capability (Cpk) for all critical features during production.

4.2 Lot Size and Traceability

Lot size depends on the quantity of parts produced under the same conditions in order to maintain some homogeneity in terms of quality. The supplier shall establish and maintain identification and traceability procedures for all phases of the production, beginning as soon as the raw material is received. This includes storage (warehousing), delivery, sub-contracting operations and other external processes (for example, thermal treatment, deburring [trimming], cleaning).

A production lot is identified with a single number, which allows it to be traced in the supplier's quality system.

Barcode labels must be legible and meet the requirements of our Shipping & Receiving Department.

4.3 Delivery Certification Requirements

When delivered products contain critical features (

), CVTech-IBC requires that their quality information and applicable certificates accompany each delivery so product compliance can be documented. CVTech-IBC reserves the right to reject any lot of parts received without this information.

Unless otherwise agreed upon by CVTech-IBC and the supplier, the following documents shall accompany each delivery:

- The certificate of compliance to CVTech-IBC's requirements (in compliance with all international standards and requirements in effect, both domestic and industrial), including the lot number and part number delivered.
- The statistical results of all critical features for the lot delivered.

4.4 Production Drawing Changes

Absolutely no changes are to be made to an approved production part without CVTech-IBC's prior written approval.

This includes changes that might impact the design (form, adjustment or functionality) of the supplied product, including a change in sub-contractor.

To obtain approval, the first thing to do is to contact the Purchasing Representative and suggest a change by issuing a Technical Change Request. A sample request form is available on demand or on the CVTech-IBC Web site at www.cvtech-ibc.com (see the "Technical Change Request" form). Such a request includes a review, a validation and any other requirements CVTech-IBC deems necessary before granting approval. Once the request has been issued, CVTech-IBC may require a new PPAP submission before approval is granted.

➲ *The process involved in issuing a Technical Change Request is described in Appendix 1.*

4.5 Process Deviations and Changes

CVTech-IBC requires that suppliers deliver parts that comply with the contract drawings and specifications. If the supplier wishes to produce and/or deliver parts that do not comply with the contract drawing and other specifications (including delivering parts prior to PPAP approval), CVTech-IBC must grant its approval before delivery is made. To obtain approval, a Deviation Request must be issued and sent to CVTech-IBC's Purchasing Representative as early as possible. A sample request form is available on demand or on the CVTech-IBC Web site at www.cvtech-ibc.com (see the "Deviation Request" form).

➲ *The process involved in issuing a Deviation Request is described in Appendix 2.*

Deviations granted to the supplier are temporary, for a specific quantity or a fixed period of time agreed upon with CVTech-IBC.

A deviation is granted only if the source of the non-compliance is clearly identified. Once the quantity has been reached or the period of time has expired, all parts that do not comply with the requirements are rejected.

CVTech-IBC also requires that the manufacturing process is consistent with that used for the PPAP approval. Each time a process must be changed, CVTech-IBC must be told in advance in writing. Written approval is not required when changes do not affect the drawing specifications or performance. CVTech-IBC reserves the right to refuse any deviation request if the product's level of quality is at risk or if the requirements that have been set out are not met.

4.6 Measurement Control & Testing Equipment, and Inspection

Before making a PPAP submission, the supplier must equip himself with the measurement devices needed to inspect ALL the features of the original drawing.

Unless otherwise agreed upon with CVTech-IBC or unless CVTech-IBC makes a change to the engineering drawing, all costs related to inspection (sub-contracts), calibration and the purchasing of inspection devices and templates are the responsibility of the supplier.

CVTech-IBC requires a sample (specimen) of all non-standard/custom-made inspection devices and templates, either ordered by the supplier or delivered to CVTech-IBC for the purposes of an inspection upon receipt, as soon as the PPAP submission is made.

CVTech-IBC keeps this measurement instrument.

If, under certain circumstances, the supplier cannot inspect one of the features requested, he shall issue a Deviation Request and send it to our Quality Assurance Department.

QUALITY REQUIREMENTS AND CORRECTIVE ACTIONS

5.1 Non-Compliant Material (NCM)

Parts and materials that do not comply with CVTech-IBC's drawings, specifications or requirements are labelled "Non-Compliant Material (NCM). All NCM, including that from sub-contractors, is unacceptable and ultimately the supplier's responsibility. The supplier must, without exception, let CVTech-IBC know in advance of any non-compliance or quality problem found so that such material can be confined as soon as possible.

This applies to any and all suspect products or materials that have been shipped. Any time this happens, measures must be taken to identify the product/material, confine it and prevent the problem from re-occurring.

5.2 Non-Compliant Suppliers

When non-compliant material is identified by CVTech-IBC, CVTech-IBC's Quality Assurance Department issues a non-compliance report (see appendix for the appropriate form).
The supplier is informed of the urgency and priority with which the problem must be handled, as well as the impact the non-compliance may have.
By default, a request for corrective measures is honoured within 48 hours (in the short-term) or within 2 weeks (in the long term).

The number of rejected parts, the number of non-compliant parts, the reoccurrence and the supplier's responsiveness are some of the criteria used to evaluate the quality of our suppliers.
Minor non-quality issues found in the supplier's material shall not be treated as non-compliance, but the supplier shall be informed and must ensure actions are taken to improve the quality.
Any correction action or communication shall refer to the non-compliance number.
➲ *The process involved in the Supplier Non-Compliance Handling Procedure is described in Appendix 3.*

Non-Compliance Handling Costs

All costs related to the handling of non-compliant products are the responsibility of the supplier when responsibility is shown to be his. This includes inspection, sorting, repair, transportation, handling and storage costs, as well as any other expense incurred by CVTech-IBC to deal with the non-compliant product.
Also included are expenses related to production line stoppage at CVTech-IBC and at the Customer site if responsibility is shown to be his.

Sorting is normally done by the supplier himself. Depending on the circumstances and on the urgency of the situation, when parts are sorted by CVTech-IBC, the costs of this activity shall be deducted from the $45.00 hourly rate. If CVTech-IBC must use equipment to render the parts compliant, an hourly rate of $75.00 applies.

5.3 Critical Problems

A critical problem is one that has a significant impact on the compliance of the product and on the production. Both the supplier and CVTech-IBC must be actively involved in ensuring the problem is solved, until it is solved.
The supplier shall dispatch a representative as quickly as possible (within 24 hours) to the CVTech-IBC site to undertake any action needed to confine the problem (sorting, inspecting, repairs, testing …). It is imperative that the supplier take any and all actions required to mitigate the problem as quickly as possible. The supplier's responsiveness shall be one of the evaluation criteria. When the problem is handled without the supplier's support, the costs shall be charged to him, as mentioned in the paragraph titled "Non-Compliance Handling Costs."

5.4 Corrective Actions

The supplier shall maintain a system of corrective actions to eliminate any material non-compliance, both in-house and at the customer site. A corrective action is required for each non-compliant product sent by CVTech-IBC. All corrective actions must be implemented and documented, then e-mailed or faxed to CVTech-IBC's Quality Assurance Representative as soon as possible.
Corrective actions can be issued on the CVTech-IBC form or any equivalent form.

A correction action includes, at the very least:

- Any immediate or containment action (sorting, repairing, isolating or quarantining …)
- The source of the problem
- The corrective action and the implementation date
- The verification of the effectiveness of the action
- The re-occurrence prevention plan

CVTech-IBC must receive and approve any corrective action before closing a non-compliance file. If CVTech-IBC deems the corrective action to be insufficient, it reserves the right to require complementary inspections or actions.
If non-compliance re-occurs, CVTech-IBC also reserves the right to impose permanent controls, the cost of which are the responsibility of the supplier, to ensure received products are compliant. Immediate confinement actions shall remain in place until the corrective action has been verified and approved by CVTech-IBC.

5.5 Returning Merchandise

When the material is not useable, the supplier shall be informed and shall take the means needed to facilitate the return of the merchandise. The supplier shall provide a written merchandise return authorisation and a method by which to recuperate the merchandise. All transportation costs are the supplier's responsibility, including any additional handling costs incurred.

If the supplier requests access to the merchandise at CVTech-IBC rather than having it returned, the request shall be considered on a case-by-case basis. A supplier may have access to samples of questionable parts to evaluate them before making a decision.

Handling and storage costs incurred during this period shall be the responsibility of the supplier until he makes a decision.
➲ *The process involved in Returning Merchandise is described in Appendix 4.*

5.6 Sub-Contractors

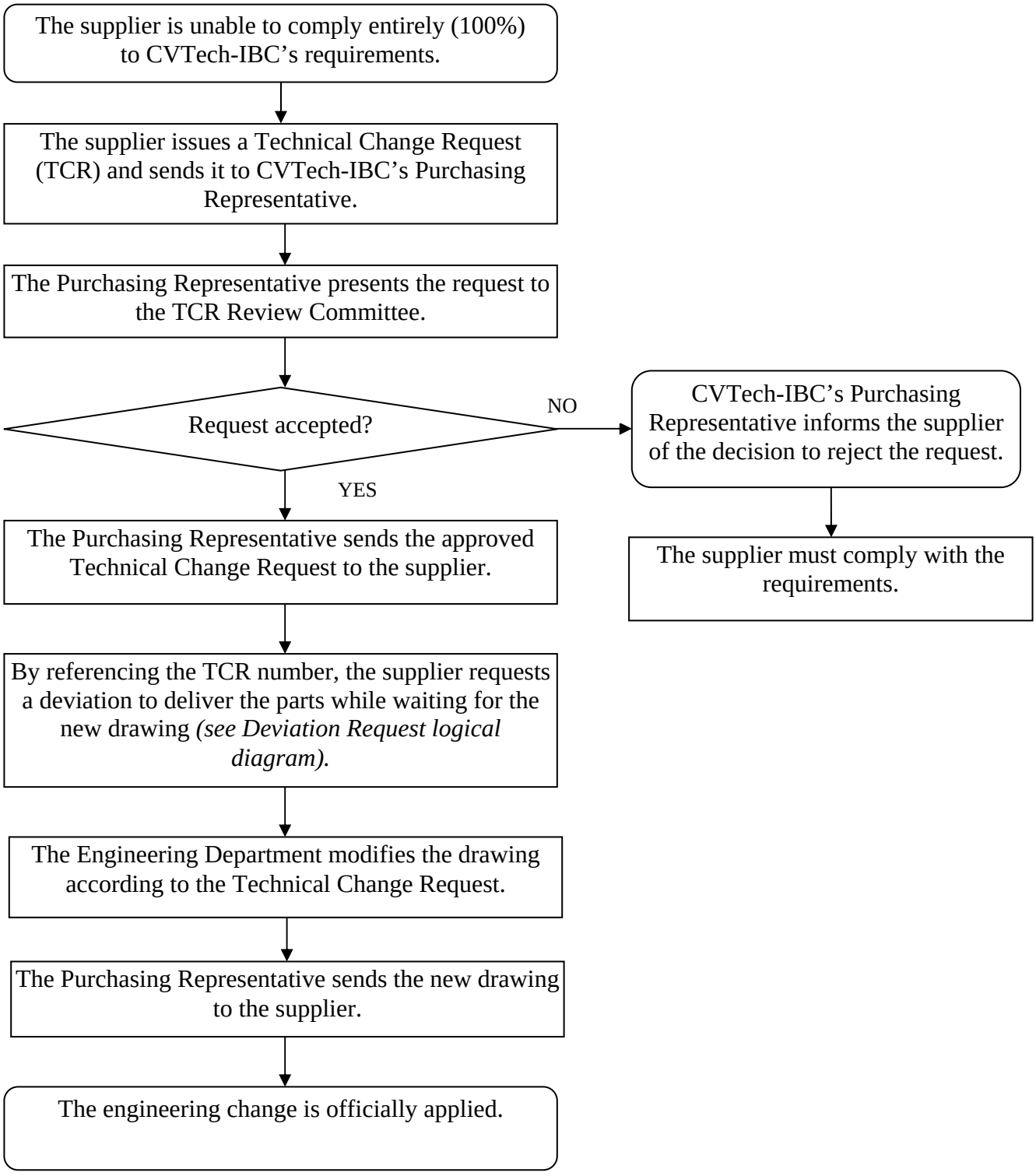
CVTech-IBC suppliers shall ensure that their own suppliers meet all the requirements defined herein. The supplier is responsible for the quality of all sub-contracted parts and/or services, and shall ensure that all requirements are met. The supplier shall be prepared to show documented proof of a sub-contractor's level of quality and allow access to their facilities and their registrations, if CVTech-IBC requests it.

CVTech-IBC reserves the right to verify all purchased parts and materials in the supplier's facilities.

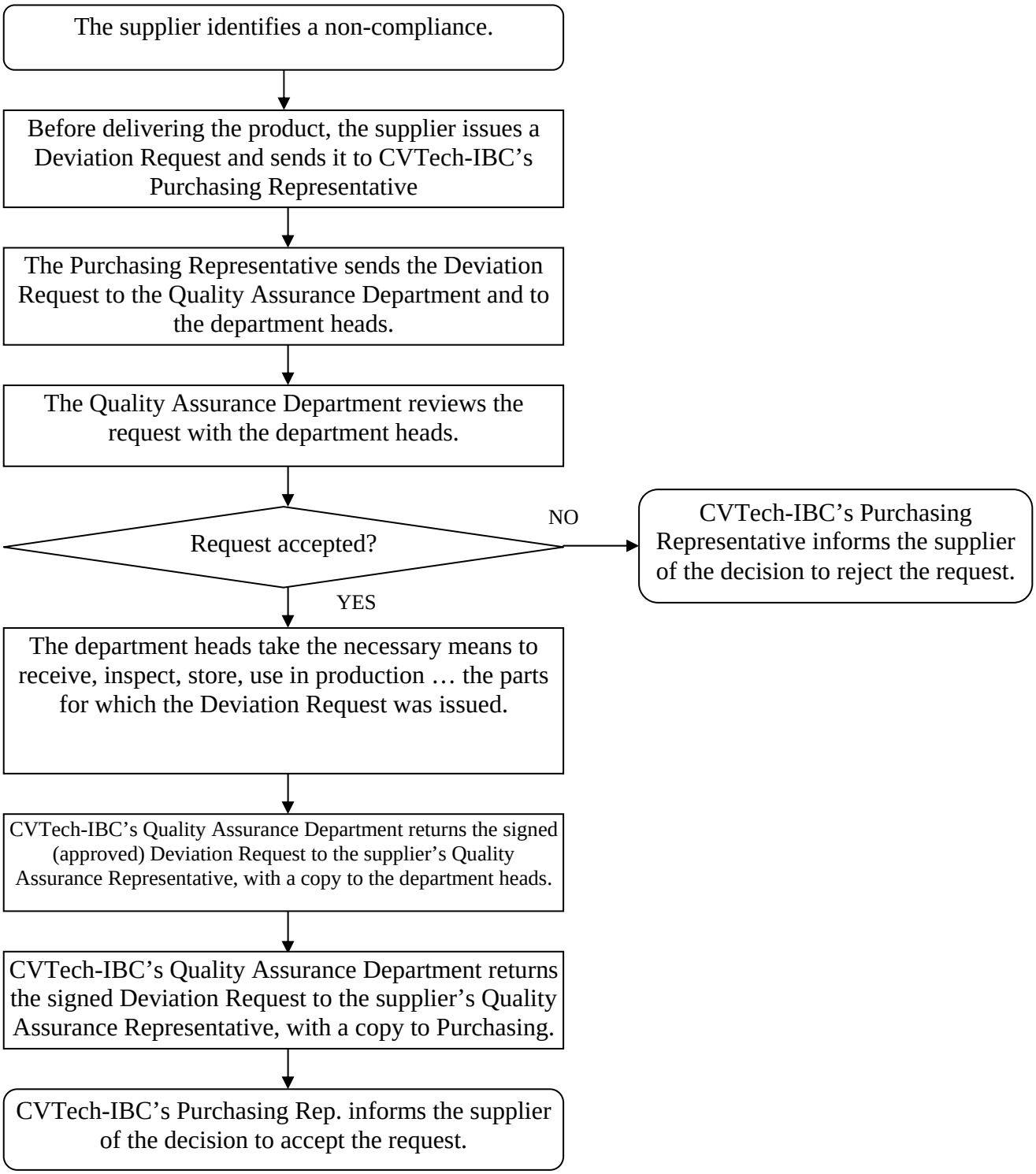
5.7 Acronyms

AIAG	: Automotive Industry Action Group
ST	: Statistical Capability Study
PPAP	: Production Part Approval Process
FMECA	: Failure Mode, Effects, and Criticality Analysis
PFMEA	: Process Failure Modes Effects Analysis
Gage R&R	: Gage Repeatibility and Reproducibility
APQP	: Advanced Product Quality Planning
NCM	: Non-Compliant Material
NC	: Non-Compliance
TCR	: Technical Change Request

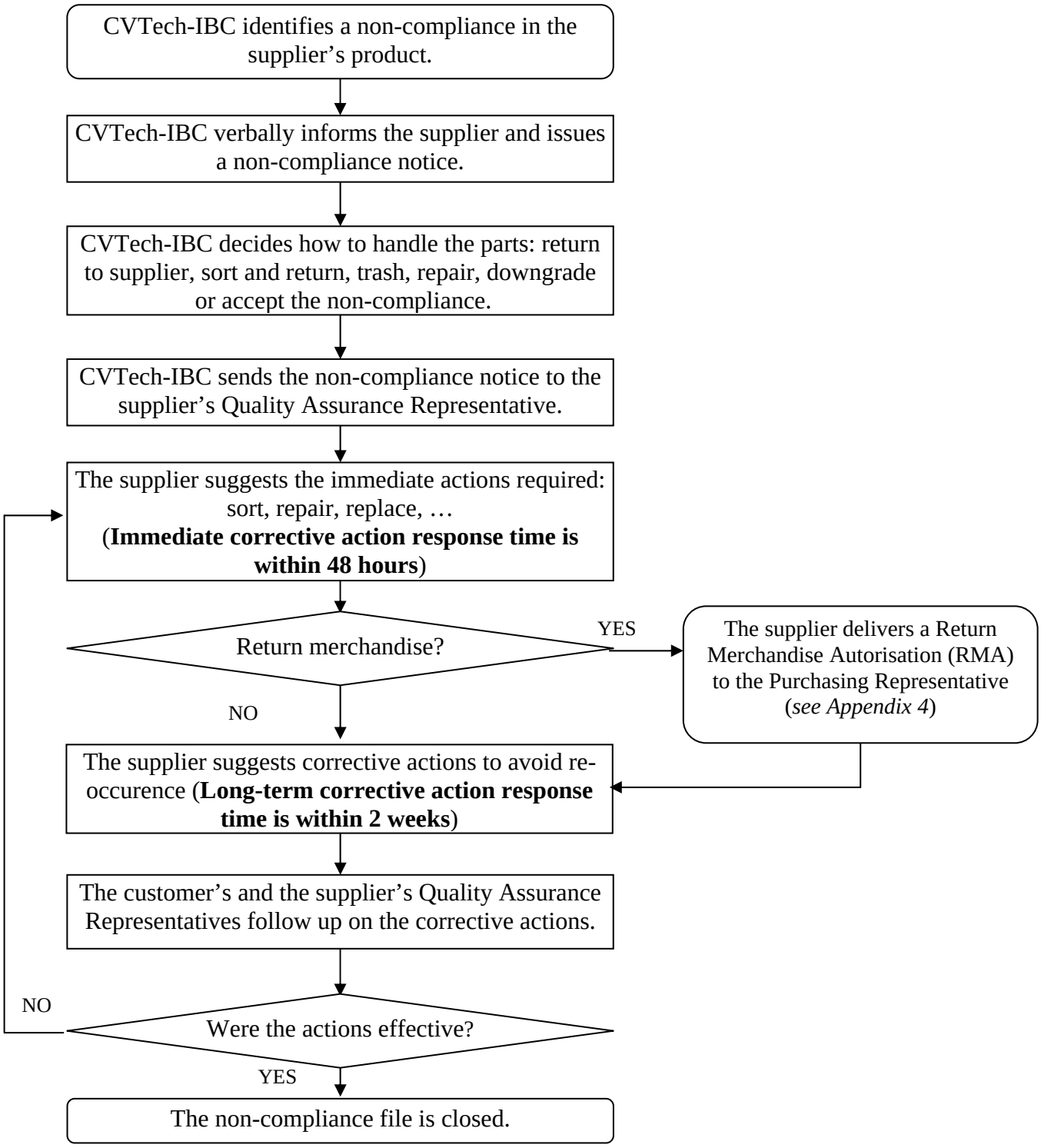
Appendix 1: SUPPLIER TECHNICAL CHANGE REQUEST



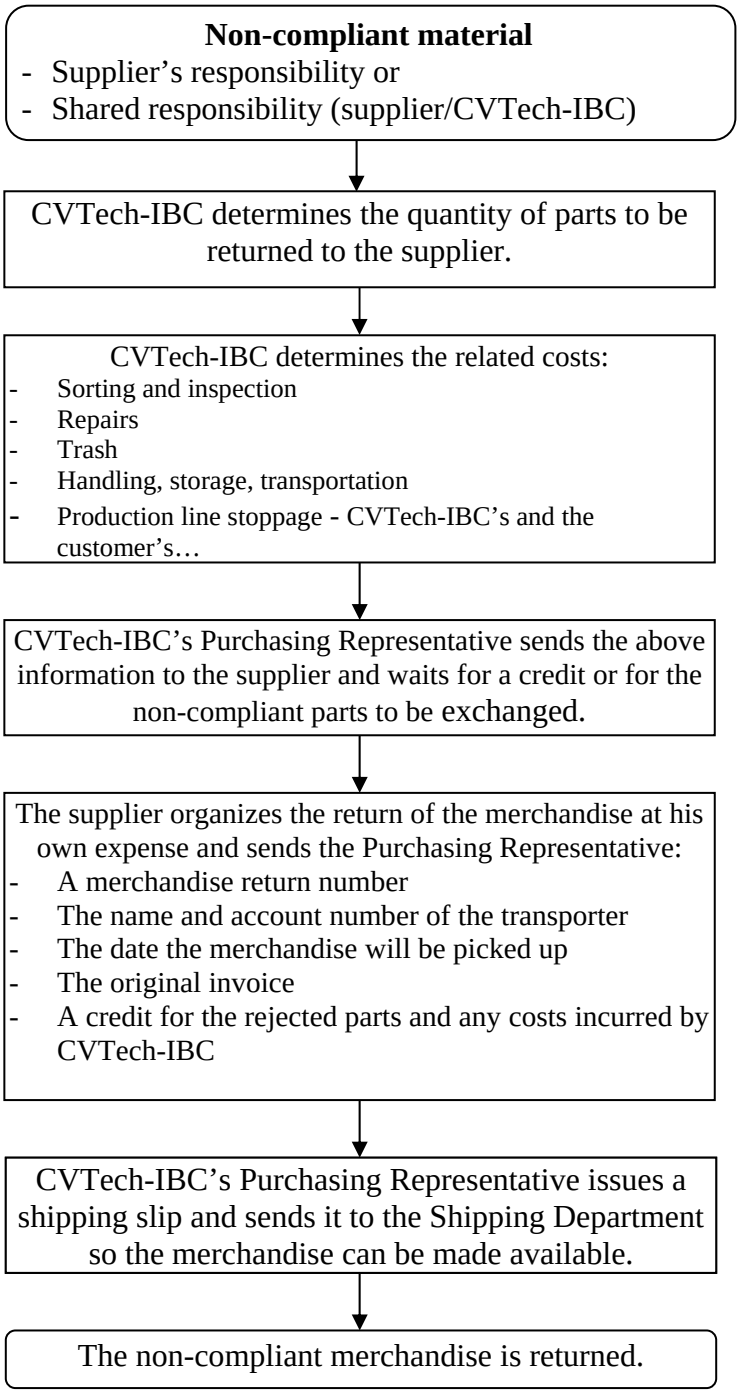
Appendix 2: SUPPLIER DEVIATION REQUEST



Appendix 3: SUPPLIER NON-COMPLIANCE HANDLING PROCEDURE



Appendix 4: RETURNING MERCHANDISE



Appendix 5: EXAMPLE OF A SAMPLE INDENTIFICATION LABEL

To be attached to all samples delivered to CVTech-IBC

○ **SAMPLE PART /** ***PIÈCE ÉCHANTILLON*** **CVTECH-IBC** Do not Inventory / *Ne pas mettre en inventaire*		
Forward To / *Pour*	**Attention / *Attention***	**Enclosed / *Ci-joint***
☐ Quality Assurance / *Dpt Assurance Qualité* ☐ Product Engineering / *Dpt d'Ingénierie* ☐ Purchasing / *Achats* ☐ Other / *Autre*	_____ _____ _____	☐ PPAP Sample / *Échant. PPAP* ☐ Engineering Sample / *Échant. d'ingénierie* ☐ Prototype Sample / *Échant. prototype* ☐ Other / *Autre*
Part number / *Pièce nº*_____ Rev. Level / *Rév* _____ Supplier / *Fournisseur*_____ P.O. # _____ Buyer / *Acheteur*_____		