Supplier Quality Manual

EXIDE®
TECHNOLOGIES

Purpose

The purpose of this document is to communicate the supplier quality expectations of EXIDE Technologies.
The quality of supplied parts is essential to ensure Exide process robustness, final products reliability and final customers' satisfaction.

Scope

This standard applies to all approved direct material suppliers to EXIDE worldwide locations.
Suppliers are expected to comply with all sections of this supplier quality manual as well as to the general terms and conditions of the purchase order. Any requirement section **not referenced** in this document indicates there are no additional requirements from EXIDE, Procurement and Supplier Quality will provide additional clarification or direction, as needed.

Requirements

In this manual, the terms "shall" and "must" mean that the described action is mandatory; "should" means that the described action is necessary and expected with some flexibility allowed in the method of compliance; and "may" means that the described action is permissible or discretionary.

Content

1. Terms and Definitions

Term	Definition
AIAG	**A**utomotive **I**ndustry **A**ction **G**roup: Not-for-profit association where professionals from a diverse group of stakeholders work collaboratively to streamline industry processes via global standards development and harmonized business practices (www.aiag.org).
APQP	Advanced Product Quality Planning
CSR	Corporate Social Responsibility
CSR's / CR	Customer Specific Requirements / Customer Requirements
Direct Materials	Materials used by EXIDE plants to manufacture components or a final product and are included in the Bill of Material (BOM).
FMEA	Failure Mode and Effect Analysis (A typical risk management system)
MSA	Measurement System Analysis
MSDS	Material Safety Data Sheet
OE (OEM, OES)	**O**riginal **E**quipment (**O**riginal **E**quipment Manufacturer, **O**riginal **E**quipment **S**pare part). Terminology mainly used in Automotive to define that a product is the validated product for the vehicle, according the specific customer design requirement. It differs from an After Market product (designed as a product on shelves, not specifically to a particular final customer design requirement)
PAP / PPAP	Part Approval Process / Production Part Approval Process: Defines generic requirements for production part approval, including production and bulk materials. The purpose of the PAP / PPAP is to determine that customer engineering design record and specification requirements are properly understood by the supplier. The supplier shall demonstrate that the manufacturing processes have the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.
PSW	Part Submission Warrant: The warrant contains supplier, part information, required documentation, the supplier application warrant and disposition. The submission approval authorizes the supplier to start production based on PO requirements.
QMS	Quality Management System
SCB	Supplier Charge Back
SC	Special Characteristics
SCR	Supplier Change Request
SNCR	**Supplier Non-Conformance Report,** Report used when an EXIDE Plant location receives material out of specification from a supplier.
SPC	Statistical Process Control
SQL, SQA, SQS, SQR	**SQL** – Supplier Quality Leader / **SQA** – Supplier Quality Assurance, commodity leader **/ SQS** – Supplier Quality Specialist / **SQR** – Supplier Quality Representative (any of above)
SVHC	Substance of Very High Concern
8D Report	8D methodology uses a structured eight step approach to problem solving. The objective is to face the problem and discover the weaknesses in the manufacturing/management systems that permitted the problem to occur in the first place. The output of an 8D process is an 8D report.

2. Quality Management System Requirements

2.1 General Requirements for Zero Defect compliance
Within the supply chain, customers and Suppliers are interdependent upon each other's performance. Our target is to ensure customer satisfaction for Quality, Cost and Delivery (QCD).
To enable us to achieve this, we must have as main Objectives:
• Green rated Suppliers (Supplier Scorecard)
• Supplier Self Assessment (SSA) compliant with Exide requirements
• 0 PPM strategy
• 0 Tolerance on Safety and Regulation (S/R) requirements
• 0 IPB strategy (Incident per Billion)

2.1.1 General Requirements – For suppliers to EXIDE OE Automotive Products
Unless otherwise authorized by the customer, Suppliers that are not IATF 16949 certified, must have a Quality Management System (QMS) certified to ISO 9001 this is the initial minimum acceptable level of development.
Based on current performance and the potential risk to customers, the objective is to move suppliers through the following QMS development progression:

a) certification to ISO 9001 through third-party audits; unless otherwise specified by the customer, suppliers to the organization shall demonstrate conformity to ISO 9001 by maintaining a third-party certification issued by a certification body bearing the accreditation mark of a recognized IAF MLA (International Accreditation Forum Multilateral Recognition Arrangement) member and where the accreditation body's main scope includes management system certification to ISO/IEC 17021;
b) certification to ISO 9001 with compliance to other customer-defined QMS requirements (such as Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers [MAQMSR] or equivalent) through second-party audits; http://iatfglobaloversight.org/default.aspx.

Note: The IATF 16949 core elements are expected to be incorporated in the quality system. The core elements of APQP, PPAP, FMEA, MSA, & SPC (blue books) are available at AIAG.org. Suppliers are expected to have core elements in their QMS.

c) certification to ISO 9001 with compliance to IATF 16949 through second-party audits;
d) certification to IATF 16949 through third-party audits (valid third-party certification of the supplier to IATF 16949 by an IATF-recognized certification body).

All renewal certificates must be submitted to Supplier Quality before the expiration date of the certificate. Failure to submit certificates or valid transition timelines will have a negative impact on the supplier's scorecard and may jeopardize future business.
EXIDE may verify the suppliers manufacturing location for compliance to these standards by performing an audit by a supplier quality representative.
EXIDE and its customers may audit the quality system, EXIDE delivered product, and process of the supplier with agreed advance notice.

2.1.2 General Requirements – For suppliers to EXIDE non-OE Automotive Products
Same expectations as in 2.1.1 generally apply.
Certification to ISO 9001 is the minimum level of expectations.
In case of non-certification, Exide Supplier Quality direction could take the decision to accept anyway the supplier based on equivalent certification and/or based on special audit

2.2 Environmental
It is expected as a minimum that all local government regulations are met.
Suppliers should adopt an environmental management system that is in accordance with ISO 14001, or equivalent.
New automotive suppliers of specified OEM customers are expected to agree to gain ISO 14001 Certification within 3 years of accepting their first order.
Exide will work with its current list of suppliers to target certification along time, based on supplier class levels.

2.3 Control of Records
EXIDE suppliers shall maintain quality records such that they remain retrievable and legible upon request by EXIDE and subsidiaries. EXIDE requires record retention duration for "life of program". Records related to nonconforming product for trend analysis and problem identification shall also be maintained. This requirement also applies to any supplier's sub-supplier. Additional record retention requirements can be referenced per AIAG or ISO 9001 and/or IATF 16949 (latest editions).

2.4 Customer Specific Requirements (CSRs)
The supplier and their sub-tier suppliers should have an effective process to cascade customer specific requirements. This includes but is not limited to all applicable technical requirements, quality system, drawings, specifications, regulatory requirements, the document and control of 'key characteristics' and/or 'key processes', and customer specific requirements (CSR's) from EXIDE customers.
Follow link below for OEM CSRs;
http://www.iatfglobaloversight.org/oem-requirements/customer-specific-requirements/

2.5 Electronic Data Interchange Requirements (EDI)
Two-Way electronic supplier communication shall be enabled, if applicable, to have all data coming from an ERP system without manual data downloads. Firm releases or purchase orders and shipment notifications are the minimum requirement. EDI is the traditional tool used to communicate forecasts to suppliers. Web-EDI and other more advanced tools are alternatives.
* Suppliers shall have a backup method in the event the organization on-line system fails.

2.6 Customer Communication
Written or verbal communication shall be in the language agreed with the customer. The supplier shall have the ability to communicate necessary information, including data in a customer-specified computer language and format (e.g., computer-aided design data, electronic data interchange).

3. Supplier Development

3.1 Sourcing management process
3.1.1 Supplier Approval
In order to receive a production purchase order, a supplier must be approved per EXIDE Sourcing procedures. Criteria for approval could include, but is not limited to, the following:

- Mutual Non- Disclosure Agreement
- Certified Quality Management System
- Financial viability
- Supplier self-assessment
- Supplier Statement of Work/Self-Assessment

3.1.2 Supplier Qualification
Once approved the supplier must be qualified for a specific raw material, part or commodity. In order to determine a supplier capabilities in several core competencies would include, but is not limited to, the following:

- Supplier Onsite Assessment
- APQP/PPAP
- Risk Management
- Production Process Sign-Off

3.2 Customer Directed (Approved) Sources
Where specified by the EXIDE Contract (e.g. customer engineering drawing, specification), the supplier shall purchase products, raw materials or services from approved sources.
The use of customer-designated sources, including tool/gauge suppliers, does not relieve the supplier of the responsibility for ensuring the quality of purchased products and of the monitoring of the tier-supplier performance. In case of issue that the supplier is not able to fix, Exide should be informed to support fixing the problem.

4. Leadership

4.1 Management Responsibility
Supplier management at highest levels shall demonstrate involvement and support for process efficiency, customer focus, quality policy, planning, defining responsibility, authority and communication and management review.

5. Planning

5.1 Provision of Resources
The supplier shall determine and provide the necessary resources to maintain and continually improve the system of quality management and also customer satisfaction by meeting customer requirements.

5.2 Supplier Training Requirement
Effective training and development system is established. Training records are available and tracked for all key processes affecting quality. All employees affecting quality are included, including design engineering.

5.3 Training on the Job
The supplier must ensure that every person in all levels of the company, which may affect product quality, has professional training and receive adequate training to function performance, including direct and indirect staff.
The supplier shall:

- Provide training to perform the function
- Evaluate the effectiveness of these trainings.
- Implement a system that ensures staff retraining at a frequency determined.
- Provide “on-the-job” training for any new job or modified process that affects product quality.
- Keep records of internal / external trainings, education and job retraining or recertification.
- Have a process to encourage employees to achieve quality objectives and to make continual improvements.
- Effective training and development system is established. Training records are available for all key processes.

5.4 Infrastructure
The supplier shall have an infrastructure that ensures compliance with the requirements of the product. The plant layout should be optimized in order to avoid excessive handling and transport, facilitating the material flow.

5.5 Plant, Facility and Equipment Planning
Lean Manufacturing principles should be understood with evidence of implementation. If not fully implemented, a plan for managing, training and implementation is in place and implementation tracked with progress evident. Examples of Lean: (5S, Value Stream Mapping, Error Proofing, Quick Change-Over, KanBan, Kaizen, Total Productive Maintenance, Visual Management).

5.6 Exide Property Tooling Management
Exide Technologies property provided to the supplier for use or incorporation into the products shall be:

- For each EXIDE owned tool running at 3rd party, a tooling contract has to be agreed between EXIDE and the supplier using such tool. The purchasing department of the local EXIDE location, owning the tool, is responsible to maintain the tooling database.
- Records should be updated at all times;
- EXIDE Tooling should be;
    - Properly identified (tools shall be permanently marked so that the ownership of each item is visible and can be determined);
    - Carefully preserved, protected, safeguarded and verified;
    - Included, when applicable, in calibration and maintenance programs.
- Suppliers shall be responsible for routine maintenance and partial or total refurbishment of EXIDE property due to any problems they may have caused.
- Should EXIDE property require extraordinary maintenance due to deterioration or wear, the supplier shall promptly notify Exide Technologies Purchasing in writing and shall start the activities only after receipt of formal authorisation.
- The use of EXIDE property does not relieve the supplier of the responsibility for ensuring the quality of supplied products.

5.7 Risk Analysis

Suppliers are expected to perform risk analysis, and consider lessons learned for example from EXIDE product complaints, product audits, field returns, repairs, scrap, and rework.

5.8 Work Environment
5.8.1 Personnel safety to achieve conformity to product requirements
The use of Personal Protective Equipment is defined and in place.

5.8.2 Cleanliness of Premises
Supplier is expected to follow 5S principles. The supplier's manufacturing areas are well lit, free of clutter, clean and safety practices are evident that prevent injury.

5.9 Supplying capability
Exide suppliers are expected to have a process in place to assess the capability of their supply chain regularly and particularly during new product launch and performance review in the aim to ensure the appropriate continuity of deliveries vs supply chain capacity. On top of this, for Exide automotive products supplies, a formal evaluation tool (e.g. Global MMOG/LE or equivalent) shall be used.
This regular evaluation, utilizing specific final customer form such as MMOG self-evaluation can be required as evidence by Exide on a regular way depending on final customer requirement (typical for some automotive makers)

6. Supplier Operations

6.1 Advance Product Quality Planning (APQP) - Design and development planning
Suppliers should ensure the design and development planning activities are developed according to appropriate methodologies (for e.g., APQP/PPAP from AIAG)

The supplier will designate a contact person responsible for determining a cross functional team, establishing the Advance Product Quality Planning (APQP) documents and submitting documentation as required to EXIDE Launch or change requirements.

6.2 Prototype Requirements
"Prototype", "Pre-Production" trial and initial production run after PPAP parts or material are expected to receive extra attention, testing, inspection and containment. These parts are to be clearly identified on the parts and/or containers as "Prototype" or "Pre-Production", as well as the quantity, date, EXIDE Part Number and Description of the part.

6.3 Pre-Launch Production Trial Run
Suppliers are expected to perform a Run@Rate or any other appropriate methods prior to PPAP, to verify that the actual production process can meet program volumes at the expected quality level. For select commodities a minimum piece run will be required. Suppliers will be advised on specific quantity requirements by EXIDE SQR.

Supplier should retain the first piece throughout the production run and maintain at the operation.
The last piece, once compared to the first piece and accepted, should be kept until the next run of that product.
Suppliers must perform 'all piece' inspection, and chemical suppliers must test product(s) to meet specified material specification requirements during appropriate process intervals.

6.4 Production Part Approval Process (PPAP)
Prior to serial production, EXIDE expects to have an approved Part Submission Warrant (PSW).
Level 3 PPAP requirements are the EXIDE default, but may be amended by EXIDE Supplier Quality representative to a different level as part of particular project decision.

Bulk Material suppliers may follow the Bulk Material Requirements provided by EXIDE Supplier Quality representative.
A separate PPAP is required for each part or material supplied.
Suppliers are expected to execute the process of qualification and PPAP by their own means, supported by EXIDE.
For plastics moulds validation, Exide will refer to its plastic mould approval procedure to support Part approval Process.

During "Prototype" and "Pre-Production" Program Management Phases, prior to serial production shipments, APQP documents like, for e.g., Process Flow Diagram, Design and/or Process Failure Mode and Effects Analysis (D/PFMEA), Controls Plans, Measurement System Analysis (MSA), Inspection Reports, and Capability Studies, Feasibility Analysis, etc. are recommended to be developed.
Special characteristics must be identified on the EXIDE drawing or specification and must be on the supplier's Process Flow Diagram, FMEAs and Control Plans.
DFMEA is required where supplier is responsible for design.
Supplier Process Sign-Off (PSO) may be required prior to PPAP approval to review a Supplier's planned and actual manufacturing process at the quoted peak daily line rate, including manpower, facilities, equipment, material, methods, procedures, software level, and tooling.

Sub-Suppliers
EXIDE expects suppliers to utilize Part Approval Process and ideally the AIAG PPAP Process to document conformance of their purchased component and raw material suppliers (Sub-Suppliers). Sub-suppliers are assessed, approved and on-going quality monitored. Suppliers may be required to provide a list of sub-suppliers that are being used.

6.5 Material Safety Data Sheets (MSDS)
Exide may require suppliers to submit information about substances, preparations and product composition as part of the PPAP qualification process. Exide may ask using IMDS to manage material and substance information for all products.

Supplier has to comply with the requirements defined in EU REACH regulation. To do so, supplier has to screen the publications of ECHA on a regular basis (at least twice a year as ECHA updates the list of SVHC) to verify whether the substances / products are in the scope of an information requirement according to Article 33 of REACH. Article 33 information has to be submitted to Exide unsolicited (EXIDE commodity manager and EXIDE plants as relevant).
Where applicable, suppliers have to provide Safety Data Sheets (SDS) according to Art. 31 of EU REACH Regulation. The SDS must be provided to serve the approval process and shall accompany the first delivery. The SDS has to be updated as defined in the regulation and accompany the next delivery.

6.6 Special Characteristics
Special Characteristics (SC's, … CC's) may be identified on drawings or specifications that depict the minimum characteristics that are assigned for statistical control and capability, poke yoke or 100% inspection, as approved on Control Plan. Symbols and letters may be used, examples: CC, SC, IC:

CC	Special characteristic related to product parameters / requirements which can affect compliance with **government regulations or safety function**	**Requested:** Process performance studies and on-going monitoring per the Control Plan. Cpk > 1,33 (1.67 for initial study expected) or 100% inspection **Recommended:** 100% automatic control Mistake proofing device with a tight tolerance to avoid defect SPC control
SC	Special characteristic identified by the Exide or its customer as important for customer satisfaction, so any possible deviation would affect fit, functionality, durability or processing of the product	**Requested:** Process performance studies and on-going monitoring per the Control Plan. Cpk > 1,33 **Recommended:** 100% automatic control Mistake proofing device with a tight tolerance to avoid defect SPC control
IC	Special characteristic identified by Exide, as expert battery manufacturer, that identifies those product and process parameters that are important.	**Requested:** Process performance studies at initial/subsequent part submission only

For bulk chemicals (i.e. acid) identified material specification attribute characteristics at the frequency defined in each Exide Technical Specification (ETS), and in general annually.

6.7 Statistical Process Control (SPC)

Statistical Process Control (SPC), Process Capability (Ppk/Cpk) Analysis, Testing and Inspection are done per an approved Supplier Process Control Plan. Where no EXIDE characteristics are identified on drawings and/or material specifications the supplier will manage SPC/process capability on critical processes or key product characteristics identified based on risk assessments (eg. FMEA).

6.8 Measurement system analysis (MSA Studies)

This requirement should be applied to all measurement systems when applicable to be cited in the control plan. EXIDE adopts as reference the AIAG - MSA Manual.
The supplier shall conduct statistical studies to analyse the variation present in each type of measurement system and means of control.
Supplier shall select MSA method appropriate to the measurement and ideally GR&R when relevant.

6.9 Calibration/verification records

All inspection, measuring gages, test equipment, fixtures, etc., for product and key processes are to be calibrated to national standards.

6.10 Laboratory Requirements

General:
Internal Lab- The supplier shall have conditions to perform tests, inspection or calibration services and the laboratory must have a written scope which includes the activities to perform. Must have procedures to perform the tests and meet customer specifications, as well as, trained staff to execute the activities.

External Lab- When the supplier cannot conduct tests, inspections and calibration services internally, external laboratories are to be accredited to ISO/IEC 17025 or national equivalent. Use of any non-certified outside lab must have written agreement with EXIDE. Note: This requirement applies when delivering parts to Exide automotive products and preferable for other cases.

When there is no qualified laboratory for specific equipment, the calibration service can be done by the equipment manufacturer.

6.11 Certificate of Analysis (CoA)
When required by Exide, Certificates of Analysis (CoA) must show results versus EXIDE specification and to display data to EXIDE specification limits as specified on the material specification for most supplied parts unless directed otherwise by the SQR.
Certificate of Analysis (CoA) for all raw material used in the manufacturing of a purchased component are required to be kept on file at the supplier for a minimum of (3) years and made available to EXIDE upon request.
Material certifications are required with each shipment of direct raw materials, such as chemicals and plastic resins. CoA must include EXIDE specification limits for required significant and critical characteristics identified.

6.12 Manufacturing process design input
Poka-Yoke, Mistake-Proofing or Error Prevention practices, as appropriate, should be evident and reviewed. Focus should be for repetitive functions, difficult task prone to mistakes, or where the cost for error is high.

7. Handling, Storage, Packaging, Preservation

Suppliers are responsible for ensuring that the appropriate measures are conducted and maintained to preserve product quality during process handling, storing, packaging, preservation, and delivery.
The supplier is responsible for packaging the parts/ material in such a fashion as to ensure product integrity and prevent damage upon receipt at EXIDE and is evaluated at PPAP.
The supplier is responsible for monitoring the self-life of the product and should not ship product that has exceeded its product life.

7.1 First In First Out (FIFO)
The suppliers have to ensure that no obsolete material is shipped to EXIDE. The suppliers shall perform first in/first out (FIFO) inventory management practices.

7.2 Identification and traceability
Product identification is to be per the drawing or Component Specification. Package labels, have to be in line with relevant Exide technical Specification (ETS) requirement and at a minimum, must show EXIDE Part Number, Description, Lot Number and/or Ship Date, Quantity, and barcode, if requested. All products are to be traceable from incoming to delivery at EXIDE.

7.3 Incoming product conformity to requirements
Adequate controls and inspections and storage are in place for incoming goods. Incoming inspection verification may cover, but is not limited to, product type, quantity, supplied documents including CoA or test reports, dimensional inspection, material specification compliance, and/or externally visible transportation damage. Supplier is responsible for handling of all returns, reworks, resubmission of inspected Product.

7.4 Supplier Routing Instruction
Where EXIDE is responsible for paying freight charges, a routing instruction will be provided to the supplier. It is the supplier's responsibility to ensure compliance and availability. Contact your purchasing representative if you have not received a supplier specific routing instruction.

7.5 Product Safety & Regulations
Suppliers shall take due care regarding product safety**.** Supplier shall ensure that a member of their management team fills the function of a "Product Safety Responsible". This function has to act as an interface between EXIDE and the Supplier in regard to all aspects of product safety.

7.6 Safety
Suppliers will provide Material Safety Data Sheet (MSDS) or national equivalent on products, upon request.

8. Supplier Performance Evaluation

General:
The expectation for supplier performance is zero (0) defect
Product received into EXIDE facilities that does not conform to the drawing, specifications and/or agreed upon standards will be counted against a supplier's PPM record. This includes, but is not limited to, product, packaging, mixed or miscounts, damage, etc. Supplier defective part PPM will be tracked and evaluated for continued or new business recommendations.
If the supplier notifies EXIDE of defective product sent, but prior to use in the EXIDE process, and is contained, the PPM found will not be counted against the supplier.

8.1 Supplier Scorecard

EXIDE will track performance of suppliers in several categories. Evaluations are made for considerations for global expansion, volume considerations, etc… The scorecard details and its KPIs will vary in time but will include:
- Delivered product conformity to requirements (ppm, number of incidents…)
- Delivery schedule performance (Customer disruptions at the receiving plant, including yard holds and stop ships, Occurrences of premium freight…)
- Non Conformity Management (8D steps on time)
- Management system certification level (for eg. ISO 9001, ISO 14001, ISO 45001, ISO 50001, IATF 16949, etc.)

If provided by our customers we will also take into consideration:
- Special status customer notifications related to quality or delivery issues
- Dealer returns, warranty, field actions and recalls

Delivery Performance- Parts/ materials are expected to be received at EXIDE 100% on-time and at ordered quantities, per EXIDE authorization on the purchase order or contractual agreement. Use of premium freight should be minimized and tracked.

8.2 Supplier Escalation

Exide implemented a special process for escalations, see specific Exide supplier escalation model.
The escalation model starts with normal monitoring of Non Conformities, action plans effective realization, and ends up to business hold level.

8.3 Supplier Nonconformity Report (SNCR) and Supplier Charge Back (SCB)

Supplier Nonconformity Report
Suppliers are notified of nonconforming material through a documented rejection notice, called a Supplier Nonconformity Report (SNCR). Nonconforming material is defined as suspect or rejected product that is deemed defective according to the drawing or established quality standards (i.e. customer specifications, inspection requirements, test results, etc.). See also Control of non-conforming product section.

Supplier Chargeback (SCB) Communication and Expectations
The Supplier Chargeback / Costs for recovery are detailed in the SNCR, and may change as updates following for example a "sorting" activity.
Suppliers are expected to respond to an SCB with agreement to the total SNCR costs within the agreed upon timeframe.

In cases where a supplier disagrees with the Supplier Chargeback, a written response is still required by the specified timeframe. Disputed Chargebacks shall be escalated to the responsible Procurement representative for assistance with final disposition. All chargebacks should be targeted for closure within timeframe determined by EXIDE, and should be no more than after 30 days of NCR/SCB notification.

8.4 Layout Inspection, Part/Product Re-qualification and Functional testing/verification

The supplier may be requested to participate in Layout Inspection, Part/Product re-qualification or Functional testing/verification. Exide plants will provide their requirements, as could be affected by Exide's own customer specific requirements.

On-going layout inspection and functional testing requirements are to be defined in the suppliers control plan.

If Exide's customer-specific requirements exist, then those requirements (including layout inspection and functional testing requirements) are also to be included in the control plan.
Supplier is to retain the results until requested by Exide plants.

Layout inspection is the complete measurement of all product dimensions shown on the design record(s)]; layout inspection is limited to dimensional measurement and requirements. Performance or materials measurements are not included in a layout inspection.
Layout inspection is a part of product requalification, if product requalification is required by Exide or our own customers.

Functional testing/verification would normally be limited to performance and material measurements such as durability or tensile strength and would not include dimensional measurements.

Part/Product requalification would normally imply full validation to all product approval requirements (e.g. all tests as initial PAP) and therefore exceeds the scope of a layout inspection or functional testing.

8.5 Quality Management system audit
Most EXIDE Plants operate under IATF standards. Suppliers are expected to participate in the corresponding specific system audit when relevant.

8.6 Second Party audit
EXIDE may require to conduct different audits types such as Supplier validation, Supplier monitoring, Non Conformity Management (NCM), QMS assessment…, using different audit formats (VDA 6.3 or NCM audit in most cases).
The audit will assess the supplier's documentation and processes to ensure EXIDE expectations are being met. EXIDE will determine the audit type, frequency and scope based on risk analysis taking in consideration Exide development needs, suppliers' performance, Suppliers' QMS level.
Suppliers should perform internal quality systems/process audits as required.

9. Supplier Change Control

9.1 Change Management
Supplier requested change(s) must be approved prior to implementing. A Supplier Change Request Form must be completed by the supplier, using SCR Exide format, sent to EXIDE Procurement for initiating the EXIDE Approval process.

9.2 Supplier Change Approval
The supplier shall notify EXIDE at minimum of 90 days for all requests to change a product or process, and obtain EXIDE approval prior to implementing the change. The supplier is required to submit a change implementation plan, including a timeline, and must inform EXIDE whenever a deviation to the approved initial change plan occurs.

Any change to design, material, sub-supplier, process, equipment location, tooling inactive for 12 months, etc. (As described in Section 3 of the PPAP manual) will require EXIDE notification and updated PPAP (Submission- Level dependent on change request). A new PPAP with PSW approval from Supplier Quality in writing must be given prior to serial production.

Any supplier or sub-supplier driven costs due to the changes are the responsibility of the Supplier or their sub-supplier, unless agreed to otherwise by EXIDE.

Examples of common supplier changes that require notification and approval include, but are not limited to, the following:

- Manufacturing location changes and/or manufacturing process changes
- Adding an additional, duplicate or optional production line
- Material changes and/or material source changes
- Design changes (part, process, packaging, etc.)
- Engineering / testing / material specification changes

9.3 Supplier Deviation Approval
Supplier must notify Purchasing leader and SQR in case of product or process deviation to the approved process / product specification, fit or function, sub-supplier deviation, etc.
Written approval from EXIDE must be received prior to product shipment.

Examples of deviation reasoning include, but are not limited to, the following:
• Parts are missing PPAP approval (non-PSW parts)
• Parts are dimensionally out of tolerance
• Parts are reworked via special means (outside parameters of approved process)
• Parts do not meet engineering or quality standards for EXIDE

10. Control of nonconforming product

If parts/material are found defective at EXIDE, or field, SNCRs and 8D Report/Corrective Action Report will be sent to the supplier. This may be in the form of electronic notification or interactive system. Initial response expected in 24 hours, initial containment in 48 hours, root cause analysis and corrective action plan in 10 days.
Containment activities are expected to ensure continuity of Exide operations, in line with initial product and process requirements.

Containment at EXIDE or its customer for defective supplier parts/material is the responsibility of the supplier.
When containment activities require product sorting, Exide expect its supplier to use the Exide sorting preferred company (or any alternative sorting company defined by the supplier). This ensure shorter time reactivity and lower environmental impact (no transport back and forth)
Alternative is the supplier to come on concerned site to sort the product and contain the issue.
If product is to be shipped back to the supplier, the supplier will provide a Returned Material Authorization (RMA) Number, or equivalent, any special return instructions and will have the arrange the collection.

Containment and/or replacement costs incurred by EXIDE will be charged back to the supplier. These costs may include extra freight, travel costs, line stoppages, rework, sort, scrap, recalls, etc.

EXIDE may require additional inspection or test certification until there is confidence that the problem is resolved. These parts and/or containers will be identified as “certified” with an agreed marking or label.

10.1 Notification of Certification Body – EXIDE Specific Requirement
The certification body could be notified as defined in the Exide suppliers escalation procedure

10.2 Cost of Nonconforming – EXIDE Specific Requirement
All costs due to quality problems detected in our process or in our customers caused by the supplier, when proven, will be transferred to the supplier. The method of payment will be negotiated with the Procurement area of EXIDE. The cost of non-conformance includes: extra freight, internal or client line stoppages, rework, sort of material, scrap in the process, travel costs, yard operations, recalls, etc.

11. Improvement

11.1 Quick Response Problem Solving (8D Problem Solving Methodology)
When purchased material does not meet EXIDE requirements (e.g. quality, engineering change level, adherence to test specifications, etc.), or a quality claim is issued by EXIDE Plants through our quality system. An immediate response is expected from the supplier with the submission of the Exide’s standard 8D form.

EXIDE expect within 24 hours (from initial complaint)
- Problem description
- Problem understanding and problem solving launch

EXIDE expect 3D within 2 working days (from initial complaint)

- Containment actions to secure EXIDE (customer) (D3)

EXIDE expect 5D within 10 working days (from initial complaint)

- Root cause analysis for “Non-Detection”
- Root cause analysis for “Occurrence”
- Definition of actions to remove the root-cause

EXIDE expect 6D within 30 working days (from initial complaint)

- Confirmation of implemented actions

EXIDE expect 7D/8D closure within timeframe agreed in D5 step and ideally no longer than 90 days (from initial complaint)

- Confirmation of effectiveness of actions to remove Containment actions.
- Actions to prevent reoccurrence.
- Official closure of 8D

Supplier is expected to communicate particularly on D3, D5 and D8 stages. When timing from D5 to D6 is expected to be more than 30 days and when timing to D8 to be more than 90 days, supplier is expected to ensure regular reviews with appropriate SQR (weekly when appropriate)

12. Contingency plans

Contingency plans shall be in place to ensure EXIDE deliveries and other requirements are met despite emergencies that arise such as utility interruptions, labour shortages, key equipment failure, back up records (i.e. quality documents, traceability documents, measurement data) and field returns.

13. Additional Specific Requirements

Supplier code of Conduct
EXIDE code of conduct is expected to be understood and followed by suppliers.
This policy applies to suppliers and their sub-tier sources. It is the responsibility of the supplier to verify and monitor compliance of this code at their operations and sub-tier source operations.

Compliance with Local Laws and Regulations
Suppliers must adhere to the laws and regulations in the locality in which they reside. This includes all local, state, and federal laws/regulations in the country of origin.

Confidentiality
The supplier shall ensure the confidentiality of Exide-contracted products and projects under development, and related product information, as well as intellectual property shared as a result of the working relationship.

Hierarchy of Documented Requirements- precedence of EXIDE documented requirements
1) Purchase Orders/ Supplier Statements of Work/ Contracts
2) Engineering Drawings/ Component Technical Specifications
3) Supplier Quality Manual Standard

14. References

References cited by this document are the latest versions available at the date of publication. When the document is revised after the date of publication, the newer version shall apply. It is the supplier's responsibility to check periodically with EXIDE for current versions of this manual.

External to Exide
ISO 9001:2015: *"Quality management systems- Requirements"*
ISO/IEC 17025: 2015: *"General requirements for competence of testing and calibration laboratories"*
IATF 16949:2016 "Quality management systems - *Particular requirements for automotive production and relevant service part organizations*"
Automotive Customer Specific Requirements – (available upon request, and also available on IATF website)
Automotive Industry Action Group Manuals (AIAG) and particularly AIAG PPAP Manual 4th Edition
German Association of the Automotive Industry Manuals (VDA) and particularly VDA 6.3 and VDA 6.5

Useful Websites References
http://www.exidegroup.com
http://www.iatfglobaloversight.org – International Automotive Task Force (IATF)
https://www.aiag.org/ - Automotive Industry Action Group (AIAG)
https://www.vda.de/en/ - German Association of the Automotive Industry (VDA)
https://www.mdsystem.com/ - Automotive IMDS portal

Internal to Exide:
8D Report – Corrective Action form (EB005-Da)
8D tools (EB005-Db)
Exide Tool Management rules (EP006-Ga)
Plastics moulds approval (EP004-Gd)
Purchased batteries specification (EP001-Gh)
Specific Drawings and specifications (specific to product)
Supplier Change Request Form – SCR (EP001-Dc)
Supplier Code of Conduct (EP001-Ac)
Supplier Part Approval Process (PAP) Pack (EP001-Dd)
Supplier Escalation Model (EP003-Gd Annex 5)
Supplier Scorecard (EP003-Da)

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REVISION			
CHANGE LEVEL	**SECTION**	**REVISION**	**REASON OF CHANGE**
31 October 2012	All	Initial Release of Supplier Manual	Creation
9 August 2013	Agreement page Sections 6.3 and 1.4	Agreement signature page removed; section 6.3 re-written / 1.4 Quality policy updated	Refresh
14 Dec 2015	Sections 1, 1.2, 3.3, 6.1, 8.2, 10.2	Delete portal access in section 1 and 8.2 / Include reference to Corporate Social Responsibility principles / Include reminder about no change is allowed in 6.1 / Adjusted wording in 3.3 and 8.2	Refresh
13 Feb 2018	All	Full review of the manual to fit with new IATF norm / Launch for approval at European level only for the moment as US did not give their agreement on the last draft of the manual and in Europe, we need to have it published now	Total refurbishment / Integration of new IATF 16949 requirements.
28 May 2019	3.1, 3.2, 5.6, 6.4, 9.4, 11, Exide Value's added	Some small corrections, title changes, percentage change in 3.2, 5.6 Exide Property Tooling Management added, PPAP wording corrected, Layout inspection clarified, paragraph 11 revised, and Exide Value's added.	Corrections and refresh.
1 July 2021	1, 2.1, 3.1, 3.2, 5.9 (New), 6 (full), 7.2, 7.4, 8(full), 9 (full), 10 (full), 11.1, 13, 14	Many changes in text, rules and references (see in detail)	Alignment to new Exide reality
2 May 2023	2.1 11.1	General Requirements for Zero Defect compliance Quick Response Problem Solving: usage of Exide's 8D	Opportunities for improvement detected during BOSCH audit in AZ

Note: changes from previous edition are highlighted in grey in order to be immediately visible. When title of a chapter is highlighted, it may be that some parts of the chapter were deleted vs previous edition.