



BorgWarner **Supplier** **Manual**

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BorgWarner Business Philosophy

1 Vision, Mission, & Beliefs

1.1 Vision

A Clean, Energy-Efficient World.

1.2 Mission

We deliver innovative and sustainable mobility solutions for the vehicle market.

1.3 What We Value: The BorgWarner Beliefs

Inclusion (respecting individuals)

- We believe in mutual respect.
- We create a safe environment where we are free to be ourselves.
- We value diversity in people, ideas, and experiences.

Integrity (honoring truth)

- We believe in transparency and authenticity.
- We do and say the right thing even if it is not the easy thing.
- We depend on each other to deliver what we promise.

Excellence (focusing on results)

- We believe there is always a way to achieve superior results.
- We contribute to our development by seeking knowledge and sharing information.
- We set high goals and hold ourselves accountable to achieving them.

Responsibility (our commitment)

- We believe safety is a top priority.
- We care about our local communities and the global environment.
- We make a meaningful impact through our talents and resources.

Collaboration (building trust)

- We believe teamwork drives high performance.
- We work together without boundaries.
- We are one BorgWarner.

2 Quality Policy Principles

Quality driven management and employee dedication are keys to success and Customer satisfaction. BorgWarner is committed to building products that are sound and dependable. We will improve our business continuously in quality, cost, and reliability. We will consistently provide products and services which meet or exceed Customer expectations and satisfy Customers by anticipating their requirements.

BorgWarner seeks to achieve and maintain a reputation of excellence throughout the communities it serves. To achieve this, dedication to quality in everything the Company does will be a top priority of all of our employees and Suppliers. We believe that success will come only through continuous renewal. Quality is at the very core of our Product Leadership culture. All BorgWarner employees are therefore, committed to CQC.

Customer Satisfaction

Quality Product

Continuous Improvement

3 Goals & Scope

“We need Suppliers who are capable of providing best-in-class quality and services.” Before presenting the following guidelines, we want to provide the general principles that drive this program to make sure that each Supplier’s decision to participate is made with a complete knowledge of our objectives, of the procedure used, and what is expected of all Supplier companies.

Goal

The purpose of this manual is to provide BorgWarner Suppliers and BorgWarner Employees guidance as to our Commercial, Quality, Delivery, Technology, and Business expectations.

The demand for improved product quality is widely recognized as the primary challenge facing our industry. BorgWarner has historically been committed to producing the highest quality product possible. Our policy is to meet and strive to exceed Customer requirements with the standard of measurement being zero defects.

This manual details the procedures and systems of this quality approach, the basis of which is defect prevention and continuous improvement. BorgWarner is committed to this approach, and we expect the same commitment from our Suppliers. It is important that BorgWarner’s supply base develops our same enthusiasm for excellence and displays the willingness to work toward the common goals outlined in this manual. With this in mind, BorgWarner has created this common Supplier Manual applicable for all BorgWarner locations supporting the following points:

- Communicate to the Supplier BorgWarner’s expectations, goals, and minimum requirements to assure quality of supplied parts.
- Encourage open and free communication of ideas, information, and notification of problems among Suppliers, BorgWarner, and its Customers in the spirit of teamwork and cooperation.
- Develop an overall plan to ensure smooth production start-up and ramp-up both at BorgWarner and the Supplier, based on effective planning and communication.
- Define the quality assurance procedures and documents Suppliers must follow to assure application of an effective quality system certified to ISO 9001, working toward IATF 16949.

Scope

This Supplier Manual applies to all production material Suppliers and service part Suppliers that supply product to the production facilities of BorgWarner. These procedures may be applied to other parts, materials, and services (such as consumable tools and supplies, indirect material, capital equipment, and non-production services). The applicability of these procedures to tools and supplies will be indicated on purchase orders.

Responsibilities

- All production material Suppliers and service part Suppliers must maintain a comprehensive Quality System to ensure compliance with the requirements of the contract and this document. This manual explains BorgWarner’s minimum

expectations as well as the process BorgWarner follows to assess the capability and performance of each Supplier. BorgWarner seeks Suppliers who have a minimum of ISO 9001 and who will achieve IATF 16949 registration. BorgWarner expects Suppliers also cascade this requirement to their subcontractors.

- The organization shall pass down all applicable statutory and regulatory requirements as well as special product and process characteristics to their Suppliers and require the Suppliers to cascade all applicable requirements down to the supply chain to the point of manufacture.
- BorgWarner also seeks Suppliers who have ISO 14001 or comparable registered Environmental Management Systems.
- All production material Suppliers and service part Suppliers must inform BorgWarner if another customer places that Supplier on a special status regarding quality and/or delivery. Such a status could be controlled shipping, customer shutdown due to a supply issue, or a field action.

4 Supplier Code of Conduct

The BorgWarner Beliefs serve as a guide for our employees on the way we conduct our business—with our customers, our employees, our Suppliers, and our communities. These beliefs, which are deeply rooted in our culture, also serve as a framework for the standards of business conduct, we expect of any Supplier that does business with us. Further, these commitments are in accordance with the Supply Chain Due Diligence laws. Compliance with these standards will be a mandatory component of our purchase contracts worldwide and must also apply to subcontractors, in particular under the premise to protect human rights and prevent or minimize environment related risks at all times in our supply chain. It is also expected that our Suppliers cascade similar expectations described in this Supplier Code of Conduct to their own Suppliers. The Supplier's shipping location is encouraged to complete the AIAG Supply-Chain Sustainability eLearning. This training is free of charge and can be accessed at the following link:

<https://www.aiag.org/store/training/details?CourseCode=ELSCS>

4.1 Inclusion. Respecting individuals

BorgWarner operates in a climate of respect, courtesy, and impartiality. The same fairness and impartiality should be extended to all legitimate Suppliers who wish to compete for BorgWarner business. We expect open, honest, and timely communication. BorgWarner Suppliers should encourage a positive, diverse, and equitable workplace by not tolerating harassment or discrimination, including that involving national and ethnic origin, race, color, social origin, health status, sexual orientation, religion, gender, age, political opinion, or disability.

Basic Working Conditions Guiding Principles

BorgWarner expects its Suppliers and Sub Suppliers to develop policies and practices for all of its facilities worldwide, to provide working conditions that are appropriate under applicable law and that support and uphold the BorgWarner Beliefs. We also expect suppliers to adhere to the International Labour Organizations' (ILO) Declaration on Fundamental Principles and Rights at Work and the UN Guiding Principles on Business and Human Rights.

- Use of Child Labor is Prohibited

Prohibits Suppliers from employing any person below the age of 15 except as part of a government sponsored training or apprenticeship program.

- Forced Labor and Corporal Punishment is Prohibited

Prohibits Suppliers from using forced labor in any form and further prohibits physically abusive practices, including corporal punishment or the threat of corporal punishment.

- Freedom of Association

Expects that Suppliers respect the rights of workers to establish and join an organization of their own selection and their rights to collective bargaining, in accordance with local laws. Workers must not be penalized or subjected to harassment or intimidation for exercising any legally protected right to join or not join such legal organizations. Encourages open communication between management and employees regarding working conditions without fear of retaliation, intimidation, or harassment.

- **Compensation**

Expects that Suppliers' employees will receive compensation and benefits that are competitive and consistent with applicable laws regarding minimum wages, overtime hours, and legally mandated benefits. The compensation paid to Suppliers' employees should constitute at least a minimum of a fair and living wage.
- **Ethical Recruitment**

It is our expectation that our Suppliers hire workers lawfully, in a fair and transparent manner that respects human rights. Suppliers should not mislead or defraud potential workers about the nature of the work, ask workers to pay recruitment fees, or confiscate, destroy, conceal, or deny access to worker passports and other government-issued identity documents. Workers should receive a written offer in a language well understood by the worker, stating in a truthful, clear manner their rights and responsibilities.
- **Working Hours**

Expects Suppliers to comply with applicable laws regulating hours of work.
- **Equal Employment**

Expects Suppliers to have written policies promoting equal employment opportunities and formal, independent practices for responding to any complaints.
- **Health and Safety**

Expects Suppliers to promote safe and healthy work environments for all employees in all types of workspaces and expects commitment to continually improving the same. Suppliers should also provide proper Personal Protective Equipment (PPE) when applicable and have an emergency preparedness and response plan. Hazard and risk analysis systems should be implemented to minimize the potential for incidents or accidents. If Suppliers provide their workers with residential facilities, they must provide clean and safe accommodations. Suppliers should also properly manage the health and safety of contractors as part of a company's extended supply chain.
- **Use of Private or Public Security Forces**

Suppliers must not commission or use private or public security forces to protect the business if, due to a lack of training or control on the part of the company, the deployment of the security forces may lead to violations of human rights.
- **Women's Rights**

Gender inequality underpins problems such as unequal opportunity in employment and unequal pay for equal work. BorgWarner expects its Suppliers to provide equal opportunity in employment and commit to equal pay for equal work.

4.2 Integrity. Honoring truth

We at BorgWarner demand uncompromising ethical standards in all we do and say—we expect our Suppliers to do the same. Our policies prohibit the acceptance of gifts, services, or anything of such value that the good judgment of the recipient might be influenced, or that

a third party might reasonably perceive as influencing that judgment. Payments of money, property, or services for the purpose of obtaining business or special consideration are prohibited. If a BorgWarner employee solicits a gift or entertainment opportunity from a Supplier for their personal use, the request is to be declined. We discourage our employees from purchasing goods or services from BorgWarner Suppliers for their personal use, even though paid for by the employee.

- BorgWarner recognizes that in some cultures, business gifts and business entertainment are considered an important part of the development of business relationships. Any gift or entertainment must be evaluated to ensure it is in the best interest of BorgWarner, consistent with BorgWarner policies and the law, and in accordance with local custom.
- No listing of ethical guidelines can be considered complete. It is incumbent upon those affected by this policy to avoid the misconception that if it is legal, it is ethical. Appropriate conduct must reflect good judgment, fairness, and high standards.

Anti-Bribery (US Foreign Corrupt Practices Act and UK Anti-Bribery Act of 2010)

BorgWarner expects all Suppliers (direct material, indirect material, and services) to comply with all laws and regulations applicable to its business, at all governmental levels worldwide.

The use of corporate funds, property, or other resources for any unlawful or improper purpose is prohibited. Anti-corruption laws require that companies meet prescribed accounting and internal control standards and impose severe penalties on both companies and individuals for certain types of payments and practices. BorgWarner Employees and our Suppliers may not give, promise, or authorize any payments, either directly or indirectly to government officials in any country.

Anti-Bribery Due Diligence

All Suppliers (direct material, indirect material, and service provider companies or individuals) who will have contact with government officials on BorgWarner's behalf are required to complete an Anti-Bribery Due Diligence Questionnaire (preferably prior to award of business). The questionnaire is available in the Supplier section of the BorgWarner, Inc. web page (<http://www.borgwarner.com/en/Suppliers/default.aspx>) or in the GSM Suppliers Site document section in ExtralCE.

Conflicts of Interest

Conflict of interest occurs when an individual or a corporation (either private or governmental) is in a position to exploit his/her or their own professional or official capacity in some way for personal or corporate benefit. BorgWarner expects Suppliers to ensure that their employees avoid and disclose situations where there is any perceived or actual conflict of interests and that decisions be based on solid business judgment unclouded by favoritism resulting from personal relations and opinions.

Anticorruption and Anti-money Laundering

BorgWarner does not tolerate bribery, corruption, or money laundering under any circumstances. Bribery involves offering, giving, receiving, or requesting something of value to improperly influence a business decision and can take many forms, including money, gift cards, travel, employment (including internships), entertainment, and charitable contributions. Giving bribes to anyone, including government employees or officials, directly or through a

third party, is prohibited. BorgWarner also prohibits facilitation payments, which are small payments intended to expedite a non-discretionary, routine government process or service (such as obtaining a visa or clearing goods through customs). BorgWarner, its employees, and Suppliers are subject to local anti-bribery, anti-corruption, and anti-money laundering laws. If you suspect a bribe or other improper payment has been made, contact the BorgWarner Compliance Office immediately.

Fair Competition and Anti-Trust

BorgWarner expects its Suppliers to uphold fair competition and anti-trust standards including, but not limited to, avoiding business practices that unlawfully restrain competition; improper exchange of competitive information; and price fixing, bid rigging, or improper market allocation. An effective compliance policy and strategy enables a company to minimize the risk of involvement in competition law infringements, and the costs resulting from anti-competitive behavior.

Financial Responsibility (Accurate Records) & Disclosure of Information

BorgWarner expects that Suppliers perform their business dealings in a transparent manner and accurately reflect them in the companies' financial reports and filings. Financial responsibility refers to a company's responsibility to accurately record, maintain, and report business documentation including, but not limited to, financial accounts, quality reports, time records, expense reports, and submissions to customers or regulatory authorities, when appropriate. Books and records are expected to be maintained in accordance with applicable law and generally accepted accounting principles. BorgWarner expects its Suppliers to disclose financial and non-financial information in accordance with applicable regulations and prevailing industry practices.

4.3 Excellence. Focusing On Results

BorgWarner seeks to be a leader—in serving our Customers, advancing our technologies, and rewarding all who invest in us. To extend our competitive position, we expect our Suppliers to relentlessly improve their own performance and to bring urgency to every business challenge and opportunity.

Data Protection and Data Security

BorgWarner expects its Suppliers to implement robust data privacy and security standards that protect an individual's personal data, regardless of whether they are employees, customers, Suppliers, or job applicants. Suppliers should respect the privacy and civil liberties in respect of the collection, retention, use or dissemination, as well as any other processing of personal data.

Intellectual Property

"Intellectual Property" includes inventions, patents, trade secrets, "know-how", trademarks, logos, and copyrights. Suppliers should use commercially reasonable practices to avoid the unjustified transfer of confidential technology and know-how (e.g., copyright, trademark, design, patent) and must be diligent to identify, protect, and defend our Intellectual Property as well as the Intellectual Property of our (OEM) customers and sub-Suppliers.

Counterfeit Parts

BorgWarner expects its Suppliers to develop, implement, and maintain methods and processes appropriate to their products and services to minimize the risk of introducing counterfeit and materials into deliverable products and adhere to relevant technical regulations in the product design process.

Export Controls and Economic Sanctions

Suppliers must comply with all applicable laws and regulations governing the conduct of international trade, including sanctions, export controls, boycotts, and customs. Suppliers should have appropriate policies and procedures to ensure compliance with applicable export controls and economic sanctions laws and regulations of all relevant countries. If the Supplier is involved in the sale, marketing, distribution, or transportation of products or services, or the transfer of technology across international borders, the Supplier must verify that the transactions do not involve restricted individuals, companies, countries, or regions, and that the products do not require an export license or other authorization.

4.4 Responsibility. Our Commitment

We are committed to good corporate citizenship. We expect our Suppliers to abide by all applicable employment, environmental, health, and safety laws and regulations. We will not allow the use of any forced, involuntary or child labor by Suppliers who provide goods or services to us. We commit ourselves to prevent and minimize any risk to human rights or environment in our business areas and in our supply chain.

Rights of Minorities and Indigenous Peoples

BorgWarner expects that its Suppliers respect the rights of local communities to decent living conditions; education, employment, social activities; and the right to Free, Prior, and Informed Consent (FPIC) to developments that affect them and the lands on which they live, with particular consideration for the presence of vulnerable groups.

Land, Forest, and Water Rights and Forced Eviction

We expect that Suppliers avoid forced eviction and the deprivation of land, forests, and waters in the acquisition, development or other use of land, forests, and water.

Environmentally Responsible Products and Processes

BorgWarner expects its Suppliers to responsibly protect the environment for the benefit of society and future generations. Suppliers should strive to conserve, recycle, and reuse resources efficiently, using responsible and sustainable environmental practices, including but not limited to energy and emissions reduction initiatives, monitoring and reporting. Suppliers should minimize water consumption, effectively reuse, and recycle water with responsible treatment of wastewater discharges and prevent potential impacts from flooding as a consequence of rainwater run-off, as required by and in accordance with applicable law.

To assure that our products and processes will provide the maximum benefit and least damage to the environment, we expect BorgWarner Suppliers to:

- Develop and offer products that help contribute to improved fuel efficiency and reduced emissions.

- Evaluate and minimize the complete-life cycle environmental impact of your products and processes.
- Minimize waste generation.
- Lead in the conversion to environmentally friendly materials including the use of recycled and recyclable materials.
- Maximize the efficient use of resources such as water.
- Obtain energy from renewable sources and/or lower impact resources wherever practical to reduce greenhouse gasses and strive for decarbonization.
- Protect ecosystems, especially key biodiversity areas, impacted by their operations, and avoid deforestation in accordance with international biodiversity regulations.
- Monitor and control the impact of their operations on soil erosion, nutrient degradation, subsidence and contamination to preserve soil quality.
- Minimize noise emissions from industrial processes to reduce disturbance of the surrounding community and environment.
- Not disturb animal welfare, respecting the five animal freedoms formalized by the World Organization for Animal Health (OIE).
- Strive for environmental leadership in regions in which you operate and fulfill the environment-related obligations set out in the Supply Chain Due Diligence laws.

Air Quality

Suppliers should routinely monitor and disclose, appropriately control, minimize, and to the extent possible, eliminate emissions contributing to air pollution, as required by and in accordance with applicable law. Suppliers should assess cumulative impacts of pollution sources at their facilities and mitigate their pollution levels accordingly.

Responsible Chemical Management

Suppliers should identify, minimize, or eliminate the use of restricted substances in manufacturing processes and finished products to ensure regulatory compliance. Suppliers should also be aware of any use of restricted substances in processes and finished products, and actively investigate suitable substitutes to maintain product and environmental stewardship.

Responsible Sourcing of Raw Materials and Minerals

Our suppliers should have a management system and be committed to responsibly source raw materials and minerals used in their products promoting supply chain traceability and transparency.

4.5 Collaboration. Building Trust

Successful business relationships are the result of mutual goals and values. We encourage differentiating technologies that challenge the status quo and help support BorgWarner's product leadership model. We view every Supplier relationship as an opportunity to extend our enterprise and grow our business. Information given to us must be accurate, and when requested, will be treated as confidential information so designated.

4.6 Adherence

We expect your cooperation in ensuring adherence to our Supplier Code of Conduct. We expect Suppliers throughout our entire supply chain to adopt and enforce policies in accordance with those stated above. BorgWarner seeks to identify and do business with organizations that conduct their businesses to these standards.

BorgWarner personnel are expected to report any known or reported violations of this code to their respective Vice President without fear of retaliation.

If you or anyone in your company believes that a BorgWarner employee or other Supplier has violated this policy, please contact the BorgWarner Compliance Office by phone at +1 248.754.0656, or e-mail to Complianceoffice@BorgWarner.com. You may also report to an independent party by calling 1-800-461-9330 in the United States or from outside the United States, go to <http://www.convercent.com/report> to find your country's toll-free number, or call collect to +1-720-514-4400 using the appropriate country code specific to your location and where you are dialing, or at compliancehotline.borgwarner.com.

4.7 Due Diligence in Supply Chains (Supply Chain Laws)

In accordance with the applicable Supply Chain Due Diligence laws, BorgWarner obliges all Suppliers in its direct supply chain to fulfill human rights and environment related due diligence obligations in order to prevent and minimize any risks to human rights and environment-related risks or to end those in case of a violation. The direct Suppliers are responsible that their sub-Suppliers act in compliance with the requirements of the Supply Chain Due Diligence laws.

BorgWarner has implemented a risk management system in which regular risk analysis are conducted to identify possible adverse effects on human rights and environment related topics in its own area of business as well as towards its Suppliers for direct material and indirect material and other vendors. In case a risk is identified, preventive measures and remedial action will take place.

Suppliers based on a defined risk category are required to complete a Self-Assessment-Questionnaire. The questionnaire will be provided by BorgWarner. Further information involving the Supply Chain Due Diligence laws can be found on <https://www.borgwarner.com/suppliers>.

5 Supplier Manual Access/Responsibilities

5.1 Supplier Communication/Access

BorgWarner utilizes a Supplier Extranet site for external communication. This site is referred to as ExtraICE and can be located at (<https://extraice.borgwarner.com>).

Supplier-specific information such as Supplier Manual, Forms, Scorecards, Training, etc. can be found under the GSM Supplier Website header tab.

5.2 BorgWarner's Responsibility

- Provide Supplier access to the latest released version of the BorgWarner Supplier Manual.
- Update Supplier Manual as required and notify Suppliers via ExtraICE (<https://extraice.borgwarner.com>).
- Specific approach to access and notification to be determined by your BorgWarner Global Supply Management (GSM) representative.

5.3 Supplier's Responsibility

- Ensure Supplier uses the current released version of the BorgWarner Supplier Manual.
- Direct material Suppliers must complete Supplier Manual Training located on ExtraICE.
- Provide training to their personnel regarding the location of the controlled version of the BorgWarner Supplier Manual.
- Suppliers must ensure that BorgWarner has the correct Supplier contact information allowing notification of any changes.
- Suppliers shall ensure that their latest Quality System Certification is uploaded into the appropriate BorgWarner system.

5.4 Revisions

Any updates to the Supplier Manual will be provided to the Supplier as stated in the BorgWarner Responsibility section above. Suppliers will be notified through electronic means of any changes to the manual.

Suppliers should never use an uncontrolled version of the BorgWarner Supplier Manual. They should always reference the controlled copy.

BorgWarner/Supplier Business Product /Service Processes

6 Commercial Expectations

6.1 Purchasing Process

Supplier Agreement (Like Non-Disclosure Agreement)

- Unless otherwise directed, Suppliers must sign and return the Supplier Agreement (e.g., Confidentiality Agreement) regarding Proprietary Information Security and Disclosure to the appropriate BorgWarner Supplier Representative prior to being issued an invitation to quote.
- Supplier must sign and return all other agreements as requested.

Request For Quotation

- Manual Request for Quotation
 - Potential Suppliers will be invited to participate in the quoting process. Suppliers are required to use the forms supplied in the request for quotation, including detailed cost breakdowns. Failure to use BorgWarner documents may result in a "no quote" status (Contact your local BorgWarner Supplier Representative for further instructions).
- Electronic Request For Quotation (eRFQ)
 - Potential Suppliers may be invited to participate in an eRFQ. In this case, Suppliers are required to use the electronic RFQ system completing all required documents (including detailed cost breakdowns) when submitting quotations on new business. Failure to use this system may result in a "no quote" status.

Supplier Selection Criteria

- The following criteria can be used to award new business:
 - The Supplier's demonstrated performance in environmental management, quality, delivery, launch management, and cost reduction [reference Supplier Balanced Scorecard and Enterprise Approved Sourcing List (EASL) sections]
 - Supplier Consolidated Risk Assessment
 - Supplier's total cost competitiveness and commitment to continuous improvement
 - Supplier's demonstrated participation in Minority Business Sourcing (United States only)
 - Supplier's demonstrated technical capabilities, Engineering support of BorgWarner programs, and Program Management of new product launches
 - Supplier's overall financial condition
 - Supplier's acknowledgement and acceptance of BorgWarner's Purchase Order Terms and Conditions
 - Other items, such as customer-directed, regional requirements, etc.

- Meet requirements mentioned in 9.1 of this Supplier Manual.

Meet requirements under applicable laws, in particular US Foreign Corrupt Practices Act, UK Anti-Bribery Act of 2010 and the Supply Chain Due Diligence laws.

Cost Breakdown Analysis

As requested, Suppliers must supply detailed and accurate cost information on appropriate forms.

Purchase Orders

Refer to the specific BorgWarner purchase order terms and conditions.

Purchasing Authorizations

Only employees from BorgWarner's Global Supply Management (GSM) and/or Indirect Purchasing organizations are authorized to commit monies to a Supplier. This commitment must be in the form of an authorized Purchase Order. This applies to all direct, indirect, service, and prototype purchases as well as tooling, capital, design, and development, etc. The appropriate purchasing representative responsible for the tooling purchase orders will communicate these requirements, where possible, on the tooling purchase orders themselves.

6.2 Continuous Improvement

General

Continuous Improvement in regard to cost reduction is an essential element of long-term business success for BorgWarner and for its Suppliers. In order to remain competitive, BorgWarner and its Suppliers must recognize the requirement to find effective ways to eliminate waste and reduce the cost of our products.

Expectation—Annual Improvement Factor

- BorgWarner expects all Suppliers to demonstrate a year-over-year cost reduction. We expect this to be directly reflected in the form of an Annual Improvement Factor (AIF) on all business. Cost reduction targets will be communicated to Suppliers from BorgWarner Global Supply Management.
- All Suppliers are expected to constantly examine and optimize the entire cost structure of their business and the products supplied to BorgWarner. This includes process improvements, cycle-time reduction, scrap reduction, die/tooling set-up reduction, design improvements, Sales, General, and Administration (SG&A) reduction, fixed and variable overhead reduction, transportation, etc. In order to ensure proper review and validation of Supplier's design and process improvement ideas, Suppliers must strictly comply with BorgWarner's change management requirements for all design and process change proposals.

6.3 Minority Sourcing Program

Expectation

- Suppliers located in the United States are expected to have a formal Minority Business Enterprise (MBE) development program. BorgWarner expects Suppliers to make every effort to procure a minimum of 5% of the material and/or services from a certified Minority Business Enterprise.
- In order to be classified as a Minority Business Enterprise a company must satisfy the following criteria:
 - The business is no less than 51% owned and operated by U.S. minority citizens
 - The minority owners are active in the management and daily business operations
 - The owners belong to one of the following U.S. minority groups:
 - African American, Asian American, Native American Indian, Asian Pacific American, Hispanic American, American Eskimo, and American Aleuts
 - The business is certified by the National, State, or Local Minority Business Development Council.

Reporting of MBE Expenditure Data

- Suppliers are required to document purchases from those sources and to report the minority Supplier purchases quarterly to the BorgWarner Minority Supplier Coordinator. Suppliers should submit their report by the 10th of the month following the end of the quarter utilizing the form dictated by the BorgWarner receiving plant.

Requests For Quotation

- All quotations from Suppliers will be evaluated with consideration given to each Supplier's MBE development program implementation status. Noncompliance with this expectation may affect a Supplier's ability to quote and receive new business from BorgWarner.

6.4 Service & Replacement

Duration

Suppliers are obligated to provide service component requirements for a minimum period of 15 years following the conclusion of series production or as otherwise stated in writing by BorgWarner.

Pricing

Service components must be priced at production pricing for a minimum of five years after BorgWarner Customer production has ceased. In no event will replacement parts be made available to BorgWarner at prices that are not competitive or exceed those charged to other comparable Customers of the Supplier.

6.5 Terms & Conditions

The Supplier must comply with the BorgWarner Supplier Manual as well as the Terms and Conditions contained in the BorgWarner Purchase Order. The Supplier will consult with the appropriate BorgWarner Supplier Representative for clarification.

6.6 Warranty

The Supplier will accept the warranty requirements specified in the Purchase Order Terms and Conditions and/or separate agreements. Additionally, Supplier will be responsible for all applicable warranty costs.

6.7 Invoicing

General

The Supplier will contact the BorgWarner plant that will be receiving the product or service (BorgWarner receiving plant) for invoicing requirements.

Standard Invoicing Instructions

The following information must be included on all production part invoices submitted to BorgWarner:

- “Original” should be on original copy of invoice
- “Duplicate” should be on any additional copies submitted
- Each invoice must contain a unique invoice number (not repeated)
- BorgWarner Supplier number
- BorgWarner part number
- BorgWarner purchase order number
- Quantity
- Unit and total price
- Country of origin
- Complete and detailed description of the merchandise
- The terms of sale (latest version of INCOTERMS)

Supplier will ensure that all information provided on all invoices and shipping/business documents, and/or electronic data accurately reflects the physical goods in the shipment.

Invoicing Consigned Inventory

Consigned inventory may or may not require an invoice depending on the BorgWarner purchase order and requirements from the BorgWarner receiving plant. If an invoice is required, the Standard Invoicing Instructions (above) are required. If an invoice is not required, follow the information from the Invoice-less Instructions (below) or specific instructions from the BorgWarner receiving plant.

Invoice-less Instructions

If a BorgWarner plant and purchase order indicate payment from evaluated receipts, the Supplier may not be required to submit an invoice with the shipment (unless required by local Customs authorities with respect to shipments of goods across international frontiers or borders or government regulations). Contact the BorgWarner receiving plant for verification.

6.8 Advertising and Public Communication

Seller shall not, without prior written consent of the BorgWarner Marketing department, in any manner advertise or publish its relationship with Buyer or Buyer's customers, make any reference to the award of business or use any trademarks or trade names of Buyer or any of its associated companies in any press release, advertising or promotional materials.

Requests for permission on any of the above topics can be directed to mediacontact@borgwarner.com. Please include a detailed outline of the permissions you are seeking and the name of the individual you work with in BorgWarner purchasing for consideration.

6.9 Contingency Plans

The Supplier shall prepare contingency plans to satisfy BorgWarner and IATF 16949 requirements in the event of an emergency such as utility interruptions, labor shortages, key equipment failure and field returns.

Supplier's contingency plan shall define preventative measures, immediate response, recovery steps and timing to resume production of quality product.

Contingency plans shall include at minimum:

- Defined roles and responsibilities
- Response organization and contact information
- Initial actions
- Escalation procedures
- Communication plans
- Recovery plans.

7 Tooling and Gauging Policy

7.1 General

BorgWarner will issue purchase orders for special tooling, including dies, jigs, fixtures, templates, inserts, molds, patterns, gauges, test equipment, etc. as agreed upon.

BorgWarner reserves the right to immediately remove BorgWarner-owned tools.

Suppliers must receive written authorization from BorgWarner before:

- Moving or destroying tooling
- Altering tooling capacity
- Disposing of service parts tooling.

Selling products made from BorgWarner tooling to any other Customer is not allowed.

All Special Tooling owned by BorgWarner must be identified (see Special Tooling below).

The Supplier is responsible to adhere to all legal safety requirements as applicable.

The Supplier is responsible for ensuring that its sub-Suppliers adhere to the above guidelines.

7.2 Definitions

Special Tooling

The following general (not all inclusive) guidelines provide characteristics that BorgWarner typically considers regarding whether or not tooling and measurement devices are considered special tooling:

- Specifically designed for a BorgWarner part or product with little or no other application
- Life and value is limited to the production and service life of the part(s) which they produce or measure
- Directly affect the part they measure or produce including part specific gauges, dies, fixtures, gear cutters, broaches, molds, jigs, etc.
- Can usually be re-located
- May be found between “bolster plates” of a machine or pieces of equipment (including dies, welding fixtures, sub plates, or automation handling devices) and are not part of the general equipment
- Unique computer software required to operate the tooling is considered part of tooling and is also the property of BorgWarner.

Measurement Systems

- Any gauges, fixtures, tools, test equipment, etc., required to measure the part/process.
- Measurement Systems may be general in application and usable for many purposes.

Parts

Any purchased or manufactured component or assembly intended for further manufacture or resale.

7.3 Quotation & Design

Tooling Quotation

The items in this section must be considered as part of a tooling quotation to BorgWarner unless otherwise specified by BorgWarner.

- Tooling quotation must include expense breakdown, including fixtures, dies, gauging and other costs as well as tooling design (i.e., number of cavities, material, etc.).
- Capacity of the tool must be clearly defined on the quotation.
 - Capacity will be calculated on a 5-day / 3-shift basis unless otherwise directed by BorgWarner.
- Tool life must be clearly defined on the quotation.
- Cavity replacement must be clearly defined on the quotation. This should be provided as a per-part cost or as a cavity replacement cost.
- The quotation must specify lead-time breakdowns including design, build, testing, and PPAP submission & approval.

Supplier's Responsibilities

- The Supplier is responsible for maintaining, repairing, refurbishing, and replacing tooling in production condition at no cost to BorgWarner and BorgWarner will retain all title and ownership rights for said repaired, refurbished, or replaced tooling for the defined lifetime of the tool, unless otherwise agreed to in writing by BorgWarner.
- The Supplier is responsible for disposing of the tooling at no cost when directed in writing by BorgWarner.
- The Supplier will keep detailed maintenance records for the tooling. The Supplier will make these records available to BorgWarner on request.
- The Supplier will monitor the tool life and performance to ensure that repair, replacement, and maintenance, whether or not the responsibility of the Supplier, are identified and corrected prior to the time that part quality or production capacity are affected. This will include regular dimensional reviews on specific part characteristics. Supplier agrees to make this data available to BorgWarner on request.
- The Supplier will, on a regular basis, monitor tool life and advise the BorgWarner Supplier Representative well in advance when tooling replacement is necessary.
- The Supplier will ensure that sufficient quantities of components will be in Supplier's inventory and available to support BorgWarner production prior to and during the time period that the tooling is being refurbished or replaced.

Tool Design

- When tooling is designed by the Supplier, BorgWarner must be provided with electronic and hard copies of the design and all related drawings and specifications.

Supplier, upon request from BorgWarner, will provide reproducible tooling prints for any existing tools.

- All designs must be based on the metric system unless otherwise agreed to in writing by BorgWarner.

Tooling Run-off

The Supplier must document tooling run-off quantities in the quotation.

Measurement System

- BorgWarner's expectation is that all Measurement System devices must be validated in accordance with the AIAG Measurement Systems Analysis.
- All gauging systems must give readings in metric unless otherwise agreed to in writing by BorgWarner.
- Gauge tolerances must be defined by SAE/DIN/ISO standards.
- The Supplier is expected to maintain the integrity of the Measurement System and provide Gauge Repeatability & Reproducibility (R&R) at required intervals.

7.4 Invoicing

Invoice Amount

Supplier invoices should document expenditures for BorgWarner-owned tooling (including a full cost breakdown). In addition, invoices must show the exact physical location by city, town, state or province, and country where the tools will be used in production. Supplier invoices for tooling should reflect the tooling order amount or the actual costs incurred, whichever is less. Any discrepancies should be brought to the attention of the GSM representative. The Measurement System Equipment invoice must include complete descriptions of each device. Note: Supplier must provide photographs of BorgWarner-owned tooling with all tooling invoices.

Payment Authorization

BorgWarner will authorize payment for tooling and Measurement System devices when PPAP and all other applicable customer requirements (regarding tooling audit) are met, statistical studies are approved, and all photographs received, or as otherwise agreed upon with BorgWarner.

Bill of Sale

Supplier will provide a bill of sale acknowledging payment and ownership of all BorgWarner Tooling and Measurement systems.

7.5 Tooling Identification & Ownership

- All tooling and materials which BorgWarner furnishes either directly or indirectly to Supplier or which BorgWarner buys from or gives reimbursement to Supplier in whole or in part (collectively, "BorgWarner's Property") will be and remain the property of BorgWarner and be held by Supplier on a bailment basis. Supplier will sign or authorize BorgWarner to sign on its behalf any documents deemed reasonably

necessary by BorgWarner to be filed with Federal, State, or Local officials to record BorgWarner's title and interest in BorgWarner's Property. Supplier will not sell, lend, rent, encumber, pledge, lease, transfer, or otherwise dispose of BorgWarner's Property. Furthermore, Supplier will not assert or permit any person claiming an interest through Supplier to assert any claims of ownership to or any other interest in BorgWarner's Property.

- The Supplier will clearly mark or tag tooling and/or dedicated measurement devices and associated materials, as appropriate, with "Property of BorgWarner."
- In certain instances, the Supplier will be required to mark or tag the tooling with the additional note, "Property of (OEM)" as directed.
- The Supplier will permanently mark the tooling with the part number, which the tool is intended to produce.
- In the event that directly marking the tool is not practical, an identifying mark will be made, and a corresponding record will be maintained that defines the corresponding part number to the mark. This record will be maintained for the life of the program.
- A descriptive breakdown of each of the various components that make up the tooling and/or measurement devices, the size and type of equipment the tooling is designed for, proof of expenditures, as well as photographic evidence of the completed tooling and/or measurement devices, must be submitted on the "Supplier Tooling Data" sheet GSM-F026 to the appropriate purchasing representative prior to PPAP. Additional information may be required dependent on specific customer needs.
- The tooling and/or measurement devices must be stored and handled in a manner to avoid damage and deterioration.
- Any Supplier logo or other identifying mark placed in a tool/die that results in a Supplier logo on the end part is prohibited unless otherwise approved by BorgWarner in writing.

8 Prototypes

8.1 General

In most programs, prototypes are required to verify the design concepts. The requirements listed below apply to all Suppliers who have been issued a prototype order.

8.2 Submission Requirements

The following items may be required with each prototype shipment. The specific details are to be defined by the purchasing location. As a guideline, the purchasing location may require information to be submitted on the Prototype Samples Submission Form (GSM- F017).

- Prototype Submission Warrant.
- BorgWarner Drawing:
 - Include a copy of the approved BorgWarner drawing supplied with the purchase order.
 - If the drawing is not pre-numbered by BorgWarner, number the print to coincide with the dimensional report.
- 100%-dimensional inspection to all print dimensions (except reference and basic dimensions) as required.
 - The sample(s) must be identified as required.
 - Part number and revision level must be listed on the print. If no revision level is listed, write “none.”
 - The method of inspection (CMM, Calipers, Micro Height, etc.).
 - All dimensions MUST meet the print specification or have a written and signed deviation by BorgWarner attached. BorgWarner must approve the deviation prior to shipment of parts.
 - Out of specification dimensions must be clearly identified. The preferred method would be to highlight the dimension with a note “refer to attached deviation.”
 - Any special requirements, details or deviations should be identified in the comments/remarks section.
- Capability Studies as required.
- Material Certification as required.
- Gauge Analysis as required.
- The shipment of prototype parts may also require the submission of material test results and preliminary Failure Mode and Effects Analysis (FMEA), control plans, or any other item specified by the appropriate BorgWarner representative.

8.3 Package Identification to be Defined by Receiving Location

8.4 Prototype Tooling

Unless otherwise specified by the BorgWarner representative, the Supplier will retain the prototype tooling at their facility. All prototype tooling paid for by BorgWarner is the property of BorgWarner and will be marked accordingly. The Supplier will provide such tooling upon BorgWarner's request.

9 Quality Requirements

9.1 General

Quality Management System

All Suppliers must comply with the BorgWarner quality expectations defined in this section. Suppliers are fully responsible for the quality of their products.

In order to ensure Zero Defects, an effective Quality Management System must be in place. Suppliers and their subcontractors are expected to work in accordance with the requirements described in ISO 9001 and be working toward IATF 16949 and all AIAG & VDA reference documents, including: Production Part Approval Process, Failure Mode and Effects Analysis, Advanced Product Quality Planning, Measurement Systems Analysis, and Statistical Process Control. Latest certification(s) must be uploaded in the appropriate BorgWarner system.

Suppliers are required to hold subcontractor's latest certification(s) on file and submit to BorgWarner upon request. These requirements are mandatory unless otherwise agreed to in writing by BorgWarner or by written permission from the Customer given to BorgWarner. In some cases, BorgWarner will provide 2nd party certification through the annual Supplier audit process. In this case, BorgWarner reserves the right to charge the Supplier for this certification.

Suppliers are also responsible for assuring their subcontractor's PPAPs are approved and are under a controlled system of evaluation and review. These records must be made available for BorgWarner examination when requested.

Plant-Specific Requirements

In addition to complying with the quality expectations defined in this section, Suppliers must also comply with the additional quality expectations, where applicable, of specific BorgWarner locations or Customers.

Customer Specific Requirements

It is the responsibility for the Supplier to:

- Pass down all applicable statutory and regulatory requirements (Team Feasibility Commitment) as well as special product and process characteristics to their Suppliers and require the Suppliers to cascade all applicable requirements down to the supply chain to the point of manufacture.
- Certified to ISO 9001:2015 "Quality Management Systems – Requirements."
- Comply with IATF 16949:2016 "Fundamental quality management system requirements for automotive production through second party audits."

Approved Supplier Status

All Suppliers currently supplying direct or indirect material to BorgWarner are approved Suppliers. Approved Supplier lists are maintained by either the BorgWarner business unit or specific BorgWarner facility. Approved Suppliers are those we currently purchase from, but it is possible they are not approved for new business awards. Reference the Enterprise Approved Sourcing List in Section 15 for sourcing criteria.

9.2 Supplier Assessments

New Suppliers

A BorgWarner Supplier Representative will provide access to the BorgWarner Supplier Manual and may request completion of the BorgWarner Supplier Questionnaire (GSM-F001) and Technical Site Assessment Form (GSM-F002). This assessment includes quality systems and financial risk assessments. BorgWarner may also complete an on-site Supplier Quality Systems Assessment. Once completed and submitted, BorgWarner will determine whether the candidate Supplier has the required quality systems, technical core competencies, program management and financial stability to be awarded new business. Regional or customer specific requirements may apply. In these cases, BorgWarner reserves the right to conduct additional investigations prior to business award (i.e.: appropriate VDA audits).

Existing Suppliers

Depending on a risk analysis which includes safety and regulatory requirements, the Supplier Scorecard rating and the QMS certification level, BorgWarner may conduct an on-site assessment using the VDA 6.3 Process Audit form or the Technical Site Assessment form (GSM-F002). Once completed, BorgWarner will determine whether the existing Supplier has the required quality systems, technical core competencies, and financial stability to be awarded additional business.

9.3 Advanced Product Quality Planning (APQP)

General

BorgWarner requires all Suppliers to take ownership of and manage the APQP process. A BorgWarner Representative may initiate the quality planning process with Suppliers during the APQP Kick-Off meeting. Suppliers subsequently have an obligation to establish a cross-functional team to manage the Product Quality Planning process utilizing the BorgWarner Electronic eAPQP system.

BorgWarner will provide Suppliers with the prototype/pre-production, PPAP and production requirements and dates, as noted in the due dates of the eAPQP system or form. Suppliers will be responsible for keeping their product quality planning timelines up to date in this system. Suppliers are expected to update their estimated completion dates in the system on frequent intervals or when there is a change that will impact overall program timing. Additional details are available in a separate Supplier eAPQP guide, available on BorgWarner's Supplier extranet at <https://extraice.borgwarner.com/Suppliers>.

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

Off Tool Samples (OTS)

Off tool samples (OTS) may be required before PPAP approval for validations, customer preproduction builds, machine run off, etc. Documentation for these builds should be submitted as part of the APQP process. Unless otherwise

directed by BorgWarner, Supplier shall comply with the following OTS characteristics and information:

- Parts coming from intended serial production tooling
- All dimensional specifications must be 100% according to drawing requirements
- Raw material according to print specification
- Parameters to produce the parts should be documented and provided to BorgWarner upon request
- 30 Piece capability report for designated characteristics
- Requirement to complete a full dimensional layout will be confirmed by BorgWarner APQP Responsible.

There may be additional plant-specific or customer-specific requirements that will be communicated through the APQP phase.

APQP Status

From the time BorgWarner awards business until the Phase 5 Gate Review, the Suppliers are required to maintain the eAPQP system at an appropriate frequency to meet program need dates.

APQP Review Meetings

Once a Supplier has been awarded business, the appropriate representative of BorgWarner may establish with the Supplier a plan for visiting their production facilities to allow BorgWarner, and sometimes its Customer, to review and assess the Supplier's APQP process and launch readiness.

9.4 We Are Ready Process Audit

General

As a verification of the Supplier's production readiness, BorgWarner may require completion of the We Are Ready Process Audit based on form (GSM-F004) prior to Start of Production (SOP). All instructions relative to the form are contained on the Instructions tab of the form file.

Sequence of We Are Ready Events

- BorgWarner determines the level of We Are Ready (WAR) activity required.
- If required, Supplier conducts WAR self-audit, completes forms along with supporting documentation, and returns to BorgWarner.
- BorgWarner may require formal WAR presentation meeting/audit.
- BorgWarner and Supplier agree on corrective action plan, if required. All temporary and permanent corrective actions must be in place prior to start of series production (all yellow items must be completed and all red X's must be eliminated on the Supplier We Are Ready Cover Sheet).

Supplier Responsibility

- Complete We Are Ready Check Sheet Form.

- All equipment and processes must have been verified at documented capacity rates and be ready to run production at the peak quoted capacity rate. Equipment and tooling should be de-bugged, and an in-house validation of the process completed.
- Operators and support personnel must be trained in the requirements of the current/updated Control Plan, equipment, and gauges.
- Process capability, operator instructions, and Gauge R&R studies must be completed and documented. Where applicable, this should include bias, stability, and linearity. This must also be checked for all sub-Suppliers.
- Material handling systems, packaging, and routings must be in place.
- Perform Run-At-Rate Requirements. Supplier's operation schedule shall meet BorgWarner's weekly volume requirements and shall be no more than five days per week, unless otherwise agreed in writing by BorgWarner.
- Complete WAR Cover Sheet Form.

BorgWarner Responsibility

- BorgWarner representative will make a determination if the audit will be completed on-site.
- Become familiar with Supplier manufacturing process.
- Review WAR self-assessment completed by Supplier—the Cover Sheet, Check Sheet, and Run-At-Rate.
- Identify any items not accurately evaluated.
- Conduct Run-At-Rate if required.

Documentation

Significant amounts of documentation can be required for completion of a WAR process audit. The following is not a complete list. However, it is representative of the types of data that may be required: PFMEA, gauge R&R studies, capability studies, training plans, customer critical features recognition, work instructions, in-process handling, environmental considerations, dunnage, etc.

9.5 Production Part Approval Process (PPAP)

General

Suppliers must comply with the latest edition of the AIAG Production Part Approval Process reference manual, VDA Standards, ISO 9001, and IATF 16949 and with all requirements outlined in this Supplier Manual. In addition, certain Customer specific requirements could apply.

PPAP Submission Requirements

Unless specifically waived in writing by BorgWarner, all Supplier PPAP submissions must include a completed Supplier PPAP Check Sheet (GSM-F005 or Business Unit specific requirements), which validates that all PPAP documents are complete.

Prior to a Supplier submitting a PPAP to BorgWarner, all of their sub-Supplier PPAP's must have been approved by the Supplier. Unless specifically waived in writing by BorgWarner, the Supplier must complete and submit the sub-Supplier Matrix (GSM-F027) along with the PPAP.

IMDS & CAMDS and CCC Requirements

- International Material Data System (IMDS)
 - Suppliers are required to provide material data in electronic format per the requirements defined in the International Material Data System (IMDS). For specifics and further information relating to this requirement, visit <http://www.mdssystem.com>. Suppliers are also responsible for the on-time provision of all IMDS relevant material data for their products and the products of their supply chain.
- China Automotive Material Data System (CAMDS)
 - China Automotive Material Data System (CAMDS) is a product data management platform for implementing the “Recycling and Reutilization Policy of Automotive Product,” carrying out the certification of recoverability rate and prohibited/restricted substance and improving the recoverability rate of China automotive material. Therefore, any product shipped to BorgWarner for use in the China market may be required to satisfy this requirement. More information can be found at the following website: http://www.camds.org/camds_en.
- Chinese Compulsory Certification (CCC)
 - The China Compulsory Certificate mark, commonly known as CCC Mark, is a compulsory safety mark for many products sold on the Chinese market. It became effective on May 1, 2002. It is the result of the integration of China's two old compulsory inspection systems, namely "CCIB" (Safety Mark, introduced in 1989 and required for products in 47 product categories) and "CCEE" (also known as "Great Wall" Mark, for electrical commodities in 7 product categories), into a single procedure.
 - BorgWarner Suppliers and External Providers that produce product for usage in China may be required to comply with this regulation. External Providers can obtain information relating to this requirement at the following internet site: <http://www.cqc.com.cn>.

Submission Disposition and Notification

- There are three possible outcomes of a Supplier PPAP Submission:
 - Full Approval—Parts are fully approved for series production. BorgWarner Material Control will specify proper delivery and release requirements.
 - Interim Approval—Parts are conditionally approved for a limited time or limited quantity. Note: In this case, a Complaint on Purchased Material (CPM) may be issued against the Supplier.
 - Rejected—Parts may not be used for series production and tooling purchase orders cannot be paid. Note: In this case, a CPM may be issued against the Supplier.

- BorgWarner will notify Supplier in writing when their PPAP submission has been approved or rejected. The documented format of notification will be a countersigned Part Submission Warrant (PSW).
- In some cases, PPAP approval requires validation testing and signatory approvals from BorgWarner's Customer prior to notifying the Supplier.

Interim Approval

- Suppliers must submit an eSCR (electronic Supplier Change Request) in cases where full PPAP approval cannot be obtained. The reasons for this request may include, but are not limited to:
 - Out of tolerance condition(s)
 - Incomplete PPAP submission requirements
- If an Interim Approval is granted, a revised PSW must be resubmitted with appropriate PPAP documentation before the Interim PPAP expiration date. If an eSCR is submitted with an Interim PPAP, both must expire on the same date.

PPAP Requirements Waiver

Suppliers must gain written approval from the appropriate BorgWarner representative(s) when requesting any variation from the above stated requirements.

Regular Re-Qualification

To maintain validation that PPAP documentation matches current process practices and capability, ***Suppliers will agree to an annual layout plan or as deemed necessary by the BorgWarner receiving plant.*** Suppliers are required to have the appropriate requalification documentation available for submittal or review upon BorgWarner's request.

Suppliers are required to obtain requalification documentation from their sub-Suppliers for submittal or review upon BorgWarner's request.

Shipping and Labeling Instructions

Unless otherwise directed by the appropriate BorgWarner representative, Suppliers must affix "PPAP SAMPLE PARTS" label below the shipping label as well as the other three sides of the container and ship separate from production parts shipments. Reference BorgWarner site-specific requirements for further details.

9.6 Early Production Containment (EPC)

General

Unless otherwise directed, this requirement applies to all Suppliers to BorgWarner. It is to be used for all pre-production and production requirements that require the Production Part Approval Process, and whenever mandated by BorgWarner on any parts that present significant risk to a BorgWarner plant. e.g., at annual shutdown, model year change, etc.

Definition and Purpose

The purpose of EPC is:

- To reduce the risk to BorgWarner and to protect the Supplier through increased detection
- To document Supplier efforts to gain control of its processes during start-up and launch so that any quality issues that may arise are quickly identified and corrected at the Supplier's location and not at the Customer's manufacturing location
- To increase involvement and visibility of the Supplier's top management.

EPC requires a documented launch or pre-launch control plan that is a significant enhancement to the Supplier's production control plan. This EPC Plan will raise the confidence level to ensure that all products shipped will meet BorgWarner expectations. This is an extraordinary launch measure. The EPC Plan will also serve to validate the production control plan. The EPC Plan should take into consideration all known critical conditions of the part as well as potential areas of concern identified during the Production Part Approval Process. EPC serves to connect the Pre-Launch Control Plan referred to in section 3.7 of the Chrysler, Ford, & GM Advanced Product Quality Planning and Control Plan Reference Manual.

During the APQP Kick-Off Meeting, a completed EPC Commitment Form (GSM- F018) will be signed by the Supplier.

Supplier Responsibility

Establish a containment process that has the following elements:

- Identification of the person responsible for the containment process
- Development of an EPC Plan consisting of additional controls, inspection audits, and factors in the production process (set-up, machinery, fixture, tooling, operator, material/components, preventive maintenance, climate). Additional controls could include:
 - Off-line, separate and independent check from the normal production process
 - Increased frequency/sample size of receiving, process, and/or inspections
 - Defined/coordinated sub-Supplier containment and/or sub-Supplier support/audits as required
 - Increased verification of label accuracy
 - Increased error proofing validation
 - Increased involvement and visibility by top management, including increased Management Internal Audits
 - Other items as specified by BorgWarner or the Supplier
 - Prompt implementation of containment and corrective action if nonconformances are discovered.
- Document the EPC Plan (including functional testing and error proofing, if applicable) using the Control Plan format referenced in the Advanced Product Quality Planning and Control Plan Reference Manual, respectively, as mentioned in IATF 16949 appendix A. The development and documentation of the EPC Plan is expected to occur during the Advanced Product Quality Planning Process. The EPC Plan is not a

substitute for the Production Control Plan but is over and above the Production Control Plan and is used to validate it.

- To indicate compliance with the EPC requirements, Suppliers will attach to each shipment label a special marking as agreed to between the Supplier and BorgWarner.

BorgWarner Responsibility

- The EPC quantity/timeframe will be agreed to with the Supplier and based on BorgWarner's Customer requirement.
- Review and approve the EPC plan and communicate approval to Supplier.

Exit Criteria

Supplier will be eligible to Self-Exit Early Production Containment provided it meets the quantity/timeframe agreed to with no discrepancies found at Supplier or BorgWarner. In the event the self-exit criteria has been met but the EPC plan continues to identify non-conformances, the EPC plan must be kept in place until process controls and capabilities have proven effective, and the Production Control Plan is validated to BorgWarner's satisfaction.

Consequences of Shipping Non-Conforming Material

- Failure to execute EPC may result in Controlled Shipping.
- Shipment of discrepant material during the specified EPC period or any other time may result in Controlled Shipping.

9.7 Process Capability and Monitoring

Defined Part/Process Characteristics

In addition to certain Customer Specific Requirements, certain characteristics can be deemed as important, and will require increased monitoring to ensure the quality of the parts. Those characteristics may be designated as special, significant, high impact, major, or other, based on specific BorgWarner site requirements.

The appropriate BorgWarner representative will identify these specific requirements or characteristics, either by direct communication, specification, or product drawing.

Control of Above Defined Part/Process Characteristics

The Supplier is expected to use statistical techniques to maintain a state of control and to improve the process capability on defined part/process characteristics.

Unless otherwise specified by BorgWarner, a minimum 1.67 Ppk index is required for designated characteristics at initial PPAP submission. For ongoing series production, a minimum 1.33 Ppk index is required.

Suppliers must maintain the statistical data for all designated characteristics and must make the data available to BorgWarner upon request. The Supplier may also be required to submit this data periodically to BorgWarner when requested.

Unless otherwise specified by BorgWarner, if the process does not meet the required capability target, the Supplier must supply a containment plan describing the 100%

inspection method that prevents out of specification parts from being shipped to BorgWarner, and a Corrective Action Plan for capability improvement.

BorgWarner representative may designate additional requirements.

Lot traceability shall be maintained by the Supplier, unless otherwise specified by BorgWarner (see section “9.10 Traceability Requirements” for specific details).

Special Process Requirements

- BorgWarner may require Suppliers with special processes to complete documented evidence for BorgWarner and its customers such as AIAG, CQI, VDA 6.3, etc. The goal of this standard is the development of a special process management system providing continuous improvement, defect prevention and reduction of variation and waste in the supply chain. Suppliers may be expected to perform annual self-assessments. BorgWarner reserves the right to complete its own on-site assessment. For all special processes, Suppliers must share the current CQI assessment with BorgWarner as soon as possible upon request.
- Heat Treatment processes are always critical to function and are a core aspect of Supplier’s manufacturing processes. Deviations to a heat treatment process have a considerable impact on the quality and reliability of our products. BorgWarner puts special focus into the approval of heat treatment processes at our Suppliers or subcontractors. All heat treatment operations where BorgWarner products are produced are required to follow the automotive standards (e.g., AIAG CQI-9) and to comply with BorgWarner Engineering and Quality Standards listed on the drawing specifications. A BorgWarner Heat Treatment representative maybe required to perform heat treatment audits at Supplier and/or subcontractors. Heat treatment processes must always be released part-specific and furnace-specific.

9.8 Complaint On Purchased Material (CPM)

General

BorgWarner will immediately notify the Supplier if non-conforming material is found. Upon verification that BorgWarner has received non-conforming product from a Supplier, BorgWarner will issue a Complaint on Purchased Material (CPM) to the Supplier.

Evidence of defect such as digital photos will be provided when possible. A sample of the defect may be sent to the Supplier upon request.

BorgWarner will issue a CPM to the Supplier regardless of the disposition and/or use of the non-conforming material and improper PPAP submissions. BorgWarner will apply only the number of non-conforming parts to the Parts per Million (PPM) calculation if containment actions and sorting results are forwarded within an agreed time frame. BorgWarner will not issue a CPM and defective parts will not be counted toward the Supplier's PPM number, if the Supplier:

- Requests and gets approval of eSCR (electronic Supplier Change Request) or other equivalent approval to cover “out of print” conditions prior to shipping parts. See [Supplier Change Management](#) section for deviation request guidelines.
- Notifies BorgWarner of a potential quality concern prior to the concern being found by BorgWarner and removes or sorts the suspect material and replaces it with "certified" material.

Containment Actions

Upon receiving a CPM from BorgWarner, Suppliers are required to immediately sort 100% of their product, including product at the BorgWarner plant(s), in transit, in warehouses, at the Supplier's production facility, etc., and to ensure that BorgWarner's assembly plants are supplied with enough certified stock to assure no disruptions to production. Material must be labeled as certified for the specific defect, or defects, for the next three shipments unless otherwise directed by BorgWarner.

- Depending on the continuity of supply situation, the following may occur:
 - High inventory at BorgWarner—Supplier may choose to have product returned or Supplier may sort at BorgWarner.
 - Low inventory at BorgWarner—Supplier must come on-site to BorgWarner to sort for defective product.
 - Extremely urgent (possible line down)—BorgWarner will take the appropriate action and the Supplier will be responsible for all costs incurred.
 - NOTE: Some of BorgWarner's production facilities do not allow sorting of purchased material to take place on-site. Suppliers must make arrangements for transporting non-conforming material from BorgWarner, sorting the material, re-packaging, creating new packing slips with accurate quantities, affixing new bar code labels as needed, and arranging transportation of certified stock back to BorgWarner.
- BorgWarner will contact the Supplier for authorization to return the material at Supplier's expense.
- BorgWarner will not manage Supplier sorting using an outside source. Suppliers are responsible for outside sources and must make all arrangements to ship parts between BorgWarner and outside source. Supplier will also be responsible for inspecting and monitoring the quality of sorted parts.
- Defective parts returned to the Supplier, reworked and returned to BorgWarner may still be counted toward the Supplier PPM. Reworked parts must meet specifications. The repairing of parts is not permissible without prior written authorization from BorgWarner.
- Supplier is responsible for reporting accurate sorting results and to request adjusted defective quantities when appropriate. This can have an impact on the Supplier's PPM calculation.

8-D Reports

General

The Supplier will respond to CPMs by using the BorgWarner 8-D Problem Solving Form (GSM-F007) or other form approved by appropriate BorgWarner personnel. The 8-D documentation will be submitted in response to each CPM, unless otherwise agreed to by the appropriate BorgWarner representative. E-mail is the preferred method of response.

Initial Submission

BorgWarner must receive the initial 8-D response within 24 hours of notification. The 3-D report, with the containment action taken and initial sort results found, must be submitted within 48 hours and the 5-D report must be submitted within 14 days. The 5-D report must contain the definition, planning and implementation of the long-term corrective action items. The above deadlines apply, unless otherwise specified (e.g., if a customer requires stricter deadlines such as 5-D closure within 7 days instead of 14 days, BorgWarner may require a faster response from the Supplier).

Final Submission

Suppliers must submit the final 8-D Problem Solving Form for approval and closure as soon as practical, but no later than 30 days from the CPM issuance date. The Supplier may request approval for an extension of the 30-day deadline but must do so prior to the original deadline. Requests should be made to the appropriate representative of BorgWarner.

Approval and Closure

The appropriate BorgWarner representative, prior to closure of a CPM, must approve a Supplier's final 8-D Report. Any 8-Ds open beyond 30 days may negatively impact the Supplier's performance rating (see [Supplier Performance Metrics](#) section).

If the 8-D identifies a change to the process or part, the BorgWarner Change Management requirements MUST be followed (see [Supplier Change Management](#) section).

- Supplier may be requested to present their corrective actions on-site at the BorgWarner Facility.
- BorgWarner and its Customers reserve the right to verify product conformance to the requirements at the Supplier's and their subcontractor's plants.
- Verification of the implemented corrective action on-site at the Supplier may be accomplished during subsequent visits.
- If Corrective Actions take more than two (2) weeks to implement, a progress report may be required.
- When the corrective action is completed and verified to be effective, the BorgWarner 8-D Champion is responsible for approving the 8-D closure and notifying the Supplier contact of the closure.

Controlled Shipping

- BorgWarner may determine that special measures are required to ensure adequate quality and delivery performance. The costs related to these measures, including but not limited to Controlled Shipping, will be at the Supplier's expense.
- Controlled Shipping is a requirement by BorgWarner for a Supplier to add a redundant inspection process for sorting of a specific non-conformance, while implementing a root cause problem-solving process. The redundant inspection is in addition to normal controls and should be completed in a controlled area. Submission of the CS2 Assessment Form – I-Chart (GSM-F009) showing inspection results is required. The data obtained from the redundant inspection process is critical as both a measure of

the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial nonconformance.

- BorgWarner will notify the Supplier they have been placed on Controlled Shipping. Two levels of Controlled Shipping exist:
 - Level 1 includes a problem-solving process as well as a redundant inspection process. The Supplier's employees at the Supplier's location enact the inspection process in order to isolate the Customer from receipt of non-conforming parts/material.
 - Level 2 includes the same processes as Controlled Shipping – Level 1, with an added inspection process by a third-party representing BorgWarner or BorgWarner's Customer's interests specific to the containment activity. The third party is selected by the Supplier, approved by BorgWarner or BorgWarner's Customer, and paid for by the Supplier. Suppliers may select the third party from an approved listing maintained by BorgWarner or BorgWarner's Customer.
- Other measures may be required if Level 2 controls are not effective. Criteria for application for Controlled Shipping – Level 1 or 2:
 - BorgWarner will make the determination whether the Supplier can effectively correct the non-conforming material situation through the normal CPM 8-D process and isolate BorgWarner or BorgWarner's Customer from the problem. One or several of the following issues may be cause for Supplier to be considered for implementation of Controlled Shipping:
 - Repeat CPMs
 - Supplier's current controls are not sufficient to ensure conformance to requirements
 - Duration, quantity, and/or severity of the problem
 - Internal/external Supplier data
 - Controlled Shipping – Level 1 failures
 - Major disruptions
 - Quality problem in the field (i.e., warranty).
 - Based on consideration of the above, BorgWarner decides whether Level 1 or Level 2 would be appropriate.
 - A 3rd party or a BorgWarner representative may perform audits. The data obtained from the 3rd party redundant inspection process as well as any audits are critical as both a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial non-conformance.
 - In special cases, the Controlled Shipping – Level 2 inspection may be required to be performed outside the Supplier's facilities at a facility deemed appropriate by BorgWarner.
- Exit criteria Controlled Shipping – Level 1 & Controlled Shipping – Level 2:

- The default exit criteria will be used when no other exit criteria are defined. The default criteria are listed below and must be provided to the BorgWarner representative when requesting removal from Controlled Shipping:
 - Twenty (20) working days of data from the containment activity, and a summary, which verifies that normal production controls are effective for controlling the discrepancy(ies) identified in the Controlled Shipping activity. The time begins accumulating from the date of implementation of permanent corrective action
 - Documentation showing the root cause was identified and verified
 - Documentation indicating that corrective action was implemented and validated
 - Documentation indicating that every effort was taken to implement error proofing
 - Copies of all documentation revised as required (control plan, FMEAs, process flow diagram, operator's instructions, training records, etc.)
 - Statistical data where appropriate
 - Other information requested by BorgWarner.
- Additional exit criteria for CS2 Only:
 - Copy of Passing CS2 Assessment Form (GSM-F009) and completed action plans
 - 3rd Party Registrar's statement of approval (or plan) for all activities undertaken by Supplier related to the controlled shipping issue(s) if requested by BorgWarner or BorgWarner's Customer.

9.9 Supplier Charge Back

General

Suppliers are responsible for the quality, on-time delivery, and reliability of the product they supply. Product must meet the drawing and any referenced specifications. The Supplier accepts financial responsibility for the consequences of non-conforming product and rejected PPAP submissions including, but not limited to, costs incurred for containment, sorting, premium freight, rework, repair costs of BorgWarner value add processing, and replacement of defective material, resulting overtime, and productivity loss incurred by BorgWarner or by BorgWarner's Customers.

Following is the schedule for charge back costs associated with non-conforming product sent to a BorgWarner site:

- Administration fee for each CPM issued.
- Off-site 3rd Party Sorting—charges to be paid directly between Supplier and 3rd Party Sorting Company.
- In-house sorting by 3rd Party Sorting Company (if allowed by specific BorgWarner site)—charges to be paid directly between Supplier and 3rd Party Sorting Company.

- In-house sorting by BorgWarner personnel (if required to avoid a down production line—Supplier will be responsible for actual costs incurred.
- Production Line Down Charge—Supplier will be responsible for actual costs incurred.
- Miscellaneous fees such as: rework, material handling, required Customer visit time and travel costs, expedites, Customer location sorting fees, tooling/machine damage, testing, etc. Supplier will be responsible for actual costs incurred.
- Supplier will be responsible for all applicable warranty costs.

Unauthorized Changes

In cases where a Supplier has implemented an unauthorized change or has failed to deliver contracted products in accordance with the specifications and terms of the BorgWarner Purchase Order, all costs that are incurred by BorgWarner and/or its Customers will be the sole responsibility of the Supplier.

Charge Back Debit

The method of charge back will be by debit memo, processed by the BorgWarner receiving location.

9.10 Traceability Requirements

Having a strong traceability system is a key component to overall success, with the focus on improving quality, reducing costs, optimizing processes, and ultimately improving time-to-customer throughout our supply chain. Cradle-to-grave availability and visibility of data is vital for our supply base who make, store, or move components through the supply chain because the data is used in production output calculations, quality control and process capability calculation, inventory management, revenue forecasting, warranty, repair, and other business operations. It's also critical to increasing throughput and lowering production costs. Lack of individual traceability significantly increases the time for root cause analysis and identification of the source of a defect, as well as increased financial impact in the event of a quality incident.

With that in mind, BorgWarner business units have specific traceability requirements outlined below:

- Traceability System requirements
- Individual or batch/lot component traceability requirements
- Manufacturing, machining, assembly, testing process traceability requirements
- Traceability Data Retention
- Part Identification (Barcoding) requirements.

The specific requirements for this section must be considered by Supplier in collaboration with the associated BorgWarner business unit.

- Business Unit: PowerDrive Systems (PDS)
- Business Unit: Drivetrain and Battery Systems (DBS)
- Business Unit: Emission / Thermal Systems / Turbo Systems (ETTS)
- Business Unit: Morse Systems (MS)

- Business Unit: Fuel Systems and Aftermarket (FS&A).

9.11 Embedded Software Requirements

This requirement is in accordance with IATF16949:2016 requirements which outlines the following:

- Organizations must use a process for quality assurance of products with internally developed embedded software and have an appropriate assessment methodology to assess their software development process.
- The software development process must also be included within the scope of the internal audit program; the internal auditor should be able to understand and assess the effectiveness of the software development assessment methodology chosen by the organization.

9.12 Product Safety Requirements

Product Safety is a section in the IATF standard, and an organization must have documented processes for management of product-safety related products and manufacturing processes. New requirements related to product safety include, where applicable:

- Special approval of control plans and FMEAs
- Training identified by organization or customer for personnel involved in product-safety related products and associated manufacturing processes
- Transfer of requirements with regards to product safety throughout the supply chain, including customer designated sources.

This clause highlights the fact that a product should perform to its designed or intended purpose without causing unacceptable harm or damage. Organizations must have processes in place to ensure product safety throughout the entire product lifecycle.

9.13 Cleanliness Requirements

Contamination control will improve part cleanliness over time with measurement, process control and handling improvements. It utilizes a standardized systematic and a structured approach to monitor and control contamination sources and applies a disciplined approach when responding to issues.

Contamination control:

- Provides a systematic approach for control and communication of contamination issues
- Supports and establishes defined areas of continual improvement
- Identifies areas of contamination risk
- Improves quality metrics: reduces PPM and warranty.

Supplier is required to follow GSM-F033 where applicable.

10 Quality System Basics - OBOSLETE

11 Supplier Change Management

11.1 General

Recognizing that managing change is of critical importance, BorgWarner has implemented a corporate-wide Change Management System designed to ensure the quality and integrity of BorgWarner products. Suppliers are expected to take a proactive approach to issues of non-conforming product or any changes to design, performance, materials, or processes. Suppliers should never ship such product before obtaining written BorgWarner approval through one of the methods outlined below. In cases where a Supplier has implemented an unauthorized change and BorgWarner and/or its Customers have been negatively impacted, the Supplier will be responsible for compensating BorgWarner for all associated costs.

11.2 Temporary Changes

When seeking permission to temporarily ship product that is out of specification or product that is produced with a temporary process change not reflected in the Supplier's current Process Control Plan, the Supplier is responsible for obtaining approval prior to shipping. Such situations might include minor dimensional errors, or a processing operation outsourced while a machine is down. Note that any changes to Supplier-specified product characteristics also fall under this requirement even if they are not shown on the BorgWarner drawing.

Suppliers must complete and submit eSCR (electronic Supplier Change Request) to the appropriate BorgWarner Supplier Representative for review and approval. Note that eSCR is used for Temporary Deviation Requests and Permanent Change Requests (different approval sections on the form).

The Supplier must obtain written permission prior to shipping product that is out of specification and carry out the following:

- Submit eSCR (electronic Supplier Change Request)
- Check box for Temporary Deviation Request only
- Track the eSCR expiration date and applicable quantity of product
- Ship product within the scope of the eSCR
- Obtain authorization for additional shipments beyond the agreed limit
- Approval must be obtained from all affected BorgWarner plants before implementing, unless otherwise agreed to with BorgWarner.

11.3 Permanent Changes

General

When seeking permission to make a permanent change to the design, performance, or processing of product supplied to BorgWarner, Suppliers must request approval as described below prior to implementation. Note that any changes to Supplier-specified product characteristics also fall under this requirement even if they are not shown on the BorgWarner drawing and/or specification.

Supplier Change Request

- Suppliers seeking permanent changes to product design, performance, or processing must complete and submit eSCR (electronic Supplier Change Request) to the appropriate BorgWarner Supplier Representative for review.
 - The form must include all relevant information.
 - BorgWarner may approve, reject, or apply conditions of approval to the SCR (e.g., Level 3 PPAP required after change is implemented). The disposition is determined by the nature of the change and impact on manufacturing and Customer requirements.
- Approval of the eSCR does not authorize the Supplier to ship—it is only the authorization to proceed with coordination of PPAP submission.
 - Suppliers must **NOT**:
 - Implement changes before receiving full PPAP approval.
 - Ship until satisfying all AIAG and/or VDA Production Part Approval Process requirements.
 - Ship prior to the implementation date established with the BorgWarner Materials Group.
 - Implement before obtaining approval from all affected BorgWarner plants, unless otherwise agreed to with BorgWarner.
 - In cases where a Supplier has implemented an unauthorized change and BorgWarner and/or its Customers have been negatively impacted, the Supplier will be responsible for compensating BorgWarner for all associated costs incurred by BorgWarner and its Customers.

11.4 Review Process

Review and Approval Process

- A cross-functional group at BorgWarner will evaluate eSCR (electronic Supplier Change Request). The nature of the change (Supplier process or design change) will determine if it can be implemented or if BorgWarner will require validation testing and approvals from our Customers.
- Suppliers may be required to use the BorgWarner eAPQP system as part of this process.

12 Materials/Delivery Expectations

12.1 Delivery Expectations

Plant-Specific Requirements

- In addition to complying with the materials and delivery expectations defined in this section, Suppliers must also comply with the laws of the country of each receiving BorgWarner facility and additional materials and delivery expectations, where applicable, of specific BorgWarner locations. Contact the appropriate material

scheduler at the receiving BorgWarner production facility for any questions on plant-specific requirements.

- All goods or their containers must be marked with the appropriate country of origin. Suppliers are also responsible to supply BorgWarner with a certification of origin for each good and promptly notify BorgWarner if there will be a change in origin. Parts shipped in bulk to support aftermarket operations must include country of origin marking on each individual part.

Program-Specific Requirements

- BorgWarner will specify expectations for materials during the Advanced Product Quality Planning process, RFQs, purchase orders and other forms of communication. The requirements include at least:
 - Labeling
 - Capacity
 - Delivery terms according to the latest INCOTERMS (examples: F.O.B., C.I.F., D.D.P)
 - Containers, trays, and other packaging
 - Warehousing
 - Consignment
 - Product identification
 - Hazardous material restrictions (including but not limited to IMDS/CAMDS/MSDS, REACH, ROHS, GADSL requirements).
 - Preservation of product:
 - Rust preventative – Process must ensure parts are rust free for a minimum of 30 days after receipt at the using BorgWarner facility.
 - Contamination – Reasonable care must be taken to ensure parts are contamination free upon receipt at the BorgWarner using facility. Additionally, part specific contamination standards may be required as noted on the part print.
 - Material release and pull systems
 - Transportation mode and carrier route
 - Returnable Packaging.
- Suppliers are expected to ship 100% on time to BorgWarner based on BorgWarner's terms and conditions as defined in its Purchase Order. Any costs associated with delays in shipments will be at the Supplier's expense.

Overseas Suppliers/Shipments

- Unless specified by BorgWarner, all Suppliers whose products require ocean transportation are required to maintain a minimum 30-day inventory buffer in the country of the receiving plant. The 30-day buffer is determined by calculating the average monthly requirement from the latest forecast/release (ex. 12-week release or 6-month forecast). It is the Supplier's responsibility to monitor and maintain this buffer

at all times. Any expenses incurred by a BorgWarner facility due to an inadequate inventory buffer will become the responsibility of the Supplier. Any deviation from this policy must be negotiated with the proper BorgWarner facility or GSM representative.

12.2 Packaging/Containerization

The Supplier will plan for the timely provision of containers and/or packaging media to support BorgWarner requirements. Returnable packaging systems are the preferred method of production part packaging. Extra cleaning processes required to meet BorgWarner cleanliness needs are the responsibility of the Supplier. Any costs associated with extra cleaning are to be part of the Supplier's quotation and are the responsibility of the Supplier. BorgWarner must approve all packaging design during APQP and prior to PPAP. Suppliers are not permitted to ship product to BorgWarner without packaging approval by BorgWarner.

The Supplier will develop and implement a system to monitor container quantity and their condition. The Supplier will also ensure that the following conditions are met:

- Containers are kept in good suitably clean and dry condition (free from foreign material)
- Labels from previous shipments are removed
- Containers are maintained in working order (i.e., lubrication of gate hinges, spring clip locking devices, etc.)
- Damaged containers, trays, or other BorgWarner supplied product are to be removed from the float, tagged as defective, and returned with notification to the Material Control at the appropriate BorgWarner plant. Reimbursement to BorgWarner will be made for Supplier-incurred damage of returnable packaging
- BorgWarner will ask each Supplier that utilizes BorgWarner-owned returnable dunnage to keep inventories at their plant to ensure proper material flow
- At the end of the calendar year, BorgWarner will request an inventory count of all returnable dunnage, including what is in storage at any of Supplier's plants and what is in transit to BorgWarner
- Packaging meets all government and environmental regulations.

The Supplier is responsible for all normal and reasonable costs associated with cleaning and minor repair.

Approval of Packaging

- Suppliers must utilize Supplier Packaging Form (GSM-F012) unless otherwise directed as part of the APQP process.
- All Packaging material must comply with ISPM 15 or any of its future revisions.

12.3 Labeling & Identification

General

- These requirements are for the printing and placement of shipping/parts identification labels.

Label Size & Materials

- The size of the BorgWarner label will be determined by the BorgWarner receiving plant. Label stock must be white, and the printing must be black. The tag will be affixed via a pressure sensitive or dry gummed application. If the label cannot be affixed to the package/container because of container size or design, special arrangements will be required between the Material Control function at the receiving BorgWarner plant and the Supplier.

Label Types, Label Placement, & Machine-Readable Information

- Label fields specified as containing machine readable information (bar codes) will comply with plant specific requirements. Of particular note, Master Labels, and Mixed Load Labels will be affixed to secondary containers in such a manner that when the pack is broken apart, the label is discarded or destroyed (e.g., hang Mixed Load Label from the banding or attach to stretch wrap).
- In order to ensure label accuracy, it is expected that the Supplier verify (electronically or manually) all labeling to ensure that the label matches the purchase order (or release). Label errors may be treated as a quality complaint necessitating permanent corrective action.

12.4 Transportation & Supply Chain Security

Customs-Trade Partnership Against Terrorism (“C-TPAT”)

- The C-TPAT applies only to Suppliers providing goods to the United States. Suppliers supplying other regions must conform to the World Customs Organization (WCO).
- Supplier will certify in writing that it is either a participating member of the C-TPAT program as promulgated by the U.S. Customs and Border Protection Bureau or that it is in compliance with all applicable supply chain security recommendations or requirements of the C-TPAT program initiative (for more information go to <https://www.cbp.gov/border-security>). Supplier will indemnify and hold BorgWarner harmless from and against any liability, claims, demands or expenses (including attorneys’ or other professional fees) arising from or relating to Supplier’s noncompliance.
- Supplier agrees to provide all information necessary for BorgWarner to comply with all applicable laws, regulations, and related legal reporting obligations in the country(ies) of destination. Supplier agrees to provide all documentation and/or electronic transaction records to allow BorgWarner to meet customs-related obligations, any local content/origin requirements, and to obtain all tariff and trade program duty avoidance(s) and/or refund benefits, where applicable. Supplier further agrees to assume, and to indemnify BorgWarner against, any and all financial responsibility arising from Supplier’s failure to comply with these requirements and/or to supply BorgWarner with the information required to meet legal reporting obligations, including, without limitation, any fines, penalties, forfeitures, or counsel fees incurred or imposed as a result of actions taken by the importing country’s government.
- The C-TPAT Supplier Status Form (GSM-F013) must be completed by any Supplier that is shipping over international frontiers where a BorgWarner entity will be responsible for the import customs formalities in the country of destination. The

completed form, as well as any questions should be directed to your BorgWarner Supplier Representative.

- The C-TPAT Supplier Status Form (GSM-F013) is to be updated on an annual basis.

WCO Framework of Standards to Secure and Facilitate Global Trade (“WCO- Framework”)

- The WCO-Framework applies to all Suppliers exporting goods to locations other than the United States.
- Supplier will certify in writing that it is either a participating member of the WCO program as promulgated by the Worlds Customs Organization or that it is in compliance with all applicable supply chain security recommendations or requirements of the WCO program initiative (for more information go to (<http://www.wcoomd.org>)). Supplier will indemnify and hold BorgWarner harmless from and against any liability, claims, demands or expenses (including attorneys’ or other professional fees) arising from or relating to Supplier’s non- compliance.

Requirements for International Shipments

All delivered goods must be accompanied by the commercially necessary documents that are needed to ensure a proper allocation and completion of the shipment. This includes:

- Invoice
- Packing List
- AWB/MAWB, CMR, ECB or BL
- If needed: Preferential Documents, Certificate of Origin.

For import related questions contact the customs group of the BorgWarner subsidiary in charge.

Invoice Requirements

Supplier, if shipping internationally, agrees to comply with the BorgWarner standard international invoice requirements:

- Invoice number
- Invoice date
- Name and address of the seller
- Name and address of the purchaser
- Port of entry into the customer’s country/European Community
- Name of the merchandise, described in sufficient detail to properly classify the merchandise under importing country’s customs law. This description must be written in English or the official language of the destination country.
- Country of origin
- Name and address of the manufacturer, if applicable
- The BorgWarner purchase order number
- The BorgWarner part number

- Terms of Sale (latest version of INCOTERMS®)—declared as precisely as possible – e.g., FCA 1849 BREVARD ROAD, ARDEN INCOTERMS 2010®
- Purchase price and currency
- Unit price and extended price on each line
- Hs Code with 6 digits for each line
- Total value of shipment
- All charges and discounts including but not limited to: assist charges including tooling, dies, molds, or any other similar items including materials and components used in the production of or incorporated into the merchandise provided by BorgWarner or its Customers.

Packing List Requirements

- Packing list number
- Packing list date
- Reference to invoice number
- Marks and numbers of the packages in which the merchandise is packed
- Merchandise quantities, gross, and net weights and measures.

Preferences/CoO – Certificate of Origin

- Free Trade Agreements (FTA)
- Preferential Treaties between the Supplier's Country and the Customer's Country
- CoO issued by the official agency in charge.

The preferential documents must be included with the documents required for customs clearance. Any additional costs incurred due to missing documents will be charged to and accepted by the Supplier.

Importer Security Filing (“ISF” 10 + 2)

All Suppliers shipping to BorgWarner U.S. locations via vessel must provide timely ISF information to BorgWarner or its designated Agent. The Supplier must include all ISF fields on their commercial invoice. For more information, the following link will direct you to the CBP ISF site.

<https://www.cbp.gov/border-security>

Import Control System (of the European Community)

The required information, for all transport modes, has to be provided to the forwarder who will transmit them electronically to the Carrier. The Carrier completes the pre-arrival declaration in the form of an Entry Summary Declaration (ENS) to Customs authorities at the first point of entry to the European Community.

This information is used to perform a near real-time risk analysis which will inform Customs authorities on how to deal with individual shipments, reducing the risk of dangerous or suspicious shipments being admitted.

The Information must be transmitted timely as described in the regulations:

http://ec.europa.eu/ecip/security_amendment/index_en.htm.

12.5 Designated Transportation Carriers

Freight Paid by BorgWarner

For freight paid by BorgWarner, Suppliers will utilize carriers designated by BorgWarner including third party logistics service providers (and utilize their portals or other instructed method of communication). Suppliers are expected to ship as required to meet BorgWarner releases and present proof of delivery if requested by receiving location. If a Supplier fails to meet these expectations, then the Supplier is responsible for associated costs, including premium transportation, to recover.

Freight Paid by Suppliers

For freight paid by Suppliers, Suppliers are expected to ship as required to meet BorgWarner releases and follow BorgWarner delivery instructions. If a Supplier fails to meet these expectations, then the Supplier is responsible for associated costs, including premium transportation, to recover.

Special Circumstances

Under special circumstances, BorgWarner reserves the right to impose the use of BorgWarner designated transportation carriers.

Performance and Processes Issues

13 Supplier Performance Metrics

13.1 General

This Supplier Performance Rating System presents the criteria that will be used by BorgWarner to rate production material Suppliers. Suppliers shipping to more than one BorgWarner plant will receive individual ratings from each Business Unit and supporting detail from each plant. Ratings will be published on a monthly basis using the following categories. A combined rating score will be generated by BorgWarner Business Unit—using the cumulative performance across all plants within that Business Unit.

- Quality - 30
- Delivery - 30
- Cost Management - 30
- Sustainability Performance - 10
- Launch Performance - 10

13.2 Quality Performance

Complaint on Purchased Material (CPM) – 20 Points

- The expectation is “0” CPMs. See section 9.8 in the Supplier Manual for a detailed description on the CPM process.
- The number of CPM’s for each month will be shown on the scorecard summary. A Supplier with a total of 0 CPMs over the previous six month will receive the full 20 points as current score. E.g., a Supplier with a total of 3 CPMs over the previous six months will receive “14 points” as a current score (see table below).
- Unless otherwise specified by BorgWarner, the following scale is used for Suppliers:

Total CPM (in 6 month)	Points
0	20 Points
1	18 Points
2	16 Points
3	14 Points
4	10 Points
5	5 Points
≥6	0 Point

- Suppliers are penalized with a maximum 10 Points reduction per category:
 - Repeat/Chronic quality issues:
 - A repeat quality issue is:

- Defect occurs more than once
 - Defect after initial 8D is closed
 - Defect with confirmed identical root cause.
 - Defect occurs on a similar part, different machine.
- A repeat quality issue is not:
 - A repeat defect occurring before initial 8D is solved
 - A similar failure with different root cause
 - Same Supplier having a different failure.
- Chronic issues:
 - Non-conformity in the same failure mode caused by the same root cause as documented 2 times or more on previously closed CPMs.
- When a CPM triggers Supplier to be placed in “Control Shipment Level 2” (CSL2)
- Suppliers are categorized automatically as a D rating:
 - Unauthorized change and unapproved SCR (Supplier Change Request). Unauthorized changes are any changes to production components or subcontractors without approval by BorgWarner.
 - When Supplier does not have a valid Quality Certificate available in the appropriate BorgWarner system.
- Suppliers are tracked but no affect to points per:
 - PPM Calculation
 - Quality issue – Pass through defect to the customer.

Responsiveness to CPMs/8-D Closure (10 points)

- The expectation is that the Supplier will submit a response to BorgWarner with 8-D closure within 30-days. Suppliers will not be penalized if granted a Long-Term Action Pending to the 30-day period for 8-D submission, provided that the request is made within the 30-day period.
- The following scale will apply to all Suppliers:
 - 8-D closure(s) submitted within 30 days or within the long-term corrective action due date - 10 points
 - Any 8-D open for more than 30 days or past the long-term corrective action due date - 0 points.

PPM Defect Rate

- The expectation is “0” PPM. Formula: $[(\text{Total Number of Defective Parts Found}/\text{Parts Delivered in the Month}) \times 1,000,000]$. BorgWarner will count only non-conforming parts, but the Supplier must forward sort results from “in House” sorts or the full quantity will be applied to the Supplier’s PPM calculation.

13.3 Delivery Performance

On Time Delivery Score (25 points)

- The expectation is delivery of product 100% on time—the accurate quantity on time.
- Formula: Total number of deliveries on-time during the prior six-month period divided by total deliveries received during the prior six month period. The following scale will apply to all Suppliers:

100% on time Delivery	25 points
98-99% on time delivery	23 points
91-97% on time delivery	20 points
83-90% on time delivery	15 points
76-82% on time delivery	10 points
<75% on time delivery	0 points

Premium Freight Score (5 Points)

The expectation is that there is no expedited freight:

- No Supplier-induced Expedited Freight 5 Points
- Supplier-induced Expedited Freight 0 Points

13.4 Cost Reduction Performance

Cost Reduction Score (20 Points)

- The expectation is that the Purchase Order (PO) piece price is reduced by the agreed target with the respective BorgWarner Buyers.
- The following scale will apply to all Suppliers:

% Target achieved	Points	% Target achieved	Points	% Target achieved	Points
100%	20	65%	13	30%	6
95%	19	60%	12	25%	5
90%	18	55%	11	20%	4
85%	17	50%	10	15%	3
80%	16	45%	9	10%	2
75%	15	40%	8	5%	1
70%	14	35%	7	0%	0

Other Performance Objectives (10 points)

A Supplier can receive up to “10” points for demonstrating exceptional performance in the categories listed below:

- Commercial Alignment—Participate in framework agreement, agree to yearly Smart Targets, AIFs, BI, cost breakdowns, payment terms
Supplier implements a long- term cost reduction process and competitive quotation activities. The Supplier develops an aggressive cost saving business approach.
- Customer Support & Responsiveness
The Supplier provides a customer service response to commercial / technical / logistical issues.
- Technology, Energy Efficiency & Innovation
Supplier contributed to BorgWarner’s success by providing outstanding innovations, which gives BorgWarner a technological advantage.
- ISO 50001 Attainment
- Completion of Conflict Minerals, EMRT, Prop 65, etc. data requests

The BorgWarner Commodity Manager or Buyer is responsible for establishing a Supplier’s performance objective score with the input of Supplier Development, Program Management, Quality, and Engineering.

13.5 Sustainability Performance

Sustainability Performance (10 points)

A Supplier can receive up to 10 points based on their response to the Sustainability Self-Assessment Questionnaire (SAQ) which is designed to indicate and verify Supplier compliance on Sustainability topics including business ethics, environment, human rights and working conditions, health and safety, and responsible supply chain management. The questionnaire is in line with the Automotive Sustainability Guiding Principles Industry to Enhance Performance in The Supply Chain. The questionnaire must be completed on the NQC Supplier Assurance system and shared with BorgWarner using the provided invitation code to earn credit. This performance measure is broken into two elements:

1. SAQ Performance Score (8 points)

Measure of management systems in place for business ethics, environment, human rights and working conditions, health and safety, and responsible supply chain management.

SAQ Score % achieved	Points
80%-100%	8
60%-79%	6
40%-59%	4
0%-39%	2
SAQ not completed / no score	0

2. Greenhouse Gas Reduction Target Questions in SAQ (2 points)

Verified targets for greenhouse gas emissions reduction in the Supplier’s own operations and in its supply base.

SAQ Question	Supplier Response	Points
Does your company set Greenhouse Gas reduction targets? (SAQ question #15)	Yes	1
Does your company have emission reduction targets for your upstream supply chain emissions (scope 3)? (SAQ question # 15b)	Yes	1

13.6 Launch Performance

Launch Performance Score (10 points)

- A Supplier who is running APQP projects can achieve up to an additional 10 points based on their Launch Performance (APQP and PPAP) in reference to APQP projects managed in the BorgWarner e-APQP Portal.
- The expectation is APQP Task Performance and on-time PPAP 100% within Program Need Date in New and Resource Launch Programs.
- It will be updated Monthly and Rolling Months are not applied and Closed APQPs are not counted in Launch Performance.
- Suppliers not launching (no open APQPs) will not be scored with these additional 10 points.
- Suppliers who have closed APQP projects and have no active running APQP projects display historical data as reference but will not be scored with these additional 10 points.
- If a Supplier is receiving zero points on either Launch Performance - APQP Tasks Performance or On Time PPAP, automatically, the total points for Launch drop to zero.
 - APQP Tasks Performance from BorgWarner e-APQP Portal (6 points)
Combination of number of Past Due APQPs and how long is delayed completion.

APQP Tasks Performance (iValua)	6
- 100% On Time APQP (Zero Past Due)	6
- 99%-90% On Time APQP (1% - 10% Past Due or Completed with over 14 days delay)	3
- Below 90% On Time APQP (Over 11% Past Due)	0

- On Time PPAP (4 points)
Evaluated on the specific task 4.6 (PPAP submission) from BorgWarner e-APQP Portal and combination of being late and for how long delay.

On Time PPAP Submission / Approval at 4.6 (BorgWarner e-APQP Portal)	4
- 4.6 Submission / Approval are done within Program Need Date	4
- 4.6 Submission / Approval are done delay (Max 14 days delay vs Program Need Date)	2
- Past Due or 4.6 Submission / Approval are done delay (Over 14 days delay vs Program Need Date)	0

- How to calculate % of Past Due and Completed with delay:

$$\% \text{ Past Due} = \frac{\# \text{ of total APQP tasks are not submitted and approved on program need date}}{\text{Total \# of APQP tasks for active running APQP projects (1 APQP project has 50 APQP tasks)}}$$

Completed with delay = how long day is delayed vs Program need date

Phase	Task Name	Program Need Date	Completed Date	Owner Name	# of days left	Task Progress Status	Supplier Company
Phase 3	3.1 Process Flow	2022-01-29	2022-03-02	XXX	-32	Completed with over 14 days delay	XXX

13.7 Supplier Balanced Scorecard

Balanced Scorecard Content

The Supplier Balanced Scorecard addresses Quality, Delivery, and Cost Performance data. The Scorecard will be used as a Business Unit Scorecard with supporting detail from each plant.

Issuing the Scorecards

Suppliers are able to view their Balanced Scorecards on a daily basis via the BorgWarner ExtralCE. Suppliers that have not shipped product within the previous six months will not be issued a Supplier Balanced Scorecard.

Review of Performance Scores

Suppliers are expected to review their Balanced Scorecards on a monthly basis. In the event that the Supplier believes that the Scorecard contains inaccurate data, the Supplier should immediately notify the appropriate BorgWarner Supplier Representative for discussion, review and resolution.

13.8 Supplier Rating System

A Level (Score > 90)

Supplier is a preferred Supplier for new business (within commodity).

B Level (Score 89-75)

Supplier is approved for new business opportunities.

C Level (Score 74-60)

Sourcing opportunities are limited based on reasons for status. Effectiveness and suitability of Supplier system should be analyzed for root cause(s) and corrective action. Improvement plans may be required for review with BorgWarner.

D Level (Less than 60)

Supplier is not eligible for new business award without Senior Management review at BorgWarner. Corrective action plans should be reviewed with BorgWarner Management on a pro-active basis to maintain the business relationship.

13.9 Scorecard Colors Rating

Characteristics	Green	Yellow	Red
Quality (30 Points)	23 to 30 points	18 to 22 points	0 to 17 points
Delivery (30 Points)	23 to 30 points	18 to 22 points	0 to 17 points
Cost (30 Points)	23 to 30 points	18 to 22 points	0 to 17 points
Launch Performance (10 extra Points)	10 points	5 to 9 points	0 to 4 points
Sustainability (10 Points)	7 to 10 points	4 to 6 points	0 to 3 points

14 Process Audits—Post SOP

14.1 Verification of Conformance

BorgWarner and its Customers reserve the right to verify product and process conformance according to the requirements at the Supplier's and subcontractor's premises—on a scheduled or unscheduled (event-orientated) basis or frequency.

14.2 Auditor Access

Suppliers are to ensure the auditors have full access to all BorgWarner product related processes and documents: e.g., FMEA, control plan, measurements, sub-Supplier matrix, etc.

These audits will be based on using the current BorgWarner Supplier Process Audit Forms.

15 Enterprise Approved Sourcing List (EASL) Process & Directory

15.1 General

The Enterprise Approved Sourcing List (EASL) is a list that contains all direct material Suppliers and their corresponding sourcing classification. The list is managed at an enterprise level. The EASL identifies the main following information:

- Supplier DUNS number, Supplier name
- Commodities Approved for sourcing
- Material
- Supplier classification: Approved/Not Approved/Under Development
- Business Unit usage
- Supplier contacts for Conflict Minerals (if applicable), Sustainability, enabled to access BorgWarner Supplier Portal (ExtralCE)
- Suppliers will not be sourced production business from BorgWarner unless they are on the BorgWarner EASL. A Supplier can only be added to the BorgWarner EASL through the approval of a classification recommendation by a BorgWarner unit (15.2).

15.2 Supplier Classifications

The Supplier classification links the Supplier to the commodity in the EASL. Below are the definitions of a Supplier's classification:

Under Development

A Supplier under development is an approved Supplier who is conditionally approved for sourcing by a BorgWarner unit. A Supplier under development is a Supplier who is new to BorgWarner and is currently in a launch mode. Upon successful launch, the classification is changed from Under Development to "Approved." Suppliers who have achieved "Approved" cannot be placed "Under Development" at a later date for the same commodity classification.

Approved

A Supplier with an "Approved" classification is eligible for sourcing for all BorgWarner units. To become eligible for an "Approved" classification, the Supplier must receive an "Approved" recommendation by a BorgWarner Business unit.

- A Supplier currently supplying direct material to BorgWarner must receive a Business Unit "Approved" recommendation for the Supplier to be classified as "Approved" for new sourcing.
- A new Supplier must have an acceptable Supplier Assessment and a Business Unit "Approved" recommendation for the Supplier to be classified as "Approved" based on a successful launch.

Once the Supplier receives an "Approved" classification recommendation, one of following approvals must be obtained prior to adding the Supplier to the EASL:

- Enterprise Managed Commodity—Enterprise Commodity Manager (ECM)
- Other Commodities—Business Unit VP.

15.3 New Business Hold (NBH)

At times the performance of a Supplier may be so problematic that actions above normal Supplier Development may be required. In these situations, the BorgWarner Global Supplier Management team may choose to place a Supplier on New Business Hold (NBH). The purpose of New Business Hold is to signal to the Supplier that significant and immediate change and improvement is needed. It is the intent of BorgWarner Global Supply Management to work with the Supplier to resolve the performance issue(s) so that normalized business relations can occur.

Placing Suppliers on New Business Hold

A Supplier can be placed on New Business Hold by any Business Unit or Enterprise Commodity Manager and approval/concurrence by the BorgWarner Supply Chain Board. Supplier will be notified in writing by BorgWarner if they are placed on NBH.

A Supplier may be recommended for New Business Hold for any of the following issues:

- Chronic or severe quality, delivery, or cost issues
- Unauthorized process changes
- Unethical business practices
- Financial distress
- Any issue not listed above that significantly impacts a Business Unit adversely.

New Business Hold Ramifications

- Supplier cannot be awarded new business until established exit criterion has been met and NBH status has been removed.
- New Business Hold may affect all locations and divisions of a Supplier on New Business Hold.
- A Supplier on New Business Hold could be placed on New Business Hold for all BorgWarner Business Units or for a specific Business Unit.
- At the Business Unit and Enterprise Commodity Manager discretion, Suppliers on New Business Hold may be permitted to participate in BorgWarner quotations and continue to launch business awarded prior to being placed on New Business Hold.
- De-sourcing may be necessary if the Supplier is not able to meet exit criteria.
- Supplier may be required to notify their Quality Registrar of their NBH unless NBH is for financial reasons or issues.

BorgWarner Champion Responsibilities

- Immediately after written notification, the BorgWarner Champion will schedule a meeting with the Supplier and Supplier Development to review improvement expectations, exit criteria, and timing to exit New Business Hold.
- If required, the BorgWarner Champion will also verify that the Supplier has notified their ISO/IATF registrar of being placed on New Business Hold if the New Business Hold is not related to financial issues.

- It is the responsibility of the BorgWarner Champion to assist the Supplier in meeting their exit criteria and timing. The BorgWarner Champion is also responsible for communicating to BorgWarner GSM the Supplier's progress in meeting exit criteria and timing.

New Business Hold Target Exit Date

Suppliers on New Business Hold will be reviewed based on the timing agreed at the time the Supplier is placed on NBH. At that time, the status will be updated based on the completion of milestones as identified by the Exit Criteria or recommendation of the Supply Chain Board.

Exit Criteria

Upon successfully completing the established exit criteria to the satisfaction of the BorgWarner Champion, the BorgWarner Champion will recommend to the Supply Chain Board that the Supplier's status be changed from "New Business Hold" to "OK To Source." The BorgWarner Champion will notify the Supply Chain Board by completing the Enterprise EASL Add or Change Form.

Upon approval of the Supply Chain Board, the BorgWarner Champion will issue a letter to the Supplier notifying them of status upgrade.

16 Supplier Conferences/Summits

Periodically, Suppliers will be requested to attend BorgWarner sponsored conferences or summits. These conferences/summits may be regional in nature or Business Unit focused. Supplier participation and support of these conferences/summits is required.

17 Record Retention

The control of records will satisfy all regulatory, BorgWarner, and Customer requirements. These records must be available for review by BorgWarner upon request and retained for periods of time specified by BorgWarner.

18 Requirements for Electronics Suppliers

18.1 Scope

The electronic content of vehicles is high and increasing, and therefore plays an increasing role in determining the overall quality and reliability of the vehicle. This section gives clarification of the general Supplier quality requirements with respect to electronics.

The following requirements apply to BorgWarner Suppliers of electronic assemblies, regardless of the design authority. They are applicable unless specifically superseded by the product drawings or contractual agreements with BorgWarner.

18.2 Component Qualifications

To achieve the required product quality and reliability, AECQ-100/101/200 qualifications are required on all electronic components, where available, and will be stated on the Bill of Materials or related part drawings and specifications. Corrosion-prone electrode by sulphurated gas (corrosion on Ag electrode by sulphurated gas, etc.) is not allowed in components that have an integrated circuit. The structure is so designed that the electrode is not exposed and protected by an appropriate circuit board coating.

18.3 Workmanship Standards

The acceptance criteria and allowable rework processes are defined for electronic assemblies and associated parts. Unless otherwise stated on the product drawings, the following workmanship standards are required:

- PCB substrates
- IPC-A-600 Acceptability of Printed Circuit Boards, Class 3 (track welding is not allowed)
- IPC-TM-650 Test Methods Manual
- PCB Assemblies
- IPC-A-610 Acceptability of Electronic Assemblies, Class 3
- J-STD-001 Requirements for soldered electrical and Electronic Assemblies (The IPC standard takes precedence where the above standards conflict).

Rework within the above standards is only allowed if prior agreement is given by BorgWarner. Rework outside of the scope of these standards must be agreed by BorgWarner on a case-by-case basis.

18.4 Printed Circuit Boards (Printed Wiring Boards)

- The Printed Circuit Board (PCB)/Printed Wiring Board (PWB) substrate/laminate is recognized as a complex component of the overall PCB assembly. The bespoke design and lengthy batch manufacturing process have unique risks. It is the responsibility of BorgWarner's electronics Suppliers to ensure that these risks are managed.
- All PCB laminate Suppliers on BorgWarner products are required to have IATF16949 certification and have a Control Plan covering their processes.

- All PCB Suppliers are required to meet BorgWarner qualification and tests requirements.
- PCB laminate Suppliers are required to test all PCB batches according to the agreed Control Plan and using the methods defined in IPC-TM650.
- The PCB Suppliers are required to retain microsections evidencing these results for a minimum of five years.

18.5 Traceability

The effective management of traceability is critical to reducing the impact of defective product, both in the supply chain, and in the field.

In addition to the IATF16949 requirements, Suppliers of electronic assemblies to BorgWarner must:

- Demonstrate lot traceability of all electronic components
- Apply serial number traceability to all BorgWarner work in progress
- Apply serial number traceability to all finished product supplied to BorgWarner
- Ensure traceability of all inspection and test records to the individual unit
- Ensure retrieval of records within 24 hours.

BorgWarner reserves the right to audit Supplier traceability systems at any time.

18.6 Use of Alternative Components

- Electronic products are validated with components from specific manufacturers. Any variation from this validated condition risks production and field issues.
- BorgWarner Suppliers are responsible for ensuring that the specified component manufacturers and part numbers are maintained and prevent unauthorized alternatives and counterfeits from being used.
- Suppliers of electronic assemblies to BorgWarner must not vary from the specified component manufacturer and part number without the formal permission of BorgWarner.
- In the event of advice from Supplier on restricted/limited supply of components, Suppliers must inform BorgWarner immediately to trigger qualification of alternative components.
- Where BorgWarner has given qualification of alternative components, the Supplier must maintain traceability of the use of such alternatives, and NOT mix alternatives within one production batch of the finished product.
- As well as component changes, any change of process materials such as fluxes, solder paste, or solder bar are classed as a notifiable change.

18.7 Alternative Sources of Components

- The approved sources of electronic components are either direct from the manufacturer, or through their nominated distributors. There is a greatly increased risk of counterfeit components when procuring from alternative sources.

- Suppliers of electronic assemblies to BorgWarner proposing to source components from alternative sources (i.e., brokers, non-approved distributors, etc.) must gain formal approval from BorgWarner.
- In such an event, a validation plan must be submitted, agreed, and performed, to confirm that the components are genuine and within specification. The agreed validation may include visual, functional, or other evaluation methods.

18.8 Component Shelf Life

- Manufacturers may define the shelf life of components, solder paste, adhesives, etc. to ensure that they can be processed to achieve the required results.
- Any manufacturer's recommendations regarding component shelf life and storage must be followed by the Supplier. Any deviation from these recommendations requires approval from BorgWarner.
- In such an event, a validation plan must be submitted, agreed, and performed, to confirm that the components are acceptable for use.

18.9 Handling & ESD Protection

- Suppliers must implement an ESD control system, based on ANSI S20.20, or if applying an equivalent standard, this must be agreed with BorgWarner.
- Suppliers must follow all component packaging, handling, and ESD requirements stated by the manufacturers, plus any in-process handling requirements to achieve the required quality levels.

18.10 PCBA Tooling Qualification

All tooling used on PCBs and PCB assemblies must be verified before use, to confirm that strain levels are within acceptable limits (as defined in IPC-9704). Unless otherwise agreed with BorgWarner, this limit is 500 $\mu\epsilon$.

18.11 Software Obligations during Product Lifetime

Suppliers with software parts have a warranty obligation to provide fixes and/or patches, along with new versions or updates of the software during the entire product lifetime cycle, including the spare part period.

Software Quality Assurance Process

- Suppliers of product related software, or products with embedded software shall provide evidence of implementation and maintenance of a software quality assurance process for their products upon request.
- Suppliers of product related software agrees to have ASPICE report or ASPICE self-assessment on similar product before, during and after software development phase.
- ASPICE level 2 needs to be fulfilled before SOP; lighthouse projects cannot be considered for assessment quote.
- All tools used for software development and supporting processes (e.g., requirement or configuration management systems) need to be certified for use in automotive

industry. Tools, software, and hardware used for ASIL-related products need to fulfill ISO 26262 standard.

- The network needs to be protected against cyber-attacks. The Supplier agrees to have reviews from internal and external BorgWarner experts to control security and data integrity.

BorgWarner Rights to Use Software, including Licensed Software

The term "use" includes the right:

- To copy, install, transfer, store, load, test, or execute the software on all available systems including the right to compile the software, or parts of it, for other products.
- To combine, integrate, or embed the software in other software, or in hardware intended for use in or in conjunction with a BorgWarner product (hereafter referred to as "products"), nevertheless that the product will not be developed by BorgWarner internally.
- For calibration, configuration, and parameterization of the software.
- To use the software as part of a BorgWarner product or together with BorgWarner products for demonstration.
- BorgWarner has the right to make copies not only for backups.

Supplier Obligation to Use Software Tied to Specific Hardware

- Software shall only be used with specific hardware or only be used in connection with specific hardware.
- The software Supplier has to provide additional software, if necessary, to load, install and run the software to the hardware.

Software Documentation

BorgWarner has the right regarding all documentation provided by the Supplier, inclusive of the operating manual, to:

- use
- duplicate (also digital), copy, reprint, scan
- translate
- modify
- disseminate
- and otherwise dispose.

Sub-Licensing

BorgWarner has the right to grant sub-licenses to the Licensed Software and to the corresponding documentation to "Authorized Third Parties." BorgWarner has the rights:

- a) To use the Licensed Software in connection with all BorgWarner and/or customer project(s).
- b) For developing, combining, and/or integrating the Licensed Software with or in other products from BorgWarner or customer, responsible persons like systems developers / integrators.

- c) To render repair, maintenance, or similar services for the BorgWarner Product, with third parties which require a right to use the Licensed Software.
- d) a) – c) Also includes customers of BorgWarner and/or any of the customer's affiliates which require a right to use, market, or disseminate the Licensed Software as part of a BorgWarner Product.
- e) a) – d) This right also includes the right to grant end users corresponding rights.

Obligations During the Warranty Period

Throughout the warranty period the Supplier shall provide to BorgWarner, without entitlement to any separate remuneration, unless explicitly otherwise agreed in writing in the respective individual transaction agreement, the following services:

- a) Workarounds
- b) Error corrections
- c) Fixes and patches
- d) Updates
- e) a) – d) To remedy critical errors and malfunctions
- f) All generally available new versions or updates of the Licensed Software and sub-components used by the Licensed Software
- g) All necessary information, not only with regard to error restriction
- h) Error correction and/or error environment
- i) Technical support on the telephone or via email.

Source Code

If the source code of the Licensed Software is not provided to BorgWarner, the Supplier agrees that upon BorgWarner's request, or in case of ownership change of the Supplier, or bankruptcy, it shall enter into a source code escrow agreement and deposit the source code at a renowned depository to be chosen by BorgWarner for the benefit of BorgWarner.

19 Supplier Manual Revision History

Rev	Date	Section Modified & Description of Change	Author/Editor
1	23-Aug-2006	Approved & Released for Distribution	K. Heberling
2	08-Jan-2007	Revised, Approved & Released for Distribution	D. Rusiewski
3	15-May-2008	Revised per Supplier Manual Change Log	T. Babineau
4	20-Jun-2008	Combined Sustainability section with Supplier Code of Conduct	D. Rusiewski
5	02-Oct-2008	Revised per Supplier Manual Change Log	D. Rusiewski
6	12-Feb-2010	Revised per Supplier Manual Change Log	J. Zobrist
7	21-Feb-2011	Revised per Supplier Manual Change Log	J. Zobrist
8	05-Aug-2011	4.3 Basic Working Conditions	J. Zobrist
9	05-Aug-2011	Section #13 Supplier Performance Metrics	J. Zobrist
10	31-May-2013	Revised per Supplier Manual Change Log	R. Krawczyk
11	29-May-2014	Revised per Supplier Manual Change Log	R. Krawczyk
12	29-Oct-2014	Section 3 Goals & Scope, Section 4.4 Anti-Bribery, Section 9.2 Supplier Assessments, 5.3.2 Supplier's Responsibilities	R.Krawczyk
13	21-Dec-2015	Revised sections; Section 1.1, Section 6.2.2, Section 12.1.4, and Section 13.	R.Krawczyk
14	04-Oct-2017	<ul style="list-style-type: none"> Added section 9.10 Traceability Requirements Revised and replaced ISO/TS16949 by referring to IATF16949 Added hyperlinks to Appendix A-2 	F. Farahy
15	01-Nov-2017	<ul style="list-style-type: none"> Added section 9.11 Embedded Software Requirements Removed references to the Forms GSM-F003, GSM-F014 and GSM-F016 Corrected some formatting issues 	F.Farahy
16	28-Feb-2018	<ul style="list-style-type: none"> Removed 24-month criteria (13.1) Added sustainability training requirements (4.2.3) Added CSR communication to sub-Suppliers (9.1.3) Added regulatory and statutory requirement communication to sub-Suppliers (3. Scope) Added Product Safety Requirements (9.12) Added Cleanliness Requirements (9.13) Revised PPAP re-qualification of Supplier (9.5.6) Revised Special Processing Requirements (9.7.3) 	G. Hegedus
17	03-Jul-2019	<ul style="list-style-type: none"> CAMDS & CCC added to 9.5.2.1 IMDS & CAMDS and CCC Requirements 12.1.2 Program-Specific Requirements 	D.Sundin S.Pazdera Gy.Filó

		<ul style="list-style-type: none"> • Section #18.1-11 <u>Requirements for Electronics Suppliers</u> 18.1 Scope 18.2 Component Qualifications 18.3 Workmanship Standards 18.4 Printed Circuit Boards (Printed Wiring boards) 18.5 Traceability 18.6 Use of alternative components 18.7 Alternative sources of components 18.8 Component Shelf Life 18.9 Handling & ESD protection 18.10 PCBA Tooling qualification 18.11. Software Obligations during Product Lifetime <ul style="list-style-type: none"> 18.11.1. Software Quality Assurance Process 18.11.2. BorgWarner rights of use for software, including Licensed Software. 18.11.3. Supplier obligation to use tied to specific hardware 18.11.4. Software Documentation 18.11.5. Sub-licensing 18.11.6 Obligations during the warranty period 18.11.7 Source code 	
18	10-Jul-2020	Revised sections: Section 18.2, 18.4 Added requirement: corrosion prone Electrode is not allowed / PCB qualification and tests requirements	J.Koo
21	18-Aug-2020	6.9.1 Contingency plans are revised	J.Koo
22	18-Aug-2020	9.4.3 Supplier operation plan requirement is added in Perform Run-At-Rate Requirement	J.Koo
23	05-Mar-2021	1.1 Mission and 1.2 BorgWarner Beliefs are updated	J.Koo
24	16-Mar-2021	Revised sections: Section 9.1.1, Section 9.1.3, Section 9.4.3, Section 9.5.1, Section 9.7.3 Added 9.3.2 OTS	P. Arturo
25	25-May-2021	Revised sections 6.1.1 (add “like Non-Disclosure Agreement”) and 18.11.2	J. Koo
26	21-Feb-2023	Revised chapters 4, 6, 9, 11 and 13 to incorporate European Supply Chain Directive, requirements in ESG (Environment, Social, Governance) and revised Supplier scorecard. The manual was reformatted using a simplified numbering system.	Supplier Development Council

27	9-Aug-2023	Revised chapter 4 to incorporated ESG (Environment, Social, Governance) elements	Supplier Development Council
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APPENDICES:

A-1 Acronyms & Abbreviations

3-D	Three Discipline Report (first 3 steps of an 8-D Report)
5-D	Five Discipline Report (first 5 steps of an 8-D Report)
8-D	Eight Discipline Report
AECQ	Automotive Electronics Council – Qualification
AIAG	Automotive Industry Action Group
AIF	Annual Improvement Factor
ANSI	American National Standards Institute
APQP	Advanced Product Quality Planning
ASIL	Automotive Safety Integrity Level
ASPICE	Automotive Software Performance Improvement and Capability Determination
EASL	Enterprise Approved Sourcing List
BU	Business Unit
CAMDS	China Automotive Material Data System
CCC	China Compulsory Certification
CCEE	China Commission for Conformity Certification of Electrical Equipment
CCIB	China Commodity Inspection Bureau
CPO	Chief Procurement Officer
CPM	Complaint on Purchased Material
D&B	Dunn & Bradstreet
DIN	Deutsche Industry Norm
DFMEA	Design FMEA
ECM	Enterprise Commodity Manager
EPC	Early Production Containment
ESD	Electrostatic Discharge
ESG	Environment, Social, Governance
eRFQ	Electronic Request for Quotation
eSCR	Electronic Supplier Change Request
FIFO	First In First Out
FMEA	Failure Mode and Effects Analysis
GADSL	Global Automotive Declarable Substance List http://www.gadsl.org
GSM	Global Supply Management
IATF	International Automotive Task Force
IMDS	International Material Data System

- (<http://www.mdssystem.com/index.jsp>)
- IPC-A Institute of Printed Circuits – Acceptability
- IPC-TM Institute of Printed Circuits – Test Methods
- ISO International Organization for Standardization
- ISF Importer Security Filing
- ISPM 15 The International Standards for Phytosanitary Measures, Guidelines for Regulating Wood Packaging Material in International Trade
- JIT Just in Time
- MBE Minority Business Enterprise
- MSDS Material Safety Data Sheet
- NBH New Business Hold
- OEM Original Equipment Manufacturer
- PCB Printed Circuit Board
- PFMEA Process FMEA
- PPM Parts Per Million
- PO Purchase Order
- PPAP Production Part Approval Process
- PSW Part Submission Warrant
- PWB Printed Wiring Board

- REACH Registration, Evaluation, Authorization of Chemicals
(<http://www.acea.be/index.php>)
- RFQ Request For Quote
- ROHS Restriction of the use of certain hazardous substances
http://ec.europa.eu/environment/waste/weee/index_en.htm
- RPN Risk Priority Number
- R&R Repeatability and Reproducibility
- SAE Society of Automotive Engineers
- SAQ Self-Assessment Questionnaire

- SDR Supplier Deviation Request
- SG&A Sales, General and Administration
- SOP Start of Production
- SOSP Start of Serial Production
- SPC Statistical Process Control
- VDA Verband der Automobilindustrie
- VIP Value Improvement Program

A-2 Forms

Form Number	Form Name	File Name
GSM-F001	BorgWarner Supplier Questionnaire	GSM-F001 BorgWarner Supplier Questionnaire.doc

GSM-F002	Technical Site Assessment	GSM-F002 Technical Site Assessment.xls
GSM-F004	We Are Ready Review Form	GSM-F004 We Are Ready Review.xls
GSM-F005	Supplier PPAP Check Sheet	GSM-F005 Supplier PPAP Check Sheet.xls
GSM-F007	8-D Problem Solving Form	GSM-F007 8-D Problem Solving Form.xls
GSM-F009	CS2 Assessment Form / I-Chart	GSM-F009 CS2 Assessment Form – I - Chart.xls
GSM-F012	Packaging Form	GSM-F012 Packaging Form.xls
GSM-F013	C-TPAT Supplier Status Form	GSM-F013 C-TPAT Supplier Status.doc
GSM-F017	Prototype Samples Submission Form	GSM-F017 Prototype Samples Submission Form.xls
GSM-F018	Early Production Containment Commitment Form	GSM-F018 Early Production Containment Commitment.doc
GSM-F023	Feasibility Commitment Form	GSM-F023 Feasibility Commitment Form
GSM-F024	Pass Through Characteristics Form	GSM-F024 Special - Pass Through Characteristics Form
GSM-F025	Supplier Tooling Checklist	GSM-F025 Supplier Tooling Checklist
GSM-F026	Supplier Tooling Data	GSM-F026 Supplier Tooling Data
GSM-F027	Sub-Supplier Matrix	GSM-F027 Sub-Supplier Matrix
GSM-F028	Capacity Analysis Process	GSM-F028 Capacity Analysis Process
GSM-F029	Rapid Plant Assessment	GSM-F029 Rapid Plant Assessment
GSM-F030	Anti-Bribery Due Diligence Questionnaire for Companies	GSM-F030 Anti-Bribery Due Diligence Questionnaire for Companies
GSM-F033	Cleanliness Audit Form	GSM-F033 Cleanliness Audit Form