

SUPPLIER QUALITY
MANUAL

Without restriction after printing

TABLE OF CONTENTS

1. Purpose
2. Supplier Responsibility
3. Supplier Requirements
 - Quality
 - Restricted Use of Hazardous Substances
 - Technological Potential
 - Economic and Financial Management
 - Commercial Attendance
 - Environment
 - Health and Safety
 - Social Responsibility
4. Supplier Development
5. Symbology for Special Characteristics
6. Sample Approval
 - Direct Materials / Production Services
 - Advanced Product Quality Planning (APQP)
 - Process and Equipment Capability; Process Statistical Control (PSC)
 - Failure Mode and Effect Analysis (FMEA)
 - Measurement System Analysis (MSA)
 - Item Certification Process
7. Sample Identification Label
8. Material Identification
9. Packaging
10. Receipt Inspection
 - Receipt Inspection Reduction
 - Good Preferential
 - Very Good Preferential
 - Excellent Preferential
 - Condition for Disqualification in Assured Quality
11. Noncompliance Treatment
12. Controlled Shipment (CS)
 - CS Level I Methodology
 - CS Level I Procedure
 - CS Level II Methodology
 - CS Level II Procedure
13. Contingency Plan
14. Retention Time
15. Electronic Trade Capacities
16. Confidentiality

17. Supplier Performance Monitoring (SPM)
 - Quality Performance Index (QPI)
 - Supplier PPM Index (SPI)
 - Batch Supply Index (BSI)
 - Response Deadline Compliance (RDC)
 - Delivery Punctuality Index (DPIN)
 - Delivery Compliance Index (DCI)
 - Purchasing Performance Index (PPI)
 - Supplier Performance Monitoring Final Result
18. Quality Indices
 - Item Quality Monthly Index (IQMI)
 - Item Quality Accumulated Index (IQAI)
 - Supplier Quality Monthly Index (SQMI)
 - Supplier Quality Accumulated Index (SQAI)
19. Audits Conducted by Brascabos
20. Continuous Improvement
21. Lean Thinking
22. Supplier Classification
 - Excellent Supplier
 - Special Supplier
 - Basic Supplier
 - Unacceptable Supplier
23. Recognition Management
24. Supplier Awarding
25. Supplier Deactivation

1. Purpose

This Manual describes the Policy and Directives of the Integrated Management System of Brascabos Componentes Elétricos e Eletrônicos Ltda. to its Suppliers, aiming at creating a portfolio of Suppliers globally competitive.

The main purpose is to clarify, regulate and improve the relationship between Brascabos and its Suppliers with regard to the development of new / changed items, services and activities related to quality, as well as to show how its quality performance and hazardous substance control is monitored. All this is done through the application of standardized methodologies established by Brascabos. These methodologies allow:

- Systematization of the identification and development of suppliers;
- Continuous improvement in the quality of products / after sales assistance;
- Permanent technological evolution;
- Total reliability of quality performance and hazardous substance control, under continuous monitoring, enabling the entry of products in Brascabos under the “Assured Quality” system;
- Continuous improvement of productivity and elimination of wastes throughout the chain, with consequent reduction of costs;
- Promote the use of materials, processes and products whose environmental impact complies with the laws in effect;
- Social Responsibility.

This way, all the information required for the Suppliers to have an overall understanding of how Brascabos selects, develops and monitors its Suppliers are described in this Manual.

The Supplier is responsible for disclosing this manual in all the areas that are directly or indirectly affected by the policies and directives established herein, as well as the sub-suppliers.

2. Supplier Responsibility

The Supplier is responsible for:

- Supplying only products as specified in drawings, standards and specifications;
- Supplying only products according to the requirements for restriction of Brascabos hazardous substances;
- Reducing the indices of rejects (internal and external) and the indices of rework (internal and external);

- Using appropriate packaging in order to guarantee the integrity of the products delivered at Brascabos;
- Conducting the deliveries according to the Brascabos schedule;
- Correctly identifying the items to be delivered with the Material Identification Label, containing the data required by Brascabos, in order to guarantee the best form of traceability;
- Keeping Brascabos up to date on all information pertaining to its Management System as well as on the certificates issued by external certification bodies or similar.
- Informing Brascabos, in ample time, of the accidental changes production processes and/or products in order to prevent eventual negative impacts on the reliability and/or performance of the products supplied in the Brascabos production and/or customer production processes.
- Obtaining prior approval from Brascabos for intentional changes made by the supplier in designs, process and/or raw material;
- Following up and giving adequate support to the quality audits scheduled and conducted mutually by Brascabos;
- Elaborating and implementing corrective and preventive action plants to eliminate the cause(s) of noncompliance;
- Providing efficient and effective technical assistance whenever requested;
- Being committed to meet the current government requirements related to occupational health, safety, environment, social responsibility, toxic and hazardous, electric and electromagnetic materials, patents and similar facts, according to regulation in effect in the country that manufactures and/or sells, being fully responsible for eventual lawsuits, in addition to specific requirements of Brascabos when these are applicable;

Note: The sending of samples and quotations to Brascabos implies in full acceptance and commitment toward the meeting of the requirements described in this Manual.

3. Supplier Requirements

The Supplier must perfectly understand Brascabos' requirements so that both can exceed the expectations and anticipate the needs of the final consumer.

If there are requirements in this manual not applicable to a certain supplier, these should be agreed upon between the Purchasing and Supplier Quality Assurance departments.

Brascabos considers the following to be fundamental requirements of the supplier:

3.1 Quality

To have a structured and implemented Quality System that assures the production of products or services according to Brascabos' needs and requirements, as described in item 6. Majority of the requirements is common to recognized international quality standards, such as: ISO 9001, latest version or IATF 16949, latest version;

To also have an effective technical assistance for the raw material or service provided after the sale, being responsible for the quality during its validity.

3.2 Restriction of Hazardous Substances

To adapt itself to the level defined by the risk assessment for risk of contamination and restriction of hazardous substances.

BRASCABOS has Specification for Restriction of Hazardous Substances (BC_1064), available in the company's website, which sets limits for substances in the composition of its products.

For BRASCABOS, products that meet this specification are considered HSF (Hazardous Substance Free). Products that do not meet the tolerance limits of the specification are considered HS (Hazardous Substance).

HS products are not accepted by BRASCABOS.

These substances are controlled through risk analysis, in which the criticality of the raw material and production process are considered with regard to contamination by hazardous substances. From this analysis, the controls for each supplier are defined, which may include:

- RoHS certificate requirement from supplier third party per company
- supply of regular chemical test reports of the item supplied
- audits

3.3 Technological Potential

Systematically present products with high performance, with clear evidences of pro-activity in the constant search for innovations that result in the continuous improvement of the items supplied.

3.4 Economic and Financial Management

Brascabos wishes for its Suppliers to present all the necessary documents that evidence their status with regard to finances, concept in the market, legal restrictions, fiscal aspects, payments, etc, according to the Supplier Development Report – RDF (BC_1001).

3.5 Commercial Attendance

Brascabos wishes for its Suppliers to have flexibility for rescheduling, delivery within the agreed term, in the exact quantity and to practice competitive prices.

3.6 Environment

Brascabos wishes for its Suppliers to take part actively in the protection, preservation and, where necessary, eradication of practices harmful to the Environment. At the same time, it expects its Suppliers to be able to assume liability for eventual environmental impacts related directly or indirectly to their production processes. This stance, appropriate by those who understand their role in the transformation of sustainable development, must be in the management of the company and extend to the other employees, policies, processes, standards and practices to be developed by the Supplier in its entire chain of production.

3.7 Health and Safety

Brascabos wishes for its Suppliers to fulfill the Legislation, Agreements and Collective Bargaining Conventions, with their established norms and parameters, following the standard of their sector of operation and the cares with health and safety standards in working conditions.

3.8 Social Responsibility

Brascabos expects its suppliers to recognize the importance of an operation with Social and Environmental Responsibility, adopting practices that are coherent with their values. These practices must include internal publics, sub-suppliers, government and society.

4. Supplier Development

The Supplier development process is conducted according to the type of Supplier to be developed. The development is the responsibility of the purchase sector and is conducted according to the Brascabos Quality System Procedures.

5. SYMBOLOGY FOR SPECIAL CHARACTERISTICS

Critical Characteristics



e.g.:

12.1 ±0.1

Safety / Regulatory Characteristic



6. SAMPLE APPROVAL

This process consists of the sending, by the Supplier, of all the documentation required by Brascabos so that it can supply the item and/or service required.

6.1 Direct Materials / Production Services

Below are the requirements for the Supplier of this type of material to submit the samples of a product, material or component and to obtain approval for a regular supply. Brascabos requires that its suppliers follow the systematic described below, unless agreed otherwise between the parties involved.

6.1.1 Advanced Product Quality Planning (APQP)

Brascabos recommends that the development comply with the APQP systematic based on APQP Manual (AIAG), latest version, assuring that all the necessary actions will be performed in the required time.

6.1.2 Process and Equipment Capability; Static Process Control (SPC)

Before clearance for production, the Supplier must demonstrate that the capability of its processes and equipment suits the critical characteristics, based on CEP Manual (AIAG), latest version (meeting at least $C_p/C_{pk} \geq 1.33$ or $P_p/P_{pk} \geq 1.67$, or according to the specific requirements of the components / parts described in their respective drawings or specifications).

In the event that one or more characteristics do not meet this requirement, the Supplier must elaborate an action plan and subject it to Brascabos' approval before the start of supply.

6.1.3 Failure Mode and Effect Analysis (FMEA)

Set of systematic activities intended to recognize and assess the potential failure of a product or process and the effects of this failure, identifying actions that can eliminate or reduce the possibility of occurrence of a potential failure, documenting the entire process based on FMEA Manual (AIAG). The focus of the FMEAs must always be on the design, of both the product and the product realization process.

The main objectives of the FMEA are:

- Concentrate a thinking of Total Quality, aiming at Continuous Improvement through reduction of risks of failure;
- Reduce the product cost, making it more competitive;
- Promote integration and multifunctional work, through multifunctional teams;
- Document and disclose the risks related to the product development;

- Identify possible failures and classify their defects;
- Identify the Special Characteristics (significant and critical);
- Classify possible design or process deficiencies;
- Help focus on the prevention and elimination of product or process problems that may occur.

One of the foremost points for successful implementation of an FMEA program is to conduct it in the most adequate moment. This means to “act before the event occurs” and not to perform a “post-fact” exercise.

6.1.4 Measuring System Analysis (MSA)

Before sending parts for serial production, the Supplier must analyze its measuring equipment and instruments through a study based on the requirements described in the MSA Manual (AIAG), latest version.

6.1.5 Item Certification Process

The approval of production part samples must comply with the Supplied Item Development systematic (DIF – BC_1005) or PSW, based on IATF 16949 and the PPAP Manual (AIAG), latest version, which is used to determine if all the design requirements, standards and specifications are duly contemplated by the Supplier, and to verify if the Supplier process has the capacity to produce parts that meet these requirements in the normal production phase.

The standard level of submission of the DIF/PSW is level 3, unless documented otherwise with Engineering, specified in the Supplied Item Development (DIF – BC_1005) or PSW and the Item Requirements List (BC_1004) – provided duly authorized by the customer.

For greater details, consult the latest version of the PPAP manual (AIAG).

Any change in the conditions presented at the time of approval requires a new submission, whose criteria and coverage will be defined by Brascabos, based on data described in the latest version of IATF 16949, of the PPAP manual. Any noncompliant situation may lead to suspension of the approval previously granted.

Approval of the DIF/PSW is mandatory for the start of regular supply of a material / component.

When all the necessary approvals have been made, Brascabos will adequately inform the Supplier.

7. Sample Identification Label

The samples sent for submission must be identified with standard label (ID_1001), with the information:

- Supplier Name;
- Part Description;
- Supplier Code;
- Brascabos Code;
- Drawing Review Number;
- Tool / Cavity Number;
- Sample Quantity;
- Invoice Number;
- Receiver (name, area and phone);
- Manufacturing Date;
- Sender (name, area and phone).

The Supplier must request to the Brascabos Quality Engineer for a sufficient quantity of labels to complete the parts submission (if necessary).

8. Material Identification

The batches supplied to Brascabos must be identified with appropriate label, in order to enable later tracking, bearing the following information:

- Brascabos and Supplier Code;
- Batch Number;
- Quantity;
- Manufacturing Date;
- Item Description;
- Barcode;
- Invoice Number;
- HSF Description.

In addition to the mandatory information, the invoice must bear the following information:

- Purchase Order Number;
- Order Number;
- Brascabos and Supplier Code;
- HSF Item Status.

9. Packaging

The design of packaging for products or parts sent to Brascabos is the Supplier's responsibility, unless defined otherwise between the parties involved. This packaging must undergo approval at Brascabos in order to verify its full compliance with the Brascabos process with regard to transportation, movement and storage of the raw material, guaranteeing perfect integrity of the parts.

The Supplier must send its products in defined packaging only, which must bear, in all the units, the label according to the specification described above.

Any change in the packaging may only be made with Brascabos' approval.

10. Receipt Inspection

After approval of the DIF/PSW, a Supplier will be qualified to start regular supply of batches to Brascabos. The batches supplied will be subjected to the receipt inspection system in 100% of the batches, made by sampling, according to requirements specified in the Examinations / Components of Examinations (receipt control plan) to be verified. The management of approval / rejection of the controlled batches is performed for each quality and control characteristic of the hazardous substances.

Brascabos adopts the "Zero Defect" philosophy for all the components used.

10.1 Receipt Inspection Reduction

Aiming at optimizing costs, the skip-batch technique is used to reduce the frequency of receipt inspection of materials from Suppliers with high quality levels.

The skip-batch is only applied to Suppliers that are certified by ISO 9001, latest version, or at least classified as Special Potential in the Audits.

The skip-batch varies according to the item's criticality, as described below:

➤ **CRITICALITY X:** Materials and components considered strategic in function of their application in the process and/or product, or for safety and functional reasons of the final product. E.g.: terminals, connectors, insulators, copper rod, electric conductors and cables, printed circuit boards (LEDs, diodes, capacitors and resistors), lamps, sensors, on/off switches, flat-cable, injected plugs.

➤ **CRITICALITY Y:** Materials and components considered important in the performance of the final product. E.g.: heat-shrinkable pipe, tie belts, fiberglass pipe, separators, passage guides.

➤ **CRITICALITY Z:** Generic auxiliary materials and components, without direct influence in the final product. E.g.: labels, accessories, packaging and others not included in the previous classes.

The item qualification must initially fit into the Good Preferential status, later being classified as Very Good Preferential and Excellent Preferential (item in Assured Quality) according to its evolution. Brascabos will inform the Supplier in advance when the item becomes Assured Quality).

10.1.1 Good Preferential: the PPM of the Supplier of the item must be within its annual goal stipulated by Brascabos and have 10 batches inspected and approved;

10.1.2 Very Good Preferential: the PPM of the Supplier of the item must be within its annual goal stipulated by Brascabos and have 3 batches inspected and approved;

10.1.3 Excellent Preferential: the PPM of the Supplier of the item must be within its annual goal stipulated by Brascabos and have 2 batches inspected and approved. When the item is classified in this status, it will undergo an inspection every 12 months.

Note: Regardless of the Receipt inspection activity, the Supplier is fully responsible for the quality of the goods supplied.

10.1.4 Table – Inspection Criteria for Assured Quality

INSPECTION CRITERIA FOR ASSURED QUALITY			
Criticality	Good Preferential	Very Good Preferential	Excellent Preferential
	Inspection w/ every	Inspection w/ every	Inspection w/ every
X	20 batches	30 batches	Every 12 months
Y	30 batches	40 batches	Every 12 months
Z	40 batches	50 batches	Every 12 months

10.2 Condition for Disqualification in Assured Quality

Items with safety and functional anomaly, causing line interruptions in Brascabos and its customers, regardless of the range (Good, Very Good and Excellent Preferential) will be disqualified from Assured Quality, returning to inspection per batch.

The item will return to Skip-batch if during 10 batches, there are no quality problems. The counting only starts after conclusion of the improvement actions for the anomaly in question. The item will return to the first qualification stage defined and not to the stage in which it was found.

11. Noncompliance Treatment

Upon submission of materials to Brascabos that do not meet the specifications and application, the treatment will be as follows:

- A Noncompliance Report (RNC – BC_3002) will be opened to treat the anomaly, which will be sent to the Supplier. The containment plan must be submitted and executed not later than 24 hours and the permanent actions in 5 days. Both approved by Brascabos;
- When necessary, the Supplier must send a qualified representative to solve the problem;
- When necessary, the Supplier must allow the presence in its establishment or in the establishment of its sub-contractor of a Brascabos representative to take part in the investigation process and anomaly solution;

The Supplier must reimburse Brascabos with all costs resulting from products with anomalies (line interruption in Brascabos and customer, operating costs, selection and rework costs, extra freight, scraping, travel and feeding costs, fines, deficiencies in delivery punctuality and quantity of the material, etc.), when its liability is evidenced. All costs will be described in the Cost Reimbursement (BC_1025), to be sent to the Supplier. Costs will be charged according to Appendix A - Management implications about quality problems

When there is need to return materials, Brascabos will be authorized to return the material with anomaly using the Noncompliance Report, if return authorization is not available. The Supplier is responsible for the freight.

If the Supplier is informed appropriately and does not provide assistance as required by Brascabos, the latter will perform or hire companies to perform the applicable activities (selection and/or rework at Brascabos and/or customer) and will transfer all the costs of these activities to the Supplier.

12. Controlled Shipment (CS)

Controlled Shipment is an additional inspection process to sort the noncompliance in purchased parts / products.

The repetition of chronic quality problems and breach of the supplier quality system is applied, in which it did not solve the causes that generated noncompliance and Brascabos will apply the Controlled Shipment system.

Controlled Shipment consists of two types or levels of retention:

- Controlled Shipment Level I: is executed by the supplier outside the normal production process.
- Controlled Shipment Level II: is administered by an outsourced company indicated by Brascabos with the costs paid by the Supplier.

12.1 CS Level I Methodology

- The supplier will be informed formally through email, fax or phone by Brascabos of the product(s) being subjected to the CS Level I process;
- The supplier must confirm receipt of the notification;
- Supplier conducts additional inspection;
- Supplier gathers and communicates the inspection data to Brascabos' Supplier Quality;
- Supplier will request for exit from CS to Brascabos based on action plans and consistency in the production process;
- Brascabos' Supplier Quality will issue a notice through appropriate means to close the CS level I after audit in the supplier process to indicate implementation of the actions;
- Even with the CS, the Supplier's parts / products that arrive at Brascabos with quality problems will be selected / reworked and all costs will be transferred to the Supplier.

12.1.1 CS Level I Procedure

- A Containment area must be set up, to conduct inspections similar to those made at Brascabos;
- The containment area must be viewed as a special activity area, be properly lighted, ventilated and equipped with the necessary inspection and control equipment;
- Repairs and reworks should not be performed in the containment area, the containment process must be conducted independently of the production process and when possible, a containment may be applied to the process that generated the defect;
- The Containment Area must have a notice board showing the measures, actions and results obtained in form of Graphs, Trend Charts, Static Process Control Charts, Action Plans, Containment Lists and Criteria for exit from the Containment Area;

- Graphs and tables must contain all the necessary information, be updated and continuously reviewed by the supervision. This data must be used to guide the solution of problems, establish controls and block errors;
- The solution of problems must be formalized; the information must be divulged and documented (Noncompliance Report);
- Those responsible for containment (inspectors / auditors) must use work instructions and quality standards (illustrations, photos, samples) and be adequately supervised;
- There must be a documented procedure to formalize the training, ensuring that those responsible for the containment are trained and have the necessary skills, equipment, tools and know-how to conduct the inspection 100%;
- An efficient flow of the material in the containment area must be clearly defined, avoiding mixing of defective materials with approved ones, defining areas for material entry and exit (part by part);
- Preventive maintenance must be conducted and error-proof devices must be incorporated in the process.

Important

- Brascabos' Supplier Quality will define, together with the supplier, which control items should be inspected during the CS period;
- CS implementation is subject to in loco verification by Brascabos' responsables, without prior notice;
- Monthly reports reporting the progress of the Containment process and the results obtained in the shipment inspections must be sent to Brascabos' Supplier Quality Sector by the tenth day of each month;
- All packaging belonging to the batch must be identified after all the inspections with the Brascabos standard label "**Controlled Shipment**" (ID_0002) or other agreed between the parties;
- The supplier must inform the name of the auditors qualified to perform final clearance and sign the ID cards.

12.2 Methodology for CS Level II

- The supplier will be informed formally through email, fax or phone by Brascabos of the product(s) being subjected to the CS Level II process;
- The Supplier must issue Purchase Order to the hired company for Inspection;
- The Supplier must confirm the notification reception;
- The Supplier must conduct the additional inspection;

- Supplier gathers and communicates the inspection data to Brascabos' Supplier Quality;
- Supplier will request for exit from CS to Brascabos based on action plans and consistency in the production process;
- Brascabos' Supplier Quality will issue a notice through appropriate means to close the CS level II after audit in the supplier process to indicate implementation of the actions;
- All the documents related to the process like: FMEA, Control Plan, Work Routine, Process flow and others, must be altered and a new submission of the PAPP will be requested, if necessary.

12.2.1 CS Level II Procedure

- The CS Level II must follow **ALL** the topics and requirements of Level I, being that the labor that will perform the selection/rework will be outsourced, indicated by Brascabos and with all costs on account of the Supplier.

13. Contingency Plan

The Suppliers must develop contingency plans for potential problems that might interrupt the flow of products to Brascabos. These plans must be available and Brascabos must be informed on the occurrence of any potential problem.

On the occurrence of events that interrupt the flow of products and Brascabos deems it necessary, the Suppliers must release access to the tools that belong to Brascabos.

14. Retention Time

The Supplier must keep in file all documents required by the *Integrated* Management system (approval of production parts, records of tools, purchase orders, records of quality performance, etc.). These records must be remain legible, readily identifiable and recoverable for a period of at least 15 years after the end of the serial production and these must be available for inquiry when requested by Brascabos.

In case of components that require a longer retention period, the condition will be defined in the component specification.

These requirements do not substitute any governmental requirements.

15. Electronic Trade Capacities

Since Brascabos increases its capacities for electronic trade, the same must be done by its partners, trusting in the electronic means of communication to

to perform interaction between the parties. For this, the Supplier is responsible for being qualified to operate through the electronic collaboration system called WEDI, which is used by Brascabos, having access to the internet and all the training required to use the system will be provided by Brascabos.

16. Confidentiality

When the information exchanged between Brascabos and its Suppliers are of utmost relevance, Brascabos may request from the Supplier signing of the Confidentiality Agreement.

17. Supplier Performance Monitoring (SPM)

This topic was developed to measure the performance of Suppliers and provide reference data for the implementation of improvement plans. The monitoring will be conducted monthly based on the factors described below:

17.1 Quality Performance Index (QPI)

This score has a total weight of 50 points. Brascabos' Supplier Quality Assurance area is responsible for conducting the assessment and it is made up of the following indices:

17.1.1 Supplier PPM Index (SPI) – this indicator is made up of the PPM (parts per million) in relation to the failures detected in the receipt, process and Brascabos customer.

$$SPI = (\text{target} / \text{SQMI of the month}) \times A$$

Note: If the SQMI of the month is less than or equal to the agreed target, the formula between parenthesis will have value equal to 1, that is, 100%.

A = Occurrence of failure	
In the receipt	1.00
In the process	0.75
In the customer	0.50

Note: In case the failure occurs in the 3 levels, the A considered in the calculation will be that of the least value, regardless of the quantity of parts found.

The goal of PPM will be established in the Agreement the Supplier Quality (BC_1068), appendix B on this manual.

17.1.2 Batch Supply Index (BSI) – this indicator measures the quantity of batches rejected in the Brascabos receipt, compared to the total of batches received.

$$\text{BSI} = 1 - \frac{\text{Total Batches Rejected}}{\text{Total Batches Received}}$$

17.1.3 Response Deadline Compliance (RDC) – this indicator refers to the compliance with the response deadline for the Noncompliance Reports (RNC) that are sent to the Suppliers.

$$\text{RDC} = 1 - \frac{\text{Total RNC responded outside the deadline}}{\text{Total of open RNC}}$$

Thus, the QPI is made up of the sum of the 3 indices described above.

$$\text{QPI} = [(\text{SPI} \times 0.65) + (\text{BSI} \times 0.20) + (\text{RDC} \times 0.15)] \times 100 (\%)$$

17.2 Delivery Performance Index (DPI) – This score has a maximum weight of 40 points and is made up of a single index:

17.2.1 Delivery Compliance Index (DCI) – This index refers to the quantity of batches received within the deadline, as well as in the quantity established. The Brascabos Material Planning and Control area is responsible for conducting the assessment.

$$\text{DCI} = (\text{Items Complied within the Deadline} / \text{Total Items Delivered})$$

Note: The Suppliers will not be disqualified if the responsibility for advance or delay belongs to Brascabos or transporting companies hired by the latter.

Therefore, the DPI is:

$$\text{DPI} = \text{DCI} \times 100 (\%)$$

17.3 Purchasing Performance Index (PPI) - This note has a total weight of 10 points. It is the responsibility of the Brascabos Purchasing area to carry out the evaluation and is composed of the following indices:

17.3.1 General Quality Agreement (GQA) - This item evaluates whether the supplier has the signed Supplier Quality Agreement

Being that:

GQA Signed	0 pontos
GQA Unsigned	50 pontos

17.3.2 Price Negotiation (PN) - This index evaluates whether the supplier presented increase, reduction or maintenance of raw material prices

Being that:

Price Increase	0 pontos
Price reduction or Maintenance	50 pontos

Thus, the PPI is formed by the sum of the two indices described above.

$$\mathbf{PPI = [(GQA \times 0,50) + (PN \times 0,50)] \times 100 (\%)}$$

17.4 Supplier Performance Monitoring Final Result

$$\text{SPM} = (\text{QPI} \times 0,50) + (\text{DPI} \times 0,40) + (\text{PPI} \times 0,10) (\%)$$

Result – Supplier Performance Monitoring

A Supplier Performance meeting will be held monthly, where the Suppliers that must present improvement plans for there to be progress in their Performances the following month will be defined.

18. Quality Indices

The quality indices help the supplier in reassessing its concepts on quality by acting preventively in the elimination of a potential source of problems. These indices are provided monthly through monthly quality information and it is through these that BRASCABOS continuously follows up on the quality of the products used in its production lines.

The quality indices of each supplier are supplied in PPM and are based on the rejections of receipt, process and Brascabos customer.

The target will be established in the Supplier Quality Agreement. (BC_1068)

18.1 Item Quality Monthly Index (IQMI): quantifies the quality performance of each item supplied individually.

$$\text{IQMI} = \frac{\text{Quantity of item rejected in the month}}{\text{Quantity of item received in the month}} \times 10^6$$

18.2 Item Quality Accumulated Index (IQAI): quantifies the quality performance of the items supplied accumulatively.

IQAI = arithmetic mean of the IQMI of the last 12 months

18.3 Supplier Quality Monthly Index (SQMI): quantifies the quality performance of all items supplied monthly by a given supplier.

$$\text{SQMI} = \frac{\text{quantity rejected from the supplier in the month}}{\text{Total quantity received in the month}} \times 10^6$$

18.4 Supplier Quality Accumulated Index (SQAI): quantifies the quality performance of all the items supplied by a given supplier accumulatively.

SQAI = arithmetic mean of the SQMIs of the last 12 months

19. Audits Conducted by BRASCABOS

Representatives of the Supplier Quality Assurance may visit the administrative plants, Supplier production and assembly, on prior notice, in order to conduct process or system audits (according to IATF 16949 requirements, latest version). The Supplier must provide the resources required to perform the activities.

The audit (process and system) is aimed at assessing the Supplier's performance in its logistic business process, quality *and hazardous substance control* practice, enabling continuous improvement of the Supplier process or system.

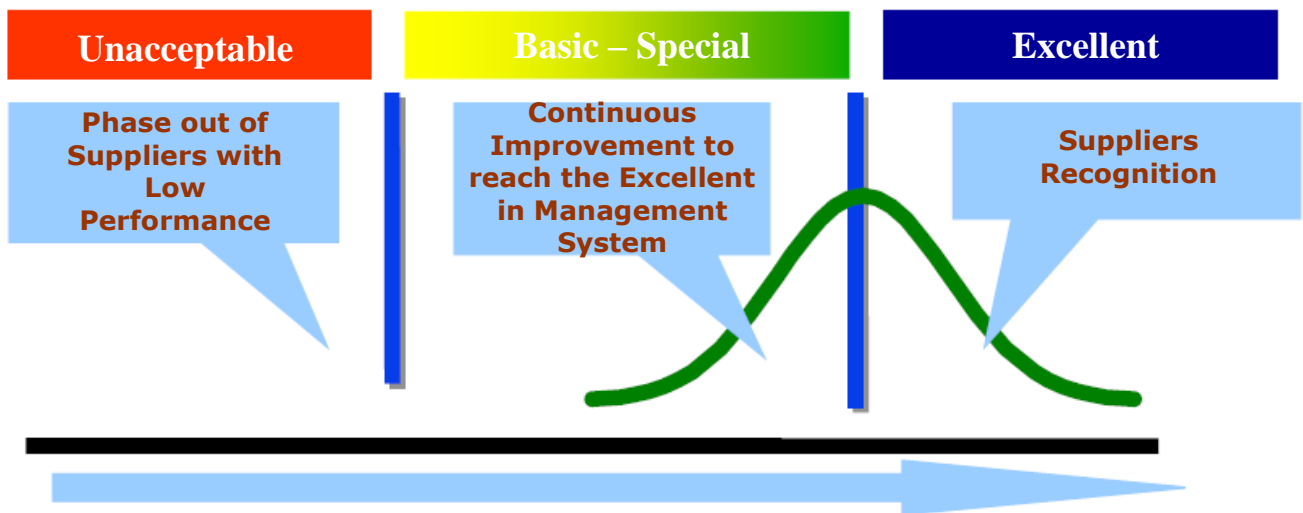
An audit may be conducted for the following reasons:

- Introduction of a new Supplier;
- Introduction of new processes/products or important changes in the processes of known Suppliers;
- Unsatisfactory performance in the performance indices of known suppliers.
- *Risk of contamination by Hazardous Substances*

The scoring criterion and classification of the audits are described in the System Audit Checklist (BC_1002) and Process Audit (BC_1003).

20. Continuous Improvement

Brascabos believes that its Suppliers must constantly implement continuous improvement plans in their Manufacturing processes related to the production of products. The aim is to reduce variance and guarantee stability and capacity of the process while the product is being produced and delivered to Brascabos. Suppliers must frequently: assess their Quality and Organizational performance indicators, review their FMEAs, Process Flow Diagrams and Control Plans according to the latest delivery performance information. This action must always be geared toward the search of Zero Defect and moving or maintenance of the Supplier to the Excellent stage.



21. Lean Thinking

This term was created to characterize the TPS (Toyota Production System), which is presented as a new paradigm, in counterpoint to mass production, which was adopted in all production systems. Lean Manufacturing is a business management philosophy geared toward elimination of wastage of resources, with the following main goals: improving quality, minimizing costs, improving Lead Time (time required for production from order entry up to product exit), lifting the spirits and increasing the safety of workers. It is not directed toward production alone, but is also applicable to all other activities and areas of the company.

Companies that adopt the Lean Thinking Model share a common goal. They have the vision of the ideal production, administration and sales system and this shared vision motivates them to make improvements beyond those required to merely meet the current needs of their customers. This ideal concept permeates throughout the organization based on Lean Thinking and is attained when the result obtained by one person, group or machine:

- Is free of defects (Has the performance expected by the customer);
- Can be attained with one order at a time;
- Can be supplied on demand in the version requested;
- Can be delivered immediately;
- Can be produced without wasting resources (materials, labor, power and space, as well as the costs associated with the stock);
- Can be produced in a work environment that is physically, emotionally and professionally safe for all the workers.

The fundamental goal of Lean Thinking is to promote the perfect value for the customer through a process of creation of value with zero wastage in: design (from conception to the final customer), production (from order to delivery) and sustenance (in use through the life cycle up to recycling).

Believing that the flow concept is not restricted to the company itself, Brascabos wishes for its Suppliers to work actively in the implementation of the Lean Thinking Process through the use of their tools and that they be open to possible applications of the tools in their lines,

application conducted by Brascabos together with the Supplier with the aim of eliminating wastages and improving information and material flows. This application is also aimed at disseminating the tools and philosophy.

22. Supplier Classification

22.1 Excellent Supplier

Is any Supplier that meets or exceeds the requirements of the quality program and has priority in the consultation of new Developments.

- Supplier Performance Monitoring ≥ 91 in the last 12 months;
- Has third party Quality System certificate, according to IATF 16949, latest version, for suppliers of the automotive segment and ISO 9001, latest version, for suppliers from other segments

Note: On not meeting one of these requirements, the Supplier is not classified in this Qualification.

22.2 Special Supplier

Is any Supplier that actively takes part in the continuous improvement process of the quality and its supply record is satisfactory. These Suppliers receive the second consultation for new Developments.

- Supplier Performance Monitoring from 76 to 90;
- Have third party Quality System certificate, according to ISO 9001 (latest version), meeting IATF 16949 requirements, latest version, for suppliers of the automotive segment and third party Quality System certificate ISO 9001, latest version, for suppliers from other segments
- System Audit according to IATF 16949 from 76 to 90, for suppliers of the automotive segment

Note: On not meeting one of these requirements, the Supplier is not classified in this Qualification.

22.3 Basic Supplier

Is any supplier that meets Brascabos' minimum requirements. These suppliers continue only with the current projects.

- Supplier Performance Monitoring from 60 to 75;
- Have third party Quality System certificate, according to ISO 9001, latest version, for suppliers of the automotive segment
- System Audit second party, according to IATF 16949, latest version, from 60 to 75, for suppliers of the automotive segment and ISO 9001, latest version, for suppliers from other segments

Note: On not meeting one of these requirements, the Supplier is not classified in this Qualification.

22.4 Unacceptable Supplier

Will not take part in any new Development and must outline improvement plans in order to continue with current projects.

- Supplier Performance Monitoring from 0 to 59;
- Does not have third party Quality System certificate, according to ISO 9001, latest version;
- System Audit second party, according to IATF 16949 from 0 to 59, for suppliers of the automotive segment and ISO 9001, latest version, for suppliers from other segments

23. Recognition Management

Brascabos, with the aim of improving the competitiveness of raw materials supplied as well as improving relations between the parties, recognizes every Supplier that meets the Quality Commitments and stands out due to its performance and efforts to consolidate the partnership ties. These will have preference with regard to:

- Increase in the share;
- Participation in the Development of new projects;
- Outstanding Supplier and Quality Commitment Award.

24. Supplier Awarding

A way of recognizing Suppliers who attain and exceed Brascabos' expectations and as an incentive for those that are giving their best, Brascabos annually awarding the "Outstanding Supplier" and "Quality Commitment".

25. Supplier Deactivation

The Supplier that frequently presents deviations in quality, *control of hazardous substances* and/or delivery and does not show interest or ability to make improvements, or that repeatedly fails to present an acceptable performance in the process and product audits, or that does not have a reliable guarantee system, will be subject to the Consequence Management applied by Brascabos. This may occur as follows:

- Reduction or loss of participation of the item;
- Complete deactivation of the Supplier – this deactivation may occur by initiative of Brascabos or the Supplier itself. In such cases, the deadlines must be negotiated between the parties in order to satisfy interests and needs of both companies.

Appendix A

Management implications about quality problems

	Description	COST	Unit
A	Brascabos' customer manufacturing assembly line stop	USD 7.500	hour
B	Brascabos manufacturing assembly line stop	USD 3.000	hour
C	Extra cost to analyze non-conforming parts:		
	Laboratory	USD 100	Hour
	PPM*	USD 500	PN/month
D	The supplier must compensate the amount of non-conforming parts as quickly as possible, shipping parts on the first available flight. The entire cost of sending parts and documentation is due to the Supplier.		
E	Loss of final product resulting to quality problems in the supplied component, please consult the actual cost of the BC_1025 report.		
F	The failed parts will be available for 15 days, if the Supplier is no interest in it they will be scrapped. All airfreight and logistics cost to withdraw is due to Supplier.		

Appendix B



BC_1068 - SUPPLIER
QUALITY AGREEMENT



**SUPPLIER QUALITY
AGREEMENT**

SUPPLIER QUALITY AGREEMENT

Dear Supplier

It is of great importance the involvement and commitment of our partners, regarding aspects of quality, cost, delivery, service, control of hazardous substances, technology the SUPPLIER / BRASCABOS companies image, so that we can achieve common goals and exceed the expectations of our customers.

As part of the group of suppliers who participate in this process, with the certainty that we can achieve our goals and strengthen our partnership, I request your signature on this document formalizing the agreement and compromise in meeting the requirements described in QUALITY SUPPLIER'S MANUAL (BC_1000), available for consultation and download at www.brascabos.com.br, as well your PPM goal as follows:

SUPPLIERS PPM GOAL BY PRODUCT FAMILY

FAMILY	PRODUCT DESCRIPTION	GOAL / PPM
C: System Connection	Terminals, Connectors and Insulators	30 PPM
E: Electronic	Signs, Electronic Components, Carbon Brushes, Welding etc.	20 PPM
F: Wire / Cable	Wire, covers etc	20 PPM
A: Accessories	Belts, Guides, Tapes, Foams, Lamps etc	20 PPM
P: Polymers	PVC, Master etc.	4 PPM

Supplier: _____

Sales Area Manager

_____ Ass _____

Quality Area Manager

_____ Ass _____

Date: _____ |