



Indústrias Mangotex Ltda.

SUPPLIER QUALITY MANUAL

IT-GTQ-002

V1_06.02.2023

REVIEWS

Rev	Date	HISTORIC	Developer / Analysis	Approver
01	02/06/2023	Topics are bordered or described in blue	Gersom M. / Geiser R.	Roberto C.
00	01/27/2022	General Revision: Procedure nomenclature changed from: IT-DNP-001 to IT-GTQ-002	Marcos A. / Geiser R.	Roberto C.

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I. OBJECTIVE

The purpose of this Manual is to disclose the criteria and requirements established by the MANGOTEX Management System to its suppliers and ensure commitment to Quality, Environment, Occupational Safety and Health of its products and services. The decision to purchase from a particular supplier depends on a multidisciplinary team that essentially evaluates the supplier's ability to meet these criteria and requirements.

MANGOTEX may, at any time and without prior notice, publish the “Letter of Clarification” on its website with the purpose of clarifying or changing any requirements, until the publication of the new updated version of this manual, as well as the described annexes (<https://mangotex.com.br>).

II. TERMINOLOGIES

- **EQF** – Supplier Quality Specialist (Product Engineer)
- **IQF** – Supplier Quality Index
- **APQP** – Advanced Product Quality Planning
- **PAPP** – Production Part Approval Process
- **SPC** – Statistical Process Control
- **RNCF** – Supplier Non-Conformity Report
- **MSDS** – Material Safety Data Sheet
- **PPM** – Parts Per Million
- **LO** – Operating License
- **CLI** – Integrated Licensing Certificate
- **DNP** – New Product Development
- **VDA6.3** – Process-based audit tool, which is part of the VDA standard document family. It is developed by VDA-QMC (*Verband der Automobil industrie – Qualitats Management Center*) and the German automotive industry for organizations that manufacture automotive products or services.
- **Product audit**: Product audit means checking the specific characteristics of the product (e.g.: product measurements, material, functionality, reliability, packaging, identification, appearance, corrosion resistance, temperature behavior).
- **Special characteristics**: it is a classification of a product characteristic or manufacturing process parameter. MANGOTEX defines its characteristics as follows: **Security**: they affect user safety or the country's legislation and have a major impact on the company and society, it is symbolized with a triangle with the letter “D”. **Critical**: the failure can affect the customer or final consumer's process, causing: scrap, stopped line, courtyard blockage, without affecting safety; is symbolized with the letter “C”.

III. MANGOTEX SUPPLIERS CODE OF CONDUCT (IT-GTQ-031)

Copy of this document is available at: <https://mangotex.com.br/codigo-de-conduta-dos-fornecedores-mangotex/>

IV. SUPPLIER SELECTION PROCESS (new supplier)




If a potential supplier is not part of the approved Suppliers, the Departments DNP, Quality, Purchasing and Quotation, are responsible for approval, meeting the following criteria:




- 1st Certification Requirements
- 2nd Quality System Assessment
- 3rd Risk Assessment
- 4th Sustainability Assessment
- 5th Mandatory subscriptions

1st Criterion: Certification Requirements

Type	Products and services	QMS level	Performance monitoring		Manufacturing Process Monitoring			PPAP (**)
			IQF	Freq.	CQI (*)	Audit	Freq.	
Raw material (Manufacturer)	Accelerators, Antiozonant, Antioxidant, Flow Agents, Activators, Adhesives, Fillers, Coagents, Reinforcing Filler, Desiccants, Elastomers, Sponges and Expanders, Oil, Inhibitors, Resins, Plasticizers, Pigments, Peroxides, Process Solvents, Solvents (Catalysts, Paints, Solvents and Diluents), granulated.	1- Goal 2- Minimum 4- Acceptable	X	Monthly	N/A	X	A=5 years B=3 years C=1 year	Level 1 + Technical Data Sheet, MSDS, Raw material Certificate and EMP
Raw Material & Distributor (***)								
Components 1			X	Monthly	X	X		Level 3 + full documentation+ capacity study - Run@Rate
Components 2			X	Monthly	N/A	X		Level 4 + documentation agreed with the DNP & EQF area
Packaging	-	8- Minimum	N/A	N/A	N/A	N/A		N/A
Services	Surface / Heat Treatment (not related to the final product): Zinc Plating, Chrome Plating, Nickel Plating, Nitriding, Carburizing / Quenching, Tempering, Annealing		X	Monthly	X	X		Level 3 + full documentation
	Rewinding, Mold Making, Mandrels, Control Jig	2- Goal 6- Minimum 7- Acceptable	N/A	N/A	N/A	X		N/A
	Calibration Services for Measurement, Testing and Testing equipment	3- Minimum 4- Acceptable	N/A	N/A	N/A	N/A	N/A	N/A
	Selection/Rework Services	2- Minimum 4 - Acceptable	N/A	N/A	N/A	N/A	N/A	N/A
SUBTITLES: X = Applicable; N/A = Not applicable QMS level 1. IATF16949 = Presentation of the IATF16949 certificate 2. ISO9001= Presentation of the ISO9001 certificate 3. Accredited ISO/IEC 17025 = Presentation of certificates of services accredited by RBC/OAA or equivalent; report must include the national accreditation mark. 4. Customer approved = Evidence of customer approval 5. Mangotex approval = Classification A in the approval audit 6. Mangotex approval = Classification B in the approval audit 7. Mangotex approval = Classification C in the approval audit with an action plan to achieve a B grade in 6 months. 8. Mangotex approval = Validation Check list NOTE1: Suppliers of Scania items must be ISO14001 and IATF16949 certified, therefore the DNP area must inform the Purchasing area whether it is a Scania item to ensure the selection of a supplier that meets the customer's requirements. For other customers, it will be serviced according to the customer's specific requirement. NOTE2: The LO and/or CLI is applicable if the company's activities involve the use of natural resources or the emission of pollutants. Suppliers certified to the ISO14001 standard (must send a copy of the certificate) are exempt from sending the license. Adaptation to the ISO 14001 standard is encouraged, these suppliers will have preference for approval. NOTE3: MANGOTEX will send the Sustainability Questionnaire every 12 (twelve) months (as a self-assessment), in order to verify compliance with minimum requirements for the Environment, Social Standards, Health and Work Protection and Organizational Ethics.			NOTE4: auxiliary materials are materials that do not remain in the final product, as well as non-productive materials and carriers, QMS, performance monitoring and process monitoring requirements will not be required, unless required by the customer. (*) The Supplier must send the self-assessment of the process according to the AIAG manuals in the latest version yearly: • CQI 9 - Heat Treat System Assessment • CQI 11 - Plating System Assessment • CQI 12 - Coating System Assessment • CQI 15 - Welding System Assessment • CQI 17 - Electronic Assembly Manufacturing-Soldering • CQI 23 - Molding System Assessment • CQI 30 - Rubber Processing System Assessment (**) Level of PPAP required from suppliers: - When it comes to a GM item, the level is 5. - The supplier must meet the requirements determined in ANNEX-C4 (PPAP Check List) (***) Distributors → The Management System certificate will be required from the manufacturer and self-assessment based on VDA 6.3 correlated with the applicable requirements for receipt, storage and dispatch will be requested and on-site audit will be carried out depending on the self-assessment, in this case it will always be up to the distributor					

2nd Criterion: Assessment of the Quality System, using the VDA 6.3 standard (Potential Analysis – P1) according to the criteria below:

Classification Criteria			
		Fully approved supplier	
		Conditionally Approved controlled by the organization	
		Disapproved supplier contract cannot be issued	

Assessed value	RED		Supplier/offer disapproved	(1 X red or min. 15 X yellow)
Questions:	YELLOW		Supplier/offer controlled	(max. 14 yellow X and no red X)
	GREEN		Fully approved supplier/offer	(max 7 yellow X and no red X)

Classification:

- **Failed:** makes the supplier unfit for continued development, unless it is a strategic supplier. In this case, it must be approved through the risk and deviation analysis granted by the client.
- **Conditionally approved:** the supplier must submit an action plan within 15 working days, counting from the date of report's receipt and implement the actions within 90 days.
- **Fully approved:** the Quality/Development Department must continue the approval process.

NOTE1: in the case of suppliers indicated by the customer, this evaluation will not be necessary, as these suppliers are directly included in the "List of Approved Suppliers".

NOTE2: suppliers of indirect materials are exempt from evaluation: auxiliary, packaging and supplied by the Customer itself, with only the material being checked visually upon receipt. If any discrepancies or damages in the material delivered are found at the time of checking, they will be blocked and returned to the supplier.

3rd Criterion: Risk Assessment

Method	Classification	Compliance Degree	Classification Name
Using the Check List (Risk Assessment) ANNEX-H9	Low	1.0 – 5.0	Approved
	Average	5.1 – 7.5	Conditional Approved
	High	7.6 – 10.0	Disapproved

4th Criterion: Sustainability Assessment

Method	Classification	Compliance Degree	Classification Name
Using the Check List (Sustainability) ANNEX-H4	Low	80.0 – 100.0	Approved
	Average	50.0 – 79.0	Conditional Approved
	High	< 50.0	Disapproved

5th Criterion: Subscriptions

- **Of this Manual** (ANNEX-H1)
- **Product Safety and Compliance Representative Term_PSCR** (ANNEX -H2)
- **Confidentiality Agreement and Data Retention** (ANNEX-H3), signed between supplier and company.

Appointment Letter: After completing all the above criteria, it will be evaluated by the TOP-SUPPLIER team, and the SQE and/or Purchasing Manager will send the APPOINTMENT LETTER if the supplier is approved.

V. PROCESS AND PRODUCT AUDIT

MANGOTEX promotes the monitoring of its suppliers' manufacturing processes through 2nd part audits, using auditors from MANGOTEX and/or appointed by it.

a) Supplier self-audit

Before the MANGOTEX audit, the supplier must carry out a self-assessment to internally verify the effectiveness of the improvement program, using a Check List sent by MANGOTEX.

b) Supplier Audit

VDA 6.3 and requirements defined in this procedure will be used. The audit will be formally scheduled with the supplier in advance. During the verification activity, the supplier must make available to the auditor all the information requested to demonstrate compliance with the requirements and carry out a product audit, by MANGOTEX's choice. After the audit, the EQF/Auditor will make the audit report available within a maximum period of 15 (fifteen) days. Each question will be evaluated according to its respective requirements and compliance:

Points	Requirements Conformity Assessment
10	Requirements fully met
8	Requirements largely met; small disagreements
6	Requirements partially met; significant divergences
4	Requirements inadequately met; serious disagreements
0	Requirements not met

NOTE1: When a MANGOTEX customer requests an assessment at the supplier's facilities, the parties will agree on the date and method of carrying it out.

NOTE2: Mangotex will carry out (remote and/or in person) process audit at the distributor, according to the check list VDA6.3 relevant to the activities/operations (e.g: stocks, FIFO, Identification, etc); however, this VDA6.3 check list will be sent first to carry out a self-assessment on your Management System and Process.

NOTE3: Suppliers without certification in their Quality Management System in accordance with the IATF16949 standard will not be classified with an "A" grade in the Process and Product audit .

NOTE4: For international suppliers, a self-assessment carried out by a qualified QMC auditor will be requested and in the absence of qualification, EQF Mangotex must critically analyze the self-assessment and may schedule a video conference to confirm the information and evidence and thus define the self-assessment score.

NOTE5: Only suppliers trained in the VDA PSCR course will obtain a score "10" in the process audit.

c) Audit classification/frequency criteria:

The frequency and criteria of 2nd part audits will be based on the risk assessment of suppliers/audit criteria:

- **Classification A:** Suppliers that achieve Classification "A" demonstrate that they are capable of serial production and must issue an action plan for questions with a score lower than 10. The Action Plan must be presented within 15 (fifteen) days after the date of the audit report and will be monitored within 90 (ninety) days. The frequency for carrying out a new audit at this Supplier is 5 (five) years.
- **Classification B:** Suppliers that achieve Classification "B" demonstrate deficiencies that may put the quality of the product supplied at risk. You will have a period of up to 15 (fifteen) days after the date of the audit report to issue an action plan, which will be monitored for up to 90 (ninety) days, or until its closure. It will be up to MANGOTEX to decide whether to close on-site or off-site, with prior communication to the supplier. The frequency for carrying out a new audit at this Supplier, after completion of the improvement plan, is 3 (three) years.
- **C Rating:** Suppliers that achieve a "C" score are automatically prevented from supplying new business and will receive a "D" score in the IQF, until the grade is recovered after a new audit. An action plan must be presented, within 15 (fifteen) days after the date of the audit report, with a visit scheduled to verify the effectiveness of the actions and scheduling a new audit within one year, in the meantime it is suspended for new business (New Business Hold supplier). The evolution of the classification from C to B will only be given when the degree of conformity is ≥ 85 points.

Process audit score classification

Classification	Conformity degree
A	90- 100
B	80 - 89
C	0 - 79

d) Downgrade rules:

Correspond to VDA6.3 rules and MANGOTEX requirements. The supplier will be notified in writing of the downgrade by the Quality Department.

- **Reasons for downgrade from A to B, despite EG≥90% compliance level:**

- ✓ Lack of quality management system certification (IATF16949);
- ✓ In the product audit, class "B" or systematic "C" failures were found (see ANNEX-C1);
- ✓ Risks were detected in the supply chain, which have a direct influence on the quality of products supplied directly to MANGOTEX. This will lead to demotion of the direct supplier.
- ✓ Present IQF level C for three consecutive months (last 3 months).

- **Reasons for downgrade from B to C, despite EG≥80% compliance level:**

- ✓ In the product audit, class "A" or systematic "B" failures were found (see ANNEX-C1)
- ✓ Risks were detected in the supply chain, which have a direct influence on the quality of products supplied directly to MANGOTEX. This will lead to demotion of the direct supplier.
- ✓ Quality management system certification (minimum ISO9001), not available or withdrawn.

- **Reasons to downgrade directly to C (even without auditing):**

- ✓ The execution of the improvement program (from: process audit, RNCF, etc.) is denied or it is not carried out; this extends to confirming the implementation of the improvement plan;
- ✓ Unacceptable deadlines to achieve quality objectives required by the customer;
- ✓ Negative performance or a non-fulfillment risk of the product's function (raw material or component), during a problem analysis or a visit by a MANGOTEX auditor;
- ✓ Access to the process and all manufacturing steps for the performance of MANGOTEX supplier audits (e.g. VDA 6.3, P1, visits) is denied;
- ✓ Quality management system certification (minimum ISO9001), not available or withdrawn.
- ✓ Present IQF level C for more than 4 consecutive months;
- ✓ Present IQF level D at least twice in the last 6 months

VI. SUPPLIER DEVELOPMENT

MANGOTEX will not give up encouraging its entire supply chain to seek IATF 16949 certification and

a. Along with the VDA 6.3 process audit, a MAQMSR audit will be carried out on ISO 9001 suppliers, which is based on the Minimum Automotive Quality Management System Requirements for Sub-tier Suppliers in order to develop the supplier to meet the requirements of the IATF standard 16949 item 8.4.2.3. Reference material: <https://www.iatfglobaloversight.org/oem-requirements/customer-specific-requirements/>

b. A Quality and Environmental Management Development Letter (ANNEX-H8) will be sent to the supplier to analyze the intention to obtain IATF 16949 and ISO 14001 certifications.

VII. MANGOTEX SPECIFIC REQUIREMENTS

Caption: C(components); MP (Raw Material - see item IV);

	ISO9001 / IATF16949	Subject	Requirements	C	MP
1	4.3.2/ VDA (7.1)	Customer specific requirements	Derogations: the supplier must use the ANNEX_C3_Form for Approval of Specific Derogations; no more than 1 (one) derogation must be requested per letter; the form must describe the specific requirement of MANGOTEX, the reason for non-compliance and also the deadline for compliance. Action plans, implementation schedules, explanatory letters and other evidence must be attached to the same email that the derogation request letter is being sent.	X	X
2	4.4.1.2 VDA (6.1.1./ 6.2.1/6.2.3/ 6.1.5/7.1)	Product safety	The Supplier must identify all regulatory and statutory safety characteristics of the product and they must be contained in the FMEA, Control Plan, Flowchart and broken down into the Instructions, Work Stations; and provide training for employees involved in the process and for the entire supply chain. *In order to meet the specific requirements of our customers, MANGOTEX requests the appointment of the person Specialist Responsible for Product Safety and Responsibility in your company, ANNEX H2_Term PSCR. The supplier must require this same appointment/indication from its sub-suppliers.	X	X
3	5.3.1 VDA (7.1)	Organizational roles, responsibilities and authorities-suppl.	The supplier must formally notify the MANGOTEX Quality Department, within 10 working days, regarding any changes in the person responsible for Product Quality and the company's Property.	X	X
4	6.1.2.3 VDA (7.3)	Contingency plans	Suppliers must have documented contingency plans regarding supply capacity and analysis of risks of shortages and periodically test these plans. The supplier must notify the Purchasing, DNP and Quality Department within 24 hours of any interruption in production.	X	X
5	7.1.4 VDA (6.4.1/6.4.4)	Environment for operating processes	Have minimum lighting conditions (mainly for inspection and manufacturing stations); order and cleanliness, climate control (where applicable), defined layout and work safety. Free from product leaks and spills; supplier must values the protection and conditions of shelves, floors, roofs.	X	X
6	7.1.5.1.1 VDA (6.4.3)	Measurement System Analysis	Requires its suppliers to perform measurement system analysis (MSA) for all measurement systems provided for in the control plan. Including studies of Stability, Linearity, Trend, Reproducibility, Repeatability and Mean and Amplitude of R&R	X	
7	7.1.5.3.2 VDA (6.4.3)	External Laboratory	ISO/IEC 17025 certified testing and calibration laboratories must be used, with validity not expired or, unless vetoed by MANGOTEX, laboratories accredited by RBLE (Brazilian Network of Laboratories and Testing), RBC (Brazilian Calibration Network) or OEM (automakers). The calibration certificate or test report must include the mark of a national accreditation body.	X	X
8	7.2.1 VDA (6.3.1/7.5)	Competence - Supplement	The supplier must have documented a Versatility Matrix and have training in the AIAG Manuals: APQP, SPC, MSA, PAPP, FMEA and Occupational Safety.	X	X
9	7.2.4 VDA 7.5	Competence of the second part auditor	The supplier must have internal auditors or contractors trained in accordance with the current ISO 9001 edition, VDA 6.3 (current), IATF (if applicable) and knowledge of other specific customer requirements (if applicable). VDA literature 6.5 (latest version) is recommended.	X	
10	7.3.1 VDA 7.1	Awareness - supplement	An awareness of this manual must be provided, reporting the specific requirements of MANGOTEX to employees involved with the product(s) supplied, as well as to their sub-suppliers.	X	X
11	7.4 VDA 7.1	Communication	The supplier must notify MANGOTEX of any changes in its registration status of its certification: IATF 16949, ISO9001 and ISO14001. These changes include, but are not limited to: Initial certification, Recertification, Transfer of certification to a new Certifier, Withdrawal of certificate, Cancellation of certificate without replacement. Whenever the company is recertified, an updated copy of the certificate must be sent to the Quality Department for storage. The supplier must complete and keep ANNEX-H7 (Contact List) updated and send a copy to MANGOTEX.	X	X
12	7.5.3 VDA 7.1	Control of documented information	Where the supplier uses MANGOTEX documents or other documents of external origin (Ex.: AIAG Manuals: APQP, SPC, MSA, PAPP, FMEA), they must ensure the most current version, or the one specified by MANGOTEX. Drawings and specifications must be requested from the Dept. of Purchasing or DNP. It is the supplier's responsibility to update versions before use.	X	X

	ISO9001 / IATF16949	Subject	Requirements	W	M P
13	7.5.3.2.1 VDA 6.6.3	Records Retention	<p>The supplier must retain records so that:</p> <ul style="list-style-type: none"> • <u>APQP/PPAP</u>: maintain for as long as the part (or family of parts) is active for production and/or replacement, plus 1 calendar year; • <u>Purchase orders</u> and supplier amendments relating to work performed on MANGOTEX proprietary tools are also included in this requirement. • Records of production inspection and testing must be retained for a minimum of 15 years. • Management's internal audit and critical analysis records must be retained for at least 3 years. • Training: keep records for 3 years from the date of training. • Calibration: retain calibration records of measuring equipment for one calendar year or replaced, whichever is longer. <p>NOTE1: MANGOTEX is authorized to inspect records and documents at any time.</p>	X	X
14	8.2.3.1.2 VDA 6.2.3	Special features designated by the customer	<p>The supplier may use its own symbols to identify special characteristics. However, a correlation table must be established and, in the case of drawings sent to MANGOTEX, the specific symbols must be used or the correlation table must be inserted in each document.</p> <p>When the characteristic to be monitored is not specified, it is at the supplier's discretion to assign the quota, noting that the critical points of their process must be monitored. MANGOTEX may request evidence of the study when it deems necessary.</p>	X	
15	8.3 VDA (6.1.1) VDA (7.1)	Design and development of products and services	<p>Suppliers and their subcontractors must have an APQP system based on the AIAG APQP manual (current), applying it in the development of parts and processes for MANGOTEX and ensuring that all necessary actions will be carried out within the required time.</p> <p>When developing new items, or replacing raw materials, where applicable, the supplier must submit a declaration of conformity for Restricted and Reportable Substances, registering the raw material in IMDS (http://www.mdsystem.com). The IMDS submission number (Component or Raw Material ID) must be recorded on the cover of the PPAP (PSW). The IMDS registration must be sent to MANGOTEX (ID 9574). The following are considered conflict minerals: Tantalum, Tungsten, Brass and Gold.</p> <p>If used in some of your processes or those of your subsuppliers, your company must make sure that the material does not come from conflict regions such as the Democratic Republic of Congo (DRC); and/or in adjacent countries that extract these minerals in a way that directly affects human rights. MANGOTEX, as an exporter of products to Europe, meets and extends to its suppliers the need to comply with European Directive 2000/53/EC from September 18, 2000, which determines, among others, mainly the prohibition of the use of metals (Lead, Mercury, Cadmium and Hexavalent Chromium) in its products, in order to comply with regulatory requirements related to the end of the useful life of vehicles. Therefore, it is necessary:</p> <p>Raw material suppliers must complete the forms ANNEX H6- Declaration of Chemical Substances (DSQ), ANNEX H5-Declaration of Heavy Metals (DMP);</p>	X	
16	8.3.4.3 VDA (6.1.1)	Prototype Program	<p>The specifications and any deviations requested at this stage must be carried out in agreement with the MANGOTEX EQF. The supplier must send, on the agreed date, the prototypes, properly packaged, and identified with a standardized label.</p> <p>Each shipment of prototypes must be accompanied by the Dimensional Report, Checked Print and Material Report. Failure to comply with the above is understood as failure to supply and the appropriate penalties will be applied.</p>	X	

	ISO9001 / IATF16949	Subject	Requirements	W	M P
17	8.3.4.4 VDA (5.4/6.1.1/7.1)	Product approval process	<p>The PAPP requirements in the most recent version must be considered. You must send, on the agreed date, the PPAP samples duly packaged and identified with the label "PAPP SAMPLES (ANNEX-C2)". PAPP documentation must preferably be sent in electronic form. The supplier must obtain PAPP approval to:</p> <ul style="list-style-type: none"> • A new part or product; • Correction of a discrepancy in a previously submitted part; • Product modified by an engineering change; • All changes or activities that affect the fit, shape, durability or performance of the product or assembly; • Manufacturing process and location changes <p>Part Submission Status MANGOTEX will notify the supplier of the willingness to submit the PAPP documentation so that a copy will be returned to the supplier and a copy will be kept on file at MANGOTEX. The different types of status are listed below:</p> <ul style="list-style-type: none"> • Full Approval: indicates that the part or material meets all specifications and requirements. The supplier is, therefore, authorized to ship production quantities of the product subject to release by MANGOTEX. • Conditional Approval: allows shipping of part or material for production needs in a limited time or based on quantity. It will only be granted when the supplier has clearly defined the cause of the non-conformities that prevent production approval and has prepared an action plan previously agreed and approved by MANGOTEX. Re-submission is necessary to obtain "full approval" without which delivery of production batches after the conditionally accepted deadline or quantity is not permitted. Additional submissions are not authorized unless an extension for temporary approval is granted or the full PAPP submission has been approved, without which the next batch of material will be subject to rejection. • Rejected: if the production batch submission or documentation does not meet the requirements. The correct product and/or documentation must be submitted and approved before production quantities can be shipped. The Supplier must approve externally provided products and services in accordance with ISO9001, Section 8.4.3, prior to submitting its part approval to the customer. <p>Requalification The supplier must carry out requalification every three years for each MANGOTEX product. NOTE1: Product requalification would normally entail full validation for all product approval requirements (e.g PPAP or PPA) and therefore exceeds the scope of a layout inspection.</p>	X	X
18	8.3.5.2 VDA (6.1.1)	Manufacturing process design outputs	<p>Process Flow Diagram The supplier must have a process flow diagram in accordance with AIAG standards clearly describing each step of the process including inspection, transportation and storage, in addition to being aligned with the Process Control Plan and FMEA.</p> <p>Analysis of Failure Modes and Effects – FMEA The supplier is responsible for understanding and using FMEA according to AIAG specifications. It is recommended to use FMEA/VDA.</p> <p>Control plan The supplier must develop a control plan in accordance with AIAG standards.</p> <p>Packaging The packaging used by suppliers must have been previously approved by the EQF, as they must comply with capacity limits, shape, identification and other applicable legal requirements.</p>	X	

	ISO9001 / IATF16949	Subject	Requirements	W	M P
19	8.4.1.2 VDA (5.1)	Supplier selection process	Only use sub-suppliers that have ISO900 certification, an evaluation questionnaire will not be accepted. It must implement supplier selection management, based on the risks in the supply chain.	X	X
20	8.4.1.3 VDA (5.1)	Customer- directed sources (directed-buy)	The supplier must obtain approval from MANGOTEX before seeking sub-tier suppliers. Contact EQF.	X	X
21	8.4.2.4 VDA (5.2/5.3)	Supplier monitoring	It must establish minimum monitoring criteria: product quality, delivery, dissemination of these results; action plans when goals are not achieved; minimum criteria of this manual to be communicated to sub-suppliers (including change management); disqualification criteria. The expectation that MANGOTEX expects from its supplier is 100% on-time delivery.	X	X
22	8.4.3 VDA (5.1/5.2/5.3)	Information for external providers	Monitoring and qualification of subcontracted suppliers must be the responsibility of the supplier, in accordance with this manual. MANGOTEX reserves the right and authority to monitor, review and/or approve the processes of subcontracted suppliers and respective facilities, when necessary.	X	X
23	8.5.1.1 VDA (6.2.1)	Control plan	Control plans must be fed back based on detected non-conformities, product, process, measurement, movement, supplier and/or FMEA changes.	X	
24	8.5.1.2 VDA (6.2.1)	Standardized work - Operator instructions and visual standards	The supplier must ensure that the work instructions contain reaction plans for non-conformities.	X	X
25	8.5.1.3 VDA (6.2.2)	Checking preparations for work (set-ups)	Process and product approval records must be recorded by authorized and trained people to release the Setup.	X	X
26	8.5.1.5 VDA (6.4.1/6.4.2)	Total productive maintenance	The supplier must identify key process equipment. It is important that the panels are protected with a lock, ensuring security. Pay attention to requirement 8.5.3	X	X
27	8.5.1.6	Tool management of production and manufacturing, equipment testing and inspection	Establish an adequate storage methodology that is easy to retrieve whenever necessary.	X	X
28	8.5.1.7	Production schedule	The supplier must not send Mangotex products less than 50% of their manufacturing expiration date. Otherwise, the lot may be returned.		X
29	8.5.2 VDA (6.1.4/6.6.3)	Identification and traceability	Have a material tracking system to limit the consequences of any defect that occurs (identification, release status, traceability at the entry and exit of your processes)	X	X
30	8.5.3 VDA (6.4.1/6.4.2/ 6.4.3)	Property owned by customers and external providers	Any tooling that MANGOTEX makes available to the supplier, for use solely and exclusively in production, must be kept in good condition by the supplier, while in its possession and when sent to MANGOTEX, if it is worn, broken or damaged, it must be repaired by the Supplier and the actual costs at your expense, except natural wear and tear relating to the useful life of the Tooling. MANGOTEX tooling must be identified and standardized as "MANGOTEX PROPERTY", the supplier must have control that keeps the tooling clean, maintained and quickly located. Any lost or damaged tool must be reported to MANGOTEX. Any concession of tools, devices or equipment will only be made after the signing of ANNEX-C5- "Lending Agreement". Variations of this model may be negotiated in specific circumstances. You must maintain a system for preventive and corrective maintenance and determine their useful life. It is recommended that there is an effectively implemented process for analyzing and optimizing downtime and managing the availability of spare parts for key products/equipment.	X	X

	ISO9001 / IATF16949	Subject	Requirements	W	M P
31	8.5.4 VDA (6.1.2/6.1.3 / 6.6.1/ /6.6.2)	Preservation	The supplier must ensure the preservation of the product throughout the entire production process (input and output). E.g.: stacking, cleaning, contamination and mixing, protection against damage; correct product and quantity.	X	X
32	8.5.6 VDA (5.2/6.1.5)	Change control	In the event of any change, regarding any material, production method or process, machine, tool, or any other factor that may affect the quality of parts or inputs, the supplier must notify MANGOTEX (Depts. Purchasing, DNP and Quality) at least 90 (ninety days) in advance of intended implementation. This includes changes to location, CNPJ and State Registration. Any change (in the process, product or suppliers) made without authorization by MANGOTEX will be a breach of the terms of this manual and will make the supplier or sub-supplier liable for losses and damages (Examples: costs of field failures, warranty expenses, rejections, fines, etc), penalty in the IQF score, will result in a "C" grade and it is still up to MANGOTEX to contact the Certifier and place the supplier in business on hold. You must use the form ANNEX-C6_Change Request	X	X
33	8.6 VDA (7.1)	Release of products and services	<p>QUALITY CERTIFICATES</p> <p>Every batch of raw materials must be accompanied by a quality certificate, attached with the invoice. It will not be required for components in each batch.</p> <ul style="list-style-type: none"> • Raw Material Suppliers: batches must be accompanied by a Quality Certificate, containing: characteristics of the material (chemical composition, mechanical properties, dimensions and other characteristics agreed with MANGOTEX). • Heat Treatment Service Suppliers: batches must be accompanied by a Quality Certificate covering: the batch produced, containing the values (specified and found) of the relevant characteristics (hardness, layer thickness, etc.). • Surface Treatment Service Suppliers: batches must be accompanied by a Quality Certificate covering: the batch produced, values (specified/found) of the characteristics (layer thickness, resistance to Salt Spray, etc.). • Chemical product suppliers: all samples must be accompanied by the Material Certificate, Technical Bulletin, Product Safety Data Sheet (MSDS). <p>NOTE1: it is the supplier's responsibility to send the most recent copy of the certificates (electronically, physical sending is not mandatory), failure to do so will result in demerits in the IQF.</p>	X	X
34	8.6.2 VDA (7.1)	Layout inspection and functional testing	After PAPP approval, layout inspection must occur every 12 months. The supplier must retain and present if requested. The layout inspection must contain the requirements: Billed Drawing and Dimensional Report with all specifications of the approved PAPP; Any change to the layout inspection frequency must be submitted to MANGOTEX and will only be considered effective after formal approval.	X	
35	8.7.1 VDA (6.2.4)	Control of non-conforming outputs	The supplier must have a system to act in situations of non-conforming products throughout the production process, including the receipt of products. E.g: reaction plan, container, quarantine area, identification, scrap/rework record, entry/exit control, etc.	X	X
36	8.7.1.1 VDA (6.2.4)	Authorization for granting from the client	Authorization to manufacture products different from MANGOTEX specifications is limited to the quantity of parts or period of time, with EQF approval being mandatory. Every batch supplied under diversion must contain a label on each package with the following inscription: UNDER DEVIATION. The supplier must use the ANNEX-C3_Form for Approval of Specific Derogations and together with an analysis of the non-conformity and an action plan to eradicate the root cause	X	X
37	8.7.1.4 VDA (6.2.4)	Reworked product control	The Supplier must prepare rework instructions, training those involved and record these operations.	X	X
38	8.7.1.6 VDA (6.2.4)	Customer notification	The supplier must notify MANGOTEX within 24 hours or sooner if a non-conforming product has been shipped.	X	X
39	9.1.2/9.1.2.1/ VDA (7.1)	Customer satisfaction	See item VIII	X	X

	ISO9001 / IATF16949	Subject	Requirements	W	M P
40	9.2.2.3 VDA (6.5.4)	Manufacturing process audit	The Supplier must carry out a self-audit process valid for a maximum of 12 months. It is recommended that the supplier obtains knowledge and training in the VDA6.3 Manual.	X	X
41	9.2.2.4 VDA (6.5.4)	Product audit	It must be defined in the Product Control Plan and carried out at least every 12 months, for each manufactured product, such as a part in series production. Any non-compliance found in the audit, the supplier must evaluate according to ANNEX-C1.	X	X
42	10.2 VDA (6.5.3)	Non-compliance and corrective action	MANGOTEX requests that the supplier, when there are divergences in relation to product and process needs, analyze the causes and verify immediate and corrective actions for their effectiveness. QMS documentation (Control Plan, FMEA, Instructions) is updated as necessary	X	X
43	10.2.3 VDA (7.4)	Troubleshooting	<p>In cases where non-conformities occur in supplied products, MANGOTEX will send the Supplier Non-Conformity Report – RNCF to the supplier. The supplier must have established a procedure and appropriate processes to take all necessary corrective and preventive actions for rejections or non-conformities detected at MANGOTEX.</p> <p>The supplier must use the RNCF Report's own methodology, always considering a risk analysis. <u>The containment action must be carried out within 24 hours (after notification of non-compliance)</u> and must be maintained until the effectiveness of the implemented corrective action is duly verified on site or through evidence.</p> <p>Regardless of the level of criticality, the supplier must take appropriate containment actions (e.g. selection) at its facilities and subcontractors, in MANGOTEX stock or even at the facilities, as necessary. These actions should guarantee the shipment of defect-free parts.</p> <p>The supplier is responsible for purchasing labor from third parties when necessary, to carry out selections, reworks, etc. The supplier must keep MANGOTEX informed whenever requested about the progress in the failure analysis process.</p> <p>MANGOTEX will carry out additional investigations when necessary.</p> <p><u>The response time for causes, corrective actions and their standardization is 5 working days</u>, starting after sending the RNCF, failure to comply with this period will result in demerit in the IQF.</p> <p><u>Non-conformity actions must be implemented within 30 days</u>, except for actions negotiated with MANGOTEX Quality Department.</p> <p>Any reworks, selections, losses and costs associated with non-conforming materials are the responsibility of the SUPPLIER and, including costs of rejections (sets), yard actions at the customer, field actions and others, due to failure of the purchased component/material.</p> <p>Lessons Learned: The Supplier must collect information resulting from experience, both from previous projects and ongoing projects (e.g., from field and production area failures, project performance, product safety), and apply it, such as lesson learning, to new projects and development work, to your ongoing production operations, and to your supply chain.</p>	X	X
44	10.3	Continuous improvement	The Supplier must reduce its relevant levels of rejection and rework internally and at the Customer by introducing the necessary measures. This information must be presented to the Customer upon request.	X	X

VIII. SUPPLIER QUALITY INDEX - IQF

MANGOTEX, in continuous improvement in evaluating the performance of its direct and indirect Suppliers, establishes monitoring guidelines, according to the equation:

IQS => Management System Index

IQP => Product Quality Index

IQR => Response delay index

IQE => Delivery Quality Index

$$\text{IQF} \Rightarrow (\text{IQS} + \text{IQR}) \times 0.4 + (\text{IQP} + \text{IQE}) \times 0.6$$

Index		Requirement	Criteria/Factor	Punctuation
IQS	Management system	IATF16949 + ISO14001	-	80
		IATF16949		70
		ISO9001 + ISO14001		60
		ISO9001		50
		Approved by the customer		30
		No certification / Expired certification		0
IQR	Response delay index	Expired operating license, VDA6.3 Audit Action Plan expired, CQI Self-Assessment (where applicable) not submitted	Without delay	20
IQP	PPM	(rejected quantity, divided by total quantity delivered x 1,000,000)	0 - 30	15
			31 - 60	10
			61 - 100	5
			Above 100	0
	Quality complaints	Recidivism	Existing	20
			Nonexistent	25
		Non-compliance response delay (8D) Containment within 24 hours and Definition of the cause/action plan within 5 days	Existing	0
			Nonexistent	15
IQE	Delivery Quality Index	Attendance at the delivery window (according to purchase order and purchase negotiation) Note1: Considering material entering the warehouse Note2: Number of special freight occurrences will be considered	Without delay	20
			Late	0

Classification and mutual decisions are based on your performance in the period:

EVALUATION SYSTEM – IQF		
IQF		ACTIONS / RECOMMENDATIONS
Great (A)	95 to 100	No action required
Good (B)	85 to 94	No action required
Regular (C)	70 to 84	1) Mandatory submission of the action plan; 2) Possibility of audit to verify the implementation and effectiveness of the action plan at the Supplier's plant; 3) Call for a meeting at Mangotex (Top Supplier) in case of presenting IQF 70 – 79 for three consecutive months and, mandatory signing of agreement and goals to resume the minimum classification B in the VDA 6.3 audit within one year;
Terrible (D)	0 to 69	1) Mandatory submission of an action plan; 2) Possibility of audit to verify the implementation and effectiveness of the action plan at the Supplier's plant; 3) Call for a meeting at Mangotex (Top Supplier) in case of presenting IQF < 70 for 2 months in the last 6 months and mandatory signing of agreement and goals to return to the minimum B classification in the VDA 6.3 audit within one year; 4) Possibility of entry into controlled shipment Level 1 or 2 (Valid for production parts and services); 5) Possibility of being blocked from new business and consequently deactivated.

NOTE1: The supplier will receive its performance every 3 months through the Quality Department, through the supplier's Performance Report.

IX. CRITICAL SUPPLIER PROGRAM (CSP)

A supplier that fails to meet quality and satisfaction requirements, for example the quality of supplied products, product and production approval (design phases), field and warranty complaints, may be assigned to the Supplier Program Critics. The Program has four escalation levels:

- CSP 0 _ Supplier has problems
- CSP 1 _ The Supplier was unsuccessful in solving these problems
- CSP 2 _ The Supplier needs external help
- CSP 3 _ The Supplier is not suitable for MANGOTEX's quality (new business on hold).

The classification of levels 0 to 2 is assigned by the Quality Department.

a. CSP-1

It will be communicated through letter or email, indicating the non-conformity(s), the affected product(s) or service(s) and other requirements that must be met during the CSP period- 1. The supplier must inform receipt of the request and submission of its proposal for additional inspection to the Quality Department, indicating the methods, illustrations, instructions and notes involved in this activity. Inspection result history must be recorded, updated and reviewed daily. It is mandatory that during the validity of CSP-1, all batches are additionally identified with the "CSP-1" symbol, clearly and visibly on the outside of all packaging. Lots supplied without proper identification will be rejected upon receipt by MANGOTEX.

b. CSP-2

In addition to the applicable requirements for CSP-1, the supplier must consider:

- The addition of a second reinspection bench (200% inspection).
- Reinspection must be carried out by outsourced companies, approved and/or indicated by MANGOTEX, whose costs will be passed on to the supplier.
- Schedule a "Process Audit" with the Quality Department within 3 working days after sending the "CSP-2" notification, with the aim of identifying the causes of non-compliance and determining the resulting actions.

NOTE1: upon agreement between the parties, the "CSP-2" inspection station can be located at the MANGOTEX facilities and the costs passed on to the supplier .

NOTE2: regardless of the location of the inspection station, the supplier is responsible for identifying all packaging with the CSP-2 label.

NOTE3: MANGOTEX requests that the supplier notifies its certifier about its current status in CSP-2. MANGOTEX must be included in said notification.

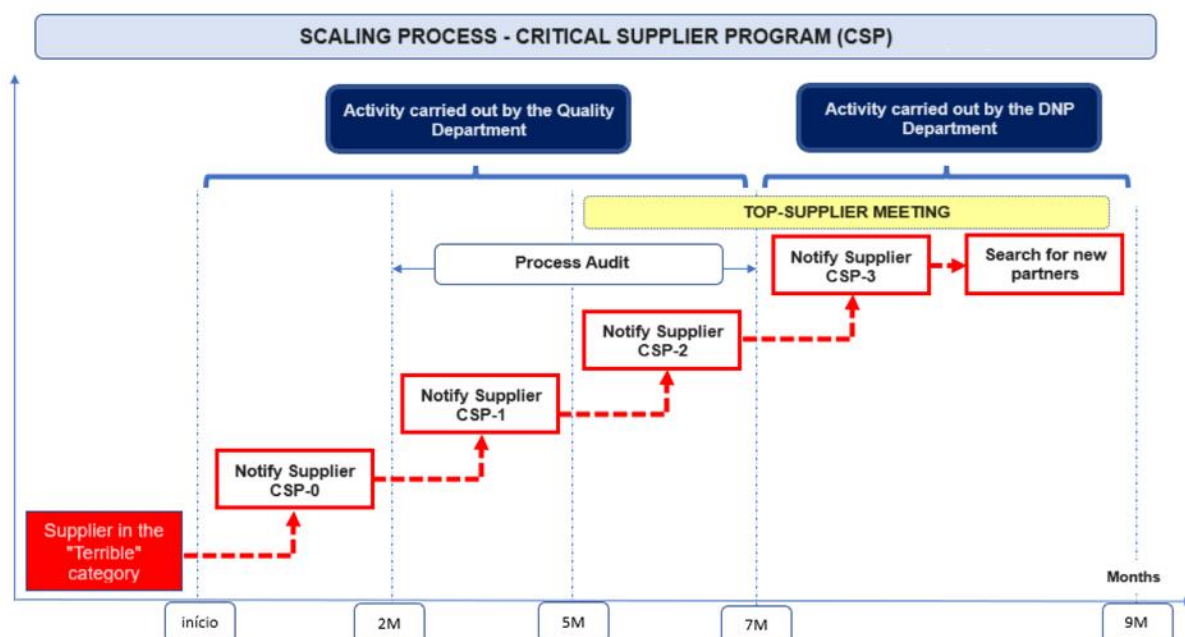
c. CSP-1 and CSP-2 EXIT CRITERIA

The CSP will be suspended by MANGOTEX after the supply of 5 consecutive batches with "Zero Defects" and upon documentation from the supplier that demonstrates the effectiveness and efficiency of the actions implemented.

NOTE1: Under no circumstances is the supplier authorized to interrupt CSP "1" or "2" inspections without authorization and/or formal agreement from MANGOTEX.

d. CSP-3

A level 3 rating can only be assigned by the DNP Department, in a Top-Supplier meeting (with the Departments: Quality and Purchasing). A "C" grade may only be removed at this same meeting, and only after an appropriate interval. Improvement measures that have been proven to be effective, for example, performance indicators (IQF and others), agreements reached at the Top-Supplier meeting are the basis for such a decision.



X. COSTS OF NON-QUALITY – COMPENSATION PROCESS

If the supplier's responsibility for the problem is confirmed, it will be communicated in advance and in writing, with some of the following costs being assumed:

- “Non-conforming” batch detected in MANGOTEX production;
- Production downtime caused by quality or supply problems (delivery);
- Selection or rework with MANGOTEX labor;
- Occupation of physical space in selection or rework carried out within MANGOTEX;
- Losses of materials and labor added to the “non-conforming material” calculated as appropriate;
- Outsourced labor used by clients in selection or rework, which will be charged according to the contracted company's invoice;
- Debts imposed on MANGOTEX by its customers, generated by breaches of quality or shortages under the responsibility of suppliers;
- Extra freight, generated due to quality breaches or shortages under the responsibility of suppliers, depending on the expense generated.

XI. CONTACTS

DEPTS	PHONES	EMAIL
DEVELOPMENT (DNP)	11-2118-9883 11-2118-9867	dnpgeral@mangotex.com.br dnp.export@mangotex.com.br
PURCHASING	11-2118-9851	compras@mangotex.com.br
QUALITY	11-2118-9870 11-2118-9879	audit.qualidade@mangotex.com.br gestao.qualidade@mangotex.com.br laboratorio01@mangotex.com.br

ANNEX H1 _ Term of Receipt and Acceptance of the Supplier Quality Manual

Make a copy or detach this page and send the signed copy to the following address:

e-mail: gestao.qualidade@mangotex.com.br; audit.qualidade@mangotex.com.br; laboratorio01@mangotex.com.br

We have received the Supplier Quality Manual, understand and agree with the expectations expressed
therein – **V1_06.02.2023**

Company: _____

_____	_____	_____
Responsible (Name)	Signature	Date

**RETURN THIS RECEIPT TERM AT THE MOST 10 (TEN) WORKING DAYS AFTER RECEIVING
THE MANUAL, IF IT IS NOT RETURNED BY THIS DATE, IT IS ASSUMED THAT THE
REQUIREMENTS HAVE BEEN MET BY THE SUPPLIER.**