

Vestas Supplier Quality Manual

Vestas Wind Systems A/S and its group of companies (“Vestas”) and Supplier are hereinafter also referred to individually as a ‘Party’ and collectively as the ‘Parties’

Supplier Quality Manual (SQM) Revision History and Document Owner			
Revision	Date	Description of Change	Owner
1.0	November 2021	<ul style="list-style-type: none"> Indirect supplier requirements updated. Vestas’s 3rd part representative can perform audits/ inspection added as additional requirement to the chapter 3.3. Maintain Vestas supplier approval status. Dangerous Substances Directive (DSD-67/548/EEC) replaced by CLP Regulation (EC 1272/2008). Minor correction for phrasing to improve clarity; various sections. 	Global Procurement
2.0	July 2022	<ul style="list-style-type: none"> ISO 9001/ ISO 14001 & OSHAS 18001 / ISO 45001 standard requirements updated. The hierarchy of the documents illustrated. Indirect scope of sourcing requirements updated. Secure Product Development section introduced. Software development management section introduced. Calibration requirements introduced. Sustainability performance added. Minor correction for phrasing to improve clarity, various sections. 	Global Procurement
3.0	July 2023	<ul style="list-style-type: none"> Order and organization of chapters reviewed. Reference to Vestas’ “Supplier Code of Conduct” removed, managed in Purchase Agreement or Vestas General Purchasing Terms. Hierarchy of documents updated, Figure A. Qualification Process for Indirect scope reviewed. Triggers for Re-Assessment updated. Section for Product / Service Development pre-requisites created. Subsection for Maintenance requirements added. Subsection for Details for End Customer Audit, Test and Inspection reviewed. APQP. Training requirements updated. Subsection for Production Part Approval Process (PPAP) for direct scope of supply updated. Subsection for Product Part Approval Process for direct scope of supply updated. Management for Vestas stipulated sub-suppliers updated. Supplier Performance Criteria: definitions revised. Supplier risk added. Section for Supplier Escalation Process added. Section for Supplier Development Tools added. Section for Other Product Specific Quality Requirements added. 	Global Procurement

Vestas Safety, Quality, Health and Environmental Policy

January 2023

Henrik Andersen
President and Chief Executive Officer



In Vestas, we operate renewable solutions across the world to secure long-term sustainability of our planet. We can only do this by keeping each other and all colleagues safe at our sites. We know that sustainable business performance is delivered through healthy people, focus on the protection of the environment and safe processes and equipment. We apply quality in everything we do ensuring deliveries on time and at the right cost, and offering solutions and services that always meet or exceed our customers' expectations.

We all play a part in:

Customer Focus

We make Vestas an attractive partner and preferred customer choice due to premium quality and ease of collaboration.

Solutions and Services

We deliver sustainable energy solutions and services with high reliability and quality, and we reduce environmental impacts including prevention of pollution from our products and operations.

Leadership

We hold each other accountable, and true leadership means driving a culture where Safety and Quality are never compromised. We lead through intent to empower our people to make safe and qualified decisions.

People

Our people are the driving force behind our success. We empower our employees through involvement,

participation, consultation, and competence development, and provide the necessary resources, training, and support.

Process Approach

Safety, Quality, Health and Environment (SQHE) is fully integrated in our end-to-end business processes. We adhere to processes and see them as the base for learning and continuous improvement.

Risks and Opportunities

We manage our risks and opportunities systematically. We pro-actively identify and mitigate risks in all activities and at all levels of the organisation and actively promote risk-based thinking and acting.

Performance Management

We measure and review SQHE performance and act upon deviations and

customer feedback, and ensure compliance to legal and other requirements. We make fact-based decisions using relevant tools systematically. We collaborate to identify and address the root-causes to prevent a recurrence and continually learn.

Partners and suppliers

We build strategic partnerships to evolve the renewable ecosystem and we involve our business partners, and suppliers in activities across the value chain. We expect the same performance from them in all aspects of Safety, Quality, Health and Environment as we expect from ourselves.

Continuous Improvement

We are committed to achieve excellence in our solutions and services. We share lessons learned to maximize the impact and experience and to continually improve our performance.

0. SCOPE	5
1. QUALITY, HEALTH, SAFETY, AND ENVIRONMENTAL MANAGEMENT REQUIREMENTS	6
1.1. QUALITY MANAGEMENT SYSTEM	6
1.2. HEALTH, SAFETY & ENVIRONMENTAL MANAGEMENT SYSTEM	6
1.3. PRODUCT SAFETY	6
2. SUPPLIER QUALIFICATION REQUIREMENTS	7
2.1. VESTAS QUALIFICATION PHASES FOR DIRECT AND INDIRECT SCOPE OF SUPPLY	7
2.2. QUALIFICATION PROCESS FOR DIRECT SCOPE OF SUPPLY	8
2.3. QUALIFICATION PROCESS FOR INDIRECT SCOPE OF SUPPLY	8
2.4. MAINTAIN VESTAS SUPPLIER APPROVAL STATUS	9
2.5. RE-ASSESSMENTS	9
3. PRODUCT / SERVICE DEVELOPMENT PRE-REQUISITES	9
3.1. SECURE PRODUCT DEVELOPMENT.....	9
3.2. SOFTWARE DEVELOPMENT MANAGEMENT.....	10
3.3. CERTIFICATIONS	10
3.4. CALIBRATION REQUIREMENTS.....	10
3.5. MAINTENANCE REQUIREMENTS.....	10
3.6. END CUSTOMER AUDIT, TEST, AND INSPECTION	11
4. QUALIFICATION REQUIREMENTS FOR NEW PRODUCT	11
4.1. APQP	11
4.2. CAPACITY EVALUATION	13
4.3. PRODUCTION PART APPROVAL PROCESS (PPAP) FOR DIRECT SCOPE OF SUPPLY.....	13
4.4. SAFE LAUNCH FOR DIRECT SCOPE OF SUPPLY	15
5. SUB-SUPPLIER MANAGEMENT	16
6. CHANGE MANAGEMENT	16
7. TRACEABILITY	17
8. DOCUMENTS, DATA AND REPORTS	17
9. PACKAGING, STORAGE AND HANDLING	18
10. DELIVERY AND INVOICE	18
11. SUPPLIER PERFORMANCE CRITERIA	19
11.1. DIRECT SUPPLIERS.....	19
11.2. INDIRECT SUPPLIERS.....	20
12. SUPPLIER ESCALATION PROCESS	20
13. QUALITY COMPLAINTS AND NON-CONFORMITIES (NCS)	21
14. DEVIATIONS / CONCESSION HANDLING	23
15. CONTINUOUS IMPROVEMENT	23
16. SUPPLIER DEVELOPMENT	24

17. OTHER PRODUCT SPECIFIC QUALITY REQUIREMENTS.....	24
18. GLOSSARY	25
19. APPENDIX 1 : 8D REPORT MINIMUM CONTENT	27
20. APPENDIX 2 : SPECIFIC REQUIREMENTS FOR EXTERNAL MANUFACTURER FOR BLADES, POWERTRAIN, AND TOWERS	28

Preface

Vestas’ mission is to deliver best-in-class sustainable energy solutions and set the pace in our industry to the benefit of our customers and our planet. We set ambitious targets, and suppliers to Vestas have a key role in ensuring that we achieve our goals. Along with a strong focus on safety and sustainability, it is crucial that quality is built into our entire value chain and always prioritized to prevent any compromise on performance or reliability.

As a supplier to Vestas, you are perceived as a capable and reliable partner and are accountable for delivering a specified level of quality that supports high product performance at the lowest possible cost throughout the entire product life cycle. You must be passionate about the product and/or service that you provide and relentlessly strive for continuous improvement towards excellence to achieve our common objective of sustainable and profitable growth.

You are requested to incorporate the practices laid forth in this Vestas Supplier Quality Manual (“SQM”) into your internal procedures wherever a gap may exist today. Strict enforcement of the requirements included in this SQM is a mandatory condition of the relationship between Vestas and its suppliers.

0. Scope

The purpose of this SQM is to define a common framework of quality requirements and necessary practices which must be in place to ensure a successful and professional relationship between Vestas and its suppliers. The requirements of this SQM apply to all suppliers belonging to direct and indirect scopes of supply used in the development, production, installation, and maintenance of Wind Turbine Generators (WTGs) or other sustainable energy solutions.

- **Direct scope of supply** includes suppliers providing materials / products and services used in wind turbines.
- **Indirect scope of supply** includes suppliers providing crane service, installation and maintenance, balance of plant products and services, transport services, and tools.

By acting as a supplier of products or services to Vestas, you acknowledge that you have read, understood, and accepted all requirements of this SQM. Moreover, you accept that it is your responsibility as a supplier to notify Vestas of any suspected area of non-compliance with these requirements as early as possible, e.g., prior to giving a quotation, during supplier qualification, during production or prior to shipment of any products and services affected by this non-compliance. This notice must be provided to Vestas SQD or Supplier Account Manager (SAM) in writing, and its receipt must be confirmed by Vestas to be considered as sufficient notice.

SQM contains fundamental requirements. In case of misalignment with more specific requirements in the Purchase Agreement, Technical Purchase Specifications (TPS), drawings and other specific requirements for product or service, those specifications prevail.

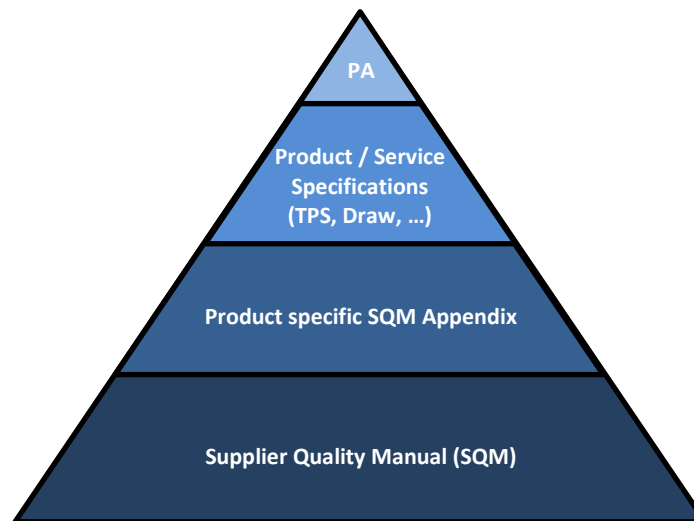


Figure A : Documents Hierarchy

1. Quality, Health, Safety, and Environmental Management Requirements

1.1. Quality Management System

All suppliers' production sites providing products and services to Vestas shall hold and maintain a certification to latest edition of ISO 9001 International Standard.

Supplier shall control and distribute copies of this SQM to each manufacturing site performing work related to Vestas. Upon request, the supplier must provide Vestas with a controlled copy of the supplier's own quality manual and make supporting procedures accessible for review / auditing.

1.2. Health, Safety & Environmental Management System

All suppliers shall comply with any applicable statutory and regulatory requirements regarding health, safety, and environment. Suppliers' production sites shall hold and maintain a certification of their HSE (Health, Safety and Environmental) management systems to the latest edition of ISO 14001 & ISO 45001.

In all cases, suppliers to Vestas must:

- Assess the safety hazards of each work area and implement counter measures to mitigate safety incidents and share these results with Vestas upon request.
- Ensure that employees receive the mandatory and necessary training and instruction to be able to perform the work in a safe way. For indirect scope of supply all suppliers shall comply with Vestas' recent global minimum contractor/subcontractor HSE requirements to perform work on site. The global minimum contractor/subcontractor HSE requirements to be requested from your Vestas sourcing responsible.
- TRIR recordings are mandatory for all suppliers manufacturing items or delivering services. Records shall be available upon request by Vestas unless specific frequency agreed.
- Comply with the most recent revision of the Vestas Prohibited and Restricted Substance document which can be found on vestas.com.

1.3. Product Safety

In the event that Vestas identifies any potential significant Product Safety concerns and forwards the concern to the supplier, the supplier shall immediately assess the product safety claims. If the Parties agree that the claim is valid and poses a significant safety risk to persons, a Safety Alert must be issued by either the Supplier or Vestas. If possible, any corrective and mitigating actions should be included into the Safety Alert ensuring short-term safe work conditions.

Long-term solutions and any claims will be handled via the measures described in section "13. Quality Complaints and Non-Conformities (NCs)"

2. Supplier Qualification Requirements

2.1. Vestas Qualification Phases for direct and indirect Scope of Supply

This section describes Vestas’ requirements for a company for direct and / or indirect scope of supply to be qualified as a Vestas supplier, which will enable a commercial relationship between the two parties. All suppliers for direct or indirect products and services need to be approved before product qualification and supply can start. Equally, individual approval is required for each supplier manufacturing site.

Vestas uses the SAP Ariba Platform for digital management and execution of the complete supplier qualification and onboarding process, which consists of four consecutive phases to verify if the supplier’s organizational maturity corresponds to Vestas’ requirements.

See the process flow for qualification for both indirect and direct scope of supply below.

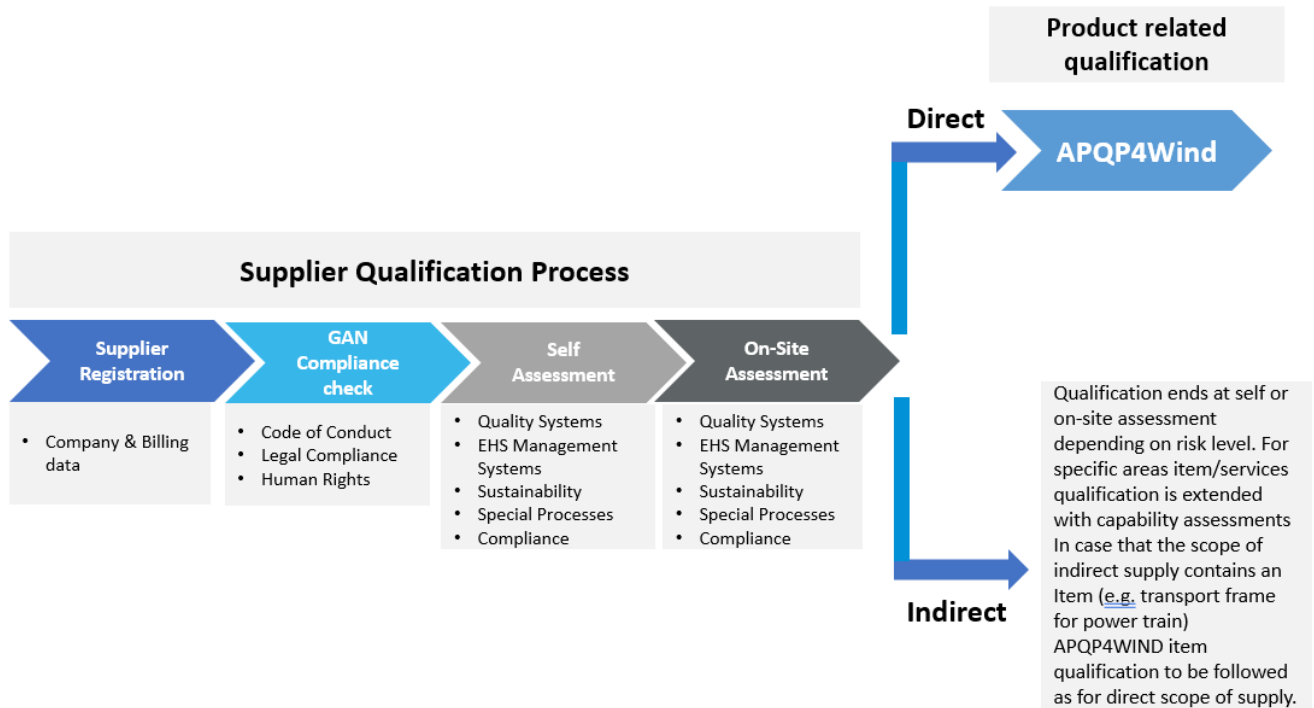


Figure B: Supplier Qualification Process Flow

The main phases are the following:

- 1. Supplier Registration**
- 2. Compliance check – GAN assessment***
- 3. Self-Assessment:** Supplier self-evaluation as per Vestas’ defined questionnaire. Vestas’ cross-functional assessment team will review the self-assessment results and decide the additional steps.

4. **On-site Assessment:** Vestas's evaluation at supplier premises by cross-functional assessment team. The scope of the questionnaire is adapted to planned supplier segmentation and characteristics of the intended business.

** **Compliance Assessment:** All suppliers undergo a third-party due-diligence screening covering business ethics and sanctions. Depending on the level of risk identified, the screening may consist of an internal questionnaire to be completed by the Vestas requestor and an external questionnaire to be completed by the supplier. If the screening identifies any compliance issues, Vestas' compliance department (Compliance) together with the requestor develops mitigating actions to lower Vestas' risk exposure. However, if the supplier is from an embargoed country, the supplier will be rejected at this stage. If the supplier is subject to targeted sanctions, Vestas' Compliance department consults with relevant legal and compliance subject matter experts to determine if Vestas can engage with the supplier.*

2.2. Qualification Process for direct Scope of Supply

Supplier assessments are required for each manufacturing location prior to start of production. Before start of business, Vestas needs to approve each manufacturing location via a written Supplier Approval Notification.

Supplier approval is obtained when the assessment process is successfully passed, involving the overall and individual score for the assessed areas satisfying approval threshold. If sufficient maturity is not demonstrated, the supplier will be rejected and / or required to solve identified gaps prior to scheduling the next assessment.

2.3. Qualification Process for Indirect Scope of Supply

Vestas will define and categorize the risk of indirect suppliers associated with their scope of work and decide the qualification requirement in accordance with the Supplier Onboarding process.

The qualification process can vary according to supplier segmentation and characteristics of intended business, where depending on the risk defined, different levels of assessments must be completed by the supplier to pass at accepted assessment score.

The assessment score is a combination of a scoring system based on QHSE & Compliance evaluation which will result in risk segmentation for supplier approval, interim approval with action plan or rejection. For specific areas item/services qualification is extended with capability & finance assessments.

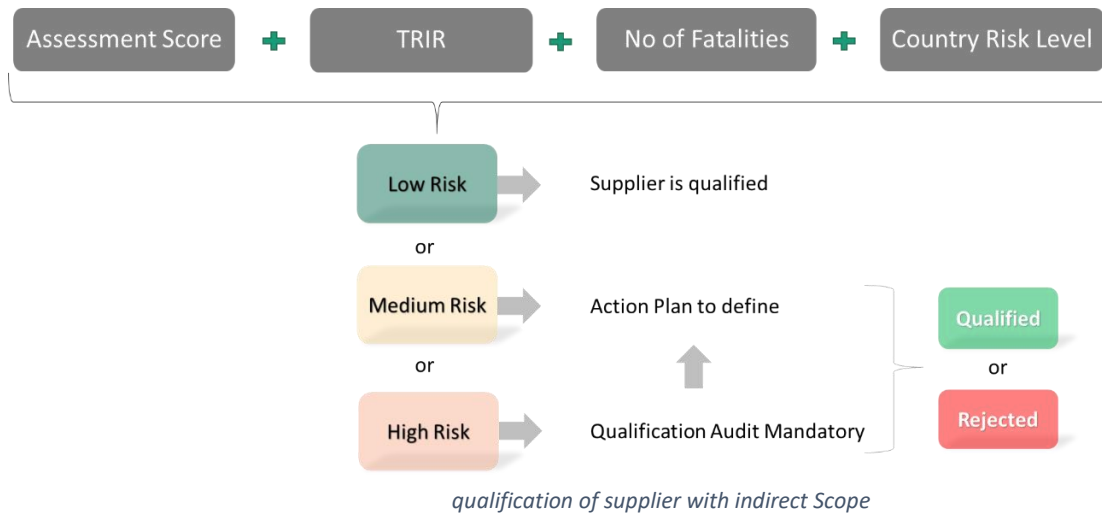


Figure C: Criteria for

When qualification is successfully concluded and the company is approved as a Vestas supplier, only then the project and service awarding shall be allocated to the supplier.

2.4. Maintain Vestas supplier approval status

After approval, the supplier shall maintain and continually improve its development. Approved status can be suspended whenever a decline on this obligation is manifested, e.g., severe deviation, inconsistent performance or failed re-assessment. Audits/inspections may be performed by Vestas or the Vestas 3rd party representative under an appropriate duty of confidentiality agreement.

2.5. Re-assessments

Re-assessment can be triggered by the following:

- Development programs
- Performance reviews
- Supplier business reviews, with or without scope change
- Risks identified during audits, annual corporate risk assessments and projects
- Significant changes taking place at supplier since first approval
- As a result of poor performance

3. Product / Service Development pre-requisites

3.1. Secure Product Development

The reduction of cybersecurity risk is a market requirement that, in some markets, will quickly become a barrier to entry for those suppliers that are unable to demonstrate that they help reduce overall cybersecurity

risk. However, if you, as a supplier, have SPD policies, procedures, and practices in place, then you are a contributor to our overall risk reduction. If supplier's scope of supply includes any component or service that generates, processes, conveys, or receives data, then that supply is in scope for cybersecurity risk mitigation. If supplier is not able to test components as being secure against known cybersecurity vulnerabilities at the time of supply, then supplier shall inform Vestas so that internal testing can be performed as part of Vestas' development procedures.

3.2. Software development management

In case that a supplier's product or service include software development as part of their product/service to Vestas, the supplier shall show evidence that they can comply to CMMI (Capability Maturity Model Integration) level 3 or higher.

3.3. Certifications

Suppliers must comply with the relevant certification schemes (for example IEC RE, UL, CSA,) as per the scope of the project. If it is not defined, they must follow Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 on machinery and later amendments thereto.

3.4. Calibration Requirements

Test devices

The test devices used for supplier's internal calibration must be calibrated in an ISO/IEC 17025:2005 accredited laboratory or a laboratory maintaining an international measuring standard accreditation for the device to be calibrated.

If no standards exist, manufacturer specifications to be used.

Tools, gauges, and equipment

All tools' gauges and equipment used for suppliers' internal measurements and tests must be calibrated in a laboratory which is as minimum ISO 9001:2015 certified, with the scope of the certification including calibration for the tools/tool group to be calibrated. Internal laboratories are also acceptable as long as they are capable and covered by ISO 9001:2015 certification. If no standards exist, manufacturer specifications to be used.

All tools' gauges and equipment shall be re-calibrated as per a predefined schedule. The period between calibrations shall be established attending to the importance of the measurement device to supplier manufacturing process, results from previous calibrations, device specifications & applicable regulations.

3.5. Maintenance requirements

Supplier shall properly maintain all tools, equipment, machines, and vehicles to be employed at any stage of product development, manufacturing process or service to Vestas. Preventive maintenance shall be planned and executed to secure they remain safe, in adequate usable condition and with extended productivity. The maintenance plan and process shall observe manufacturer instructions, as well as external regulations or

customer specific requirements. If some of those tools are owned by Vestas, supplier shall maintain the tools as per the agreement between the parties.

3.6. End Customer Audit, Test, and Inspection

It is a requirement of Vestas' customers (End customer) to participate or carry out specific inspections, tests, or audits at supplier with and without End customer or a 3rd party assigned by the End customer. Such inspections, observance of tests and audits may be extended to products subject to project specific requirements or local legislation requirements in the country of WTG installation.

Supplier shall accept and facilitate End customers' inspections, observance of tests, and audits (accompanied by representatives of Vestas and representatives of the relevant End customer), provided such inspections, tests and audits are requested 10 business days prior to the date of the initiation of inspection, test, and/or audit.

Supplier shall support the inspections, tests, and/or audits, by making adequate resources and technical personnel available to successfully perform the inspections, tests and/or audits. Any eventual derived cost must be handled according to the provisions in the Purchase Agreement between the Parties.

4. Qualification Requirements for New Product

4.1. APQP

Vestas requires suppliers to use Advanced Product Quality Planning (APQP4Wind), which is a common quality assurance methodology for the global wind industry.



APQP4Wind is applicable for the direct scope of supply and for the items delivered in the indirect scope of supply selected by the relevant commodities based on quality and safety criticality.

The supplier must adapt APQP4WIND methodology in their product and process development. Further information and training options can be found on the organization's official website (apqp4wind.org). Supplier shall have at least one APQP4wind (or equivalent) certified employee, however it is supplier's responsibility to have sufficient employees trained and certified as required by the quantity and complexity of the qualifications derived from new product introduction or change management with Vestas.

APQP4Wind provide the generic requirements for a proper Product and Process approval. It does not replace Vestas specific requirements and deliverables when applicable.

APQP4Wind is applicable for new product and process development, changes in the product and processes, technology transfers at suppliers and process outsourcing if nothing is otherwise agreed with Vestas.

The quality planning activities are to be conducted according to the APQP4Wind Manual. The required APQP4Wind deliverables are to be agreed during the kick-off meeting between the Vestas Supplier Quality & Development (SQD) representative and the supplier.

The supplier shall establish appropriate product quality planning activities as part of their overall project plan. In addition to APQP4Wind requirements, Vestas' APQP activities are extended to include the following:

- Quality requirements specified in Request for Quotation (RFQ)
- Capacity evaluation
- VDA 6.3 audit or an equivalent process audit accepted by Vestas
- Product-specific requirements specified by Vestas.

APQP reviews are formal meetings where Vestas reviews the supplier's APQP milestone readiness. During this meeting, Vestas and the supplier jointly confirm that the project is on track with respect to milestone deadlines and results. In a case where the project is not on track, an escalation process will take place.

The supplier is responsible for:

- Assigning a dedicated project manager or APQP leader
- Organizing a cross functional APQP project team
- Developing and executing an APQP Plan to support a successful product launch

Vestas is responsible for:

- Identifying the Vestas project team members
- Assigning an SQD resource to support the completion of APQP activities with the project team
- Identifying key milestones and project parameters

SUPPLIERS ARE RESPONSIBLE FOR DEVELOPING AND DRIVING APQP FOR ALL COMPONENTS DELIVERED TO VESTAS IF OTHER CONDITIONS ARE NOT AGREED WITH VESTAS.

The illustration below demonstrates the relationship between APQP4Wind and Vestas' Product Development model.

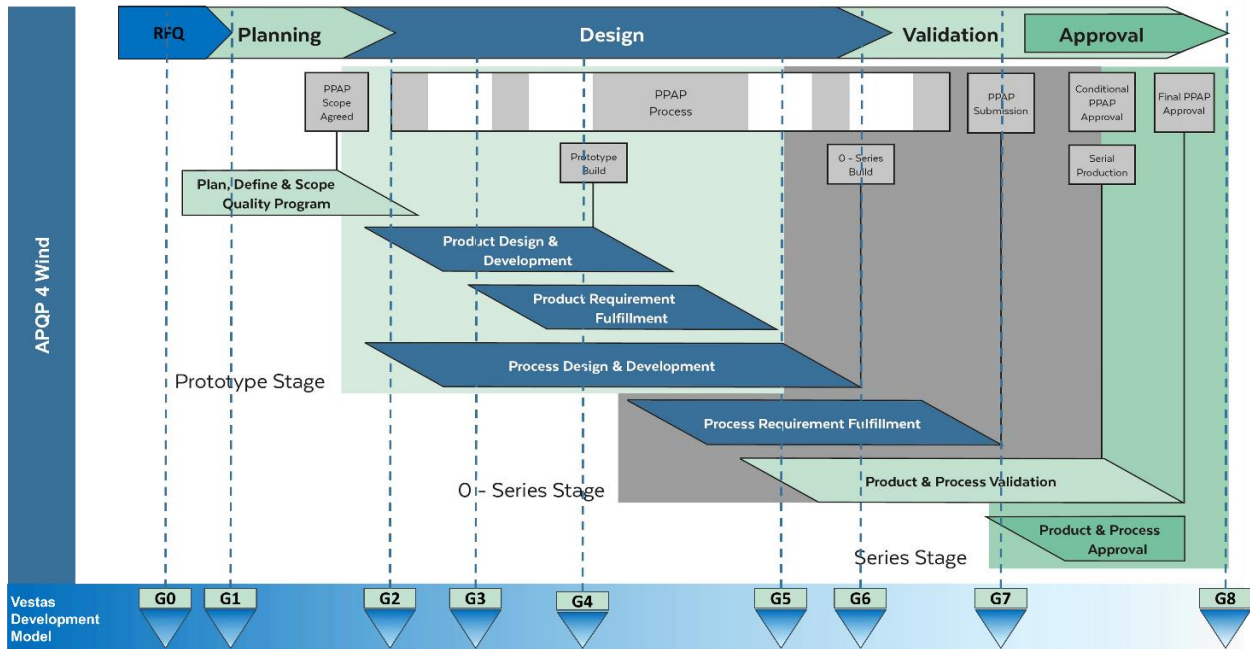


Figure D: Vestas Product Development Model vs APQP4Wind phases

4.2. Capacity evaluation

Capacity assessments will be conducted based on Vestas' request to validate for weekly peak demand or annual demand. The capacity validation must be based on actual process cycle times, OEE, and other relevant capacity parameters and can be performed both for new product introduction and for running products.

Capacity validation for new product introduction is divided in 4 phases:

- L0 - Planning Phase
- L1 - Design Phase
- L2 - Prototype Phase
- L3 - Serial Ramp-up Phase

Capacity validation for running products can be triggered by the following: volume change, new factory, new production line, new machines, delivery challenges, high share of wallet, any crisis impacting delivery or similar.

The L2 and L3 validation should be done with the presence of Vestas personnel. The supplier is obliged to share all relevant capacity data with Vestas.

4.3. Production Part Approval Process (PPAP) for direct scope of supply

Vestas requires PPAP Approval (signed Part Submission Warrant (PSW) prior to the start of serial deliveries. The compliance of PPAP samples needs to be proven prior to shipment to any Vestas / subcontractor location.

Suppliers shall ensure that the PPAP document and sample submissions are based on APQP4Wind requirements and Vestas' requirements described below:

APQP4Wind Phase	APQP Chapter	APQP4Wind Element	Workbook link	
1.0 Plan, Define & Scope Quality Program	1.8	Product Quality Planning Team	C) PPAP Details F) Product Quality Team	
	1.9	Product Quality Plan (PQP)	1) Product Quality Plan	
2.0 Product Design & Development	2.3	Team Feasibility Commitment	2) Team Feasibility Commitment (TFC)	
	2.4	DFMEA (Design Failure Mode & Effect Analysis)	3) D-FMEA	
	2.5	Special Characteristics	3) D-FMEA 8) P-FMEA	
	2.6	Design for Manufacturability, Assembly, Transport & Service	2) Team Feasibility Commitment (TFC)	
	2.11	Engineering Change Management (ECM)	5) Customer Engineering Appr.	
3.0 Product Requirement Fulfillment	3.3	Sub Supplier Product Quality Plan	1) Product Quality Plan	
	3.4	Customer Engineering Approval	5) Customer Engineering Appr.	
	3.5	Prototype Control Plan	9) Control Plan	
4.0 Process Design & Development	4.1	Preliminary Process Flow Chart & Floor plan	6) Process Flow Chart 7) Factory Floor Plan	
	4.2	PFMEA (Process Failure Mode Effect Analysis)	8) P-FMEA	
	4.3	MSA Plan (Measurement Systems Analysis)	15) Measurement System Analysis	
	4.4	Preliminary Process Capability Study Plan	10) Process Capability Study	
	4.5	Packaging & Transport Specifications	16) Packaging Test Report	
5.0 Process Requirement Fulfillment	5.1	Process Flow Chart & Floor Plan	6) Process Flow Chart 7) Factory Floor Plan	
	5.3	O-Series Control Plan	9) Control Plan	
	5.5	Preliminary Process Capability Study Plan	10) Process Capability Study	
	5.6	Sub Supplier PPAP Completion	APQP4Wind Workbook	
6.0 Product & Process Validation	6.2	Performance Test Report & Certification	11) Performance Test Report	
	6.3	Material Test & Certification	12) Material Test Report	
	6.4	Dimensional Report	13) Dimensional Test Report	
	6.5	Appearance Approval Report	14) Appearance Approval Report	
	6.6	MSA Report (Measurement Systems Analysis)	15) Measurement System Analysis	
	6.8	Form, Fit & Function (FFF)	21) Form, Fit and Function	
	6.9	Serial Production Control Plan	9) Control Plan	
	6.10	Packaging & Transport Evaluation	16) Packaging Test Report	
	7.0 Product & Process Approval	7.1	PPAP Documentation (Production Part Approval Process)	APQP4Wind Workbook
		7.2	Master Samples	17) Product and Master Samples
7.3		PPAP Submission & PSW (Part Submission Warrant)	18) Part Submission Warrant, PSW 19) PSW, Deviation sheet	

Figure E: APQP4Wind phases and deliverables

- For each new or changed product, upon request from Vestas, the supplier shall submit serial production samples with a complete report and supporting documents based on the Vestas supplier product qualification process and agreed Extent of Documentation (EoD).
- The extent of required documentation depends on the component risk level determined by Vestas.
- The initial (PPAP) samples shall be made under serial production conditions, following the same process.
- PPAP documentation and samples shall be ready as scheduled. Samples must be clearly marked as PPAP samples, using Vestas-specified PPAP labelling unless otherwise agreed.
- The supplier shall notify Vestas when PPAP samples are ready. Supplier must submit PPAP documentation for SQD initial review before shipping the first samples to Vestas.
- By signing the PSW, the supplier confirms fulfilment with Vestas' specification and requirements.
- Supplier manufacturing process* and resulting initial samples shall be in full compliance with Vestas' requirements and pass Form, Fit, & Function test (FFF) at the first submission. If this is not the case, Vestas will request corrective actions and PPAP re-submission when corrective actions are proved to be effective. In addition to demonstrating compliance with the specification of the product in scope, the supplier must also prove / state conformance with the CLP Regulation (EC 1272/2008) and must confirm that they are not using materials banned by the "Vestas Prohibited and Restricted Substance Document" published on the Vestas homepage.
- Vestas will respect the supplier's confidentiality / expertise concerning data covering proprietary parts and it is accepted that in these circumstances the supplier may not share all information / data with Vestas. However, if problems or concerns arise, the supplier must be prepared to share information eliminating such concerns.
- Vestas will notify the supplier with written approval or rejection of the serial production samples or PPAP documentation. In the event of rejection, the supplier will not be allowed to supply related item number until corrective actions are implemented and accepted by Vestas.
- Serial production material can be only delivered to Vestas through approved PSW (Or interim PSW). Exceptions must be discussed and approved by Vestas with documented evidence.

*Supplier manufacturing process shall demonstrate the capability of meeting the quality targets for Product and Process special characteristics i.e., CTQs. Guidelines from APQP4Wind shall be used unless otherwise stated in the Vestas specifications.

Note: Vestas's approval does not relieve the supplier of the liability for the product(s) delivered to Vestas in accordance with the agreement in place between the Parties.

VESTAS REQUIRES PPAP APPROVAL PRIOR TO SHIPMENT OF ANY PRODUCTS FOR USE IN CUSTOMER

TURBINES

If required by Vestas, the supplier shall develop a Quality Assurance Safe Launch (QASL) plan. A safe launch plan is designed to protect both Vestas and the supplier in the initial phase of product supply and ramp up. The focus is on ensuring capacity readiness, process stability and capability, resulting in continuous quality.

5. Sub-supplier Management

Sub-supplier qualification and monitoring is the responsibility of the supplier and shall be carried out in accordance with the qualification and monitoring procedures used under the Vestas supplier qualification and selection process or an equivalent qualification process which has been accepted by Vestas to ensure the same defined quality standards at sub-suppliers as applicable to the supplier. The selection process shall include Quality Management System certification to latest edition of ISO 9001.

Vestas' consent shall be obtained prior to any outsourcing of a process related to the production of the product(s) supplied to Vestas. If the supplier, upon Vestas' consent, chooses to outsource such a process, the supplier is fully responsible for qualifying the relevant sub-supplier. In these cases, sub-supplier systems for Quality, Health, Safety and Environmental Management shall be certified on latest edition of ISO 9001, ISO 14001 & ISO 45001 to correspond with section 1 of this manual.

The supplier shall ensure Vestas has access to monitoring, reviewing, and performing assessments at sub-suppliers in case Vestas sees a need.

Vestas reserves the right to stipulate sub-suppliers in exceptional cases. In this set up, the supplier shall manage daily operation with related sub-suppliers i.e., inspecting incoming deliveries per Vestas instruction, raising NC towards suppliers, and ensuring problem solving with sub-supplier. In case the sub-supplier raises a supplier deviation request, this needs to be forwarded to Vestas per chapter 14 for disposition.

The supplier is responsible for APQP4Wind deployment at its sub-suppliers when a need is identified or when requested by Vestas.

6. Change Management

The supplier shall have a documented procedure for change management. The supplier shall submit a Supplier Change Request (SCR) to Vestas for any type of change or modification related to the provided product(s) as stated below having potential impact on form, fit, system function, safety, quality, reliability, durability, appearance, delivery, or serviceability:

- Part modifications (including form, fit, and function changes of catalogue items)
- Change of material
- Change of sub-suppliers
- Process changes (including modification of machines or manufacturing equipment changes)
- Change of manufacturing site

The SCR must include the objectives, change description, cost implications, effect on form, fit and function and a schedule for implementation. The SCR is to be sent to the relevant Vestas Supplier Account Manager.

No implementation of the requested change shall take place prior to a written agreement between Vestas and the supplier. Vestas' SCR shall be included in the communication regarding all changes. A modification requires a revision and submission of the PPAP and, if applicable, an update of the corresponding product and / or process documentation.

In case of a premature implementation of a change, the following consequences will apply:

- All costs related to correcting the situation created by an unauthorized change will be charged back according to the agreement in place between the Parties.
- The supplier's third-party certification body will be formally notified that the supplier is not following their quality system or customer requirements.
- The supplier will be required to complete corrective action and demonstrate effective controls to prevent recurrence.
- The supplier may be placed on hold for new business.

Note: Product-related changes initiated by Vestas will be communicated via the Supplier Account Manager (SAM) in accordance with the internal Engineering Change Management (ECM) process. Once the change is confirmed, the product modification follows the Vestas Vendor item qualification process just like a new product (see section 4).

7. Traceability

The supplier shall demonstrate the agreed level of traceability on the product(s) and repaired product(s). The traceability level is specified in the TPS and may require implementation of a Vestas Unique Identifier (VUI) with the product(s) or other traceability means. The supplier may, in agreement with Vestas, integrate the specified traceability means into the supplier's existing traceability system for the product(s). For offshore projects, the supplier is obligated to support forward traceability for Vestas specified components.

Where standards or regulations require the traceability of materials, welds, non-destructive testing, sub-assemblies, etc., the supplier must identify such requirements and implement controls that will ensure they are satisfied. In addition to Vestas' required traceability, the supplier is obligated to establish additional traceability where a need is identified based on DFMEA and PFMEA risk evaluation.

8. Documents, Data and Reports

Upon request, the supplier shall grant access to vestas to documents, data, and reports regarding the sourced product(s) or services and related processes, as required. This applies to documents and records retained by the supplier, as well as documents and records retained by sub-suppliers, if necessary.

The supplier shall have a documented procedure for the documentation and retention of quality data of the product(s) and processes related to product(s) supplied to Vestas. The record retention period shall be a minimum of 30 years from date of supply unless otherwise specified by Vestas. The supplier shall ensure that all product-related documents and records specified in the applicable Technical Purchase Specification (TPS) are retained according to the requirements stipulated in this section. All documents must be text searchable.

In case of non-fulfilment of the above-mentioned requirements, the supplier is obligated to cover all related costs according to the agreement in place between the Parties. If there are consistent deviations, the relevant certification body will be notified. All submitted documentation must be in English.

9. Packaging, Storage and Handling

All products shall be packaged, stored, handled, and shipped as per the agreement between Vestas and the supplier. If there is no special agreement between Vestas and the supplier, the standard packaging procedures of the supplier shall be applied. The supplier shall avoid any damage to products and use the correct packaging for safe handling.

The supplier must prepare packaging to withstand the type of transportation used in shipping (air, truck, sea, and rail). This means that multiple forms of packaging might be required if the supplier ships to multiple regions for Vestas. It is the supplier's responsibility to understand these requirements and to use appropriate packaging methods. After mutual agreement, returnable containers shall be introduced to achieve cost reductions and to save natural resources contributing to a better environment.

The packing shall ensure safety while products remain unpacked at Vestas. The supplier shall inform Vestas of all unique storage / handling conditions that can have an impact on the performance of a material. All material shall be properly stored as per the manufacturer's recommendations to protect against both handling damage and natural elements such as temperature, humidity, and corrosion.

10. Delivery and Invoice

The products and / or services shall be delivered in line with the quantities, delivery date, and locations specified in the Purchase Order (PO). The supplier must ensure that every invoice must clearly reference a valid Vestas PO.

Each invoice shall conform to the following requirements:

- Include invoice number and date of issue or date of resubmission (if the invoice was previously rejected).
- Invoice currency must match the currency on the Vestas PO.
- Credit notes should always be referenced to the original invoice and Vestas PO.
- Include full address of the ship-from company.
- Include full address of the ordering Vestas entity.

- For EU suppliers, include VAT number of supplier and Vestas's entities.
- Before issuing an invoice, the supplier shall ensure that all goods and / or services have been delivered according to the terms shown on the Vestas PO.
- The quantities on the invoice must match the quantities given on the Vestas PO. Higher quantities on the invoice than shown on the PO will cause your invoice to be rejected.
- The invoice shall not reference any charges not included on the Vestas PO.
- Additionally, requirements are to be outlined in the Purchase Agreement (PA).

11. Supplier Performance Criteria

Supplier Performance may be measured monthly using any of the following KPIs with targets communicated to suppliers by Vestas and reviewed annually:

11.1. Direct suppliers

- **Defective rate of parts (PPM):** Total number of defective parts in relation to total number of parts delivered.
- **NC Quantities:** Total number of NCs issued to the supplier.
- **Warranty consumption:** Total number of replacements / repairs during the warranty period in relation to total number of delivered parts.
- **Containment and corrective action efficiency:** Total number of re-occurrences of same failure mode / root cause.
- **8D / claim resolution time:** Number of working days between notification date (date of NC reception at supplier) and 8D report sign-off / closure (by both Parties).
- **Product CTQ capability:** Process Capability measured in Cpk for Vestas identified special characteristics (CTQs – “Critical-To-Quality” characteristics). Ref. 4.3.
- **Process CTQ capability:** Based on the supplier's PFMEA, additional process special characteristics shall be identified and SPC shall be introduced. Guidance from APQP4Wind standard shall be used unless any special agreement with Vestas. Ref. 4.3
- **Process stability:** The supplier shall establish special characteristics control, monitoring and reaction according to APQP4Wind or Vestas TPS. The supplier shall demonstrate the capability by presenting the control charts monthly to Vestas SQD with focus on outliers and reaction. Upon request of Vestas, the supplier shall upload special characteristics and SPC data to the Vestas database using the templates or data structure provided.
- **CoPQ ratio:** Total cost incurred by Vestas due to poor quality caused by supplier / total cost of goods delivered.
- **On time delivery (OTD):** This compares the goods received date to the agreed delivery date on purchase order line level. Even though deliveries should be exactly on date, the KPI counts deliveries as on time if they are maximum three days early or one day late. Undelivered items count as not being on time.
- **Safety Performance, e.g., TRIR or other metrics specified by Vestas.**

- **Sustainability performance** as scope 1 ,2 and 3 CO2 emissions and circularity
- **Continuous improvement:** Adequate improvement projects for low-performing special characteristics and other performance targets are to be triggered and executed at the supplier's expense. Ref. 15 and 16 for further info.
- **Supplier Risk level:** Vestas evaluation of supplier risk through leading and lagging indicators as per predefined scoring criteria. Vestas requires Low risk suppliers

Should performance improvement not be visible, then further action shall be taken as appropriate. This may include alternative product / service provider sourcing where quality expectations cannot be met.

The supplier herewith commits to fulfill the Performance Targets agreed with Vestas.

11.2. Indirect Suppliers

- **Safety Performance:** Number of supplier incidents at Vestas projects.
 - **TRIR (Total Recordable Injury Rate):** Incident ratio (Year to Date or 12month rolling calculation)
 - Calculation Formula: Total Number of Recordable Cases x 1.000.000 hours / total hours worked by all employees during the year covered. TRIR is calculated on corporate level.
 - Recordable cases shall include fatalities, lost time injuries (LTI), restricted work injuries (RWI) and medical treatment injuries (MTI).
 - **HSE incidents** handling to follow HSE incidents minimum case handling requirements.
- **Quality Performance:**
 - **CoPQ ratio:** (Cost of Poor Quality) Total cost incurred by Vestas due to poor quality caused by supplier / Total spend.
 - **NC Quantities:** Total number of NCs issued to the supplier.
 - **Post Service Evaluation:** Internal assessment where Vestas' rates and provides feedback on the subcontract service level, considering different criteria, e.g., project execution, safety behavior, quality of work, mobilization on-time.
- **Sustainability Performance** as scope 1 ,2 and 3 CO2 emissions and circularity.

12. Supplier Escalation Process

The supplier escalation process (see figure F) is intended to minimize impact on Vestas' operations and enforce supplier accountability to live up to Vestas's standards. The aim is to get the supplier back on track when facing continuous, systemic and/or high impact issues within safety, quality, delivery, and cost. The process is applicable for both direct and indirect tier 1 suppliers.

If the supplier is underperforming and the underperformance is due to the supplier, the supplier shall enter the supplier escalation process and will be formally notified through an escalation letter. The letter will

contain all the information regarding the reasoning behind the escalation, how to proceed, consequences and criteria to be fulfilled before de-escalating or ending the escalation.

Consequences are applied when entering the escalation process and adjusted with the escalation levels. The supplier shall be responsible for any additional costs associated with the consequences i.e., 3rd party firewalls, onsite task forces to contain and solve the problem.

The escalation process consists of 3 levels highlighting the severity and extent of the issue. The escalation is a stepwise process, meaning the supplier will enter the process on level 1. However, for de-escalation it is not necessarily a stepwise process as a supplier can end the escalation in one step, provided all exit criteria are fulfilled.

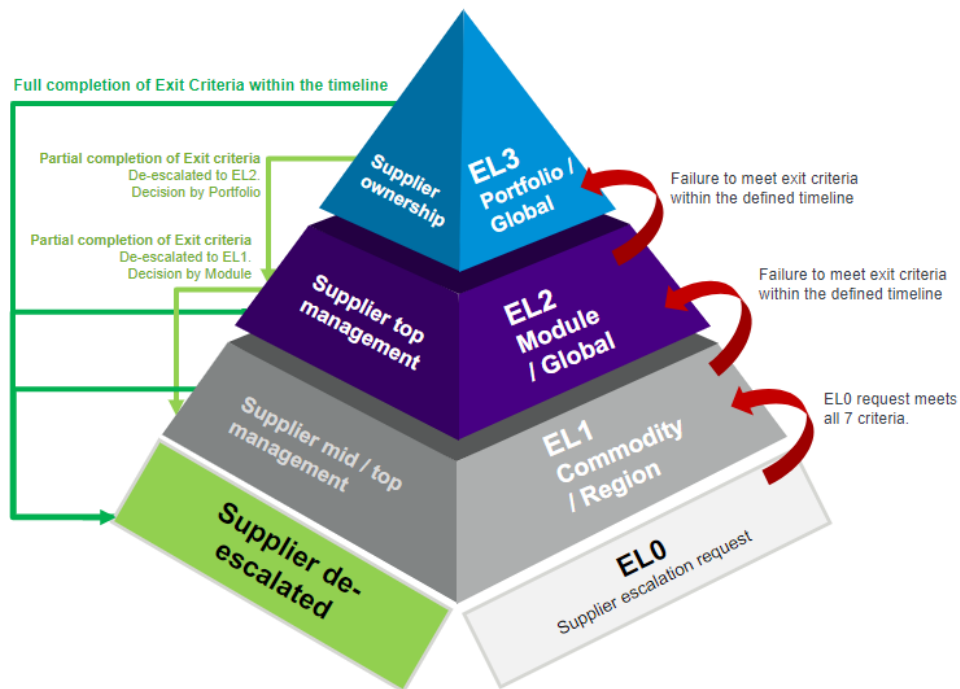


Figure F : Supplier Escalation Process

13. Quality Complaints and Non-Conformities (NCs)

Upon Vestas' request, the supplier shall apply the Eight Disciplines (8D) of the problem-solving process when receiving a non-conformity report. If requested, the supplier shall provide an 8D report to the Vestas facility of claim origin. It must be in the English language and must, upon closure, clearly define and verify the corrective actions implemented to eliminate the verified root cause of occurrence and lack of detection. A Vestas template is required if nothing is agreed with Vestas. Vestas 8D template can be found on Vestas.com under About/Our partners/Suppliers

The minimum requirements on the 8D report can be found in Appendix 1. Use of a supplier template needs to be authorized by Vestas SQD. The 8D report will not be considered complete until proposed corrective and preventive actions to stop the recurrence are fully implemented and approved by the department responsible for quality. Upon supplier request, a defect part can be picked up from Vestas' location with timeline to be agreed with Vestas' NC case handler.

In the event of non-conformities, the supplier shall provide items disposition and immediate corrective actions necessary to ensure production flows without interruption within the timeframe stipulated below. These actions may include sorting, marking rework, containment, immediate replacement of defective parts or materials and the presence of supplier or supplier's personnel in the Vestas facilities affected.

Once the supplier has been notified of a non-conformity, the supplier shall follow the 2/2/2 rule, meaning:

- The supplier shall evaluate items disposition, implement containment actions, and inform Vestas within two days of receiving the notification. The appropriate Vestas representative responsible for handling the concern shall review and approve the proposed actions.
- The supplier shall provide Vestas with a root-cause analysis report within two weeks of receiving the notification or upon receipt of the defective parts or services. This report must identify why the NC has occurred and why it was not detected before delivery as well as define corrective action(s) describing how to eliminate the root cause. The appropriate Vestas representative responsible for quality shall review and approve the proposed actions.
- The supplier shall verify and implement the agreed corrective actions within a timeframe of two months maximum.

8D RESPONSE TIMING

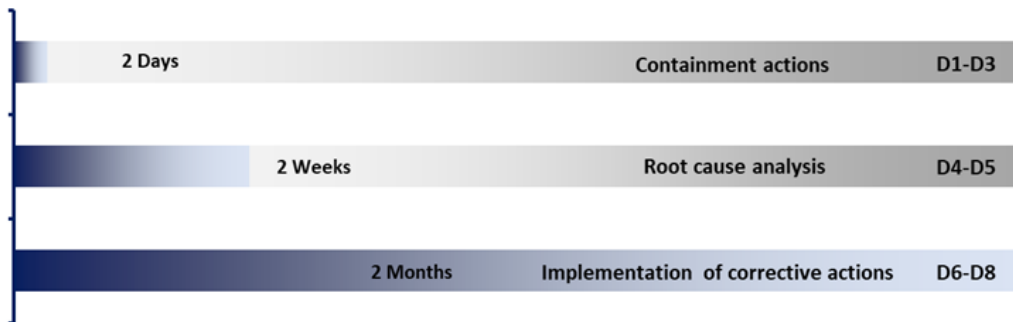


Figure G: 8D timing, deliverables, and applicable disciplines

Any costs of poor quality (CoPQ) caused by the defective parts, poor quality of services at Vestas or at Vestas customer sites will be handled according to the provisions in the Purchase Agreement between the Parties.

14. Deviations / Concession Handling

Prior to delivery, the supplier shall submit in writing a Supplier Deviation Request (SDR) to Vestas SQD when the supplier is not capable of supplying the ordered products within specification but deems them to fit and function without any rework. The Vestas template is to be used if nothing is otherwise agreed with Vestas. The supplier needs to request the latest template from their Vestas contact.

Not meeting quality targets for special characteristics i.e., CTQs, is considered a deviation, and supplier shall equally notify Vestas by SDR if this circumstance happens during serial production.

The request shall include the following:

- Supplier name, manufacturing site name
- Contact details of the person responsible for handling deviation / concession
- Specification which is not fulfilled
- Complete description of the deviation including effect on form, fit, and function.
- Quantity affected
- Serial numbers / batch numbers / VUI codes affected
- Timeframe for applicability
- Description of suggested repair (if applicable)
- PO number

If Vestas grants a concession, each affected delivery must be identified with a concession label including the reference number of the Vestas deviation approval (NC number). The concession shall be limited by time and number of parts.

15. Continuous Improvement

The supplier shall maintain a Continuous Improvement Plan and shall share the content of this plan upon Vestas' request. The plan must reflect suitable actions to achieve the performance targets and shall be reviewed and updated latest 1 month after any of the performance KPI falls below target.

Note: Achieving the Quality Performance Targets does not relieve the supplier of its obligation to continuously improve its products, services, and processes resulting in tangible customer benefits like reductions in cost and lead time.

Depending on the results of the supplier's performance evaluation, the supplier shall present short- and middle-term action plans on how to achieve the Quality Performance Targets within a specified time frame. It is an essential pre-condition for achieving the Quality Performance Targets that the supplier secures the availability of resources required to implement such improvement plans.

16. Supplier Development

During collaboration with Vestas and depending on supplier performance or growth, Vestas can find necessary to implement development activities for gap analysis and improvement.

The tools listed below have the purpose to identify the gap that triggers supplier development activities, improving enablers, and thereby preventing / mitigating poor performance. This list is indicative, other tools/activities may be selected if found more suitable or pertinent to address Vestas's concern:

- **Supplier Business Assessment, SBA:** Evaluation of Supplier Management systems with Vestas latest tool to retain supplier site approval. Ref. section 2.5.
- **Technical Capability Assessment, TCA:** General evaluation of supplier capability for selected special processes.
- **Safety & Sustainability Assessment:** Supplier evaluation on Health & Safety, Environmental Sustainability and Social Sustainability.
- **Product Qualification:** Concerned product shall complete new qualification process to retain product qualification approval. Ref. section 4.
- **VDA Process Audit:** Concerned supplier manufacturing process shall pass a VDA 6.3 Process Audit. Usual scope P5, P6, P7. P2-P4 can be included whenever requested by Vestas.
- **Advanced Supplier Capacity Assessment, ASCA:** Concerned supplier manufacturing process shall pass capacity assessment to confirm suitable productivity for committed volumes. Ref. section 4.2.
- **Quality Improvement Plan, QIP:** Quality project to address root causes for supplier non-conformities reaching Vestas.
- **DMAIC project:** Improvement initiative to enhance process capability by Six sigma DMAIC methodology.
- **Lean4Wind:** Development program focused on lean manufacturing implementation
- **Quality Assurance Safe Launch (QASL):** A safe launch plan to ensure that launch and ramp up risks are mitigated and that launch problems are corrected as quickly as possible during ramp up.

17. Other Product Specific Quality Requirements

Additional specific requirements and procedures are required for External Manufacturer for Blades, Powertrain, and Towers with regards to Quality targets, Quality Assurance Plan, Audit Plan and Firewall.

These supplementary requirements will be communicated as an Appendix 2 to this SQM during request for quotation phase and jointly will constitute the quality working frame.

In case on conflict with general requirements in this SQM, the specific requirements in the Appendix 2 shall prevail.

18. Glossary

5-why	Technique used to explore the cause-and-effect relationships
8D report:	8 Disciplines, a problem-solving method
APQP	Advanced Product Quality Planning
Circularity	Circularity refers to practices aiming to keep products, components, and materials at their highest utility and value at all times – e.g., through planned maintenance, re-manufacturing, recycling, etc.
CoPQ	Cost of Poor Quality
Cpk/Ppk	Capability Analysis Index Ratio of difference of nearest specification limit minus Process Average over three times the process standard deviation.
CTQs	Critical-to-quality characteristics
DFMEA	Design Failure Modes and Effects Analysis
Direct scope	Material, component, and services used in serial productions
ECM	Engineering Change Management
EoD	Extent of Documentation
End customer	Vestas’s customer or third-party representative
FAI	First article Inspection
FFF	Form, Fit, and Function; trial use of components in production setting to confirm conformance to requirements. <ul style="list-style-type: none">• “Form” means shape, size, dimensions, and other parameters that distinguish the product.• “Fit” means the ability of the Product to physically interface with, connect to, or become an integral part of another part of the relevant WTG as intended by Vestas for the proper functioning of such WTG.• “Function” means the intended action, inaction, or other capability of a Product.
Fishbone diagram	A fishbone diagram is a visualization tool for categorizing the potential causes of a problem.
FMEA	Failure Modes and Effects Analysis
Forward traceability	The project for the produced item is already known
GAN assessment	Global compliance assessment
HSE	Health, Safety, and Environment
Indirect scope	Site development, Cranes, installation of turbines, balance of plant, transport of main components to WTG site, CAPEX and site tools, helicopters, drones, vessels, PPE and safety equipment
ITP	Inspection & Test Plan
KPI	Key Performance Indicator
LTI	Lost Time Injury
MPD	Modular Product Development
MSA	Measurement Systems Analysis
MTI	Medical Treatment Injury
NC	Non-Conformity
OEE	Overall Equipment Effectiveness
OTD	On Time Delivery
PA	Purchase Agreement
PFMEA	Process Failure Modes and Effects Analysis

PO	Purchase Order
PPAP	Production Part Approval Process
PPM	Total number of defective parts in relation to total number of parts delivered
Product Safety	The ability of a product to be safe for intended use, as determined when evaluated against a set of established rules
PSW	Part Submission Warrant
RFQ	Request for Quotation
RPN	Risk Priority Number
RWI	Restricted Work Injuries
Safety Alert	A notification issued by the Manufacturer to affected personnel of a recently identified high risk of a serious accident
SAM	Supplier Account Manager
SCR	Supplier Change Request
SDR	Supplier Deviation Request
SPC	Statistical Process Control
SQD	Supplier Quality & Development
SQE	Supplier Quality Engineer
SQM	Supplier Quality Manual
Scope 1 emissions	Companies report GHG (greenhouse gas) emissions from sources they own or control. Direct GHG emissions are principally the result of activities undertaken by the company.
Scope 2 emissions	Companies report GHG emissions from the generation of acquired and consumed electricity, steam, heat, or cooling
Scope 3 emissions	Companies report emissions that occur from sources owned or controlled by other entities in the value chain (e.g., materials suppliers, third-party logistics providers)
TFC	Team Feasibility Commitment
Test Devices	Devices used to calibrate tools, gauges, or equipment
Tower Doc	Vestas Tower documentation database
TPS	Technical Purchase Specification
TRIR	Total Recordable Injury Rate
VDD	Vestas Document Database
VUI	Vestas Unique Identifier
WTG	Wind Turbine Generators including all its systems and components

19. Appendix 1 : 8D report minimum content

1. Problem description
2. Risks on similar products and processes
3. Containment action
4. Sorting activities at relevant locations in the supply chain
5. Root-cause analyses using 5-why and fishbone diagram defining:
 - Root cause for non-detection
 - Root cause for deviation
6. Permanent countermeasures
7. Effectiveness / tracking
8. PFMEA RPN recalculation and lessons learned

20. Appendix 2 : Specific requirements for External Manufacturer for Blades, Powertrain, and Towers