



Thermia

Supplier
Manual

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Introduction

Thermia has a strong commitment to product quality and reliability to ensure sustainable development.

Our suppliers play an important role in our quality assurance work. We strongly believe that it is in the mutual interest of both Thermia and our suppliers to meet the current and future requirements of customer expectations and product durability.

This Supplier manual describes Thermia's requirements in terms of quality assurance and legal compliance. These conditions need to be met in advance of receiving approval for a new/changed product or manufacturing process.

Part Approval process

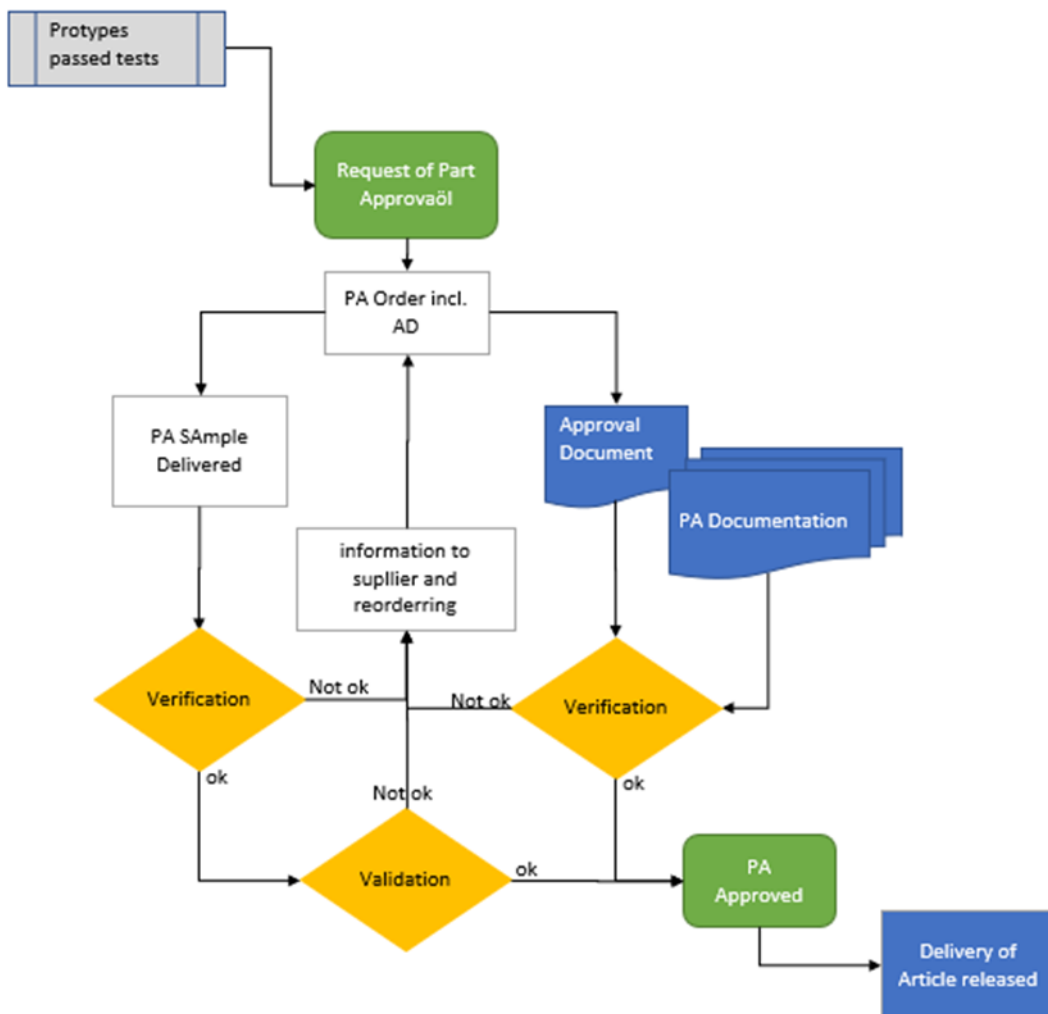


REQUIREMENT

Thermia requires all suppliers to ensure the quality of new or exchanged parts, as well as production processes, before delivery of items intended for serial production at Thermia.

METHOD

Thermia expects all suppliers to follow Thermia's Part Approval (PA) process, which is a simplified version of the established PPAP within AIAG 16946.



Sample orders



PROTOTYPES

Prototype parts may be ordered for tests before drawings, specifications or other design parameters are finalized

PA SAMPLE

The PA samples for approval will be in accordance with agreed drawings and specifications and manufactured using the specified materials in series production tools and process.

PA DOCUMENTATION

Necessary documentation for PA is decided based on the component type, as specified in a guidance matrix.

PA ORDER

Thermia will send a purchase order with identification "PA ORDER" and specification noted or attached.

If the PA samples are ordered together with 1st order, this will be specified within the purchase order.

APPROVAL DOCUMENT



Thermia will send the approval document together with the PA purchase order

DELIVERY

Thermia expects all suppliers to deliver PA samples and submit the required documentation without delay.

Approval Document



Approval Document		Date: 2022-02-22	
		Revision : 6	
Part Name		Creator: Annica Westerberg	
Thermia Part No	Revision		
Supplier Part No			
Supplier Name	Supplier ID		
Purchaser	Date		
Supplier Quality Engineer			
Reason for PA :	Choose an alternative	CR/Project ID	
PA Documentation			
Basic			Additional
Norm / Drawing / Tech.spec	<input checked="" type="checkbox"/>	<i>X= Demands to this AD</i>	<input checked="" type="checkbox"/> Production Process flow chart
Material Declaration	<input checked="" type="checkbox"/>		<input type="checkbox"/> Risk analysis /FMEA
Packaging specification	<input type="checkbox"/>		<input type="checkbox"/> Dimensional Results
Control Plan/Manufacturing tests	<input checked="" type="checkbox"/>		<input type="checkbox"/> CE-declaration / Manufacture 's Declaration
Master Sample/Initial sample	<input type="checkbox"/>		<input type="checkbox"/> Material Recycling Report
Declaration			
I hereby affirm that the samples represented by this certification are representative of our parts, have been made to the applicable customer drawings and specifications and are made from the specified materials on serial production tooling in the serial production process. I also understand and agree to that any changes will require a change process including a new Approval Documentation			
Supplier			
	Digital Signature	Title	Date
Print Name:			
Thermia			
	Digital Signature	Title	Date
		Supplier Quality Engineer	
Print Name:			
			
<small>Thermia AB Box 950, 671 29 Arvika 0570-813 00 www.thermia.se</small>			

GENERAL DATA

Thermia completes general data about the specific part and supplier.

PA DOCUMENTATION

Lines marked with an "x" must be included with the signed approval document (AD):

Templates are available in the AD excel file.

Detailed information in following pages explains the contents of each documentation form.

DECLARATION

Thermia accepts both digital and written signatures on the AD document.

PA documentation



GENERAL

PA documentation is used to confirm the approval of the part/product, including the production process.

Documentation required is based on part/product type.

GUIDANCE MATRIX

The guidance matrix summarizes the documentation required for each type of part/product.

“X” is always mandatory

“Optional” is decided by Thermia SQE

“a” is mandatory if the part/product has a specified requirement.

“n/a” is not applicable

Grupperingskriterier			Basdokument							Tilläggsdokument				
Gruppering	Förklaring	exempel på komponenter	AD Approval dokument	produkt-information	Material-deklaration	Förpacknings-information	Control plan / slutkontroll	PA prov specifikt	PA prov ur första leveransen	Processkarta produktionsflödet	Risk-bedomning produktionsprocessen	Mät-protokoll	CE-försäkran	Material-återvinningsanalys
Thermias design	köp av komponenter där leverantören ansvarar för tillverkningen men Thermia har ansvar för konstruktionsunderlaget	Display box, plåtar, kablar, BM-kort etc	X	n/a	X	X	X	X	n/a	X	X	X	a	n/a
Flytt av produktion	leverantören flyttar produktionen till annan egen produktionsenhet, detta gäller när det produceras på vårt konstruktionsunderlag	de som inte är hylvaror eller kemikalier	X	n/a	X	optional	X	X	n/a	X	X	a	a	n/a
Thermia-tillägg	Komponenter som är katalogvaror, där den tekniska specen refererar till ett produktdatablad/ norm / standard MEN med tillägg/ ändringspecifikt för Thermia	Kompressor, kopplingar, cirkumpump, Inverter, (PCB)	X	a	X	a	X	X	n/a	X	optional	a	a	optional
Trading	Trading / köp av färdigprodukt	iTec, SVR, WT-X, Tillbehör	a	X	X	X	X	X	n/a	X	optional	a	a	X
Kemisk	Kemisk produkt / Kemiskt ämne eller blandning	Glykol, köldmedier	n/a	X	X	n/a	a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ren Hylvara	standardartiklar, hylvaror INGEN handpåläggning/specifikt för Thermia	skruvar, stångklämpor, buntband, påsar (kompressor, kylmedier)	optional	X	X	n/a	a	optional	X	n/a	n/a	n/a	optional	optional

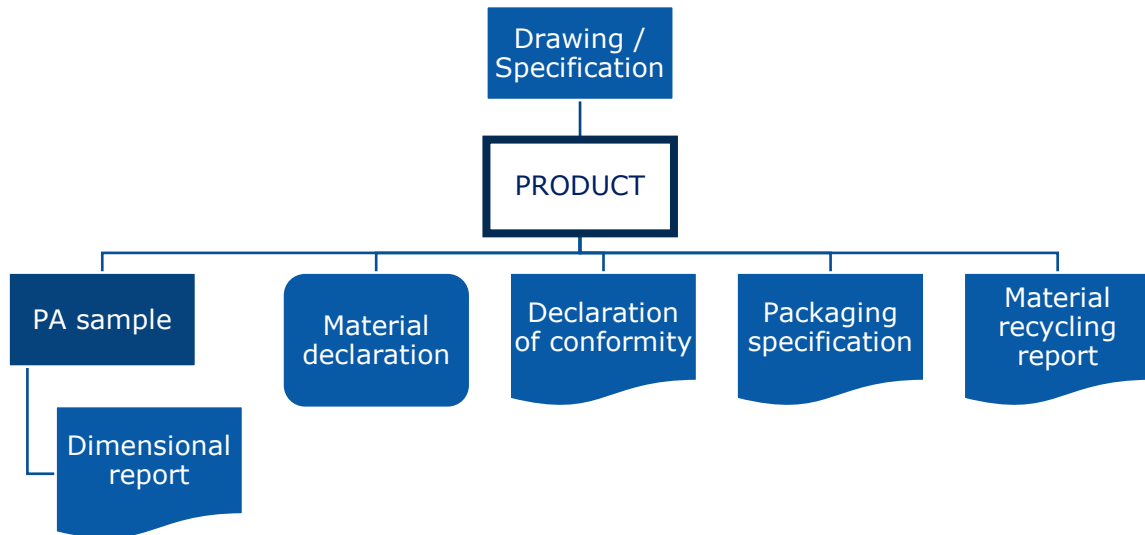
DOCUMENTATION

The PA documentation is in two parts: “basic” and “additional” information.

The PA documentation covers both product and production quality assurance.

Templates are available in the AD excel file. It is acceptable to use supplier in-house templates as long as they provide all the requested information.

Product quality assurance



PRODUCT TECHNICAL SPEC/DRAWING/DATA

For Thermia-designed parts, drawings and technical specifications are included together with the PA order.

For supplier-designed parts, all available product specifications must be forwarded to Thermia.

For supplier-designed parts with Thermia customizations (i.e. controller settings, part numbers, etc.), both parties will provide the necessary specifications.

DIMENSIONAL REPORT

When applicable, PA samples must be measured and the protocol sent to Thermia.

All results must be traceable to the specific samples and should include appropriate references to the equipment and procedures used for the measurements taken.

Critical specific characteristics must be highlighted on the drawings. Their inclusion in the protocol is mandatory.

Product quality assurance (cont.)



DECLARATION OF CONFORMITY

When applicable, the supplier is responsible for assuring that the products/parts fulfill the CE requirements. A declaration of conformity must be submitted to Thermia if requested.

CE requirements applies to; energy-related, electrical and electronic appliances and similar (products covered by the Machinery Directive).

MATERIAL RECYCLING REPORT

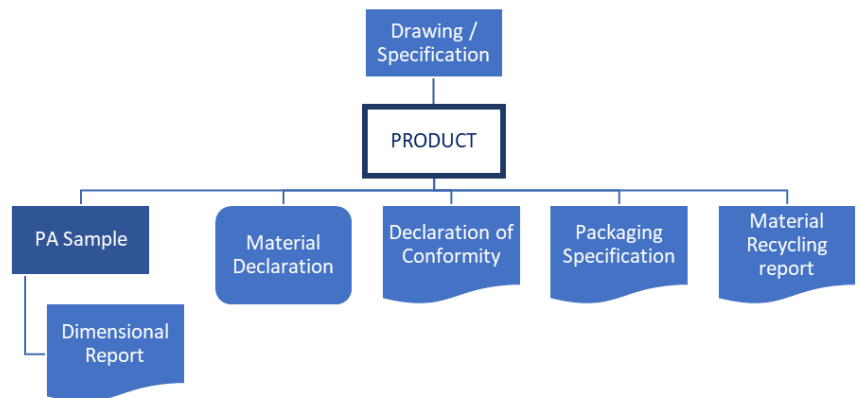
A material recycling report related to the part/product must be available and submitted to Thermia if required.

The report is preferably made according to EN45555:2020.

If other analyze method is used, please describe this in the report

MATERIAL DECLARATION

A material declaration is mandatory for all parts/products. See following pages.





Material declaration

MATERIAL DECLARATION

A material declaration is mandatory for all products.

The declaration form is enclosed as an excel file and must be fully completed.

Products containing substances that fall under Article 33 of REACH (see right) must be declared as in Example 1. Products must also be registered in SCIP database by the supplier.

Products not containing substances affected by Article 33 of REACH must be declared as in Example 2.

DUTY TO COMMUNICATE

According to Article 33 of REACH, the manufacturer of a part is required to provide information about any Substances of Very High Concern (SVHC) on the candidate list when the concentration exceeds 0.1% weight by weight (w/w).

LEGAL REGULATIONS: FURTHER INFO

For more detailed information about SCIP, Reach, RoHS, WEEE, Biocidal and POPs regulations, see follow pages.

Component / part	Chemical substance / Material	CAS No.	Total Weight[g]	Weight %	REACH	SCIP	SCIP number	ROHS	RoHS exemption	WEEE	Biocidal Regulation	POPs Regulation
Example 1: Brass nut	Lead	7439-92-1	1500	>10 viktprocent och: 10,0 viktprocent	Yes, included in the Candidate List	Yes, registered in ECHA SCIP-database	XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX	Product meet the requirements by application of described exemption(s)	6(c)	Yes, an Electrical or electronic product	Not applicable for this part	Not applicable for this part
Example 2: Hose				No, it contains no SVHC substances	Yes, but not included in any of the lists	No, it contains no SVHC substances		Product meets the requirements without any exemptions		Not applicable for this part	Not applicable for this part	Not applicable for this part

Legal regulations



WFD (WASTE FRAMEWORK DIRECTIVE)



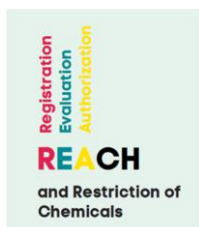
The Waste Framework Directive is a European Union directive concerned with "measures to protect the environment and human health by preventing or reducing adverse impacts".

It sets out measures and requirements for the prevention, re-use and recovery of packaging wastes in Member States.

Member States must ensure that packaging placed on the market complies with the underlying requirements. The directive implies the "producer responsibility" principle.

The Waste Framework Directive can be viewed here: <https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0098&qid=1652206816484>

REACH (Registration, Evaluation, Authorisation and restriction of Chemicals)



REACH (2011/65/EU) is a regulation of the European Union that governs the use of chemical substances and has an impact on most companies across the EU.

Particularly hazardous substances are called SVHC "Substances of Very High Concern".

More than 200 substances are listed in the candidate list. Particularly dangerous substances requiring permission for use are listed in Appendix XIV of REACH. The rules apply throughout the EU.

Chemicals that pose unacceptable risks to humans or the environment are listed in Appendix XVII in REACH.

The REACH regulation can be viewed here: <https://eurlex.europa.eu/legal-content/en/TXT/HTML/?uri=CELEX:02006R1907-20210215>

Legal regulations



SCIP (Substances of concern in Products)

Every manufacturer, importer or distributor of a product placed on the market in the EU / EEA and containing more than 0.1% by weight of a particularly dangerous substance (SVHC) included in the candidate list in REACH, must provide information to the SCIP database at ECHA.

The regulation has applied since 1 January 2021 and is based on the Waste Frame directive for reducing waste containing hazardous chemicals and promoting the use of safer alternatives. The purpose is to support waste operators in ensuring that substances of concern are not used in recycled materials

The SCIP directive can be viewed here:

<https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018L0851&qid=1652207714754>



WEEE (Waste of Electrical and Electronic Equipment)

Manufacturers and distributors are required to:

- Register with the responsible national authorities in all countries distributing or selling equipment.
- Regularly submit reports of the amount of electrical and electronic equipment sold.
- Organize and finance the collection, treatment and recycling of the products they produce.
- Distributors must offer their customers the opportunity to return electrical and electronic waste free of charge.
- Products must be visibly marked with a crossed-out wheeled bin label.
- All manufacturers must comply with the RoHS Directive.

The WEEE directive can be viewed here:

<https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012L0019&qid=1652207360012>



Legal regulations



ROHS



The RoHS (Restriction of Hazardous Substances) Directive (2011/65/EU) aims to reduce risks to human health and the environment by replacing and limiting hazardous chemical substances in electrical and electronic equipment.

The substances regulated by the RoHS directive are mercury, cadmium, lead, hexavalent chrome, flame retardants PBB and PBDE and plasticizers DEHP, BBP, DBP and DIBP.

The RoHS directive can be viewed here: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1584116022829&uri=CELEX:02011L0065-20200301>

BPR



The BPR (Biocidal Products Regulation) governs the supply and use of biocides on the market to ensure a high level of protection for both human and animal health, and the environment. Biocides are chemical or biological pesticides used to control and eliminate harmful organisms.

The BPR can be viewed here: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:02012R0528-20210329>

POPS



The POPs (Persistent Organic Pollutants) Regulation prohibits or restricts the use of persistent organic pollutants in both chemical products and goods. POPs have particularly serious health and environmental properties and can be found in, for example, flame retardants, high-flouring substances (PFASs) and short-chain chlorine paraffins.

The POP regulation can be viewed here: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R1021&qid=1652206184230>

Dimensional report



GENERAL REQUIREMENTS

The report must provide a record of the dimensional data taken from PA samples.

It is acceptable to use your own supplier template. An example is included in the excel file "Approval Document".

Part name											
Thermia Part Number						Revision					
Performed by						Date					
Measuring point	Nom. value	Tolerance limit	Result Part 1	Result Part 2	Result Part 3	Result Part 4	Result Part 5	Result Part 6	OK	NOT OK	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

DESCRIPTION

- Critical measures should be noted on drawing/s. If there is any doubt about which measures need to be included, please contact Thermia SQE
- Measuring points must be marked on the drawing/s.
- Measurements must be noted for each part
- Mark with "X" whether OK or NOT OK in relation to tolerance limits

Packaging specification



GENERAL REQUIREMENTS

All packaging components must be recyclable. You should avoid using composite materials that are difficult to separate.

All packaging should be of sufficient quality to minimize damage during transport and internal handling.

Packaging dimensions must be agreed with Thermia Logistics and the quantity of each shipment optimized for the size of packaging.

Packaging specification			
Part of the packaging	Material	Weight	Additional info
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
	choose option		
Total weight of the Packaging		0	kg
Outer dimension of the complete Package:		height:	mm
		width:	mm
		depth:	mm
Photo inner packaging			
Photo outer Package to be delivered			
Comments:			

DESCRIPTION

- Each part of the packaging shall be declared for material (drop down list) and weight (kg to 2 decimal places)
- Use "additional info" when, for example, the packaging has to be a combination of 2 materials, and state how to separate them.
- The total weight of the packaging must be summarized.
- Specify the external dimensions for height, width and length.
- Attach a photo showing the inside of the package.
- Attach a photo showing the outside of the package.

Material recycling report



GENERAL REQUIREMENTS

All suppliers must be able to provide a report from a recycling audit of the part/product.

A template is available in the excel file. Other templates are acceptable as long as they include all the information below and describe the analysis method used.

Audit and report should ideally be carried out according to the EN 45555:2020 standard.

Product:			
Completion date of the recycling analysis:			
Name of responsible for the report			
	Weight	% of total	Comments
Material recycling		#DIV/0!	
Energy recovering		#DIV/0!	
Landfill		#DIV/0!	
Hazardous waste		#DIV/0!	
	0		
Description of the Analysis method			
Additional Information			

Production quality assurance

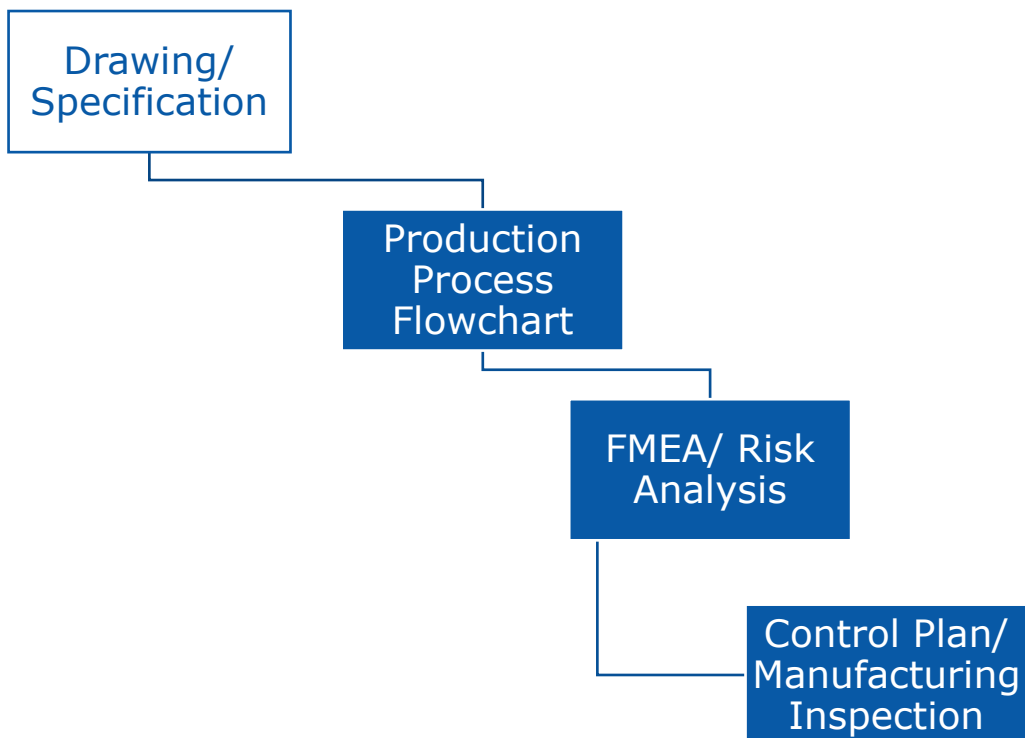


GENERAL REQUIREMENTS

All suppliers must be able to provide documentation to verify the safety and quality of the production process.

Technical specifications and/or drawing provide the basis for manufacturing.

1. A product production process is described in a flowchart.
2. FMEA / risk analysis is performed and evaluated, highlighting any areas of risk that may mean not fully meeting the requirements.
3. Risks must then be minimized to avoid delivering defective parts. These preventive actions should be described in a control plan, manufacturing inspection chart or similar



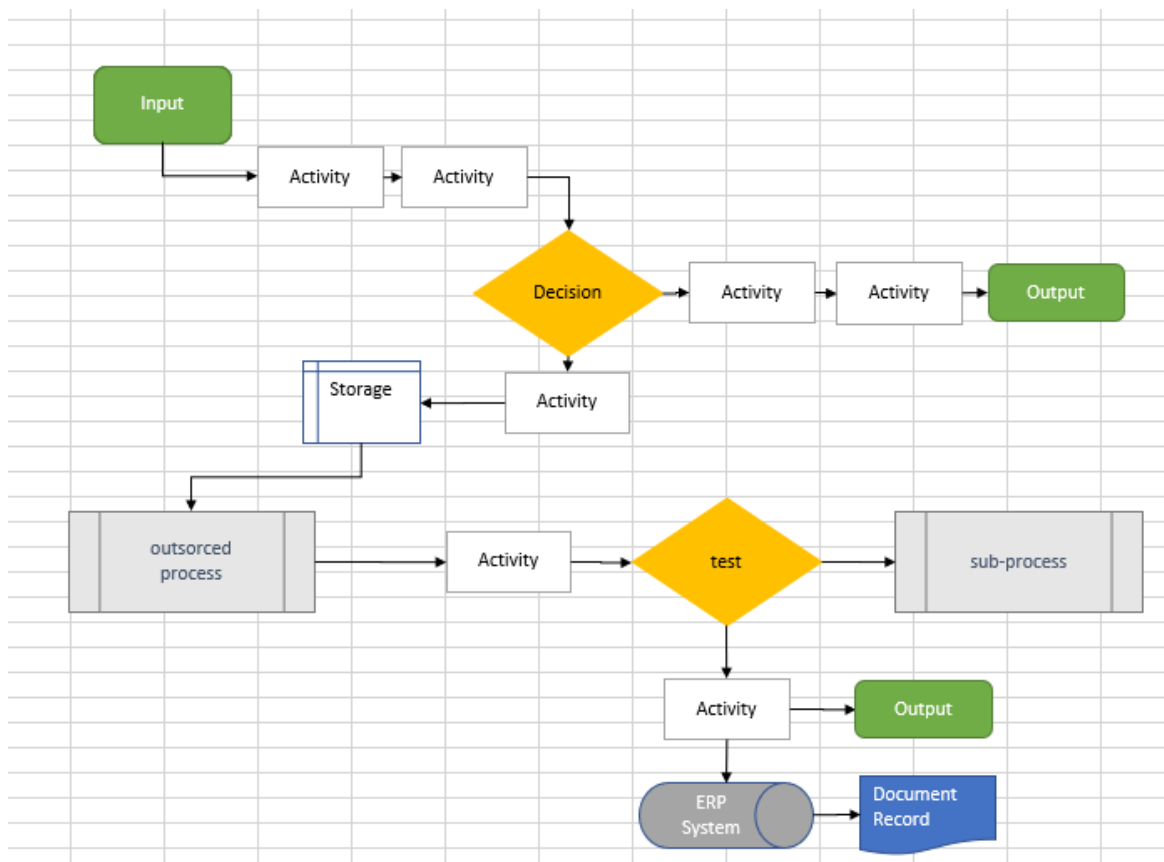
Process flow chart

GENERAL REQUIREMENTS

All suppliers must maintain a production process flowchart that clearly describes the production process steps and sequences, from material reception through production to packaging and shipping.

A template is available in the excel file. Other templates are acceptable as long as all required information is provided.

Process steps must also include operations performed by third parties (such as sub-suppliers). These steps need to be identified within the diagram and are subject to approval.



Control plan



GENERAL REQUIREMENTS

The control plan describes how the production process is controlled in detailed implemented activities to ensure conformity with agreed drawings and specifications according to identified risks.

Manufacturing inspections may be described in the production process flowchart.

DESCRIPTION

List all identified operational risks along the production process, together with the assessment result > 100 for RPN

Complete the chart in full. Particularly important are measuring frequency and the number of samples.

Include an ID in the reaction plan, where the operator can see what measures to take if it falls outside the defined limits.

Control Plan Number			Key Contact/Phone				Date (Orig.)		Date (Rev.)			
Part Number/Latest Change Level			Core Team				Customer Engineering Appro					
Part Name/Description			Supplier/Plant Approval/Date				Customer Quality Approval/D					
Supplier/Plant		Supplier Code		Other Approval/Date (If Req'd				Other Approval/Date (If Req'd				
PART/ PROCESS NUMBER	PROCESS NAME OPERATION DESCRIPTION	MACHINE, DEVICE, JIG,TOOLS, FOR MFG.	CHARACTERISTICS			SPECIAL CHAR. CLASS	METHODS					REACTION PLAN
			NO.	PRODUCT	PROCESS		PRODUCT/PROCESS SPECIFICATION/ TOLERANCE	EVALUATION/ MEASUREMENT TECHNIQUE	SAMPLE		CONTROL METHOD	
								SIZE	FREQ.			

