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ARKAL Automotive

Global Quality Manual



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1. **Purpose:** This Quality Manual describes ARKAL's global Quality System, defines ARKAL's worldwide organization, quality policy and strategic goals.

2. **Annexes:**

2.1. All documents numbered AI-4.2.2-XX


3. **ARKAL's profile, scope of activity:**

3.1. Arkai Automotive was founded in 1997 with the vision of leveraging Arkai's huge expertise in sophisticated thermoplastic parts manufacturing to advance the possibilities of lightweight automotive parts design for the global vehicle industry.

Today the company offers its OEMs and Tier 1 customers such as Daimler, General Motors, Volkswagen-Audi and BMW an extensive off-the-shelf range of lightweight automotive solutions , as well as fully bespoke solutions, based on innovative use of sophisticated development tools for product design, cost effective/density effective materials, and the innovative combination of composite materials with injection molding.

Arkai's unique one-stop 'design-to-manufacturing' approach enables its automotive customers to benefit from optimally cost-effective solutions by integrating Smart Product Design, Efficient Process Design and Automated Production under one roof – enabling our clients to meet and exceed aggressive targets for weight reduction, safety performance and cost reduction.

Over the last 20 years, Arkai has significantly grown its global footprint, and

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today the company operates 8 state-of-the-art production sites in North America, China and Europe. Arkal's impressive growth has been guided by its unique customer-centric approach called "ICE": Innovative design process + Competitiveness + Easy to work with, and a laser-sharp focus on fulfilling its vision of: "Lighter, Smarter, Better."

3.2. Scope of activity:

The Design, manufacturing and assembly of technical plastic products.

4. ARKAL's global footprint and sites:



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Site	Activity	Location	Country
Headquarters	Corporate management, marketing, R&D, project management, product design, validation lab, sourcing (suppliers)	Kidmat Galil	Israel
ARKAL NA	Projects launch Manufacturing Supply	London, ON	Canada
ARKAL USA		Auburn, AL	USA
ARKAL GMBH		Crock	Germany
ARKAL SPAIN		Pamplona	Spain
ARKAL Tianjin		Tianjin	China
Arkal Shanghai		Supply management, production (via manufacturing partners)	Shanghai
Arkal Mexico		Leon	Mexico

5. Contexts of the organization, interest parties expectations


5.1. The determination of **internal & external contexts**, and **interested parties expectations** - is needed for the understanding of Arkal's business environment, and for the integration of implications into the QMS planning

5.2. Determination of organization contexts, interest parties expectations - refer to annexes:

- AI-4.2.2-14 "HQ Core Processes Matrix"
- AI-4.2.2-15 "Plant Core Processes Matrix"
- Organizational SWOT – included in annual work-plan / MRM

6. Risks and opportunities

Risks and opportunities analysis supports prioritization of actions and controls to

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reduce risks and promote opportunities

Core processes risks management methodologies:

6.1. Management – use of SWOT for the mapping of risks and opportunities as part of annual BP / Work Plan

6.2. Marketing (RFQ) – FFC & Feasibility studies – refer to AI-7.2-00

6.3. Design – DFMEA, refer to policy AI-7.3.0-02

6.4. Project management – APQP GRs, refer to policy AI-7.3-00

6.5. Production – PFMEA, refer to policy AI-7.3.0-02

6.6. Supply – Contingency & escalation plan – refer to policy AI-7.4-04

6.7. Maintenance – infrastructure systems and machines risk level classification – refer to policy AI-6.3-00

6.8. Sub-contractors & Suppliers – the risk levels managed via two methods:

6.8.1. VDA 6.3 audits (classify the supplier into risk levels A / B / C)

6.8.2. Monthly / Quarterly risk performance evaluation (low performance => high risk, actions required as per pre-defined criteria)

6.8.3. Refer to policies AI-7.4-00, AI-7.4-01, AI-7.4-03

6.9. Human Resources – key positions back-up plan.


in addition - launch "successors program" – effective mid 2018

6.10. Also, for high level risk consideration, refer to:

6.10.1. Arkal HQs core processes – AI-4.2.2-14

6.10.2. Arkal manufacturing plants core processes – AI-4.2.2-15

6.11. The risk analysis refers to LL from past failures, product audits, customer complaints, warranty or field failures, Non-conformances

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7. Leadership, responsibility and authority:

7.1. Leadership

Arkal top management demonstrate leadership and commitment with respect to the quality management system by:

7.1.1. Taking accountability for the effectiveness of the quality management system

7.1.2. Ensuring that the quality policy and quality objectives are established, and ensuring that the quality management system achieves its intended results

7.1.3. Ensuring the integration of the quality management system requirements into the organization's business processes

7.1.4. Promoting the use of the process approach and risk-based thinking

7.1.5. Allocating the resources needed for the quality management system

7.1.6. Engaging, directing and supporting persons to contribute to the effectiveness of the quality management system

7.1.7. Promoting improvement

7.1.8. Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility

7.1.9. Corporate responsibility: refer to annex AI-4.2.2-12 "code of conduct and ethics"


7.2. Responsibility & Authority – refer to policy AI-6.2-0

7.3. Organizational chart – refer to annex AI-4.2.2-05

7.4. Job descriptions – refer to JD for every ARKAL's employee

8. Business work plan:

Arkal's business work plan developed on annual basis. Main topics are:

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- 8.1.Strategic planning, business development, new customers and market activities, new technologies
- 8.2.Marketing and sales plan
- 8.3.Supply chain, budget, capacity planning
- 8.4.Financial plan, profit & lose, cash flow
- 8.5.Planning for all operational activities (Engineering, Quality, HR, Purchasing...)
- 8.6.Key performance & quality indicators and objectives
- 8.7.SWOT

9. **Key performance indicators, Quality Objectives:**


Detailed objectives and performance indicators are defined as part of annual work plan and MRM

listed below are main quality performance indicators:

- 9.1.PPM - Parts (rejected) Per million
- 9.2.CPM (Complaints Per Million)
- 9.3.OTD (On Time Deliveries)
- 9.4.Internal PPM (% internal rejection)
- 9.5.PQC (Poor Quality Cost, divided by parts sales)
- 9.6.Customer Audits
- 9.7.Customer Score Cards
- 9.8.Environmental, Health & Safety KPI's – refer to worldwide sites procedures

10. **Quality Policy:**

Arkal is a leader in the design and manufacture of innovative, weight-saving

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solutions for the global automotive industry.

Arkal develops and supplies plastic based products, with smart, competitive and comprehensive solutions, while striving continuously for excellence

Quality is key parameter of why our customers choose ARKAL.

Therefore, the following quality policy defined by ARKAL's management:

- 10.1. Customers are the focus of everything we do.
- 10.2. We are continuously striving to meet or exceed our customer's expectations
- 10.3. Quality planning principles:
 - "First time quality" is the target for all our activities
 - Quality planning is based on "prevention at the source"
 - Advanced quality planning and risk analysis tools are in use:
APQP / FMEA / Control plans / Statistical methods.
- 10.4. We are carrying out continuous improvement activities, in order to ensure efficiency, profitability and competitiveness
- 10.5. Risk-based thinking approach is used for the planning of QMS processes
- 10.6. Our quality management system, at all locations, is committed to and following the requirements of:
 - 10.6.1. ISO 9001:2015 (quality management systems)
 - 10.6.2. IATF 16949:2016 (particular application for the automotive production)
 - 10.6.3. ISO 14001:2015 (environment management systems)
 - ISO 45001:2018 (Health & safety management system) – planned for 2020
 - HSE policy – refer to EMS-AI-10-13.
 - 10.6.4. Customer specific requirements as addressed by every and each customer
Refer to policy AI-4.2.2-07

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10.6.5. Regulation with regards to Health & Safety, Environment, Employment and Product.

10.6.6. Ethics is part of our culture with regards to preventing discrimination, employment rules, protecting human dignity, and acting honestly.

Refer to annex AI-4.2.2-12 "code of conduct and ethics"

10.6.7. The same are the expectations with our suppliers

10.7. Confidentially – Arkal committed for confidentially for customer information.

10.8. The quality policy is published in Arkal website and available to all interest parties

11. **Arkal's core processes:**

Reference: annex 4.2.2-14, 4.2.2-15 - core processes matrixes.

12. **OEM Customer Specific Requirements:**

CSR (Customer Specific Requirements) are listed in policy 4.2.2-07, and integrated into ARKAL's procedures and processes. Below main topics:


12.1. OEM CSR are documented in PLM under "CSR" and "standards"

12.2. Automotive core tools, APQP control and risk management tools are implemented according to CSR (mostly AIAG / VDA) – refer to policy AI- 7.3-00

12.3. BIQS is GM requirements to its supplier's manufacturing sites, and fully implemented accordingly.

12.4. VDA 6.3 (process audit), VDA 6.5 (product audit) are German OEMs CSR and implemented accordingly

12.5. Product safety / PSB – refer to policy 7.5.0-03

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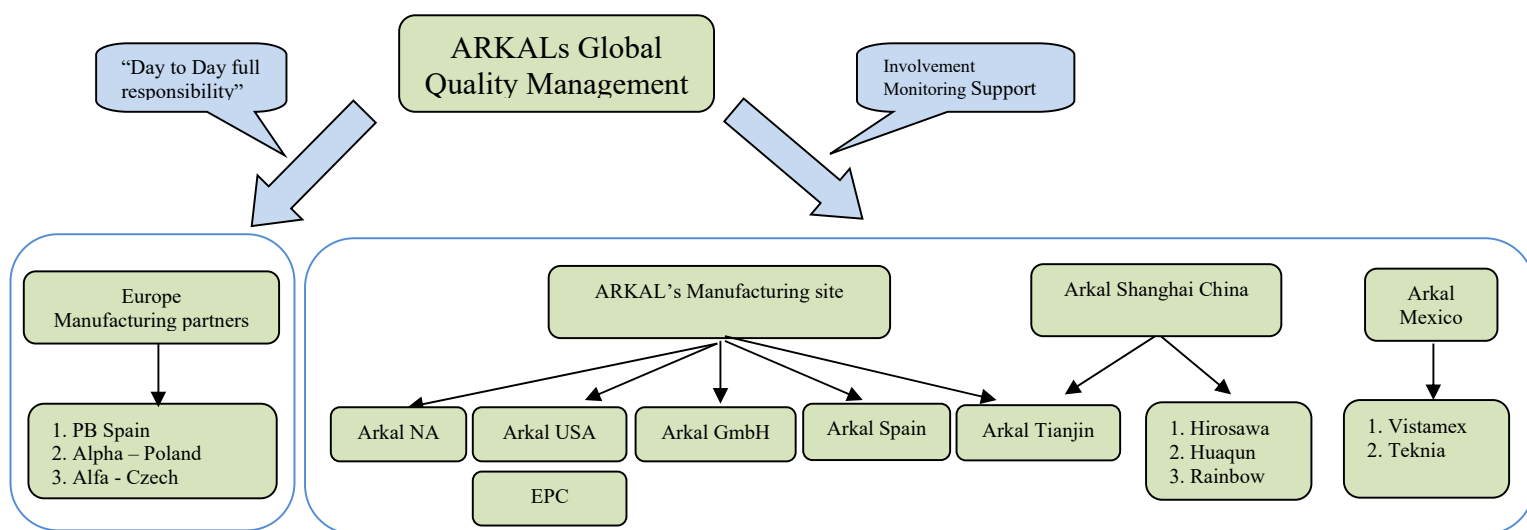
13. Quality Management System:


13.1. All Arkal's employees are part of the quality management system, with commitment to fulfill the quality goals, follow quality policy, improve their performance, and supply high level quality products and services.

13.2. The QA team leads and supports the quality management activities by:

- Defining quality and performance goals
- establishing and defining robust processes
- providing and implementing advanced planning and quality tools
- standardizing methods on the global level
- provide knowledge and training in the area of quality
- define expectation and acceptance criteria for the quality of product and services.

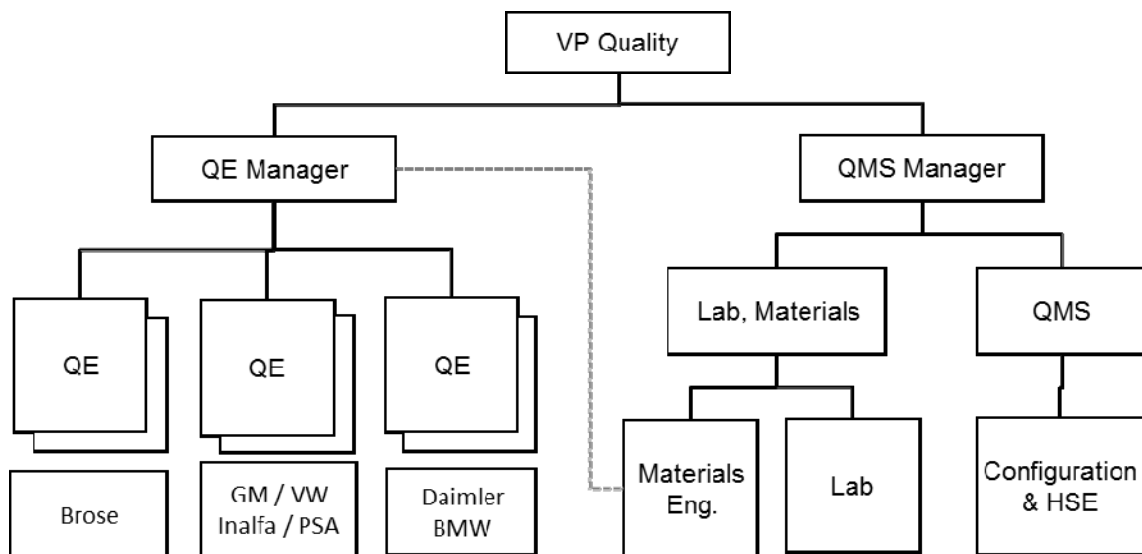
13.3. Quality organizational chart – global level:



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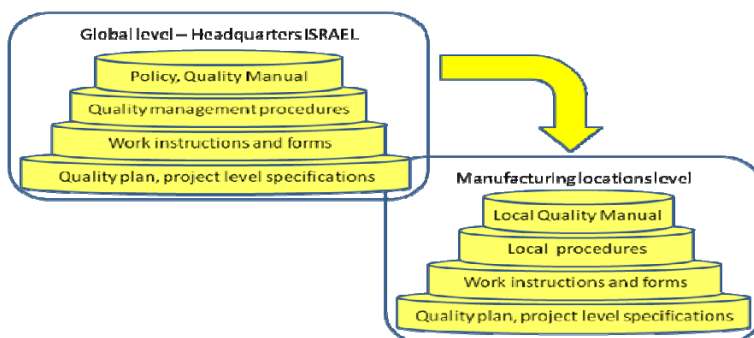
13.4. QA organizational chart – headquarters ISRAEL:




14. Quality documentation structure:

The QMS documentation developed in two levels:

- 14.1. Global policies and Global QMS documentation
- 14.2. Manufacturing sites QMS documentation, as generated out from the global policies.
- 14.3. Quality documentation structure sketch



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15. Changes to the QMS

- 15.1. When determines the need for changes to the quality management system, the changes are carried out in a planned manner:
- 15.2. The changes are considered and risks are taken into account ,including the availability of resources and any other implications
- 15.3. Significant changes are reviewed and agreed upon in MRM
- 15.4. Refer to policy 4.2.3 for the management of changes to QMS processes and documentation

16. Quality management procedures:

- 16.1. All IATF 16949 requirements apply, no waivers.
- 16.2. Reference: annex 4.2.2-03 "cross matrix to IATF 16949"