

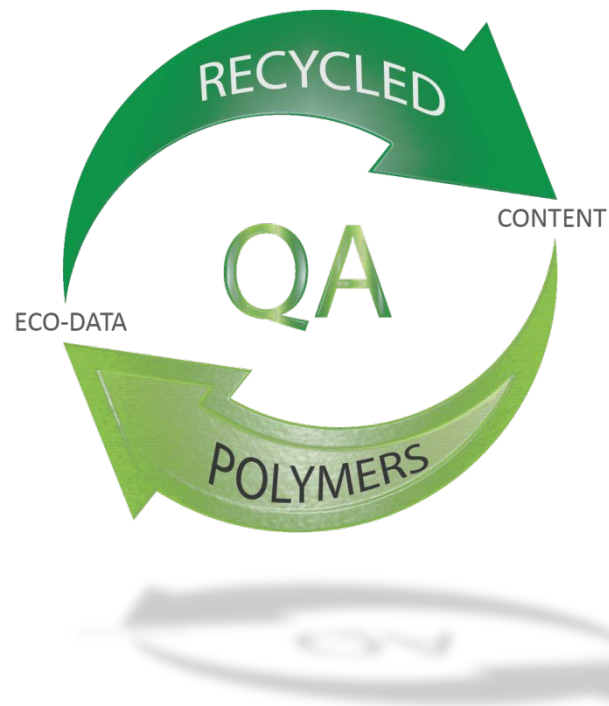


SPECIFIC REQUIREMENTS  
RELATED TO THE MANAGEMENT  
SYSTEM OF RECYCLED  
MATERIALS

## QA-CER

Quality Assurance of Content and  
Eco-data of Recycled materials in  
Polymeric Products





## **Quality Assurance of Content and Eco-data of Recycled materials in Polymeric and other Products**

[www.qa-cer.be](http://www.qa-cer.be)

### **SPECIFIC REQUIREMENTS RELATED TO THE MANAGEMENT SYSTEM OF RECYCLED MATERIALS**

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# Preface

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The QA-CER certification scheme has been developed by the accredited certification organism BQA in collaboration with the accredited laboratories of Centexbel-VKC. The certification scheme focuses on the certification of industrial companies producing and/or applying polymer recycled materials in polymer fusion processes.

## **The QA-CER certification system applies to:**

- Waste sorting and recycling companies of post-consumer waste from plastics, textiles, woods or composites
- Plastic, textile and wood processing companies and composite producers, applying post-industrial and post-consumer waste from plastics and other materials
- Assembling companies producing composite products from the recycled materials of plastic components, textiles and other materials

The QA-CER certificate is issued to a company for the entirety or for part of its activities.

## Quality and environmental assurance in recycled material applying sectors

The application, in part or in whole, of recycled materials in polymer fusion processes is increasing in both plastic converting and textile production companies. This growth is clearly stimulated by economic and/or ecologic considerations of the production companies. But important users too (e.g. the automotive sector) and authorities (in the framework of sustainable procurement) can speed up this process by requiring the presence of a significant percentage of recycled materials in the final product.

The increased demand of recycled products has of course a direct impact on their availability and pricing. To answer the growing demand, recycling companies not only have to process pre-consumer/production wastes but also post-consumer waste flows. The increasing prices of recycled materials may of course incite dishonest companies to non-permissible practices.

It goes without saying that the desired quality of the final products made from recycled materials has to be maintained. To remain within the product specification boundaries, companies mostly work with a combination of new polymers and recycled materials. The desired quality depends of course on the product, sector and application. Therefore, the meaning of "quality" cannot be defined unambiguously for all companies and markets.

It is of course conceivable to assure the desired quality of the final products by means of a 100% in-house quality control system. However, in practice, this method is hard to realise, very expensive or insufficiently trustworthy for third parties.

The installation of (a) a conclusive retraceability system within the entire value chain and of (b) a certification system of an appropriate Quality Assurance system in the different steps of the entire value system are a valuable alternative for the abovementioned approach.

These new instruments shall inspire sufficient trust among the users, and this against an economically and socially acceptable price.

The requirements are based on the principles of the ISO 9001 quality management system, completed with the requirements from the European standards on recycling, including e.g. the characteristics of polymer waste flows as summed up by EN 15347, and the retraceability system for polymer waste flows as defined in EN 15343).

The periodical certification of the applied systems (retraceability and quality assurance system) by an independent party within companies shall result in transparency and inspire trust among the many actors (recycling and production companies, users, authorities, etc.).

At present, customers only impose “environmental requirements” concerning the % of recycled materials in products. The possible presence of environmentally harmful additives or contaminations in recycled products or in the products made from them, are not yet being questioned. In the application of post-consumer waste flows, the presence of such substances can never be entirely excluded. Recycled materials have to be considered as articles not subjected to the REACH registration obligation.

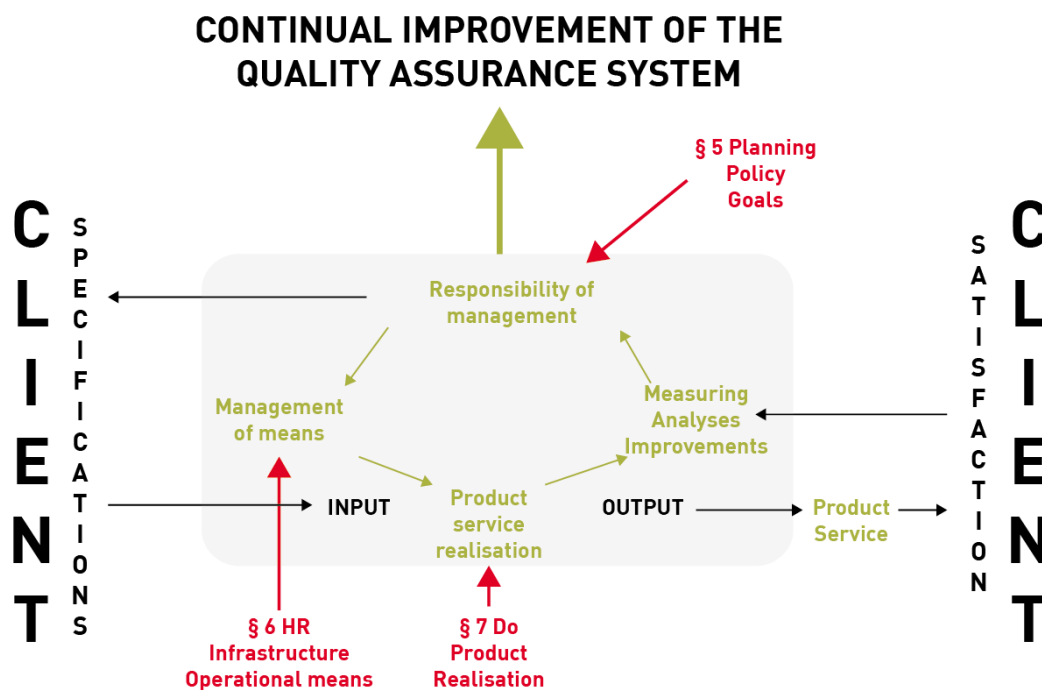
The presence of “substances of very high concern” (heavy metals, bromated FR products, carcinogenic pigments...) in recycled products can only be revealed by systematic chemical analyses.

Flows of these substances can of course be characterised as such. A traceability system and a goal-oriented application of flows of recycled materials and final products by means of separated recycling can result in a “detoxification” of the recycling chain.

The QA-CER certification system includes three levels that will be defined below.

# QA-CER certificate level 1

The management of recycled flows and their applications is the basic requirement of the certificate. Chemical characterisation is not required.



**NOTE 1:** in defining the requirements below, reference is made to the paragraphs of ISO 9001:2008 that have been specially developed for the recycling management system; this does not implicate, however, that a QA-CER certificate holder has to maintain an ISO 9001 quality assurance system.

**NOTE 2:** to organisations already certified according to ISO 9001:2008, the above diagram indicates which paragraphs of ISO 9001:2008 have to be elaborated more in particular.

## Recycled material management system

### Definitions

Recycled material is defined as:

- a raw material resulting from a recycling process (as defined by CEN TR15353 : recycling = processing in a production process of [plastic] waste materials for the original purpose or for other purposes, but excluding energy recovery) in which the chemical structure of the raw material is not significantly modified, or as
- a waste flow, applied as raw material.

(§ 4.1 General requirements)

The organisation shall determine the criteria and methods necessary to perform and manage the processes, more in particular the one related to recycling.

#### *Questions:*

- *Are there specific "criteria" related to the purchasing, processing, controlling and selling of recycled materials or of materials, semi-finished or finished products partly or entirely made from recycled material?*
- *Are there specific "processes" related to the reception, storing, possible pre-treatment (purification, compounding) and processing of recycled materials and their management?*
- *Are there processes needed for outsourced recycled material management system and their management?*

(§4.2.4 Management of registrations)

The organisation shall document the registrations that prove the follow-up of the recycled material flows. Registrations about finished products in which recycled material has been processed, shall be managed.

#### *Questions:*

- *Which registration takes place in the internal recycling activities? Which registration takes place during the processing of internally generated recycled materials? Which registration takes place during the processing of externally generated recycled materials?*
- *Which registration applies to the transformation of waste flows into raw materials? Does the registration cover the traceability requirements of the customer?*

The organisation shall define the way to document and destroy the required registrations.

## **Responsibility of the management**

(§5.3 Quality management)

The management shall provide evidence that the recycled material management system is incorporated into the quality policy and that the corresponding quality objectives are defined for the relevant functions and levels within the organisation.

*Questions:*

- *Has the quality policy been adapted to include the application of recycled material in the finished products?*
- *Has the quality policy about recycling been adapted to include purchasing, selling, product development, production, quality control...?*
- *Are there measurable objectives concerning the use of recycled material? Are these objectives discussed and evaluated on a regular basis?*

## **Management of means**

(§6.2.2 Raising the awareness of the personnel)

The organisation shall raise the awareness of the personnel about the importance of their activities and on how they can contribute to achieving the objectives of the recycled material management system.

*Questions:*

- *How does the company communicate to the personnel on the recycling activities and the use of recycled materials?*
- *Does the company provide specific training sessions on how to assess, reject or release and apply recycled materials and products made from recycled materials?*

(§6.3 Infrastructure and other means)

The organisation shall foresee the necessary means to reach the objectives of the recycled material management system.

*Questions:*



- *Which measures have been installed to receive, identify, store, control and possibly pre-treat and process recycled materials?*

## **Product realisation**

### (§7.1 Planning and product realisation)

The organisation shall plan the processes needed to realise the product and determine the requirements concerning the product, control, testing and their registration.

#### *Questions:*

- *In which way it is demonstrated that the applied amount (content) of recycled material is in conformity with the finished product in which the recycled material has been applied?*

### (§7.2.1 Determination of product specifications)

The organisation shall determine the client's specifications, or other specifications needed for the foreseen use.

#### *Questions:*

- *Does the client have any specific requirements about recycling or recycled content?*
- *Do these requirements always apply or may one deviate from them depending on the availability of the recycled material?*
- *Is the quality level of the applied recycled material consistent? Can this be demonstrated by means of registrations?*
- *Does the final product comply with the REACH and RoHS regulations (limitation of hazardous substances, lead, mercury, cadmium, Chromium VI, polybromated biphenyl, polybromated diphenylether)? Which documents can be shown?*
- *Are the product properties in conformity with the applicable client or market specifications?*

### (§7.2.3 Communication with the customer)

The organisation shall determine and implement adequate measures to communicate with the customer about the application/processing of recycled material.

#### *Questions:*

- *Has the use of recycled material been discussed with the customer and what are the specific agreements (product files, packaging, website, etc.)?*

(§7.3. Design and development)

The organisation shall manage the product design and product development regarding the recycled material management system.

*Questions:*

- *Has the use of recycled material been incorporated in the design?*
- *Is the quality level of the recycled material essential in achieving the quality of the finished product? If so, how can this quality level be guaranteed?*
- *How does one deal with the requirements in relation to the use of recycled material? Does one distinguish between internally and externally recycled materials?*
- *How does one manage changes in design and development?*
- *Are there specific analyses on products made from recycled material? Are the new products based on recycled materials being released?*
- *Are there product files including product specifications of products containing recycled material? Is the recycled material content indicated in these product files?*

(§7.4.2 Purchasing data)

The organisation shall assure that the specifications of purchased goods contain the needed information on the recycled material content and that the purchased goods comply with the buying requirements in this respect.

*Questions:*

- *Are the recycled materials being specified? Are they controlled and guaranteed by the supplier?*
- *Are there different types of recycled material in relation to the product and how are they specified?*
- *What is the procedure to specify and release a new recycled material? Is the origin of the purchased recycled material known or retraceable?*
- *Are the purchased recycled materials clearly identified as recycled materials?*

(§7.4.3. Verification of the purchased product)

The specifications of the purchased goods shall be verified. The results of the verification and possible necessary measures shall be registered and stored.

*Questions:*

- *Is there an (administrative/visual/check) incoming goods inspection and registration of recycled materials or products containing recycled materials?*
- *Are the different supplies of recycled materials accompanied by test reports or product certificates?*
- *Are the released raw materials marked as such?*
- *What happens with non-conform recycled materials?*

## (§7.5.1. Production management)

The organisation shall plan and run the production under controlled circumstances in all partial processes where recycled materials are being processed.

*Questions:*

- *How is the processing being managed?*
- *Are there specific controls on products based on recycled materials?*
- *Are there clear production instructions related to the processing of recycled materials?*
- *Does one work with the same process parameters when applying recycled materials as when not?*
- *How is the quality checked and assured of end products (partly) based on recycled materials?*
- *How does one control the desired recycled material content during production?*
- *Are there specific procedures to treat recycled materials and the insecurities involved? Which are the main process parameters that have to be managed in processing recycled materials?*
- *How does one determine the processing parameters and applied tolerances in the processing of recycled materials?*
- *Do the finished products have the same (internal) specifications as identical finished products based on virgin granulate?*

## (§7.5.3. Identification and traceability)

The organisation shall appropriately identify the application of recycled materials during the entire product realisation.

*Questions:*

- *Are the recycled materials to be applied clearly identified?*
- *Is there a specific coding of the recycled material and contents that have to be present in the finished product?*

- *Is there a clear traceability system concerning the application of recycled material? Which data are traceable and what is their relevance?*

(§7.6. Monitoring and measuring equipment)

The organisation shall determine the monitoring and measurement that will be performed and which monitoring and measuring equipment is needed to provide proof of conformity of the product with the set requirements.

*Questions:*

- *Are there specific tests of the recycled material (incoming goods inspection) - products based on recycled materials?*
- *Outgoing goods inspection?*
- *How do the controls proceed?*
- *How does one verify the measuring instruments?*

## **Measuring, analysis and improvement**

(§8.3. Management of deviating products)

The organisation shall guarantee that products that are not in conformity with the product specifications regarding the application of recycled materials will be identified to prevent their delivery. Registrations of the nature of the deviations and of the subsequently implemented measures (derogations, obtained concessions) shall be documented.

*Questions:*

- *How are "non-conform recycled materials" being managed?*
- *What if the recycled materials are depleted?*
- *Are there alternatives for recycled materials and how are these systems installed and assured?*

(§9.1. Management of product controls)

## QA-CER certificate level 2

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Level 2 includes all requirements of level 1 and applies to companies desiring to guarantee the technical specifications of their products, of both the recycled material and the final product.

The organisation shall clearly describe the products covered by the certificate. The description may take place by clearly defined product families.

### **Additional requirements for level 2:**

- Product control by a recognized external organisation
- Control frequency: at least once a year
- Sampling by BQA
- Controlling labs: accredited lab of recognized by BQA. If the company disposes of a proper laboratory, it may perform the tests itself under supervision of the BQA auditors.

(§9.2. Management of ECO-parameters)

## QA-CER certificate level 3

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Level 3 includes all requirements of level 2 with an additional control on system level of the ECO-parameters of the product or recycling material.

### **Additional requirements for level 3:**

- The organisation shall prove that it respects all environmental parameters, e.g. that it has incorporated sufficient control systems to assure that no products listed on the REACH or RoHS lists are present.
- Administrative control by BQA to determine whether the documented process and laboratory tests of the ECO-parameters are being managed.