

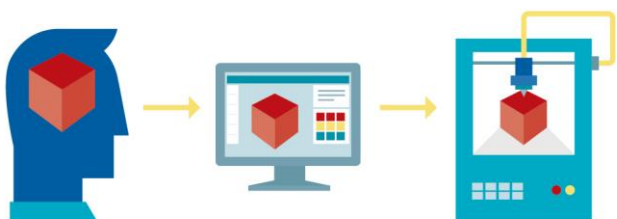
Creating Trust in Additive Manufacturing Process and Product Reliability

Additive Manufacturing as an Industrial Production Technique

Additive manufacturing (AM), i.e. *3D printing*, has a big potential to change the rules of industry. In the last decade it has started to be seen as a technique to manufacture functional product beside its primary task of prototyping. 3D-printed products start to replace the goods that are produced traditionally, particularly the ones for which the traditional techniques are more costly or limited in design possibilities.

AM techniques also create new industries such as *mass customization*. This new perspective shakes the fundamentals of production, B-to-B relations and service industry.

We believe that AM is going to be a mainstream industrial production technique in a close future. The faster it improves its *reliability* and *market acceptance*, the closer such future will be.

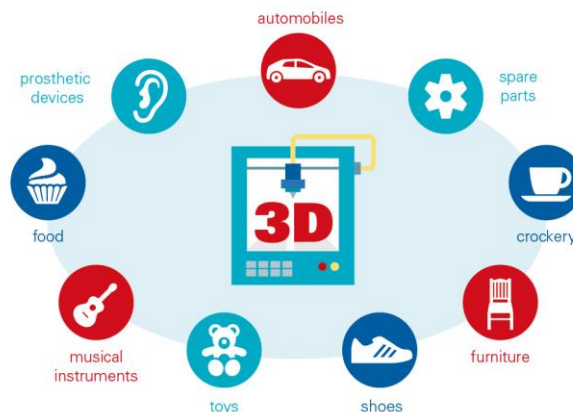


The reliability of AM

The power of AM is being a versatile and flexible technique where almost everything you imagine can be designed and produced with very *short time-to-market*. The range of size, shape and material alternatives are large and the technique does not need additional production tools such as molds or assembly lines.

AM technique creates a vast space for *creativity* and the *versatility* for processes while its versatile nature creates a challenge as well in assessing the reliability of the processes and products.

There is a need for a *simple solution* for reliability assessments of AM processes and products. The assessment should not limit the versatility and creativity of AM and be able to facilitate the realization of its acceptance as an industrial production technique for mass customization.



Additive manufacturing processes can be divided into stages such as *design*, *material feed*, *building*, *post processing* and *inspection*. These stages can be parts of one production line or function cooperatively as independent production units in a *digital ecosystem*.

Kiwa is your partner for progress in AM industrialization

A specific certification can be provided for each stage of AM process to reduce the total effort required for the manufacturing and the costs for *quality verification* through the supply chain.

Production units working independently in the ecosystem can be also *pre-certified* to reduce the costs and the lead times for *part certification*.

Kiwa, as an *independent*, *impartial* and *innovative* partner, wants to help AM companies go forward. AM technology has the ambition and Kiwa has the knowledge to help AM companies achieve reliability and market acceptance.

Kiwa's core business lies in activities as *testing*, *inspection* and *certification (TIC)* with related *training*, *technology* and *data services*. We aim to contribute to organizations being able to offer *quality* and adding value to society thanks to their reliability, safety, efficiency and sustainability.

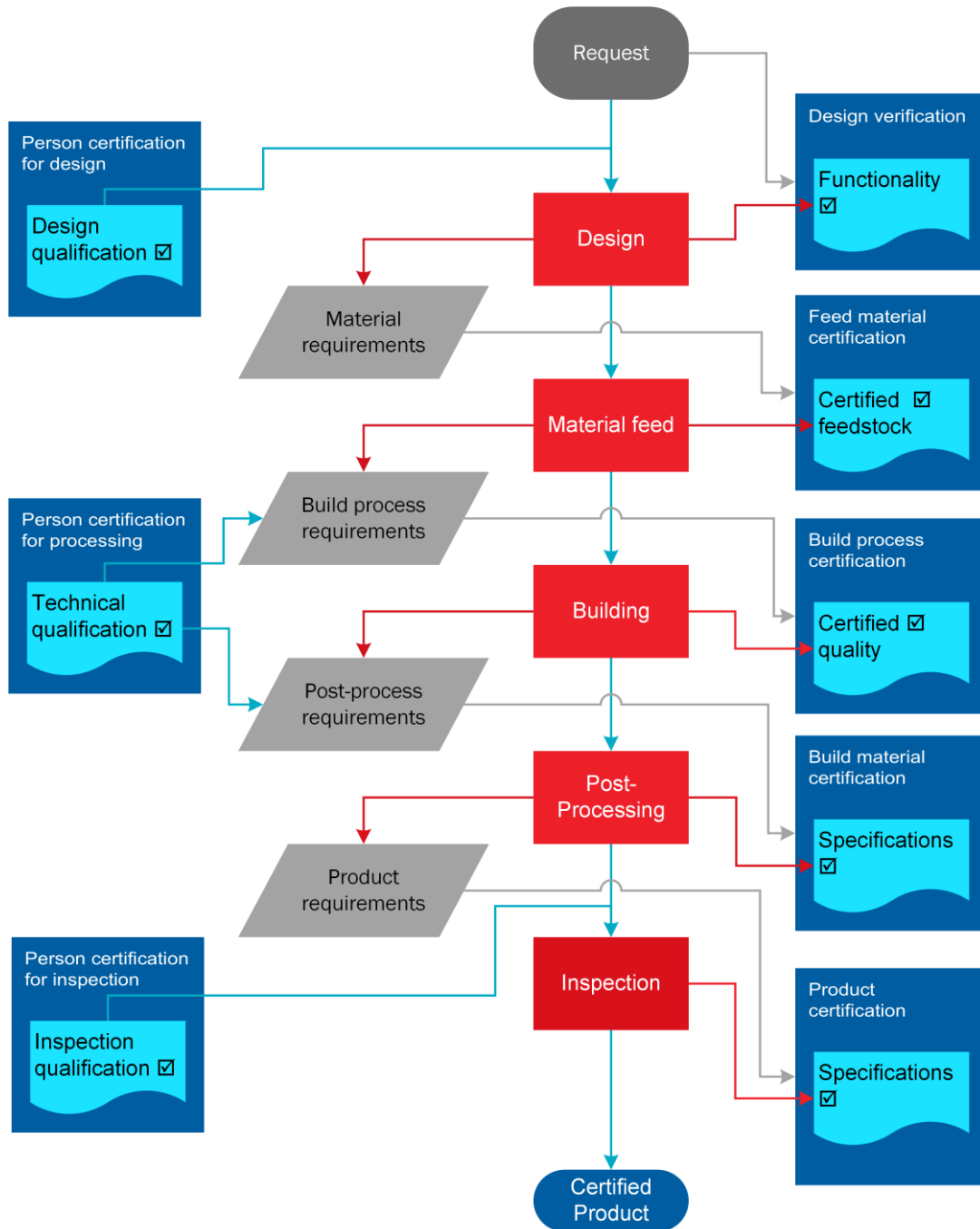


Kiwa Nederland B.V.

Sir Winston Churchillaan 273
Postbus
2280 AB RIJSWIJK
The Netherlands

Tel.: +31 88 998 44 65
Fax: +31 88 998 44 20
E-mail: rubber@kiwa.nl
www.kiwa.nl

Certification options for AM processes



Kiwa Nederland B.V.

Sir Winston Churchilllaan 273
 Postbus
 2280 AB RIJSWIJK
 The Netherlands

Tel.: +31 88 998 44 65
 Fax: +31 88 998 44 20
 E-mail: rubber@kiwa.nl
www.kiwa.nl