

Content

- + [LayerBits: David vs. Goliath](#)
- + [Case Study: Mixer](#)
- + [News: The LayerWise RM Coaching Initiative](#)
- + [Soft as SILC](#)
- + [New material options](#)
- + [Events](#)

LayerBits: David vs. Goliath

Flexibility is one of the principal advantages of Rapid Manufacturing. There are virtually no start-up costs because no programming, fixturing or tooling is needed to start a production run. In times of economic uncertainty, this renders RM extra attractive.

For starters, RM is well suited to sustain your necessary R&D efforts as functional prototypes can be delivered in a fast and economic fashion. But there is more. Due to the absence of start-up costs, you may also want to consider RM as an alternative for the conventional manufacturing methods. If you can't justify the tooling costs due to the uncertainty about the effective demand, RM offers a ZERO RISK method to market your innovations.



Risk assessment is however not the only opportunity. The best projects are realized when engineers consciously incorporate RM in their designs with the goal to add performance to their innovations. Components can be made lighter, assemblies can be simplified or throughput or production rates can be increased. Studies have demonstrated for example that conformal cooling in injection molds results on average in a 30% cycle time reduction.

Metal Rapid Manufacturing is a promising and emerging metal forming technology. Just like David defeated Goliath with one stone, you can also benefit from its advantages and effectively nurture new developments.

Case Study: Mixer

Diametal is a contract manufacturing company, processing metal parts on CNC milling and turning machines. As they cater to the process industry, they appreciate the benefits of metal Rapid Manufacturing. In this example case of a spray nozzle, 10 curved channels are combined with 4 inlets that are mixed in complex internal diffuser chamber. Furthermore the component is internally heated via a conformal channel. In the process industry, corrosion resistance is of key importance. Therefore, LayerWise offers besides the traditional Stainless Steel varieties also specialist materials like Inconel.



Characteristic: Function integration, Simplified Design, No leakage, Better heating rate.

News: The LayerWise RM Coaching Initiative

Are you looking to increase the performance for your innovations with RM but you don't know where to start? Then the LayerWise RM Coaching Initiative can help you.

The idea came from our customer base. We experience that clients recognize more opportunities to implement Rapid Manufacturing after they completed a few projects. Therefore we decided to turn things around and started the RM Coaching Initiative.



With RM Coaching, LayerWise offers to:

- Identify the RM opportunities for your company or product line
- Assist in optimizing designs for Rapid Manufacturing
- Execute Rapid Manufacturing series

With the RM Coaching Initiative, you can commission a LayerWise RM expert Free of Charge who will analyze and work out the opportunities together with your engineers. For more information, please contact info@layerwise.com.

Soft as SILC

In the previous edition we already announced the SILC treatment to **optimize surface** aspects. First generation RM parts often were characterized by rough and grainy surfaces and a 5 μ Ra was the effective processing limit. Therefore LayerWise has developed the SILC treatment to further improve the quality to the 1 to 1,5 μ range, depending on the part geometry.



LayerWise SILC treatments:

- **SILC BASIC:** a matte, uniform finish
- **SILC MEDIUM:** a smooth, uniform finish
- **SILC POLISH:** a smooth, shining finish
- **SILC HIGH POLISH:** a smooth, mirror finish (for tool inserts for example)
- **SILC ELECTROPOLISH:** a smooth, shining finish that makes it easy to clean parts

New material options

LayerWise is a leader in titanium manufacturing. Besides titanium 6Al4V, LayerWise currently also offers pure titanium components: **titanium ASTM grades 1 and 2**. Also new is the availability of **316L stainless steel** and this in addition to our 1.2709, 1.4540 and 1.4542 steel varieties.

LayerWise is also active in pilot projects with **Aluminium** and **Inconel**. Inconel materials are characterized by a high thermal and corrosion resistance which renders them very suitable for the process and reactor industry.

Do not hesitate to contact us about other materials.

Events

March 31: LayerWise presents at the Laser Event 2009, Twente (NL):



www.industrial-laserevent.nl

April 2: (Rapid) Prototyping Event 2009, Kortrijk: www.protolab.be/rp2009.

April 23: LayerWise presents at the CAE dag, Gent. Inscriptions: tadee@wtbk.org.

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