



Plastics Case Study 05/2013

Company: Advanced Plastics Ltd

.....Zenith too

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Zenith too



[Advanced Plastics](#) provide a diverse range of technical injection moulded products for blue chip clients across a range of market sectors. From the initial design concept to volume production the Hull based company adopt the latest technology and employs its considerable experience to ensure the delivery of robust solutions at minimum cost.

The consistent provision of added value, customer service, technical support, and product quality has resulted in Advanced Plastics remaining the preferred partner for its existing long term clients and in its ability to attract new customers.

Since the company's inception in 1993 Advanced Plastics' client base has expanded steadily across a number of demanding market sectors. Global industries served now include the Automotive, Heating, Defence, Industrial, Construction, Packaging, Labelling, Medical and Consumer Goods markets.

Manufacturing facilities include twenty high quality injection moulding machines with 40 Ton to 1500 Ton clamp force and multi axis robots fitted to most machines. In addition plastic jointing is undertaken by Linear Vibration Welding and Ultrasonic Welding and Inserting. Assembly and Testing provisions include Bespoke Assembly and Test Cells and Manual Assembly and Kitting.

Advanced Plastics operate a Quality Management System accredited to ISO9001-2008 standard and embraces structures such as, Advanced Product Quality Planning (APQP), Process Failure Mode and Effects Analysis (PFMEA) and Production Part Approval Process (PPAP). These progressive procedures help to ensure process capability and defect prevention throughout the product lifecycle. To help ensure the efficient operation of the company's busy quality department, regular investments are made in the most up to date metrology equipment, such as the recently purchased advanced [Zenith too Coordinate Measuring Machine](#) from Aberlink Innovative Metrology.

Craig Neill Advanced Plastics QHSE Manager explained "Our in-process quality is verified at every stage of manufacture by fully trained team members, in addition traceability records are maintained and SPC trends monitored in real time.

"Although we achieve world class standards of Parts Per Million (PPM) defects, when occasional quality concerns are experienced they are managed via the Global 8D Process. Thorough root cause analysis conducted by a cross functional team we are able to quickly establish and verify the actual root cause, robust countermeasures are then deployed and monitored to prevent any reoccurrence.

"In addition to employing highly competent staff, we utilise state-of-the-art inspection aids to ensure the continuation of our industry leading quality standards. Our most recent inspection acquisition is our new, advanced Zenith too CNC Coordinate Measuring Machine from Aberlink Innovative Metrology.

"Having previously used an older, slower CMM, due to the increasing volume of work passing through our busy Inspection Department, we became aware that we needed to invest in a faster, easier to programme machine.

"After deliberating the options, we chose Aberlink's CMM as it delivered all of our required needs and in many ways exceeded our expectations. Now installed in an environmentally controlled room that we had built to accommodate it, due to its exceptional speed, the Zenith too has removed any potential for bottle-necks from our inspection function."

Neal Topham, Advanced Plastics Quality Engineer, added. "Despite our new CMM's speed, it also has an impressive accuracy specification we particularly appreciate the ease of use of Aberlink's software. Compared to our previous CMM, we are able to write even complex part programmes in a fraction of the time previously taken. Also, the Zenith's generous capacity means that we can load a single part or multiple parts on to its large component support, quickly recall a part programme, then perform an inspection routine in a completely automatic CNC mode.

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“On completion of a measuring task, our Zenith is able to generate a comprehensive inspection report showing all relevant parameters in both tabulated and graphic formats and SPC information. Due to the nature of our customers, this function is particularly useful to us.

“In addition to being very impressed with our new Zenith CMM, we have been delighted with the excellent levels of training, service and technical back-up we have received from Aberlink.”

Manufactured by Aberlink Innovative Metrology, the largest UK owned Coordinate Measuring Machine manufacturer, the large capacity Zenith too Coordinate Measuring Machine range consists of 10 machines with XYZ capacities from 1000x1000x600 –1000x3000x800.

The range’s cutting edge, all aluminium construction, advanced drive design and raised guide-ways ensures that despite their generous measuring envelopes, the machines’ extremely low inertia characteristics guarantees supreme speed of operation. Impressive accuracy and repeatability figures are further aided by the range’s measuring structure being completely independent of the machine’s granite surface table. Although the Aberlink series is perfectly suited to use within environmentally controlled inspection environments, it is on the shop floor where the Zenith too range’s low thermal mass and extremely robust characteristics come to the fore, enabling the accurate measurement of large components to take place nearer to their point of manufacture.

The impressive hardware of the new Zenith too is complemented by the range’s intuitive Windows based software. A welcome bi-product of any Zenith too CMM inspection routine is that a simultaneous picture of the measured component is created in real-time on the operator’s computer screen. Dimensions between the measured features, mirroring those that appear on the component drawing, are then picked off as required. In essence Aberlink’s ‘smart’ software represents an intelligent measuring system that is able to automatically recognise and define the various features being measured. [Aberlink 3D is the easiest to use CMM software currently available](#), so much so, that a complete novice is usually able to perform relatively involved measurement routines after just 5 minutes training.

Aberlink supply a complete Zenith too ‘turn-key’ package, including a comprehensive training programme, a wide choice of motorised or manual probes, Aberlink’s celebrated 3D software and not least the latest generation of high speed custom controllers, that are capable of generating true, three dimensional contours.

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