

PE ball valve Production process

This infographic illustrates the complete production process of PE Ball valves at the production facility of AVK Syntec.

#1 Incoming inspection

All materials and components are inspected before processing.

The raw materials are extensively tested on e.g., melt flow rate (MFR), oxidation induction time (OIT) and moisture content prior to be released for further processing. AVK Syntec only uses virgin materials to manufacture PE ball valves.

#2 Injection moulding

After QA has approved and released the synthetic material it will be dried in designated dryers and can be used for injection moulding. A first batch of products is made and thoroughly checked on appearance, dimensions, weight and colour prior to releasing it for full production.

After the first batch is approved full production can be started. Raw materials are processed into bodies, spigots, balls, stems and other essential parts of the valve.

#3 Machining

The moulded components go through a special heat treatment process for stress relief and dimension stability called annealing.

After annealing the components are machined to size. The machined parts have a relaxation time of twelve hours and are subsequently inspected before they are pre-assembled.

#4 Pre-assembly

During pre-assembly all bodies and balls are manually assembled together with several other parts. The operator performs a 100% visual inspection.

#5 Welding

Bodies and spigots are automatically welded in a modern butt-welding machine. Directly after welding a unique serial number is generated by the welding machine and dotmarked onto the body.

Every welded valve is visually inspected and has to be conditioned for twenty-four hours before the next step is initiated.

#6 Batch release testing

All ball valves are tested in accordance with worldwide leading standards such as EN1555-4, ISO4437-4, EN12201-4, GIS/V7-2 and GB15558.3.

The batch release testing consists of leak tightness, hydrostatic strength and operating torque tests. Checking dimensions, appearance, colour and marking completes the testing.

#7 Final assembly

When the production run is finished, random inspections are done and products are assembled into final products.

All ball valves are provided with a barcode (according to ISO12176-4) for traceability purposes and are registered at www.traccoding.com.

The valves carry a QR code that can be scanned by using the AVIT app on a smartphone. This app allows customers to fully record, track and identify exactly where their AVK valves are located.

#8 Packing

Eventually the ball valves are packed in standard quantities, loaded into a lorry and delivered to the customer.

