Frankwen Forge – diversified services under one roof

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Situated in Benoni, Frankwen Forge has a unique diversified manufacturing facility that can offer the customer forgings, heat treatment, machining, destructive and non-destructive testing, all under one roof.

In order to remain the leading independent forge facility in South Africa, Frankwen Forge has established a reputation of delivering quality products to the needs and expectations of its customers at market-related prices and agreed delivery time frames.

"Through the use of a formal documented Quality Management System, Frankwen Forge has been able to give its clients the assurance that products manufactured are of the highest quality, meeting with their specific requirements.

Frankwen Forge has been providing this service for the past twenty years, locally and internationally," says marketing manager **Toni Da Matta**.

Forging Division

The forge is the engine room of the company and is geared up to manufacture forgings from 10 kg to 12 tons.

A new Ringmill has enabled Frankwen Forge to supply the market with the heaviest rolled rings on the African continent.

A comprehensive range of manufacturing equipment enables the forge division to produce a vast range of forgings in carbon, low-to-medium alloy steel, copper, aluminium and stainless steels (austenitic, martensitic or duplex).

The petrochemical market is supplied with flanges ranging from 1″ to 72″ and blind/ tube sheets up to two metre in diameter.

The larger flanges are profile rolled, while their smaller counterparts are forged in die blocks to maintain the grain flow with minimal allowances for machining.

Heat Treatment Division

The heat-treatment division offers the following services:

- Oil quench and tempering, up to 7,3 metre in length.
- Water quench and tempering, up to 6,5 metre in length.

Forge Division: 1800 ton Press – The forging of a bush

- Normalising, up to 8 metre in length.
- Annealing, up to 8 metre in length.
- Stress relieving, sizes up to 8 m (length) × 3 m (width) × 1,5 m (height).
- Solution annealing of stainless steel.
- Solution annealing of forged aluminium.

Due to market demand, the oil-quenching facility was extended to accommodate 7,3 metre bars horizontally and 3 metre bars vertically. The water-quenching facility can accommodate 4 metre bars vertically.

A vast range of straightening equipment is available to ensure the straightness of bars supplied to the customer is within the commercial standard.

Shot blasting is also offered to customers requiring scale-free surface-finished components.

Special Steels Division

The special steels division carries a wide range of bars in the most popular grades and sizes. The bars are available in full lengths or they can be cut to the customer's requirement.

The readily available range is as follows:

- Carbon steel – 70 mm to 450 mm in diameter.
- Alloy steel – 70 mm to 450 mm in diameter.
- 709M40 condition T – 70 mm to 200 mm in diameter available off the shelf.
- 817M40 condition T – 70 mm to 200 mm in diameter available off the shelf.

However, larger diameters are available on request.

To further enhance the supply of bars into the market, a peeling facility was introduced into the special steel division.

The supply of the peeled bar ranges from 70 mm to 200 mm in diameter.

The customer benefits from the peeled bar in the following manner:

- Reducing machining time – less to machine and better machinability.
- Eliminating the scale – reducing costs in maintenance and tips.
- Reducing weight – the six per cent allowance is reduced.

The delivery offered is 48 hours, which is dependent on quantities ordered.

Machining Division

An established machining division with a diverse selection of machines allows Frankwen Forge to supply fully-machined components ranging from a one inch flange to the drilling of a two metre tube sheet.

This also enables Frankwen Forge to take advantage of adding value to a forged component by reducing the supply chain.

Franktech

Franktech metallurgical laboratory is an independent division of Frankwen Forge offering the following services:

- Mechanical testing - tensile, yield and impact strength.
  - Modulus of elasticity.
  - Elongation.

The mechanical testing can be done at elevated or subzero temperatures.

- Chemical analysis and portable spectrometric analysis.
- Bend testing.
- Hardness testing (Rockwell, Brinell and/or Vickers).
- Metallurgical investigations.
- Failure analysis.
- Photo-microscopy.
- Metallographic analysis.
- Welder's performance and procedure qualification testing.
- Non-destructive testing – magnetic particle inspection (MPI).
- Dye penetrant inspection (DPI).
- Ultrasonic testing (UT).

Technical support is available to Frankwen Forge customers and the industry by a team of qualified metallurgists.

They offer an advisory service on material selection, specification equivalents and general enquiries of a technical nature.

"Our top priority is quality and, to this end, strict measures are taken to ensure that strict quality assurance procedures are maintained.

An in-house inspectorate ensures that quality is kept at the highest levels," says Da Matta.

Frankwen Forge has been servicing the industry since 1985 and has had significant involvement in the following projects:

- SA Naval Corvettes
- Petro SA
- Sasol (various refinery upgrades)
- Engen
- Atomic Energy Corporation
- Caltex refinery
- Coal- and gold-mining industry

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