



FRANKWEN FORGE
(Pty) Ltd

THE HOME OF QUALITY FORGINGS



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Welcome

Founded in 1981, Frankwen Forge has grown into a key manufacturing and engineering business. Our quality products and services have been used in a variety of industries, including the mining, petrochemical, power generation, marine and general engineering sectors.

Backed by over 35 years in the forging and engineering industry, we strive to be the preferred supplier to customers by delivering excellence in everything we do.

Vision

To forge continued development in the engineering and steel manufacturing sector whilst maintaining a sustainable future for artisans and steelworkers in an ever evolving South Africa.

Mission

Progressing the engineering capabilities in South Africa by continuing to provide a vast array of quality forged and rolled products using suitable material to global standards.



Who We Are

Frankwen Forge maintains pace with the latest International standards and testing methods in multiple sectors. We support customers on technical aspects and engineering drawings as part of our overall drive towards customer satisfaction.



Situated in Benoni, on the outskirts of Johannesburg, Frankwen Forge has a unique diversified manufacturing facility that offers our customers forgings (in plain carbon, aluminium, copper, low to medium alloys, austenitic, martensitic and duplex stainless steels and round bar), heat treatment (stress relieving, normalising, annealing and through hardening by means of oil and water quenching and salt bath hardening), machining and non-destructive testing that conform to our clients most stringent specifications.

Frankwen Forge maintains pace with the latest testing methods in the critical petrochemical and marine

fields and prides itself in providing the customer with metallurgical and technical guidance as part of its customer service philosophy.

This service also entails the services of a SANAS Accredited Metallurgical Testing Laboratory (Franktech) which is on site. Frankwen Forge has successfully maintained ISO 9001 certification from 2005, and is supported by sound business principles. These principles relate to an established reputation of delivering quality products to the needs and expectations of its customers (locally and internationally) at market related prices and agreed delivery time frames.



Frankwen Forge has a unique and diversified manufacturing facility that offers the customer a variety of forgings, seamlessly rolled rings, heat treatment services, machining and non-destructive testing.

Our Capabilities

- Forgings (from 10kg to 10 tons)
- Heat treatment
- Machining
- Specialised laboratory testing



50 000m²
Total area of site.



Largest open die forging facility in Africa



+300
We serve over 300 customers



+35
Years experience in the forging industry



FORGE DIVISION



Our range of input material includes the popular grades of carbon and low/medium alloy steels of the BS/EN, AISI/SAE and ASTM/ASME ranges.

Selected grades of martensitic, austenitic and duplex stainless steels are also kept in stock. Horizontal band saws with capacities of cutting up to 1000mm diameter are used for the preparation of feedstock to the forge

OUR DIVERSE FORGING AND RING ROLLING SETUP ENABLES FRANKWEN TO PRODUCE AN ARRAY OF FORGINGS:

Bars/ shafts from $\varnothing 100\text{mm}$ to $\varnothing 850\text{mm}$ by up to 7500mm in length, either stepped or parallel.

Gear blanks up to $\varnothing 2000\text{mm}$ by $\varnothing 650\text{mm}$ high

Various rings up to $\varnothing 2800\text{mm}$ in diameter by 650mm high

Bushes up to $\varnothing 1500\text{mm}$ by 1200mm high

Forgings from 10kg to 10 tons



AVAILABLE EQUIPMENT:

3 Ringmills with the capability of rolling up to $\varnothing 2800\text{mm}$ diameter and a wall height of 650mm. Max weight - 3 tons.

Ringmills also have capability to profile roll 36inch raised face weld neck flanges and tyres

3 Hammers - 1ton, 1,5 ton and 3 ton. The 3 ton hammer makes use of a 3 ton manipulator

3 Hydraulic presses - 1000 ton, 1400 ton and 1500 ton all with manipulators

2 Ring expander sizers to ensure ring sizing accuracy

HEAT TREATMENT



Not only are our heat treatment services used to service our own forging department, but are also offered to external foundries, forges and round bar merchants.

For round bar merchants straightening is critical. Frankwen uses 2 gag presses for smaller diameters (25mm+) and a 200 ton press for diameters of up to $\varnothing 650\text{mm}$. In addition, a reeler is used to assist in de-scaling and straightening bars of up to 170mm in diameter.

Frankwen has mastered the deep surface salt bath hardening technique whereby the item is run through heated molten salt followed by a water quench. This allows Frankwen to supply critical undercarriage components such as lower rollers.

CAPABILITIES INCLUDE:

Normalising - up to 8m long

Stress relieving - sizes up to 8m x 3m x 1,5m

Annealing - up to 8m long

Solution heat treatment of aluminium forgings

Oil and water quench bars up to 7.3m long by 3m vertically



SPECIAL STEELS



ROUND BAR:

Standard merchant bar stock sizes, in the popular steel grades are available ex stock in prime lengths.

Additionally, we cut to length requirements and heat treat as required.

ALLOY STEELS:

Bars can be made at short notice to customer requirements ranging from Ø170mm and upwards in the below materials. (We stock 709M40 in selected sizes from Ø84mm - Ø150mm):

- 709M40 (EN19)
- 817M40 (EN24)
- 655M13 (EN36)
- 826M40 (EN26)
- 17CrNiMo6

CARBON STEEL:

Available in sizes Ø70- Ø400mm in the following materials:

- 080M40 (EN8)
- 070M55 (EN9)
- 070M20 (EN3A)

PEELED BAR:

Peeler can peel sizes from Ø75-Ø180mm in diameter.

CUT TO LENGTH:

Our automatic band saws are capable of cutting multiple cuts on a continuous basis.

MACHINE SHOP



CAPABILITIES INCLUDE:

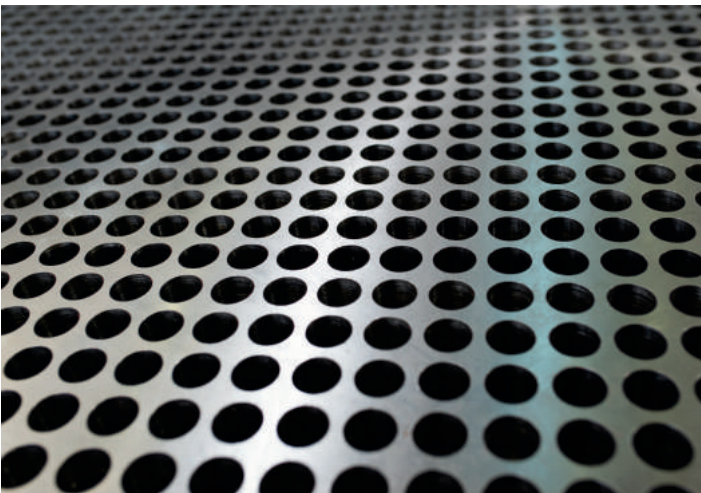
Machining capabilities of up to $\varnothing 3000\text{mm}$ in diameter

Proof machining ability of shafts of up to 6000mm in length

Flanges and tube sheets - final machined & drilled

Girth flanges and bushes - final machined & drilled

Long weld necks and lip types nozzles - final machined & drilled



A bevy of vertical boring mills, centre lathes, horizontal boring mills and radial arm drills are fully tooled for almost every eventuality.

Our CNC machining is the pride of our machining department and a must for precision machining of components and accurate drilling of tube sheets, baffle plates and flanges.

Frankwen is equipped with both 3 and 5 axis CNC machines, allowing us to machine complex, integrally reinforced lip type nozzles and final drill tube holes in plate and forged tube sheets to customers' drawings and specifications.

The majority of our finished machined items are used in the petrochemical and marine industry and thus conform to international specifications.

FRANKTECH LABORATORY

Franktech is a SANAS accredited, independent Metallurgical testing laboratory that is located on the premises of Frankwen Forge

Lab Number: T0244

CHEMICAL ANALYSIS:

Carbon steels (High and low alloy)

Stainless steels

Non - ferrous (on request)

IMPACT TESTING:

ASTM E23; ISO 148-1; NIST Certified

Energy absorbed (Joules)

Lateral expansion

Percentage shear

Room temperature and sub zero to -196 degrees celcius

WELD TESTING:

EN ISO 15614 – 1; ASME IX and AWS D1.1

Procedure and Welder qualification

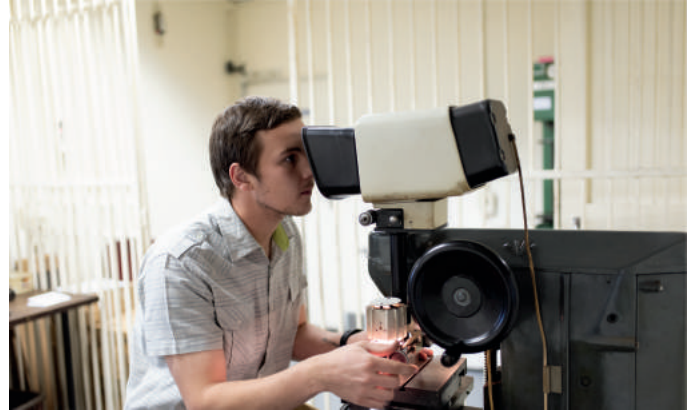
Flattening test, Bend tests, Tensile, toughness, macro and hardness traverse

CORROSION TESTING

ASTM A923 Methods A, B & C; ASTM A262 Practice A, C & E

Test for susceptibility to intergranular corrosion in Austenitic Stainless steels

Test for detrimental intermetallic phases in duplex Stainless Steels



MACRO & MICRO EVALUATION INVESTIGATIONS:

Structure evaluation & Interpretation

Cleanliness (ASTM E45 & ISO 4967)
Grain Size (ASTM E112)

Ferrite/austenite phase balance on duplex and stainless steels (ASTM E562)

TENSILE TESTING:

ASTM E8; ISO 6892-1

Ultimate tensile strength | 0.2% Proof stress

Reduction of area | Percentage elongation

Hot tensile testing up to 600 degrees celcius

HARDNESS TESTING:

Brinell (3000kg)- ASTM E 10; BS EN ISO 6506-1

Vickers (10Kg and 30 Kg)- ASTM E92-82-03; BS EN ISO 6507-1

Metallurgical Failure Investigations

SIMULATED HEAT TREATMENT

Post weld heat treatment (Short and Long Cycles)

Simulated carburize (Core properties)

Our Contribution

Frankwen Forge along with a few other businesses in Benoni wanted to make a difference in the community. This commitment to creating a positive change led to the creation of the White House Healing Centre and Sinomsebenzi Business Development.

www.whitehousehealing.co.za

www.sinomsebenzi.co.za



You too can partner with Sinomsebenzi and earn BBBEE points for Socio Economic Development (SED), Economic Development (ED), Supplier Development (SD) and earn additional points for Skills Development.



The centre focuses on:

- Physical
- Economic and
- Spiritual healing.

The Spiritual Healing aspect involves hosting Church services every Sunday morning. The White House has also partnered with the inner city Ministry NPO.

The Physical healing aspect involves a soup kitchen, clothing bank and free medical treatment from a Doctor weekly at the clinic on site.

The White House Healing Centre established Sinomsebenzi Business Development in order to facilitate economic healing in the community. A variety of courses are offered that target the unemployed as well as existing and future business owners.



Sinomsebenzi focuses on sustainable economic healing and community development through equipping, empowering and transforming people and organisations.

Sinomsebenzi offers work Readiness Training (Work 4 a Living) ; Short Skills Courses ; Business Training and Mentoring (Paradigm shift) as well as youth development ('The Future is Now' course). Sinomsebenzi also manufactures and distributes a nutritional dry food product, Ezesondlo, to needy communities.

Meet the Team



Allan Traube
Managing Director
& Founder



Donovan Traube
Assistant Director



Vincent Hosburgh
Sales Manager



Toni Da Matta
Heat Treatment
Manager



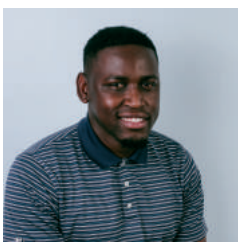
Danie Henning
Production Manager



Barry Maluleke
Franktech Laboratory
Manager



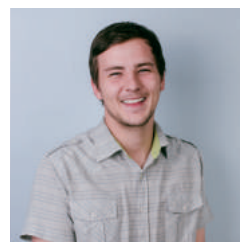
Frikkie de Jager
QC,QA & Dispatch
Manager



Tshepo Mphethi
Heat Treatment
Assistant Manager



Sean Rudwick
Petrochemical
Sales Manager



Juane Mohr
Franktech Laboratory
Technician



Annalize Hampson
Internal Sales



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