



About ENGIE Fabricom

ENGIE Fabricom designs, builds and maintains multi-technical facilities for companies and local authorities. Many of its solutions improve mobility, safety, distribution systems and the share of renewable energies, as well as operational and energy performance in industrial environments.

ENGIE Fabricom and its subsidiaries are active in both Belgium and abroad. They recorded a turnover of €1.20 billion in 2018 and employs over 5,800 people.

ENGIE Fabricom is part of the ENGIE Group, a major stakeholder in the international energy industry.

engie-fabricom.com

About ENGIE

Our group is a global reference in low-carbon energy and services. ENGIE is committed to responsible growth of its businesses (power, gas and energy services) to succeed in the central challenges of delivering an energy transition to a low-carbon economy: providing access to sustainably generated energy, combating climate change, reducing its effect and making responsible use of natural resources.

The Group is developing high-performance, innovative solutions for personal customers, urban authorities and companies by applying its expertise in four key sectors: natural and renewable gas, renewable electricity, energy efficiency and digital technologies. With our 160,000 employees, our customers, partners and stakeholders, we are a community of Imaginative Builders, committed every day to more harmonious progress.

Turnover in 2018: 60.6 billion Euros.

engie.com

ENGIE FABRICOM BENDING ACTIVITY OFFICE & WORKS

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World Class Manufacturer of Induction Bends

A leading position in bending

High Flexibility and Close Tolerances

As a world leading manufacturer of pipe bends, produced by induction bending, ENGIE Fabricom has the advanced technological and machine operating capabilities required to produce bends for the most advanced **onshore** and **offshore** oil and gas pipeline systems as well as specific applications in the **chemical**, **petrochemical** and **energy** sectors.

Our leading position is the result of experience gained throughout more than 47 years of manufacturing and development, and is fully supported by detailed test results gathered throughout this period.



Bending Capabilities

Pipe dimensions	max dia.	64"
	min dia.	2"
Bending Radius	min	75 mm or 1.5 OD
	max	Unlimited
Bending Angle	R > 75 mm	Angle ≤ 90°
	R > 265 mm	Angle ≤ 180°
Minimum length between Bends	OD < 8"	360 mm
	OD < 16"	460 mm
	OD > 16"	600 mm

ENGIE Fabricom operates **3 production lines** capable to bend pipes with diameters **up to 64" (1,600 mm)** all of which offer a high degree of flexibility in terms of bend radius, bend angle and bend plane. Located in Grimbergen (B), our machines are computer controlled, enabling us to achieve close tolerances.

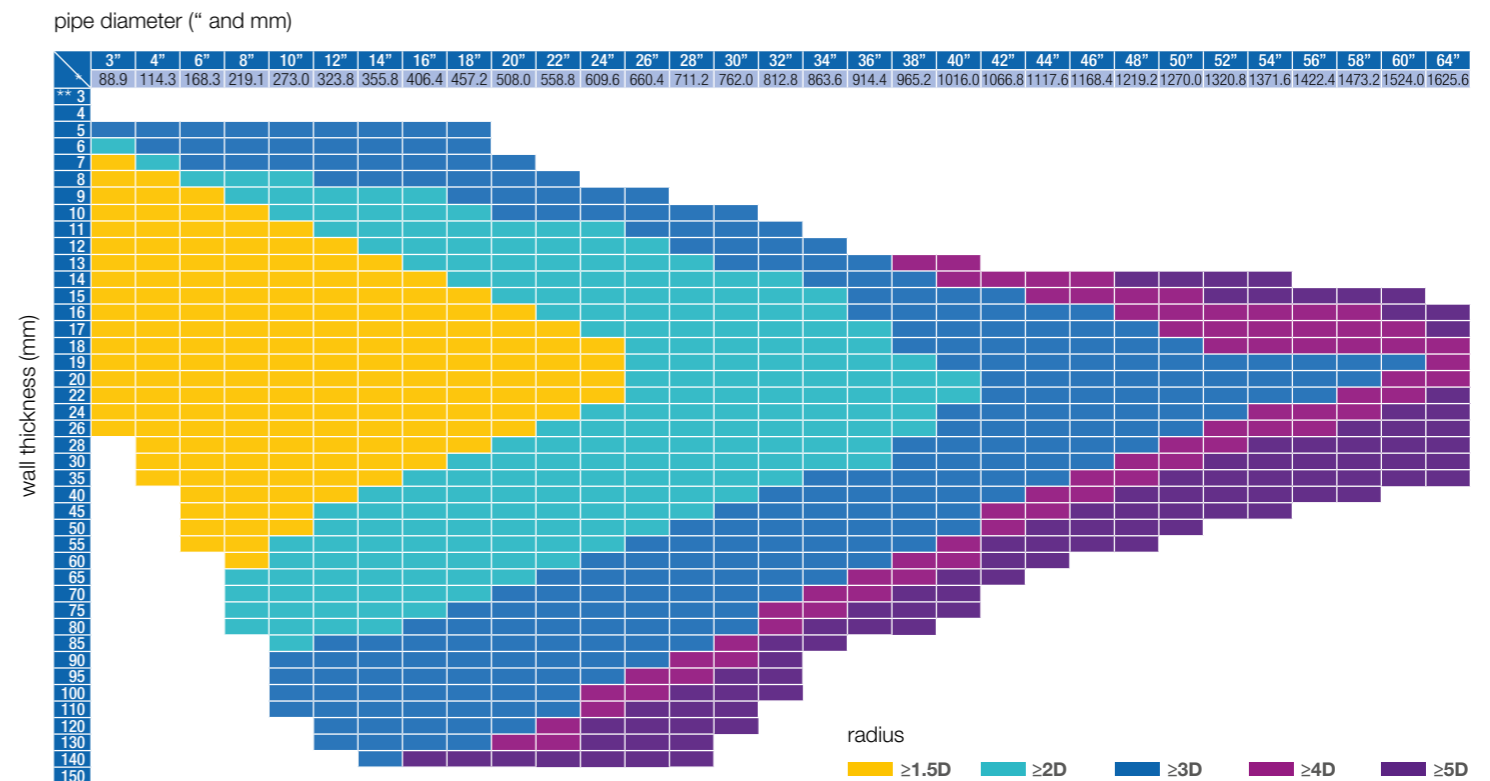
ENGIE Fabricom works with **all types of material**, including seamless or welded pipes in carbon and stainless steel, duplex and superduplex, clad pipes as well as the most sophisticated alloy steels. We are able to quote for single bends, the serial production of bends, spool pieces, J-tubes and riser bends, torus pipes, etc., in all sizes, up to 64" diameter.

The production of complete spools from straight pipe eliminates a lot of welding as well as its related costs and risks. By reducing welding in the system, plant integrity and safety is enhanced and in-service inspection reduced.



64"

BENDING CAPABILITIES



Heating and Quenching



After bending, especially for heavy wall materials or special alloy steels, it may be necessary to restore the mechanical properties of the pipe using heat treatment.

Such treatments include stress relieving, normalising, quenching & tempering and solution annealing heat treatment.

In order to perform these types of heat treatment, ENGIE Fabricom has **3 furnaces** which can be heated up to 1 200°C.

The furnaces are continuously monitored by thermo-couples situated in each zone, ensuring correct and balanced temperatures throughout the heat treatment cycle. In order

to meet the strict requirements with regard to material properties set by the Oil, Gas and Power industry, ENGIE Fabricom can offer various cooling types. Following heat treatment, bends can be immersed in water (quenching), cooled in still air or forced air, to obtain the right mechanical and corrosion characteristics.

Furnace Dimensions

Length	Width	Height
4.60 m	3.30 m	2.00 m
6.80 m	3.30 m	2.00 m
12.50 m	4.16 m	2.50 m



1200°C

Piping Prefabrication



300

TON / MONTH

Our Grimbergen pipe prefabrication workshop has a **300 ton/month** capacity, 20 500 m² of covered workshop and 20 000 m² of outside pipe storage yard, all crane operated.

Operating a large number of semi-automatic and automatic welding machines, the workshop has a fully equipped machine shop

with heavy duty CNC beveling, cutting and drilling machines.

This enables ENGIE Fabricom to offer the complete pre-fabrication of high pressure piping systems such as those used in thermal, and nuclear power stations, offshore platforms etc.



Additional services



End Preparation

ENGIE Fabricom has all the necessary equipment to machine the pipe ends according to its customer's requirements:

- > Plain ends
- > Weld end preparation and/or Tapering

Surface Treatment

All products are prepared and protected for shipment: ENGIE Fabricom has its own grit blasting and painting facilities.

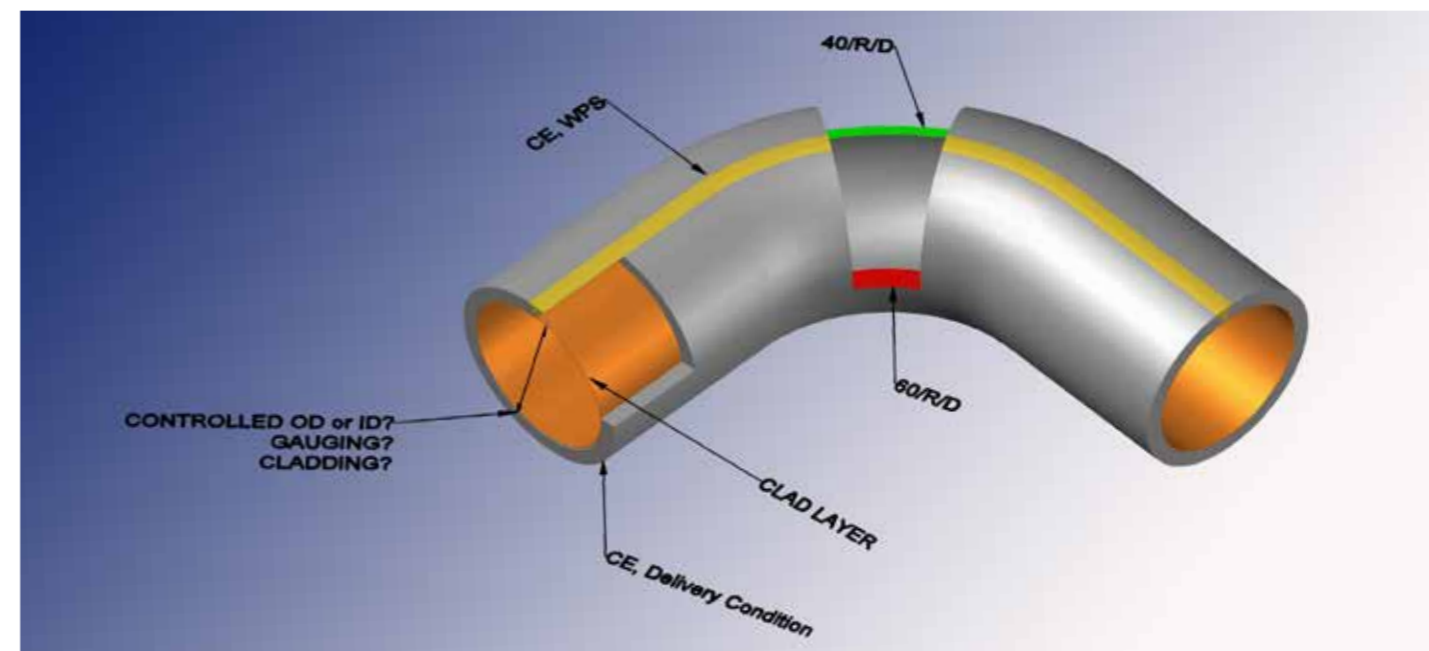
Through its close relationship with leading specialist companies, ENGIE Fabricom can also offer internal and/or external coating such as: PE, PP, FBE (Fusion Bonded Epoxy), concrete weight coating, insulation coating etc.

Process control

The entire process from sales up to delivery is controlled by an ERP application. Both quality and schedule are closely monitored and controlled to customers requirement.



Quality & Safety Our priorities



All shop and site activities are continuously supervised using:

- > An ISO 9001 certified Quality Assurance System.
- > An R&D team that conducts ongoing research relating to new processes for bending and welding.
- > A welding team that ensures that the latest welding techniques are implemented.



Environmental awareness & safety

Care for people and the environment are unmistakably essential parts of our business. We are qualified according **ISO14001** and **OHSAS 18001**.