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# A World Class Manufacturer of Induction Bends

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# 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"
	wall thickness	min 3 mm max 150 mm
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.

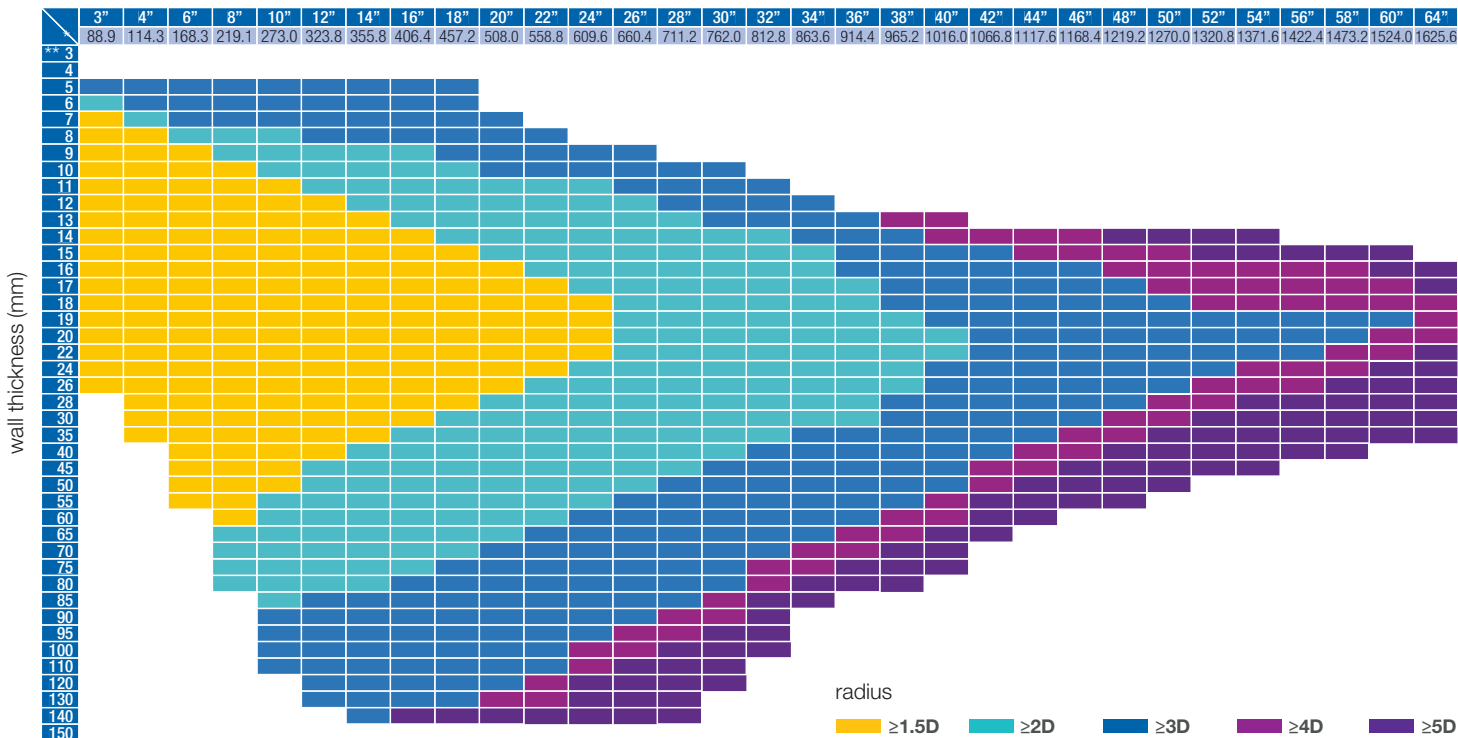


# 64"

## BENDING CAPABILITIES

pipe diameter (" and mm)

	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"	50"	52"	54"	56"	58"	60"	64"
** 3	88.9	114.3	168.3	219.1	273.0	323.8	355.8	406.4	457.2	508.0	558.8	609.6	660.4	711.2	762.0	812.8	863.6	914.4	965.2	1016.0	1066.8	1117.6	1168.4	1219.2	1270.0	1320.8	1371.6	1422.4	1473.2	1524.0	1625.6



# 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



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# Piping Prefabrication

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**300**  
TON / MONTH

Our Grimbergen pipe prefabrication workshop has a **300 ton/month** capacity, 7 155 m<sup>2</sup> of covered workshops and 20 500 m<sup>2</sup> of crane operated storage area. Operating a large number of semi-automatic and automatic welding machines, the workshop has a fully equipped machine shop with heavy duty 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.

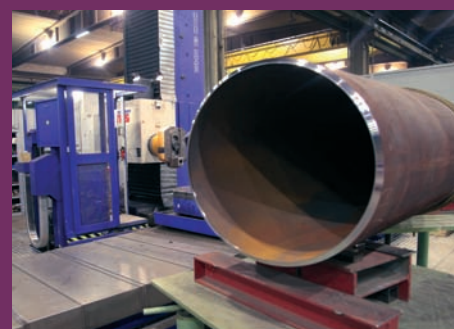




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# Additional services

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## End Preparation

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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

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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

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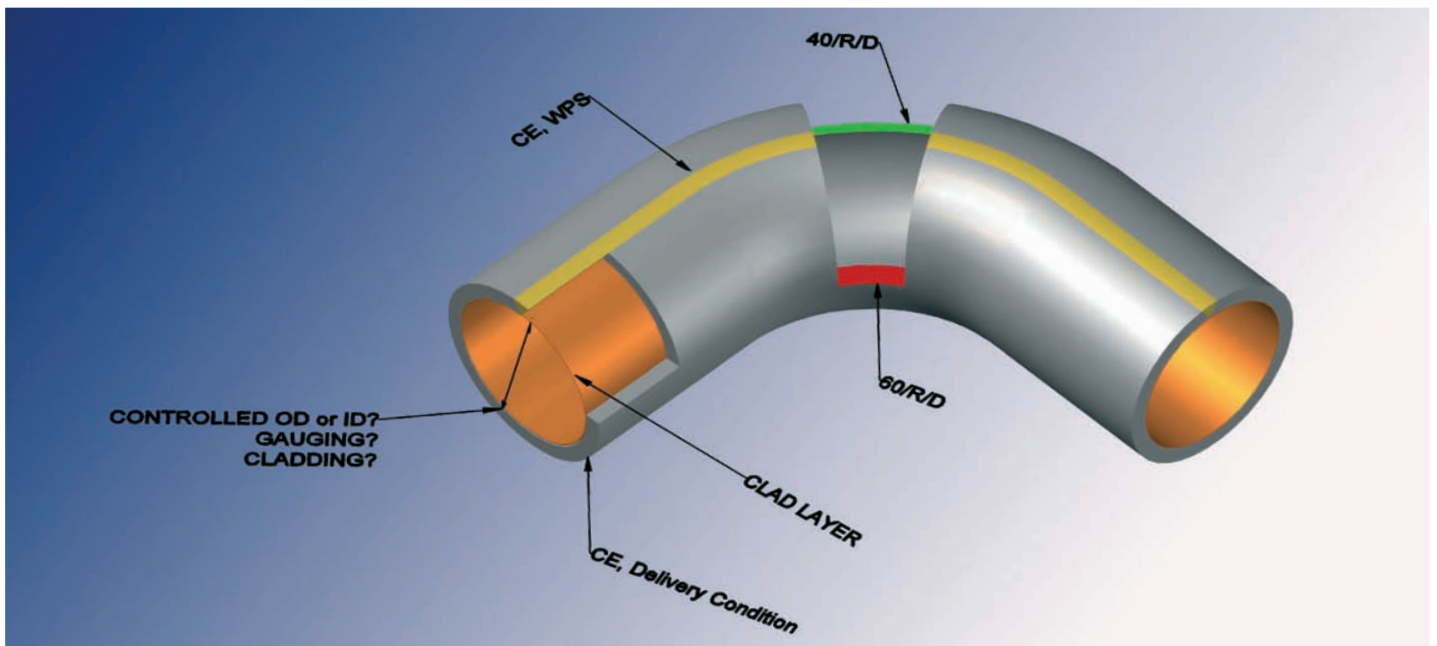
The entire process from sales up to delivery is controlled by an ERP application. Both quality and schedule are closely monitored and controlled to customers requirement.





# 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**.



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