

# Certificate



GL Systems Certification

GL Systems Certification herewith certifies, that the company

## El Nasr Casting Company

Cairo-Egypt  
Ductile Iron Pipes Plant, Tanash- Giza-Egypt.  
High Quality Castings Plant, Om Zeghew-Alexandria-Egypt



has established and maintains a Management System relevant for

**Design and Manufacturing of Butterfly and Gate Valves, Hydrants, Fittings,  
Accessories and Miscellaneous Castings from Ductile, Grey Iron & Steel (Alexandria  
Location)**

**Manufacturing of Ductile Iron Pipes and Rolls (Cairo Location)**

**Provision of Administration and Finance Activities Internally**

GL Systems Certification confirms that the Management System of the above mentioned company has been assessed and found to be in accordance with the requirements of the following standard:

### ISO 9001:2008

The validity of this certificate is subject to the company applying and maintaining its Management System in accordance with the standard indicated. This will be monitored by GL Systems Certification.

The certificate is valid from 27<sup>th</sup> December, 2011 until 26<sup>th</sup> December, 2014

Cairo, 27<sup>th</sup> December, 2011

GL Systems Certification Hub Egypt

Certificate No. **QS-5736HH**

Hazem Sharaf El-Din

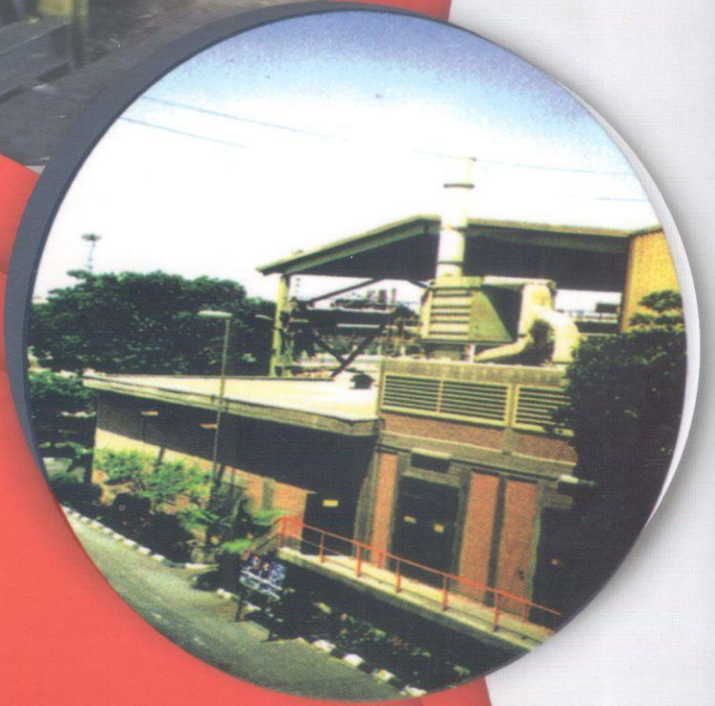
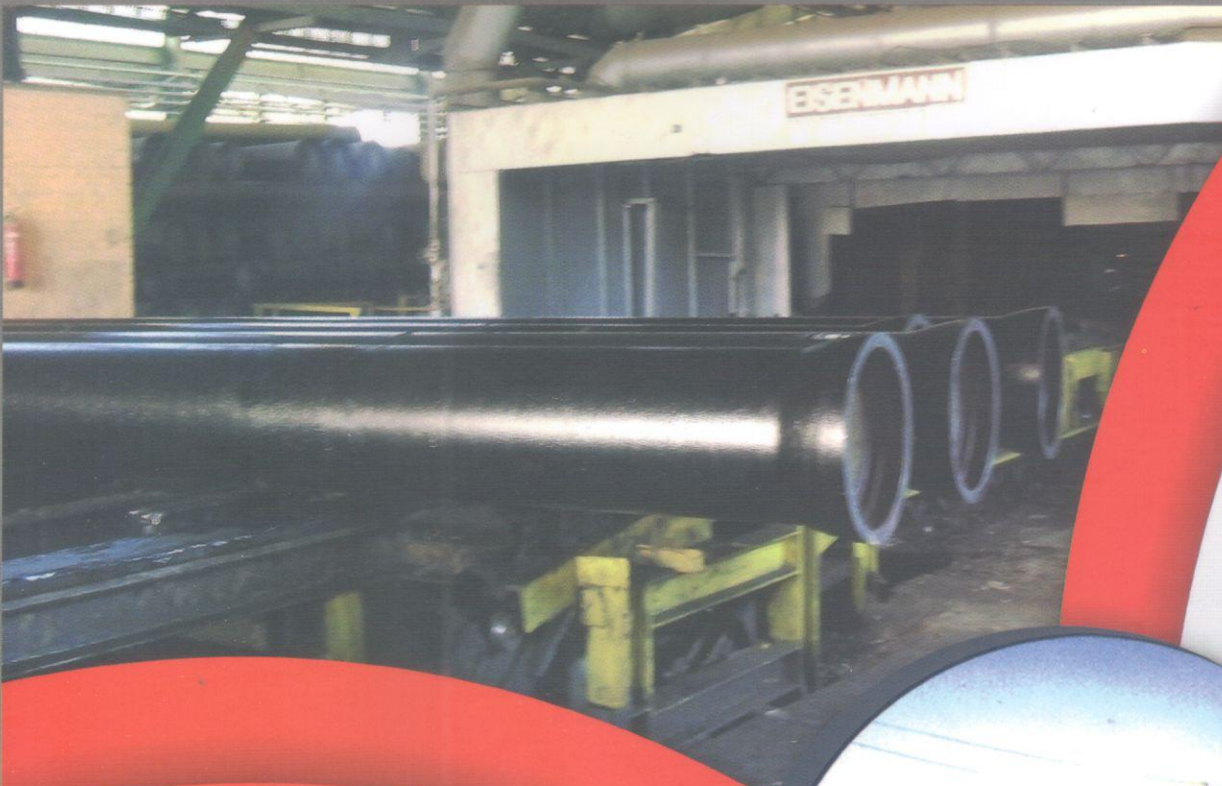


Deutsche  
Akkreditierungsstelle  
D-ZM-16026-01-02

Germanischer Lloyd SE, Competence Centre Systems Certification, Brooktorikai 18, D-20457 Hamburg







# COMPANY PROFILE

El-Nasr Castings company (ENC) is the Egyptian Leading Manufacturer for Grey and Ductile Iron Products for Water and Wastewater Industry with experience more than 60 years.

ENC considered as the pioneer company in metal castings in Egypt and Middle East. ENC produces Ductile Iron Pipes from DN 100 mm to DN 1000 mm ,Fittings up to DN 2000 mm and Valves from DN 65mm to DN 1800 mm based on the International and European Standards.

Through the last decades ENC has Provided the Egyptian and International market with its products which can meet the highest specifications standards for water and waste

ENC group of Foundries have a continuous history of innovation which is reflected in the high standard and wide range in cast products, which are supplied to many sections of industry

Ductile Iron Castings ranging from 0.5 Kg to 12 ton individual weights are made by using electric induction furnaces, in ductile and grey iron, low, medium and high alloy grades of cast iron for heat and corrosion resisting applications.

Pipes are produced by centrifugal castings method, while other castings are variously produced by hand and machine molding methods, in addition, there is a comprehensive pattern making department.



# A BRIEF HISTORY

**1948 :**

ENC was found in two plants of grey cast iron

**1985 :**

The Company started the Construction of its third factory of Ductile Iron Pipes in Tanash , Giza which opened officially in 1988

**1991:**

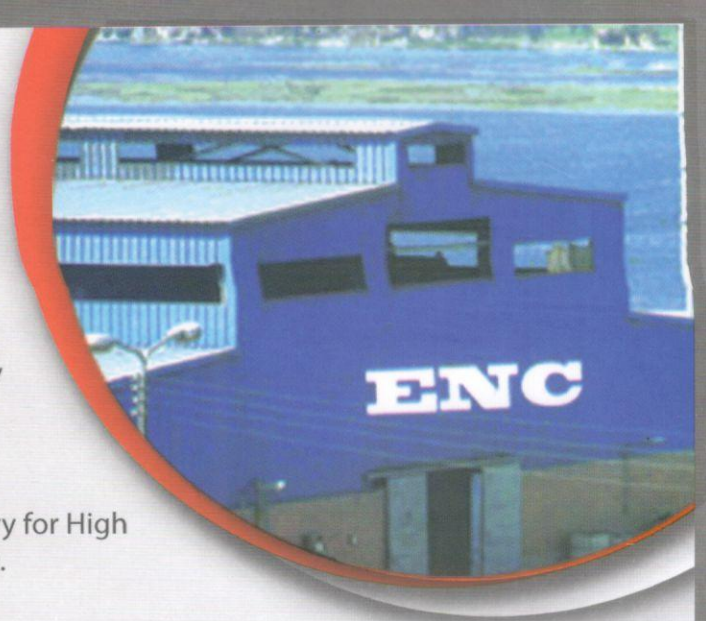
The Company has succeeded to construct the fourth factory for High quality castings, including Ductile Iron Valves in Alexandria.

**2006:**

Flour Milling Rolls Plant established and has started its production

**2008 :**

The Company started in producing Fe Si Mg 10% Alloy & Fe Si Mg 5% Alloy.



## COMPANY MISSION

ENC believes in the concept of customer and supplier working together to deliver drinking water for disadvantaged areas and working in pursuing this policy and in continually striving for improvements in service quality.

The quality policy is based on 3 fundamental principles :

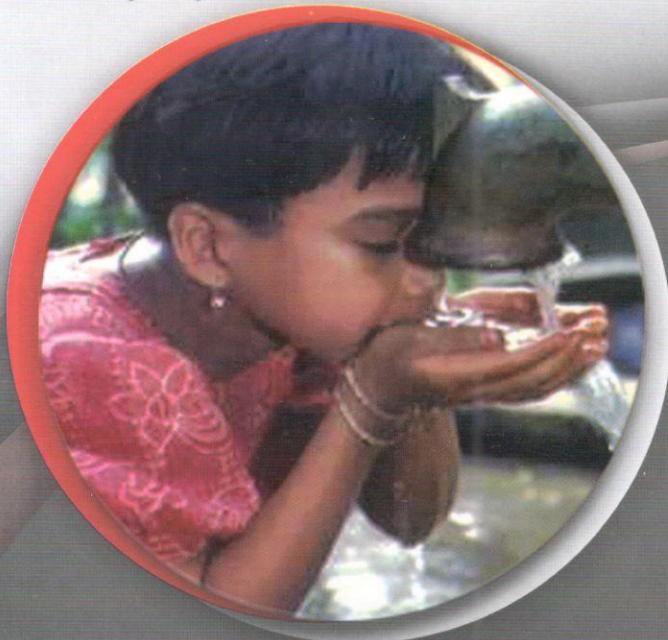
- A. Ensuring that we fully identify and conform to the needs of our customers.
- B. Looking at our service provision processes, identifying the potential errors and taking the necessary action to eliminate them.
- C. Everyone understand how to do his job and doing it right first time.

## COMPANY GOAL

The goal of the company is to achieve a high level of customer satisfaction at all times. Commitment to the implementation of supporting managerial and business operational systems is essential to realize that goal .

To achieve higher profitability by increasing growth and by optimizing cost while Maintaining Highest Quality Standard

To Keep Our Leadership in Research, development and Ownership of pipe Manufacturing Technologies



## VISION & PRINCIPLE

ENC will provide a healthy, safe work environment where continuing education is encouraged. Retention of the finest, qualified employees will assure that our quality goals are met.



# DUCTILE IRON PIPES

## Range Of Pipes

Nominal Diameter (mm) DN	External diameter mm	Wall thickness of		Nominal pressure PN water bar	Mass excluding outside coating			
		Casting mm	Cement mortar lining mm		of pipe of overall length including socket, plus cement mortar lining 6000 mm kg	Casting kg/mtr	Casting including cement mortar lining kg/mtr	
100	118	6.0	3	40	106	15.6	17.7	
150	170	6.0			157	23.0	26.0	
200	222	6.3			216	32.0	36.0	
250	274	6.8			287	42.5	48.0	
300	326	7.2			361	54.0	60.5	
350	378	7.7	5	32	477	67.5	79.5	
400	429	8.1			566	80.5	94.5	
450	480	8.6			671	97.0	112.0	
500	532	9.0			774	112.0	129.0	
600	635	9.9			1007	147.0	168.0	
700	738	10.8	6	25	1298	187.0	217.0	
800	842	11.7			1594	233.0	266.0	
900	945	12.6			1917	282.0	320.0	
1000	1048	13.5			2267	20	337.0	378.0

## Applied Standards

NC is committed to operate under the disciplines and control of a Quality Management System conforming to the International standard ISO 9001:2008, planned and developed jointly with our other management functions.

Ductile Iron Pipe	EN545, ISO2531
Push-on Gasket	EN681-1, ISO4633
Cement lining	EN545, ISO4179
External Coating	EN545, ISO8178
Dim. of Socket and Spigot Pipes	EN545
Polyethylene	EN545, ISO8180
Zinc coating	EN545, ISO8179
Bitumen Coating	EN545
Socket	EN545

Socket





## Range Of Pipes

ENC produces Ductile Iron pipes from DN 100 mm to DN 1000 with nominal Laying Length 6 m according to the International Standards ISO 2531 and EN 545.

Pipes have the advantage of small wall thickness which leads to an increase in the internal diameter for the same nominal diameter compared with other types of pipes.

Pipes have the advantage of high resistivity against the high salinity of ground water, aggressive soil and stray electric currents..

Ductile Iron is furnished with several different types of joints, and a wide variety of standard fittings are available without special order. Although Ductile Iron pipe is usually furnished with cement mortar lining, optional internal linings are also available for a wide range of special applications.

## Applications

Ductile Iron Pipes is the choice of water and waste water treatment plant piping and it is well-suited for use in pipe-on-supports applications .



Ductile iron pipe is utilized for innovative solutions of sewerage piping problems. It can be used in a wide variety of wastewater applications.



Often used for inverted siphons in difficult installations such as the stream crossing shown here because of its great strength, joint integrity.



## Protection

### Internal Coating

Pipes are internally Lined by cement mortar-lining conform with ISO 4179/EN 545. cement create a hydraulically smooth flow surface inside the pipe, resulting in less friction and thus, less head loss.



### External Coating

Ductile iron pipes are protected externally with a pure zinc - coat and bitumen . the pipes can be coated with Epoxy lining and additionally sit wrapped in polyethylene



N.B : upon customer request ENC can offer any kind



# WHY Ductile Iron ?

Ductile Iron not only retains all of Gray Iron's attractive qualities, such as machinability and corrosion resistance, but also provides additional strength, toughness, and ductility. Although its chemical properties are similar to those of Gray Iron, Ductile Iron incorporates significant casting refinements, additional metallurgical processes, and superior quality control.

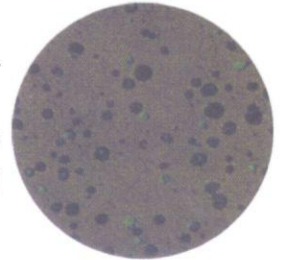
Ductile Iron also differs from Gray Iron in that its graphite form is spheroidal, or nodular, instead of the flake form found in Gray Iron.

This change in graphite form is accomplished by adding an inoculant, usually magnesium, to molten iron of appropriate composition during manufacture.

Due to its spheroidal graphite form, Ductile Iron has approximately twice the strength of Gray Iron as determined by tensile, beam, ring bending, and bursting tests. Its impact strength and elongation are many times greater than Gray Iron's.



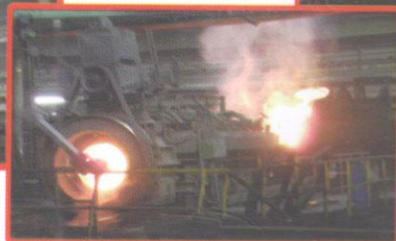
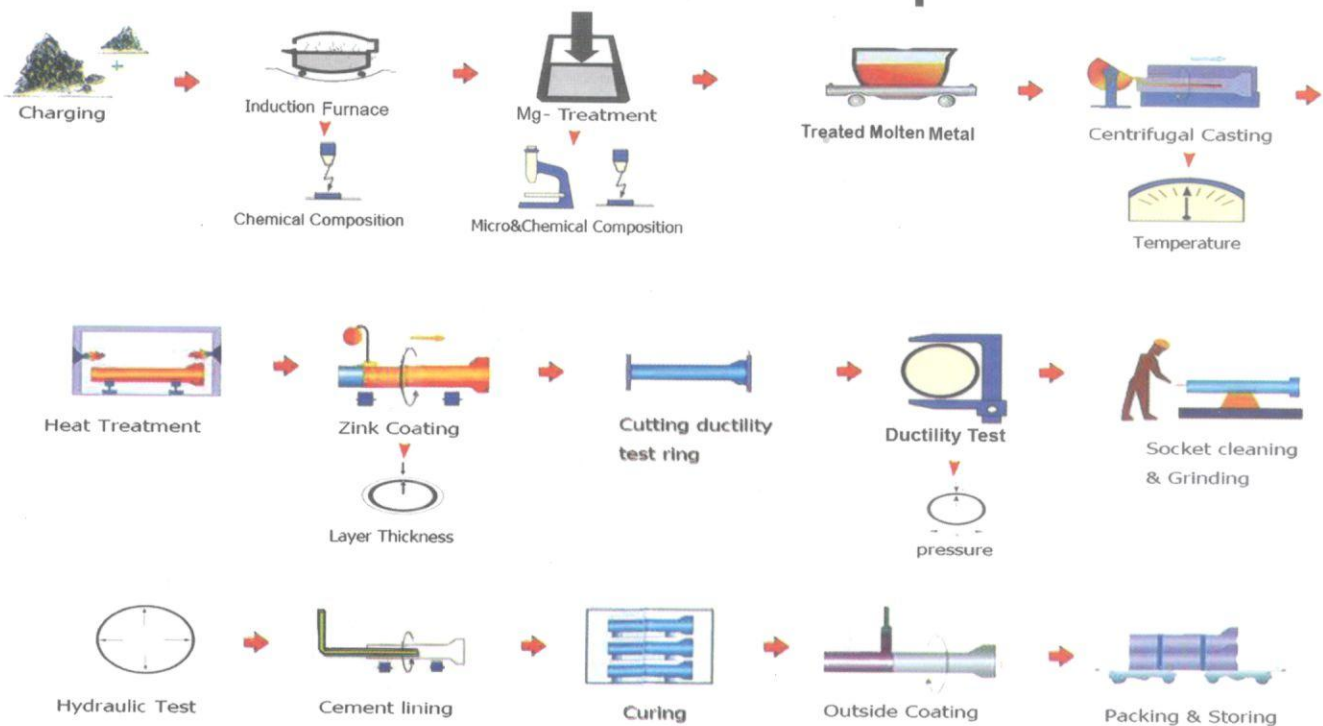
Gray Iron



Ductile Iron

As these photomicrographs show, Ductile Iron differs from Gray Iron

## Production & Quality Control Processes in D.I.Pipes Plant





# DUCTILE Flanged Pipes

## Range of Pipes:

ENC can manufacture any configuration of Ductile Iron Fabricated Flanged Pipe to suit your specific requirements in nominal bore 100mm - 1000mm and up to a maximum length of 5.9m. according to ISO 2531/ EN 545.

This facility is available according to EN545 for potable water and EN598 for sewage and wastewater applications. Standard Flange Drilling is PN10,PN16 and PN25 upon Request

## Applications :

Flanged Joints are rigid but can act as a restrained joint, reducing the requirement of thrust blocks and external restraining devices.

Ideal for over-ground pipelines and crossovers (such as pillars, roads, bridges etc.)

Vertical pipelines used in treatment plants, pump houses , Elevated / Overhead service Reservoirs.

In Pump house , Water and Sewage Treatment plants where various units and accessories are inter-connected.

Applications where pipelines need to be desinged or transferred from one location to the other.

## ENC succeeded to produce Restrained Pipe Joint from DN 100mm -1000mm



## Bolts & Nuts for the joint:

Bolts made of Mild Steel as per ISO 1367 & Galvanized Nuts. High Tension bolts may be used where high axial load is anticipated.

## Accesories For Flanged Pipes

### Gaskets :

For Flanged pipe jointing are normally flat rubber gaskets EPDM elastomer as per ISO 4633. Use of poor quality gaskets made of Natural rubber is not recommended.

## Specifications:

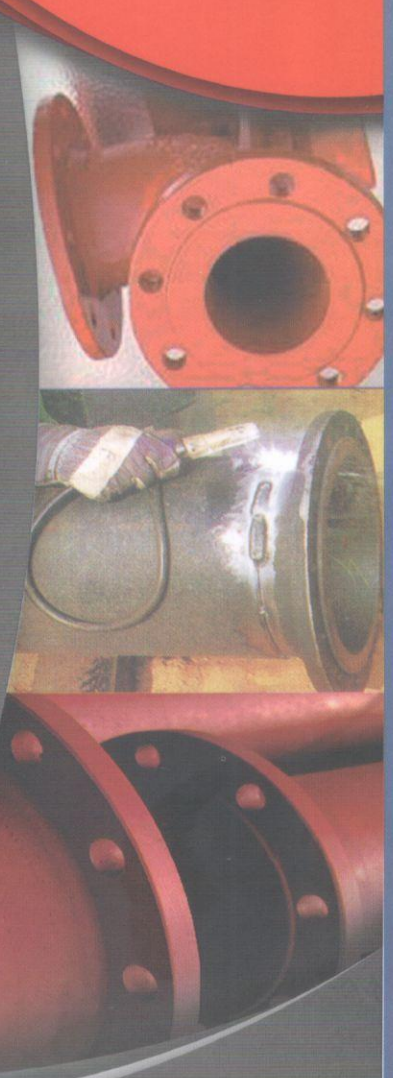
Flanged Pipes are available in both standards EN545,ISO2531 for potable water and EN598 for sewage and wastewater applications. Standard Flange Drilling is PN10,PN16 and PN25 upon Request .

ENC Manufacture Flanged Pipes using two Methods :

- 1- Cast Flanged Pipes
- 2- Welded Flanged Pipes

## Advantages:

Stronger, Higher Factor of Safety ,  
Lighter To Use, Better Casting  
Process, Dimentional Accuracy  
, better finish, longer life and  
Excellent corrosion Resistance.





# VALVES

## Gate Valve



**DN65 - DN400 , PN 10 / PN 16,  
with hand wheel**

### Standards :

- 1- Face to face dimension : DIN 5752
- 2 - Mating dimension : ISO 2531, PN 16
- 3- Marking : ISO 5209
- 4- Pressure testing : ISO 5208
- 5- Seat Tightness : Leakage 3
- 6- Pressure drop coefficient : 0.1 – 0.3
- 7- Spindle sealing : O - ring
- 8- Max. service : + 80o C ( with internal  
temperature epoxy coating )
- 9- Min. service temperature : -30o C

### ADVANTAGES IN SHORT

- 1- Installation : In any position .
- 2- Reliable O-ring spindle seal .
- 3- Requires very little maintenance .
- 4- Unimpeded straight line flow .
- 5- Straight – through bore – no trapping of dirt  
or sediments .
- 6- Easy To operate . The obturator bonded  
with EPDM travels in accurate metal guides.
- 7- No visual leakage .
- 8- Internal epoxy coating
- 9- Replacement parts are included in  
EL-NASR modular system supplies  
are thus assured for decades



## Butterfly Valve



**DN350 - DN1800, PN 10/PN 16**

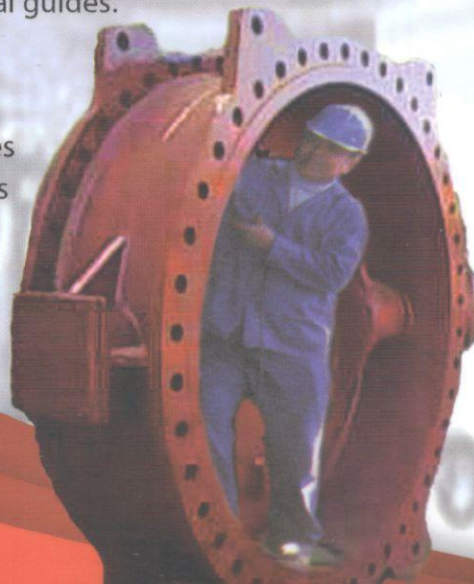
### Standards :

- 1- The butterfly valves comply with technical  
conditions of delivery for valves of drinking  
water plants : DIN 3230 part 4
- 2- Face to face dimension : DIN 3202 series F4.
- 3- Pressure test : ISO 5208
- 4- Mating dimension : ISO 2531
- 5- Max. service temperature : 120o C
- 6- Cast iron GGG 50 : DIN 1693

### ADVANTAGES IN SHORT

- 1- Body seat face as nickel weld overlay, micro  
finished .
- 2- Valve disc double offset on shafts .
- 3- Designed for optimum hydraulic flow pattern
- 4- Low flow coefficient .
- 5- Endless profile sealing ring .
- 6- Adjustment and exchange of peripheral seals  
are possible without removing the valve disc .
- 7- All screws in contact with working fluid of  
stainless steel A-4 .

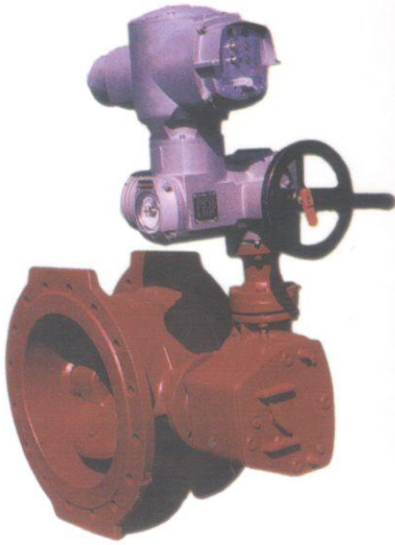
- 8- A positive, tight shut – off
- 9- Sealing of the disc is  
guaranteed for pressure  
from both sides .
- 10- Suitable for flow control  
purposes .
- 11- Irreversible spindle gear,  
corrosions resistant .
- 12- Works manual with gear  
box or with actuators or  
pneumatic



IN 2010 ENC Succeeded to  
Produce Butterfly Valve DN 1800



## Electric Valves



ENC has succeeded to produce and supply electric valves to the market which meet client's need to control "the water flow" automatically.

Types : 1- ELECTRIC SOFT SEALING GATE VALVE  
2- ELECTRIC BUTTERFLY VALVE

OPERATION 1- OPEN/CLOSE DUTY  
2- MODULATING DUTY  
3- Integral with matic unit



The Actuator has been represented by AUMA Company-Germany

## BUTTERFLY VALVES WAFER :

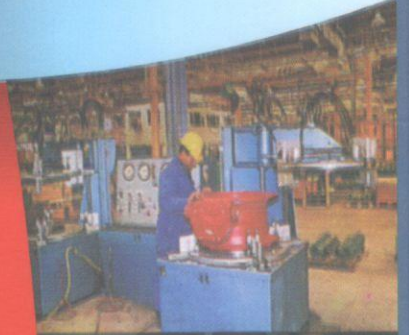


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- 5- Endless profile sealing ring .
- 6- Adjustment and exchange of peripheral seals are possible without removing the valve disc
- 7- All screws in contact with working fluid of stainless steel A-4 .
- 8- A positive, tight shut – off .
- 9- Sealing of the disc is guaranteed for pressure from both sides
- 10-Suitable for flow control purposes .
- 11-Irreversible spindle gear, corrossions resistant .
- 12-Works manual with gear box or with actuators or pneumatic





# FLANGES & FITTINGS

El-Nasr Castings Produce a Variety of Fittings used for potable water and waste water networks according to the international standards with a wide range of diameters (65-1800mm)

These fittings (e.g. tees, Bends with all degrees, Tapers, crosses, flanges, plugs, and Assembling joints ...etc.) are suitable for all purposes they are used for



*Fittings are produced according to ISO 2531, EN545 and DIN standards Also special fittings are produced.*



Raw Casting tolerances according to DIN 1685, GTB17.  
General tolerances of linear and angular dimensions acc. to DIN7168.  
Fittings are coated externally with bituminous compound acc. to DIN 30674, part 4, which are suitable for the application in a tropical climate, Zinc coating is applied upon client's request.  
Fittings shall be coated internally with bituminous compound acc. to DIN 30674, Part 4, cement mortar lining acc. to DIN 1164, ISO 4179 is applied upon client's request



# DUCTILE IRON ROLLS



El- Nasr Castings is considered one of the pioneer companies in producing Ductile Iron Rolls in Egypt . Those Rolls are used in steel rolling , flour mills, plastic and paper industries.

## Steel Rolls Specifications

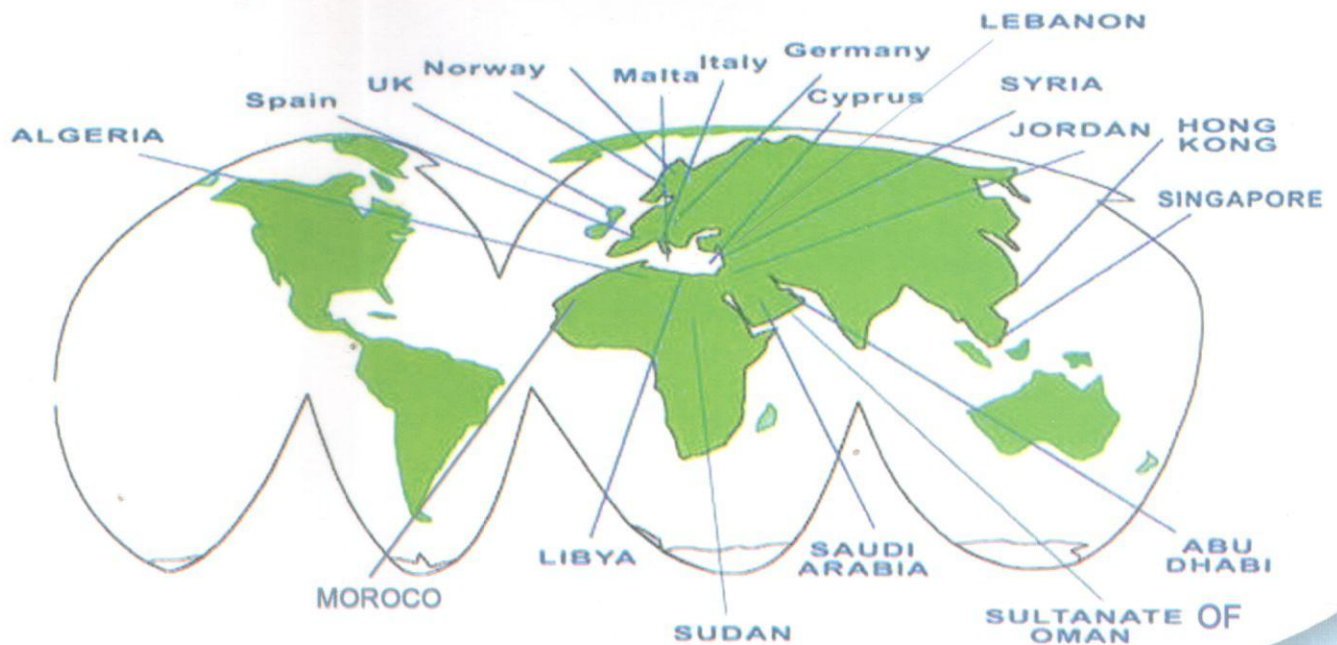
Diameters	up to 600 mm
Lengths	up to 4m
Weight	from 200 to 5000 kg.
surface Hardness	up to 70 shore "C" sclerscope
Material	Alloyed Ductile Iron
Resistance to impact	high.
Resistance to wear and heat	high.

## Flour Mills Rolls Specifications

Dimensions	-Barrel length 1000mm -Roll diameter 250mm
Surface Finish	Grinded
Surface Hardness	From 480 to 550 HB
Thickness of hard layer	-15 to 20mm - 20 to 25mm
Dynamic Balance	At 600 RPM
Tolerance	- In diameter $\begin{cases} + 1.3 \text{ mm} \\ - 0.5 \text{ mm} \end{cases}$ - In shaft length, Bohler Type , 287mm + 0.5 mm - In shaft diameter , Bohler Type , 70 mm + 0.02 mm
Packing	wooden boxes ,protected by light film of grease and wrapped with polyethylene



**El-Nasr castings Products are already distributed all over more than 17 Countries Europe ,Middle East, Africa and Far East**



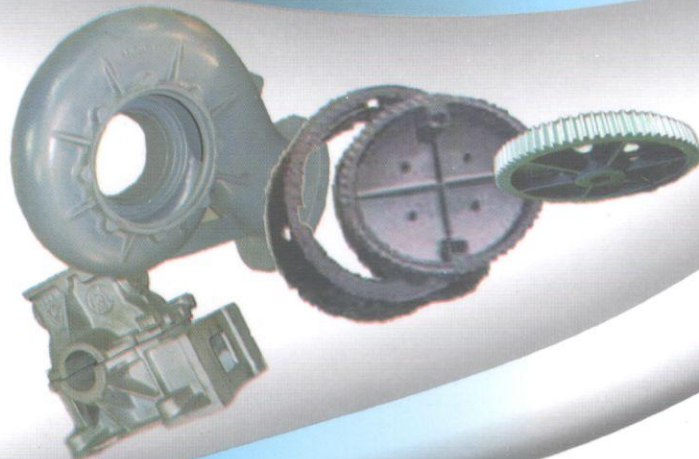
## **SPECIAL CASTINGS**

El Nasr Castings Co. give a part of its capacity for the production of miscellaneous castings.

These castings could be from special cast iron or steel (e.g. Ni-Cr steel, Heat resisting gear steel, Corrosion resisting Mn-steel, Carbon steel and Tool steel).

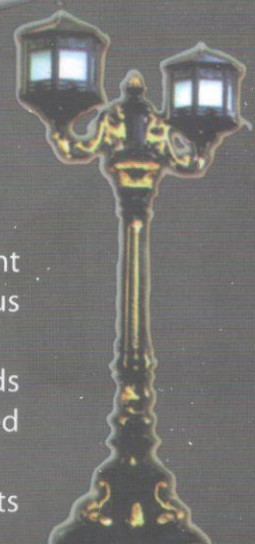
These products serve many Industries such as :

- 1- Cement
- 2- Petrochemical
- 3- Iron & Steel
- 4- Metallurgical
- 5- Automotives
- 6- Railways and Others

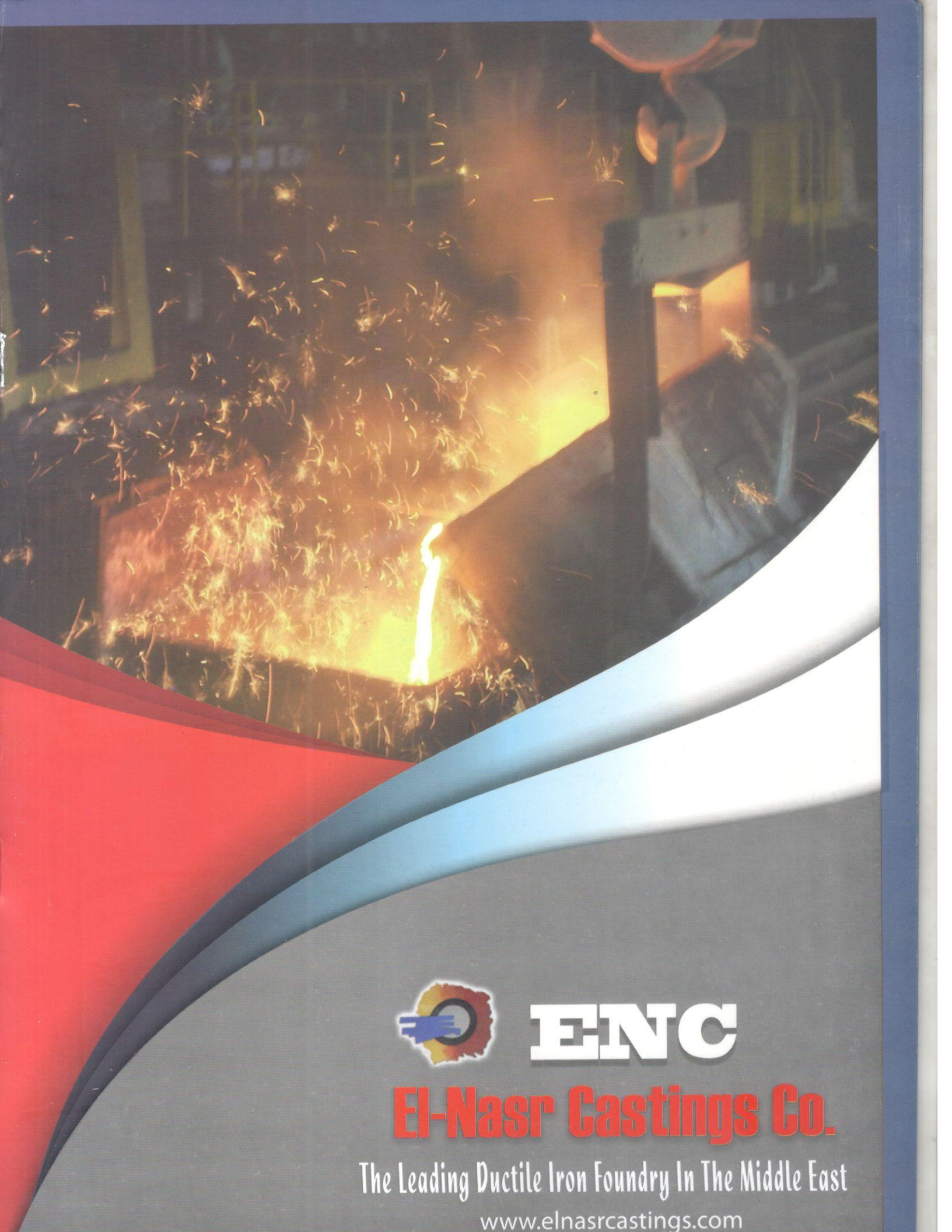


ENC produces cast iron decorative light posts in different figures and sizes to decorate streets, squares, clubs, famous places and general parks.

After dominating the local market, the company proceeds to export this successful product which has been received with all acceptance and admiration by clients due to the creative designs and its high resistance against the changeable weather factors







**ENC**

**El-Nasr Castings Co.**

The Leading Ductile Iron Foundry In The Middle East

[www.elnasrcastings.com](http://www.elnasrcastings.com)



