



摩洛哥FES项目
The FES project in Morocco

THE FES PROJECT IN MOROCCO

摩洛哥FES项目 **Sinoma**
中国中材



▲ 摩洛哥国旗
Flag of Morocco



▲ 项目所在位置
Project location

工程技术特点:

该项目为在欧洲供货的烧成系统上进行升级改造，整个系统的设计与老厂实现了设备及控制系统的无缝兼容；项目采用EP方式操作。

Engineering and Technical Characteristics:

This project is extension project a based on the burning lines system constructed by European company in 1992. The whole engineering on equipment and control system is completely compatible with the existing old plant; This project is a EP project.



▲ 摩洛哥FES项目全景
Morocco FES project location

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1、项目概况 Project Overview

Holcim(摩洛哥)FES项目是一条由1400吨/日的老线提升为日产2800吨水泥熟料现代化水泥生产线的改造项目，由瑞士Holcim集团在摩洛哥投资，也是中材集团旗下的原中材建设有限公司与Holcim(摩洛哥)集团在摩洛哥继Settat新建4000吨/日水泥项目之后签订的第二个合作项目。

该项目于2008年8月5日在法国举行了签字仪式，公司董事长兼总经理彭建新先生和Holcim(摩洛哥)水泥集团总裁Mr.Drouet 先生代表双方签署了项目主合同，合同总金额达到62 600 000欧元。项目预计将于2012年9月5日点火投产。

FES项目位于摩洛哥古城Fes市郊区西南大约15公里处，该项目合同为半EPC方式，整个改造项目的控制工期为27个月（新生产线第一次产出熟料），其中中材建设负责其中的设计、供货、制造、电气设备安装、系统调试，合同范围包括石灰石破碎、原料存储、原料粉磨、煤磨制备、预热器塔架、冷却机和熟料库。

该项目将采用中材建设最先进的设计方案生产工艺和技术。项目采用了垃圾焚烧技术、变频控制技术、自动化控制技术和清洁收尘技术等新技术。这些新技术的应用，将大大提高摩洛哥的技术水平，并解决大批FES市的就业问题，为摩洛哥的经济发展提供建筑材料的保障。

2012年2月，中国驻摩洛哥特命全权大使许镜湖到项目进行春节慰问和视察，对我们公司在摩洛哥承建的水泥厂项目给予了高度评价，称赞FES项目是中国机械高科技装备产业走出中国的榜样，走技术密集、高附加值的路子，区别于其他中资企业普遍在摩洛哥进行的纯劳务承包工程，对于提高我国的机械装备制造制造业和中国产业的形象有很大帮助，成为中摩经济合作的新模式。

Holcim(Morocco)FES project is a extension project from 1400 tons/ day to 2800 tons /day with a modern cement production line, invested by Switzerland Holcim Group in Morocco. This is the second project between SINOMA and Holcim(Morocco) after Settat project with a capacity 4000tons / day.

The contract was signed in Paris, France on 5th August 2008, by Mr. Peng Jianxin, Chairman of SINOMA Mr. Dominique Drouet, CEO of Holcim Morocco. The contract price is 62.6 million Euros. And the first clinker date will be 5th September 2012.

The project is located at 15km south-west of Fes city, the oldest capital of Kingdom of Morocco. The contract is based on semi-EPC. The contractual duration was 27 months(From effective date to First clinker date), SINOMA is charge of engineering, supply, fabrication, electrical erection, commissioning ect. The scope of work is including limestone crushing, raw material storage, raw meal grinding, coal grinding, preheater tower, cooler and clinker silo.

This project adopts the most advanced engineering and process, for example, AFR(Alternative fuel burning system), Variable frequency control system, automatic control system and clean dedusting system etc, which will greatly improve the level of technology and the employment of Morocco, assure the building material supply for economical development.

In February 2012, Ms. Xu Jinghu, Chinese Ambassador in Morocco visited the project site for greeting Spring festival. The Ambassador praised highly the achievement on the cement plant constructed by SINOMA, she said SINOMA is a very good example of Chinese mechanical machinery industry exportation. Deferent to the traditional other Chinese pure labor construction company, SINOMA is oriented by intensive technology and high added value, which is very helpful to improve the mechanical machinery industry level and image of China, which will be the new mode of sino-moroccan economical cooperation.



◀ 332原料调配车间设备安装收尾
332raw material blending workshop equipment installation ending



▲ 362原料磨桥架安装
362raw material mill bridge installation



▲ 492熟料库钢构安装
492clinker silo steel installation

2、项目建设节点 Project Milestone

- 2008年8月，合同签字仪式
- 2010年6月，举行开工仪式
- 2009年12月，首批设备运抵
- 2010年6月，设备安装开始施工
- 计划于2012年12月，获得PAC证书
- 计划于2013年8月，获得FAC证书
- In 2008August, the contract signing ceremony
- In 2010June, held a groundbreaking ceremony
- In 2009December, the first batch of equipment transfers
- In 2010June to start construction, equipment installation
- In 2012December, will gat PAC certificate
- In 2013August, will gat FAC certificate



▲ 开工仪式
Commencement ceremony



▲ 整洁的现场
Cleaning site

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3、主机设备详表 Main Equipment List

序号 item	车间名称 workshop	主机名称 main machine	型号 规格 性能 type/size/capab.	数量(台) Qty (unit)	功率(Kw) Power (Kw)
1	石灰石预均化堆场 Raw Material Storage	堆取料机 Stacker/reclaimer	堆料能力stack: 1500t/h 取料能力reclaim: 360t/h	各1 One unit respectively	stacker: 160 reclaimer: 140
2	原料粉磨及废气处理 Raw material grinding and exhaust gas treatment	立式磨 Vertical mill	型号type: LM 46.4 生产能力capab.: 240 t/h	1	2280
		原料磨风机 Fan for raw mill	风量Flow volume: 578000Bm ³ /h 全压Full load: 11925Pa	1	2700
		窑尾高温风机 Kiln inlet hi-temperature fan	风量Flow volume: 270000Bm ³ /h 全压total pressure: 7618Pa	1	800
		窑头窑尾废气处理袋收尘 Kiln outlet and inlet exhaust gas treatment bag filter	处理风量Flow volume treated: 421000m ³ /h 过滤面积Filt area: 10134m ² 出口含尘浓度outlet dust outlet dust density: ≤30mg/Nm ³	1	
		废气处理风机 Fan for Exhaust gas treatment	风量Flow volume: 690000m ³ /h 全压Full load: 3310Pa	1	900
3	煤粉制备 Coal grinding and preparation	管磨 Tube mill	型号type: MCO105 生产能力capab.: 15t/h(Coal), 18t/h(Pet Coke)	1	1250
		煤磨袋收尘 Bag filter for coal mill	处理风量Flow volume treated: 56416m ³ /h 过滤面积Filt area: 1235m ² 出口含尘浓度Outlet dust density: ≤15mg/Nm ³	1	
		煤磨风机 Fan for coal mill	风量Flow volume: 75000 m ³ /h 全压Full load: 890.39mbar	1	450
4	烧成系统 Burning zone	回转窑 Rotary kiln	规格size: φ3.8×60m 生产能力capab.: 2800t/d	1	不在合同 范围内 Not scope of contract
		预热器及分解炉 Preheater and precalciner	采用双系列5级预分解窑分解炉: adopt double serial 5stages system and precalcining kiln system: 生产能力Capab.: 2800t/d	1	一系列是老 厂原有的 already existing
		篦式冷却机 Cooler	篦床面积 Area of Grating bed: 67.3m ² 生产能力Capab.: 2800t/d	1	55
		热交换器 Heat exchanger	风量Flow volume: 315200 m ³ /h 入口温度temp. inlet: 500° C 出口温度temp. outlet: 178° C	1	90

4、友好往来 Friendly exchanges

(1) 尊重当地文化

伊斯兰教是摩洛哥国家的主要宗教，项目部在当地重大的宗教节日和法定节日，尽量安排当地雇工节假日休息。当地最大的传统节日宰牲节，特意购买新鲜的羊肉发放给每位摩洛哥员工。

(1) Respect the local culture

Islam religion is Moroccan national religion. During the local important religion holidays, SINOMA project arrange the local employee to take a rest, especially Ramadon, SINOMA purchased the fresh limb to distribute the local employees.

(2) 为所在地做公益

项目部在FES水泥厂建设期间，重视对于当地社区（乡村）的环境保护和积极参与社区建设。施工现场附近道路严重损坏，影响居民出行，项目部利用业余时间，组织员工对路面进行修复，方便当地居民的出行。

(2) Public services to local society

SINOMA attaches an importance to public services to local society. SINOMA has organized to repair the damaged road close to site to make the local traffic improvement.

(3) 解决当地就业

项目部就近解决当地居民就业问题，招聘当地社区（乡村）居民到施工现场工作，累计招纳雇工80余人次，为其全部办理当地劳动保障CNSS。

(3) Employment for local community

SINOMA project has employed more than 80 local workers to join SINOMA team, which brought the opportunity to improve the local community life level. SINOMA signed the work contracts with every local workers and make them covered by local social security CNSS.

(4) 维护周边环境

项目部对生活区和现场办公区进行分区环境保护管理。生活区建有专门的化粪池和食堂污水池，请专业清洁公司清理污水。现场办公区对可回收垃圾和废弃垃圾分类存放，并到当地政府指定地点处理。

(4) Protecting the local environment.

SINOMA project team attaches an importance on the environmental protection. SINOMA constructed the special toilet septic pool and used water pool, Classifies the recycled rubbish and transport the rubbish to the local dedicated point.



▲ 保护环境项目
Protect environment project



▲ 在宰牲节给当地百姓送羊肉
During Eid al-Adha give local people send mutton

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