



## 1. Overview of orders executed:

Below are few examples of executed orders:

- Sibling Cement Factory: New production line.  
In cooperation with **Technip-France**: Design, fabricated and erected the preblending building, three overhead cranes, hoppers, silos, conveyor and platforms.
- Holcim Cement Factory: New kiln and heat exchange ducts and piping about 5000 mm diameters in cooperation with **Polysius-Germany**. Design, fabrication and erection of the piping, ducts, feeders and burning oil piping system.
- Cimenterie Nationale SAL: New cement line in cooperation With **Polysius and Elex of Germany**: Kiln line No.4 and cement mill 9 buildings, dust filters, silos, hoppers, waste gas piping, chimneys and 12 overhead cranes.
- Many other large projects in Lebanon, Qatar, Nigeria, Syria, Iraq etc....  
The projects such as: exhibition buildings, stadiums, multi-storey buildings, dust filters, oil and gasoline tanks, space frame, walk way and bridges, slide doors and warehouses.

For more information, please visit our websites: [www.mkaristeel.com](http://www.mkaristeel.com)  
[www.demagcranes-](http://www.demagcranes-lb.com)

[lb.com](http://www.demagcranes-lb.com)

## 2. Type and location of project for which are fabricated.

- All our projects were executed for Lebanon, Syria, Iraq, Qatar, Nigeria, Jordan, Saudi Arabia and Egypt.
- Type of projects are as following:



- Steel Structural warehouses.
- Steel structural multistory buildings.
- Oil and gasoline tanks up to 10000 m<sup>3</sup> capacity
- Silos and hoppers
- Overhead cranes – Agent of Demag – Germany.
- Ducts and filters
  
- Gas and heat-exchange piping
- Moulds and metal forming

### 3. Reference list of clients

- O.T.V Omnium de traitemnet Et Valorisation – Iraq
  - Butec – Engineering- for Syria and Lebanon
  - Yared et fils – Beirut – Lebanon
  - Demco – Yervant Demirdjian-Beirut-Lebanon
  - La Regie Libanaise – Lebanon
  - Waagner – Biro – Germany
  - Cimenterie Nationale – Chekka – Lebanon
  - Blue Steel Factory – Qatar
  - Encocorp – Saudi Arabia
  - Qatar Factory for gas and petrol equipment – Qatar
  - Skar – Lebanon
  - K and K construction (Nig) LTD – Nigeria
  - Middle East Economic Digest – Lebanon
  - Forum de beytrouth
  - Yabani restaurant
  - Chamber of commerce Tripoli.
  - Tripoli stadium.
  - Air liquide- chekka
  - Bemco-saudi arabia
- And more



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4. **Order executed for major international EPC companies like Bechtel, KBR Saipem etc...**

- Technip – France
- Polysius – Germany
- Homboldt – Deatz – Germany
- Consolidated Contractors Company – CCC – Lebanon
- Waagner – Biro – Germany
- Elex – Germany
- Dar El Handasa – Egypt
- Builders Design Consulant – Lebanon
- Butec – Engineering – Lebanon
- Intensive Filter – Germany

5. **International accreditation**

- German DIN for overhead cranes with Demag – Germany .

6. **Type of materials handled and used during manufacturing**

- All kinds of building steel sections such as: IPE, HEA, UPN, HEB, etc...
- All kinds of pipes: seamless or welded with all kinds of diameters.
- Sheet metal: corrugated sheets, flat and plan sheets.
- Overhead cranes: hoists, motors, wheels, electrical accessories and steel for Cranes Bridge.
- Insulation materials

7. **Product capacity**

- 4000-4500 steel structure, tanks, silos. Etc...per year
- 30 overhead cranes per year



**8. Resources and people skills**

All Lebanese: engineers, administrators, technicians, foremen, skilled labor and qualified welders.

**9. Plant Layout**

Factory area is 16000 m<sup>2</sup>, consisting of 4 warehouse and a covered storage yard, maintenance workshop, electrical workshop, administration office, engineering offices, QC rooms, spare parts and tools storages and others. 11 overhead cranes are used over the above mentioned area.

**10. Quality management systems its scope and implementation.**

- Our quality control department consists of QC engineer, technician, foremen and inspectors.
- Scope: to meet the best result and quality requirement for material and
- Fabrication related fittings, measurements good weld and perfect finishing.
- Implementation: implement the international standards and codes.

**11. Design and engineering facilities, design office set up and design team.  
International design standards for product design, manufacturing and testing.**

- Engineering department:  
Design office – design team: qualified engineers Canadian, German and Lebanese Universities graduated. Theirs field: civil and mechanical engineering.
- International standards for product design...etc  
Please see paragraph (13)



**12. Application of design software**

- a- Strucad: Steel structure design in three dimensions system. Great details and shop drawings. Helps to design standard connections, fabrication drawing and bill of quantity for a complete project (all versions).
- b- Stad/pro: British analysis and design software for structural steel.
- c- Robot : French analysis and design software for steel structure, joint, steel members and concrete design.
- d- Genius : German designed and development of piping and ducting system
- e- Autocad

**13. Technical specifications, standards, codes etc...relevant to Product under consideration**

- a- AISC: American Institute of Steel construction 1986 edition
- b- ANS/AWS (D1-1-92 / D.11-11): American Welding society
- c- ASTM: American Society for testing and material
- d- NF-EN 10025 (Dec.1993: Material grade S235 JR and S 355 JR)
- e- ASTM.A.325 and ASTM.A.490 for bolts, washers and nuts.
- f- SIS 05 5900: 1967-DIN 55928 Teil 4: standards for surface cleaning
- g- ISO 8501-1: 1988: Swidish standards institute
- h- AASHTO: American Association of State highways and transportation office

**14. Material storage, inward receipt, inspection of bought out/procured materials,**



### material issue and control

- A covered storage yard for inward receipt material. The material is to be stored and marked by QC for each project separately after confirming the exception of material. Overhead cranes are provided for this section for easy sorting and transporting to inside the factory for fabrication.
- A storage warehouse for finished items and ready for delivery with overhead cranes facilities for easy moving and loading.
- Bought out/procured material is to be inspected and covered with an inspection Report.
- Certificate and testing reports it's to be requested from all materials suppliers. Facilities are to be provided for inspection at all reasonable time at all fabrication, shops, workshops or any other area in which material to be supplied for the project.

### 15. Production facilities, machineries, tods and plant

	Qty
15.1 Radial drill	1
15.2 Revol.drill – 6212 holes up to 80mm	2
15.3 Magnetic stand drill	7
15.4 Heavy duty vibrator drill	4
15.5 Different kinds of drills	4
15.6 Guillotine shear	2
15.7 Pedding house hydr.punching mach	1
15.8 Universal punching and notching mach	2
15.9 Band saw	3
15.10 Circular saw	1
15.11 Bress brake	1
15.12 Cylinde roll machine	2
15.13 Grind machine	4
15.14 Sand blasting lines	2
15.15 Coating spray compressors	8
15.16 Welding machine (3CO2)	46



15.17 Lathes	2
15.18 Universal milling machine	1
15.19 Hydraulic manual press 100t	1
15.20 Circular cutting mach	2
15.21 Automatic table grinder	1
15.22 Lifting equipments and tools	34
15.23 General equipments	31
15.24 Generators	3
15.25 Transformer	1
15.26 Electrical equipments	33
15.27 Section bending machine	1
15.28 Overhead cranes	11
15.29 Hydraulic punching machine	5
15.30 Heavy duty compressors	4
15.31 CNC plasma cutting machine	1

## 16. Production staff:

	Number
Skilled labor	50
Unskilled labor	10
Qualified welders	20
Instruments technicians	5
Electrical technicians	7

## 17. Welding controls and management

The welding control is done in the accordance with (AWS) D.11-11 (American welding Society)

Beside the welding inspection is done by our QC department, the Industrial Research Institute (IRI) of Lebanon is to inspect constantly with liquid penetrant test and X-ray ultrasonic.



Our welders are to be tested and certified periodically by the same Institute.

## 18. Welding consumables control and management

- Welding procedures and qualification of weld shall be in accordance with the Structural Welding Code (AWS) D.11.77
- Welding electrodes are to be (E70-Exxx or equivalent) and must be conform to AWS A5.17 for submerged arc welding electrodes (E70T – X equivalent).
- All welding shall be performed in an area protected from adverse weather condition (rain, wind). This is to be controlled constantly by our engineer and QC. But weld performed by automatic or semi automatic welding and classified in special category. Electrode drying covers are used in winter before welding with the electrodes.

## 19. Shop floor production process and controls

- Quality control engineer, foremen and inspectors are controlling and inspecting every fabricated piece all the time during working hours. Tolerances are to in accordance with AISC code and AWS code or other particular tolerances show on fabrication drawing.
- All measurements, holes, dimensions, plates position and end grinding are to be checked before sending the piece to next procedure such as welding or painting.

## 20. Cleaning and painting including paint storage and control.

- Abrasive blast cleaning:  
In this method, millscale, rust and other surface contaminants shall be





removed using blast. After the specified standard has been achieved, all dust, debris and abrasive residues shall be removed from the cleaned surface and the surface painted before contamination or flash rusting occur.

The applicable standard for surface preparation is to be SIS 05 59 00:1967 or DIN 55928 teil 4.

- Primer:  
As soon as possible after surface has been cleaned( blasting, wire brushed, etc...) and before it has become chemically contaminated, wet, rusted, or shows sign if significant discoloration, and in any case the first prime shall be applied within 4 hours.
- Subsequent pain coat:  
When the primer coat dried and thickness has been confirmed, and the primer surface has, if necessary, been cleaned to remove dust moisture the specified protective paint shall be applied.  
The adhesion pull test result shall be carried out in accordance with ASTM D 4541 pull of test.
- Paint storage:  
Paint is not stored by us, because we purchase gradually for each project Separately and on time.

## 21. Inspection and testing management and implementation

- The QC department is responsible for the inspection and testing of products by stamping the personal number of each inspector or engineer.

The QC staff have to see that:

- The measurement and dimensions are exactly as required on drawing and in the range of the tolerances. Tolerances are to be in accordance with ASTM code or Euronorm Code.



- Holes and holes tolerances. Holes must be cleared of burrs or rough edges. The diameter of holes must not exceed the diameter of bolt by more than 1.5 – 2mm.
- Care shall be taken to ensure that the clearance specified are adhered to the section clearance for cleared ends of member connecting steel to steel must not be greater than 2mm at each end.
- The contact surface of splice joint, and bolted connections or flanges, etc... shall be machined if necessary such that an effective contact exists over such surfaces.
- Welding: welding of web to flange of built up section of pipe is to be form both two sides.  
Shop connections are to be welded either by submerged or shield arc process and welding shall be in accordance with the applicable section relating to design and allowable stress of code AWS D.1.192

**22. QC. And inspection staff**

QC engineer  
QC foreman and technician  
QC inspectors: 3 trained skilled labors.

**23. Management and control of in-house testing laboratory**

No laboratory in house.  
Out source laboratories when it needed such as (IRI) Industrial Research Institute of Lebanon which is the only authorized government institute.  
Also the American University of Beirut (AUB).

**24. Purchasing control-materials procurement source for supply of raw material such as plate, sections etc...**

All materials are to be first quality, free of defects and imperfections, of recent manufacture, unused and at the grade specified, as a minimum.



The supplier has to give a certificate.

A test report (mill certificate) by authorized sources .

**25. Items/manufacturing activities which are outsourced**

Many items such as sandwich panels, Z and C pan, bolts, etc...

**26. Selection, management and control of sub-vendors including inspection of items supplied by them**

Most of the items are covered with a certified from the supplier specially international well known suppliers such as: Hilti, Fisher, Team-Pro, Sodap, etc...

Other item are to be inspected by engineers according to specialties.

**27. Section, management and control of sub-contractor including inspection of services provided by them**

Usually, each project or job dealing with sub-contactor will be supervised by one of our engineers, who is responsible for the required quality.

Inspection is to be done by the individual engineer and a foreman is to help him.

**28. Control and management of inspection and measuring devices**

- Elecometer: paint thickness measurement
- Micrometer : fine diameter and thickness measurement
- Welding gauge: to measure the height and the width of the weld
- Level instrument: for leveling
- Laser 3-D axes checking instrument – 3 axes level checking
- Laser – Distance and dimension measuring instrument



**29. Control of non-conformity**

Each item is to be controlled and inspected separately. The checking is done by engineers or technical foremen.

**30. Inspection reports and records management**

- Dimensions, holes and fabrication is to be inspected according to fabrication drawing.  
The fabrication drawing is to be signed by the engineer who checked the finished item. The signed drawing is to be filed in the projects file.
- Welding reports and tests are to be kept in a separate file for each project.

**31. Storage and preservation**

Our storages are all covered.  
Different kinds of items are to be sorted and all part shall be properly wedged against one another.  
Placing of accessories between steel shape flanges is prohibited.  
There are 4 special storages rooms for that.

Packing operations are three kinds:

- Bundles
- Grates
- Cases

**32. Handling facilities:**

There are (11) overhead cranes and 4 wheel carriages on rails for handling of raw material, fabrication process, welding, painting and storing.



### 33. Shipping facilities

We cooperate with many shipping companies.

All kinds of trucks are available for shipping and transportation inside and outside the country.

Trucks can enter our storage yard easily. Three overhead cranes can be used for loading.