

MERO IRAN

Structural Solutions with European Standards

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SPECIFICATION FOR MERO IRAN SPACE FRAME

Modular Steelwork Structure.

The structure is a steel space frame using ball node and circular tube elements. The tubes and cones are welded to each other featuring precise length.

Supplier of space frame system: **Mero Iran**
Ahwaz Industrial Estate No. 1
Ahwaz, Iran

Tel. 0098 611 4436972
Fax 0098 611 4441008
www.meroiran.com

General Description

The Mero Iran type system basically consists of tubular members with conical members welded at each end and bolts which are either incorporated before attachment of the conical elements or later inserted through holes provided in the tubes.

These bolts are later screwed into special steel balls (nodes), which are the connecting elements of the space structure. Bolts are provided with hexagonal elements (sleeves), which by means of pins passing through the sleeves and bolts are with the aid of a spanner screwed into the nodes. By assembling these elements into various combinations a three-dimensional structure can be formed.

All external forces are applied through the nodes resulting in either tensile or compressive forces throughout the framework. Tensile forces are borne by the bolts and tubular elements while compressive forces are transmitted through the sleeves and tubes.

According to the calculated forces, each tubular element, bolt and sleeve and node is sized to sustain these forces resulting in economies in material required.

Mero Iran, P.O. Box 161, Tehran 14665-161, Iran

Tehran Office: 098-21-807-4915
Ahwaz Office: 098-611-443-6972

Fax: 098-21-807-9744
Fax: 098-611-444-1008

1. Scope.

The scope of work comprises the design, manufacture, supply and erection (if required) of the space frame, columns, foundations and wind-bracings and also including purlins for roof cladding and fascia supporting elements.

2. Design.

The design shall comply with DIN norms or equivalent BS norms.

Basis of the design shall be in accordance with the following data: (add relevant figures)

- a) Live load
- b) Roof cladding
- c) Dead load
- d) Wind pressure
- e) Temperature variations
- f) Services

3. Drawings & Calculations

These are to be submitted for approval prior to commencement of fabrication.

4. Interfaces.

Communication and co-operation with the client's consultant to be provided to ensure all architectural details are integrated with each other.

5. Quality.

All space frame tubes shall be hot-dipped galvanized in accordance with BS norms. Length tolerance shall not exceed $\pm 0.5\text{mm}$

Nodes shall be of hot forged steel of CK45 quality and machined to tolerances of $\pm 0.05\text{mm}$ face-to-face and ± 0.2 degrees angular deviation.

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5. Quality. (Cont.)

Where welding is required nodes shall be made of ST.52 steel. All nodes shall be electro-galvanized to a minimum of 40 microns

Sleeves shall be made of CK35 steel and electro-galvanized to a minimum of 40 microns.

Cones shall be hot-forged steel of ST37 quality and electro-galvanized prior to welding to the tubes. The weld shall be subsequently re-galvanized

Bolts shall be of either 8.8 or 10.9 grade and protected by the DACROTIZE method (brochure attached)

Columns & wind bracing shall be sandblasted and painted with two coats of epoxy paint.

6. Powder Coating.

Powder coating shall be applied by the electro-static process and subsequently cured in an oven heated to approx. 200 degrees Centigrade.

Coating thickness shall be at least 80 microns. RAL colour to be agreed by client and contractor.

7. Installation.

(To be discussed if to be the responsibility of the Supply Contractor)

Mero Iran was established in 1972 after it was granted a full and exclusive license by MERO Raumstruktur GmbH & Co., Wurzburg, Germany to design, fabricate, and install building structures utilizing the space frame technology invented by Dr. Mengerlinghausen, known as the KK system. We were the very first country to be granted this license. A modern and fully equipped factory was established in Ahwaz, Iran, to fabricate MERO components for the Middle Eastern market.

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