<table>
<thead>
<tr>
<th>pag.</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Introduction</td>
</tr>
<tr>
<td>3-4</td>
<td>Stayed and Suspended Structures</td>
</tr>
<tr>
<td>5-6</td>
<td>Incremental Launched Bridges</td>
</tr>
<tr>
<td>7-8</td>
<td>Balanced Cantilever Method</td>
</tr>
<tr>
<td>9-10</td>
<td>Post-Tensioning in Bridges</td>
</tr>
<tr>
<td>11-12</td>
<td>Post-Tensioning in Buildings</td>
</tr>
<tr>
<td>13-14</td>
<td>Post-Tensioning in Tanks and Silos</td>
</tr>
<tr>
<td>15-16</td>
<td>Special Projects</td>
</tr>
<tr>
<td>17-18</td>
<td>MKT460 Structural Bar System</td>
</tr>
<tr>
<td>19-20</td>
<td>Pot and Elastomeric Bearings, Expansion Joints</td>
</tr>
<tr>
<td>21-22</td>
<td>Bar Systems</td>
</tr>
<tr>
<td>23-24</td>
<td>Ground Anchors</td>
</tr>
<tr>
<td>25-26</td>
<td>Geotechnical and Structural Monitoring</td>
</tr>
</tbody>
</table>
Company Profile

With great pleasure we would like to take this opportunity to introduce our company,

EURO POSTECH INTERNATIONAL (W.L.L) is a registered company since 2009 in Doha-Qatar (with associated Post-Tension systems from MK4-Spain) to offer Specialized Construction contracting works (especially Post-Tension Design/Contracting Works) & Post-Tension components trading.

As the construction industry moves into the new era, the need for ever more efficient structural forms continues to grow. Taller, lighter, stronger... these are the words in the minds and on the lips of clients and architects around the world. As a result, more and more engineers are looking at the possibilities offered by Pre-stressed Concrete, Ground Anchors and Cable-Stayed Structures.

One company uniquely qualified to provide the necessary design assistance, expertise, hardware, and associated services for the new wave in construction is EURO POSTECH INTERNATIONAL (W.L.L)

Contracting: We undertake all kind of Post-Tension design supply & execution with internationally certified P.T. Systems, Structural designers, Project Engineers & Technicians to provide the necessary services to keep up for the new wave of construction developments in Qatar, Oman, UAE and India. We stand for Quality, Cost effectiveness and safe structures.

Structural Strengthening: We are in associated of the Leading Concrete Repairs in Europe (MK4-Spain) and we do completed with unmatched expertise and we have a proven record of working smoothly with government agencies and labor organizations. Over the years, we have created many innovative construction techniques, like increasing the beaming capacity of the existing structure by using steel structure through structural design and analysis by our design department. And treatment of the deteriorated concrete structure and replacing the damaged steel bars in order to extend the service life of the concrete structure.

We assure you and pride ourselves in providing the most competitive price & prompt quality service. This assurance is the reason that we have steady with continued business growth and have helped us expand.
To whom it may concerns:

MK4 WORLD WIDE S.L here confirms that the Company EPI, EUROPOSTECH INTERNATIONAL (www.europostech.com)

Is fully entitled to use the certified and approved MK4 post-tensioning system.

The company is moreover qualified as a Post-Tensioning Specialist Company for the installation of MK4 post-tensioning system, on exclusive basis, in the followin territory of:

SULTANATE OF OMAN
QATAR

For all information regarding the MK4 post-tensioning system and the Approval please make reference to the website:

www.mekano4.com

This certificate is issued on the 22nd February 2017 and it is valid until the 22nd February 2022.

Best regards,

Javier RICHART
COO MK4
+34659057058
Introduction

In Mekano4, we supply technical solutions for construction and maintenance of bridges and structures, also for geotechnical projects with our bars and ground anchorages, looking to provide our clients with specialised and complete service which responds to their technical problems.

Post-tensioning, Bridge Bearings, Expansion Joints, Construction Methodologies for bridges, Stayed Cables for suspended structures, Ground Anchors, High Tensile Bars, Monitoring, … these are some of the products and technical solutions that we offer in the bridges, structures and geotechnics markets.

Our work philosophy, flexibility and specialization, allows us to integrate new markets, new demands and challenges of each project and client.

In order to see our propositions and technical services in evolution, we decided to fund a R&D research and development program. Also for the development of new products and innovative solutions. This in a collaboration and discussion with the best designers and suppliers in the bridge, structures and geotechnical fields.

Mekano4 put in practice a constant improvement of the quality system that meets the requirements of ISO 9001:2000. Our company is involved to respond our clients efficiently and quickly; our aim is to be the best specialist supplier.

We believe in the quality that leads to supply materials and services in the exact deadline dates, in agreement with the client needs, we believe in a good and precise definition of the solution to build and its continuous improvement during the development of the project.
Mekano4 as a specialist in the design and implementation of structural solutions for bridge construction offers their Clients a wide range of engineered solutions for all type of stayed, suspended and hanging structures. The experience of our site engineers in assembly and erection and the continuous development of new systems all culminates to add value to the projects.

Various types of stays or hangers can be used (see below) depending on designer preferences and requirements which are usually based on the following: Loads, Corrosion protection, Installation, Stay lengths, Cost, etc.

Mekano4 proposes its Cable System DMK to be used principally in bridges of medium and large spans. Consisting in tendons of high durability and fatigue resistance, composed with strands of 7 wires with up to 4 protective anti-corrosion layers.

We offer anchorages up to 127 strands with 0.6” diameter. Designing anchorages with high capacity. Our cables systems have fulfilled all the requirements of the fib Recommendations for the Acceptance of Stay Cable Systems using Prestressing Steels.

The MK4 System for Locked-Comp Ropes is mainly for medium span arch bridges, medium size suspension bridges and suspended roofs.

The MK4 Systems for stays with High Tensile Bars MKY1050 and with Structural Bars MKT 460 are specified in other chapters in this catalogue.
Jiang-Bai Bridge (Taiwan)

Galindo Bridge - Vizcaya (Spain)

Gran Valira River Bridge (Andorra)

Teror Bridge in Gran Canaria (Spain)

Waterford Bridge (Ireland)

Bridge of the Americas (Uruguay)

Lonia River Bridge (Spain)
Incremental Launching Method

The concept of the Incremental Launched Method is to cast successive deck segments of approximately 15-30 metres long in a stationary formwork (similar to factory conditions) behind the abutment and then to push/pull the increasing lengths of bridge decks into their final position by sliding the segments over special Teflon-stainless steel devices (temporary or permanent bearings). For the launching operation special “friction system” using hydraulic lift-push jacks is used. Alternatively the launching can be done by means of hydraulic pulling jacks using strand or bar temporary tendons. A steel nose is installed in front of the first span permitting the reduction of the deck cantilever length prior to its reaching a pier.

MKeno4 is a leading company in this field having already successfully accomplished many projects of this kind (concrete and steel structures) worldwide.

Typical scope of work (construction package) offered by MK4 includes:

- Construction design / alternative design.
- Supply and installation of temporary / permanent post tensioning,
- Supply and erection of special formwork and launching steel-nose,
- Supply of bearings (temporary/permanent).
- Launching operations and equipment.
- Supply of special sliding pads and devices.
- Bar prestressing for steel-nose and lateral guides attachment to the structure.
Balanced Cantilever Method

This methodology is one of the most spectacular in bridge construction. With this method, after concreting the pier segments, concreting of the superstructure is undertaken in-situ by casting segments of approximately 3-5 metres in length. This is achieved by means of specially designed steel carriage formwork travellers advancing symmetrically from one or more pier supports. PT tendons are arranged according to the moment diagram of a cantilever.

This method is especially advantageous for medium or long span structures in which the use of scaffolding is onerous, expensive or impossible.

MK4 offers packages including redesign, erection methodology, supply and erection of travellers, post tensioning and bearings.
Betanzos River Bridge (Spain)

Miño River Bridge (Spain)
Post-Tensioning in Bridges

MeKan04 as a highly qualified engineering company is primarily involved in the bridge construction industry, the application of post-tensioning systems being its core business. The MK4 system has been successfully installed in all types of structures such as standard cast in-situ flyovers, bridges and viaducts constructed by various methods such as, Incremental launching, Precast segmental, Balanced cantilever, Precast or in-situ beams and Arches, etc.

The MK4 system embodies the latest proven state of the art innovations in prestressed concrete. The system’s components reflect the outcome of stringent testing, being designed to satisfy widely held international performance standards including the new European Technical Agreement ETAG-013.

By combining a wide range of anchorages and equipment with skilled engineering services and technology, the MK4 system is capable of providing solutions for an extensive variety of post tensioning applications; optimum design, quality and economy being central features of the system.

The substantial resources of an experienced team of technical personnel provide the MK4 system with a comprehensive engineering facility committed to innovative development as well as providing full collaboration with designers and control management in planning and execution of specific projects.

Principal characteristics of the MK4 system are:

- Products and services tailored to the client’s needs
- Technical support throughout all project phases
- Comprehensive range of tendons, anchorages, couplers and other specialist hardware and equipment, adapted to tendon variations when using different size strands, typically 0.5" and 0.6" diameters.
- Anti corrosion protection by cement or wax injection,
- Components adaptable to different types of sheathing, metallic or polyethylene etc.
- Stressing jacks of compact construction and efficiency that are reliable, easy to handle and to operate and capable of simultaneously stressing all strands in a tendon in any number of stages.
- Anchorage and special elements designed to the client’s needs, adapted to specific projects.
The use of post tensioning systems in buildings offers numerous advantages and is increasingly being used in this industry. The most common type of PT utilised in building slabs is the unbonded mono-strand system (greased and PE-coated strand). The MK4 unbonded mono-strand system uses 0.6” and 0.62” diameter strand of 1880 MPa capacity.

Multi-strand bonded systems with either round or flat corrugated duct is also provided as an alternative for the construction of slabs in buildings when this type of system is required.

The advantages of PT in buildings can be summarised as follows:

- Reduced quantity of reinforcement for passive bending and shear
- Larger column free space
- Thinner slabs and reduced volume of concrete
- Speeding up the construction cycle
- Reduced construction joints
- Crack-free slabs
- Minimised foundations
- Reduced maintenance costs

Mekano 4 also offers complete packages including alternative design of the slabs in addition to the conventional incorporation of our MK4 tendons (supply, installation and stressing).

Repair, maintenance and surveillance of structures, especially old buildings and monuments are additional activities in which we are presently becoming very active.
Post-Tensioning in Tanks and Silos

MK4 has extensive experience in executing post-tensioning works on tanks, water reservoirs, silos, shells and circular structures in general.

Our range of anchorages are well suited for these specific applications. Additional special anchorages such as the monostrand connector as well as the 4-0.6" block anchorage/coupler have been developed specifically for circular structures.

MK4 system has also been tested in independent laboratories to comply with most stringent international standards for its application in LNG Tanks (Liquified Natural Gas).

Another activity in which MK4 has achieved spectacular results has been the repair of existing tanks by the addition of circumferential external PT.
Market Dyrton Water Tanks (UK)
Buxton Cement Plant (UK)
Temara Silos (Morocco)
MK4 has a highly experienced staff of engineers and technicians, with the relevant expertise working and developing solutions for the construction industry and is regularly involved in special projects that due to their size, location or technical complexity require special developed tailor-made solutions.

Full-scale construction packages are offered to Main Contractors, by partnering with well-known designers and other specialised companies. Our objective is to collect and formulate the most appropriate ideas, products and services to fit the client's special requirements and to their entire satisfaction. Flexibility and commitment within the MK4 organisation enables us to offer very competitive solutions by adapting our systems and procedures to any given circumstance, geographical area and client's will.

Our engineers have the necessary experience to assist you in the design and fabrication of special moulds, tailor-made installation systems, innovative solutions for structural repair, or just to develop solutions taking advantage of your existing equipment, design capabilities and labour force.
Silleda Bridge (Spain)

Teror Bridge in Gran Canaria (Spain)

Barajas Airport Satellite Building (Spain)
MKT 460 Structural Bar System

McKano's Structural Bar System with MKT 460 supplies an interesting combination of elegance and resistance, obtaining the satisfaction of the designer and the contractor.

The MKT 460 is usually installed in small arch bridges, in suspended bridges, in footbridges, building, aerodromes and other architectural applications, suspended roofs, etc... the whole structural bar is available in 460/510 steel types and with different end fittings.

The MKT System incorporates different alternatives of protection against the corrosion (special painting/ galvanising/ stainless steel). The structural bar is completed with different types of anchorage ends.
Biomedical Research Center (Spain)

Sanchinarro Shopping Center Entryways (Spain)
Our technical "know-how" and a large experience in different developed projects, gave us the opportunity to develop a large range of bearings and expansion joints for bridges and structures.

An important team of engineers and qualified technicians of Mekano4 worked during many years in this field, and are able to develop the best solution in order to fulfill specific needs of our clients for each project.

It is our mission to resolve any special problems our clients may be faced with and in order to assist us to do this, we have developed special software for optimizing the design of pot bearing and other bearing types.

Since we recognize the importance of simplicity, clarity, and ease of use, we reiterate that we can offer both the simple, standardised series of products and also the highly sophisticated customised solutions for specific problems.

F.E.M. and special software for this application has been developed to allow MK4 to study singular specifications for special projects.
Third Millennium Bridge in Zaragoza (Spain)

POT Bearings on a TGV Bridge (Spain)
MK Bar system is based on special steel high tensile bars manufactured in Germany. The success of the system is largely as a result of the longevity of production (over 20 years).

Depending on the final use of the bars, they are either hot rolled or cold treated, thereby attaining the requisite grades of tensile strength. Low relaxation bar production for post-tensioning is included in the range.

All mechanical properties comply with the DIN EN 10025 standards.

Initially, bars were developed specifically for its use in rock and soil anchorages. Post-tensioning, reinforced concrete and stayed structures emerged later.

- **MK Y1050 system** | Post-tensioning bar tendons.
- **MK B600 system** | Soil and rock nails. Reinforcing steel.
- **MK S670 system** | Soil anchors and rock nails.
- **MK Y1100 system** | Formwork materials.
- **MK S1000 system** | Fixing systems for bridge rigid barriers.
Barajas Airport Satellite Building (Spain)

Slope stabilisation with MK S670 bars

Bull Fighting Area in Tarragona (Spain)
Ground Anchors

MK4 rock and soil anchors have been designed to comply with a wide range of specifications. They facilitate a wide range of forces and inclinations up to 45°.

MK4 designs, produces and installs temporary and permanent anchorages for each project with a wide range of solutions involving either high tensile bars or prestressing strands to provide tendons for different grouting levels and systems as well as variable anchor heads.

For large jobs, MK4 is also prepared to implement basic facilities for on-site production of ground anchors, thereby minimising transportation costs and adapting the production to the day-to-day needs.
Geotechnical and Structural Monitoring

Geotechnical and structural instrumentation packages can be provided to monitor projects and follow the behaviour of civil works such as deep excavations, tunnels, foundations, buildings, roads and railways using a large number of sensors able to measure various properties including strain, pressure, temperature, displacement and ground water levels.

The instrumentation can be applied in any phase of the project: in the initial phase of the project and to know the soil, in constructive phase and in the service phase (during the service life of the structure).

During the first phase, it should establish which are the possible problems to define the necessary measurements to be followed. During the construction phase, the checking of the structure can lead to change used models.

MKano4 has a wide experience in monitoring of soils and structures through MKano Instrumentation (MKI), using equipments and specialized material as Inclinometers, Piezometers & Water Level Systems, Extensometers, Load Cells & Stressmeters, Strain Gauges, Settlement Systems, Recording Stations or Limnimeters, among others.

One of the working lines in MKI are the load test in bridges, once they are built and before open to traffic, in both road and railway bridges.
Cable Stayed Load Measurement

Test Load on a High Speed Viaduct (Spain)

Martorell Tunnel Monitoring (Spain)

Barcelona Line 9 Underground (Spain)

La Colada Dam (Spain)
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