

This catalogue represents **20** years of experience in the design, manufacturing and supply of Formwork & Falsework Systems such as our custom "tailor" made, launching gantries, balance cantilevers, movable scaffolding systems, precast moulds, tunnels and a big variety of steel structure work, for the industrial, commercial and infrastructure projects around the world. It also highlights the work of our teams of directors, engineers and support staff, whose tireless efforts have made **alpi south east asia co., ltd.** (**alpi sea**) a major force in the region today in implementing a full multicapacity construction organization with complete turn-key services, solutions and support systems.

At **alpi sea**, we recognize the importance of QUALITY in all our products, PRECISION in our fabrication and TOP CLASS services to clients and their projects. We constantly strive to achieve higher standards in our deliveries by maximizing satisfaction, as to get your concrete in shape.

We would like to convey our sincere and special thanks to all our clients, whom, by entrusting their projects to us, have made our success possible. We hope that the contents of this most recent catalogue will assist both, old and new clients in the selection of their Formwork and Falsework Systems and that clients will select alpi sea to get their concrete in shape, based upon our excellent quality and on time delivery capabilities.

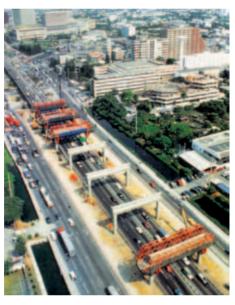
#### **Frank Michas**

Chairman/CEO Bangkok, Thailand



# company profile

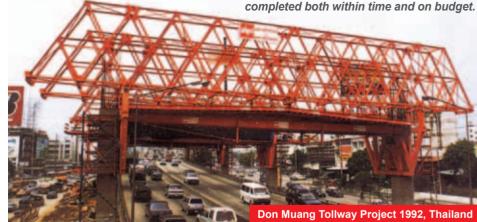




HEADQUARTERS, PRODUCTION AND MARKETING

alpi sea's first major project in 1992 was for Dywidag/GTM Consortium, building the Elevated Expressway connecting downtown Bangkok to Don Muang International Airport.

This was the very first time custom steel Formwork and Falsework Systems were used in Thailand. The challenges for us were to provide a cost-effective solution without any interruption to a heavy daily traffic. We successfully cast supporting portal cross beam in situ, wich was



Our strategically excellent location.

alpi south east asia co., ltd. (alpi sea) was first registered in the kingdom of Thailand in May 1992, initially as a subsidiary of Alpi Casseforme S.P.A; a renowned specialist in Formwork and Falsework Systems in Italy. alpi sea became independently owned in 1996.

Located in the geographical center of South East Asia, in an environ-

ment where skilled labor, management, materials and transport services are available at competitive prices, **alpi sea** operates from an easy accessible location on the outskirts of Bangkok. Our production facilities are all within easy reach of our Bangkok office.

While the Thai market is still core to our business, our continuous network expansion of representative offices throughout the world is a clear indication of our success in providing our services throughout International markets.

alpi sea employs highly experienced Formwork engineers encompassing 20-30 years of handson expertise and experience on the biggest and best projects in the world today. This gives you Go-Now reliability and the knowledge that you can meet your targets and expectations when it comes to getting your concrete in shape.









alpi sea also keeps closely aligned with the industry's leading Auto-CAD, StruCAD and other software corporations, so as to keep our people & our business at the cutting edge of the latest software innovation and developments.

alpi sea's design office is constantly competant with the latest technology software, such as Autodesk (AutoCAD, 3ds Max/Design), AceCad (StruCaD), SolidWorks as well as our own in-house programs, who carry out our design work and presentations

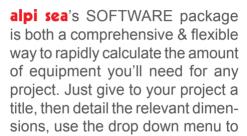
**alpi sea**'s scaffolding, **midi** and **mini** Formwork Systems are supported by the latest SOFTWARE that can accurately calculate & estimate packages to help manage your project with the highest efficiency.











select your quantity, weight and price options and you'll receive immediate information which will help you to project manage and plan the task ahead of you.





### Our goals

**alpi sea**'s strategy for growth is based on superior service to our customers and to the development of our International presence, with performance. The company expects to achieve this by adopting the following principles:

- We develop Formwork and Falsework Systems to meet the specific requirements of each individual customer.
- We analyze to solve problems on site with our customer.
- We manufacture at the most beneficial locations for our customers and their requirements.
- We utilize our experience and apply our technological knowhow to inpliment simple, rational & economic solutions.
- We continue to generate interest in our products through innovative marketing.



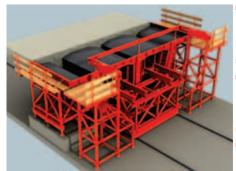


- We build-on our established reputation among our customers as a high quality and famously reliable supplier.
- We provide constant on & off site follow-up services to all of our client's projects.









### **Mission statement**

**alpi sea** aims to be a continuously improving, profitable, supplier of high quality civil engineering sevices & products, consistently providing customers with creative & cost-effective solutions supported with continuously reliable services.



### Specifically alpi sea aims to:

- Provide the most cost-effective designs for standard and special Formwork and Falsework Systems.
- Adequately respond to any request from local and International contractors in the building and civil work sectors.
- Provide a competitive advantage to our customers through cost-effective solutions.
- Provide alternative solutions wherever necessary.

### To achieve our goals, alpi sea provides:

- A full range of services and products, to equip our customers with tailored solutions.
- The pursuit of strategy of product and systems development and product sales activities, which will increase the value of our sales in the different market segments.

- Special emphasis on the successful launch of our rental systems of standard equipment and maintain the use of our buy-back policy on selected standard equipment.
- Specific attention to development, technical & managerial support for alpi sea distributors and agents, in their respective markets.

# From our central office in Thailand, alpi sea offers the following services:

- Design, fabrication & supply of standard alpi sea systems.
- · Planning & management.
- Design & fabrication of custom made Formwork and Falsework Systems following required specifications by individual clients & their unique requirements.
- Structural steelwork solutions to the superstructure sector of the construction industry.
- Fabrication of all types of other steelwork applications.
- Mechanical engineering solutions.
- Technical assistance, on site training & maintenance.





**alpi sea**'s range of Formwork and Falsework products, are usually manufactured, in the most appropriate location; for each individual project.



We'll get your concrete in shape.



### Production and quality assurance.

#### 1. Introduction:

- alpi sea's standard as well as custom made Formwork and Falsework products can be manufactured in both Thailand or else where but always are in accordance with alpi sea's standards of QUALITY.
- alpi sea provides technical assistance to its subcontractors to insure premium QUALITY.
- alpi sea provides technical assistance to its clients by training its own work force on site for the safe erection and utilization of equipments and ensuring the highest performance and quality of construction.



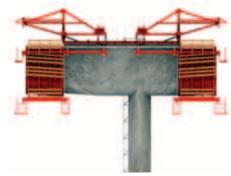
### 2. Project development sequence:

#### 2.1 Tendering.

Preliminary drawings with 3D illustrated movies are attached with quotation to the client; to illustrate the systems offer in the most appropriate solutions.

### 2.2 **Design.**

Once the contract has been awarded, alpi sea begins to collect detailed requirements from the client to give the right input for the alpi sea design engineers. Minutes of all meetings & preliminary drawings are normally sent to the client electronically.





Subsequently, general design drawings with calculation notes (When necessary) are sent from our Bangkok office via the internet to the client for approval.

### 2.3 **Detailing.**

Once the general design drawings have been approved, alpi sea makes detailed fabrication drawings

(Shop drawings). These are produced specifically for our production team or our contracted fabricators

#### 2.4 Fabrication.

Our aim is to manufacture in optimal & beneficial locations.

#### 2.5 Erection.

For on site erection, alpi sea prepares a special set of drawings as well as an erection method statement. These drawings are given to our client(s) prior to delivery of the equipment to the job site. alpi sea engineers supervise the fabrication and are on site to supervise the erection of the equipment for the client. The engineers are also available to stay with the client for the complete assembly, disassembly cycle of the equipment or longer if adjustments or other requirements are necessary.

### 3. Supplier selection

3.1 alpi sea has been successfully operating within our region since 1992 and we have developed a network of suppliers in the region area for:

- Commercial parts such as bolts, teflon plates, beta pins, rubber seals, hydraulic, electrical components, steel plates, steel profile & paint etc.
- Fabrication of our equipment.
- 3.2 **alpi sea** has built strong relations with the best suppliers and fabricators. In all projects we carefully monitor all the various aspects of the project, through:
  - Administrative.
  - Technical.



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- References of previous contracts.
- Quality Assurance systems.













### 3.3 At the start of each new project we choose the supplier according to its:

- Organization.
- Capacity of production.
- Factory work load.
- Type and quality of work.
- Delivery time.
- Reliability.
- Price, terms of payments.
- Financial situation.
- Past experience with alpi sea.
- Certification & Qualification

### 4. Order processing.

Once a supplier has been selected, a purchase order is issued to formalize our agreement. It can be a single page purchase order for standard commercial, products (Bolts) or detailed contract including commercial & technical specifications, the contractual fabrication drawings & delivery schedule.

### 5. Contract follow up.

#### 5.1 Purchase Order

The P.O. is monitored by our administrative staff. Lists of purchase orders, with due dates are updated regularly. Shortly before delivery date, the supplier is required to re-confirm the delivery by fax or email. After confirmation, an **alpi sea** Quality Control engineer visit the supplier's factory to approve the product before delivery or, a QC inspection is made on site where the product is to be installed. Once a delivery note has been approved and signed the supplier can submit his invoice for payment.



- 5.2 **Contract for fabrication:**When the contract has been awarded, a supplier is required to give us the following information:
  - List of all workers; names, qualifications & assignment.
  - Floor plan arrangements for the various products & fabrication phases with the schedule of fabrication for jigs & tables etc.
  - Proof of delivery of the raw materials (When not supplied by alpi sea).
  - QC report for the quality of raw materials.
  - Mill certificates when required.
  - Delivery schedule.
  - or more frequent) work in progress meetings are held at the factory, between the factory manager & his QC inspectors with alpi sea management, engineers and QC supervisors. During these meetings, progress reports are reviewed and any problem that may impact on quality or delivery time will be resolved.

- 5.4 Additionally alpi sea QC engineers monitor all work on a daily basis. It is their duty to:
  - Help the supplier by explaining product details and to discuss the best fabrication process with the factory manager.
  - Check the quantity; dimensions & quality of the welding at every step of fabrication.

#### These are:

- Cutting of the raw material.
- Preassembly (spot welding).
- Full welding.
- Final inspection.
- Painting.
- Final assembly for approval.
- Approval (by alpi sea and its clients).
- Delivery.

These procedures assist in avoiding the need for adjustments & repairs at the end of the fabrication process.



- 5.5 For products designed to carry heavy loads such as lattice girders, beams, supporting platforms & towers. And a Non-Destructive Tests (NDT) of the welding seam is carried out under alpi sea's supervision.
- 5.6 After each delivery, the supplier will issue an invoice which will be processed by the administrative team of alpi sea. It is essential for us that our suppliers are paid on time.



We'll get your concrete in shape.

- 5.7 **alpi sea** issues invoices for each delivery, with the delivery notes duly signed by the customer's supervisor on each job site.
  - alpi sea engineers visit the job site immediately upon the arrival of the equipment to assist the client's work force on site. To follow the fabrication & preassembly tests are made in the factory. Their duty is not to install the equipment but to train the client's workers how to assemble the equipment in a safe and effective way. They stay with the customer for the first erection to the striking of the entire system.





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### **OUR THIRD PARTY CHECKER**





Our in-house engineers are fully capable of providing inspections and calculation notes, duly endorsed for all our procedures, fabrications and construction requirements.

However, should our clients require independent inspections, our Third Party Checker & Partner for all design check and endorsement, is Er. M Sivakumaran (M. Eng MBA) **SMS Consulting Engineers** (Members of the Association of Consulting Engineers, of Singapore). SMSCE is a professional consultancy firm located in Singapore which was formed in the 1990s' by Er. M Sivakumaran with the aim of providing consultancy services in the fields of civil and structural engineering.





When Non-Destructive Testing (NDT) and engineering inspection and certification services are needed, including quality control services on the fabrication work, we also have a close relationship with **Qualitech Public Company Limited** which is a Thailand-based company and the first company to achieve ISO certification of NDT by International standards (**ISO/IEC 17025** General requirements for the Competence of Testing and Calibration Laboratories) and **ISO 9001** (Certificate of Quality Management System) primarily engaged in the provision of **Non-Destructive Testing Services** and **Engineering Inspection and Certification Services**, including quality control services. It provides inspection & testing services, especially for steel structure during construction, manufacturing, online service & plant shutdown.

**Qualitech Public Company Limited** perform our Conventional and/or Advanced **NDT procedures** when and where required. **Qualitech Public Company Limited** undertakes its business in safety engineering by providing Non-Destructive Testing, inspection & certification services and engineering offering advice as an independent third party engineering service to various organizations in order to test and evaluate equipment according to International standards.











### WHY CHOOSE ALPI SEA FORMWORK & FALSEWORK SYSTEMS AND SERVICES?

Some of the **top reasons** our clients choose **alpi sea** to get their concrete in shape based on high quality and timely deliveries are:

- We have the best, most cost effective solutions, designs and also calculate the most efficient and the safest performance parameters of each of our Formwork & Falsework Systems to meet their requirements.
- We visualize future projects in combination with our network of structural designers, architects, & consultants.
- We provide top class precision work in our fabrication with an accuracy and tolerance of between +/-3 to 5mm. The big advantages of using our Formwork Systems are an extremely smooth finish on the surfaces; virtually no remedial work necessary; erection and dismantling time is greatly reduced and with a much smaller labor crews than necessary when erecting other traditional Formwork Systems such as when made of wood etc.
- We optimize our design(s) to allow the Formwork Systems to be easily transportation by always providing a system which can be transported into normal size container (20'& 40') and be easy to manipulated, and which do not contain elements that due to their size or weight, cause problems with our client job-site and work force during commissioning and operation.
- · Lifetime of the entire Formwork Systems.
- Our after sales, services & support have been in continuous operation for more than Two (2) decades. This provides our clients with professional peace of mind along with the flexibility of re-using their Formwork Systems on any future projects.
- We have commercial/marketing people worldwide with connections to a vast number of new construction projects in which we can advise and guide our client in the resale of their Formwork Systems once they have completed their project.
- Because our Formwork Systems are normally made of STEEL, if for any reason the Formwork Systems are only to be scrapped, the residual value return is commonly between 8 to 12 % of its purchase price depending of the age and actual condition of the raw materials.
- It is important to note; that traditional Formwork Systems made of wood (wooden beams, timber, or plywood etc.) are becoming less and less popular today because of their very low capacity for reuse of these old systems (with capabilities often only between 3 to 15 castings). Just as significant are the vital environmental protection issues that surround the destruction our life-giving forests, that both people and government are demanding protection of throughout our South East Asia region, and thus the ensuing heavy taxes on the burning of wooden items once scraped (Singapore, Japan, Malaysia etc.).
- By entrusting your project to **alpi sea**, you NOT ONLY get a supplier of Formwork & Falsework Systems products and services, you get an entire partnership, supported to the full duration of and to the completion of your project.

### PORTAL & MOVABLE SCAFFOLDING SYSTEM (MSS)

#### Purple Line Project Rattanatibet, Thailand 2012





Southern Outer Bangkok Ring Road Project, Thailand 2008





2<sup>nd</sup> Stage Expressway Bangkok, Thailand 1995



Nonthaburi Bridge Project, Thailand 2010





Our on site Team of Engineers





















We'll get your concrete in shape.



2<sup>nd</sup> Stage Expressway Bangkok Thailand 1995, Client : Bilfinger Berger

alpi sea designed and manufactured a full Falsework Systems to build 300 portals and cross heads of the entire Elevated 2<sup>nd</sup> stage Expressway in Thailand. The system had to be adjustable in height, width, and could not rest on the ground, and had to be erected without interrupting the traffic.











We'll get your concrete in shape.







alpi south east asia co., ltd.

Systems Modular Formworks for Building & Infrastructure Technologies.

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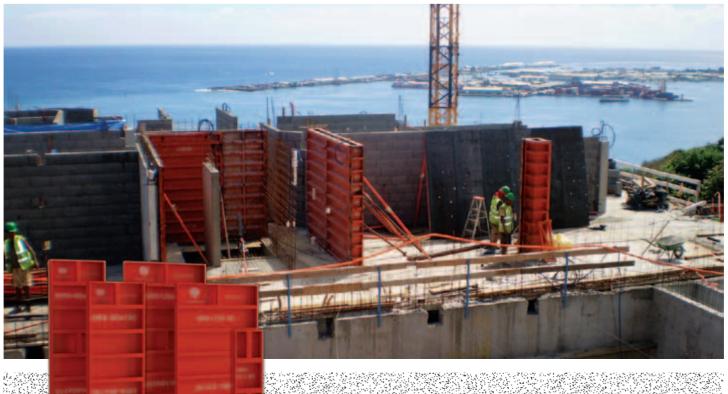
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### Light weight for light work: A tap of a hammer for fast, coplanar locking.





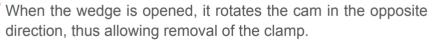
Panel coupling systems with through pins and wedges do not ensure coplanarity of Formwork, nor do they allow for staggered installation on irregular surfaces, while ergonomics are compromised. The special configuration of the edge section in the steel **mini** system interacts with the clamp to ensure smooth coupling and locking; with just the simple tap of a hammer.

- The wedge rotates the cam lock to align the two edge sections and thus ensure total coplanarity.
- The cam then locks the two aligned, coplanar edges, avoiding any loss of grout.







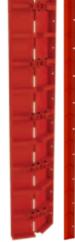


The panels have been designed around a 30 cm module and can be positioned both vertically and horizontally to meet the geometrical requirements of the formworked wall; in the best manner possible.

Using a limited number of components, Formwork can be set up for any kind of structure: from the simplest to the most complex, from foundations and bases to intricate wall systems. Using cranes for large surface areas or mounting panels individually by hand.



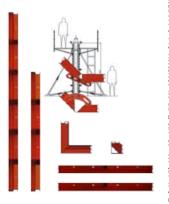




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### mini 150/120







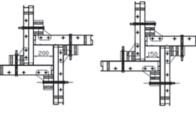


### mini 210/180





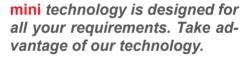




- Three standard light weight panels measuring 120, 90 and 60 cm available in two heights of 210 & 180 cm (multiple 30 cm modules).
- Three coupling and compensation elements (inner & outer angles, with sheet and compensation rod).
- Two coupling elements (clamp and compensation alignment devices).
- A limited number of plumbing accessories and gangway installations.











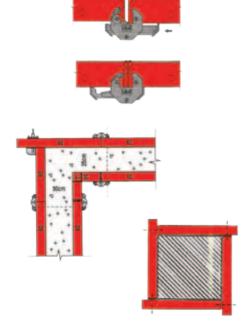


- Panels weight only 35 kg/ m<sup>2</sup> and can easily be handled without a crane.
- Permitted pressure greater than 50 kN/m² with bending less than 1/300.
- Steel box section frames provide maximum torsion strength.
- 10 cm high edge section without holes (For easier cleaning). Whilst having a patented outline to allow clamps to be fitted around the entire perimeter (For joining and/or overlapping panels, including staggered configurations).
- mini panel systems comes with a facing 2.3 mm. steel plate.

alpi sea: "Our technology at vour service."



In small/medium building sites. Formwork has to be installed individually for every cast and can often be handled, even without cranes. Our lightweight mini panel forms are specifically designed for this requirement.



Height/Width	300	270	240	210	180	150	120	90	60	30
300	204 kg.	194.40 kg.	180 kg.	157 kg.	135 kg.	113.98 kg.	92.16 kg.	68.31 kg.	48.99 kg.	29.71 kg.
270		174.96 kg.	162 kg.	141.75 kg.	121.80 kg.	102.58 kg.	82.95 kg.	61.45 kg.	44.10 kg.	25.83 kg.
240			144 kg.	126 kg.	108 kg.	91.18 kg.	73.73 kg.	64.65 kg.	39.19 kg.	22.97 kg.
210				110.50 kg.	94.50 kg.	79.78 kg.	64.51 kg.	47.82 kg.	34.29 kg.	20.16 kg.
180					81.50 kg.	68.40 kg.	55.30 kg.	40.98 kg.	30.25 kg.	17.55 kg.
150						57.15 kg.	44.08 kg.	34.20 kg	25.20 kg.	14.85 kg.
120							37.92 kg.	27.16 kg.	20.24 kg.	12.60 kg.
90								20.60 kg.	15.30 kg.	9.48 kg.
60									10.30 kg.	6.48 kg.
30									1	3.28 kg.





#### **High-tech modular elements:**

Handling large surface areas coupled, overlapped and aligned with panels.

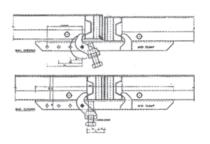


Modern building & infrastructure site demands Formwork which provides increasingly sophisticated performance alignment and locked panels, with pins and wedges.

We set ourselves the task of designing and testing a simple, fast coupling system which ensure panels were perfectly **coplanar** (No off set), **well locked** (No loss of grout) and are accurately **aligned** (No additional stiffening for handling over large surface areas).

This objective has now become a reality; steel **midi**, the system developed and patented by **alpi** sea based on many years of on site experience.





The simplicity of the **midi** system comes from technology developed on site & within in real work situations.

A pivot with a reach on the bolt (M24) turns the rotary jaws, moving the edge profiles towards the alignment system so in this way, the two profiles are perfectly **coplanar**.



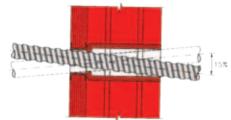
- The bolt then further tightens the device; the two profiles are then completely locked.
- In this position, the alignment device creates a bridge between the two adjacent panels, which are locked and aligned with absolute precision.

Thanks to the modularity of the **midi** panels and the simple, fast coupling system, each re-inforced concrete structure from the founda-



tion edge to high walls, from simple straight walls to the most complex geometry can be executed in the most rational manner.

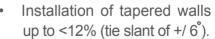








Every **midi** panel is equipped with special drilled U-shaped cross beams to allow:



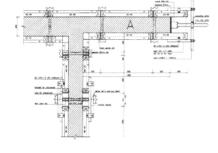
 Formation of square or rectangular pillars measuring from 5 upwards in 5 cm stages, using this special clamping device.

By combining **midi** panels using special flexible metal sheets, it is also possible to execute circular tanks with polygonal faceting.

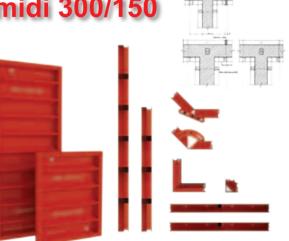
The **midi** panel system is fully compatible with our **mini** system, with which one can produce ramped brackets, thrust bearing frames for casts against earth etc.

midi technology is designed for all your requirements. Take advantage of our technology.





### midi 300/150





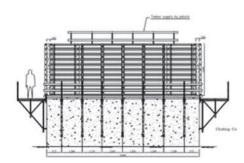
midi is the best answer to the ever growing daily requirements of site operators very high structures, high casting pressures, perfect surface concrete & low labor etc.

midi has been track developed in combination with all our customers planners and site managers.

Standard heights of 300 & 150 cm (With relative widths of 150, 120 & 90 cm).

### midi 210/120





- Permitted pressure of <80 kN/ m2 with bending of <1/300 in each space between supports.
- 3 ties for h=300 cm panels (1 tie per square meter) with just 2 ties for h=240 panels (0.82 ties per square meter).
- Boxed profile with patented edge profile of h=10 cm which allows alignment (midi clamp) & lifting (midi crane hook) clamps to be fitted along the entire perim-

- eter of the panel.
- Patented alignment clamp for rigid alignment and overlapping of panels which can then be handled easily for large surface areas.
- midi panel system comes with a 3.2 or 4.5 mm thick steel plate panels or plywood.



Height/Width	300	270	240	210	180	150	120	90	60	30
300	412.91 kg.	384.30 kg.	346.70 kg.	309.09 kg.	271.49 kg.	218.31 kg.	180.70 kg.	143.10 kg.	105.49 kg.	67.89 kg
270		347.91 kg.	313.91 kg.	279.76 kg.	245.68 kg.	197,64 kg.	163.57 kg.	129.49 kg.	95.42 kg.	61.34 kg
240			280.97 kg.	250.42 kg.	219.87 kg.	176.90 kg.	146.43 kg.	115.89 kg.	85.34 kg.	54.80 lg.
210				221:00 kg.	194,07 kg.	156.32 kg.	129.30 kg.	102.28 kg.	75.27 kg.	48.25 kg
180					168.26 kg.	135.66 kg.	112.17 kg.	99.67 kg.	65.19 kg.	41.71 kg
150						114.99 kg.	95.04 kg.	75.08 kg.	55.12 kg.	35.16 kg
120							77.90 kg.	81.47 kg.	45.05 kg.	28.62 kg
90								48.87 kg.	34.05 kg	22.07 kg
60									24.09 kg.	15.53 kg
										0.00 kg.

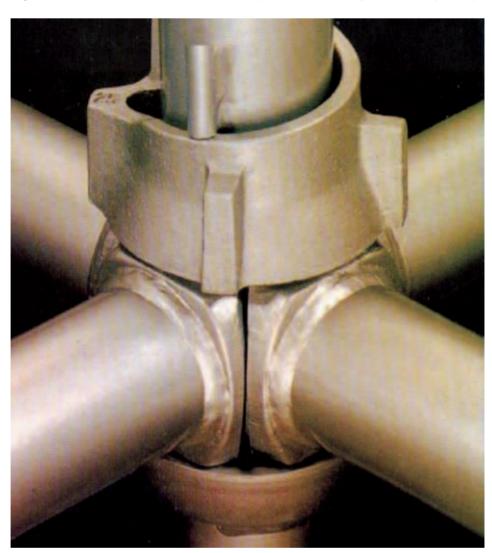
We'll get your concrete in shape.





### Caplock scaffolding system:

alpi sea's caplock is the result of over 20 years experience gained on major projects throughout the world.





### **SIMPLICITY**

alpi sea's caplock is a universally established pre-fabricated scaffolding system. Its inherent simplicity is what makes alpi sea's caplock a versatile, efficient and cost-effective alternative to traditional tube and coupler scaffolding systems.



lower cap, which is welded to the vertical at 0.5 m intervals, with a sliding upper cap. The forged blade ends of the horizontals are located in the lower cap. The upper cap is moved down and rotated by hammer blows to give a positive and rigid connection.

access and staircase access, and a well proven heavy duty Falsework support system which are universal jacks, super planks and stair access systems.

#### **ALL TYPE OF ACCESS**

alpi sea's caplock is an extremely versatile modular system that can be used for all types of access scaffolding requirements. Components are lightweight and therefore erection and dismantling are accomplished easily by a small crew.

### ONE SINGLE ACTION

The principal feature of **alpi sea**'s **caplock** is the unique node point-locking, up to four horizontals in one single action without the use of nuts, bolts or even wedges. The locking device is formed by a fixed

#### **SAVING TIME & COST**

**alpi sea**'s **caplock** is a costeffective, modular, steel shoring system, developed from **alpi sea**'s extensive range of accessories, it's robust, galvanised design & easily assemblage.

**alpi sea**'s **caplock** system is the premier choice in modular shoring. New building construction, renovations & building maintenance, power plants, including ship building & maintenance & other industrial applications.

**alpi sea**'s **caplock** scaffolding system is ideal for a wide range of applications, including continuous facade, circular scaffold, birdcage



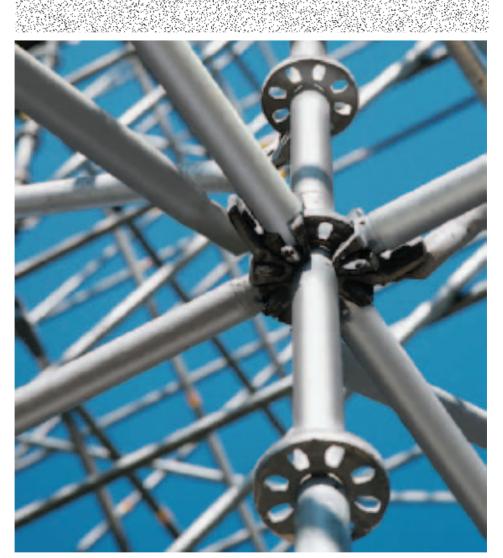






#### Ringlock scaffolding system:

alpi sea's ringlock is the simplest method of connecting horizontals and diagonals to verticals in one single action; without any use of loose fittings such as: nuts & bolts etc.





Just one hit of a hammer on the wedges is sufficient to obtain complete stability & safety of the connecting components.

### **8 CONNECTIONS IN 1**

alpi sea's experienced engineering team have designed an ingenious connector technology made of 8 connections in one automatic right angles & flexible angle selections, forming self locking (By means of wedges) during assembly.

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The tight connection between the rings is the key to the entire scaffolding system. Lateral side forces on the verticals are transferred to horizontals & diagonals to achieve the maximum loading with even distribution of loads throughout the shoring.

### HIGH LEG

**alpi sea**'s **ringlock** scaffolding system provides high leg load capacity which also provides greater versatility in both high and low support levels.

### **LIGHTWEIGHT**

**alpi sea**'s ringlock scaffolding system can be flexibly assembled and can be use in most construction projects (Civil & Building viaduct, ramp, side traffic lane, pier cap, box culvert, drainage culvert, & tunnel).









### COMPATIBLE WITH ALL SYSTEM FORMS

alpi sea's ringlock scaffolding system is compatible as a Falsework (Shoring) System for various Formwork types (Traditional, system Formwork or with our midi steel panels) for a all over all design.

### **ALL REQUIREMENTS**

alpi sea's ringlock scaffolding system can be used in Hi-tech





factories, power plants, water towers, recycling plants, refineries, incinerators, large scale performance stages etc. for both Falsework and access such as in viaduct construction, where complete towers sets can be moved horizontally using special trolleys and rails, then simply crane lifted to the next location, saving time & labor costs.

# table forms

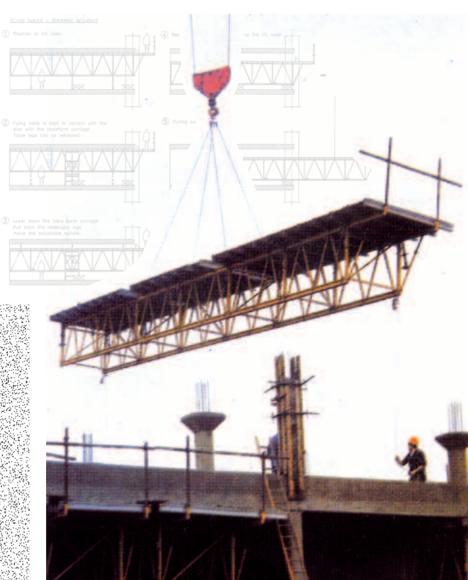
### Flying form system:

The alpi sea flying form is a cost-effective modular Formwork Systems for the successive casting of concrete floors.

This is ideal for use in many multistorey buildings or other repetitive reinforced concrete structures & is designed to minimize construction times. labor and material costs.







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### **Drophead system:**

The alpi sea drophead system consists of a casting platform with one or more ends that can be dropped; to allow easy handling and moving.



The ends can also be tilted to allow casting of angled slabs in tunnel situations. This system is made to cast heavy concrete slabs and beams.





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# climbing systems • slip & jump form



### The traveling cart will hoist both bracket and Formwork at the same time:

Climbing systems brackets provide the supporting structure for Formwork for off-ground successive casting operations.







Climbing systems brackets provide the supporting structure for Formwork for successive off-ground casting operations. With weightbearing rests on the attachment anchored to the cast, while a safety

pin prevents detachment in the event of error of execution.

The travelling cart can hoist both bracket & Formwork at the same time.







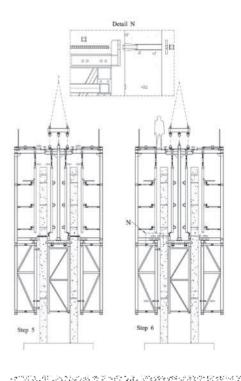


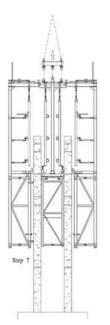
Climbing brackets and platforms constructed from standard components cater for a wide range of construction specifications.

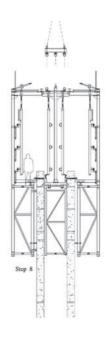
Brackets are usually 2.50 m wide and will accommodate suspended platforms of a width of 1.50 m; to ensure swift attachment recovery.



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The platforms rest directly on a wall recess, on a special support device previously fixed to the wall.

The self climbing system is a hydraulically operated self climbing Formwork Systems for the construction of tall concrete structures, such as building core walls and bridge pylons. This improves productivity and safety, it is raised without the use of a crane and is connected to the structure at all times during

the climbing process. Platforms allow for safe, efficient work and high loads. The climbing sequence begins by stripping the previously cast Formwork using carriages on the brackets or platform. Leading climbing shoes are then bolted to the anchors from the previous cast. The hydraulic climbing mechanism raises the climbing rails or platform to the leading climbing shoes.





## precast mould systems







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Precast moulds for concrete offers an almost endless variety of products and design options for both above-ground and underground construction. From the largest infrastructure projects to the smallest architectural details, precast is one of the most versatile and sustainable building materials available for today's fast-paced, environmentally conscious construction.











Pre-stressing is a technique introducing stresses to the pre-determined magnitude into a structural member; to improve its behavior. This technique is usually found in concrete beams, spandrels, columns, single and double tees, wall panels, segmental bridge units, build-tee girders, & I-beam girders etc.





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The main sources of strain being; the builtin vibrator system, which helps to vibrate the concrete during the casting stage & are the numerous casting operators and handlings systems sustained by the mould; in order to produce thousands of segments needed to construct each tunnel.







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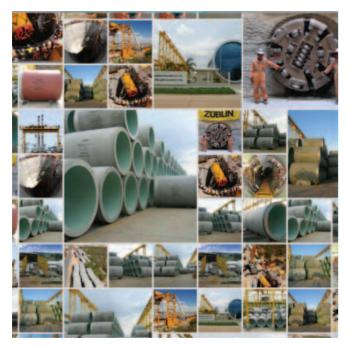
ABU DHABI STRATEGIC TUNNEL ENHANCEMENT PROGRAMME LINK SEWER CONTRACT LS-01 Project

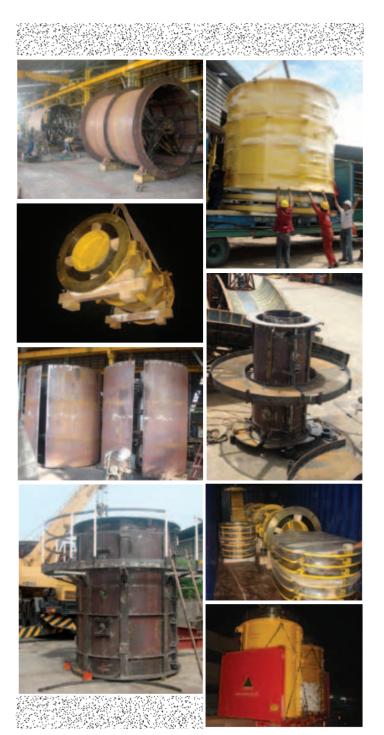
Clients: Ed. Züblin AG Abu Dhabi & Commodore Cement Industries L.L.C.

The contract is part of the **Strategic Tunnel Enhancement Programme** (STEP) by the Abu Dhabi Sewerage Services Company (ADSSC). The programme is in direct response to aggressive growth set forth in recent years and consists of a 40-kilometer long deep wastewater tunnel with a pumping station at its end and a network of link sewers connecting the existing sewage network and pumping stations to the wastewater tunnel. The new wastewater network will discharge the complete sewage of the city of Abu Dhabi with an approx population of 1,000,000 people.

As part of the STEP Programme Ed. Züblin AG Abu Dhabi & Commodore Cement Industries LLC have received the contract award for Link Sewer Contract LS-01 Package. Contract LS-01 is located at Abu Dhabi Island (CBD) and consists of the construction of 35.7 KM Sewerage Network with diameters ranging from 200 mm to 2800 mm and 247 shafts for manholes with a depth between 8 m to 26 m.

Pipe Jacking Method will be implemented for the construction of the sewer tunnels, and in one hand, **Züblin AG** choose **alpi sea** to supply all these Moulds for Jacking Pipes (ID700 / 800 / 1000 / 1200 / 1500 / 1800 / 2800 / 3100) with lubrication and accessories. In the second hand, **alpi sea** supply for **Commodore Cement Industries LLC** Precast Concrete Standard Shafts / Cutting Shoe Segment Moulds ID3000 / 3900 / 5000 / 6000 with "**Vertical method of casting**".





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#### **SEGMENT MOULDS**

alpi sea has a unique know-how advantage in the design & manufacture of precast moulds and tunnel construction, alpi sea's strength is based on 20 years experience of a wide range of precast mould configurations. alpi sea's R&D department are at the edge of implementation of new production technologies; necessary to improve better design & fabrication of all kinds of precast moulds.

The segment moulds are normally defined according to the tunnel geometry layout. As each tunnel is unique, so are its segments & moulds. The mould are entirely dependent on the segment geometry. Therefore its engineering can only be made according to the segment concrete design.

alpi sea's goal is to design a segment mould which can produce a high quality segment for a long period of time: as the mould will undergo heavy strains.



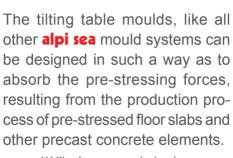
A segment mould is composed by a Soffit part, Four (4) Side Form and Two (2) Top Panels.

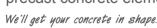
#### STATIONARY TILTING TABLE **MOULDS**

The production of concrete elements on stationary tilting table moulds are used for the production of concrete wall elements and/or where facades are used. in principle "to produce horizontally and removed vertical shuttering work" as required due to transportation, logistics and/or for structural reinforcement requirements.

The tilting table moulds consists of a stabilized foundation beam, a horizontal beam, surfaced with specially designed steel profile "Omega" topped with a steel sheet with a particularly high surface quality. The horizontal beams can be moved from the horizontal position along the longitudinal axis by about 80 degrees so that the elements produced can be vertically lifted from this position, by mean of using a hydraulic system.

other alpi sea mould systems can be designed in such a way as to absorb the pre-stressing forces, resulting from the production process of pre-stressed floor slabs and







#### STAIRCASE MOULDS

Staircase moulds can be constructed in either a lying position in an individual Formwork or in a standing position, in a cassette Formwork Systems. The lying moulds can be efficiently produced, either on a pallet or on a production platform. This saves additional vibration equipment and heating.

Straight staircases can be produced in different cast positions. Each type has its advantages and peculiarities. Therefore **alpi sea** offers a solution for every type of optimal mould.

Depending on the on site requirements, the construction can vary continuously with additional variostep components between 220-320mm with rising continuously, varying between 150-200mm.

#### The Advantages

- Variable stairs strength.
- Easy conversion between left & right way stairs.
- Going and rising steeples adjustable.
- Standard moulds up to 17 steps.
- Sharp-edged stair versions.
- Steps formed at right angle or with undercuts
- Setting system secure from concrete deposits.
- Three-sided exposed concrete quality with a bottom view of a smooth-formed finish.
- Rear wall can be horizontally moved or lifted.
- · Height-adjustable mould rear wall.

- Mould floor is made of steel
- Landing platforms can be added on, quickly & easily.
- Landing platforms can be cast with stairs.
- Horizontally movable rear wall provides plenty of working space.
- Complete adjusting tools.
- Working platform.
- Inserting form liners can produce anti-slip surfaces







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## 👽 tunnel & culvert systems 🛭

#### Box culvert & tunnel:

Our services are not limited solely to production.



Our services are not limited solely to the production, sale and hire of our systems but extend into infrastructure site problem solving tasks; to find the right & most costeffective solutions to your needs. For any special applications such

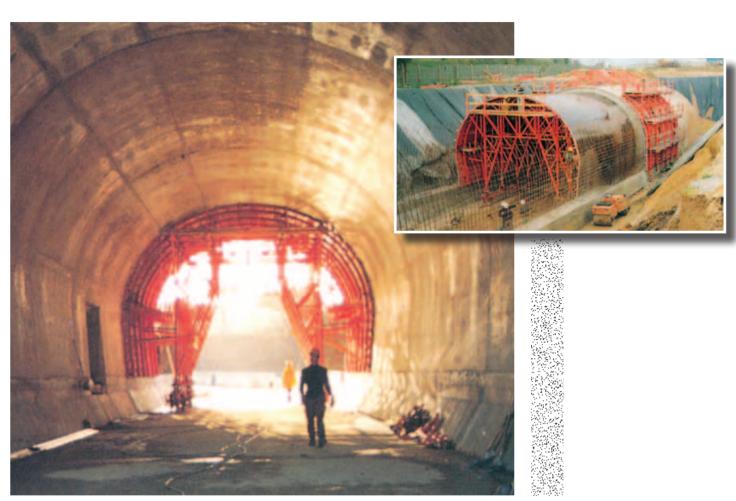




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#### **TUNNEL & CULVERT SYSTEMS.**

SELF-REACTING TUNNEL FORMWORK Formwork to cast medium and large cross-section linings, on-site with an articulated structure to support the concrete forces. The self-propelled, hydraulic transport and dismantling carriage has a telescopic function or a single section design. This self-supporting formwork solution includes centralized jet spray and pneumatic or electric sidewall vibration systems. Service and maintenance carriages are supplied to complete the system.



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FULL ROUND TUNNEL FORMWORK SYSTEM for PIPELINES Telescopic, "full round" multi-section formwork ideal to achieve continuous advancement or block jets. Self-propelled, hydraulic transport carriage available in the traditional version come with all accessories, such as pneumatic or electric side-wall vibration, jet spray system with articulated feed piping, service carriages, concrete mixing trains.





as arches or any type of tunnel work **alpi sea**'s tunnel Formwork Systems operate manually or are self propelled which is particularly cost-effective since 80% of the carriage consist of **alpi sea** standard products such as panel & scaffolding systems.

#### **SLAB & WALL FORMS**

Here, we have designed & fabricated an entire system made of standard, as well as special Formwork & Falsework, to allow the start of the construction of the C.T boxes for the BERTS project.

The challenge was to design the complete system (wall, doors frames, columns & large quantities of travelling slab Formwork) locally and in the very short period of four months.

alpi sea: "Our technology at your service."





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#### **TUNNEL FORM**

alpi sea's tunnel form is a Formwork Systems which allows you to cast cellular walls and slabs in one operation on a daily cycle. The system creates an efficient load-bearing structure for use in a wide variety of applications. It combines the speed, quality and accuracy of on site production, with the flexibility and economy of in situ constructions and is recognised as a modern method of construction. The result is a cellular reinforced concrete structure, the surfaces a high quality, so as to require only minimal finishing for direct decoration

Tunnel form is a fast-track method of construction well suited to repetitive cellular projects such as hotels, social housing, residential blocks, student accommodation, barracks and prisons.



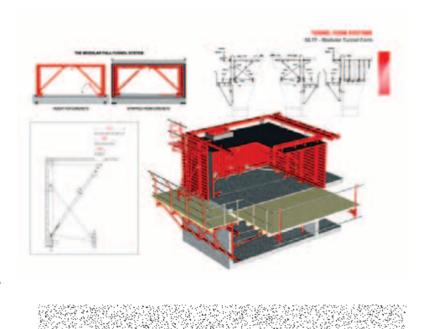


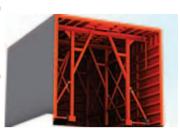


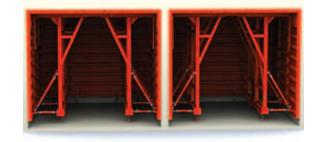
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Using **alpi sea**'s tunnel form is recognized as a modern method of construction & tunnel form simplifies the whole construction process by enabling a smooth and fast operation that can result in frame costs being reduced by up to 20 percent and provide frame program time savings of up to 25 percent.

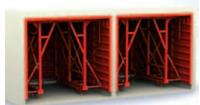
During the tunnel form construction process, a structural tunnel is created by pouring concrete into steel Formwork to make the floors and walls in one massive process. Every 24 hours, the Formwork is moved so that another tunnel can be formed. When a storey has been completed, the process is repeated on the next level. A strong, monolithic structure is thus constructed which can reach 40 or more stories in height.











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# shoring / MSS & scaffolding systems

#### **Heavy duty shoring systems:**

For every situation, to support a structure horizontally and/or vertically, alpi sea can provide solutions based on light and/ or heavy duty modular propping system designed for any axial loads. alpi sea shoring systems can be configured for every variety of application, such as bridge launching, travelling slab and barrier. Falsework for steel structure erection, tunnel and culvert, pier, pier head, portals etc.



A transportation system (Rebar trolley) for prefabricated reinforcement cages, or a portal crane system can be integrated within the entire system.

SUPPORTING BRACKET (SEE NOTE 3)



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#### Movable Scaffolding Systems:

For both types of Movable Scaffolding Systems (MSS), overhead and/or underslung: the systems consist of a self supporting structure.

The **alpi sea**'s Movable Scaffolding Systems (MSS) are the most important and exciting tools for the design and construction of bridges. They are normally made of a steel structure with rather sophisticated equipment, and travel forward on the bridge pier head (which is normally cast prior to allowing the MSS to travel on it) span by span. The steel structures support the entire Formwork Systems which gives shape to the bridge deck.

**alpi sea**'s Movable Scaffolding Systems (MSS) are always much lighter than conventional equipment because our design engineer's focus is always to provide our customer with the most cost-effective system based on the cost-saving advantages for each bridge construction projects, through design optimization, ease of assembly; yet with operational performance for the highest levels of safety.



Our engineers will provide equipment based on less steel & bigger load capacity options, as well as increasing safety, based on a design structure which is permanently monitored.

alpi sea's Movable Scaffolding Systems (MSS) are available in underslung and overhead solutions for spans from 20m to 70m. Other custom made solutions can be developed to support our customer's needs.

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## 👽 barrier & parapet systems 🏽

#### Parapet traveller:

alpi sea's parapet traveller is designed to cast in situ a concrete parapet of any bridge, access road & expressway, etc.







alpi sea's parapet traveller is designed to cast in situ concrete parapets of any bridge, access road, expressway, etc. It is a simple machine manually operated and towed by a truck, pickup or placed with a winch or chainblock.



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## The major design criteria are:

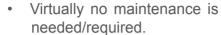
- 1. Simplicity.
- 2. Compactness to allow a truck mixer to pour the concrete directly into place.
- 3. Ease of assembly and disassembly.
- 4 Ease of adjustment.
- 5. Ease of maintenance.
- 6. Rigidity to guaranty/quality accuracy of the parapets.
- 7. Speed of work.
- 8. Lifetime of the machine.

## Advantages of the alpi sea parapet traveler system:

- Low cost.
- Systems are very compact, a truck mixer can pour concrete directly in the form.
- Systems are clean without many props accessories around and is simple to operate.
- Few adjustments are necessary.
- Short cycle-time (erection, casting and striking cycle).







- Easy cleaning of the Formwork from the top of the slab or from the walkways for the bottom panel.
- Adjustable internal side panels prevent leakage.
- For transportation by truck, the machine can be disassembled in 3 basic blocks.
- Last but not the least, the alpi sea experience and technical support ensure our peace of mind in getting your concrete in shape.













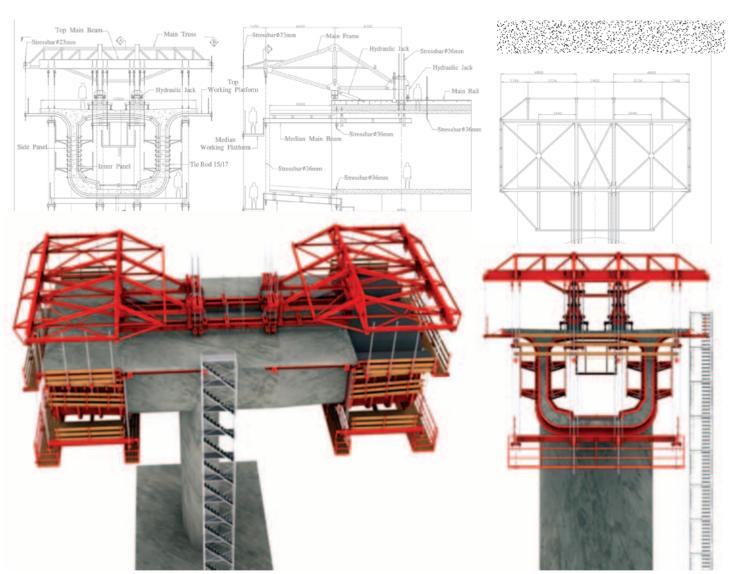


# balance cantilever systems for segmental & in situ



**Balance cantilever:** 

alpi sea supply special Formwork and Falsework Systems for in situ and/or segmental of free cantilevered structures.



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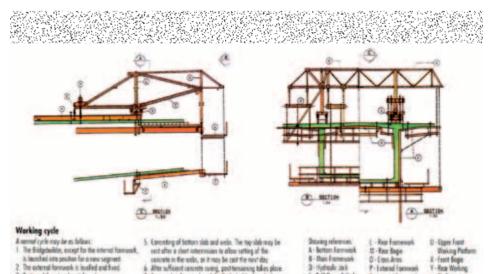
Betters slab and wells minhared

8. The internal formouth is guiled forward



The **alpi sea** Balance Cantilever system is used for the **cantilevering method of construction**, This kind of equipment can be used for placing prefabricated segments (Length of segments are approx. 3-5 m) or for cast in situ concrete.

This option is normally cost-effective and recommended where scaffolding to the ground may be difficult or impossible to erect because of traffic, deep and/or wide valleys or in the case of expensive foundation conditions for scaffolding systems to be used.



Formwork is loosened, and the Bridgebuilder launched

forward to the next segment. In most cases one cycle in

samed out to one week. There are examples of 45 days cycles.





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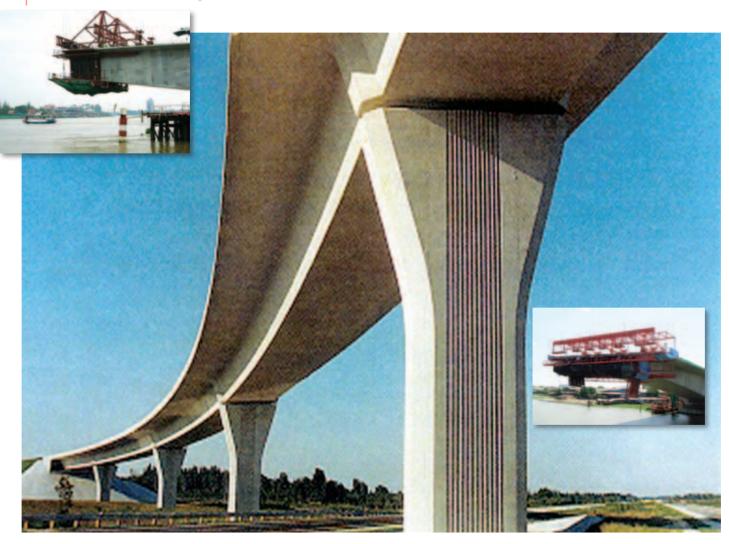
Internal Fermionic

**Warking Flotterni** 

Full Doon Calode

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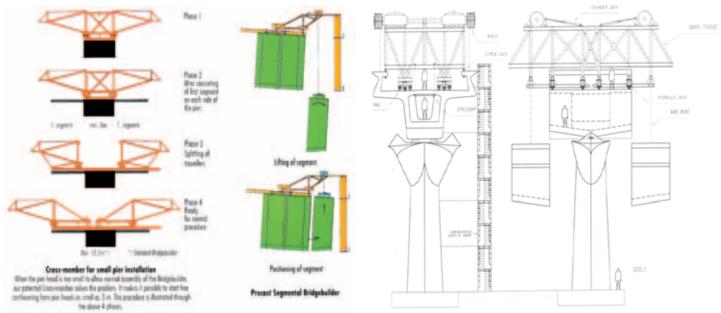
H-Man Rail



**alpi sea** is continually improving their Balance Cantilever systems technology design for major projects. Our goal is to provide our client with cost-effective equipment that are lightweight, versatile and easy to erect, operate and of which could be re-used on other client's projects.







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## launching gantries systems



#### Launching gantry system:

alpi sea supplies any size or type of Launching Gantry (LG), be it overhead or underslung system.





alpi sea's Launching Gantry (LG) method of construction has been developed for multi-span bridges over difficult terrains or water where scaffolding is expensive or not feasible at all.

The method is highly adaptable for a wide range of spans and types of superstructure and can handle prefabricated elements.





In fact, Launching Gantries are most often used for placing prefab segments, match-cast and stressed together or in complete units, spanning from pier to pier.







**alpi sea** offers solutions for both gantries systems, overhead and underslung methods of erection. Our design will be based on advanced equipment, which has been improved and optimized over many years & founded on our experience from multiple projects carried out throughout the world.

Our systems are light weight, easy to assemble & operate, practical, supported with Internationally known hydraulic systems such as Enerpac, which is most important to this efficient operation. Last but not least, they are cost-effective. The gantry can be modify and re-used on other projects; which increases the contractor's project cost-saving.





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## Description of the equipment:

The equipment is designed to place precompressed reinforced concrete segments used for the construction of bridges roads and viaducts. If following a "span by span" construction method the segments are hung on the truss and joined via stressed cables and laid on the piers.

If following a "Cantilever" construction method, the bridge may be built via an overhang, in respect of the piers.



For both construction methods "span by span" and/or "cantilever", the framework consists of two (2) lattice trusses with a triangular section, the ends of which are connected via horizontal bracings.







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## custom made elements

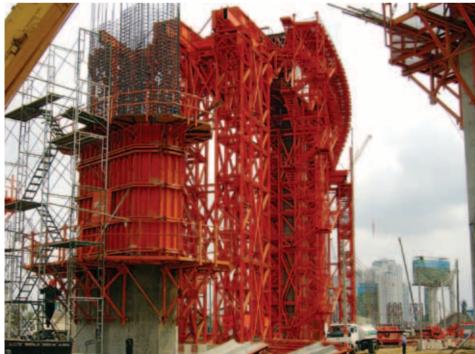
#### In situ V-Shape, cross beam, head:

The challenge to alpi sea on many job sites is to allow continued traffic flow during construction.





Bridge deck cross sections of high efficiency; always consider operational aspects such as crew needs, easy transportation and easy assembly on site, with the highest safety criteria.







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### IN SITU V-SHAPE. CROSS **BEAM, HEAD**

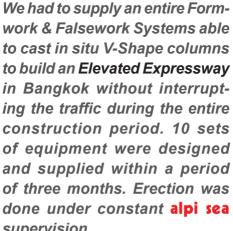
The challenge of these Falsework and Formwork Systems proved to be the most cost-effective solution. This was achieved by using our midi regular standard Formwork Systems to cast the deck supported with our special tower sets element (height 3 m) supporting systems.

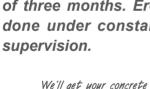












### **COLUMNS**



Column forms were of varying shapes and sizes, and are one of the most sought after items of our equipment today.



















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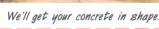














alpi sea supplied in average 2500 Tons of boxes culverts (Type 4.5m, 7.1m, and 9m) for the COJAAL Algerian East-West Motorway Project in 2009. alpi sea also did all the erection, with our on site operation team.











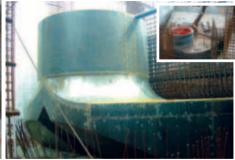






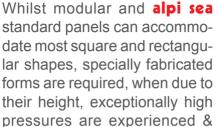
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# **FORMS**



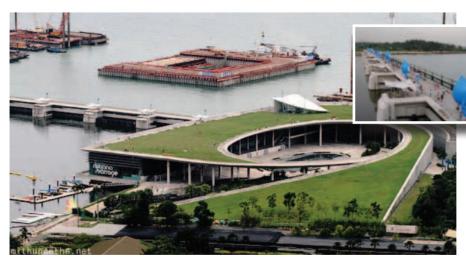


The Marina Bay Barrage is a dam built in Singapore across the Marina Channel between the reclaimed lands of Marina Fast and Marina South. The Sq\$226 million project was completed in 2007, and turned the Marina Bay & Kallang Basin into a new downtown freshwater reservoir. It also provides water supply. flood control (by changing the tide flow into the barrage) and a new lifestyle attraction for locals & visitors to Singapore.

Below is a pictorial walk-through of the design, fabrication and supply of a Falsework and Formwork Systems for seven gigantic pump-houses for the Marina Bay Barrage project (Client: Koh Brothers. Contractors and Civil Engineers Pte.Ltd).







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## Marina Bay Sands Casino & Resort Project.(Singapore)

alpi sea has supplied Formwork Systems for all the foundation of the Marina Bay Sands Casino & Resort Project, which shall be open in 2009, will feature three 50-story hotel towers containing 1,000 rooms each, crowned by a two acre Sky Garden bridging across the towers, offering 360-degree views of the city and the sea, outdoor amenities for the hotel such as jogging paths, swimming pools, spas, and gardens; an iconic Arts and Sciences Museum on the promontory; one-million square feet of integrated waterside promenade and shopping arcade; a state-of-the art one-million square foot convention center; two 2,000-seat theaters; a casino; and a 4,000 car garage.



















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#### MRT Circle Line Contract 823 Project. (Singapore)

Below are some pictures of the Formwork and Falsework Systems(Coulmn & Y-Pier Head) supplied by alpi sea for the new Singapore Underground MRT Station.



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alpi sea supplied all the Formwork Systems for the Red & Green line from 2006 to 2010 of the DUBAI Light Rail Transit Project (Client: ETIC Link, Japan-Turkey Metro J.V.) and continued with other projects in the UAE region.

alpi sea completed the design, fabrication and supply of the Formwork and Falsework Systems of the precast moulds for the pier heads project.



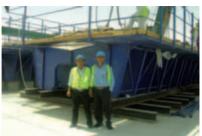


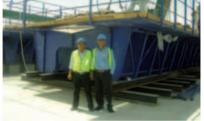
Typical Formwork for Precast Type 1A





alpi south east asia co.,ltd







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alpi sea work on the Sheraton Park Project, an ambitious plan which will change the face of Doha's Corniche. The project, with the focus on developing the Sheraton-end of the over 8km Corniche into a public park, includes a two-level car lot & an underground tunnel providing access to the under-construction Convention Centre across the road. The proposal also includes the design-build of a maintenance-depot & a control centre for Doha's future light-rail passenger transit system with two connecting entry-and-exit tunnels.

QDVC is a subsidiary of Vinci Construction Grands Projets (49%) and Qatari Diar (51%).

The contract called for the design-build of a 66kV sub-station for the utility provider, Kahramaa, in addition to two 11kV sub-stations. According to information posted on Vinci Construction's website, the project consists of a 73,000m2 public park of "exceptional quality", including basins, water fountains, children's playgrounds, cafes and restaurants.

alpi sea make the design, manufacturing and supply of Formwork Systems for columns type C1, C3, C4, C5, C6, C7 and Wall Form. (2011-2012)













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While the Thai market is still core to our business, construction companies such as, Sino-Thai Engineering & Construction, Unique Engineering, Ch Karnchang, Italian-Thai etc. which are involved on the construction of the Bangkok LRT/MRT Purple, Red and Blue line Project, has choose alpi sea for the supply of their Formwork & Falsework Systems and we have been supplied 80% of entire requirement of the Purple, Red and Blue line to cast

kickers (starter), columns, Pier, Pier Head, Cross Beam, Portal and some Launching gantries and other steel products and services including supervision and installation. (2010-2013)



We'll get your concrete in shape.



We'll get your concrete in shape.



We'll get your concrete in shape.



This 30,000 seat outdoor stadium has been built for the S.E.A Olympic games with alpi sea's steel Formwork and Falsework Systems. The challenge of this project was to provide a combination of equipment made of alpi sea standard products such

as midi panel combined with custom made equipment to allow the construction of every concrete structure.

The main contractor, Girola/Lodigiani J.V. built 3 stadiums with the same alpi sea's steel Formwork & Falsework Systems.

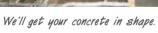
















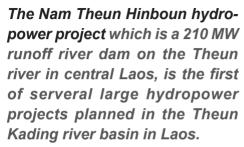




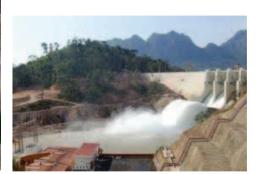








alpi sea make the design, manufacturing and supply of Formwork Systems for Up Stream, Down Stream and Tunnel.



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# steel structures

#### alpi sea is a major fabricator and erector of structural steel:

With works that encompass all types of steel construction, including bridges elements, road, trusses, support structures and building facilities.

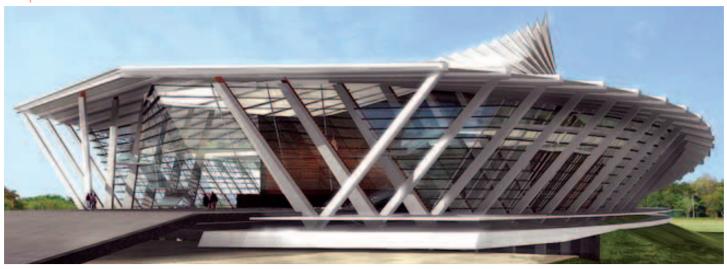








We'll get your concrete in shape.



Mahidol University is a truly distinquished university with diverse academic disciplines a high-caliber personnel, providing the highest quality in education. With their commitment to be "The Wisdom of the land", Mahidol University is dedicated to providing the greatest benefits for the global community.

alpi sea has made all the steel structure design, manufacturing, supply and erection in collaboration with NIL KHOSOL Co Ltd.

















#### **OUR TOOLS**

#### **FABRICATION FACILITIES**









#### NIL KHOSOL Co., Ltd



We have a partnership with a modern and well equipped fabrication yard names NIL KHOSOL Co., Ltd. They are one of the leading fabricators in Thailand. They produce the highest quality Pressure Vessel, Storage Tanks, Heat Exchangers, Steel Framed Structures, Stacks, Silos and Boilers for Chemical, Petro-Chemical, and Energy related industries, to the strictest international construction standards, such as: JIS, API, DIN, ASME, ASTN and the Thai industrial Codes.



Yearly production is 5,000 MT of Formwork System, 1,200 MT of Storage Tanks, 1,800 MT of Pressure Equipment and 6,000 MT of Steel Structures within their 10,000 m2 of workshop and 5,000 m2 of open workspace which gives a total of 15,000 m2 of total area and allows for further expansion.

Visit their website at http://www.nilkhosol.com today.









We'll get your concrete in shape.



We insure quality through our management and QA/QC control systems, developed on the job in diverse projects over our 20 years of experience.











We'll get your concrete in shape.



#### **OUR TOOLS**

#### **FABRICATION FACILITIES**









#### P.T. ARKON PRIMA INDONESIA

Early 2012 after a large demand from our clients, **alpi** sea established their name into the Indonesian market with establishing a fabrication yard and partnership with P.T Arkon Prima Indonesia, one of the most modern and well equipped leader of steel fabrication yard located in jl. Raya Bekasi, east Jakarta with an initial annual capacity of 5.000 metric tons, primarily for preengineered steel buildings.

Entering the 21st century, **alpi** / **Arkon** J.O with fully supported by professional management, skilled & well trained staff and workers, the J.O will expand its market abroad, such as Australia, Asia, Middle East and Africa hrough longstanding relationships with many of leading Construction Contractors as well as OEMs around the world. To ensure the Company's products meet international standard requirements, the Company had adopted and implemented ISO 9001 – 2000 as its quality management system.

Equipped with the right know-how, production and handling tools, **alpi / Arkon** experienced professionals are able to up hold the international codes and standards such as, AWS, AISC, JIS, CSA, BS, DIN, ASME, as well as the Indonesian standard for design of Formwork & Falsework Systems and any steel structure buildings (PPBBI) requirement.

Visit their website at http://www.arkonprima.co.id todav.



Equipped with the right know-how, production and handling tools, alpi / Arkon experienced professionals are able to up hold the international codes and standards such as, AWS, AISC, JIS, CSA, BS, DIN, ASME, as well as the Indonesian standard for design of Formwork & Falsework Systems and any steel structure buildings (PPBBI) requirement.









# erection, dismantling & after sale services

#### **Erection & dismantling:**

With a vast experience in erection and dismantling, alpi sea can deliver any size of project on time.



experienced technical personnel will be at our customer's service, on site & wherever their project is located in the world.

For all projects, the assembly of Formwork and the first castings of concrete take place under the supervision of **alpi sea**'s technical staff. In this way, not only the correct implementation of the system is secured but also training of contractor's site personnel is achieved.

In order to provide perfect concrete



surfaces, the Formwork has to be kept properly, in good condition and looked after. **alpi sea** provides reconditioning/maintenance services facilities.

The Formwork is checked for damage and dimensional accuracy. Necessary cleaning and repair works are performed to increase the lifetime of the Formwork to improved performance and undertake modifications if required by the client.





## **ALPI SEA'S CONSTRUCTION SERVICES**

After many years in the domain of designing, manufacturing and supplying Formwork and Falsework, alpi sea, at the request of some of our clients, started to offer actual construction services in 2002. In the first instances these services were connected with the efficient use of our Formwork Systems.



We'll get your concrete in shape.

However, once seeing the quality of our construction work and our total commitment to efficiency, clients invited **alpi sea** to carry out complete building works, from the foundations down to the finishing touches.



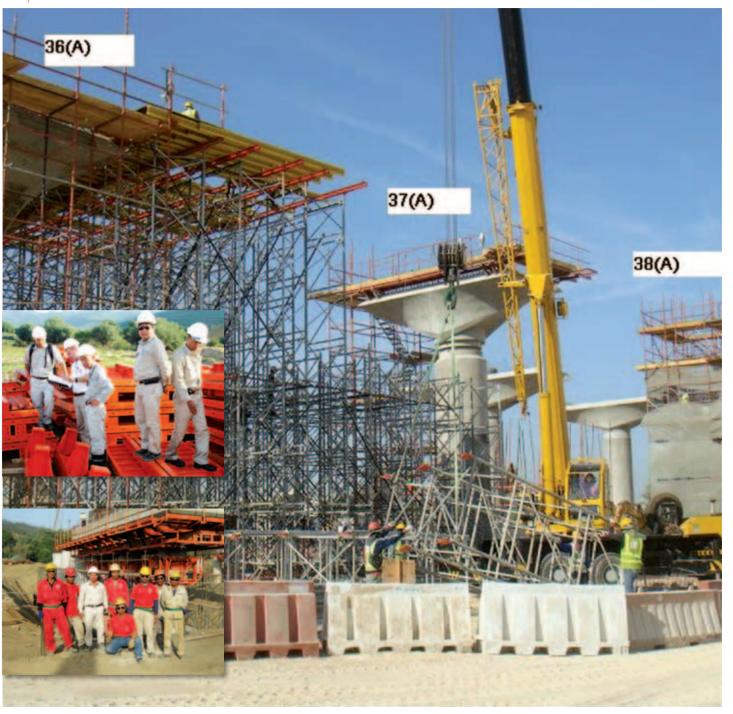








We'll get your concrete in shape.



We'll get your concrete in shape.

#### **SERVICE**

We use communication to improve the speed and affectiveness; and to aid and make solutions less complicated.

Thanks to our modular structure and the **alpi sea**'s network, we can plan and implement projects worldwide as easily as for our clients next door.











We'll get your concrete in shape.



# transport & logistics



Since its beginning, **alpi sea** has dedicated itself to project's Formwork & Falsework forwarding all around the world. **alpi sea**'s transport & logistic's team has proven track-record (thanks to our "Template of Origin") of transporting all types of heavy & oversized equipment, Formwork, Falsework, Steel Structures and accessories to even the most remote sites.



#### **Template of Origin**



#### Sea Freight



Sea freight for **alpi sea** represent an average part of 60% of the different means of shipping, this method of transportation is used for quasi-all our projects all around the world



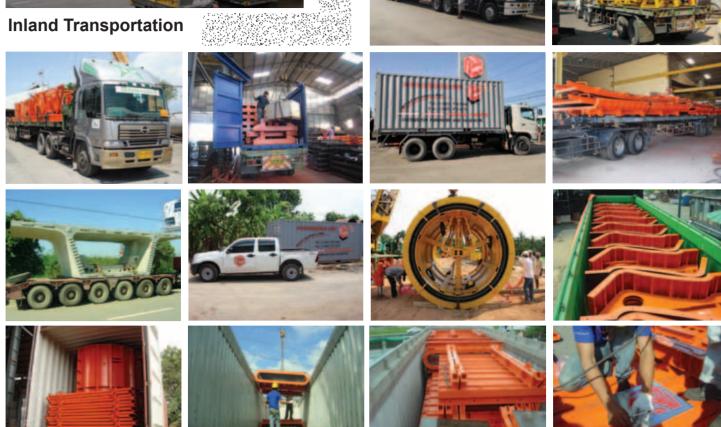
For our local projects or for the border projects of Thailand, **alpi sea** is using an inland transportation which represents 40% of shipping.

We'll get your concrete in shape.

## Air Freight



In case of urgent request for more accessories or lightweight equipment, **alpi sea** is able to send out via Air Freight these materials as soon as requested on site.



We'll get your concrete in shape.



# parts & accessories





Small tools & components must be as versatile as the Formwork:

- Ties and anchors.
- · Second operation moulds.
- Small PVC tools and components.

## **Hydraulic Power for all Applications**











## **Normal / High Frequency External Vibrators**





**alpi sea** provides all range of vibrators, from electric and/or pneumatic for continuous (nonstop) vibration applications.

Our systems will meet all kinds of situations. Durability according to our design specification, based on strong and simple requirements, with LOW maintenance & LONG life, suited for the consolidation of the concrete, in combination with precast Formwork Systems (moulds) and vibrating table forms.









The frequency can be set (from 0 to 9.000 vibrations) when used in combination with an adjustable frequency inverter. This feature minimizes sound emissions as well as increasing consolidation performance.

All models are also available in special versions for all International standard frequencies & voltages.





Pin M16x110 p/n: 10P1611



Safety Pin p/n: 151600



Bolt / Nut Washer M16/140 p/n: 10B1614



Tie Rod T20/23 p/n: 11T1508 Tie Rod T15/17B. p/n: 10T1507B.



Tie Rod T15/17W. p/n: 10T1507W.



Wingnut Base 100 mm p/n: 10E0100



Wingnut Base 60 mm p/n: 10E0060



Wingnut Base 40 mm p/n: 10E0040



Wingnut Base 60 mm D20 p/n: 10E6020



ASEA Wingnut Base 35 mm p/n: 10E0035



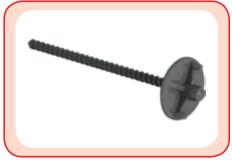
Check Nut 15 p/n: 10E1150



Nut E15 L50 p/n : 10E1500



Weldable Nut D15 p/n: 10W1500



Coupling Device p/n: 0140000



Watertight Coupling D15 p/n: 10E0155



Coupling D15 p/n: 10E0156



Coupling D20 p/n: 11E0100



Plastic Cone p/n: 1040002



Steel Shear Cone D15 p/n: 1041500



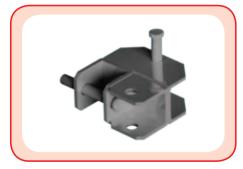
Rubber Plug p/n: 1040000



Stabilizer 400 p/n: 0744000



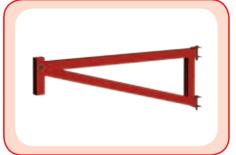
Stabilizer 200 p/n : 0742000



Bracket for Stabilizer p/n: 0740002



Base for Stabilizer p/n: 0740001



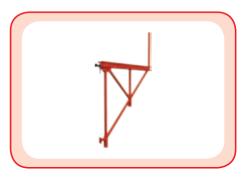
Walkway p/n : 11E0001



Bracket for Walkway p/n: 0840002



Parapet for Walkway p/n: 11E0002



Climbing Console p/n: 0940091



Free Clamp p/n: 0140014



Climbing Bracket p/n: 0940002



Steel Shearing Cone p/n: 1041500



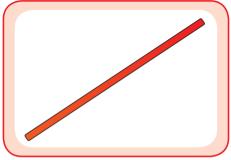
Crane Hook p/n : 0140012



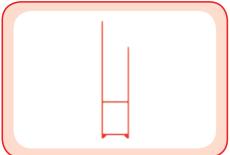
Midi Clamp p/n: 0140006



Stop End p/n : 0140013



Tube for Alignment 6.0 m p/n: 0140011



Console Bracket p/n: 0940092



Mini Clamp p/n: 0130005



Crane Hook p/n: 0130007

## Scaffolding Accessories



Caplock: Tower



Caplock: Horizontal Single Bracing



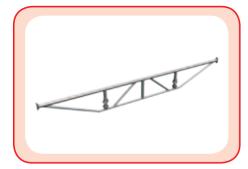
Caplock : Adjustable Base Plate



Caplock: Extention Walk Way



Caplock: Diagonal Bracing Swivel



Caplock: Horizontal Double Bracing

## **Scaffolding Accessories**



Caplock: Board Braket



Caplock : Steel Plank



Caplock : U-Head



Caplock: Caster Wheel



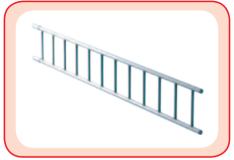
Caplock : Ladder Bracket



Caplock : Stair



Caplock: Swivel Brace

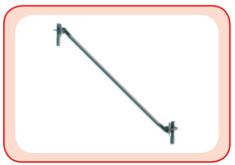


Ringlock: Ladder



Ringlock : Stair

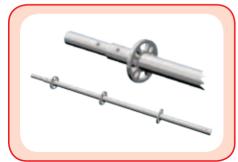
## **Scaffolding Accessories**



Ringlock: Banister



Ringlock: Caster Wheel



Ringlock: Tower



Ringlock: Horizontal Bracing



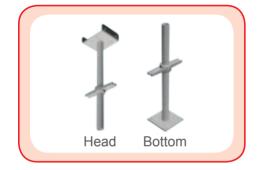
Ringlock: Diagonal Bracing



Ringlock: Steel Plank



Ringlock : Base



Ringlock: Screw Jack



Ringlock: Head Jack

## **Scaffolding Accessories**







Ringlock: Pipe Clamp

## **Tension / Thread Bar Systems & Special Accessories**













**alpi sea** has been designing & manufacturing a range of architectural ties & supports including a wide range of small diameter high tensile tension bars, thread bars, screw jacks, tie rod systems & special accessories which have all successfully been used on many major of their Formwork & Falsework Systems for equipment such as balance cantilever, launching gantries, movable scaffolding systems and all special custom made Formwork which are incorporated into the design of Formwork and Falsework Systems. Elegant tension structure bar systems provide architectural style, engineering strength and economic cost effective solutions.



# our references



























































