



**SPEAKER**

**Julien Raybaud-Gines**

General Manager  
Bar Systems  
Dextra Group

**SESSION 6: Revolutionising Ports and Terminals**  
An Overview of Current Trends and Innovations  
in Infrastructure Performance

# Use of Composite & Steel Materials and Precast Technology in Marine Structures

DoubleTree by Hilton Istanbul Piyalepasa, Türkiye  
Thursday, July 6<sup>th</sup>, 2023

# Company Introduction



Established 40 years ago in 1983, Dextra is a leading manufacturer and distributor of **engineered construction products** for the building and civil industries.

For over 15 years, Dextra has been selling a **comprehensive range of steel bar systems** suitable for a variety of concrete, ground engineering and structural steelwork applications.

The combination of our in-house expertise and design capability with modern manufacturing facilities has allowed us to supply to major construction projects such as **Jebel Ali Port in Dubai**.

We are moving forward to become a **global leader in engineered solutions** for the construction industry, providing high added value in terms of **quality, safety, and service**.



## Leader in design and manufacturing of engineered solutions

Over 40 years of experience on the world's most prestigious projects



Integrated engineering  
& manufacturing  
products & equipment



80+ fabricators &  
distributors worldwide



International  
& local contractors



Landmark projects:  
high-rise, infrastructure  
and energy projects



Compliance with  
international standards,  
approved by major  
consultants

# Global Presence



80+ Distributors - 12 Offices - 3 Factories

# Manufacturing Capabilities



Bangkok, Thailand



Mumbai, India



Guangzhou, China





Speed of execution & increase  
in productivity



Sustainability & Durability



Quality & Safety



Modularity

## INNOVATION

Applications  
&  
Materials

Production processes

# DEXTRA Fiber Reinforced Products



Fibers

Resin



The perfect Alternative To Steel



### Stronger & Lighter than steel

- 2x the tensile strength of steel
- 1/4 weight of a steel bar of same diameter



### Non-corrosive, non-conductive

- Material doesn't corrode and offer high resistance to chlorides and alkali. Particularly suitable for environments exposed to water, salt, & humidity.
- Non-conductive. It's the perfect reinforcement solution for high voltage currents and magnetic fields.



### Simplified Installation

- Delivered in straight bars up to 11.8m or in coils.
- Labor required for installation reduced by 2x to 3x.



Material is safe & easy to handle, requiring much less labor for installation, generating both time & money saving.

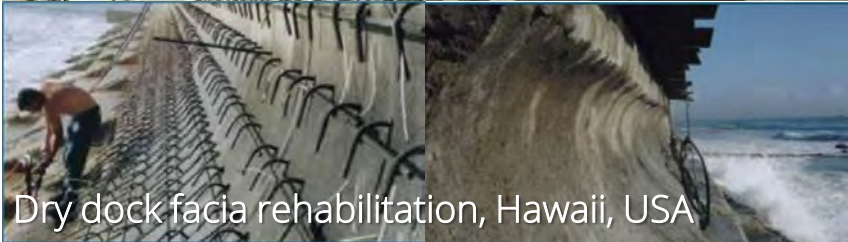


Durable material, allowing to design for a longer lifetime of the structure. As no maintenance nor repair work is needed, ASTEC generates savings during the whole project life.



Sustainable material, with significantly less energy required & CO<sub>2</sub> emission, both at production stage and for its transportation & installation.

# Marine Applications



Dry dock facia rehabilitation, Hawaii, USA



Dock of Aramco, KSA



Elizabeth Quay, Australia



Jizan Flood Mitigation Channel, Saudi Arabia



# Marine Applications

## Construction of Quay & Jetty



**Outer skin of wall in contact with sea-water**

# Marine Applications

Storage of Oil & Gas at Port Terminal



Dextra



2018 05 23



# Marine Applications

## Dry-Dock Rehabilitation



Dextra



**Grid of 19mm (#6) GFRP bars  
doweled and epoxied in place**

# Marine Applications

## Jetty Repair / External Strengthening



Dextra



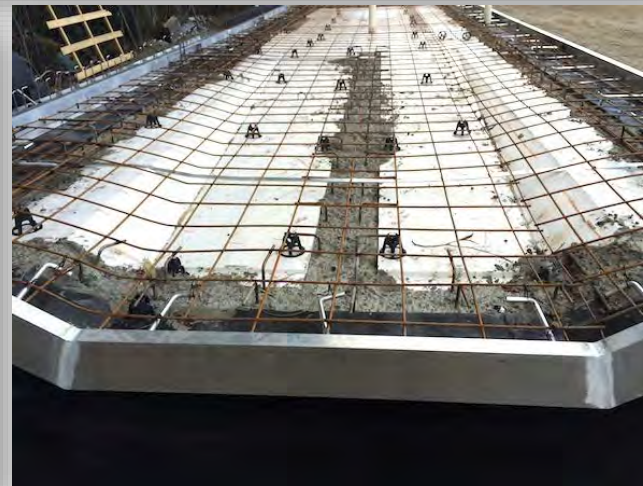
**Concrete with GFRP dowels  
& post-tensioned steel bar**

# Marine Applications

## Platforms and Floating Structures



Dextra



**Precast and Composite  
Materials at glance**

# Marine Applications

## Sea Walls



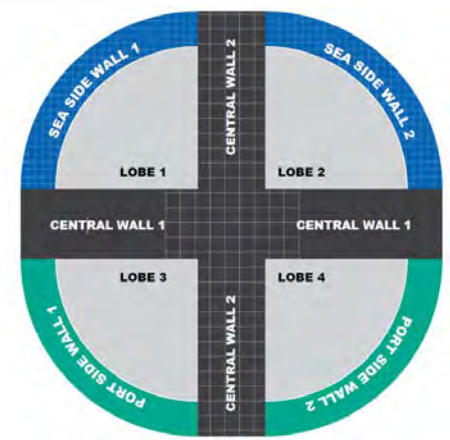
**Precast and  
Composite Materials  
at glance**

# Marine Applications

## Caissons Structures



Dextra



**Dextra Couplers = splicing Systems designed for the connection of concrete reinforcing bars**

# DEXTRA Marine Tie Bars



*Short installation time thanks to reduced assembly scope*



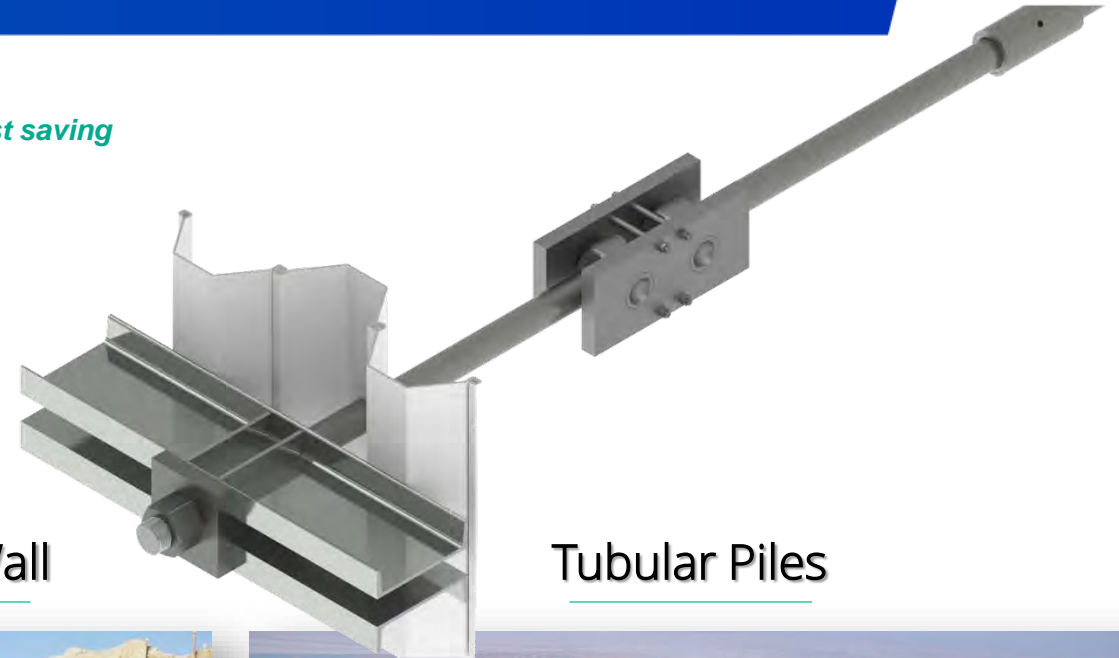
*Control over delivery sequence*



*Overall efficiency in detailed design phase*



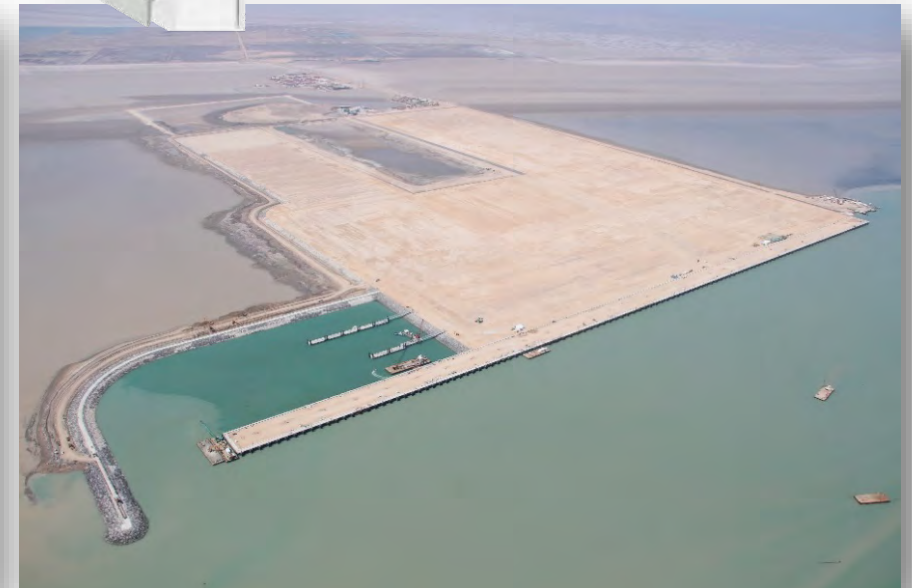
*Cost saving*



Steel Piles

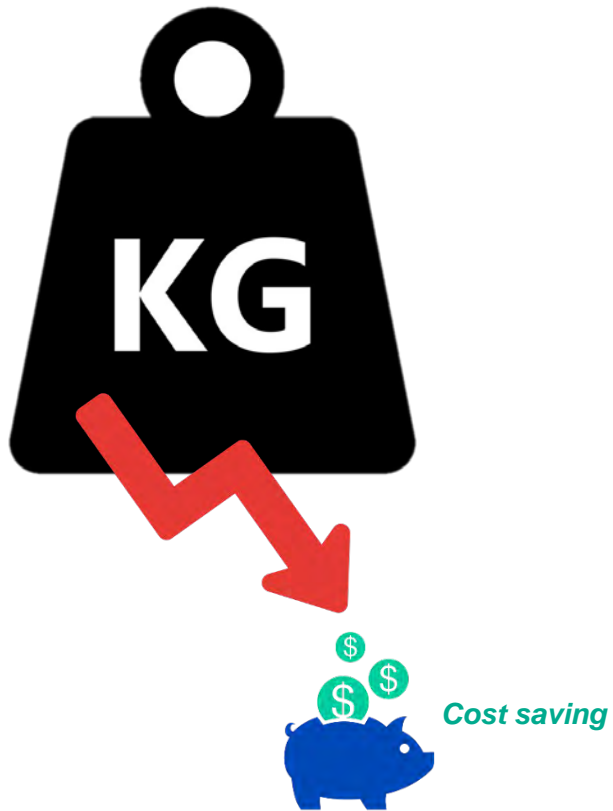
Diaphragm Wall

Tubular Piles





Increase steel grades, reduce diameters and go  
"lighter"



For a given working load of 4,400 kN

Grade	500	700
Diameter	110 mm	95 mm
Weight per 1m	75 Kg	56 Kg

Up to 25-30% savings  
for the contractor with Grade 700

# CAD & BIM Technical Tools



Get fast and precise 2D & 3D design



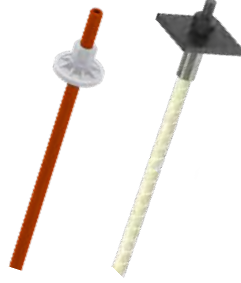
Easy to use



Up-to-date libraries



Dedicated support



Ground Engineering



Tension Rods



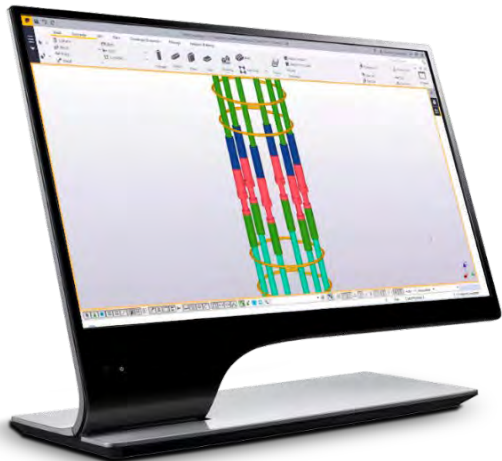
PT Bars



Marine Tie Bars



Rebar Couplers



# ESG Responsibility



**REDUCE**   **REUSE**   **RECYCLE**





# Producing "smarter"



01

IFC



02

ISO 14001



03

LCA





Akkuyu Nuclear Power Plant, Turkey

# THANK YOU

Name: Julien Raybaud-Gines  
E-Mail: [jrgines@dextragroup.com](mailto:jrgines@dextragroup.com)

-  [www.dextragroup.com](http://www.dextragroup.com)
-  [www.facebook.com/dextragroup](https://www.facebook.com/dextragroup)
-  [www.linkedin.com/company/dextra-group](https://www.linkedin.com/company/dextra-group)
-  [www.youtube.com/dextragroup](https://www.youtube.com/dextragroup)