



Dextra

BORNEO
INTERNATIONAL
MARITIME WEEK 2025



SPEAKER:

Julien Raybaud-Gines

General Manager
Engineered Bars Systems
Dextra Group

Transmission Line Project
Malaysia

Session 6

Next Generation Ports

Innovations for Green Technology,
Decarbonisation and Process
Improvements in Building Resilient Ports.

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

Tuesday 28 to Thursday 30 October 2025
Promenade Hotel Bintulu, Sarawak, Malaysia

Global leader in design and manufacturing of engineered solutions

Over 40 years of experience on 20,000+ of the world's most prestigious projects



Integrated engineering
& manufacturing
products & equipment



90+ fabricators &
distributors worldwide



International
& local contractors

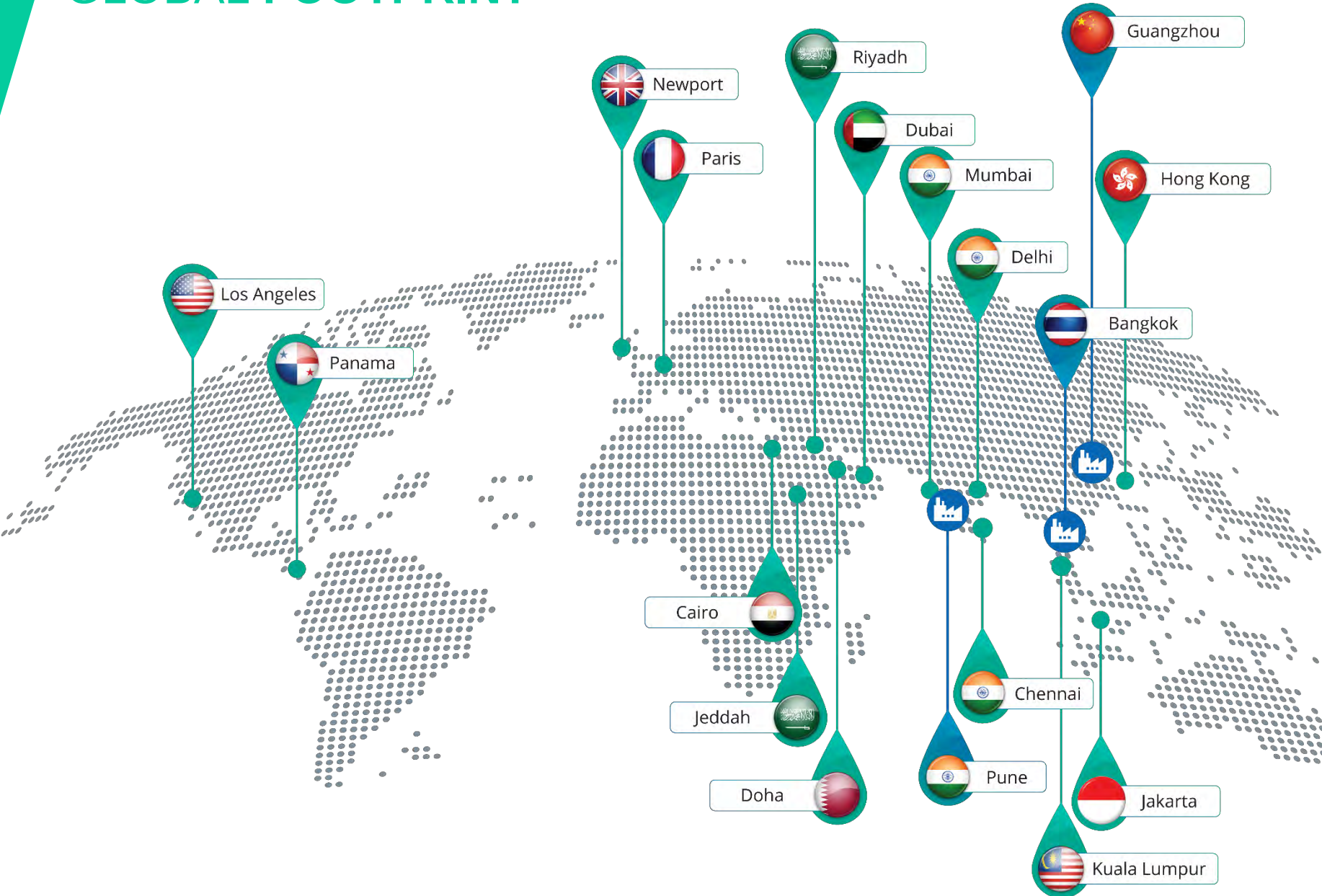


Landmark projects:
high-rise, infrastructure
and energy projects



Compliance with
international standards,
approved by major
consultants

GLOBAL FOOTPRINT



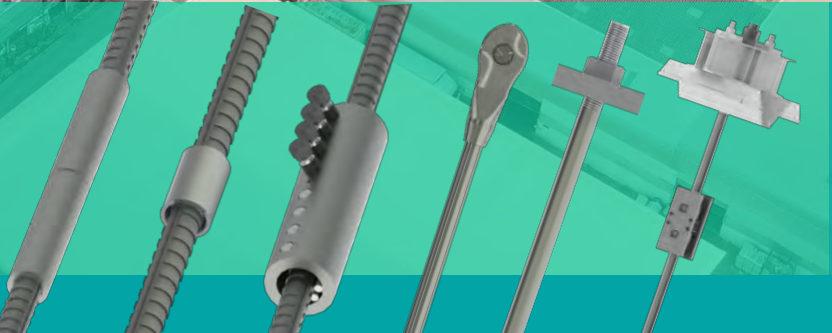
17

Locations

3

Manufacturing
Plants

MANUFACTURING CAPABILITIES





Bangkok, Thailand

16 Million Splices p.a.

12,000 Tons Bars p.a.

60,000 Sonic Tubes p.a.

150 Equipment Sets p.a.





Guangzhou, China

8 Million Linear Meters FRP bars p.a.

2 Million Linear Meters FT bars p.a.

1.6 Million Linear Meters Core bars p.a.

360,000 Sonic Tubes p.a.





Pune, India

8 Million Splices p.a.

3.4 Million Linear Meters FRP
bars p.a

540,000 Sonic Tubes p.a.



INNOVATIONS FOR PORTS INFRASTRUCTURE AND PERFORMANCE



Speed of execution & increase
in productivity



Quality & Safety



Sustainability & Durability

INNOVATION

Applications
&
Materials

Production processes

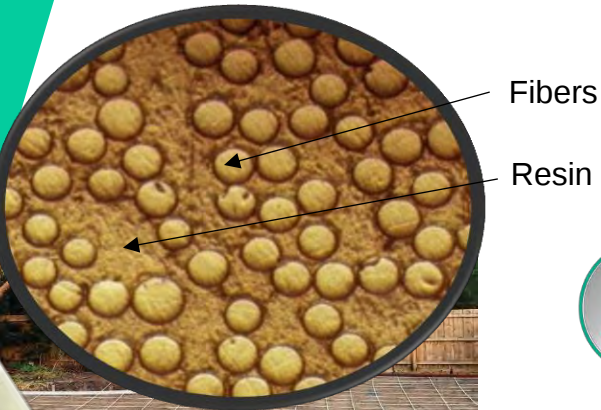


Modularity

DEXTRA FIBRE REINFORCED PRODUCTS



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



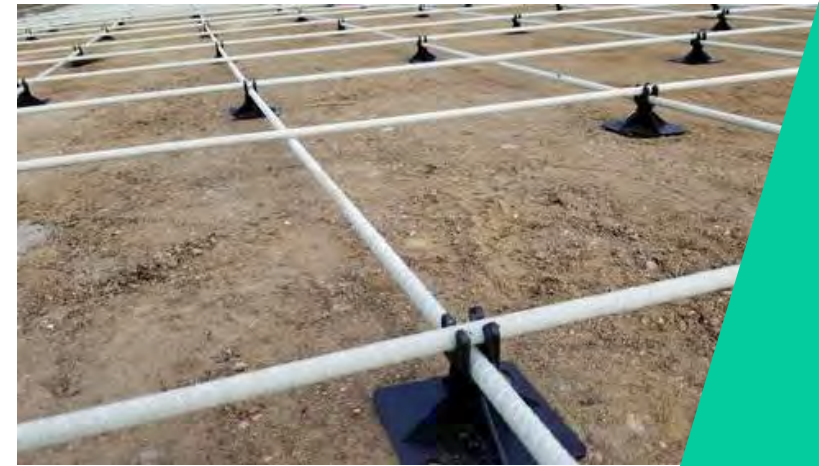
Non-corrosive, non-conductive

- 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.



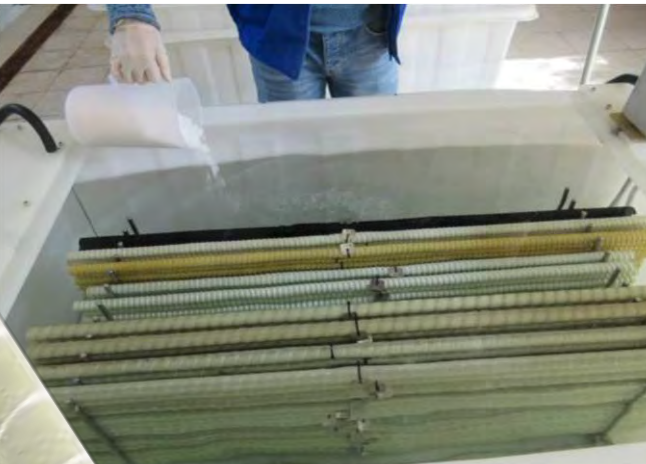
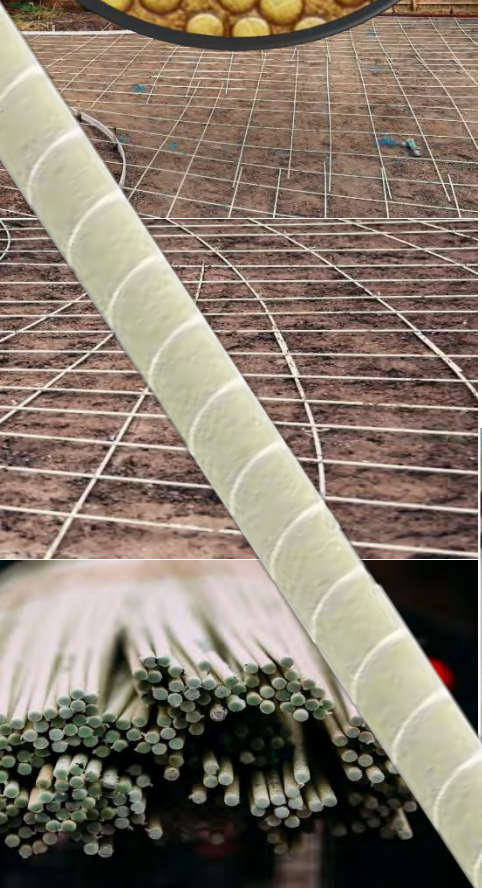
Material is safe & easy to handle, requiring much less labor for installation, generating both time & money saving.



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 and CO₂ emission, both at production stage and for its transportation & installation.



MARINE APPLICATIONS



Construction of Quay & Jetty



Outer skin of wall in contact with sea-water

MARINE APPLICATIONS

Storage of Oil & Gas at Port Terminal



Dry-Dock Rehabilitation



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

Jetty Repair / External Strengthening



Concrete with GFRP dowels
& post-tensioned steel bar

Platforms and Floating Structures



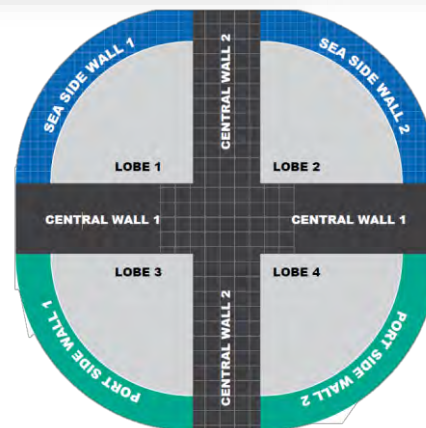
Precast and Composite
Materials at glance

Sea Walls



Precast and Composite
Materials at glance

Caissons Structures



Dextra couplers = splicing systems designed for the connection of concrete reinforcing bars

MARINE TIE BARS



Short installation time thanks to reduced assembly scope



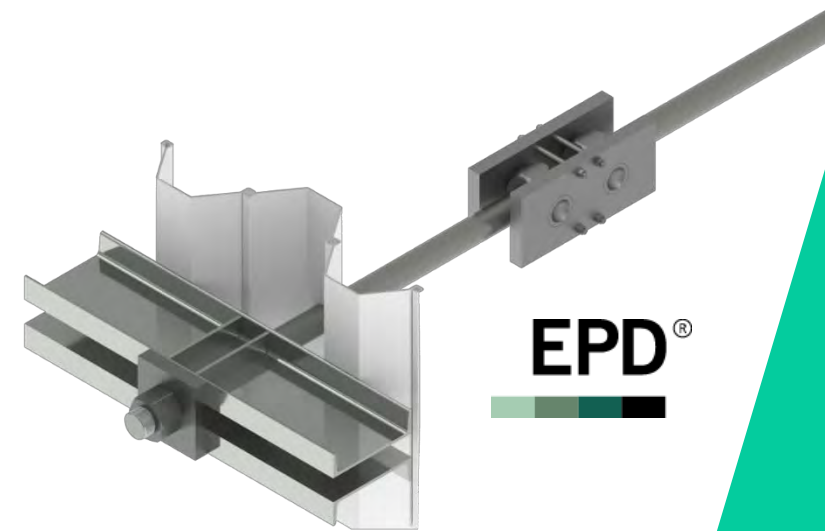
Overall efficiency in detailed design phase



Control over delivery sequence



Cost saving



Steel Piles



Diaphragm Wall



Tubular Piles



MARINE TIE BARS

Increase steel grades, reduce diameters and go “lighter”

For a given working load of 4,400 kN



Cost saving



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		

SEA-SAND SEAWATER CONCRETE (SSC)

Life cycle cost analysis of structural concrete using seawater, recycled concrete aggregate, and GFRP reinforcement have shown significant CO₂ reductions along with cost savings



Substitute the use of freshwater with saltwater for concrete production ...

To construct durable and economical concrete infrastructures

Key benefits:

1. Resource Conservation
2. Early Strength
3. Sustainability
4. Cost Efficiency
5. Durability



Coastal Enhancement
Works at Lei Yue Mun (HK)

SEA-SAND SEAWATER CONCRETE (SSC)



SUSTAINABILITY

Beyond direct reductions of 60% to 70% of embodied carbon (CO2)

Biggest impact is the reduction of CO2 from concrete itself: reduce the quantity - up to 30% - and change its composition with recycled materials

GFRP Rebars	Sea-sand Seawater	Recycled Concrete Aggregate (RCA)
		

ACI Committee 243 - Seawater Concrete

New ACI committee whose mission is to develop and report information on concrete made with brackish, saline, and brine water and sea aggregates

As of June 2024 - Dextra is associated member of this new committee



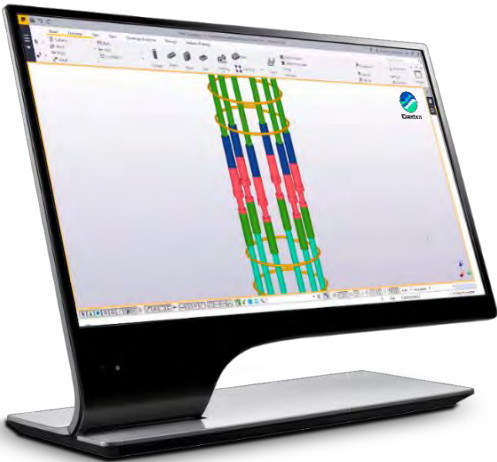
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Rebar
Couplers



Tension
Rods



PT Bars



Marine
Tie Bars



Ground
Engineering

 **Tekla**



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ALLPLAN



 **rocscience**



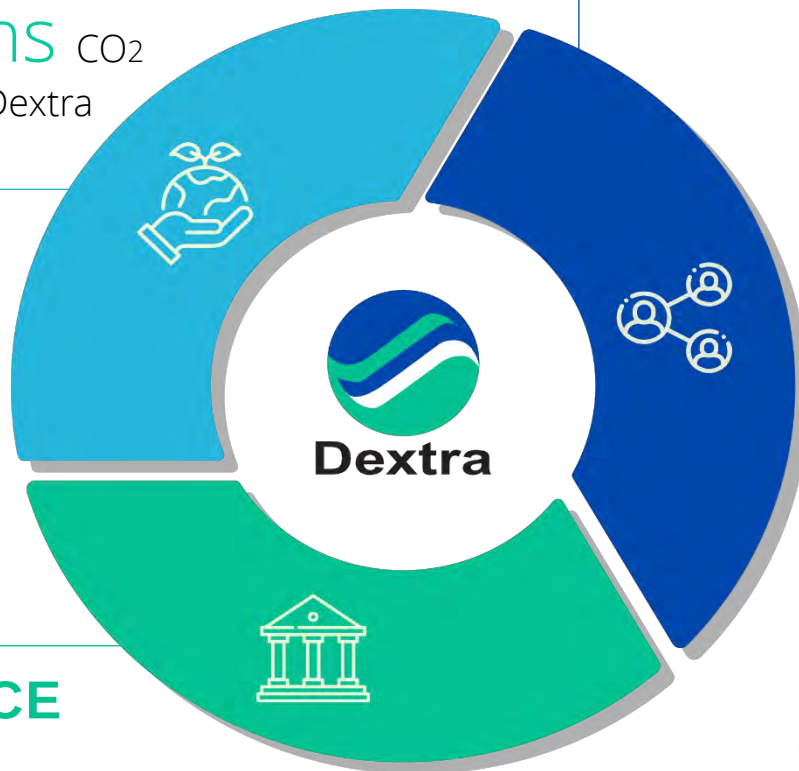
Free Download 

www.dextragroup.com

ESG POLICY

ENVIRONMENTAL

60,000 Tons CO₂
emissions saved by Dextra
couplers in 2024



SOCIAL

88%

Employee Engagement rate
score achieved in 2024

GOVERNANCE

- Legal & Regulatory compliance
- Code of conducts & ethics
- Risk management
- Stakeholder engagement



ENVIRONMENTAL CERTIFICATIONS



THE INTERNATIONAL EPD® SYSTEM



Dextra solutions are **EPD (Environmental Product Declaration)** verified and officially listed on the **EPD Hub** website

- ✓ Marine Tie Bars
- ✓ Tension Rods
- ✓ Post-Tensioning Bars
- ✓ Rebar Couplers
- ✓ GFRP Rebars
- ✓ Steel Ground Anchors
- ✓ Steel Self-Drilling Rock-Bolts
- ✓ Steel Combination Bolts
- ✓ Sonitec CSL Tubes



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THANK YOU