



**PRODUCTS
AND SERVICES**



CORPORACIÓN DE CIENCIA Y TECNOLOGÍA PARA EL DESARROLLO DE LA INDUSTRIA NAVAL, MARÍTIMA Y FLUVIAL



OUR CORPORATION

We are an organization that generates and transfers knowledge from our applied research, development and innovation processes, leading both the technological evolution and competitiveness of the naval,



LOCATION

Strategically located in Cartagena de Indias, Colombia, 265 miles from the Panama Canal, which is easily accessible from the Caribbean's most important maritime routes.



WHAT WE DO

Our product and service offering considers life cycle management from support in defining requirements and design and construction, to after-sales followup, maintenance and revamp of vessels, naval artifacts and their end-of-life decommissioning and disposal

FACILITIES



MAMONAL | Sistema Syncrolift

Lifting Capacity	Length	Draft	Beam	Dry Dock Positions	Berthing Positions
3,600t	120 m	5,8 m	22 m	9	4

BOCAGRANDE | Sistema Slipway

Capacidad de levante	Length	Draft	Beam	Dry Dock Positions	Berthing Positions
1,200t	66,5 m	4.3 m	14 m	2	3

INDUSTRY SERVICES

Our installed capacity and experience in the shipbuilding sector enables us to offer services and solutions tailored to the industry, which makes us a key player in the sustainability of industrial companies in Colombia.



- Manufacture of metal structures and containers.
- SMAW, GTAW and FCAW specialized production and maintenance welding
- Machining and manufacturing of parts.
- Lathe, bending machines, rolling machines and cutting tables, 12 meters long.
- Electrical workshops authorized by SIEMENS
- Equipment calibration laboratory with ONAC accreditation
- Preparation of external surface in tanks with Waterjetting using automated equipment
- Specialized engineering development services for automation and instrumentation projects
- Engineering services in analysis and simulation of complex systems and structures
- Diesel engine maintenance (MTU, Detroit, Caterpillar, MAN, Cummins, among others) up to 5,000 HP, with dynamometer testing for engines up to 2,000 HP
- Construction of parts and containers in fiber and composite materials.
- Heating, ventilation, and air conditioning (HVAC) systems. BITZER Authorized Workshop.
- Inspection and non-destructive testing using ultrasound,
- magnetic particle testing, positive material identification, and ultrasonic leak testing.
- Exclusive representative of Wärtsilä Marine and Wärtsilä Voyage for the defense sector.



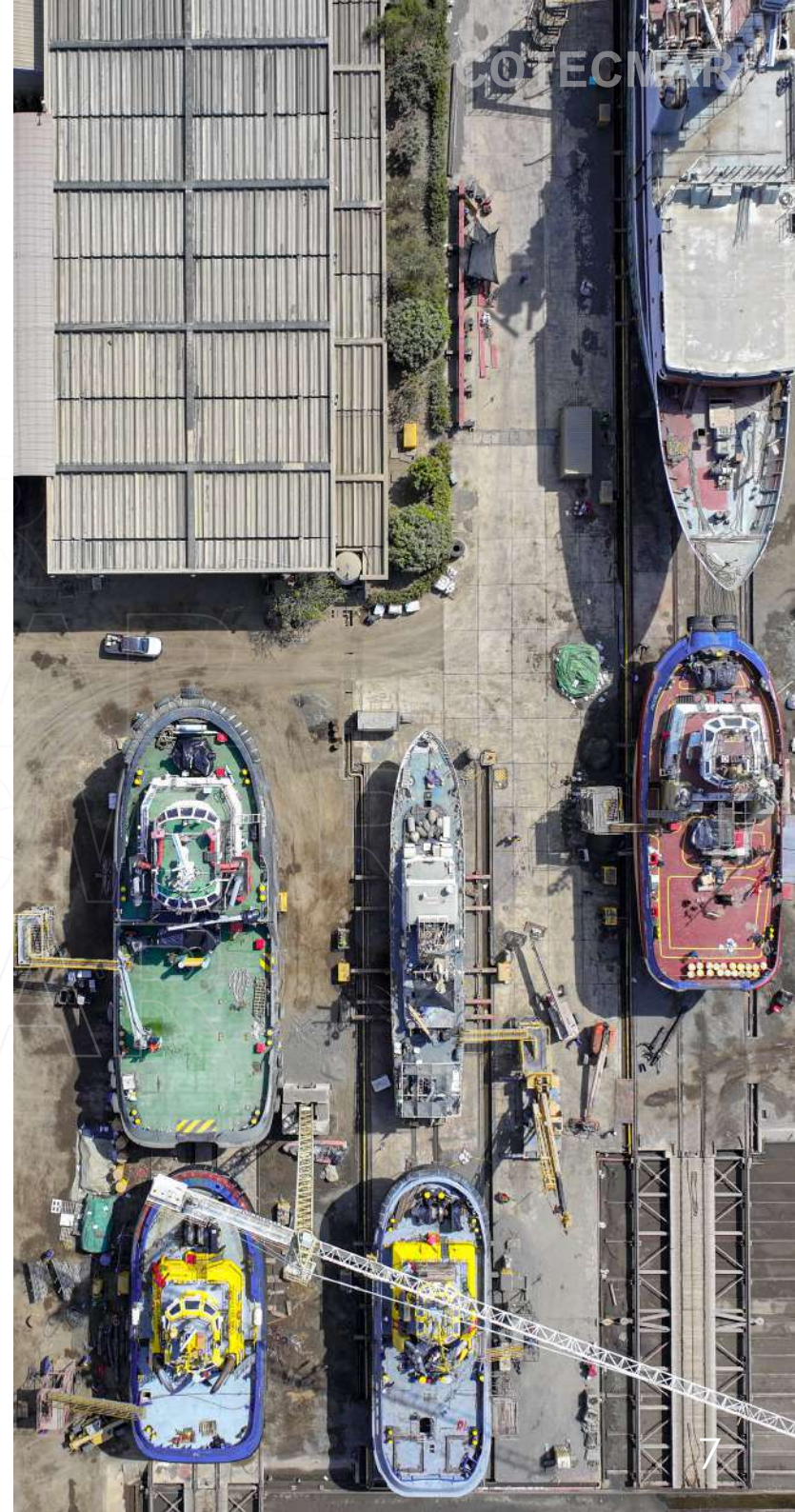
REPAIR AND MAINTENANCE



Our commitment is to ensure the efficient and safe operation of our clients' fleets through repair, maintenance, revamp, repowering and conversion services with facilities strategically located in the Caribbean, international standards, our own capabilities (in-house workshops), and highly trained and experienced personnel.

Types of vessels serviced

- Oil Tankers
- General Cargo Ships
- Tugboats
- Barges
- Dredges
- Tuna/Fishing Vessels
- Yachts
- Passenger Ships
- LNG Carriers
- Chemical Tankers
- International Security and Defense Vessels



PROPULSION AND MECHANICAL SYSTEMS

- Fixed-pitch, controllable, and variable-pitch propulsion systems.
- Maintenance of azimuth and Voith-Schneider propulsion systems.
- Steering systems.
- Laser alignment.
- Valve test bench.
- Heat exchanger.
- Heating, ventilation, and air conditioning systems.
- Maintenance of hydraulic systems.

ELECTRONICS

- Electronic integration of equipment.
- Propulsion control.
- Sensor installation and maintenance.
- Specific engineering services for automation and control projects on vessels.
- Remote monitoring systems for main and auxiliary machinery (AMS).
- Generator load management systems (PMS).
- Synchronization and management.
- Variable pitch remote control system.
- Generator control.
- Alarm monitoring system.
- Modernization of generator control systems.
- Digitization of auxiliary systems.

WELDING AND TESTING

- Steel, aluminum, and stainless steel.
- Cargo hold lids.
- Construction, manufacturing and renovation of pipes.
- Ultrasonic thickness measurement.
- NDT (non-destructive testing)

HABITABILITY AND PAINTING

- Sandblasting, hydroblasting, gritblasting and water jetting (44000 psi).
- Robotic equipment for "Hydroblasting".
- Conventional and silicone scheme.
- Tank clean-up and painting.
- Installation and application of indoor and outdoor flooring (non-slip)
- Manufacturing of wooden/ metal furniture.
- Manufacture and installation of thermal insulation for hot and cold pipes.

AIR CONDITIONING AND REFRIGERATION

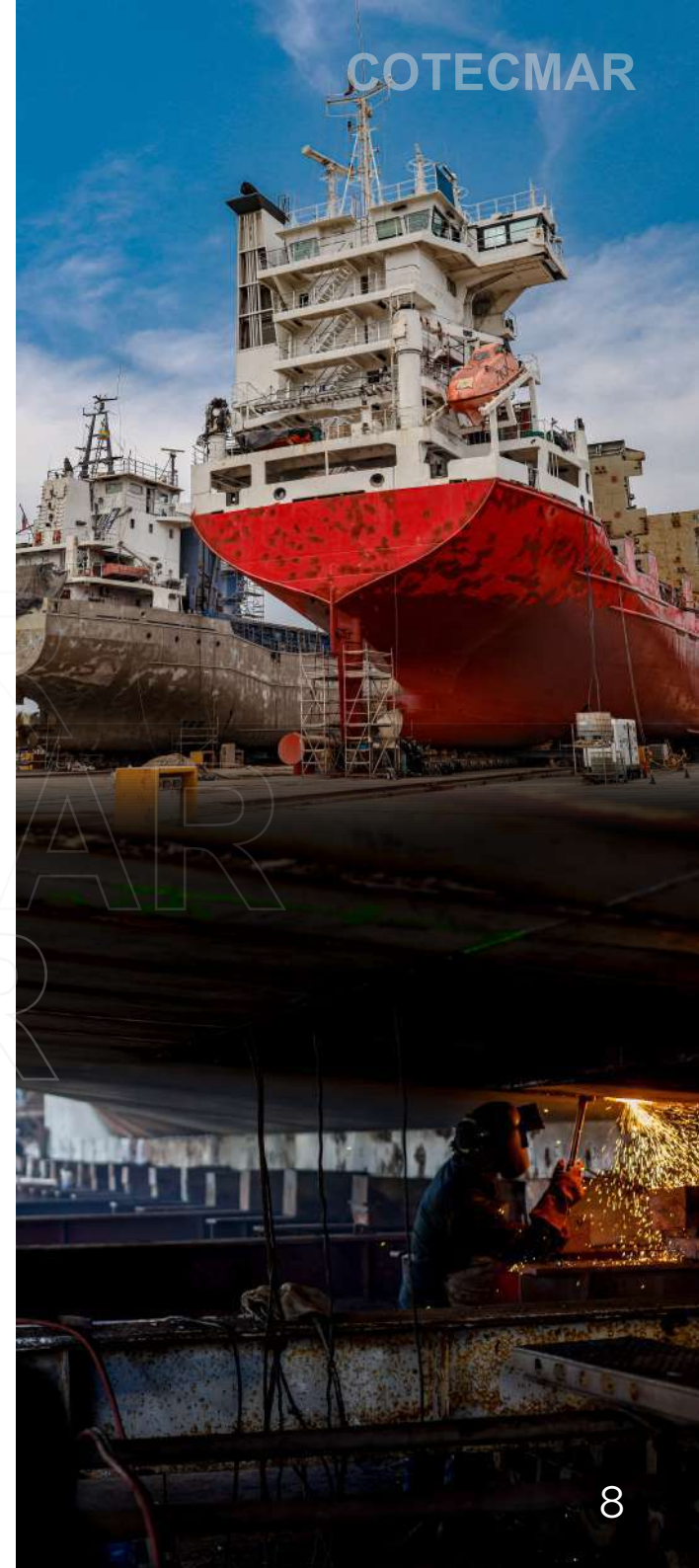
- Maintenance of air conditioning units
- Maintenance of refrigeration systems
- Maintenance of refrigeration tanks

DIESEL ENGINES

- Maintenance and overhaul of MTU, DETROIT, CATERPILLAR, CUMMINS, WARTSILA, MAN, DEUTZ engines
- Test bench (dynamometer) up to 2000 HP.
- Vibration measurement and testing.

ELECTRICITY

- Electric generators.
- Electric motors.
- Transformers and converters.
- Electrical panels.
- Air conditioning unit control systems.
- Static analysis of windings for motors up to 5000V





Major repairs and revamps for tuna-type vessels.

- Steel work in tanks
- Thermal insulation and polyurethane.
- Manufacturing and installation of coils.
- Maintenance of motors and generators.
- Works of prefabricated or traditional carpentry.
- Extensive work on pipes, winches, davitts and fishing systems.
- Modifications to the ship's design and functionality.
- Mechanical protection for main piping systems.
- Design and installation of electrical systems.

Design, engineering and installation of ballast water treatment systems (BWTS).

- 3D Inspection and Scanning.
- Conceptual design.
- Basic Engineering.
- Certification by IACS classification societies.
- Detailed engineering and 3D drawings.
- Prefabrication.
- Manufacture.
- Installation.
- Commissioning.

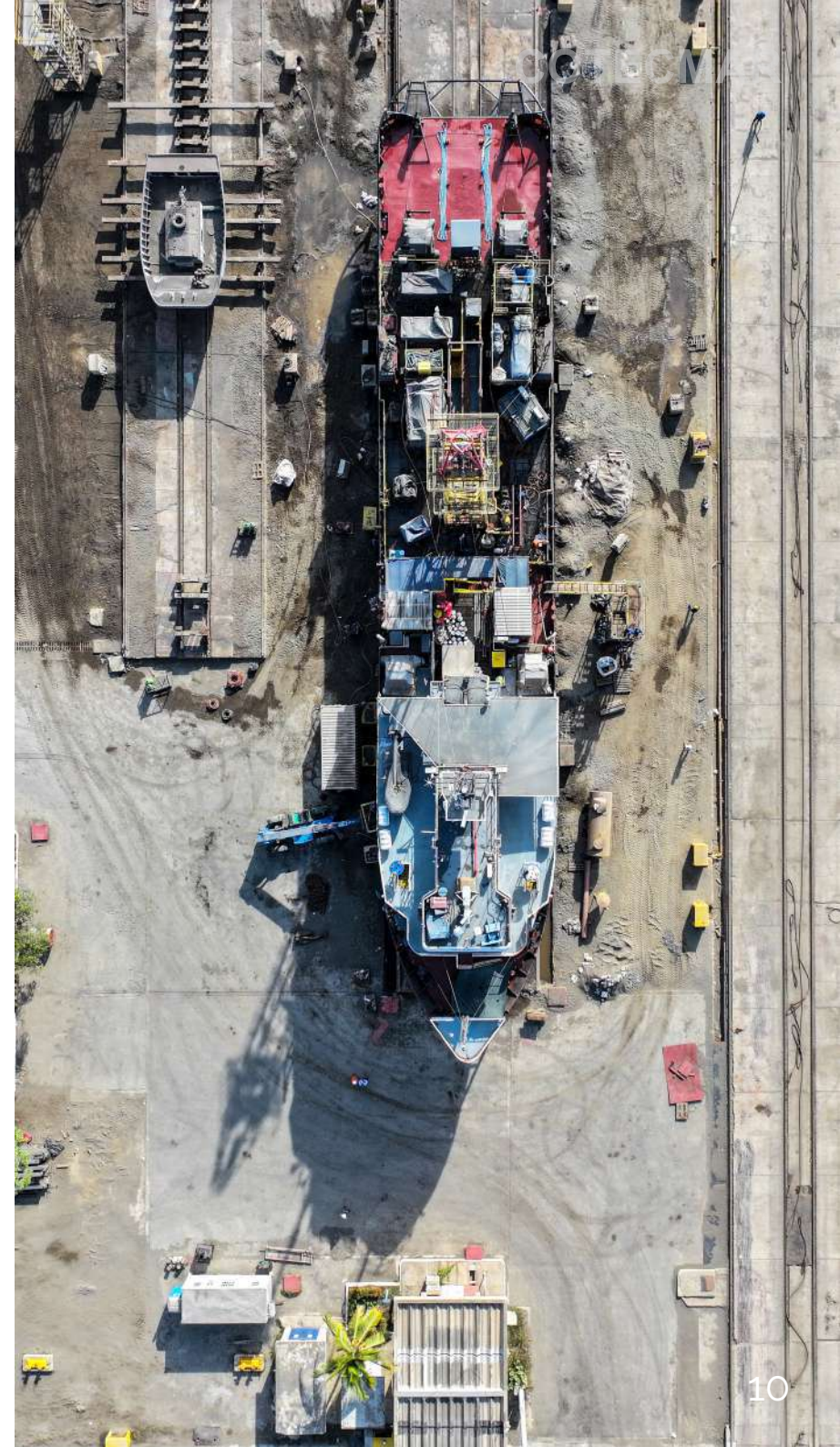


CERTIFIED AND SPECIALIZED IN-HOUSE WORKSHOPS

- Mechanics.
- Propulsion systems.
- Sheet metal work and welding.
- Surface preparation and painting.
- Electricity.
- Electronics / Automation and Control.
- Electric motors and internal combustion engines.
- Auxiliary systems.
- Prefabricated and conventional carpentry.
- Cranes up to 50t and rolling gear.
- Interior design, carpentry and metalworking services.

INTERNATIONAL QUALITY STANDARDS ENDORSED BY IACS MEMBER RATING AGENCIES

- Lloyds (local surveyor in Cartagena, Colombia).
- Bureau Veritas (local surveyor in Cartagena, Colombia)
- ABS (local surveyor in Cartagena, Colombia)
- DNV
- RINA: surveyor in Panama.
- And others.





DESIGN AND ENGINEERING SERVICES

SERVICIOS



Design of Vessels and Naval Artifacts

Our mission is to design ships and naval vessels to high-quality standards



Specialized Consultancy

Our team offers a wide range of specialized consultancy services in the naval, maritime, river, and industrial and energy sectors.



Integrated Logistics Support Plans

We offer ILS plans designed to optimize the availability, sustainability, and operational efficiency of naval and maritime systems, covering everything from spare parts analysis and management to maintenance planning.



Research and Development

We develop innovative solutions, aimed at generating new products and/or services, to meet the needs of our clients.



Marine Engineering

We have a group of experts with a broad global vision of the naval, maritime and river industry with excellent training and experience.



Feasibility Study

Comprehensive study and evaluation of projects that meet the needs of our clients.



Product Engineering - Virtual Models

We develop, starting from basic design and using CAD technologies, smart electronic models that enable us to generate production-oriented engineering.



Experiences in Virtual Environments

Development of virtual, augmented and/or mixed reality experiences that facilitate the integration of design and construction processes.



SCIENCE, TECHNOLOGY AND INNOVATION ACTIVITIES



Cotecmar makes available to society all the tools, knowledge and experience of the human capital of the Science, Technology and Innovation Management Unit to structure systems and processes that help organizations manage and materialize innovation in terms of products, processes and organizational capacity.

INNOVATION MANAGEMENT SERVICES.

INTELLECTUAL PROPERTY SERVICES:

Inventory of intellectual property assets, as well as design and implementation of protection strategies for such assets.

TECHNOLOGY TRANSFER SERVICES:

Design and implementation of technology transfer plans towards adopting new technologies or market developed technologies to third parties.

TECHNOLOGICAL READINESS SERVICES:

Prototyping, technological readiness, market validations, technological monitoring and competitive intelligence for the design

KNOWLEDGE MANAGEMENT SERVICES:

Design of customized knowledge management models tailored to

PROJECT MANAGEMENT SERVICES:

Formulation of projects and management of resources for Science, Technology and Innovation projects.

SPECIALIZED TRAINING:

Training for R&D&I units in Technology Management, innovation management and knowledge management; with a focus on intellectual property management, technology transfer and R&D&I project management.



SERVICIOS DE DESARROLLO TECNOLÓGICO EN INTEGRACIÓN DE SISTEMAS



Operation-based training and system maintenance



Design and integration of hardware and software solutions for the naval sector.



Design and implementation of software development methodologies.



Post Implementation support and technological upgrade.



Methodologies and procedures for the development of performance, efficiency and reliability tests of systems.



DEVELOPED TECHNOLOGIES.

COTECMAR strives to increase the efficiency and security of communications in naval operations for command and control support, developing and marketing technologies in the following fields.



COMMUNICATION, COMMAND AND CONTROL TECHNOLOGIES AND SYSTEMS.

Data Link, Public Address and General Alarm (PAGA) systems, integrated communication systems (ICS) and DDU data distribution units.



PLATFORM CONTROL TECHNOLOGIES

Remotely surface vessels (USVs) and other developments in the naval sector.



AUTOMATION TECHNOLOGIES



Systems Alarm Monitoring (AMS).

SHIPBUILDING

Maritime Security
and Defense Vessels



OCEAN PATROL VESSEL



OPV 93

TECHNICAL SPECIFICATIONS

Overall Length:	93 m
Overall Beam:	14 m
Depth:	7 m
Draft:	3,9 m
Design Displacement:	2460 t

PERFORMANCE

Maximum Speed:	18 knots
Range:	Up to 10.000 nm (at 12 knots)
Autonomy:	45 days (@ 64 people) 20 days (@100 people)

Diseño 100%
colombiano

TECHNICAL SPECIFICATIONS

Overall Length:	80,6 m
Overall Beam:	13,6 m
Depth (to first deck):	6,5 m
Design Draft (at maximum load):	3,8 m
Design Displacement:	1814 t

PERFORMANCE

Maximum Speed:	18 knots (2 x 2040 kW) 21 knots (2x4080 kW) Up to 10000 nm (@ 18 knots) Up to 4500 nm (@ 21 knots)
Range:	40 days (@ 64 people)
Autonomy:	

OCEAN PATROL VESSEL

Design licensed by FASSMER



OPV 80

COASTAL PATROL VESSEL



CPV 46

TECHNICAL SPECIFICATIONS

Overall Length:	46,25 m
Overall Beam:	7,09 m
Depth (to first deck):	4,30 m
Draft (at maximum load):	2,12 m
Design Displacement:	326,00 t

PERFORMANCE

Maximum Speed:	19 knots
Range:	2000 nm (@ 12 knots)
Autonomy:	17 days (@ 23 people)

100% Colombian Design



100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall Length:	35,25 m
Overall Beam:	7,10 m
Depth:	3,90 m
Design Draft:	1,60 m
Design Displacement:	150,60 t

PERFORMANCE

Maximum Speed:	21,00 nudos
Cruising Speed:	14,00 nudos
Range:	850 nm (@ 14 nudos)
Autonomy:	15 días
Operating Area:	G3 (<150 mn)



COASTAL PATROL VESSEL



PCL 35

LOGISTICS SUPPORT VESSEL



BALC 49

TECHNICAL SPECIFICATIONS

Overall Length:	49 m
Overall Beam:	11 m
Depth (to main deck):	3,10 m
Design Draft:	1,75 m
Design Displacement:	680 t

PERFORMANCE

Maximum Speed:	9 knots
Range:	1500mn (@ 9 knots) 2500mn (@ 6 knots)
Autonomy:	20 days (@ 55 people) 40 days (@ 19 people)



100% Colombian Design



100% Colombian Design

TECHNICAL SPECIFICATIONS

Overall Length:	60,0 m
Overall Beam:	12,5 m
Depth:	3,7 m
Draft (at maximum load):	2,7 m
Design Displacement:	1381 t

PERFORMANCE

Maximum Speed:	12,00 nudos
Range:	2500 nm (@ 10 nudos)
Autonomy:	45 días (@ 26 personas) 10 días (@ 92 personas)



LOGISTICS SUPPORT VESSEL

BAL 6012



SHIPBUILDING



Security and defense
river vessels

RIVER SUPPORT PATROL VESSEL



PAF 53

TECHNICAL SPECIFICATIONS

Overall Length:	53,10 m
Overall Beam:	9,5 m
Depth:	3,10 m
Design Draft:	1,5 m
Design Displacement:	465,17 t

PERFORMANCE:

Maximum Speed:	15 knots
Range:	5556 km (@ 10 knots)
Autonomy:	20 days (@ 61 people)

100% Colombian Design



100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall length:	40,30 m
Overall beam:	9,50 m
Depth (to first deck):	3,10 m
medium draft (at maximum load):	1,26 m
Design displacement:	373 t

PERFORMANCE:

Maximum speed	9 knots (16,7 km/hr)
Range:	2900km (@ 9 knots)
Autonomy:	20 days (@30 people)

RIVER SUPPORT PATROL VESSEL



PAF 40

RIVERINE SUPPORT PATROL VESSEL



PAF 30

TECHNICAL SPECIFICATIONS

Overall Length:	30 m
Overall Beam:	7 m
Depth:	3,1 m
Draft (at maximum load):	1 m

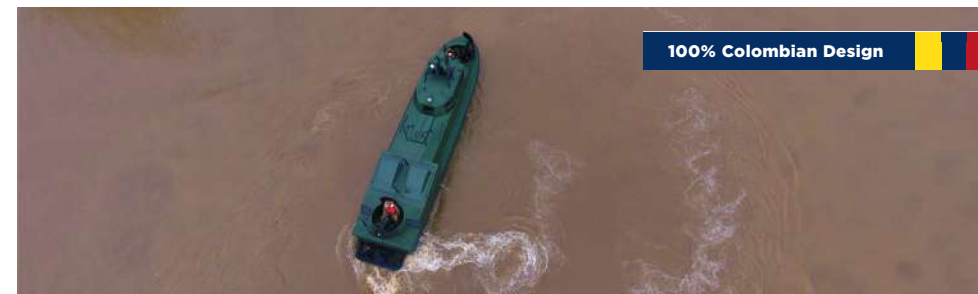
PERFORMANCE

Speed, deep water	9 knots (16,6 Km/Hr)
Range:	1560 km (@ 9 knots)
Autonomy:	12 days (@ 11 people)



100% Colombian Design

100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall length:	12,7 m
Overall beam:	2,8 m
Depth (to first deck)	1,53 m
Draft: (at maximum load:	0,65 m
Design displacement:	11 t

PERFORMANCE

Maximum Speed:	32 nudos
Range:	500 km (@ 25 nudos)
Autonomy:	5 días (@ 6 personas)



RIVERINE PATROL SPEEDBOAT



LPR

SHALLOW-DRAFT RIVER OPERATION BOAT



BOFBC 28



TECHNICAL SPECIFICATIONS

Overall Length:	8,68 m
Overall Beam:	2,42 m
Depth:	1,03 m
Draft Jack Plate Up:	0,48 m
Draft Jack Plate Down:	0,62 m
Design Displacement:	3,65 t

PERFORMANCE

Maximum Speed:	27 knots
Range:	280 km

100% Colombian Design



100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall Length:	7,7 m
Overall Beam:	2,42 m
Depth:	1,0 m
Maximum Draft:	0,37 m
Approximate Draft with engines:	0,65 m
Design Displacement:	3,8 t

PERFORMANCE

Maximum Speed:	27 knots
----------------	----------

LOW-DRAFT RIVER OPERATION BOAT



BOFBC 25



SHIPBUILDING

Scientific research vessels
and maritime signage

MARINE SCIENTIFIC RESEARCH VESSEL

Design licensed by DAMEN

BICM



TECHNICAL SPECIFICATIONS

Overall Length:	83 m
Overall Beam:	16 m
Depth:	7,20 m
Design Draft:	4,25 m
Design Displacement::	3245,87 t

PERFORMANCE

Maximum Speed:	13 knots
Range:	10.000 nm (@ 11 knots)
Autonomy:	45 days (@ 60 people)
	30 days (@ 90 people)



100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall Length:	24 m
Overall Beam:	8 m
Depth:	3,50 m
Design Draft:	2 m
Design Displacement:	246 t

PERFORMANCE

Maximum Speed:	9 knots
Range:	10 days (@ 15 people)
Autonomy:	2000 nm (@ 7 knots)

MULTI-PURPOSE BEACON VESSEL_a

BBM



SHIPBUILDING



Ships and artifacts for
transport and work

MULTIPURPOSE LOGISTICS SUPPORT TUGBOAT

DESIGN LICENSED BY ROBERT ALLAN LTD.



TECHNICAL SPECIFICATIONS

Overall Length:	37,47 m
Overall Beam:	13,50 m
Depth	6,08 m
Summer Load Draft (on baseline)	4,93 m
Bollard Pull:	70 t
Design Displacement:	1488 t
Gross Registered Tonnage:	745,1 t
Net Registered Tonnage:	224 t
Speed:	12 knots (without tugging)

CAPACITIES

Fuel (Diesel):	300 m³
Fresh Water:	70 m³
Ballast:	205 m³
Oily Water:	150 m³
Firefighting Foam (FOAM):	12 m³
Lifting Crane:	10 t a 12 m
Free Deck Area:	150 m²
Crew:	17





RIVER PUSHER CRAFT

EFC



100% Colombian Design

TECHNICAL SPECIFICATIONS

Overall length:	60 m
Length between perpendiculars:	58,50 m
Overall beam:	14,90 m
Depth at center:	3,45 m
Design draft:	2,40 m

TECHNICAL SPECIFICATIONS

Overall Length:	33 m
Overall Beam:	11,50 m
Depth:	2,90 m
Design Draft:	1,50 m
Air Draft:	10 m
Design Displacement:	367,77 t
Towing Capacity:	15000 t
Maximum Speed:	13,5 knots (without tugging)



100% Colombian Design



BFM

MULTI-CARGO RIVER BARGE





TANKER BARGE

BT 1600 - 1200

TECHNICAL SPECIFICATIONS

Overall length:	60,00 m
Length between perpendiculars:	58,08 m
Molded beam:	16,00 m
Depth at center:	3,10 m
Design draft (maximum load):	2,30 m
Maximum displacement under load:	2054,23 t
Load capacity:	1697 t

100% Colombian Design



SHIPBUILDING



Vessels for social
welfare operations

COASTAL RIVER HOSPITAL SHIP



BHCF



TECHNICAL SPECIFICATIONS

Overall Length:	39,36 m
Overall Beam:	9,50 m
Depth:	3,30 m
Draft:	1,50 m
Design Displacement:	442 t

PERFORMANCE

Maximum Speed:	9 knots
Range:	1600 km (@8 knots)
Autonomy:	25 days (@ 35 people)

100% Colombian Design



TECHNICAL SPECIFICATIONS

Overall Length:	46,8 m
Overall Beam:	11,5 m
Draft:	1,6 m
Design Displacement:	655 t

PERFORMANCE

Maximum Speed:	8 knots
Autonomy:	25 days (@ 37 people)

BHF



RIVER HOSPITAL SHIP

100% Colombian Design



**TECHNICAL SPECIFICATIONS**

Overall Length:	12,70 m
Overall Beam:	2,80 m
Depth:	1,53 m
Design Draft:	0,55

PERFORMANCE

Maximum Speed:	25 knots
Autonomy:	200 km (@ 25 knots)

**TECHNICAL SPECIFICATIONS**

Overall Length:	14,74 m
Overall Beam:	3,70 m
Depth:	1,54 m
Design Draft:	0,70 m

PERFORMANCE

Maximum Speed:	25 knots
Range:	6 hours (@ 20 knots)
Autonomy:	120 mn (@ 20 knots)



AID AND RESCUE SPEEDBOAT



LAR

TECHNICAL SPECIFICATIONS

Overall Length:	12,20 m
Overall Beam:	2,80 m
Depth:	1,53 m
Maximum Load Draft:	0,80 m
Design Displacement:	8,50 t

PERFORMANCE

Maximum Speed:	25 knots
----------------	----------



100% Colombian Design



COTECMAR

FLOATING TOURIST INFORMATION CENTER



TECHNICAL SPECIFICATIONS

Overall Length:
Overall Beam:
Maximum Speed:
Autonomy:
Maximum Load Draft:
Maximum Load Displacement:
Crew:

16,20 m
4,80 m
13 Km/h (7 knots)
24 hours
0,85 m
45,70 t
@ 10 people

PROPULSIÓN

Engines:
Propulsion:
Fuel:

2x100HP
Outboard
Gasoline

100% Colombian Design



100% Colombian Design



TECHNICAL SPECIFICATIONS

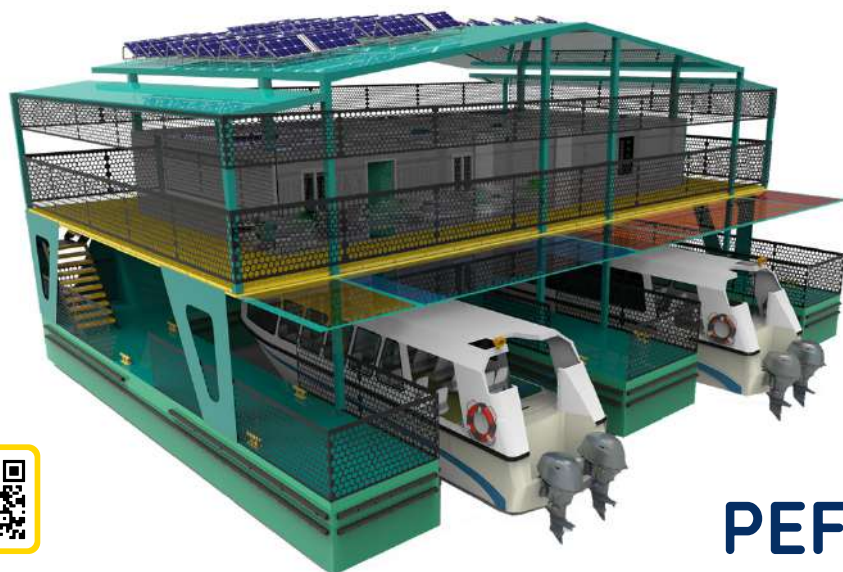
Overall Length:
Overall Beam:
Depth:
Design Draft:
Design Displacement:

30 m
15 m
1,3 m
0,75 m
280 t

FLOATING CLASSROOMS



100% Colombian Design



PEF

RIVERINE EDUCATIONAL PLATFORM

ESPECIFICACIONES TÉCNICAS

Overall Length:	19,20 m
Overall Beam:	15,00 m
Depth:	1,40 m
Maximum Draft:	0,9 m

CAPACITIES

Classrooms for 40 students:
Satellite Connectivity:



River School
Transport



MEDICAL SERVICES PLATFORM

ESPECIFICACIONES TÉCNICAS

Overall Length:	19,20 m
Overall Beam:	15,00 m
Depth:	1,40 m
Maximum Draft:	0,9 m

CAPACITIES

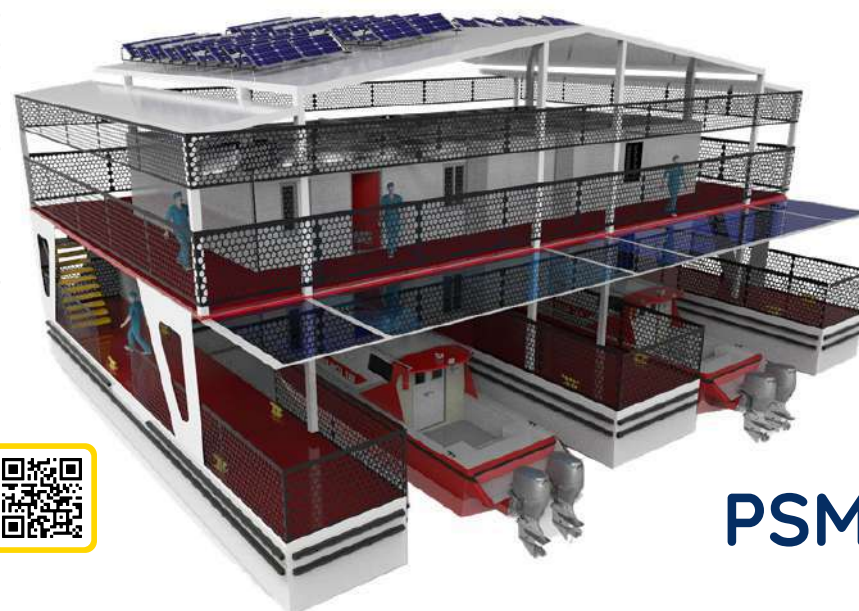
General Medicine
Dentistry
Pharmacy



Medical Care
Transport



100% Colombian Design



PSM

RIVER PIERS



TYPE "A" PIER



TECHNICAL SPECIFICATIONS

Overall length:	6,60 m
Overall beam:	3 m
Depth:	0,90 m
Draft:	0,30 m

TYPE "C" PIER



TECHNICAL SPECIFICATIONS

Overall length:	10,80 m
Overall beam:	9,00 m
Depth:	0,90 m
Draft:	0,33 m

100% Colombian Design



TYPE "E" PIER



TECHNICAL SPECIFICATIONS

Overall length:	13,20 m
Overall beam:	9 m
Depth:	0,90 m
Draft:	0,30 m



100% Colombian Design

TECHNICAL SPECIFICATIONS

Overall Length:	8,70 m
Overall Beam:	2,6 m
Design Displacement:	2,5 t
Motor:	Electrical

PERFORMANCE

Speed:	10 knots
Autonomy:	1 hour (max. power) - 2 hours (Continuous)
Range:	2,5 KM line of sight
Sensors:	2 cameras, 2 radio frequency links, horn, searchlights, sailing lights, GPS
Charging time:	1 hour - Propulsion battery
Power supply:	Solar panels - Auxiliary battery systems



UNMANNED ELECTRICAL SURFACE VEHICLE

USV



100% Colombian Design



TOPSIDE PILOT RIVER TRANSPORT BOAT

BTF

TECHNICAL SPECIFICATIONS

Overall Length:	12,20 m
Overall Beam:	2,80 m
Depth:	1,4 m
Average Draft:	0,60 m

PERFORMANCE

Maximum Speed:	25 knots
Range:	150 mn (@ 25 knots)

ACCOMMODATION

Crew:	@ 02 people
Passengers:	Up to 27 passengers

BOTTOM PILOT RIVER TRANSPORT BOAT



100% Colombian Design

BTF

TECHNICAL SPECIFICATIONS

Overall Length:	12,20 m
Overall Beam:	2,80 m
Depth:	1,4 m
Average Draft:	0,55 m

PERFORMANCE

Maximum Speed:	25 knots
Range:	150 mn (@25 knots)

ACCOMMODATION

Crew:	@ 02 people
Passengers:	Up to 20 passengers



FLOATING PLATFORM

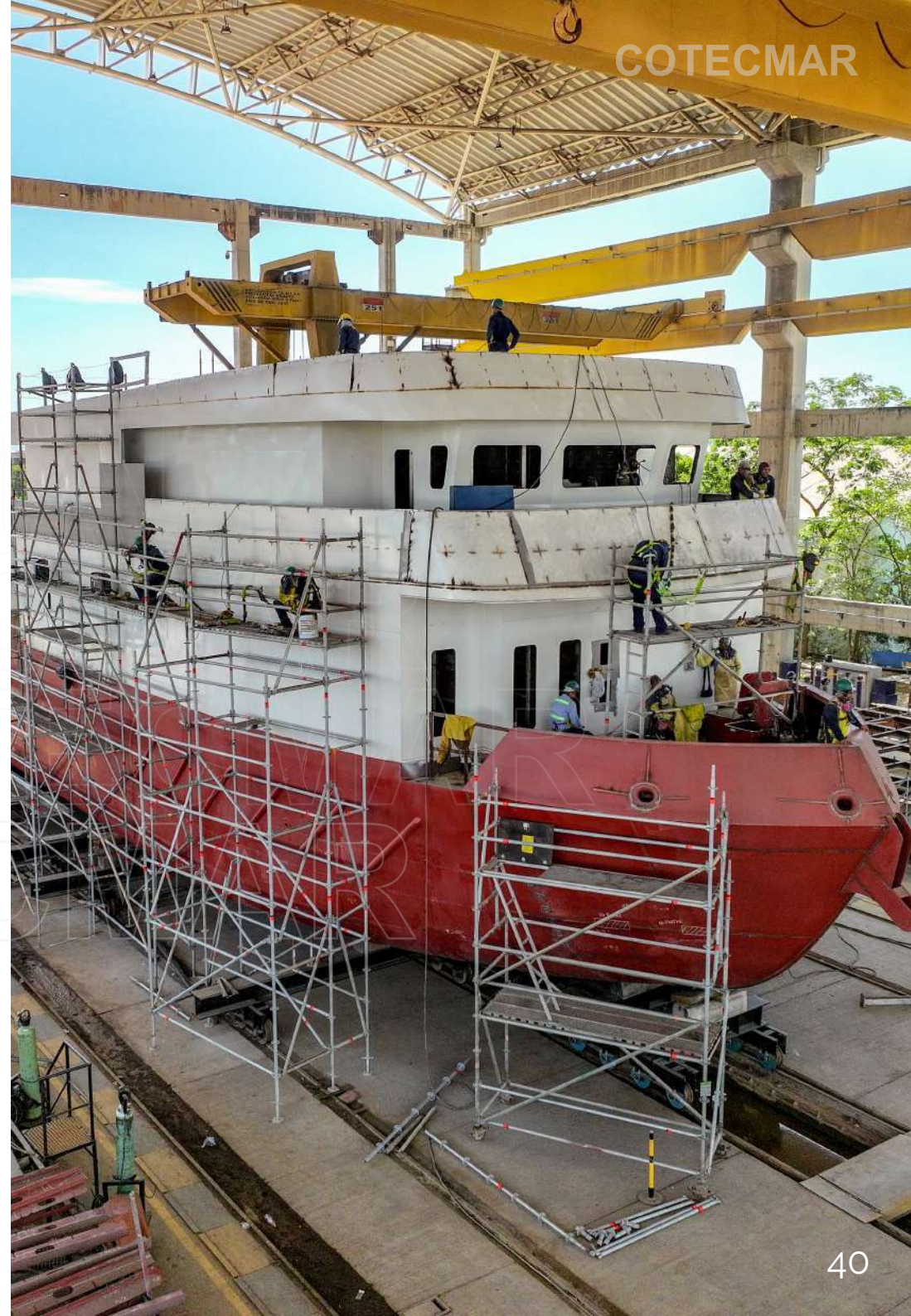


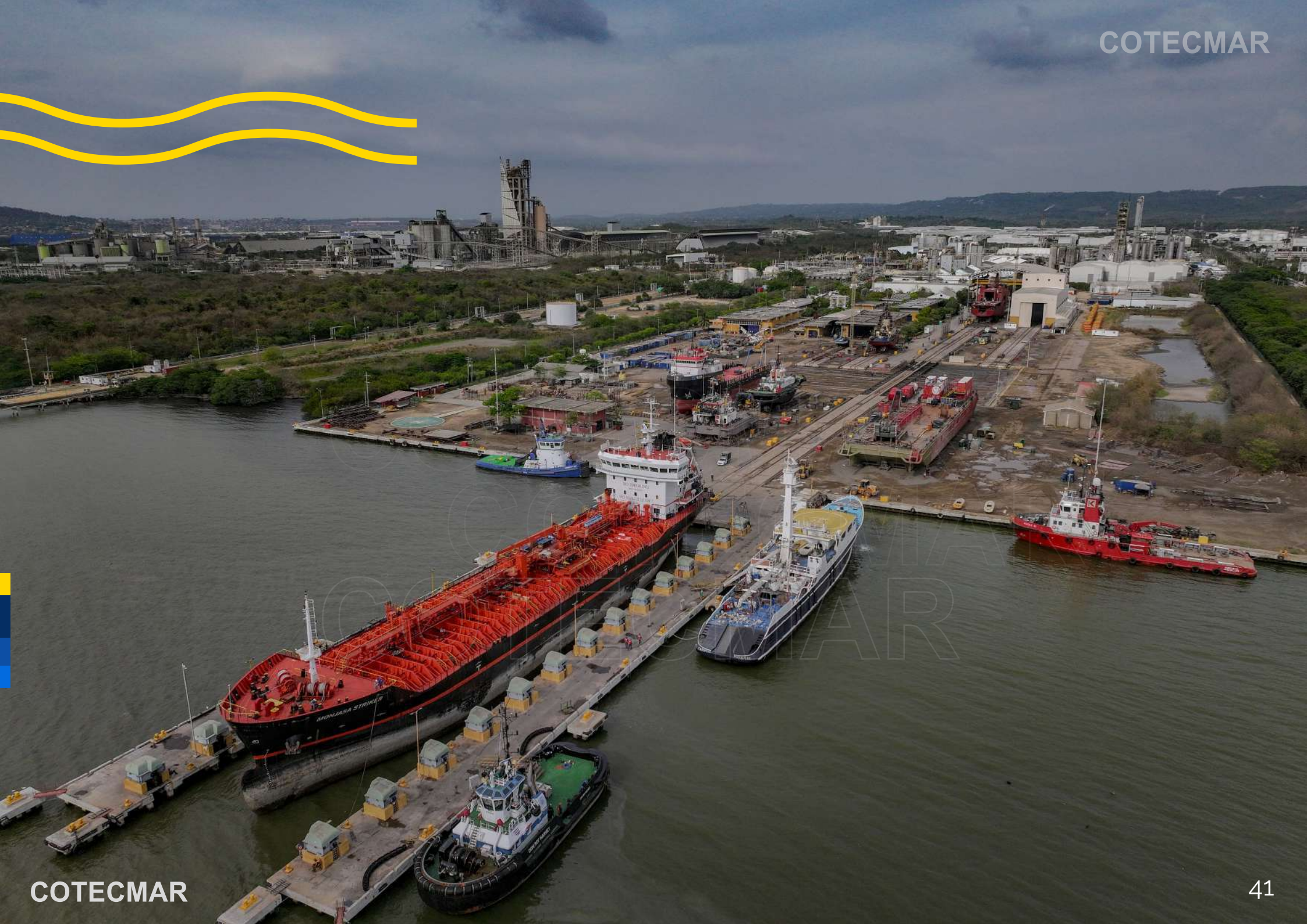
MAIN DIMENSIONS

Overall length:	10,6 m
Beam:	12,0 m
Depth:	0,90 m
Draft @ light displacement:	0,45 m



100% Colombian Design







MAMONAL FACILITY
Zona Industrial Mamonal Km 9
Cartagena de Indias - Colombia

BOCAGRANDE FACILITY
Carrera 2da. Base Naval A.R.C. Bolívar
Cartagena de Indias - Colombia

BUSINESS CONTACT
sales@cotecmar.com

☎ (+57) 323 223 2359 ☎ (+57) 321 805 6799

No part of this document may be reproduced in any format, by printing, microfilm, or any other means without the written consent of COTECMAR.

#Seguimos**Avante**
info@cotecmar.com



www.cotecmar.com