

Generic Cost Estimating Relationships

New Ship Construction

Rates based upon average mid-size U.S. commercial shipyard having
mid-2000's production facilities.
(factors available for other size yards, foreign and domestic,
and for military contractors)

***Confidential & Proprietary
Data***

All material costs and equipment have been escalated for the year

2020

**NOTE: To change material cost estimates to another year,
insert that year above**



New Construction CER Category

Coatings - Blast & Paint Large Areas
 Coatings - Blast & Paint Loose Parts
 Coatings - Blast & Sweep
 Coatings - Blasting, Brush-Off
 Coatings - Blasting, Coal Slag
 Coatings - Blasting, Copper Slag
 Coatings - Blasting, Dry Ice
 Coatings - Blasting, Garnet
 Coatings - Blasting, Heavy Duty
 Coatings - Blasting, Hermatite
 Coatings - Blasting, High Pressure Water
 Coatings - Blasting, Nut Shell
 Coatings - Blasting, Olivine
 Coatings - Blasting, Silica Sand
 Coatings - Blasting, Spot
 Coatings - Blasting, Staurolite
 Coatings - Blasting, Steel Grit
 Coatings - Exterior Coatings
 Coatings - Exterior Coats
 Coatings - Full Coats
 Coatings - Grinding
 Coatings - Hull Markings
 Coatings - Interior Coating
 Coatings - Interior Coats
 Coatings - Machinery Spaces
 Coatings - Paint & Primer Selections
 Coatings - Paint & Cement
 Coatings - Paint Supervision
 Coatings - Paint Wastage
 Coatings - Spot Coats
 Coatings - Spot Paint
 Coatings - Surface Prep
 Coatings - Tanks & Voids
 Coatings - Thermal Spray Paint
 Coatings - Touchup Paint
 Coatings Pipe - Bondstran

Design & Engineering - Classification fees
 Design & Engineering - Loft & services
 Design & Engineering - Model Tests
 Design & Engineering - Photographs
 Design & Engineering - Plot & sketch
 Design & Engineering - Ship's Navigation Paper Charts
 Design & Engineering - Wooden Model

Electric Cable - Heat Tracing
 Electric Cable - Pull Earthing Cable
 Electric Cable - Pull High Voltage Power Cable
 Electric Cable - Pull Instrument Cable
 Electric Cable - Pull Low Voltage Power Cable
 Electric Cable - Terminating Cable
 Electric Cable - 2000V Type G-GC Round Power Cable
 Electric Cable - 600V Type TC-ER Standed Cable
 Electric Cable - 600V Type TC-ER Standed Cable w/Ground Wire
 Electric Cable - Banding
 Electric Cable - Cable Sizes
 Electric Cable - Connect
 Electric Cable - Connect Large Enclosure
 Electric Cable - Connect Medium Enclosure
 Electric Cable - Connect Small Enclosure
 Electric Cable - Cutting
 Electric Cable - Fume Tight
 Electric Cable - Hook-up
 Electric Cable - ID Tags
 Electric Cable - Install Armoured Single Core, Multi-Wire Cable
 Electric Cable - Install Cable
 Electric Cable - Install Unarmoured Multi-Core Core Cable
 Electric Cable - Install Unarmoured Single Core, Multi-Wire Cable

Worksheet Name (Hyperlinked)

[Paint Large Areas](#)
[Paint Loose Parts](#)
[Coatings](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
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[Blast, Sweep & Clean](#)
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[Blast, Sweep & Clean](#)
[Blast, Sweep & Clean](#)
[Coatings](#)
[Coatings \(2\)](#)
[Coatings \(2\)](#)
[Blast, Sweep & Clean](#)
[Coatings](#)
[Coatings](#)
[Coatings \(2\)](#)
[Coatings \(2\)](#)
[Paint](#)
[Coatings](#)
[Coatings](#)
[Coatings](#)
[Coatings \(2\)](#)
[Coatings](#)
[Coatings \(2\)](#)
[Coatings](#)
[Coatings](#)
[Coatings \(2\)](#)
[Coatings](#)
[Coatings](#)
[Pipe Coating](#)

[Design & Engineering](#)
[Design & Engineering](#)
[Design & Engineering](#)
[Design & Engineering](#)
[Design & Engineering](#)
[Design & Engineering](#)
[Design & Engineering](#)

[Cable Pull Charts](#)
[Cable Pull Charts](#)
[Cable Pull Charts](#)
[Cable Pull Charts](#)
[Cable Pull Charts](#)
[Cable Pull Charts](#)
[Cable Price Charts](#)
[Cable Price Charts](#)
[Cable Price Charts](#)
[Cable Work](#)
[Cable Sizes](#)
[Cable Work](#)
[Cable Connect Charts](#)
[Cable Connect Charts](#)
[Cable Connect Charts](#)
[Cable Work](#)
[Cable Work](#)
[Cable Work](#)
[Cable Work](#)
[Cable Connect Charts](#)
[Install Cable](#)
[Cable Connect Charts](#)
[Cable Connect Charts](#)

New Construction CER Category

Electric Cable - Multi-Cable Transits (MCT)
 Electric Cable - Packing
 Electric Cable - Power Cable
 Electric Cable - Preparation Work
 Electric Cable - Pulling
 Electric Cable - Shooting Studs
 Electric Cable Tray - Galv. Horizontal Elbow Type Tray
 Electric Cable Tray - Galv. Ladder Type Tray Horizontal Tee
 Electric Cable Tray - Galv. Ladder Type Tray Radius
 Electric Cable Tray - Galv. Ladder Type Tray Vertical Elbow
 Electric Cable Tray - Galv. Solid Bottom Type Tray
 Electric Cable Tray - Galv. Vented Trough
 Electric Cable Tray - Galv. Vented Trough Horizontal Elbow
 Electric Cable Tray - Galv. Vertical Elbow Type Tray
 Electric Cable Tray - Install Galv Cable Tray w/Fittings & Accessories
 Electric Cable Tray - Install SS Cable Tray w/Fittings & Accessories

Electric Fiber Optic - Cable
 Electric Fiber Optic - Cable Miscellaneous
 Electric Fiber Optic - Cable Splices
 Electric Fiber Optic - Cable Terminations
 Electric Fiber Optic - Hybrid Cable

Electric Transits - Install Hawke HRT Circular Transit Frame

Electric Wireways - "T" Box
 Electric Wireways - 90-Deg Elbow
 Electric Wireways - Fittings
 Electric Wireways - Panel Adapter
 Electric Wireways - Screw Cover

Electrical - Battery Charging -
 Electrical - Degaussing System
 Electrical - Electrical Labor
 Electrical - Electrical Power Distribution -
 Electrical - Emergency Power Cables -
 Electrical - Emergency Power Cables -
 Electrical - Emergency Power Generation -
 Electrical - General Electric - Misc CERs
 Electrical - General Electrical (CuNo)
 Electrical - General Electrical (kW & SHIPSETS)
 Electrical - General Power Conversion -
 Electrical - Habitation Area Deck Area
 Electrical - Habitation Area Volume
 Electrical - Labor
 Electrical - Lighting System Distribution -
 Electrical - Lighting System Distribution -
 Electrical - Lighting System Fixtures -
 Electrical - Lighting System Fixtures -
 Electrical - Lighting System Fixtures - Estimating No. LED Fixtures
 Electrical - Lighting System
 Electrical - Lighting System (LED)
 Electrical - Machinery Space Electrical
 Electrical - Motor Control Centers (MCC)
 Electrical - Motor Control Centers (MCC)
 Electrical - Motor Controllers
 Electrical - Motor Controllers
 Electrical - Ship Service Power Cables -
 Electrical - Ship Service Power Cables -
 Electrical - Ship Service Power Generation -
 Electrical - Switchboards Power Distribution -
 Electrical - Switchboards Power Distribution -
 Electrical - Transformer
 Electrical - Transformer
 Electrical - Uninterrupted Power Supply (UPS)
 Electrical Glands - High Voltage Glanding
 Electrical Glands - Stuffing Galnds

Worksheet Name (Hyperlinked)

[Cable Work](#)
[Cable Work](#)
[Power Cable](#)
[Cable Work](#)
[Cable Work](#)
[Cable Work](#)
[Cable Trays Charts](#)
[Cable Trays Charts](#)
[Cable Trays Charts](#)
[Cable Trays Charts](#)
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[Cable Trays Charts](#)

[Fiber Optic Cable](#)
[Fiber Optic Cable](#)
[Fiber Optic Cable](#)
[Fiber Optic Cable](#)
[Fiber Optic Cable](#)

[Transits Charts](#)

[Wireways](#)
[Wireways](#)
[Wireways](#)
[Wireways](#)
[Wireways](#)

[Electrical](#)
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[Electrical](#)
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[Electrical Select](#)
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[Electrical](#)
[Electrical Select](#)
[Electrical](#)
[Electrical Select](#)
[Electrical](#)
[Electrical 2](#)
[Electrical Lighting Systems](#)
[LED Lighting](#)
[Electrical](#)
[Electrical Select](#)
[Electrical](#)
[Electrical Select](#)
[Electrical](#)
[Electrical Select](#)
[Electrical](#)
[Electrical Select](#)
[Electrical 2](#)
[Electrical 2](#)
[Cable Glands](#)
[Cable Glands](#)

New Construction CER Category

Insulation - Low Temperature

Insulation - Pipe

Insulation - Pipe

Insulation - Polyurethane Sandwich Panel, Cold Box

Insulation - Pyrogel

Insulation - Rigid

Insulation - Sprayed-On

Insulation - Tank

Insulation - Thermal

Insulation - Wrap

Labor Rates, International - Average Shipbuilding Labor Rates

Labor Rates, International - Average Shipbuilding Labor Rates

Labor Rates, USA - Auxiliary Shipbuilder

Labor Rates, USA - Average Regional Labor Rates

Labor Rates, USA - Combatant Shipbuilder

Labor Rates, USA - Commercial Mid-Tiered Shipbuilder

Labor Rates, USA - Contracted Technical Services

Labor Rates, USA - USCG Civilian Labor Rates

Labor Rates, USA - USCG Military Labor Rates

Machinery - High Speed Diesel Engine Prices

Machinery - Low Speed Diesel Engine Prices

Machinery - Medium Speed Diesel Engine Prices

Machinery - Skysails

Machinery, Electric Generation - Auxiliary Power Units -

Machinery, Electric Generation - Batteries

Machinery, Electric Generation - Diesel Generators

Machinery, Electric Generation - Diesel Generators

Machinery, Electric Generation - Diesel Generators

Machinery, Electric Generation - Electric Generators

Machinery, Electric Generation - Electric Generators

Machinery, Electric Generation - Electric Motors

Machinery, Electric Generation - Emergency Power Generation -

Machinery, Electric Generation - Gas Turbines + HRSG

Machinery, Electric Generation - Motor Gensets

Machinery, Electric Generation - Power Take-Off (PTO) Units -

Machinery, Electric Generation - Power Take-Off Units

Machinery, Electric Generation - Ship Service Power Generation -

Machinery, Electric Generation - Spark Ignition LNG/CNG Gas Engine G

Machinery, Electric Generation - Steam Turbines

Machinery, Electric Generation - Wind Turbines

Machinery, Electric Generation - Engine Monitoring: Torque & Power of a

Machinery, Installations - Machinery & Components

Machinery, Miscellaneous - Air Cushion Vehicle Machinery

Machinery, Miscellaneous - Anchor gear

Machinery, Miscellaneous - Auxillary machinery

Machinery, Miscellaneous - Ballast Water Treatment Systems

Machinery, Miscellaneous - Cargo Pump Diesel Engines

Machinery, Miscellaneous - Emissions Reduction Systems (Includes Inst:

Machinery, Miscellaneous - Added Cost for Tire-3 Engines

Machinery, Miscellaneous - Added Cost for Tire-3 Engines

Machinery, Miscellaneous - Added Cost for LNG Switching Equipment

Machinery, Miscellaneous - Added Cost for LNG Switching Equipment

Machinery, Miscellaneous - Added Cost for Tire-4 Engines (SCR)

Machinery, Miscellaneous - Engine Weights

Machinery, Miscellaneous - Equipment Spares

Machinery, Miscellaneous - Gas Turbine Uptakes

Machinery, Miscellaneous - Gyro Stabilizers

Machinery, Miscellaneous - Hydraulic Lift Systems

Machinery, Miscellaneous - Hydraulic Stabilizers

Machinery, Miscellaneous - Intercon Tug-Barge Connector

Machinery, Miscellaneous - KUBOTA Diesels

Machinery, Miscellaneous - Miscellaneous Equipment

Machinery, Miscellaneous - Steering gear

Machinery, Miscellaneous - Winches and warping gear

Worksheet Name (Hyperlinked)[Duct & Wrap Insulation Prices](#)[Duct & Wrap Insulation Prices](#)[Pipe Insulation Prices](#)[Outfit Insulation](#)[Duct & Wrap Insulation Prices](#)[Duct & Wrap Insulation Prices](#)[Outfit Insulation](#)[Duct & Wrap Insulation Prices](#)[Outfit](#)[Duct & Wrap Insulation Prices](#)[International Labor Rates](#)[International Labor Rates Chart](#)[US Labor Rates](#)[Regional Wage Rates](#)[US Labor Rates](#)[US Labor Rates](#)[US Labor Rates](#)[US Labor Rates](#)[US Labor Rates](#)[More Machy Graphs](#)[More Machy Graphs](#)[More Machy Graphs](#)[Machinery Equations](#)[Machinery](#)[Machinery](#)[Machinery](#)[Diesel Engines](#)[Machinery Graphs](#)[Machinery Cost Models](#)[Elect. Generators](#)[Machinery Graphs](#)[Machinery](#)[Gas Turbines](#)[Machinery](#)[Machinery](#)[Machinery Graphs](#)[Machinery](#)[Machinery](#)[Steam Turbines](#)[Machinery](#)[Machinery](#)[Machinery Details](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery Graphs](#)[Machinery](#)[Machinery Graphs](#)[Machinery](#)[Engine Weights](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[Machinery](#)[KUBOTA Diesels](#)[Machinery](#)[Machinery](#)[Machinery](#)

New Construction CER Category**Worksheet Name (Hyperlinked)**

| | |
|---|--|
| Machinery, Propulsion - 2-Stroke Outboards | 2-Stroke Outboards |
| Machinery, Propulsion - 4-Stroke Outboards | 4-Stroke Outboards |
| Machinery, Propulsion - AZIMUTH Pod Units | Machinery |
| Machinery, Propulsion - Boilers & HRSG | Machinery |
| Machinery, Propulsion - Bow & Stern Thrusters | Machinery |
| Machinery, Propulsion - Diesel Electric Drive - Twin AZIMUTH PODS | Machinery |
| Machinery, Propulsion - Diesel Electric Drive - Twin FPP | Machinery |
| Machinery, Propulsion - Diesel Electric Drive Propulsion Systems | Machinery |
| Machinery, Propulsion - Diesel Engine Components | Machinery |
| Machinery, Electric Generation - Diesel Generators | Diesel Engines |
| Machinery, Propulsion - Diesel w/ CPP | Machinery Cost Models |
| Machinery, Propulsion - Diesel w/ FPP | Machinery Cost Models |
| Machinery, Propulsion - Diesel w/ Waterjet | Machinery Cost Models |
| Machinery, Propulsion - Diesel w/ Z-Drive | Machinery Cost Models |
| Machinery, Propulsion - Diesel-Electric w/ FPP | Machinery Cost Models |
| Machinery, Propulsion - Diesel-Electric w/ Pod | Machinery Cost Models |
| Machinery, Propulsion - Diesel-Electric w/ Waterjet | Machinery Cost Models |
| Machinery, Propulsion - Electric Loiter Motors | Machinery |
| Machinery, Propulsion - Fuel Cells | Machinery |
| Machinery, Propulsion - Gas Turbine w/ FPP | Machinery Cost Models |
| Machinery, Propulsion - Gas Turbine w/ Pod | Machinery Cost Models |
| Machinery, Propulsion - Gas Turbine w/ Waterjet | Machinery Cost Models |
| Machinery, Propulsion - Gas Turbines | Machinery |
| Machinery, Propulsion - Gas Turbines | Gas Turbines |
| Machinery, Propulsion - Gear Boxes | Machinery |
| Machinery, Propulsion - High Performance Gas Engines | High Performance Gas Engines |
| Machinery, Propulsion - High Speed Diesel Engines | Machinery |
| Machinery, Propulsion - High Speed Diesel w/ Water Jet | Machinery |
| Machinery, Propulsion - High Speed Geared Diesel Propulsion Systems | Machinery |
| Machinery, Propulsion - KORT Nozzle | Machinery |
| Machinery, Propulsion - LNG Capable Diesel Engines | Machinery |
| Machinery, Propulsion - Low Speed Diesel Engines | Machinery |
| Machinery, Propulsion - LowSpeed Direct Drive Diesel Propulsion System | Machinery |
| Machinery, Propulsion - Medium Speed Diesel Engines | Machinery |
| Machinery, Propulsion - Medium Speed Geared Diesel Propulsion System | Machinery |
| Machinery, Propulsion - Misc. Supplemental Propulsion | Machinery Cost Models |
| Machinery, Propulsion - Nuclear Electric Drive | Machinery |
| Machinery, Propulsion - Nuclear-Gas Turbine Electric Drive w/ FPP | Machinery Cost Models |
| Machinery, Propulsion - Nuclear-Gas Turbine Electric Drive w/ Pod | Machinery Cost Models |
| Machinery, Propulsion - Nuclear-Gas Turbine w/ Waterjet | Machinery Cost Models |
| Machinery, Propulsion - Propellers - CPP | Machinery |
| Machinery, Propulsion - Propellers - FPP | Machinery |
| Machinery, Propulsion - Propulsion Controls | Machinery |
| Machinery, Propulsion - Propulsion Cost Comparison Graphs | Propulsion Cost Graphs |
| Machinery, Propulsion - Shafting | Machinery |
| Machinery, Propulsion - Sky Sails | Machinery |
| Machinery, Propulsion - Steam Turbine w/ FPP | Machinery Cost Models |
| Machinery, Propulsion - Steam Turbines | Machinery |
| Machinery, Propulsion - Thrusters | Machinery Cost Models |
| Machinery, Propulsion - Thrusters | Thrusters |
| Machinery, Propulsion - Water Jets | Machinery |
| Machinery, Propulsion - Waterjets | Waterjets |
| Miscellaneous - Dredging Services | Excavation Services |
| Miscellaneous - Excavation Services | Excavation Services |
| Miscellaneous - Highways | Highways |
| Miscellaneous - Ship Characteristics | Ship Characteristics |
| Miscellaneous - Units of Measure | Units of Measure |
| Miscellaneous - Work Type | Work Type |
| Miscellaneous - Media Events | Miscellaneous |
| Oil & Gas Equipment - Subsea Power Cable | Oil-Gas Equipment |
| Oil & Gas Equipment - Floating Oil Transfer Hose | Oil-Gas Equipment |
| Oil & Gas Equipment - Subsea Active Heavy Compensated Crane | Outfit Equipment |
| Oil & Gas Equipment - Offshore Gas Steel Tube Umbilical (Aker - Norway) | Oil-Gas Equipment |
| Outfit - Anchor | Anchor & Mooring |

| <u>New Construction CER Category</u> | <u>Worksheet Name (Hyperlinked)</u> |
|---|---|
| Outfit - Anchor & Anchor Gear | Outfit Equipment |
| Outfit - Anchor Chain | Anchor & Mooring |
| Outfit - Anchor Chain Stopper | Anchor & Mooring |
| Outfit - Anchor Chain Swivel | Anchor & Mooring |
| Outfit - Anchor Winch | Anchor & Mooring |
| Outfit - Anchor Windlass | Outfit Equipment |
| Outfit - ATB Connectors | Outfit Equipment |
| Outfit - Berthing Areas | Outfit |
| Outfit - Bollards, Bitts, Chocks & Fairleads | Outfit Equipment |
| Outfit - Bulker Hatch Covers | Outfit Equipment |
| Outfit - Capstan | Anchor & Mooring |
| Outfit - Cathodic Protection | Outfit |
| Outfit - Ceilings | Outfit |
| Outfit - Containers | Miscellaneous |
| Outfit - Container Cell Guides & Handling Equipment | Miscellaneous |
| Outfit - Cranes | Outfit Equipment |
| Outfit - Davits | Outfit |
| Outfit - Deck Coverings | Outfit |
| Outfit - Doors | Outfit |
| Outfit - Doors - Water Tight | Outfit |
| Outfit - Doors - Aircraft Hangar | Outfit |
| Outfit - Drilling Equipment | Outfit Equipment |
| Outfit - Elevators & Lift Equipment | Outfit Equipment |
| Outfit - Evacuation Systems | Outfit Equipment |
| Outfit - Fenders & Fender Gear | Outfit Equipment |
| Outfit - Fenders & Fender Gear | Fenders |
| Outfit - Fire Fighting Equipment | Outfit Equipment |
| Outfit - Floors, Ladders, Walkways, & Grates | Outfit |
| Outfit - Food Prep Area | Outfit |
| Outfit - Forklift Equipment | Outfit Equipment |
| Outfit - Fuel Tanks | Outfit Equipment |
| Outfit - Furnishing & Fixtures by Type Area | Outfit |
| Outfit - General Zone Outfit | Outfit |
| Outfit - Hatches | Outfit |
| Outfit - Hand Grabs | Outfit |
| Outfit - Helicopter Recovery, Securing & Transfer (HRST) System | Outfit Equipment |
| Outfit - Hull Designations And Markings | Outfit |
| Outfit - Joiner Work & Furnishings | Outfit |
| Outfit - Joiner Wall & Bulkhead Panels | Joiner Panels |
| Outfit - Keel Blocks | Outfit Equipment |
| Outfit - Ladders & Stairwells | Outfit |
| Outfit - Laundry Facilities | Outfit |
| Outfit - Life & Rescue Boats & Tenders | Outfit Equipment |
| Outfit - Life Buoys | Outfit Equipment |
| Outfit - Life Buoys | Life Rafts & Life Buoys |
| Outfit - Life Jackets & Survival Suits | Outfit Equipment |
| Outfit - Life Rafts | Life Rafts & Life Buoys |
| Outfit - Life Rafts & Raft Davits | Outfit Equipment |
| Outfit - LNG Tanks | Outfit Equipment |
| Outfit - Lockers | Outfit |
| Outfit - Machinery Spaces Furnishings | Outfit |
| Outfit - Manholes & Cleaning Ports | Outfit |
| Outfit - Masts and Spars | Outfit |
| Outfit - Medical Facilities | Outfit |
| Outfit - Metal Sheathing & Bulkheads | Outfit |
| Outfit - Mooring & Towing Gear | Outfit Equipment |
| Outfit - Mooring Winch | Anchor & Mooring |
| Outfit - Mooring/Tow Synthetic Rope | Anchor & Mooring |
| Outfit - Mooring/Tow Wire Rope | Anchor & Mooring |
| Outfit - Office Equip & Furn in Wheelhouse | Outfit |
| Outfit - PAX Lounge Facilities | Outfit |
| Outfit - Pollution Control Equipment | Outfit Equipment |
| Outfit - Purchased Vehicle Ramps | Outfit Equipment |
| Outfit - Railings, Ladders & Stairwells | Outfit |
| Outfit - Rigging & Canvas | Outfit Equipment |
| Outfit - Ro/Ro Bow Doors & Ramps | Outfit Equipment |
| Outfit - Ship's Office Facilities | Outfit |
| Outfit - Shops & Storerooms | Outfit |

New Construction CER Category

Worksheet Name (Hyperlinked)

| | |
|--|--|
| Pipe Fabrication - CRES | <u>CRES Pipe Fab PBI</u> |
| Pipe Specs - ANSI | <u>ANSI Pipe Specs</u> |
| Piping Systems - Ballast Treat Systems | <u>Pumps & Piping</u> |
| Piping Systems - Bilge & Ballast Systems | <u>Pumps & Piping</u> |
| Piping Systems - Charts Pipe, Fits & Hangers | <u>Charts Pipe, Fits & Hangers</u> |
| Piping Systems - Compressed Air Systems | <u>Pumps & Piping</u> |
| Piping Systems - Container Shore Facility Crane | <u>Outfit Misc.</u> |
| Piping Systems - Deck Drains & Scuppers | <u>Outfit</u> |
| Piping Systems - Deck Heating Systems | <u>Pumps & Piping</u> |
| Piping Systems - Exhaust, Smoke Stacks & Uptakes | <u>Pumps & Piping</u> |
| Piping Systems - Fire Extinguishing Systems | <u>Pumps & Piping</u> |
| Piping Systems - Fresh Water Cooling Systems | <u>Pumps & Piping</u> |
| Piping Systems - Fresh Water Distiller Watermaker | <u>Pumps & Piping</u> |
| Piping Systems - Fresh Water Evaporator Watermaker System | <u>Pumps & Piping</u> |
| Piping Systems - Fresh Water Reverse Osmosis Watermaker System | <u>Pumps & Piping</u> |
| Piping Systems - Fuel Burning Systems | <u>Pumps & Piping</u> |
| Piping Systems - Fuel Fill, Transfer & Purify Systems | <u>Pumps & Piping</u> |
| Piping Systems - Fuel Oil Heating Systems | <u>Pumps & Piping</u> |
| Piping Systems - Fuel Vent Systems | <u>Pumps & Piping</u> |
| Piping Systems - Garbage Disposal Systems | <u>Pumps & Piping</u> |
| Piping Systems - Helicopter Refueling System | <u>Pumps & Piping</u> |
| Piping Systems - HVAC Piping | <u>Pumps & Piping</u> |
| Piping Systems - Hydraulic Systems | <u>Pumps & Piping</u> |
| Piping Systems - Hydrophore Units | <u>Pumps & Piping</u> |
| Piping Systems - Incinerator Systems | <u>Pumps & Piping</u> |
| Piping Systems - Large-Scale Desalinization Plants (MSF-Multi-Stage Fl | <u>Outfit Misc.</u> |
| Piping Systems - Liquid Cargo Systems | <u>Pumps & Piping</u> |
| Piping Systems - LNG Re-Liquidation Systems | <u>Pumps & Piping</u> |
| Piping Systems - Lube Oil Systems | <u>Pumps & Piping</u> |
| Piping Systems - Misc. Machinery Piping | <u>Pumps & Piping</u> |
| Piping Systems - Navigation Light | <u>Outfit Misc.</u> |
| Piping Systems - Pipe - Bondstran | <u>Bondstran FRP Pipe & Fits</u> |
| Piping Systems - Pipe - Copper Nickel | <u>CuNi & Titanium Pipe</u> |
| Piping Systems - Pipe - Copper Nickel | <u>CuNi & Titanium Pipe Prices</u> |
| Piping Systems - Pipe - Copper Nickel | <u>Non-Steel Pipe Graphs</u> |
| Piping Systems - Pipe - PVC & ProPEX | <u>PVC Pipe</u> |
| Piping Systems - Pipe - Rolled Plate Tubes | <u>Rolled Plate Tubes</u> |
| Piping Systems - Pipe - Stainless Steel | <u>CuNi & Titanium Pipe Prices</u> |
| Piping Systems - Pipe - Stainless Steel, 304, 316, SCH 40, SCH 80 | <u>StainlessPipeMaterial</u> |
| Piping Systems - Pipe - Stainless Steel | <u>SS Pipe \$M</u> |
| Piping Systems - Pipe - Stainless Steel | <u>SS Pipe \$FT</u> |
| Piping Systems - Pipe - Stainless Steel | <u>SS Pipe Price Graphs</u> |
| Piping Systems - Pipe - Stainless Steel | <u>316L SS Pipe & Fits</u> |
| Piping Systems - Pipe - Stainless Steel Fittings | <u>316L SS Pipe & Fits</u> |
| Piping Systems - Pipe - Steel Black & Seamless | <u>Steel Pipe \$M</u> |
| Piping Systems - Pipe - Steel Black & Seamless | <u>Steel Pipe \$Foot</u> |
| Piping Systems - Pipe - Steel Black (Seamless, ERW & Welded) | <u>Steel Pipe Price Graphs</u> |
| Piping Systems - Pipe - Steel Galvanized Pipe | <u>Steel Pipe Price Graphs</u> |
| Piping Systems - Pipe - Steel Pipe Characteristics | <u>Pipe Specs</u> |
| Piping Systems - Pipe - Steel Pipe Prices | <u>Pipe Specs</u> |
| Piping Systems - Pipe - Titanium | <u>CuNi & Titanium Pipe</u> |
| Piping Systems - Pipe - Titanium | <u>CuNi & Titanium Pipe Prices</u> |
| Piping Systems - Pipe - Titanium | <u>Non-Steel Pipe Graphs</u> |
| Piping Systems - Pipe - Titanium | <u>TitaniumPipeMaterial</u> |
| Piping Systems - Pipe - Victaulic Roll-Grooved Steel Pipe Fittings | <u>Pumps & Piping</u> |
| Piping Systems - Plumbing Systems | <u>Pumps & Piping</u> |
| Piping Systems - Pump Installation | <u>Charts-Pumps</u> |
| Piping Systems - Pumps | <u>Pumps & Piping</u> |
| Piping Systems - Sea Water Cooling Systems | <u>Pumps & Piping</u> |
| Piping Systems - Searchlight | <u>Outfit Misc.</u> |
| Piping Systems - Sewerage Treatment Systems | <u>Pumps & Piping</u> |
| Piping Systems - Steam Condensate & Feed Systems | <u>Pumps & Piping</u> |
| Piping Systems - Teeyay Pipe Couplings | <u>Pumps & Piping</u> |
| Piping Systems - Uncontaminated SW & Incubator Systems | <u>Pumps & Piping</u> |
| Piping Systems - Valve Prices & Installation Hours | <u>Valve Graphs</u> |
| Piping Systems - Valves, Ball | <u>Valves</u> |

New Construction CER Category

Piping Systems - Valves, Butterfly
 Piping Systems - Valves, Check
 Piping Systems - Valves, Gate
 Piping Systems - Valves, Globe
 Piping Systems - Valves, Motor-Operated
 Piping Systems - Valves, Pressure/Vacuum
 Piping Systems - Valves, Relief
 Piping Systems - Waste Oil Systems
 Piping Systems - Watermakers & Osmosis Systems
 Piping Systems - Watermakers & Osmosis Systems

Productivity Factors - Hull Size Productivity Factors
 Productivity Factors - International Shipyards
 Productivity Factors - U.S. Shipyards
 Productivity Factors - Stage of Construction
 Productivity Factors - On-Board Work Areas
 Productivity Factors - Work Height
 Productivity Factors - Mild Steel
 Productivity Factors - HT Steel
 Productivity Factors - HY80 Steel
 Productivity Factors - HSLA80 Steel
 Productivity Factors - HY100 Steel
 Productivity Factors - HSLA100 Steel
 Productivity Factors - HSLA100M Steel
 Productivity Factors - HY130 Steel
 Productivity Factors - CP Ti50 A Titanium
 Productivity Factors - Ti130 Titanium
 Productivity Factors - Aluminum 5086
 Productivity Factors - Aluminum 5456

Science Equipment - Acoustic Systems
 Science Equipment - Centerboard and Trunk [controls & outfitting]
 Science Equipment - Hydrographic Research A-Frame
 Science Equipment - Hydrographic Research Deck Equipment
 Science Equipment - Hydrographic Research Electronics
 Science Equipment - Hydrographic Research Lab Equipment
 Science Equipment - Hydrographic Research Miscellaneous
 Science Equipment - Oceanographic Science Equipment
 Science Equipment - Science Communications
 Science Equipment - Science Deck Equipment
 Science Equipment - Science Outfit and Furnishings
 Science Equipment - Sub-Sea Vehicles
 Science Equipment - Trawl Outfit and Equipment

Security Registration - Ship Registration
 Security Registration - Ship Security Certification
 Security Registration - Ship Security Plan
 Security Registration - Training, Ship Security Officer (MTSA/ISPS/TWIC)

Shipyards Services - Barging Hull Blocks -
 Shipyards Services - Crew Training
 Shipyards Services - Equipment Rentals - No Resident Equipment
 Shipyards Services - Fire department
 Shipyards Services - Freight - Average Equipment & Material
 Shipyards Services - Inland Tug/Barge
 Shipyards Services - Inspection Fees
 Shipyards Services - Inspection, Coating Destructive
 Shipyards Services - Inspection, Radiographic
 Shipyards Services - Jigs & Fixtures
 Shipyards Services - Land Transportation of Hull Blocks
 Shipyards Services - Launching party
 Shipyards Services - Material Expediting
 Shipyards Services - Material Handling
 Shipyards Services - Miscellaneous
 Shipyards Services - Mock Ups
 Shipyards Services - Monthly Services
 Shipyards Services - NDT Testing of Welds-Pt (liquid penetrant)
 Shipyards Services - Patterns

Worksheet Name (Hyperlinked)

[Valves](#)
[Valves](#)
[Valves](#)
[Valves](#)
[Valves](#)
[Valves](#)
[Valves](#)
[Pumps & Piping](#)
[Pumps & Piping](#)
[Watermakers](#)

[Structural Size Factors](#)
[Internat'l Perform. Factor](#)
[Shipyards Performance Factors](#)
[Shipyards Performance Factors](#)
[Shipyards Performance Factors](#)
[Shipyards Performance Factors](#)
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[Shipyards Performance Factors](#)

[HydroEquip](#)
[HydroEquip](#)
[Hydrographic Equipment](#)
[Hydrographic Equipment](#)
[Hydrographic Equipment](#)
[Hydrographic Equipment](#)
[Hydrographic Equipment](#)
[HydroEquip](#)
[HydroEquip](#)
[HydroEquip](#)
[HydroEquip](#)
[Sub-Sea Vehicles](#)
[HydroEquip](#)

[Security](#)
[Security](#)
[Security](#)
[Security](#)

[TugBargeSea Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[TugBargeSea Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[TugBargeSea Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
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[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)
[Shipyards Services](#)

New Construction CER Category

Worksheet Name (Hyperlinked)

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| Shipyards Services - Preparation, holds, quarters, machinery spaces | Shipyards Services |
| Shipyards Services - Production Engineering | Shipyards Services |
| Shipyards Services - Production Planning | Shipyards Services |
| Shipyards Services - Project Administration | Shipyards Services |
| Shipyards Services - Protection Services | Shipyards Services |
| Shipyards Services - Quality Control | Shipyards Services |
| Shipyards Services - RO-RO Sea Transport | TugBargeSea Services |
| Shipyards Services - Staging & Scaffolding | Services Charts |
| Shipyards Services - Staging and Launching | Shipyards Services |
| Shipyards Services - Supervision & Production Control | Shipyards Services |
| Shipyards Services - Tank Air Test (per tank) | Shipyards Services |
| Shipyards Services - Temporary lights, heating, power, etc. | Shipyards Services |
| Shipyards Services - Testing | Shipyards Services |
| Shipyards Services - Tools & instruments | Shipyards Services |
| Shipyards Services - Tools & General Spares | Shipyards Services |
| Shipyards Services - Trials | Shipyards Services |
| Shipyards Services - Transport Vessel Cradles | TugBargeSea Services |
| Shipyards Services - Transport Vessel Services | TugBargeSea Services |
| Shipyards Services - Tug Services - Hampton Roads Area | TugBargeSea Services |
| Shipyards Services - Tug Services - Philadelphia Area | TugBargeSea Services |
| Shipyards Services - Tugs - per hour per tug | Shipyards Services |
| Shipyards Services - Ultra-sonic thickness readings | Shipyards Services |
| Structural Material Process - Cutting, Laser Plate Cutting | Laser Plate Cutting |
| Structural Material Process - Cutting, Oxy-Fuel Plate Cutting | Oxy-Fuel Plate Cutting |
| Structural Material Process - Cutting, Plasma Plate Cutting | Plasma Plate Cutting |
| Structural Material Process - Cutting, Waterjet Plate Cutting | Waterjet Plate Cutting |
| Structural Material Process - Gouging | Gouging |
| Structural Material Process - Metal Cutting, Welding & Grind | Metal Cutting, Welding & Grind |
| Structural Material Process - Metals Machining | Machining |
| Structural Material Process - Plate Blast & Prime | Plate Blast & Prime |
| Structural Material Process - Welding Charts | Welding Charts |
| Structural Material Process - Welding, Aluminum Welding Charts | AL Welding Charts |
| Structural Material Process - Welding, DH-36 SAW Weld Rates | DH-36 SAW Weld Rates |
| Structural Material Process - Welding, Robotic Welding Rates | Robotic Welding Rates |
| Structural Material Process - Welding, TIG Welding Rates | TIG Welding Rates |
| Structures, Air Cushion Vehicle Skirts ACV Skirts | ACV Skirt |
| Structures, Aluminum - Aluminum Plate Prices | Composite Materials Prices |
| Structures, Aluminum - Aluminum Plate Prices | Aluminum Plate Prices |
| Structures, Aluminum - Aluminum Plate Prices | Aluminum Plate Prices B |
| Structures, Aluminum - Aluminum Plate Prices | AL Plate Price Charts |
| Structures, Aluminum - Aluminum Plate Units of Measure | AL Plate Price Charts |
| Structures, Aluminum - General Info - Types of Aluminum | Aluminum Info |
| Structures, Blocks & Assemblies - Aluminum Block Structures | Aluminum Metal Block Structures |
| Structures, Blocks & Assemblies - Steel Block Structures | Steel Metal Block Structures |
| Structures, Blocks & Assemblies - Structure - Mild Steel Blocks | Structure - Mild Steel Blocks |
| Structures, Blocks & Assemblies - Structure Hull Distribution | Structure Distribution |
| Structures, Cold Molding - Cold Molding | Cold Molding |
| Structures, Composites - Composite Materials Prices | Composite Materials Prices |
| Structures, Composites - Composite Materials Prices | StructuralMaterialPrices |
| Structures, Composites - Composite Materials Prices | Composite Equations |
| Structures, Composites - Composite Materials Prices | Composite Materials |
| Structures, Composites - Composite Materials Prices | Composite Graphs |
| Structures, Composites - Composite Materials Prices | Composites C (Calcs) |
| Structures, Composites - Composite Structures Prices | Composites A |
| Structures, Composites - Composite Structures Prices | Composites B |
| Structures, Metals - Compare Metals Characteristics | Metals Characteristics |
| Structures, Metals - Compare Metals Prices | Structural Material Costs |
| Structures, Metals - Weight & Labor Conversion Factors | Structural Materials Conversion |
| Structures, Stainless Steel - Stainless Steel Plate Prices | StructuralMaterialPrices |
| Structures, Stainless Steel - Stainless Steel Plate Prices | Stainless Steel Plate Prices |

New Construction CER Category

Structures, Steel - Steel Plate & Shapes Prices
Structures, Steel - Steel Plate & Shapes Prices
Structures, Steel - Steel Plate & Shapes Prices
Structures, Steel - Steel Plate Prices
Structures, Steel - Steel Plate Units of Measure

Structures, Titanium - Titanium Plate Prices
Structures, Titanium - Titanium Plate Prices

Structures, Fixed BallastFixed Ballast Material

Tubing - Aluminum
Tubing - Copper
Tubing Specs

Worksheet Name (Hyperlinked)

[StructuralMaterialPrices](#)
[Type Steel Price Index](#)
[Steel Plate & Shapes Prices](#)
[Steel Plate Prices](#)
[Metals Characteristics](#)

[StructuralMaterialPrices](#)
[Titanium Plate Prices](#)

[Fixed Ballast](#)

[Tubing - Aluminum](#)
[Tubing - Copper](#)
[Tubing Specs](#)