

# CUMING EVENTS

225 Bodwell Street

Avon, MA 02322.1148

1.800.432.6464

Fax 508.580.0960

www.cumingcorp.com

## NEW MATERIALS YIELD BETTER, STRONGER, MORE EFFICIENT SYNTACTIC PRODUCTS

A research and development program lasting over two years has resulted in a major advance in syntactic foam materials for drilling riser buoyancy modules. The improved systems are not only stronger, tougher, and more rugged than conventional materials, but are also much lighter, yielding greater efficiency in making deepwater buoys. What is more, the new materials are tailored to suit Cuming Corporation's newly-installed automated manufacturing system, permitting rapid high-volume production. C-FLOAT standard product

line options include a choice of three constructions, each designed to

### Depth vs. Density of C-FLOAT Riser Buoyancy Modules

(Custom high-integrity and ruggedized constructions also available)

Service Depth Rating, Feet (m)	Standard C-SDF Construction, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	Low Density C-LDF Construction, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	Ultralight C-ULF Construction, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )
2,000 (610)	24.0 (385)	23.0 (369)	22.0 (353)
4,000 (1220)	27.0 (433)	26.0 (417)	24.0 (385)
6,000 (1829)	31.0 (497)	29.0 (465)	27.0 (433)
8,000 (2439)	35.0 (561)	32.0 (513)	30.0 (481)
10,000 (3049)	38.0 (609)	36.0 (577)	33.0 (529)
12,000 (3658)	42.0 (673)	39.0 (625)	37.0 (593)

Note: All densities are nominal and approximate only. Consult with our skilled engineers to determine the most efficient construction for your application.

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OTC 09

THE NEXT WAVE

May 4-7  
Reliant Center, Houston, TX  
Cuming Corporation Booth 2063  
and BFT Booth 2153



## BUOYANCY SALES: GOING UP

Demand remains strong for riser buoyancy modules, as Ray Wong, Cuming

Manager of Flotation Products, reports new orders from

Hyundai Heavy Industries (HHI), Daewoo Shipbuilding & Marine Engineering Co. (DSME), and Frontier Drilling.

A new customer for Cuming in 2008, HHI describes itself as "the world's biggest shipbuilder," claiming a 15 percent market share. The company registered record sales in 2008, nearly 20 trillion won, or \$14.5 billion. Wong says they bought identical buoyancy packages for two drill ships that can reach 10,000 feet deep.

DSME, with about two-thirds the revenue of HHI, purchased buoyancy riser modules for three ships, all rated to 10,000 feet as well: a semi-submersible drilling rig, drill ship, and a specialty vessel. Cuming has already delivered strings to DSME for two other semi-submersible rigs.

Cuming has sold 7,500 foot riser strings to Frontier, a Norwegian company with administrative offices in Houston, for Bully I, an ultra-deepwater specialty drill ship scheduled for delivery this year. Initially,

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# THROUGHPUT DOUBLED WITH NO COMPROMISE IN QUALITY OR SAFETY



Randy Porter, Project Engineering Manager, uses a computer work station to accurately weigh all raw materials before loading them into a mixing vessel.

Production quality, quantity, and safety are major benefits of a state-of-the-art meter/mix system for buoyancy modules now operational in Avon, reports Randy Porter, Project Engineering Manager.

“The significant investment that the system required has enabled us to double Avon production of

buoyancy modules, necessary to keep pace with the growing demand for our buoyancy products,” Porter says.

From a quality standpoint, Porter says that the appearance of castings is excellent when they emerge from the hydrostatic tester. He also says that the closed system – with no open bowls – limits worker exposure to chemicals to virtually nil. Design began in early '08 and the system was completely operational by Sept. 1, 2008 – on schedule, under budget, and exceeding expectations.

Using customized computer work stations, the system automatically and accurately weighs all raw materials into a mixing vessel, where ingredients are blended under carefully controlled conditions. After blending, the mix is transferred to holding tanks, where it is stored at controlled conditions until needed. The metered mix is then blended with a carefully calibrated level of catalyst and injected into the mold.

Jim Collins, Engineering Technician, designed the control system, customizing and programming off-the-shelf components.

## PETRORIG 1 GULF OF ME



Singapore's Jurong Shipyard is the first of four ultra-deepwater Oil & Gas. A joint of Cuming's maiden assignment is

## 60,000 MODULES SHIPPED

At Cuming Corporation's Avon, Massachusetts, factory, employees celebrate the successful completion and shipment of the company's 60,000th drilling riser buoyancy module. Cuming has been a world leader in offshore buoyancy for over twenty years and a pioneer in developing new deepwater technology.

Pictured left to right: Ray Wong, Lou Watkins, John Cuming, Larry Parkinson, Randy Porter, Frank Civetti, Vincent Wang, Jim Collins, Majdi Haddad, and Alan Moreau



# CUMING SECURES COMPETITIVE EDGE WITH 6,500 PSIG TEST VESSEL

**READY FOR  
MEXICO DEPLOYMENT**



Shipyard has completed major construction of Petrobrig 1, deepwater semi-submersible drilling rigs for Larsen. The riser buoyancy is hoisted into place. The rig's contract is a five-year stint with Petrobras in the Gulf of Mexico.

As oil and gas exploration reaches ever deeper below the ocean surface, the demand intensifies to factory-test Cuming products under excruciating pressure.

“With a new 6,500-psig pressure vessel in operation, Cuming is – to the best of our knowledge – the only manufacturer of flotation and insulation equipment able

to conduct its own tests of its products on its premises to conditions simulating 14,000 feet below the water’s surface,” says Dave Eubank, Engineering Manager. “We believe that our competitors must farm out such testing to independent labs, leaving themselves dependent on the schedule and workmanship of others.”

## REACHING TO NEW DEPTHS

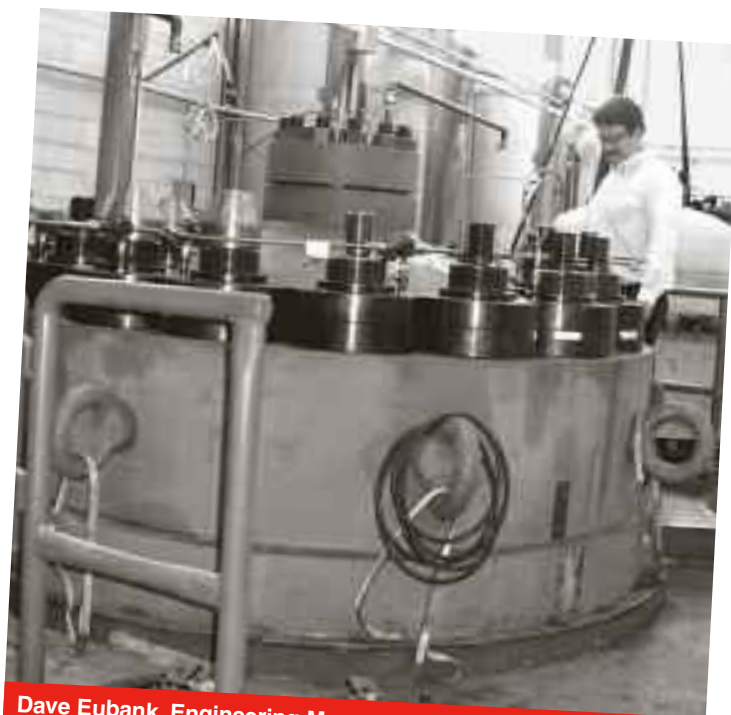
In its January – February issue, Ocean News & Technology magazine reported that Shell Oil Co. has set a world water depth record in drilling and completing a subsea well 9,356 feet (1.77 miles) below the ocean surface. Cuming Corporation provided production drilling riser buoyancy modules at two stages: (1) When exploration drilling pinpointed the reserves, and (2) Once full production began.

This is in the Silvertip section of the Perdido Field, about 200 miles from Houston in the Gulf of Mexico.

The publication quotes Russ Ford, Shell’s Technology Vice President for the Americas as saying, “Pressing into ever

deeper waters shows that the ultra deep is a new frontier for the critical resources to meet the world’s future energy needs. This achievement represents a leap forward in applying sophisticated technologies in rugged seafloor terrain with a harsh environment of very high pressures accessible only by remotely operated vehicles. This means not just reaching a new milestone, but forging new ground in technological innovation.”

Since drilling is not yet conducted at over 14,000 feet, Cuming expects the new pressure vessel to be more than adequate, in terms of testing depth, for years. The massive unit weighs nearly 270,000 pounds. The lid, which weighs 16 tons itself, is sealed with 16 hydraulic nuts that weigh 150 pounds each and studs seven inches in diameter. Two cranes and a spreader bar are required to remove and replace the lid.



Dave Eubank, Engineering Manager, supervised installation of a new pressure vessel capable of testing Cuming products to conditions simulating over 14,000 feet below the water’s surface.

The full article was, at the time of publication, available on the magazine’s Web site, <http://www.ocean-news.com/>.

## NEW MATERIALS YIELD BETTER, STRONGER, MORE EFFICIENT PRODUCTS continued from page 1

provide customers with an optimized solution for their off-shore needs:

**Standard C-SDF Construction:** The acknowledged standard of the industry, combining rugged long-lasting service in harsh conditions with maximum cost effectiveness.

**Low Density C-LDF Construction:** The proven materials choice for systems needing extra lift while maintaining extraordinary ruggedness and longevity.

## BUOYANCY SALES: GOING UP continued from page 1

it will operate under a five-year contract with Shell in the Gulf of Mexico.

Wong also reports a sale for Bully II, an ultra-deep specialty drillship to be moored in DP arctic operations. This vessel is scheduled for delivery to Shell in 2010. Frontier is a repeat customer from 2007.

**Ultralight C-ULF Construction:** The ultimate in high strength-to-weight ratio; lightweight buoyancy for maximum lift, minimum volume, and low deck weight.

**C-FLOAT** high-integrity and ruggedized construction features can be designed into any of these materials to further enhance impact resistance and prevent handling damage. Request a copy of the latest TNB (Technical News Bulletin) on the subject from Lou Watkins, [lwatkins@cumingcorp.com](mailto:lwatkins@cumingcorp.com).


"These ships, and therefore Cuming products, will operate worldwide," says Wong, "off the coasts of Africa and Australia and in the Gulf of Mexico."

## GULF OF MEXICO BOUND



A Cuming-insulated manifold is loaded shipboard for the BP Atlantis field, the Gulf of Mexico's third-largest. This manifold is compact, with the valves and internal pipes extremely close together. We had to devise an entirely new method of applying insulation to make it work.

### CONTACT INFORMATION:

- LOU WATKINS
- RAY WONG (flotation)  
225 BODWELL ST.  
AVON, MA 02322  
1-800-432-6464  
++1-508-580-2660  
++1-508-580-0960 FAX  
[lwatkins@cumingcorp.com](mailto:lwatkins@cumingcorp.com)  
[rwong@cumingcorp.com](mailto:rwong@cumingcorp.com)  
++1-617-648-7096  
WONG'S MOBILE
- ELMER HERSHEY (Insulation)  
  
Bayou Flow Technologies, LLC  
BAYOU FLOW TECHNOLOGIES, LLC  
515 N. SAM HOUSTON  
PARKWAY EAST  
SUITE 630  
HOUSTON, TX 77060  
++1-281-591-1001  
++1-281-591-0284 FAX  
++1-713-376-5767 MOBILE  
[ehershey@cumingcorp.com](mailto:ehershey@cumingcorp.com)  
4401 CURTIS LANE  
NEW IBERIA, LA 70560  
++1-337-367-8383  
++1-337-367-8349 FAX
- LOUIS SLAUGHTER (flotation)  
Teal Equipment Company  
2100 NORTH LOOP WEST  
P.O. BOX 924116  
HOUSTON, TX 77292  
++1-713-253-1629  
++1-713-627-0314 FAX  
[lslaughter@cumingcorp.com](mailto:lslaughter@cumingcorp.com)
- EUROPE
- MIKE BOHLEKE  
SCHULSTRASSE 8  
D-61276  
WEILROD, GERMANY  
++49-6083-1251  
++49-6083-28380 FAX  
++49-172-7208025 MOBILE  
[mbohleke@cumingcorp.com](mailto:mbohleke@cumingcorp.com)
- MAGNUS VIKÅ – (Insulation)  
STAVANGER, NORWAY  
++ 47-916-93-181  
++ 47-518-95-480 FAX  
[mvika@cumingcorp.com](mailto:mvika@cumingcorp.com)
- JAPAN
- Y. IKEGAMI  
5-39-14 HINO-MINAMI  
KONAN-KU  
YOKOHAMA-SHI  
KANAGAWA 234-0055 JAPAN  
++ 81-45-844-0667 TEL  
++ 81-45-844-0682 FAX  
[yikegami@cumingcorp.com](mailto:yikegami@cumingcorp.com)

