

# CUMMING

## **TECHNICAL NOTE 100-10**

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## **STACKING AND RACKING OF C-FLOAT RISER BUOYANCY MODULES**

### **GENERAL**

**C-FLOAT** syntactic foam riser buoyancy modules are made of strong plastic and fiberglass materials, rugged enough for normal handling under most offshore conditions; however, accidental damage may occur. Following these guidelines will reduce the chance of damage and ensure long service life. This advice is general in nature, and may not apply in every case. Consult our engineers with any questions about specific applications. It would also be helpful to read Technical Note 100-9, Handling, Installation, and Maintenance.

### **STACKING AND RACKING**

The two most important rules to be followed in stacking modules are to: (1) Avoid bearing stress in excess of 1,000 psi on either the stacking flats or on the flexure lugs; and (2) Take care to prevent large bending loads by always locating supports directly under the flexure lugs. Stacking flats typically 12.00" wide are molded into the O.D. surfaces of **C-FLOAT** modules. These flats not only prevent rolling but also provide a large bearing area for stacking. In addition, the I.D. of each module is equipped with two flexure lugs designed to safely carry loads and isolate the buoyancy elements from any bending. Special attention to these features is essential to prevent damage or risk of injury when stacking modules or suited risers several layers high.

### **TYPES OF DAMAGE**

The most common types of handling damage suffered by buoyancy modules are:

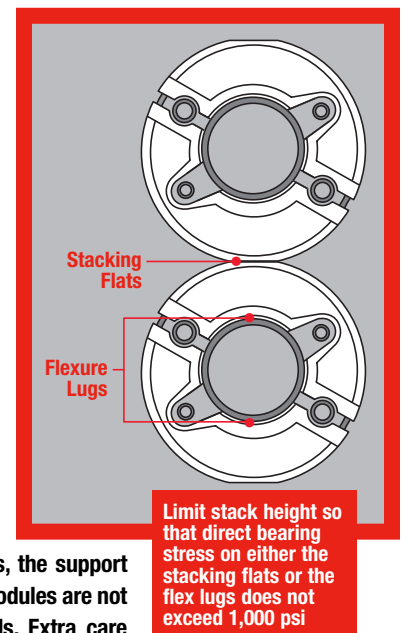
- punctures in the fiberglass skin by sharp objects, such as forklift truck forks;
- broken edges caused by dropping or rough handling; and
- cracks resulting from excessive bending loads.

None of these types of damage are necessarily serious, and often have little immediate effect on hydrostatic performance, but an ongoing program of

inspection and maintenance is required to prevent any damage from accumulating and possibly worsening over time.

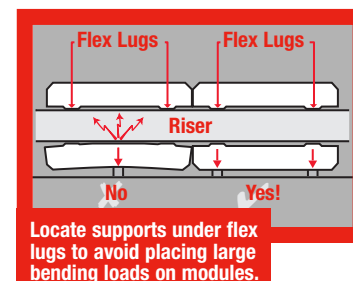
### **HANDLING PRECAUTIONS**

Personnel involved in handling buoyancy modules should be trained to exercise reasonable precautions to avoid the types of damage described above. Modules should be lifted with soft slings instead of chains or wire ropes. When modules are shored on wood or metal beams, the support points must be located so that modules are not subjected to large bending loads. Extra care should be taken when handling modules under extreme temperature conditions, either very hot or very cold.



### **MAINTENANCE AND REPAIR**

Minor damage to **C-FLOAT** modules can be easily repaired in the field using the special repair kits available from Cuming Corporation (see Technical Bulletins 127-1 and 127-2). More extensive damage is best repaired at factory-trained and authorized facilities to be found near most major offshore centers. Contact our customer service department for the repair facility located nearest you.



Sales Offices Worldwide

See our website  
[www.cumingcorp.com](http://www.cumingcorp.com)  
for the office nearest you.