General remarks on mounting equipment inside VITROVEX glass enclosure

There are many ways in which equipment could be installed inside VITROVEX glass sphere enclosures. However, there are a few general remarks as below which should be considered in this regard.

1. Please take into account that glass spheres shrink when they are under pressure. Even if the reduction in diameter is very small, the outer diameter of all built-in items has to be at least smaller than the maximum inner diameter of the sphere less the shrinking value for this particular housing. Nautilus can supply mounting rings in various diameters to support installation.
2. If bulkheads/feedthroughs/connectors etc. are used, do not fix instruments, battery housings or any other items directly to them in order to avoid bending stress along the drill holes.
3. We recommend applying adaptor plates for the installation of bulkheads/feedthroughs/connectors. As a consequence, those bulkheads/feedthroughs/connectors etc. shall be ordered with a post/thread long enough to accommodate such adaptor plates. Available off-the shelf-connectors may not meet this requirement, but connector manufacturer are usually able to provide those with only little surcharge and slightly delayed lead time.
4. All items which should be fixed to the glass have to be flexible mounted with flexible epoxy, silicon or equivalent. Adhesives, which are not flexible, could damage the inner surface of the glass, when pressurized. Resulting micro flaws could propagate over time and eventually lead to larger spalling.
   Adhesives that can be recommended are <WEICON Flex 310 M Classic> (http://www.weicon.com/en/produkte/elastische-klebstoffe/flex310-m.php) or <EP42HT-2LTE> from http://www.masterbond.com/tds/ep42ht-2lte
   Optional, the glass surface can be pre-treated with a primer to achieve an even higher bonding strength.
5. Data logger, Batteries and all other items should be shock mounted to avoid any damages during transportation, deployment or recovery.
6. There are actually no limitations in view of the material that could be built in; however, rigid PVC has been proven best.
7. Items which produce any kind of gas, that eliminates the vacuum of the sphere, must not be used.

We also refer to our Handling Procedures for VITROVEX glass spheres for additional information (http://www.nautilus-gmbh.com/vitrovex-deep-sea-housings/instrument-housings/).

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