RECOMMENDED INSTALLATION PRACTICES FOR CPVC PLUG (CH4821-1) AND ADAPTER (CH4821-2) ASSEMBLIES.

To support correct installation and reduce the risk of leakage, breakage, or thread damage, please follow the recommendations below. These recommendations are based on internal review and validation work and are intended as best-practice guidance for field assembly.

1. GENERAL RECOMMENDATIONS APPLICABLE TO BOTH PLUG AND ADAPTER

- Use a **lubricant that is compatible with CPVC materials**. Lubricant selection is important because some products may negatively affect CPVC performance.
- Apply lubricant **only to the O-ring sealing area**, if lubrication is needed. **Do not apply lubricant to the thread**. Thread lubrication may significantly reduce friction and increase the mechanical load in the threaded joint, even when the applied torque appears acceptable
- Avoid exposure of the CPVC component to **non-compatible lubricants, petroleum-based products, or other chemicals** that may contribute to chemical degradation or brittle cracking
- **Sealing is ensured by the O-ring only. Do not use PTFE tape, thread seal tape, or any other sealing material on the threads**, as this may impair proper assembly and reduce the structural reliability of the plug or adapter.

2. BOTTOM PLUG INSTALLATION

- Install the plug using a **hand-tight plus angular rotation** approach:
  The validated acceptance method is:
  - **Minimum**: hand-tight **+ 1/4 turn**
  - **Maximum**: hand-tight **+ 1/2 turn**
- The installation is considered acceptable only if this assembly method results in:
  - **no leakage**
  - **no breakage**
  - **no permanent thread damage**, meaning the component remains serviceable and removable after installation.

3. ADAPTER INSTALLATION (4" TO 2.5")

- Consider valid guidelines indicated for the bottom plug at point 2. of this document for the installation of the adapter into the tank – related to 4" thread.
- When installing the valve into the **2.5" thread, hold the adapter firmly while screwing the valve in**.
- As for the plug, the acceptance method remains:
  - **Minimum**: hand-tight **+ 1/4 turn**
  - **Maximum**: hand-tight **+ 1/2 turn**
- The installation is considered acceptable only if this method results in:
  - **no leakage**
  - **no breakage**
  - **no permanent thread damage**, meaning the component remains serviceable and removable after installation.

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4. PIPING AND INSTALLATION CONDITIONS

- Care should be taken to avoid installation conditions that may introduce **additional mechanical stress** into the adapter or plug assembly.
- Special attention should be given to the connection layout, particularly where **rigid piping** is used. Clear distinction should be made between rigid and flexible connections, since the connection design may influence the load transferred to the threaded component.
- If PVC piping is considered sufficiently flexible in a given installation, its suitability should still depend on the actual installation characteristics, such as pipe geometry and stiffness.

5. RISER TUBE LENGHT

- The riser tube must be cut to a length compatible with the valve used. Its length shall be such that proper assembly is ensured and no axial load is transferred to the bottom plug. In particular, the riser tube must not be long enough to push against the bottom plug during normal tank expansion and relaxation in service.

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