

# Don't Compromise Onsite Safety & Reliability by Using Friction Fit Tapered Plugs

## **Pop-A-Plug® Tube Plugs - ASME PCC-2 Compliant Mechanical Plugging Method**

Friction fit tapered plugs can be expelled during shell side pressure testing or from tubes that have not been properly vented prior to plugging, becoming a serious safety concern for surrounding equipment and personnel working in or near heat exchanger tube ends during testing. Pop-A-Plug Heat Exchanger Tube Plugs from EST Group offer a mechanical plugging solution compliant with ASME PCC-2-2015 recommendations.

### **Risks & Dangers of Friction Fit Tapered Plugs**

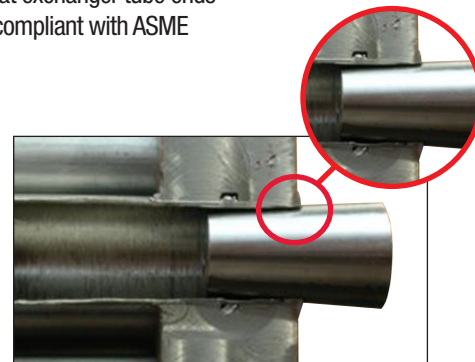
- Do not conform to ASME PCC-2-2015 recommended tube plugging repair methods for applications above 200 PsiG (14 BarG) / 400°F (205°C)
- Lack of pressure rating resulting in an unknown safety factor
- Can eject when system is pressurized and become a lethal projectile
- Can overstress and/or damage tube joints and crack tubesheets due to uncontrolled installation force
- Can damage expensive epoxy coated tubesheets resulting in costly repairs
- Require welding in high pressure services/applications

Mechanical Plugs should be considered in situations where friction fit tapered plugs are not appropriate for the pressure and/or temperature of service or other mechanical/environmental conditions.\*

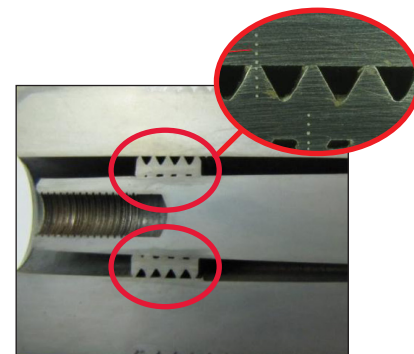
EST Group's **Pop-A-Plug® Tube Plugging System** is a safe and reliable mechanical plugging method compared to friction fit tapered plugs that are subject to weld cracking, leaking and/or plug ejection issues that can often occur after units restart.

### **Advantages of Pop-A-Plug Tube Plugs**

- **Conform to ASME PCC-2-2015 recommended tube plugging repair methods**
- **Pressure Rated** - up to 7000 PsiG (483 BarG)
- **Safe** - will not leak or eject as a result of thermal expansion and/or galvanic corrosion
- **Reliable** - provides a helium leak tight seal
- **Cost-Effective** - reduces turnaround duration improving plant uptime
- **Engineered Solution** - controlled and repeatable installation force protects surrounding tubes and adjacent ligaments from damage
- Accommodates through the tube plugging applications
- Plug and tube materials always matched to prevent galvanic interaction problems
- No welding required
- Compliant with QA Systems including ANSI N45.2, NQA-1, 10 CFR 50 Appx. B and 10 CFR 21
- Manufactured in an ISO 9001:2015 registered facility



*Limited contact with tube/tubesheet*



*Multiple points of contact with tube/tubesheet*

\* *Inspection and Repair of Shell and Tube Heat Exchangers, The American Society of Mechanical Engineers (ASME) PCC-2-2015, Article 3.12, p.133-135.*