

## **EST Group**

## POP-A-PLUG<sup>®</sup> QADOC5 CERTIFICATION

Thursday, March 26, 2015

## To whom it may concern:

For the Pop-A-Plug<sup>®</sup> System (P2 and CPI Plugs) EST Group offers an optional QADOC5 certification package.

All EST Group products are manufactured under the ISO-9001 Quality Management System. However the EST Group QADOC5 certification

package provides additional valuable information specific to each Pop-A-Plug manufactured. This can be summarized as follows:

The **QADOC5** certification package is in accordance with **EN 10204 3.1** for:

- The *materials of construction* used for the Pop-A-Plug Pin and Ring. The certification provides the heat and lot numbers for the raw materials used for manufacturing. The certification is traceable to the Pop-A-Plugs by means of:
  - 1.1. The S.O.# on the box label if manufactured prior to March 1, 2015.
  - 1.2. The Lot # on the box label and marked on each pin if manufactured since March 1, 2015 (see fig. 1.1).
- 2. The *performance testing* of the Pop-A-Plugs as supplied is conducted:
  - 2.1. In both the *smallest* and *largest* inside diameter as applicable for the Pop-A-Plug size in question.
  - 2.2. Testing is performed based on the "*worst case scenario*" of the tube side pressure being greater as the shell side pressure (in the direction of the pin's small diameter), effectively trying to push the pin out of the ring. This confirms the Pop-A-Plug is "*pressure direction independent*" (see fig.1.2).
  - 2.3. A *minimum safety ratio of 1.5* in place where the minimum acceptable performance test results must be at least 1.5 x the specified maximum pressure as applicable for the Pop-A-Plug in question.
- **Example**: A Pop-A-Plug rated for 6000 PsiG (414 BarG) must pass a minimum performance test value of 9000 PsiG (621 BarG).

Submitted by,

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Fig. 1.1 Shows marking on pin since March 1, 2015

