

## Fort Collins Utilities' Home Efficiency Program Combustion Safety Testing (CST) Process

### Audit CST Process:

- Auditor performs the following tests:
  1. Carbon Monoxide (CO) Test in vent pipe
  2. Spillage and Draft Test
- Auditor records results on audit data sheet for installation contractor's use.
- Auditor will follow Building Performance Institute's (BPI) Combustion Safety Test Action Levels:

| CO Test Result*                       | And/<br>Or | Spillage and Draft Test Results       | Retrofit Action  |
|---------------------------------------|------------|---------------------------------------|--|
| 0-25 ppm                              | <i>And</i> | <b>Fails at worst case only</b>       | Recommend that spillage problem be fixed. Have owner sign disclosure form.   |
| 26-100 ppm                            | <i>And</i> | <b>Passes</b>                         | Recommend that the CO problem be fixed. Have owner sign disclosure form.   |
| 26-100 ppm                            | <i>And</i> | <b>Fails at worst case only</b>       | Recommend that the CO and spillage problem be fixed. Auditor will install CO detector** and have owner sign disclosure form.   |
| 100-400 ppm                           | <i>Or</i>  | <b>Fails under natural conditions</b> | Work may not proceed until the system is serviced and the problem is corrected. Auditor will install the CO detector** and have owner sign disclosure form.  |
| > 400 ppm                             | <i>And</i> | <b>Passes</b>                         | Work may not proceed until the system is serviced and the CO problem is corrected. Have owner sign disclosure form.  |
| > 400 ppm                             | <i>And</i> | <b>Fails under any condition</b>      | Turn off the appliance, have the owner call for service immediately and sign disclosure form. Auditor will install the CO detector.**  |
| > 35 ppm ambient CO in breathing zone | –          | <b>During natural conditions test</b> | Abort the test. Turn off the appliance, ventilate the space and evacuate the building. Have the homeowner call for service immediately and sign disclosure form. Auditor will install CO detector** after CO is removed. |

\*CO measurements for undiluted flue gases in the vent at steady state.

\*\* unless CO detector is currently installed on premises.

### Post-Installation CST Process:

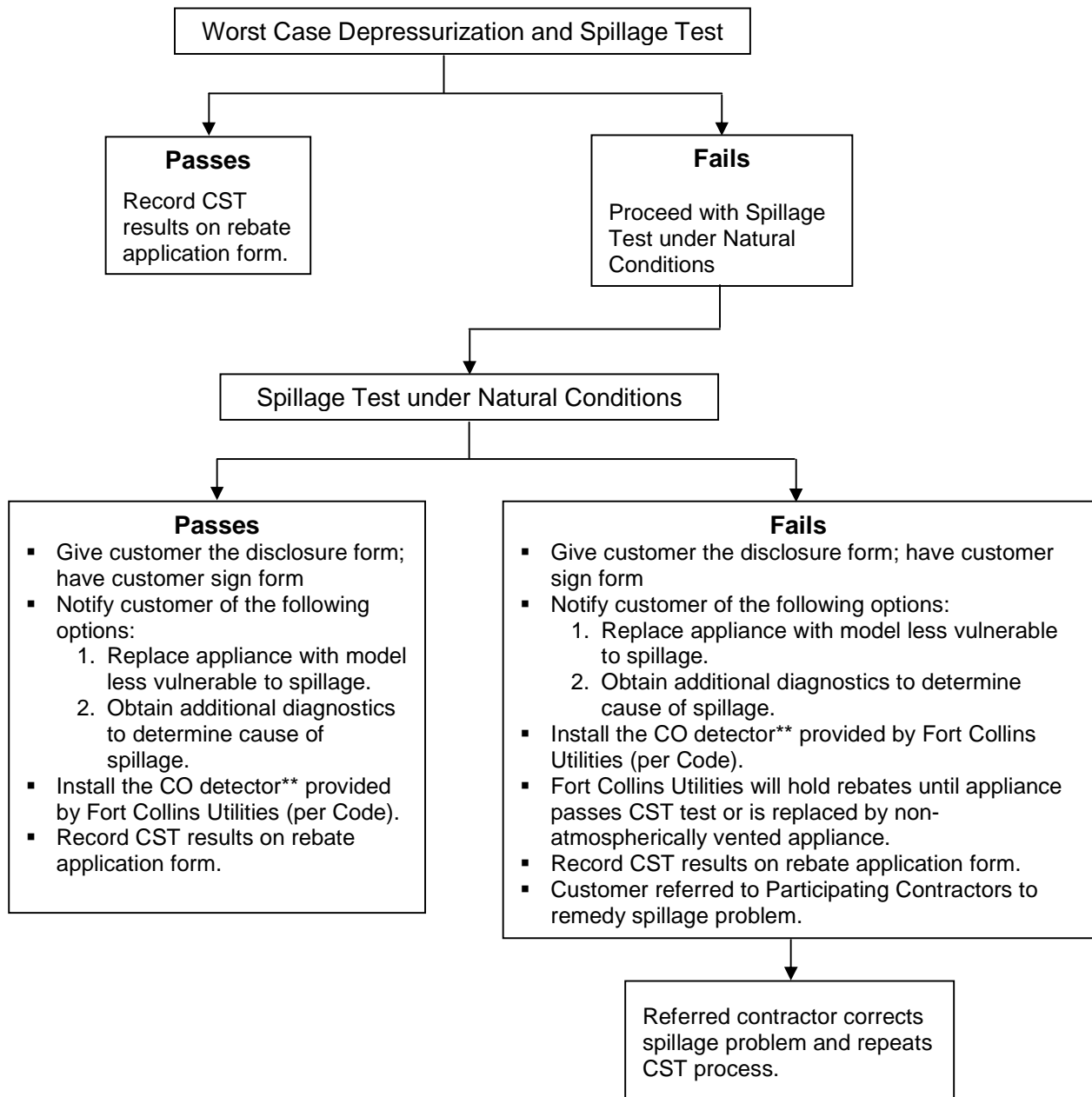
Installation contractor performs Worst Case Depressurization and Spillage Test as well as Spillage Test under Natural Conditions (see reverse for flow chart) after the following installations:

- Air sealing
- Conditioned crawl space insulation
- Basement wall insulation
- Exterior frame wall insulation
- Masonry exterior wall insulation
- Attic insulation
- Gas furnace replacement
- Gas boiler replacement
- Replacement water heater
- Mechanical ventilation
- Duct sealing

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## Post-Installation CST Process, continued

Installation contractor performs these tests and follows the indicated actions:



\*\* unless CO detector is currently installed on premises.