



Advanced Home Upgrade FQC Checklist

This FQC checklist is designed as a high level guide for participating contractors to better understand how FQC findings relate to the FQC scoring categories. For a more comprehensive list, please reference the sources listed in this document. All applicable local codes, ordinances, and guidelines must be followed. Materials and equipment must be installed per manufacturer's instructions.

Table 1: Scoring Categories

Scoring Categories	
Fail - F	Contractor has left the home in an unsafe condition that threatens occupants' health and safety and requires immediate corrective action (per BPI and NGAT). Verifier has notified the homeowner of the unsafe conditions and has called PG&E to assess the situation. Follow-up is required for all CAS failures and corrective action is mandatory.
Discrepancy - D	The contracted scope of work does not meet home performance standards and/or Program requirements; significant discrepancies were found in the testing data submitted in the post installation application and areas of technical performance need improvement. Corrective action is strongly recommended and may be required.
Pass - P	Exceptional work completed. The job passes all program health & safety and technical requirements. Test-out data was accurately reported. A comprehensive home performance work scope met quality installation standards and high priority items have been installed.



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Table 2: Checklist for Advanced Home Upgrade Field Quality Control

Findings in this section of combustion appliance safety testing will receive an 'F' score.	
Measure Description	Findings
<p>Combustion Appliance Safety Testing Note: FQC will apply the BPI BA 1200 Standard and/or PG&E Whole House Action Guidelines, whichever standard is more stringent.</p>	<ul style="list-style-type: none"> Appliance(s) failed spillage Significant gas leak(s) accompanied by a strong odor and/or hissing Room ambient CO exceeded 9 ppm Appliance(s) exceeded air free/as measured CO limits Defective heat exchanger. Evidence of cracks, holes, metal fatigue, excessive rust or soot. Vent fails visual inspection (Disconnected, missing, damaged, rusted out or incorrectly installed vent, including missing draft diverter) Soldered, kinked or pre-1973 flex connector was found on any gas appliance Gas line not properly capped Communication at FAU between cold air return and products of combustion. Insufficient CVA
Findings in the sections below will receive a 'D' score.	
Measure Description	Findings
<p>Health and Safety</p>	<ul style="list-style-type: none"> Fuzz leak detected and verified Dryer (gas or electric) is not vented to the outside CO monitors or detectors are not installed. Insufficient fire clearance Vent is not mechanically secure (3 screws/120 degrees at each vent connection) Draft diverter misaligned Combustion ventilation air vent is obstructed Serious moisture issues were not addressed and included in the SOW



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	<p>Gas appliances present but not reported on the test measurement form</p> <p>Significant communication between conditioned space and: Attic, CAZ, Garage, Crawlspace</p> <p>Seismic straps are not installed at DHW</p>
Shell - Wall insulation	<p>Minimum 50% total wall area (all walls)</p> <p>R value ≥ 13 (2x4 framing) or R value ≥ 19 (2x6 framing), installed per CEC QII Standards</p> <p>Insulation density does not meet program requirements</p>
Shell - Attic Insulation	<p>100% of accessible attic area (minimum 50% of total attic area)</p> <p>R-44 or better, installed per CEC QII standards</p> <p>Insulation uniformity does not meet program requirements</p> <p>Attic rulers are not visible from attic hatch (loose fill insulation: 1 ruler is required every 250 sq. ft.)</p> <p>Access hatch is not insulated</p> <p>Weather stripping is not installed at access hatch</p> <p>Baffles are not installed at eave vents; eave vents are obstructed</p> <p>Knee-walls and skylight shafts are not insulated</p> <p>Insulation dams are not installed at attic access and all heat producing devices (HPDs)</p> <p>Combustion ventilation air (CVA) vents are unobstructed</p>
Shell – Floor Insulation	<p>100% of accessible floor area (minimum 50% of total floor area)</p> <p>R value ≥ 19, installed to full-joist thickness, per CEC QII Standards</p> <p>Insulation is not in full contact with subfloor</p> <p>Insulation does not uniformly fill the cavity (side-to-side and end-to-end)</p>
Shell – Whole building/envelope air sealing and Ventilation	<p>800 square foot conditioned area (at 8 ft average ceiling height) minimum</p> <p>0.5 ACHn minimum performance required</p> <p>0.35 or better ACHn target achieved in accordance with BPI standards and ventilated per ASHRAE 62.2. (installation of balanced Heat Recovery Ventilation recommended)</p> <ol style="list-style-type: none"> 1) 15% building leakage reduction (pre vs. post) 2) 30% building leakage reduction (pre vs. post) <p>Unconditioned space and CAZ doors to conditioned space are not weather stripped</p> <p>ACHn was incorrectly calculated and mechanical ventilation was not recommended</p>
HVAC - Replacement Ducts and Duct	<p>Duct replacement only</p> <p>R-8 All CZs @ 5% or less duct leakage to outside test</p>



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Insulation	<p>Ducts are not installed with a vapor barrier</p> <p>Plenums are not wrapped with fiberglass duct insulation or rigid insulation board</p> <p>Use of mastic and draw bands</p>
HVAC – Cooling	<p>Split AC: SEER 15.0 / EER 12.5 or better</p> <p>Packaged AC: SEER 15.0 / EER 12.0 or better</p>
HVAC – Heating	<p>Sealed Gas Furnace: 92% AFUE or better</p> <p>Heat Pump: 9.0 HSPF or better</p>
HVAC – Ultimate Comfort	<p>Meet 7 Residential HVAC System Commissioning Specifications including Delivered Sensible EER @ 85% or better (85% Delivered Heat for Furnaces)</p> <p>Only available on projects with HVAC Upgrade <i>and</i> Duct Replacement by program-approved HPHI installers</p>
Natural Gas Storage Water Heater	0.70 EF / UEF or better
Condensing Natural Gas Storage Water Heater	0.90 EF / UEF (Sealed Combustion)
Electric Storage Heat-Pump Water Heater	3.24 EF / 3.09 UEF or better
Pool Pump	CEC Title 20 compliant variable speed pool pump replacing existing single or two-speed pump (primary in-ground pool system only; no jacuzzis)
Smart Thermostat	<p>EnergyStar certified Smart Thermostats</p> <p>Must be Wi-Fi enabled and confirmed via test login</p>
Indoor Lighting	Pin-base recessed LED retrofit fixture (Title 24 - JA8 Compliant)
Sources:	<ul style="list-style-type: none"> - 2019 Home Upgrade Installation Specs - 2019 Whole House Combustion Appliance Safety Test Procedure - 2019 NGAT Action Guidelines - 2016 Reference Appendices for the 2016 Building Energy Efficiency Standards - ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings