IBA Home Energy Conservation Program Gas Furnace & Appliance Form for Auditors & HVAC Contractors (2011)

Client Name: _____ Client/Job Application ID: _____
Client Address: _____ County: _____

IF GAS APPLIANCES EXIST IN THE HOME, MAKE SURE CLIENT HAS GAS SERVICE OR IMMEDIATELY STOP WORK IN THE HOME.

☐ **EMERGENCY** ☐ FOLLOW UP NEEDED ☐ Mobile Home ☐ Site Built

Health & Safety Inspection of Gas Appliances
Ambient CO Level: _____ ppm **Gas Odor:** ☐ Yes ☐ No **Fire Hazards:** ☐ Yes ☐ No

Equipment Information
Make of Furnace: _____ **Model of Furnace:** _____

Serial # of Furnace: _____ **Manuf. Temperature Rise:** _____ Min. _____ Max.

Fuel Type: ☐ Natural ☐ Propane **Forced Air:** ☐ Yes ☐ No **Btuh Input:** _____

Furnace Type: ☐ Draft hood ☐ 80% ☐ 90% ☐ Mobile Home ☐ Other: _____

Furnace Application: ☐ Up flow ☐ Down flow ☐ Horizontal ☐ Lowboy

CAZ Location: _____ **Water Heater:** ☐ Gas ☐ Electric **Btuh Input:** _____

ITEMS MARKED CONTRACTOR TO REPAIR & REPLACE MUST BE INCLUDED ON WORK ORDER

	Initial Auditor: _____ Initial Audit Date: _____	**Contractor:** _____ Service Date: _____ *If new furnace is installed, use new Furnace installation form and Worst Case Draft Forms instead.*	**Auditor Insp.:** ____ Date: _____ *If new furnace is installed, use new furnace installation form and Worst Case Draft Forms instead.*	**Final Aud.** _____ Date: _____
Gas Piping Inspection				
Is entire visible gas system free of leaks?	☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Does gas system have proper materials & configuration?	☐ Yes ☐ No ☐ Replace/Repair	☐ Yes ☐ Repaired/Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Vent System Inspection				
Describe vent system: (i.e. height, connector rises, Lateral lengths, diameters, elbows, materials)				
Furnace connector: _____				
Water heater connector: _____				
Common vent: _____				
Other: _____				
Is there a masonry chimney that needs to be lined?	☐ Yes ☐ No	☐ Yes ☐ No ☐ Installed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is chimney penetration sealed correctly?	☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Does the vent termination have a proper cap?	☐ Yes ☐ No ☐ Install ☐ Replace	☐ Yes ☐ Replaced/Installed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA

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Auditor	Contractor	Inspection	Final
Is the single wall pipe proper gauge? ☐ Yes ☐ No ☐ Replace	☐ Yes ☐ Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Does all the pipe have proper clearance to combustibles? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is all pipe connected and supported properly? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Do the connectors have the proper ¼" per foot rise? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Area all pipes free of corrosion and rust? ☐ Yes ☐ No ☐ Clean ☐ Replace	☐ Yes ☐ Cleaned/Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the vent system clear of blockage? (open & inspect) ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Has the vent system been inspected in the attic? ☐ Yes ☐ No ☐ Repair ☐ Replace	☐ Yes ☐ Repaired/Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Are vent and combustion air pipes both piped to outside? ☐ Yes ☐ No ☐ Vent to Outside	☐ Yes ☐ Vented to Outside	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Do pipes slope back toward furnace for drainage? ☐ Yes ☐ No ☐ Adjust	☐ Yes ☐ Adjusted	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Are pipes supported properly? (hanger every 4-5 feet) ☐ Yes ☐ No ☐ Repair ☐ Install	☐ Yes ☐ Repaired/Installed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA

Ventilation and Combustion Air *(to be completed by Initial Auditor)*

Pre weatherization equipment inputs & available combustion air

Total Btuh of natural draft equipment in CAZ: _____ **Btuh** **Divided by 20 :** _____ **cu. ft.**

Total Btuh of draft induced equipment in CAZ: _____ **Btuh** **Divided by 26 :** _____ **cu. ft.**

Add the cu. ft. of these two lines together. This is the minimum area needed: _____ **cu. ft.**

Multiply the area (L x W x H) that communicates with the CAZ: **Available area** _____ **cu. ft.**

Projected combustion air requirements after modifications are made or equipment is replaced

Total Btuh of natural draft equipment in CAZ: _____ **Btuh** **Divided by 20 :** _____ **cu. ft.**

Total Btuh of draft induced equipment in CAZ: _____ **Btuh** **Divided by 26:** _____ **cu. ft.**

Add the cu. ft. of these two lines together. This is the minimum area needed: _____ **cu. ft.**

Multiply the area (L x W x H) that communicates with the CAZ: **Available area** _____ **cu. ft.**

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Furnace Filter Arrangement			
Filter Size: _____ x_____ x_____ *Filter size must also be recorded on Dwelling Form*			
Is the furnace filter clean? ☐ Yes ☐ No ☐ Replace	☐ Yes ☐ Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the furnace filter properly supported? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the filter slot or door in place and sealed? ☐ Yes ☐ No ☐ Repair ☐ Seal	☐ Yes ☐ Repaired/Sealed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Was the client educated on care and maintenance? ☐ Yes ☐ No	☐ Yes	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Electrical Safety			
Is the polarity correct? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the furnace properly grounded? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the ssu fuse and/or breaker correct amperage? ☐ Yes ☐ No ☐ Replace	☐ Yes ☐ Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Amperage of fuse found: _____amp	**Amperage of fuse replaced:** _____ amp		
Is there an operational shut-off switch? ☐ Yes ☐ No			
Is the operational shut-off switch working properly? ☐ Yes ☐ No ☐ N/A ☐ Repair ☐ Replace	☐ Yes ☐ N/A ☐ Reprd/Replcd	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Blower, Burners, Coil and Heat Exchanger			
Does visual inspection show crack, hole, or excessive corrosion in heat exchanger? *(If yes, photo doc. & order new furnace or exchanger)* ☐ Yes ☐ No ☐ Replace	☐ Yes ☐ No ☐ Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is there a crack, hole, or excessive corrosion in heat exchanger? *(If yes, photo doc. & order new furnace or exchanger)* ☐ Yes ☐ No ☐ Replace	☐ Yes ☐ No ☐ Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Are the burners clean & free of corrosion? ☐ Yes ☐ No ☐ Clean	☐ Yes ☐ Cleaned	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the blower wheel clean? ☐ Yes ☐ No ☐ Clean	☐ Yes ☐ Cleaned	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Blower Motor Oiled: ☐ Yes ☐ No ☐ Oil	☐ Yes ☐ Oiled ☐ N/A	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the Motor On Proper Speed? ☐ Yes ☐ No ☐ Adjust	☐ Yes ☐ Adjusted	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the Motor Working Properly? ☐ Yes ☐ No ☐ Repair ☐ Replace	☐ Yes ☐ Repaired/Replaced	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA

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Auditor	Contractor	Inspection	Final
Is the A/C unit cooling properly? ☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes/NA
Is the A/C coil clean? ☐ Yes ☐ No ☐ Clean	☐ Yes ☐ Cleaned	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the A/C coil drain pan in working condition? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the A/C coil drain line in working condition? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Duct System Visual Inspection			
Are there open returns or disconnected ducts? ☐ Yes ☐ No ☐ Repair	☐ No ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Are there ducts in unconditioned spaces that need sealed? ☐ Yes ☐ No ☐ Seal	☐ No ☐ Sealed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Thermostat Inspection			
Is the thermostat location correct? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the thermostat level? ☐ Yes ☐ No ☐ Repair	☐ Yes ☐ Repaired	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the thermostat hole sealed behind the sub base? ☐ Yes ☐ No ☐ Seal	☐ Yes ☐ Sealed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Is the heat anticipator or cycle rate set properly? ☐ Yes ☐ No ☐ Adjust	☐ Yes ☐ Adjusted	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA
Record heat anticipator setting: _____ **amps**	_____ **amps**	_____ **amps**	_____ **amps**
Is there a working existing digital thermostat? ☐ Yes ☐ No ☐ Repair ☐ Replace ☐ Install (only if other HVAC ordered)	☐ Yes ☐ Repaired/Replaced ☐ Installed	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA ☐ Yes/NA
Measure Temperature Rise			
Supply air temperature: _____ deg.	_____ deg.	_____ deg.	_____ deg.
Return air temperature _____ deg.	_____ deg.	_____ deg.	_____ deg.
Temperature rise: _____ deg.	_____ deg.	_____ deg.	_____ deg.
Is the temp. rise within manufacturer specs.? ☐ Y ☐ N	☐ Y ☐ N	☐ Pass ☐ Fail ☐ N/A	☐ Yes/NA

Furnace Operation

Furnace Operation Section only to be completed once unless HVAC repair work is done. Auditor to do only if a HVAC Contractor is not going to be in the home. HVAC to complete post-test if repair work is done.

	Pre-Test	Post-Test	
Is pilot safety system operational? *(N/A if mid or high efficiency)*	☐ Y ☐ N ☐ N/A ☐ Contractor to repair	☐ Y ☐ N	☐ Yes/NA
Did the limit switch function properly?	☐ Y ☐ N ☐ Contractor to repair	☐ Y ☐ N	☐ Yes/NA
Record plenum temperature when tripped:	_____ deg.	_____ deg.	_____ deg.
Record and adjust fan off temperature:	_____ deg.	_____ deg.	_____ deg.

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Check firing rate of furnace, required if high CO or unusual temperature rise exist.

Verify furnace firing rate by clocking meter for natural gas, checking manifold pressure for propane:
On ¼ ft. dial, time 4 turns and use 1 ft. column. / On 2 ft dial, time one turn and use 2 ft. column.

Dial timed: ☐ ¼ cu. ft. ☐ ½ cu. ft. ☐ 2 ft.

	Pre-test	Post-test
Seconds to turn 4 revolutions:	_____ sec.	_____ sec.
Total Seconds divided by 4:	_____ sec.	_____ sec.
Cubic feet per hour from clocking table:	_____ cu. ft.	_____ cu. ft.
Btu content per cu. ft. of gas: *(can be obtained from local gas supplier)*	_____	_____
Cubic feet per hour times by gas Btu content:	_____ Btu input	_____ Btu input
	Input must be within 5% of rated input without going over	
Furnace gas manifold pressure:	_____ "w.c	_____ "w.c

INCAA Pg. 1

	Gas Meter Dial Used				
Seconds for one revolution	One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu.ft.
	Cubic Feet Per Hour				
10	180	360	720	1800	3600
11	164	327	655	1634	3272
12	150	300	600	1500	3000
13	138	277	555	1385	2770
14	129	257	514	1286	2572
15	120	240	480	1200	2400
16	112	225	450	1125	2250
17	106	212	424	1059	2118
18	100	200	400	1000	2000
19	95	189	379	947	1894
20	90	180	360	900	1800
21	86	171	343	857	1714
22	82	164	327	818	1636
23	78	157	313	783	1566
24	75	150	300	750	1500
25	72	144	288	720	1440
26	69	138	277	692	1384
27	67	133	267	667	1334
28	64	129	257	643	1286
29	62	124	248	621	1242

INCAA Pg. 2

	Gas Meter Dial Used				
Seconds for one revolution	One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu.ft.
	Cubic Feet Per Hour				
30	60	120	240	600	1200
31	58	116	232	581	1162
32	56	113	225	563	1126
33	55	109	218	545	1090
34	53	106	212	529	1058
35	51	103	206	514	1028
36	50	100	200	500	1000
37	49	97	195	486	972
38	47	95	189	474	948
39	46	92	185	462	924
40	45	90	180	450	900
41	44	88	176	440	880
42	43	86	172	430	860
43	42	84	167	420	840
44	41	82	164	410	820
45	40	80	160	400	800
46	39	78	157	391	782
47	38	77	153	383	766
48	37	75	150	375	750
49	37	73	147	367	734

INCAA Pg. 3

	Gas Meter Dial Used				
Seconds for one revolution	One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu.ft.
	Cubic Feet Per Hour				
50	36	72	144	360	720
51	35	71	141	353	706
52	35	69	138	346	692
53	34	68	136	340	680
54	33	67	133	333	666
55	33	65	131	327	654
56	32	64	129	321	642
57	32	63	126	316	632
58	31	62	124	310	620
59	30	61	122	305	610
60	30	60	120	300	600
62	29	58	116	290	580
64	29	56	112	281	562
66	29	54	109	273	546
68	28	53	106	265	530
70	26	51	103	257	514
72	25	50	100	250	500
74	24	48	97	243	486
76	24	47	95	237	474
78	23	46	92	231	462

INCAA Pg. 4

	Gas Meter Dial Used				
Seconds for one revolution	One Half cu. Ft.	One cu. Ft.	Two cu. Ft.	Five cu. Ft.	Ten cu.ft.
	Cubic Feet Per Hour				
80	22	45	90	225	450
82	22	44	88	220	440
84	21	43	86	214	428
86	21	42	84	209	418
88	20	41	82	205	410
90	20	40	80	200	400
94	19	38	76	192	384
98	18	37	74	184	368
100	18	36	72	180	360
104	17	35	69	173	346
108	17	33	67	167	334
112	16	32	64	161	322
116	15	31	62	155	310
120	15	30	60	150	300
130	14	28	55	138	276
140	13	26	51	129	258
150	12	24	48	120	240
160	11	22	45	113	226
170	11	21	42	106	212
180	10	20	40	100	200