ENERGY STAR
Indoor Air Package

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IAQ -
Is it Green or is it Gray?

What is Indoor Air Quality (IAQ)?

3. DEFINITIONS

acceptable indoor air quality: air toward which a substantial majority of occupants express no dissatisfaction with respect to odor and sensory irritation and in which there are not likely to be contaminants at concentrations that are known to pose a health risk.

ASHRAE Standard 62.2-2004

What Contaminants Are "Known to Pose a *Health Risk*"?

- *Radon, ETS, Formaldehyde, & Benzene exposure can cause cancer*
- *Indoor dampness linked to respiratory illness*
- *Many known indoor asthma triggers*
- *Many VOC's linked to adverse health effects*
- *CO kills at high levels; other effects at low levels*
- *Pesticides linked to acute & chronic health effects*
- *PM linked to respiratory illness & heart disease*
- *Indoor air typically has 2 to 5 times more chemical contaminants than outdoor air*

Indoor Air Quality (IAQ) is

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~~ASHRAE Standard 62.2-2004~~ Eric

Does Green Mean Good IAQ?

- Certified
- Bronze   ?
- Silver   ?
- Gold   ?
- Platinum
- Emerald

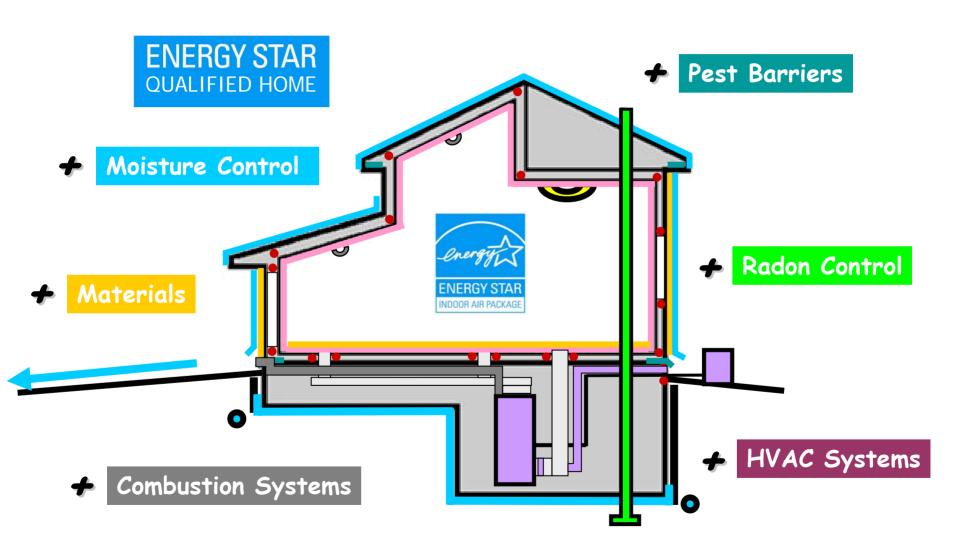# Other Green Attributes Competing with IAQ for Points

- Energy Efficiency
- Materials & Resources
- House Size
- Sustainable Sites
- *Indoor Air Quality*
- Water Efficiency
- Innovative Design

Which IAQ points will most "Green" builders choose?

Non-Mandatory Measures?

- Bulk Moisture Control
  - Water managed wall, roof, foundation system
- Radon Control
- Effective Garage Isolation
- Low VOC Materials
  - Low formaldehyde materials (boards, carpets/pads)
- Sealed Combustion
- Efficient, Low-emission Fireplaces

Indoor Air Package Summary

STEPS to Start Building With the ENERGY STAR INDOOR AIR PACKAGE

1. Work with a HERS Rater to evaluate your homes, just like your first ENERGY STAR qualified home

2. Build IAP qualified homes

3. Rater verifies during 2 ENERGY STAR inspections & labels homes

4. Market & sell homes with stronger promise of good IAQ

5. Tell us your story, so we can recognize your company

Indoor Air Package Details

turning Gray into Black & White

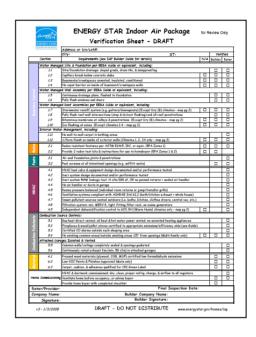ENERGY STAR Indoor Air Package — Verification Sheet - DRAFT — for Review Only

Section		Requirements (see IAP Builder Guide for details)	N/A	Verified Builder	Rater
Moisture Control		Water Managed Site & Foundation per EEBA Guide or equivalent, including:			
	1.1	Site/foundation drainage: sloped grade, drain tile, & dampproofing		☐	☐
	1.2	Capillary break below concrete slabs	☐	☐	☐
	1.3	Basements/crawlspaces unvented, insulated, conditioned	☐	☐	☐
	1.4	No vapor barrier on inside of basement/crawlspace walls	☐	☐	☐
		Water Managed Wall Assembly per EEBA Guide or equivalent, including:			
	1.5	Continuous drainage plane, flashed to foundation		☐	☐
	1.6	Fully flash windows and doors		☐	☐
		Water Managed Roof Assemblies per EEBA Guide or equivalent, including:			
	1.7	Stormwater runoff system (e.g. gutters/downspouts) (Except Dry (B) climates - map pg 2)	☐	☐	☐
	1.8	Fully flash roof-wall intersections (step & kickout flashing) and all roof penetrations		☐	☐
	1.9	Bituminous membrane at valleys & penetrations (Except Dry (B) climates - map pg 2)	☐	☐	☐
	1.10	Ice flashing at eaves (Except climates 1-4 - map pg 2)	☐	☐	☐
		Interior Water Management, including:			
	1.11	No wall-to-wall carpet in bathing areas			☐
	1.12	>1 Perm finish on inside of exterior walls (Climates 1, 2, 3A only - map pg 2)	☐	☐	☐
Radon	2.1	Radon resistant features per ASTM E1465, IRC, or equiv. (EPA Zones 1)	☐	☐	☐
	2.2	Provide 2 radon test kits & instructions for use to homebuyer (EPA Zones 1 & 2)	☐	☐	
Pests	3.1	Air seal foundation joints & penetrations			☐
	3.2	Pest screens at all intentional openings (e.g. soffitt vents)		☐	☐
HVAC	4.1	HVAC load calcs & equipment design documented and/or performance tested			☐
	4.2	Duct system design documented and/or performance tested			☐
	4.3	Duct system total leakage test <4 cfm/100 sf, OR no panned returns + sealed air handler			☐
	4.4	No air handler or ducts in garage			☐
	4.5	Rooms pressure balanced (individual room returns or jump/transfer grills)			☐
	4.6	Ventilation systems compliant with ASHRAE Std 62.2 (bath/kitchen exhaust + whole house)			☐
	4.7	Known pollutant sources vented outdoors (i.e. baths, kitchen, clothes dryers, central vac, etc.)			☐
	4.8	Filtration system: min. MERV 8, tight fitting filter rack, no ozone generators			☐
	4.9	Independent dehumidification control to 60% RH (Warm Humid climates only - map pg 2)	☐		☐
Combustion Pollutants		Combustion Source Controls:			
	5.1	Gas heat direct vented: oil heat & hot water power vented: no unvented heating appliances			☐
	5.2	Fireplaces & wood/pellet stoves certified to appropriate emissions/efficiency stds (see Guide)			☐
	5.3	Certified CO alarms outside each sleeping area			☐
	5.4	No smoking common areas/outside smoking areas >25' from openings (Multi-family only)	☐	☐	☐
		Attached Garages Isolated & Vented			
	5.5	Common walls/ceilings completely sealed & openings gasketed			☐
	5.6	Continuously rated exhaust fan (min. 50 cfm) in attached garages			☐
Material	6.1	Pressed wood materials (plywood, OSB, MDF) certified low-formaldehyde emissions		☐	☐
	6.2	Low-VOC Paints & Finishes (approved labels only)		☐	☐
	6.3	Carpet, cushion, & adhesives qualified for CRI Green Label		☐	☐
Home Commissioning		HVAC & ductwork commissioned: dry, clean, proper refrig. charge, & airflow to all registers			☐
		Ventilate home before occupancy, or advise buyer		☐	☐
		Provide home buyer with completed checklist		☐	

Address or Div/Lot#:
City: ST:

Rater/Provider: Final Inspection Date:
Company Name: Builder Company Name:
Signature: Builder Signature:

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Questions?

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Come back at 1 PM for the details!

And a sneak peek at new label concepts