KANSAS BUILDING SCIENCE INSTITUTE 200 ZEANDALE RD PO BOX 1264 Manhattan, KS 66505-1264



Inspecting Residential Furnaces

# Nov. 7-8, 2005 Manhattan, Kansas

Presented by: Kansas Building Science Institute

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#### Residential Furnaces

The most common residential heating system in use today is the combustion forced-air furnace. Its safety and reliability make it easy to take for granted. As houses are made increasingly tight, however, combustion furnaces can operate in an unsafe manner, causing combustion by-products, including carbon monoxide, to poison the air inside a home.

This course teaches an effective, efficient procedure for examining a combustion heating appliance to ensure that it is operating safely and efficiently. No special skills are required other than a basic understanding of the equipment and tools. A checklist methodology assures that inspections are consistently carried out in the same manner so that no element is omitted.

## Who should attend

If you are a weatherization inspector, crew member, heating contractor, professional home inspector, or if you are involved in housing performance in any way, this training is designed for you.

## What you will learn

- A thorough understanding of combustion appliance operation.
- How to use both simple and advanced diagnostic tools to assess performance and safety.
- How to test for a cracked heat exchanger, CO production, backdrafting and other safety problems.
- How to identify and specify exact repairs to be made by a licensed contractor.

This two-day course will combine classroom instruction with hands-on training in KBSI's combustion furnace lab.

#### Your instructors

- **Tom Chavey** is a trainer for KBSI. He has been involved in housing programs for twenty years as a contractor, inspector and trainer. He is a certified Home Energy Rater, Kansas Weatherization Inspector, and Housing Quality Standards Inspector.
- **Doug Walter** is president of KBSI. He holds a Bachelor of Architecture Degree from Kansas State University and has taught building energy principles for more than 20 years. He developed the furnace inspection program for the Kansas Weatherization Assistance Program.

### Registration

Registration for this workshop is limited to 18 and will be filled on a first-come, first-served basis, so early registration is advised.

Registration fee of \$295 includes a furnace inspection manual, and lunch and refreshments each day.

Registration fee is refunded only if notice is received 48 hours before the course. For more information about the course, please call tollfree:

877-537-2425

- The house system: building envelope, mechanical equipment & occupants
- Heating system components and their functions
- Furnace efficiency and safety
- Incomplete combustion and CO
- Diagnostic tools and their functions
- Lab demonstration of heating cycle and step-by-step inspection protocol

#### Day 2

- Heat exchanger test procedures
- Calculation of combustion air and dilution air requirements
- Pressure balancing, door closures and the combustion appliance zone (CAZ)
- Natural draft vs. induced draft
- Blowers and motors
- Hands-on practice
- Review
- Performance exam

The training will be conducted at the KBSI Training Center, 200 Zeandale Rd (1/4 mi. east of Hwy 177 on Hwy 18, just south of the Kansas River bridge). All sessions will begin at 8:30 a.m. and conclude by 5:00 p.m.

## Lodging

The Fairfield Inn, 300 Colorado St., is the hotel closest to KBSI. The hotel has an indoor pool, Jacuzzi and exercise room. Breakfast is included. Call 785-539-2400 to make your reservation.

For a complete list of Manhattan guest accommodations, click on the links page at <u>www.kansasbuildingscience.com</u>.

Registration Form

### **Inspecting Residential Furnaces**

Name	Title
Company	//Agency
Address	
City	State Zip
Work Phone	Work FAX
Home or Cell Phone (for emergency contact only)	
e-mail address	
Nov. 7-8, 2005	\$295
Method of Payment: Check enclosed payable to KBSI Invoice my company/agency for \$ Charge \$to:VISAMasterCard DiscoverAMEX	
Cardholder's Printed Name as it appears on card	

Cardholder's Signature

Card Number & Expiration Date

Register by returning this form to: Kansas Building Science Institute PO Box 1264 Manhattan, KS 66505-1264 By FAX: 785-537-2440

Kansas Building Science Institute is committed to making services, activities and programs accessible to all participants. If you have special requirements due to disabilities or dietary restrictions, please contact KBSI at least two weeks before the start of the workshop.

Course agenda