



Session 5: HVAC

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Minnesota Department of Commerce

Division of Energy Resources

Heating & Cooling



Standard Work Specifications Tool

Search All Topics

- Health & Safety
- Air Sealing
- Insulation
- Heating & Cooling**
- Ventilation
- Baseload

Heating and Cooling

FORCED AIR

- Design 2
- Site Preparation 1
- System Assessment & Maintenance 11
- Special Considerations 0

HYDRONIC HEATING (HOT WATER & STEAM)

- Design 2
- Equipment Installation 0
- Piping (Distribution Installation) 0
- Equipment Maintenance, Testing, & Repair 3
- Special Considerations 0

SHADING

- Landscaping
- Reflective Roofs

NON-DISTRIBUTION COOLING SYSTEMS

- Ceiling & Other Fans
- Room Air Conditioners

Heating & Cooling

- Evaluate Air flow pg 294 section 8.12
 - When are tests required
 - What if you are not in the manufactures specs?

Heating & Cooling

- Combustion-Safety Evaluation
 - Combustion-Safety Observations
 - Leak-Testing Gas Piping
 - Carbon Monoxide (CO) Testing
 - Worst-Case CAZ Depressurization Testing
 - Evaluating Combustion Air at Worst-Case
 - Mitigating CAZ Depressurization and Spillage
 - Combustion-Air-Related Solutions
- Electronic Combustion Analysis
 - Critical Combustion-Testing Parameters

Heating & Cooling

- Heating System Replacement
 - Combustion Furnace Replacement
 - Gas-Fired Heating Installation
 - Combustion Boiler Replacement
 - Oil-Fired Heating Installation
 - Evaluating Oil Tanks
- Combustion Space Heater Replacement
 - Space Heater Operation
 - Unvented Space Heaters



Heating & Cooling

- Gas Burner Safety & Efficiency Service
 - Combustion Efficiency Test for Furnaces
 - Inspecting Gas Combustion Equipment
 - Testing and Adjustment
- Oil Burner Safety and Efficiency Service
 - Oil Burner Testing and Adjustment
 - Oil Burner Inspection and Maintenance
- Inspecting Furnace Heat Exchangers
- Wood Stoves
 - Wood Stove Clearances
 - Stove Clearances
 - Wood Stove Inspection

Heating & Cooling

- Inspecting Venting Systems
 - Vent Connectors
- Chimneys
 - Masonry Chimneys
 - Manufactured Chimneys
 - Chimney Terminations
 - Air Leakage through Masonry Chimneys
- Special Venting Considerations for Gas
 - Venting Fan-Assisted Furnaces and Boilers
 - Venting Sealed-Combustion Furnaces and Boilers
 - Sidewall Power Venting

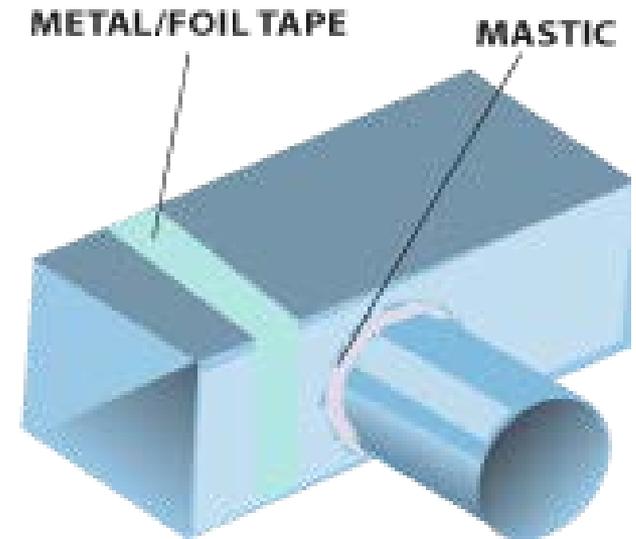
Heating & Cooling

- Ducted Air Distribution
 - Sequence of Operations
 - Solving Airflow Problems
 - Unbalanced Supply-Return Airflow Test
 - Evaluating Furnace Performance
 - Improving Forced-Air System Airflow
- Evaluating Duct Air Leakage
 - Troubleshooting Duct Leakage
 - Measuring Duct Air Leakage with a Duct Blower
 - Measuring House Pressure Caused by Duct Leakage



Heating & Cooling

- Sealing Duct Leaks
 - Sealing Return Ducts
 - Sealing Supply Ducts
 - Materials for Duct Sealing
- Duct Insulation
 - Spray Foam Duct Insulation
- Hot-Water Space-Heating Distribution
 - Boiler Efficiency and Maintenance
 - Distribution System Improvements
- Steam Heating and Distribution
 - Steam System Maintenance
 - Steam System Energy Conservation
- Programmable Thermostats



Heating & Cooling

- Electric Heat
 - Electric Baseboard Heat
 - Electric Furnaces
 - Central Heat-Pump Energy Efficiency
 - Room Heat Pumps
 - Ductless Minisplit Pumps
- Evaluating Ducted Central Air-Conditioning Systems
 - Central Air-Conditioner Inspection
 - Air-Conditioner Sizing
 - Duct Leakage and System Airflow
 - Evaluating Air-Conditioner Charge
- SWS Alignment