

Neighborhood Energy Connection

Residential Energy Specification

Customer: City of Saint Paul

Auditor: Michael Childs

Address: 275 Bates Avenue 10/10/2014

Phone: 651-789-5710

Spec ID#	Spec Title	Specification	Location / Notes
104	Replace Furnace with 95%+ AFUE, Multi-stage, Forced Air Furnace or boiler (see below)	All work is to be performed to manufacturer's specifications and be in compliance with current building codes. Remove existing furnace, recycle all metal components and dispose of all other materials in a code legal dump. Install a new ENERGY STAR rated, gas-fired, multi-stage burner, forced air furnace with a minimum AFUE rating of 95%+ and ECM distribution fan with 2" rise above floor. Connect to existing duct work and gas line. New furnace to be vented with PVC piping per manufacturer's specifications. New furnace will have minimum limited warranties of 20 years on heat exchangers; 5 years on parts. Include auto setback thermostat controls, vent pipe & new shut-off valve. Rework cold air return if necessary to ensure easy access, good fit & easy replacement of air filter. An exterior return air filter box shall be installed on one side, both sides or bottom of new furnace. Seal all exposed duct joints with duct mastic. Remove all existing cloth duct tape prior to installing mastic. Any asbestos containing equipment and materials will be abated in accordance with State laws and regulations.	

202	<p>Replace Boiler with 90% AFUE Hot Water Boiler</p> <p>or furnace (see above)</p>	<p>All work is to be performed to manufacturer's specifications and be in compliance with current building codes. Replace existing boiler with a gas fired, modulating, direct vent, 90%+ AFUE+ hot water boiler. Installation to include all power & control wiring, a setback thermostat, expansion tank, one circulation pump, water & gas supply & flue piping. The installation is required to maintain a minimum 70 F indoor temperature evenly throughout the conditioned space when outdoor temperature is - 10 F. Remove existing boiler, recycle all metal components and dispose of all other materials in a code legal dump. Any asbestos containing equipment and materials will be abated in accordance with State laws and regulations.</p>	
302	<p>Replace Water Heater with an Energy Star rated power vent or direct vent model</p>	<p>All work is to be performed to manufacturer's specifications and be in compliance with current building codes. Replace water heater with an Energy Star rated power vent or direct vent model. Include pressure & temperature release valve, discharge tube to within 6" of floor and PVC flue to power vent to exterior.</p>	
500	<p>Seal Attic Bypasses</p>	<p>Bypasses shall be defined as any building air leakage pathway between conditioned and unconditioned areas. Bypass locations include, but are not limited to, the following areas: chimney chases, combustion and soil stack chases, open wall tops, dropped ceilings, open plumbing walls, beneath knee walls and around duct work, electrical work and attic access points. Bypasses shall be sealed in such a manner that the movement of air through the bypass is essentially stopped. "Essentially stopped" means that air leakage will not be detected by an infrared scan when the house is pressurized to 50 Pascals. Materials used for bypass sealing are determined by the size and location of the bypass and shall be installed to manufacturer's recommendations and shall meet current building code requirements. These materials include high quality caulks (20-year life span), polyethylene rod stock, foam, sheetrock, sheet metal, extruded polystyrene and densely packed insulation.</p>	

510	Blow Open Attic to R-50	<p>Before insulating the attic, Contractor shall confirm proper air sealing. Installation must meet or exceed the Minnesota Energy Code where space permits. Blow insulation to depth indicated on manufacturer's coverage chart, consistently and evenly to R-50. Provide attic insulation depth markers. One marker shall be placed for every 100 sq. ft. of attic area, and all markers must be visible from attic access points. A signed manufacturer's coverage chart or attic information card shall be posted at each attic access point which lists the number of bags used or pounds installed, the date of installation, installed thickness in inches, sq. ft. of coverage area, installed R-value, and contractor information.</p>	
526	Insulate Above Bay Window	<p>Installation must meet or exceed the Minnesota Energy Code where space permits. Insulate cavities above and below bays. Dense pack with cellulose to capacity using the Dense Pack Method to a minimum density 3.5 lbs./ft³, or dense pack spider fiberglass per manufacturer's instructions. Access holes must be patched, plugged and painted as necessary.</p>	
530	Install Air Chutes	<p>All work shall meet Minnesota State Residential and Energy Codes. When soffit vents are installed or existing, a passage for air movement shall be cleared before insulating. Vent chutes and wind baffles shall be installed at all soffit vents. Attic areas below the baffle or chute shall be insulated to R-50 or to capacity as space allows.</p>	
532	Build Dam, insulate and weather strip attic hatch	<p>Access hatch door to attic shall be insulated to R-50 as space allows with a rigid insulation dam constructed around the opening. Opening shall be weather stripped to provide an air tight seal.</p>	

602	Dense pack exterior walls.	<p>Determine cavities are free of hazards and can support dense packing pressures. Locate drilling hazards and ensure openings into the house are blocked.</p> <ul style="list-style-type: none"> - Exterior Treatment: Shakes and siding shall be removed before drilling access holes. Holes in sheathing shall be plugged with tight fitting wood or urethane foam plugs before shakes or siding are nailed back without damage using appropriate galvanized nails. Stucco shall be punched or drilled to provide access. Holes must be plugged weather tight with tight fitting plugs and patched. - Interior Treatment: Control dust when drilling from interior. Holes must be filled with tight fitting plugs and patched. <p>Completely fill each cavity to a consistent density. Dense pack cellulose to a minimum density of 3.5 lbs./ft³ or dense pack spider fiberglass per manufacturer's instructions. Follow all applicable Lead Safe Work Practices as per the EPA's RRP Rules.</p>	
802	Air Seal and Insulate Rim Joist	<p>Remove existing insulation if present. Seal cracks and holes in rim joist before insulating. Caulk or foam 3 inches of rigid insulation in place; or apply two-part polyurethane foam evenly and consistently according to manufacturer's instructions to insulate to R-10 around basement rim joist.</p>	
1010	Install continuous ventilation	<p>Install Continuous Ventilation - Install an ENERGY STAR rated two-speed bathroom fan rated for continuous use, maximum of 1.0 sone for full flow rate of 110 cfm or less and maximum of 1.5 sones for a full flow rate above 110 cfm, with a pre-set low-speed of 25-35 CFM and a minimum 70 cfm high-speed boost capability initiated by a wall switch or motion detector manual or automatic two-speed switch (such as an occupancy sensor) that toggles the fan between the high and low flow rates only; the switch shall not turn the fan off. Alternately, install an ENERGY STAR rated kitchen exhaust fan rated for continuous use. Vent fan using rigid duct insulated to R-8 minimum and vented to the exterior with dampered roof vent.</p>	