

## Neighborhood Energy Connection

### Residential Energy Specification

Customer: City of Saint Paul

Auditor: Terry Cagle-Kemp

Address: 696/698 Hawthorne Ave E

Phone: 651-221-4462 x122

Spec ID#	Spec Title	Specification	Location / Notes
104	Replace Boiler with 95% AFUE, Multi-stage, Forced Air Furnace	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 Motor 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.	Replace boiler for both units

304	Replace Water Heater with Power Vented .67 EF	Replace water heater with a power-vented water heater with an EF of .67 or greater. Include pressure & temperature release valve, discharge tube to within 6" of floor and PVC flue to power vent to exterior.	Replace for both units
310	Replace Central Air Conditioning Unit	Install 16 SEER, 13 EER split system central air conditioning unit, following local building code. Using OEM performance information and industry-approved procedures, confirm that the selected equipment satisfies/meets the load requirements at the system design conditions.	
500	Seal Attic Bypasses	Contractor shall seal all attic bypasses. Bypasses shall be defined as any break in the envelope of a house between a heated living space and an unheated area or exterior. Bypass locations include, but are not limited to, the following areas: chimneys, soil stacks, end walls, 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 30 Pascals. Materials to be used for sealing bypasses depend on the size and location of the bypass and meet 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.	
502	Dense Pack Below Floor and blow above floor to R-50	All bypasses shall be sealed before insulating 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 30 Pascals. Floored attics shall be blown below floor boards using the Dense Pack Method to a minimum density 3.5 lbs/ft <sup>3</sup> . Blow above floorboards to bring below and above total to R-50 or more.	Remove insulation and vapor barrier from slant walls if floor is getting insulated. Call NEC with questions.
512	Dense Pack Slants to capacity with cellulose	Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Blow Slant walls with cellulose to capacity using the Dense Pack Method to a minimum density 3.5 lbs./ft <sup>3</sup> .	Stairwell ceiling to attic door.
524	Insulate Flat Roof	All bypasses shall be sealed before insulating 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 30 Pascals. Insulate to R-50. If there is not enough room, insulate to capacity.	Entry Way
518	Dense Pack Enclosed knee walls	All knee walls shall have a top and bottom plate or blockers installed using a rigid material. If fabric material is used before dense packing, secure it with 1" crown staples every 2" or furring strips every wall stud. If rigid material is used it must cover the entire surface of the accessible knee wall area. If foam sheathing is used, it must be listed for uncovered use in an attic; or covered with an	Option A: If sheathing holds up to densepacking. Kneewall next to attic door between conditioned space and attic.

		ignition/thermal barrier. Blow knee walls to capacity using the Dense Pack Method to a minimum density of 3.5 lbs./ft <sup>3</sup> .	
	Insulate Open Knee walls with Fiberglass Batts	All knee walls shall have a top and bottom plate or blockers installed using a rigid material. Air seal all joints, cracks and penetrations in finished material including interior surface to framing connections. Insulate all knee walls to R-19 with fiberglass batts and install housewrap to secure.	Option B: if sheathing is removed. Kneewall next to attic door between conditioned space and attic.
534	Insulate and weatherstrip walk-up attic door	Insulate door to walk-up attic to R-19, and weatherstrip.	Air seal above and below door adjacent to conditioned space—call NEC with questions.
616	Wall insulation - Interior Application: Dense Pack Cellulose	Exterior walls insulated from inside the house shall be drilled through to provide access. Determine cavities are free of hazards and can support dense packing pressures, locate drilling hazards, control dust when drilling from interior. Completely fill each cavity to a consistent density. Dense pack cellulose to a minimum density of 3.5 lbs./ft <sup>3</sup> or dense pack spider fiberglass per manufacturer's instructions. Follow all applicable Lead Safe Work Practices as per the EPA's RRP Rules.	
802	Air Seal and Insulate Rim Joist	Seal cracks and holes in rim joist before insulating. Caulk or foam 3 inches of rigid insulation in place. Or, apply two-part foam evenly and consistently according to manufacturer's instructions to insulate to R-10 around basement rim joist.	

912	Insulate crawl space walls	Install poly on the ground. Crawl space walls shall be insulated by installing 6" (R19) encapsulated fiberglass batts attached permanently and directly against rim joist, band joist and exterior walls extending one foot onto poly ground covering. Alternatively, use spray foam on rim joist, band joist and walls to R-19.	
1000	Install ENERGY STAR Rated Kitchen Fan	Install an ENERGY STAR rated exhaust fan connected with insulated rigid ductwork into a dampered vent.	
1010	Install ENERGY STAR Rated 2-stage Bathroom Fan	Install an ENERGY STAR rated two-speed bathroom fan .8 sones or less, with a pre-set low-speed of 10-30 CFM and a high-speed boost capability of 70-110 CFM initiated by a wall switch or motion detector. Vent bathroom fan using rigid duct and insulated with fiberglass and vented out with dampered roof vent.	Replace existing fans.
1200	Replace incandescents with CFLs	Replace incandescent bulbs with ENERGY STAR rated compact fluorescent lights. Install fixtures that meet the lighting needs of the particular area.	
1212	Install ENERGY STAR Rated Dishwasher	Install ENERGY STAR rated dishwasher including all alterations and connections to plumbing and electric system. Remove existing dishwasher, recycle all metal components and dispose of all other materials in a code legal dump.	For both units
1214	Install ENERGY STAR Rated Refrigerator	Install ENERGY STAR rated refrigerator sized appropriately for the household. Remove existing refrigerator, recycle all metal components and dispose of all other materials in a code legal dump.	For both units

1216	Install ENERGY STAR Rated Air Conditioners	If installing window or wall sleeve air conditioners, use only ENERGY STAR rated air conditioners. Size the air conditioners appropriately for the room.	For both units
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