ENERGY STAR® Residential New Construction Programs

Historical Document

This document is provided for reference because it has been superseded by a more recent Version or Revision. Please find current program documents on the <u>Program Requirements</u> webpage.

Use of older Versions and Revisions, such as this document, are typically limited to homes and buildings with a permit date (or, for manufactured homes, a production date) prior to a specified date. Consult the Implementation Timeline table to assess whether a home or apartment is still eligible to be certified using this document.

For questions or more information, contact us at energystar.gov.



This document provides instructions for determining the ENERGY STAR ERI Target, the highest ERI value that each rated home may achieve to earn the ENERGY STAR. Note that, in addition to meeting the ENERGY STAR ERI Target, homes shall also meet all Mandatory Requirements for All Certified Homes in Exhibit 2 of the Oregon and Washington Program Requirements for ENERGY STAR Certified Homes, Version 3.2.

A Home Energy Rating Software program accredited by an EPA-Approved Verification Oversight Organization (VOO) shall automatically determine (i.e., without relying on a user-configured ENERGY STAR Reference Design) this target for each rated home. This shall be done by configuring the ENERGY STAR Reference Design Home in accordance with Exhibit 1, the Expanded ENERGY STAR Reference Design Definition, and calculating its associated ERI value. This value, rounded to the nearest whole number, shall equal the ENERGY STAR ERI Target.

Revised 09/01/2018



Exhibit 1: Expanded ENERGY STAR Reference Design Definition for the States of Oregon and Washington

Building	for the States of Oregon and Washington					
Component	Expanded ENERGY STAR Reference Design Definition ¹					
Foundations:	Construction Type & Structural Mass: Same as Rated Home, except:					
	For masonry floor slabs, modeled with 80% of floor area covered by carpet and 20% of floor directly exposed to room air Conditioning Type: Same as Rated Home, except:					
	 Crawlspaces shall be modeled as vented with net free vent aperture = 1sq. ft. per 150 sq. ft. of 	crawlspace floor area				
	Gross Area: Same as Rated Home ²					
	Insulation: 3,4 Choose appropriate insulation level below:					
	Basement Wall Assembly U-factor only applies to conditioned bsmt.'s; if applicable, insulation s	shall be located on inte	rior side of			
	Walls					
1	Floor assemblies above crawlspace foundations shall be configured to meet the applicable floor assembly U-factor listed in the					
	 building component section for Floors Over Unconditioned Spaces On-grade and below-grade slab floors shall be insulated to the Slab Insulation R-value at both the perimeter for the entire depth of 					
	the slab, or 2 ft. if slab depth is not specified by user, and under the entire slab area	ine peninetei ioi the e	nure deput of			
	Climate Zone:	CZ 4C & 5	CZ 6			
	Slab Insulation R-Value:	10	10			
	Basement Wall Assembly U-Factor:	0.042	0.042			
Floors Over	Construction Type: Wood frame					
Unconditioned	Gross Area: Same as Rated Home					
Spaces:	Insulation: 3, 4	07.40.0.5				
	Climate Zone:	CZ 4C & 5	CZ 6			
Above-Grade	Floor Assembly U-Factor: Interior and Exterior Construction Type: Wood frame	0.028	0.028			
Walls:	Gross Area: Same as Rated Home					
rrano.	Solar Absorptance = 0.75					
	Emittance = 0.90					
	Insulation: 3					
	Climate Zone:	CZ 4C & 5	CZ 6			
	Wall Assembly U-Factor:	0.056	0.056			
Thermally	·					
Isolated	None					
Sunrooms:						
Doors:	Area: Same as Rated Home Orientation: Same as Rated Home					
	U-Values and SHGCs: ⁵					
	Door Type: Opaque	≤ 1/2-Lite	> 1/2-Lite			
	U-Value : 0.17	0.25	0.30			
	SHGC: N/A	0.25	0.30			
Glazing:	Total Area: (except in homes with conditioned basements and attached homes ⁶) • Same as Rated Home, where Rated Home glazing area is less than 15% of conditioned floor area; <u>OR</u> • 15% of the conditioned floor area, where the Rated Home glazing area is 15% or more of the conditioned floor area					
	Orientation: Equally distributed to North, East, South, and West	Talloriou noor aroa				
	Offeritation. Equally distributed to North, East, South, and West					
	Interior Shade Coefficient: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷					
	External Shading: None					
	U-Values and SHGCs: ⁵					
	Climate Zone:	CZ 4C & 5	CZ 6			
	U-Value:	0.27	0.27			
	SHGC:	0.30	0.30			
Skylights:	None					
Ceilings:	Construction Type: Wood frame					
	Gross Area: Same as Rated Home					
	Insulation: 3					
	Climate Zone:	CZ 4C & 5	CZ 6			
	Ceiling Assembly U-Factor:	0.026	0.026			
Attics:	Construction Type: Vented with aperture = 1sq. ft. per 300 sq. ft. ceiling area					
Doofor	Radiant Barrier: None					
Roofs:	Construction Type: Composition shingle on wood sheathing Gross Area: Same as Rated Home					
	Solar Absorptance = 0.92					
	Emittance = 0.90					
	Linitance – 0.30					



Exhibit 1: Expanded ENERGY STAR Reference Design Definition for the States of Oregon and Washington (Continued)

Systems Fuel Type: Same as Rated Home; except Reference Design shall be configured with air-source heat pump where Rated Home is nodeled with ground-source heat pump, electric strip or baseboard heat; applicable efficiency selected from befow; CZ 6 8 5 CZ 6 OI Furnate Zone; CZ 6 OI Fur	Heating	Heating capacity shall be selected in accordance with ACCA Manual S based on building heating and coo	ling loads calculate	d in			
Fuel Type: Same as Rated Home is system Type: Same as Rated Home, except Reference Design shall be configured with air-source heat pump where Rated Home is modeled with ground-source heat pump, electric strip or baseboard heat; applicable efficiency selected from below in CZ 42 & 5 & CZ 6 (Climate Zone: Cas Furn, AFUE: 95 & 95 (Climate Zone: Cas Furn, AFUE: 95 & 95 (Climate Zone: 95 (Clim			0				
System Type: Same as Rated Home is modeled with ground-source heat pump, electric strip or baseboard heat; applicable efficiency selected from below? Climate Zone: Gas Furn. AFUE: Gi Furn. AFUE: Gi Furn. AFUE: Gi Boiler AFUE: Ground-Source Heat Pump BSPF: Air-Source Heat Pump BSER: For non-electric warm furnaces and non-electric boilers, the Electric Audiliary Energy shall be determined in Secondance with Accordance with ACCA Manual S based on building heating and cooling loads calculated in soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling loads calculated in Soundance with ACCA Manual S based on building heating and cooling and with air-source heat pump septime sea of the Soundance with ACCA Manual S based on building heating and sea of the Soundance with ACCA Manual S based on building heating and sea of the Soundance with ACCA Manual S based on the Soundance with ACCA Man	Oystoriis.						
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Gas Furn. AFUE: Gas Boller AFUE: Ground-Source Heat Pump DEPT Boller Boller ASIS / RESNET / ICC Std. 301. using the capacity determined in this Section. Gooding caseptly shall be selected in accordance with ACCA Manual S beased on building hearing and cooling cacacity shad calculated in accordance with ACCA Manual J. Eighth Edition, ASHRAE Handbook of Fundamentals, or an equivalent computation procedure. Further Young Same as Rated Home: Gooding Casepts and Same Asted Home: Gas Boller AFUE: Gas Gas Gas Boller AFUE: Gas Gas Gas Gas Based Home: Gas							
Oil Furn. AFUE: Ga Bollor AFUE: Oil Boiler AFUE: Air-Source Heat Pump HSPF: Air-Source Heat Pump Backup: For non-electric warm furnaces and non-electric boilers, the Electric Availlary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Sid. 301, using the capacity determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Sid. 301, using the capacity determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Sid. 301, using the capacity determined in this Section. Cooling Gystems: Cooling Capacity shall be selected in accordance with ACCA Manual S based on building heating and cooling capacity determined in this Section. Full Type Sums as Rated Home Sum accordance with ACCA Manual S based on building heating and cooling capacity shall be selected in accordance with ACCA Manual S based on building heating and cooling capacity shall be selected in accordance with ACCA Manual S based on building heating and cooling capacity shall be selected in accordance with ACCA Manual S based on building heating and cooling capacity shall be selected in this Section. Full Type Sums as Rated Home Sum accordance with ACCA Manual S based on building heating and cooling capacity shall be configured with air-source heat pump where Rated Home is modeled with ground-source heat pump; applicable efficiency selected from below. Standard Standar				CZ 6			
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Oil Boiler AFUE: Air-Source Heat Pump HSPF: Air-Source Heat Pump Dackup: For non-electric warm furnaces and non-electric boilers, the Electric Auxiliary Energy shall be determined in accordance with the methodology for the Energy Rating Reference Home in ANSI / RESNET / ICC Std. 301, using the capacity determined in this Section. 7 Cooling capacity shall be selected in accordance with ACCA Manual Staced on building heating and cooling loads calculated in accordance with ACCA Manual Staced on building heating and cooling loads calculated in accordance with ACCA Manual J. Eighth Edition, ASHRAE Handbook of Fundamentals, or an equivalent computation procedure. System Type: Same as Rated Home; except Reference Design shall be configured with air-source heat pump where Rated Home is modeled with ground-source heat pump, applicable efficiency selected from below.* CI Marco ASER: Air-Source Heat Pump SERE: CZ 4C & 5 CZ 6 AC SER: Air-Source Heat Pump SERE: 13 13 13 13 Air-Source Heat Pump SERE: 15 15 15 15 16 15 17 16 Vision Service Water Heating Systems: Use (Gallions per Day): Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * 2** Use (Gallions per Day): Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * 3** You are the service of the service		Gas Boiler AFUE:	90	90			
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AG SEER: Air-Source Heat Pump SEER: Ground-Source Heat Pump EER: Ground-Source Heat Pump EER: Ground-Source Heat Pump EER: Ground-Source Heat Pump EER: Viscource Heat Pump Heat Select Pump Water heater. Select applicable efficiency from below.¹ Climate Zone: Gas DHW EF: Climate Zone: Gas DHW EF: But Insulation Read of Louiside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Thermostat: Thermostat: Thermo			C7 4C & 5	C7 6			
Air-Source Heat Pump SEER: 15 15 15 n/a n/a n/a Service Water Heat Pump EER: 16 15 n/a n/a n/a n/a Service Water Heating Systems: 16 Gallons per Day): Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301. except for reduced usage resulting from low-flow plumbing fixtures, R-3 pipe insulation, and the dishwasher specified in the Lighting, Appliances, & Internal Gains Section. Tank Temperature: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301. **IT and It also seed to the dishwasher specified in the Lighting, Appliances, & Internal Gains Section. Tank Temperature: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301. **IT and It also system Type: If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home uses a system with a gas or propane fuel type, model as 60 gallon electric heat pump water heater. If Rated Home u							
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resulting from low-flow plumbing fixtures, R-3 pipe insulation, and the dishwasher specified in the Lighting, Appliances, & Internal Gains Section, 7 Tank Temperature: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * IT Fuel Type & System Type: If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater. Select applicable efficiency from below. ** Climate Zone: Gas DHW EF: Electric DHW EF: Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Home Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Slab Crawlspace Duct Surface Area: Same as Rated Home Thermostat: Thermostat: Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 * Infiltration & Mechanical Ventilation: Mechanical Ventilation: Holling Tanks: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: CZ 4C & 5 CZ 6 CZ 6 CZ 6 S CZ 6 ACH50: Same as Energy Rating Reference home, as defined by ANSI / RESNET / ICC Std. 301 * Infiltration Rate: Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET							
Systems: Tank Temperature: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 **.11 Fuel Type & System Type: If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater. Select applicable efficiency from below. *** Climate Zone:	Water	resulting from low-flow plumbing fixtures, R-3 pipe insulation, and the dishwasher specified in the Lighting, Appliances, & Internal Gains					
Fuel Type & System Type: If Rated Home uses a system with a gas or propane fuel type, model as instantaneous gas water heater. If Rated Home uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater. Select applicable efficiency from below. 12 Climate Zone: CZ 4C & 5 CZ 6 Gas DHW EF: Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Home Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Pone Story Above Grade: Type: Programmable Type: Programmable Type: Programmable Type: Programmable Type: Programmable Type: Programmable Infiltration & ACH50: ACH50: Mechanical Ventilation: Infiltration Rates: Climate Zone: ACH50: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFA Rate is determined above Climate Zone: Ventilation: Lighting, Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Appliances, 8 Internal Gains: CZ 4C & 5 CZ 6 Exhaust Exhaust Lighting, Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Appliances, 8 Internal Gains: Celling Fan: 122 CFM per Watt, Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Dishwasher and Dyre: Same as En							
Rated Home uses a system with an oil, electric, or other fuel type, model as 60 gallon electric heat pump water heater. Select applicable efficiency from below. ²² Climate Zone: Gas DHW EF: Electric DHW EF: Blectric DHW EF: Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Insulation: R-8 on all ducts located in unconditioned space Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Home Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditiones below (e.g. multifamily kwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: One Story Above Grade: Two Story Above Grade: Two Story Above Grade: Two Story Above Grade: Two Story Above Grade: Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 AcH50: Ac	.,	Fuel Type & System Type: If Rated Home uses a system with a gas or propage fuel type, model as instar	itaneous das water	heater. If			
efficiency from below. ¹² Climate Zone: Gas DHW EF: Electric DHW EF: Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Langage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Langage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Home Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g., multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Slab Crawlspace Basement Two Story Above Grade: 100% Attic 100% Crawlspace 0ne Story Above Grade: 175% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 176% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Thermostat: Infiltration & Mechanical Ventiliation: Infiltration & Mechanical ventiliation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Cellimate Zone: Ventilation Type: Celling Franciton of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ciothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 * Internal Same as Energy Rating Refe							
Climate Zone: Gas DHW EF: 2.6		efficiency from below 12					
Gas DHW EF: Electric DHW EF: 2.5 2.0 Thermal Distribution Systems: Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25 Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Home Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: One Story Above Grade: 100% Attic 100% Crawlspace 100% Easement Thermostat Thermostat Thermostat Thermostat Infilitration & Mechanical Ventilation: Mechanical Ventilation: Mechanical Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: CZ 4C & 5 CZ 6 Ventilation Type: Lighting, Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Faringerator, 423 kWh per year Bishers Cilothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 1, except for adjustments for the lighting, refigerator, 428 internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refigerator, 428 internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, re			CZ 4C & 5	CZ 6			
Electric DHW EF: 2.5 2.0							
Duct Leakage to Outside: The greater of 4 CFM25 per 100 sq. ft. of conditioned floor area or 40 CFM25							
Distribution Systems: Distribution Systems: Duct Insulation: R-8 on all ducts located in unconditioned space Duct Surface Area: Same as Rated Horne Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Slab Crawispace Dne Story Above Grade: Tow Story Above Grade: Tow Story Above Grade: Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Mechanical Ventilation: Mechanical ventilation system without heat recovery Ratic: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, Appliances, Appliances, Infiltration: Cay	Thermal						
Systems: Duct Surface Area: Same as Rated Home							
Supply and Return Duct Locations shall be configured according to the table below or, if Rated home does not meet any of the conditions below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Slab One Story Above Grade: Type: Programmable Type: Programmable: Type: Programmable: Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Mechanical Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Inferioration of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7							
below (e.g. multifamily dwelling unit with conditioned unit below), then duct locations shall be configured to be 100% in attic space. Foundation Type: Slab Crawlspace Basement One Story Above Grade: 100% Attic 100% Crawlspace 100% Basement Two Story Above Grade: 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Mechanical Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Infiltration Type: Lighting, Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Appliances, & Internal Gains: Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7	.,						
Foundation Type: Slab Crawlspace 100% Active 100% Crawlspace 50% Attic / 50% Basement 100% Active 50% Attic / 50% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement 75% Attic / 50% Basement 75% Attic / 50% Basement 75% Attic / 50% Crawlspace 50% Attic / 50% Basement 75% Attic / 50% Basement 75% Attic / 50% Attic / 50% Attic / 50% Basement 75% Attic / 50% Attic / 50% Basement 75% Attic / 50% Basement 75% Attic / 50% Attic / 50% Basement 75% Attic / 50% Basement 75% Attic / 50% Attic / 50% Basement 75% Attic / 50% Att							
One Story Above Grade: 100% Attic 100% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 75% Attic / 25% Conditioned Floor Attic / 50% Crawlspace 50% Attic / 50% Basement Two Story Above Grade: 75% Attic / 25% Conditioned Floor Attic / 50% Crawlspace 50% Attic / 50% Attic / 50% Crawlspace 50% Attic / 50% Crawlspace 50% Attic / 50% Attic / 50% Crawlspace 50% Attic / 50% Attic / 50% Crawlspace 50% Attic / 50% Attic / 50% Attic / 50% Crawlspace 50% Attic / 50% Att							
Two Story Above Grade: 75% Attic / 25% Conditioned 50% Attic / 50% Crawlspace 50% Attic / 50% Basement Thermostat: Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Infiltration Rates: Climate Zone: CZ 4C & 5 CZ 6 Mechanical Ventilation: Mechanical ventiliation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: CZ 4C & 5 CZ 6 Exhaust Lighting, Appliances, & Internal Gains: Erraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7							
Thermostat: Type: Programmable Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Mechanical Ventilation: Mechanical Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: Lighting Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Cothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, 7							
Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI / RESNET / ICC Std. 301 7 Infiltration & Infiltration Rates: Climate Zone: ACH50: Mechanical ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Cyate & 5 Cz 6 Ventilation Type: Lighting, Appliances, & Internal Gains: Lighting Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7	Thermostat:		00707111107 0070	Bacomone			
Infiltration & Mechanical Ventilation: We provided the street of the st	memostat.	Temperature Setpoints: Same as Energy Rating Reference home, but with offsets for a programmable thermostat, as defined by ANSI /					
Mechanical Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: ACH50: ACH50: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms CZ 4C & 5 CZ 6 Ventilation Type: Lighting, Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7	Infiltration &		CZ 4C & 5	CZ 6			
Ventilation: Mechanical ventilation system without heat recovery Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: Lighting: Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7	Mechanical Ventilation:						
Rate: CFM = 0.01 * CFA + 7.5 * (Nbr + 1), where CFA = Conditioned Floor Area and Nbr = Number of Bedrooms Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: Lighting: Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7			-	-			
Runtime: 24 Hours per Day Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7			drooms				
Fan Watts: Watts = CFM Rate / 2.8 CFM per Watt, where CFM Rate is determined above Climate Zone: Ventilation Type: Lighting, Appliances, & Internal Gains: Exhaust Lighting: Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7							
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Lighting, Appliances, & Internal Gains: Appliances Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Exhaust Manual Exhaust Branch Some as Energy Rotating Reference Home, as defined by Some interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7			CZ 4C & 5	C.7 6			
Lighting, Appliances, & Internal Gains: Lighting: Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations: 90% for interior; 0% for exterior and garage Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7							
Appliances, & Internal Gains: Refrigerator: 423 kWh per year Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7 Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. 7 Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 7	Lighting						
& Internal Gains: Dishwasher: 0.66 EF, Place Setting Capacity Same as Rated Home Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Home; otherwise Quantity = 0 Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷ Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. ⁷ Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷			5., 575 IOI OXIOIIOI 6	a garage			
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Clothes Washer and Dryer: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷ Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. ⁷ Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷							
Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. ⁷ Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷	Gallis.						
lighting, refrigerator, dishwasher, and ceiling fans specified in this Section. ⁷ Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷							
Internal Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷							
Management							
Mass: Additional mass specifically designed as a Thermal Storage Element for the Rated Home shall be excluded	Internal	Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301 ⁷					
	Mass:	Additional mass specifically designed as a Thermal Storage Element for the Rated Home shall be exclude	ed.				



Footnotes:

- Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Home.
- 2. "Same as Rated Home" indicates that the parameter shall be identical to the value entered for the Rated Home.
- Slab insulation R-values represent nominal insulation levels; and assembly U-factors for foundations, floors, walls, and ceilings represent the overall assembly, inclusive of sheathing materials, cavity insulation, installation quality, framing, and interior finishes.
- 4. If software allows the user to specify the thermal boundary location independent of the conditioned space boundary in the basement of the rated home, then the thermal boundary of the ENERGY STAR Reference Design shall be aligned with this boundary. For example, if the thermal boundary is located at the walls, then the wall insulation shall be configured as if it was a conditioned basement. If the thermal boundary is located at the floor above the basement, then the floor insulation shall be configured as if it was a floor over an unconditioned space.
- 5. Note that the U-factor requirement applies to all fenestration while the SHGC only applies to the glazed portion.
- 6. When determining the ENERGY STAR ERI Target for homes with conditioned basements and for attached homes, the following formula shall be used to determine total window area of the ENERGY STAR Reference Design:

 $AG = 0.15 \times CFA \times FA \times F$

Where:

- AG = Total glazing area
- CFA = Total conditioned floor area
- FA = (Gross above-grade thermal boundary wall area) / (Gross above-grade thermal boundary wall area + 0.5 x Gross below-grade thermal boundary wall area)
- F = 1 0.44 x (Gross common wall area) / (Gross above-grade thermal boundary wall area + Gross common wall area)

And where:

- Thermal boundary wall is any wall that separates Conditioned Space from Unconditioned Space, outdoor environment, or the surrounding soil;
- Above-grade thermal boundary wall is any portion of a thermal boundary wall not in contact with soil;
- Below-grade thermal boundary wall is any portion of a thermal boundary wall in soil contact; and
- Common wall is the total wall area of walls adjacent to another conditioned living unit, not including foundation walls.
- 7. The version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings shall be used to configure this parameter.
- 8. Fuel type(s) shall be same as Rated Home, including any dual-fuel equipment where applicable. For a Rated Home with multiple heating or cooling systems using different fuel types, the applicable system capacities and fuel types shall be weighted in accordance with the loads distribution (as calculated by accepted engineering practice for that equipment and fuel type) of the multiple systems.
- 9. For a Rated Home without a heating system, the ENERGY STAR Reference Design Home shall be configured with a 78% AFUE gas furnace system, unless the Rated home has no access to natural gas or fossil fuel delivery. In such cases, the ENERGY STAR Reference Design Home shall be configured with a 7.7 HSPF air-source heat pump.
- 10. For a Rated Home without a cooling system, the ENERGY STAR Reference Design Home shall be configured with a 13 SEER electric air conditioner.
- 11. That is to say, representative of reference clothes washer gallons per day, standard distribution system water use effectiveness, a hot water piping ratio of 1.0, and no drainwater heat recovery.
- 12. For a Rated Home with multiple water heating systems using different fuel types, the system capacities and fuel types shall be weighted in accordance with the loads distribution (as calculated by accepted engineering practice for that equipment and fuel type) of the multiple systems.

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