

National ERI Target Procedure (ANSI 301-20194) ENERGY STAR Multifamily New Construction, Version 1 (Rev. 01)

National ERI Target Procedure for use with ANSI/RESNET/ICC 301-20194

This document provides detailed instructions for determining the ENERGY STAR ERI Target, the highest ERI value that each rated multifamily unit, excluding townhouses, may achieve to earn the ENERGY STAR. Note that, in addition to meeting the ENERGY STAR ERI Target for each unit, units shall also meet all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements for ENERGY STAR Multifamily New Construction, Version 1 / 1.1 / OR-WA 1.2. While Townhouses are eligible to earn ENERGY STAR Multifamily New Construction by meeting their ENERGY STAR ERI Target and also meeting all Mandatory Requirements for All Multifamily New Construction Projects in Exhibit 2 of the National Program Requirements, the instructions for determining their ENERGY STAR ERI Target is in the National ERI Target Procedure for ENERGY STAR Certified Homes.

An EPA-recognized Verification Oversight Organization's Approved Software Rating Tool shall automatically determine (i.e., without relying on a user-configured ENERGY STAR Multifamily Reference Design) this target for each rated unit. This shall be done by configuring the ENERGY STAR Multifamily Reference Design in accordance with Exhibit 1, the Expanded ENERGY STAR Multifamily Reference Design Definition, and calculating its associated ERI value. The ERI value shall be calculated using ANSI / RESNET / ICC Standard 301-20194 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 301-20194 shall also be followed. Any exceptions shall be approved by EPA and reported at www.energystar.gov/ERIExceptions. This value, rounded to the nearest whole number, shall equal the ENERGY STAR ERI Target.

The National ERI Target Procedure (ANSI 301-20149) must instead be used to determine the ENERGY STAR ERI Target when using ANSI / RESNET / ICC Standard 301-20149.

Revised 10/18/2019



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Exhibit 1: Expanded ENERGY STAR Multifamily Reference Design Definition

Building Component											
Foundations:	Construction Type & Structural Mass: Same as Rated Unit ² , 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 Unit ² , 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 Unit ²										
	Insulation: ^{3, 4} Choose appropriate insulation level below;										
	Basement Wall Continuous Insulation R-Value only applies to conditioned basements; if applicable, insulation shall be located on interior side of coally.										
	side of walls	foundations shal	Il he confic	ured to me	et the annlic	ahla floor assambly	Ll-factor liste	d in the hu	ildina		
	 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 										
	Slab floors with a floor surface less than 24" below grade shall be insulated to the Slab Insulation R-value. The insulation shall extend										
	downward from the top of the slab or	n the outside of t	he founda	tion wall ar	nd then vertic	ally below-grade to	the Slab Insu	ulation Dept	th		
	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8		
	Slab Insulation R-Value:	0	0	0	10	10	15	15	20		
	Slab Insulation Depth (ft):	0	0	0	2	2	2	2	2		
	Basement Wall	0	0	0	7.5	7.5	7.5	10	12.5		
Парта Ошат	Continuous Insulation R-Value:										
Floors Over	Construction Type: Wood frame										
Unconditioned Spaces:	Gross Area: Same as Rated Unit ² Insulation: ^{3, 4}										
opaces.					C7 4	07.400.5					
	Climate Zone: Floor Assembly U-Factor:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8		
Above Orest		0.282	0.052	0.033	0.033	0.033	0.033	0.033	0.033		
Above-Grade Walls:	Interior and Exterior Construction Type: W	rood frame									
vvalis.	Gross Area: Same as Rated Unit ²										
	Solar Absorptance = 0.75										
	Emittance = 0.90										
	Insulation: 3					07.400.5					
	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8		
Th 11	Wall Assembly U-Factor:	0.089	0.089	0.089	0.064	0.051	0.051	0.051	0.036		
Thermally Isolated Sunrooms:	None										
	Area: Same as Rated Unit ² , with door seal properly installed to minimize air leakage between the door and door frame, to avoid the 140 CFM50										
Doors:				nize air lea	kage betwee	en the door and door	frame, to av	oid the 140) CFM50		
Doors:	addition to measured airflow per ANSI / R			mize air lea	kage betwee	en the door and door	frame, to av	oid the 140) CFM50		
Doors:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ²			mize air lea	ikage betwee	en the door and door	frame, to av	oid the 140) CFM50		
Doors:	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs:	ESNÉT / ICC Sto	d. 380	mize air lea) CFM50		
Doors:	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type:	ESNET / ICC Sto	d. 380 aque	mize air lea	≤ 1	/2-Lite		> 1/2-Lite) CFM50		
Doors:	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor:	EŚNÉT / ICC Sto	d. 380 aque	mize air lea	≤ 1	/2-Lite 0.27		> 1/2-Lite 0.32) CFM50		
	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC:	ESNET / ICC Sto	d. 380 aque .21 n/a		≤ 1	/2-Lite		> 1/2-Lite) CFM50		
Doors: Glazing:	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, with	Op 0 rhout exceeding a	d. 380 aque .21 n/a		≤ 1	/2-Lite 0.27		> 1/2-Lite 0.32) CFM50		
	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per	Op nhout exceeding a centage of area	aque 21 n/a available w	vall area ⁵	≤1	/2-Lite 0.27 0.30	;	> 1/2-Lite 0.32) CFM50		
	addition to measured airflow per ANSI / Ri Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere	Op nhout exceeding a centage of area	aque 21 n/a available w	vall area ⁵	≤1	/2-Lite 0.27 0.30	;	> 1/2-Lite 0.32) CFM50		
	addition to measured airflow per ANSI / RI Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by perd Interior Shade Coefficient: Same as Energ External Shading: None	Op nhout exceeding a centage of area	aque 21 n/a available w	vall area ⁵	≤1	/2-Lite 0.27 0.30	;	> 1/2-Lite 0.32) CFM50		
	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs:	Op Op Or hout exceeding a centage of area gy Rating Refere	aque .21 n/a available w	vall area ⁵ , as defined	≤ 1	/2-Lite 0.27 0.30 RESNET / ICC Std. 3	301	> 1/2-Lite 0.32 0.30			
	addition to measured airflow per ANSI / Ri Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone:	Op Op Or hout exceeding a centage of area gy Rating Refere CZ 1	aque .21 n/a available w	vall area ⁵ , as defined CZ 3	≤ 1 d by ANSI / F	/2-Lite 0.27 0.30 RESNET / ICC Std. 3	301 CZ 6	> 1/2-Lite 0.32 0.30	CZ 8		
	addition to measured airflow per ANSI / Ri Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value:	Op Op Or hout exceeding a centage of area By Rating Refere CZ 1 0.60	aque .21 n/a available v nce Home CZ 2 0.60	vall area ⁵ , as defined CZ 3 0.35	≤ 1 d by ANSI / F CZ 4 0.32	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30	301 CZ 6 0.30	> 1/2-Lite 0.32 0.30	CZ 8 0.30		
	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC:	Op Op On A A A A A A A A A A A A A A A A A A	aque .21 n/a available w nce Home CZ 2 0.60 0.27	vall area ⁵ , as defined CZ 3 0.35 0.30	≤ 1 d by ANSI / F	/2-Lite 0.27 0.30 RESNET / ICC Std. 3	301 CZ 6	> 1/2-Lite 0.32 0.30	CZ 8		
	addition to measured airflow per ANSI / Ri Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b	aque .21 n/a available v nce Home CZ 2 0.60 0.27 passed on 2	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC	≤ 1 d by ANSI / F CZ 4 0.32 0.40	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40	CZ 6 0.30 0.40	> 1/2-Lite 0.32 0.30 CZ 7 0.30 0.40	CZ 8 0.30 0.40		
	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone:	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5	CZ 6 0.30 0.40	CZ 7 0.30 0.40	CZ 8 0.30 0.40		
	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38	CZ 6 0.30 0.40 CZ 6 0.36	CZ 7 0.30 0.40 CZ 7 0.29	CZ 8 0.30 0.40 CZ 8 0.29		
	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45	CZ 6 0.30 0.40 CZ 6 0.36 0.43	CZ 7 0.30 0.40 CZ 7 0.29 0.37	CZ 8 0.30 0.40 CZ 8 0.29 0.37		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC:	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38	CZ 6 0.30 0.40 CZ 6 0.36	CZ 7 0.30 0.40 CZ 7 0.29	CZ 8 0.30 0.40 CZ 8 0.29		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45	CZ 6 0.30 0.40 CZ 6 0.36 0.43	CZ 7 0.30 0.40 CZ 7 0.29 0.37	CZ 8 0.30 0.40 CZ 8 0.29 0.37		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45	CZ 6 0.30 0.40 CZ 6 0.36 0.43	CZ 7 0.30 0.40 CZ 7 0.29 0.37	CZ 8 0.30 0.40 CZ 8 0.29 0.37		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ²	Op 0 nhout exceeding a centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45	CZ 6 0.30 0.40 CZ 6 0.36 0.43	CZ 7 0.30 0.40 CZ 7 0.29 0.37	CZ 8 0.30 0.40 CZ 8 0.29 0.37		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Struct Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ² Insulation: ³	centage of area gy Rating Refere CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65 0.27	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65 0.27	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60 0.30	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45 0.40	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45 0.40	CZ 6 0.30 0.40 CZ 6 0.36 0.43 0.40	CZ 7 0.30 0.40 CZ 7 0.29 0.37 0.40	CZ 8 0.30 0.40 CZ 8 0.29 0.37 0.40		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Structors) Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ² Insulation: ³ Climate Zone:	CZ 1 0.50 0.27 tural) Windows b CZ 1 0.50 0.65 0.27	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65 0.27	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60 0.30	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45 0.40	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45 0.40 CZ 4 C & 5	CZ 6 0.30 0.40 CZ 6 0.36 0.43 0.40	CZ 7 0.30 0.40 CZ 7 0.29 0.37 0.40	CZ 8 0.30 0.40 CZ 8 0.29 0.37 0.40		
Glazing: Skylights: Ceilings:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Structors) Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ² Insulation: ³ Climate Zone: Ceiling Assembly U-Factor:	CZ 1 0.50 0.65 0.27 CZ 1 0.60 0.27	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65 0.27	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60 0.30 CZ 3 0.027	≤ 1 d by ANSI / F CZ 4 0.32 0.40 CZ 4 0.38 0.45 0.40	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45 0.40	CZ 6 0.30 0.40 CZ 6 0.36 0.43 0.40	CZ 7 0.30 0.40 CZ 7 0.29 0.37 0.40	CZ 8 0.30 0.40 CZ 8 0.29 0.37 0.40		
Glazing:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by per Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Structors) Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ² Insulation: ³ Climate Zone: Ceiling Assembly U-Factor: Construction Type: Vented with aperture =	CZ 1 0.50 0.65 0.27 CZ 1 0.60 0.27 tural) Windows b CZ 1 0.50 0.65 0.27	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65 0.27 CZ 2 0.027 sq. ft. ceil	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60 0.30 CZ 3 0.027 ing area	CZ 4 0.32 0.40 CZ 4 0.38 0.45 0.40 CZ 4 0.27	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45 0.40 CZ 4 C & 5 0.27	CZ 6 0.30 0.40 CZ 6 0.36 0.43 0.40	CZ 7 0.30 0.40 CZ 7 0.29 0.37 0.40	CZ 8 0.30 0.40 CZ 8 0.29 0.37 0.40		
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Glazing: Skylights: Ceilings:	addition to measured airflow per ANSI / R Orientation: Same as Rated Unit ² U-Factors and SHGCs: Door Type: U-Factor: SHGC: Total Area: AG = 0.15 x CFA x FA x F, wit Orientation: Same as Rated Unit ² , by pere Interior Shade Coefficient: Same as Energ External Shading: None Assembly U-Factors and SHGCs: Climate Zone: U-Value: SHGC: Class AW Assembly U-Factors (i.e., Structor Climate Zone: Fixed Window U-Factor Operable Window U-Factor SHGC: None Construction Type: Wood frame Gross Area: Same as Rated Unit ² Insulation: ³ Climate Zone: Ceiling Assembly U-Factor: Construction Type: Vented with aperture = Radiant Barrier: In climate zones 1-3, if >1 Construction Type: Composition shingle o	CZ 1 0.60 0.27 tural) Windows b CZ 1 0.65 0.27 tural) Windows b CZ 1 0.60 0.27 tural) Windows b CZ 1 0.60 0.27	aque .21 n/a available v nce Home CZ 2 0.60 0.27 based on 2 CZ 2 0.50 0.65 0.27 CZ 2 0.027 sq. ft. ceil ctwork are	vall area ⁵ , as defined CZ 3 0.35 0.30 012 IECC CZ 3 0.46 0.60 0.30 CZ 3 0.027 ing area	CZ 4 0.32 0.40 CZ 4 0.38 0.45 0.40 CZ 4 0.27	/2-Lite 0.27 0.30 RESNET / ICC Std. 3 CZ 4 C & 5 0.30 0.40 CZ 4 C & 5 0.38 0.45 0.40 CZ 4 C & 5 0.27	CZ 6 0.30 0.40 CZ 6 0.36 0.43 0.40	CZ 7 0.30 0.40 CZ 7 0.29 0.37 0.40	CZ 8 0.30 0.40 CZ 8 0.29 0.37 0.40		



ENERGY STAR Multifamily New Construction, Version 1 (Rev. 01) Exhibit 1: Expanded ENERGY STAR Multifamily Reference Design Definition (Continued)

11	Exhibit 1: Expanded ENERGY						. , ~ ~	,					
Heating	Heating capacity shall be selected in acco												
Systems:	ACCA Manual J, Eighth Edition, ASHRAE												
	boiler is distributed by water-loop heat pumps within the Rated Unit, in accordance with the methodology for the Rated Home in ANSI /												
	RESNET / ICC Std. 301, the Reference Design shall be configured such that the heating load is assigned to two separate heating systems: 1) a heat pump with a capacity that is equal to the Reference Design heating load divided by 4.2 COP and 2) a boiler with the balance of the												
	neat pump with a capacity that is equal to the Reference Design heating load divided by 4.2 COP and 2) a boiler with the balance of the capacity of (1-1/4.2) or 76.19%												
	Fuel Type: Same as Rated Unit ^{2,6}												
	System Type: Same as Rated Unit ² , exce	nt Reference D	esign shall b	e configure	d with air-sou	rce heat pumr	in CZ 1-6 wh	ere Rated	Unit is				
	modeled with air-source or ground-source												
	with ground-source heat pump in CZ 7 & 8 where Rated Unit is modeled with air-source or ground-source heat pump, electric strip heat or												
	electric baseboard heat; applicable efficier		m below ⁷										
	Climate Zone:	CZ 1	CZ 2	CZ 3	CZ 4	CZ 4C & 5	CZ 6	CZ 7	CZ 8				
	Gas Furn. AFUE:	80	80	80	90	90	90	90	90				
	Oil Furn. AFUE:	80	80	80	85	85	85	85	85				
	Gas Boiler AFUE:	80	80	80	85	85	85	85	85				
	Oil Boiler AFUE:	80	80	80	85	85	85	85	85				
	Central Boiler, ≥ 300 KBtu/h E _t :	<u>86</u>	<u>86</u>	<u>86</u>	<u>86</u>	<u>86</u>	<u>86</u>	<u>86</u>	<u>86</u>				
	Central Boiler w/WLHP, ≥ 300 KBtu/h E _t		<u>89</u>	<u>89</u>	<u>89</u>	<u>89</u>	<u>89</u>	<u>89</u>	<u>89</u>				
	Air-Source Heat Pump HSPF:	8.2	8.2	8.2	8.5	9.25	9.5	n/a	n/a				
	Air-Source Heat Pump Backup:	Electric	Electric	Electric	Electric	Electric	Electric	n/a	n/a				
	Ground-Source Heat Pump COP:	n/a	n/a	n/a	n/a	n/a	n/a	3.5	3.5				
	For non-electric warm furnaces and non-e												
	determined in accordance with the method												
	determined in this Section. For non-electric accordance with the methodology for the F							all be dete	rminea in				
Cooling	Cooling capacity shall be selected in acco							n in accord	lance with				
Systems:	ACCA Manual J, Eighth Edition, ASHRAE							11 111 400010	anoc with				
-,	Fuel Type: Same as Rated Unit ^{2, 6}			.,									
	System Type: Same as Rated Unit 2, exce	pt Reference D	esign shall b	e configure	d with air-sou	rce heat pump	in CZ 1-6 wh	ere Rated	Unit is				
	modeled with air-source or ground-source												
	with ground-source heat pump in CZ 7 & 8			led with air-s	source or gro	und-source he	at pump, elec	tric strip he	eat, or				
	electric baseboard heat; applicable efficier												
	Climate Zone: AC SEER:	CZ 1	CZ 2	CZ 3		Z 4 C & 5	CZ 6	CZ 7	CZ 8				
	Air-Source Heat Pump SEER:	14.5 14.5	14.5 14.5	14.5 14.5	13 14.5	13 14.5	13 14.5	13 n/a	13 n/a				
	Ground-Source Heat Pump EER:	n/a	n/a	n/a	n/a	n/a	n/a	16.1	16.1				
	Where system type is a chiller or cooling to												
	the methodology for the Rated Unit in ANS												
Service			shall be determined using 0.78 kW/ton. For water-loop heat pumps, Reference Design SEEReq shall be determined using 14 EER Use (Gallons per Day): Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for reduced usage										
Water	resulting from the equipment specified in the Lighting, Appliances, Fixtures, & Internal Gains Section ⁹												
			pliances, Fix	tures, & Inte	rnal Gains S								
Heating	Tank Temperature: Same as Energy Ratir	ng Reference Ho	pliances, Fix ome, as defi	tures, & Inte	rnal Gains Se I / RESNET /	ICC Std. 301							
	Tank Temperature: Same as Energy Ratin Recirculation Pump Energy (for pumps se	ng Reference Horving the Rated	pliances, Fix ome, as defi Unit and no	tures, & Intended here to the tunits)	rnal Gains So I / RESNET / : 0 kWh per y	ICC Std. 301 rear	T / ICC Ctd 2	04					
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump <u>Energy (for pumps se</u> <u>Recirculation Pump Energy (for pumps se</u>	ng Reference Horving the Rated rving the Rated	pliances, Fix ome, as defi Unit and no Unit and oth	tures, & Intended her units) other units) ner units): as	rnal Gains So I / RESNET / : 0 kWh per y	ICC Std. 301 rear	T / ICC Std. 3	01, using (
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP as	ng Reference Horving the Rated rving the Rated	pliances, Fix ome, as defi Unit and no Unit and oth	tures, & Intended her units) other units) ner units): as	rnal Gains So I / RESNET / : 0 kWh per y	ICC Std. 301 rear	T / ICC Std. 3	01, using (
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP as Fuel Type: Same as Rated Unit ^{2,6}	ng Reference Horving the Rated rying the Rated s the pump serving the Rated	pliances, Fix ome, as defi Unit and no Unit and oth ving the Rate	tures, & Intended by ANS other units) ner units): as ed Unit	ernal Gains Se I / RESNET / : 0 kWh per y s defined by A	ICC Std. 301 rear ANSI / RESNE).85 for				
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP a Fuel Type: Same as Rated Unit ^{2, 6} System Type (when Rated Unit is served by	ng Reference Horving the Rated rying the Rated sthe pump serving the commercial or a commercial reference Horving the Rated rying the Rated Rate	pliances, Fix ome, as defi Unit and no Unit and oth ving the Rate	tures, & Intended by ANS other units) ner units): as ed Unit	ernal Gains Se I / RESNET / : 0 kWh per y s defined by A	ICC Std. 301 rear ANSI / RESNE).85 for				
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP as Fuel Type: Same as Rated Unit ^{2,6} System Type (when Rated Unit is served to 85% Et. For electric water heaters, use 0.9 System Type (when Rated Unit is served to 95% Et. For electric water heaters)	ng Reference Horving the Rated rying the Rated sthe pump serving a commercial of EF coversidential systems.	pliances, Fix ome, as defi Unit and no Unit and oth ving the Rate al system): S ystems): Cor	tures, & Interned by ANS other units) her units): as ed Unit ame as system over tional st	ernal Gains So I / RESNET / : 0 kWh per y defined by A em serving the orage water I	ICC Std. 301 Pear ANSI / RESNE The Rated Unit. The Rated With tar	For boilers or	water hea	0.85 for hters, use ated Unit,				
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP at Fuel Type: Same as Rated Unit ^{2,6} System Type (when Rated Unit is served to 85% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served to 19 unless Rated Unit uses instantaneous water water water heaters).	ng Reference Horving the Rated rying the Rated sthe pump serving a commercial of EF coversidential syler heater in which	pliances, Fix ome, as defi Unit and no Unit and oth ving the Rate al system): S ystems): Cor ich case sele	tures, & Interned by ANS other units) or units): as ed Unit ame as system over tional steet 50 gallor	ernal Gains So I / RESNET / : 0 kWh per y defined by A em serving the orage water I	ICC Std. 301 Pear ANSI / RESNE The Rated Unit. The Rated With tar	For boilers or	water hea	0.85 for hters, use ated Unit,				
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP as Fuel Type: Same as Rated Unit 2.6 System Type (when Rated Unit is served to 85% Et. For electric water heaters, use 0.9 System Type (when Rated Unit is served to 1998) unless Rated Unit uses instantaneous wat Select applicable efficiency from below using the same as the same	ng Reference Horving the Rated rying the Rated sthe pump serving a commercial of EF coversidential syler heater in which	pliances, Fix ome, as defit Unit and no Unit and other ving the Rate al system): Systems: Corich case selections	tures, & Interned by ANS other units); as ed Unit ame as system over tional state of 50 gallor Design	ernal Gains So I / RESNET / : 0 kWh per y defined by A em serving the orage water I	ICC Std. 301 Pear ANSI / RESNE The Rated Unit. The Rated With tar	For boilers or k size equal t 60 gallon tank	water hea	0.85 for hters, use ated Unit,				
Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP as Fuel Type: Same as Rated Unit ^{2, 6} System Type (when Rated Unit is served to 85% E ₁ . For electric water heaters, use 0.5 System Type (when Rated Unit is served to 10 unless Rated Unit uses instantaneous wat Select applicable efficiency from below using Gas Storage Tank Capacity:	ng Reference Horving the Rated rying the Rated sthe pump serving a commercial of EF coversidential syler heater in which	pliances, Fix ome, as defit Unit and no Unit and oth ving the Rate al system): Systems: Corich case sele Reference L	tures, & Interned by ANS other units): as ed Unit ame as syst exect 50 gallor Design	ernal Gains So I / RESNET / : 0 kWh per y defined by A em serving the orage water I	ICC Std. 301 Pear ANSI / RESNE The Rated Unit. The Rated With tar	For boilers or k size equal t 60 gallon tank > 55 Gal	water hea	0.85 for hters, use ated Unit,				
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Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP at Fuel Type: Same as Rated Unit ^{2, 6} System Type (when Rated Unit is served 185% E ₁ . For electric water heaters, use 0.5 System Type (when Rated Unit is served 1 unless Rated Unit uses instantaneous wat Select applicable efficiency from below usi Gas Storage Tank Capacity: Gas DHW EF:	ng Reference Horving the Rated rying the Rated sthe pump serving a commercial of EF coversidential syler heater in which	pliances, Fix ome, as defit Unit and not Unit and other ving the Rate at system): Systems): Corich case sele Reference E	tures, & Intended by ANS other units): as ed Unit ame as syst nventional st ect 50 gallor Design 55 Gal 67 EF	ernal Gains So I / RESNET / : 0 kWh per y defined by A em serving the orage water I	ICC Std. 301 Pear ANSI / RESNE The Rated Unit. The Rated With tar	For boilers or k size equal t 60 gallon tank > 55 Gal 0.77 EF > 55 Gal	water hea	0.85 for tters, use ated Unit,				
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Heating	Tank Temperature: Same as Energy Ratir Recirculation Pump Energy (for pumps se Recirculation Pump Energy (for pumps se motor efficiency and using the same HP at Fuel Type: Same as Rated Unit 2.6 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit is served 185% Et. For electric water heaters, use 0.5 System Type (when Rated Unit 2.6 System Type (when Rated Un	ng Reference Horving the Rated rying the Rated rying the Rated is the pump serving a commercia serving the serving tank size of the serving tank s	pliances, Fixome, as defit Unit and not Unit and other ving the Rate al system): Systems): Corrich case sele Reference E	tures, & Intended by ANS other units): as ed Unit ame as syst nventional st ect 50 gallor Design 55 Gal 67 EF 55 Gal 95 EF Gallon	ernal Gains Soil / RESNET / control of the control	ne Rated Unit. heater with tar systems and 6	For boilers or k size equal t gallon tank > 55 Gal 0.77 EF > 55 Gal 2.00 EF 70 Gallon	water hear or that of R for electric	on the state of th				
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ENERGY STAR Multifamily New Construction, Version 1 (Rev. 01)

Exhibit 1: Expanded ENERGY STAR Multifamily Reference Design Definition (Continued)

Infiltration &	Comportmentalization									N / DECNET /	
Mechanical	Compartmentalization Rates: 0.3 cfm50/ft ² Enclosure Area, with Aext applied to calculate Infiltration Rate, in accordance with ANSI / RESNET / ICC Std. 301										
Ventilation:											
V OTHER COLOR	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 / Day Fan Watts: Watts = CFM Rate / 2.2 CFM per Watt, where CFM Rate is determined above										
		Crivi Rate / 2.2 Criv							07.7		
	Climate Zone:		CZ 1	CZ 2	CZ 3	CZ 4	CZ 4 C & 5	CZ 6	CZ 7	CZ 8	
	Ventilation Type:		Supply	Supply	Supply		Exhaust	Exhaust	Exhaust	Exhaust	
<u>Lighting,</u>	Lighting: Fraction of qualifying Tier I fixtures to all fixtures in qualifying light fixture locations 90% for interior; 0% for exterior and garage										
Appliances,	Refrigerator: 423 kWh per year										
Fixtures &	Dishwasher: 0.66 El	washer: 0.66 EF, Place Setting Capacity Same as Rated Unit 2; use 12 settings if no dishwasher installed in Rated Unit									
Internal	Clothes Washer: Use the ENERGY STAR values below, even if no clothes washer is installed or if the ratio of dwelling units to installed										
Gains:	washers is more tha	washers is more than 14. Exception: If installed clothes washer is not available as ENERGY STAR certified (e.g., top-loading commercial									
	clothes washers, Combination All-In One Washer-Dryers), model the same as the Rated Unit clothes washer										
		<u>LER</u>	<u>\$/I</u>	<u>kWh</u>	<u>AGC</u>		\$/therm	CAPw		<u>IMEF</u>	
	ENERGY STAR	<u>152</u>	0	<u>.12</u>	<u>12</u>		<u>1.09</u>	<u>4.2</u>		<u>2.06</u>	
	Clothes Dryer: Field Use Factor is 1.04 and CEF is 3.93 for electric and 3.43 for gas, even if no clothes dryer is installed. Exception: If installed										
	clothes dryer is not available as ENERGY STAR certified (e.g., commercial clothes dryers, Combination All-In One Washer-Dryers), model the										
	same as the Rated Unit clothes dryer										
	Ceiling Fan: 122 CFM per Watt; Quantity = Number of bedrooms + 1 when ceiling fans present in the Rated Unit; otherwise Quantity = 0										
	Water fixtures: all showers and faucets ≤ 2.0 gpm										
	Internal Gains: Same as Energy Rating Reference Home, as defined by ANSI / RESNET / ICC Std. 301, except for adjustments for the lighting.										
	refrigerator, dishwas							•			
Internal	Same as Energy Ra	ting Reference Hom	ne, as defii	ned by ANSI	/ RESNET / IC	C Std. 301					
Mass:	Additional mass spe						hall be excluded	d			
L		timetim, tradigitor at		2.2.2.490 =1			3/10/000	=	_		



National ERI Target Procedure (ANSI 301-20194) ENERGY STAR Multifamily New Construction, Version 1 (Rev. 01)

Exhibit 1: Expanded ENERGY STAR Multifamily Reference Design Definition (Continued)

Revised 10/18/2019



ENERGY STAR Multifamily New Construction, Version 1 (Rev. 01)

Footnotes:

- 1. Any parameter not specified in this exhibit shall be identical to the value entered for the Rated Unit. Where envelope building components do not exist in the Rated Unit, such as a foundation or slab, they should not be modeled in the ENERGY STAR Multifamily Reference Design. Where the envelope component is adiabatic in the Rated Unit, it shall also be adiabatic in the Multifamily Reference Design.
- 2. "Same as Rated Unit" indicates that the parameter shall be identical to the value entered for the Rated Unit.
- 3. 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 unit, then the thermal boundary of the ENERGY STAR Multifamily 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. When determining the ENERGY STAR ERI Target, the following formula shall be used to determine total window area of the ENERGY STAR Multifamily 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 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 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 other conditioned space, not including foundation walls.
- 6. Fuel type(s) shall be same as Rated Unit, including any dual-fuel equipment where applicable. For a Rated Unit with multiple heating, cooling, or water heating 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, unless otherwise specified by ANSI / RESNET / ICC Std. 301.
- 7. For a Rated Unit without a heating system, the ENERGY STAR Multifamily Reference Design shall be configured with a 78% AFUE gas furnace system, unless the Rated unit has no access to natural gas or fossil fuel delivery. In such cases, the ENERGY STAR Multifamily Reference Design shall be configured with a 7.7 HSPF air-source heat pump.
- 8. For a Rated Unit without a cooling system, the ENERGY STAR Multifamily Reference Design shall be configured with a 13 SEER electric air conditioner.
- 9. That is to say, representative of standard-flow plumbing fixtures, reference clothes washer gallons per day, standard distribution system water use effectiveness, a hot water piping ratio of 1.0, no pipe insulation, and no drain water heater recovery.
- 10. To determine domestic hot water (DHW) EF requirements for additional tank sizes, use the following equation: Oil DHW EF ≥ 0.70 (0.002 x Tank Gallon Capacity).

In accordance with the RESNET Guidelines for Multifamily Energy Ratings, for a Rated Unit with conditioned space below, software shall either automatically apply a 15% reduction to the compartmentalization results of the Rated Unit or instruct the Rater to apply the reduction. If automatically applied, the software shall make that known, such that the Rater does not also apply the same reduction. The 15% reduction shall not be applied if the Rated Unit is located in a building where outdoor air for the Rated Unit is supplied to the corridor and is not directly ducted either into the Rated Unit or into the Rated Unit's HVAC system.

Revised 10/18/2019