

Technical Bulletin:

Track A - HVAC Grading by Rater Available for Use with ENERGY STAR Multifamily New Construction Program!

October 5, 2021

Track A - HVAC Grading by Rater is a collection of requirements built upon ANSI / RESNET / ACCA / ICC Standard 310 that can be used to satisfy many of the HVAC design and functional testing components of the ENERGY STAR Multifamily New Construction (MFNC) program.

And now, with the release of updates for Ekotrope, EnergyGauge USA, and REM/Rate, Track A - HVAC Grading by Rater, can be used in the ERI Path to help meet the ENERGY STAR MFNC Energy Rating Index (ERI) Target.

While this new track is available for use, partners are free to continue using the approach that has been available since the MFNC program launched in 2019, which was recently renamed Track B - HVAC Testing by Functional Testing Agent.

Key Benefits of Track A - HVAC Grading by Rater

HVAC grading makes it easier to certify ENERGY STAR MFNC buildings:

- Integrates most ENERGY STAR HVAC requirements into an ERI
- For systems that are eligible for grading, a credentialed HVAC contractor or a Functional Testing Agent is not required
- Rewards proper installation with ERI points and helps meet the 45L tax credit

How to Use Track A - HVAC Grading by Rater

1. Complete the mandatory training and assessment required by your Home Certification Organization (HCO) or your Multifamily Review Organization (MRO).

For example, EPA's currently-recognized HCO, RESNET, requires that Raters and RFIs complete online training and an evaluation by a field candidate assessor prior to using ANSI / RESNET / ACCA / ICC Standard 310. In the future, other HCOs may have different requirements. Your MRO may also require this training or have their own requirements.

2. Identify the systems that are eligible to use Track A – HVAC Grading by Rater.

ANSI / RESNET / ACCA / ICC Standard 310 is applicable to unitary HVAC Systems including air conditioners and heat pumps up to 65 kBtuh and furnaces up to 125 kBtuh in dwelling units that have their own HVAC system separate from other units. For the MFNC program, HVAC grading may also be completed on these systems where they serve a single common space. Systems that do not meet the

sizing limits or systems that serve multiple dwelling units or common spaces are not eligible for Track A – HVAC Grading by Rater.

3. Follow ANSI / RESNET / ACCA / ICC Standard 310 throughout design & construction for eligible systems serving dwelling units & common spaces.

One required component is the collection of a design report. RESNET has created an ANSI / RESNET / ACCA / ICC Standard 310 HVAC Design Report template, available <u>here</u> under "Calculators And Tools". This report has been integrated into Wrightsoft and EnergyGauge USA, and can be completed with the press of a button while performing residential load calculations with these software programs. Efforts are underway to integrate it into RHVAC, as well.

It's recommended that Raters wait to use this standard until this integration is complete for the program(s) being used by the HVAC designers they work. However, in the interim, Raters can have HVAC designers complete this report manually.

1. Design Basis & Architectural Scope					ANSI / RESNET	/ ACCA 310) HVA	C Design Re	eport	1, 2	
1.1 Design description (optional):	Su	nflower plan	design for all options excep	t sunroom	a Equipment Selection	Equip. / System	1	Equip. / System	2	Equip, / System	_
1.2 Designer company: Superior HVAC Design Incorporated Designer name: Ms. Maximum Designer Date:		Date: 12-01-2020	it Pumps, & Other Cooling Er		there will				N/A 🗖		
1.3 Software name and version used to complete design: Acme Design Software, v1.0		Software, v1.0	N/A 🗖	D for each system:	Attic AC	UNESE WI	Basement HP	IVA I			
For a Dwelling, Townhouse, or Dwelling / Sleeping U	hit Within (i.e., d	luplex):			serves (See Item 3.6):	Living Area		Basement			
1.4 Architectural plan name or address of the propert	r: Sk	Sunflower Plan		serves (See item 3.6):	AC Goodman AC16abc		HP Goodman HP15def				
1.5 Architectural options used in the design: ²	P	Patio with sliding glass door		oil mfr. & model #: 10							
1.6 Other architectural options that the design can be used with: *				oil mfr. & model #; " i model #: 30	Goodman Ac16a			N/A D		N/A D	
For a Dwelling / Sleeping Unit Not Within a Dwelling or Townhouse (e.g., co		le.g., condo, apartment):									
1.7 Unique ID for the bldg, that the dwelling / sleeping unit is in: 5					tck box for alt. OEM doc.: 31	12345678	OEM		OEM		OEM
 Architectural plan used in design (e.g., dwelling unit model): 1.9 Other architectural plans that the design can be used with: ⁴ 1.10 Architectural options used in the design: ³ 1.11 Other architectural options that the design can be used with: ⁴ 					ooling efficiency: 32	16 SEER	N/AD	15 SEER	N/A		N/A
					ig efficiency: 20		N/A		N/A		N/A
					c to min. rated capacity:		N/A		N/A		N/A
					er fan motor & speed type: 34	PSC Single	N/AD		N/A		N/A
1.12 Dwelling / sleeping unit location used in design:					ressor speed type: 36	Single	N/A		N/A		N/A
2. Dwelling-Unit Mechanical Ventilation System D					device type: 36	Piston / Cap	N/A		N/A		N/A
Ventilation System Type & Control Location:	System 1		System	System	EM subcooling target (°F): 27		N/A		N/A		N/A
2.1 Unique name or ID for each system: *	Whole-Hous	e ERV			ce metric and rating: 38	MERV 7	N/A		N/A		N/A 🗖
2.2 Vent, equipment manufacturer & model #: *	Broan DEI	F782			Other Heating Equipment (If			l, check "N/A")			N/A
2.3 Specified system type: 10	ERV				ID for each system:	Attic Furnace					
2.4 Specified control location: "	Utility R	m			n serves (See Item 3.6):	Living Area					
2.5 Ventilation zone name(s) served by system: 12	Whole-Ho					Furnace					
Ventilation Zone Served by Ventilation System	Zone		Zone	Zone	ufacturer & model #:	Goodman AC16a	sbc				
2.6 Ventilation zone name: 12					teck box for alt. OEM doc.: 31	54648977	OEM		OEM		OEM
					er, rated heating efficiency:	90 AFUE	N/A		N/A		N/A.
					ir fan motor & speed type: ³⁴		N/AD		N/AD		

RESNET has also created an ANSI / RESNET / ACCA / ICC Standard 310 Data Tool, also available <u>here</u> under "Calculators And Tools," to assist with the design review and field tasks required by the standard.

A B C D E F G	H I	J	KL	м	N
Standard 310 Data Tool:					_
Evaluation of the Blower Fan Volumetric Airflow		Section Reference	Formatting Legend		
Prerequisites			123 User Inpi		
Did total duct leakage achieve Grade I or II designation?	Yes	6.2.1		it is out of range specified by the standard	
HVAC equipment is operational & matches specification?	Yes	6.2.2.1	123 Calculate	d value	
If specified, mech. vent. system is operational & matches specification?	Yes	6.2.2.2			
If specified, distribution system installed, including registers & grilles?	Yes	6.2.2.3			
If specified, filter installed & matches specified performance rating?	Yes	6.2.2.4			
Have prerequisites been met?	Yes				
Information from HVAC Design Report					
Information from HVAC Design Report Enter design-specified blower fan airflow (Odesign)	1.200 CFM	4.2.5.5.1			
Test Method Selection					
Does the system have a total amount of supply ductwork or distribution build	ing No	6.3.1.1			
cavities that is > 10 total linear feet?					
Is the system entirely in Conditioned Space Volume?	No	6.3.1.1			
Is testing required?	Yes	6.3.1.1			
Was blower fan airflow test exemption taken?	No	6.3.1.1			
What Grade designation did total duct leakage achieve (I or II)?	Grade I				
If testing is required and pre-regs met, select one airflow test method.	Flow Hood	6.3.1.3			
Dwelling and Forced-Air HVAC System Set Up					
Dwelling and forced-air HVAC system set up per Section 6.4?	Yes	6.4			
Enter mode that forced-air HVAC system was tested in	Cooling	6.4.5			
Complete One of Four Test Methods, Per Selection Above					
Pressure Matching Method - Rater Measurements & Calculation					

In addition to following ANSI / RESNET / ACCA / ICC Standard 310 over the course of design and construction, there are three additional tasks required when choosing Track A - HVAC Grading by Rater:

4. Collect the ENERGY STAR MFNC HVAC Design Supplement.

While most of the design documentation requirements are satisfied by the new ANSI / RESNET / ACCA / ICC Standard 310 HVAC Design Report, ENERGY STAR requires several additional design elements related to the ventilation system and HVAC sizing. These are reported on the design report supplement.

	ultifamily New Construction, All Versions (Rev. 0 sign Supplement to Std. 310 for Dwellings & Uni	1	
1. Design Basis		2	
1.1 Design description (optional):			
1.2 Designer company:	Designer name: Date:		
	stem Design ("Vent System") & Inlets in Return Duct 2.3.4	Verified	5 N/A
Airflow:			
2.1 Ventilation airflow design rate & run-time	for each Vent System meets ASHRAE 62.2-2010 or later edition. 6		
2.2 Access point is specified for Rater to mea	sure ventilation airflow rate and inspect any motorized / shutoff dampers. 4,7		
System Controls			
2.3 Specified controls for each Vent System a	allow it to operate automatically, without occupant intervention.		
	nclude a readily-accessible override & a label has also been specified if its juired for a toggle wall switch, but not for a switch that's on the vent. equip.). ⁸		
	ect to a ducted return of the HVAC system, specified controls automatically during ventilation off-cycle and occupant override. ^{4,9}	•	
Sound: 2.6 Specified fan of each Vent Syst	em is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted. ¹⁰		
Efficiency: (Complete if Vent System control	ler operates HVAC fan or Vent System uses bath fans; otherwise, check "N/A")		
	AC fan, then HVAC fan operation is intermittent and either fan type in HVAC ce the run-time by accounting for HVAC system heating or cooling hours. ¹¹	•	
2.8 If bathroom fans are specified as part of a	iny Vent System, then they are ENERGY STAR certified. 12		
	specified as part of the Vent System, then if ≤ 1 HP, they are direct-drive, 1 HP, they are specified with NEMA Premium [™] Motors or equivalent.	•	•
Air Inlet Location: (Complete this section if	system has a specified (ir inlet location; otherwise check "N/A") 14		

This template has been created and will be integrated into HVAC design programs, as well. Wrightsoft is targeting Q4 2021, EnergyGauge USA is targeting Q2 2022, and RHVAC is assessing their timeline. It's recommended that Raters wait to use the standard until this integration is complete for the program(s) being used by the designers they work with. However, Raters can have HVAC designers complete this supplement manually or have them complete the current ENERGY STAR National HVAC Design Report, which contains the same information.

Spaces & Central Sy	gn Supplement to St stems ¹	a. 310 for C	ommon	
		minn 1 / 1 1 / 1	2 /Bau Of	2)
ENERGY STAR Multifami	ily New Construction, ve	rsion 171.171	.2 (Rev. 0.	2)
 This Supplement shall be used for MFNC buildings wh Complete one Supplement for Common Spaces and C hydronic systems, common space heating and cooling requirements not covered under ANSI / RESNET / AC projects with multiple buildings, one Supplement per b Obtain efficiency features (e.g., window performance, - Provide the completed Supplement to the Rater and th 	Central Systems for each building. Thi systems that are not using HVAC Gr CA 310 or the National HVAC Design uiding or per project is permitted. ¹ insulation levels, and infiltration rate)	s Supplement includes ading, and common sp Supplement to Std. 31 from the builder, archite	system design ace and central 0 for Dwellings ect, or Rater. ²	for all ventilation & Units. For
1. Design Overview				
1.1 Designer name:	Designer company:		Date:	
		FAgent MEP / Cred		
1.2 Select which party you are providing these design service	rices to: Builder / Developer	TAgent DMEP / Cred		
1.2 Select which party you are providing these design serv 1.3 Name of company you are providing these design serv	rices to: Builder / Developer	T Agent D MEP / Cred		contractor
1 1 Designer name: 1 2 Select which party you are providing these design sen 13 Name of company you are providing these design sen 14 Project address: 2a. Common Space Mechanical Ventilation Design	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State	lentialed HVAC	
1.2 Select which party you are providing these design serv 1.3 Name of company you are providing these design serv 1.4 Project address: 2a. Common Space Mechanical Ventilation Design Airflow:	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designer
12 Select which party you are providing these design sen 1.3 Name of company you are providing these design sen 1.4 Project address. 2a. Common Space Mechanical Ventilation Design Altflow: 2.1 Common space outldoor airflow design rate meet the re-	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designer
12 Select which party you are providing these design sen 1.3 Name of company you are providing these design sen 1.4 Project address. 2a. Common Space Mechanical Ventilation Design Airflow 21 Common space outdoor airflow design rate meet the n exceeding 2013 rates by more than 50%. List common space for which 62.1 ventilation rates	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designe Verified
1.2 Select which party you are providing these design serv 1.3 Name of company you are providing these design serv 1.4 Project address: 2a. Common Space Mechanical Ventilation Design Airflow: 2.1 Common space outdoor airflow design rate meet the in screeding 2013 rates by more than 50%. List common space for which 62.1 ventilation rates were calculated in the spaces to the right. K ^{or}	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designer Verified
1.2 Select which party you are providing these design serv. 3. Name of company you are providing these design serv. 4.4 Project address: 2a. Common Space Mechanical Ventilation Design Nirflow: 2.1 Common space outdoor airflow design rate meet the in screeding 2013 rates by more than 50%. List common space for which 62.1 ventilation rates ver calculated in the spaces to the right: ^{6,7} 2.2 Ventilation airflow rate required by ASHRAE 62.1:	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designe Verified
12 Select which party you are providing these design sen 1.3 Name of company you are providing these design sen 1.4 Project address: 2a. Common Space Mechanical Ventilation Design Airflow 21 Common space outdoor airflow design rate meet the re- exceeding 2013 rates by more than 50%. List common space for which 62.1 ventilation rates were calculated in the spaces to the right: 4.7 2.2 Ventilation airflow rate designed: 3 Ventilation airflow rate designed:	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designer Verified
1.2 Select which party you are providing these design serv 1.3 Name of company you are providing these design serv 1.4 Project address:	rices to: Builder / Developer F rices to (if different than Item 1.1): City:	State:	entialed HVAC	Designer Verified

For Multifamily projects, if all dwelling unit systems are using HVAC grading, there is an abbreviated version of the MFNC Design Report to just cover central hydronic distribution requirements (such as water-loop heat pumps on a shared loop), central ventilation requirements, and common space systems that are not using HVAC Grading. This is the "National HVAC Design Supplement to Std. 310 for Common Spaces & Central Systems," pictured above. If not all dwelling-unit systems are graded, project teams should fill out the National MFNC HVAC Design Report for any systems that are not covered by HVAC grading.

5. Complete the first page of the ENERGY STAR MFNC National Rater Design Review Checklist.

Most design review requirements for ENERGY STAR will be satisfied by the ANSI / RESNET / ACCA / ICC Standard 310 design review. The two additional requirements for ENERGY STAR are shown in the highlighted fields below. They simply require the Rater to verify that all required documentation was collected and completed and that the cooling sizing limits have been met.

2.1.1 Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ³ 1.2 ERI and ASHRAE only. Specified fenestration meets or exceeds 2009 IECC residential requirements. ³ 2.1 Common space: ² 2.1 ERI and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ³ 2.2 ASHRAE only. Specified fenestration meets or exceeds 2009 IECC commercial requirements. ³ 2.3 ERIs and Prescriptive: Specified fenestration meets or exceeds 2009 IECC commercial requirements. ³ 2.3 ERIs And SHRAE only. Specified fenestration meets or exceeds 2009 IECC commercial requirements. ³ 2.3 Astronomy of the second state of the			Rev. 02	/
Project Address: City: State: 1. Partnership Status Control: Rater 4 1.1. Rate has verified and documented that builder or developer has an ENERGY STAR partnership agreement using www.energynata.gov/ASHRAE.develoate. Developer name: 0 1.2. ASHRAE Chrip: Rater has verified that modeler is listed in the online directory using www.energynata.gov/ASHRAE.develoay. 0 0 2.1.2. SHRAE Chrip: Rater has verified that modeler is listed in the online directory using www.energynata.gov/ASHRAE.develoay. 0 0 2.1.1.Prescriptive: Specified fenestration 0 0 0 2.1.1.Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ⁸ 0 0 2.2.2.ERB and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ⁸ 0 0 2.2.2.ERB and Prescriptive: Specified fenestration meets or exceeds 2000 IECC considential requirements. ⁸ 0 0 2.3.1.ERB and Prescriptive: Specified fenestration meets or exceeds 2000 IECC commercial requirements. ⁸ 0 0 3.1.1.Prescriptive: Specified fenestration meets or exceeds 2000 IECC commercial requirements. ⁸ 0 0 3.1.1.Prescriptive: Specified fenestration meets or exceeds 2000 IECC commercial requirements. ⁴ 0 0 3.1.1.Prescriptive: Speci	If pursuing Track A – H	VAC Grading by Rater, complete this page. ³		
Partnership Status Must Correct Rater */ Verified 11 Rater has verified and documented that builder or developer has an ENERGY STAR partnership agreement using wink energyptic, guripathedicate. Developer name: 0 21 24 RFARE Orky: Rater has verified that modeler is loted in the online directory using www.energyptic.guripathedicetory. 0 0 21 25 RFARE Orky: Rater has verified that modeler is loted in the online directory using www.energyptic.guripath.StateRetectory. 0 0 21 26 RFARE Orky: Rater has verified that modeler is loted in the online directory using www.energyptic.guripath.StateRetectory. 0 0 21 21 RFI and SHRAE Orky: Specified fenestration requirements. 0 0 21.1 ERI and ASHRAE orky: Specified fenestration meets or exceeds 2009 IECC residential requirements. 0 0 22.2 Common space. 2 0 0 0 2.3 LIBRI and Prescriptive: Specified fenestration meets or exceeds 2009 IECC commercial requirements. 0 0 3.1 Develing unit 0 0 0 0 3.1 Develing unit 0 0 0 0 3.2 Common space. 0 0 0 0 3.1 Develing unit 0 0 0 0 3.1 Develing unit 0 0 0 0 3.2 Common	Project Name:	Number of Units: Permi	Date:	
	Project Address:	City:	State:	
	1. Partnership Status			
12 ASHRAE Only: Rater has verified that modeler is listed in the online directory using www.energenate.geov/ASHRAE/developy. Modeler name:	www.energystar.gov/partnerlocator.			
2. High-Performance Fenestration 2. Development 2. Ling Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. * 2. Ling Prescriptive: Specified fenestration meets or exceeds 2009 IECC residential requirements. * 2. Ling and ASHRAE only. Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. * 2. Ling and Prescriptive: Specified fenestration meets or exceeds 2009 IECC creation and the second state of	 ASHRAE Only: Rater has verified that modeler is lister www.energystar.gov/ASHRAEdirectory. 	d in the online directory using		
2.1.2 ERI and ASHRAE only. Specified fenestration meets or exceeds 2009 IECC residential requirements. ¹ 2 Common space: ² 2.1.ERI and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ¹ 2.2.A.SHRAE only. Specified fenestration meets or exceeds 2009 IECC commercial requirements. ⁴ 3. Migh-Performance Insulation 3.1.Prescriptive: Specified fenestration meets or exceeds 2009 IECC commercial requirements. ⁴ 3.1.Prescriptive: Specified fenestration meets or exceeds 2009 IECC commercial requirements. ⁴ 3.1.Prescriptive: Specified ceiling ¹ , wall ² , floor, and slab-on-grade insulation levels meet or exceed ENERGY 3.1.2.FRI and ASHRAE only. Specified ceiling ¹ , wall ² , floor, and slab-on-grade insulation levels meet or exceed 2.2 common space: ² 3.2.1 ERI and Prescriptive: Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 2.2.Common space: ² 3.2.1 ERI and Prescriptive: Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 2.2.Common space: ² 3.2.1 ERI and Prescriptive: Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 2.2.Common space: ² 3.2.2.ASHRAE only. Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 1.2.EXERT SIAR MER Color State MERCAC State. 3.0.1.4.Co.C.State. 3.10 enter MA DEVENCE Commercial chapter, ^{4, 8, 8} 3.2.2.ASHRAE only. Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 1.2.2.ASHRAE only. Specified ceiling ¹ , wall ¹ , floor, and slab-on-grade insulation levels meet or exceed 1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.				
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22 Common space: ² 2.1 ERI and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements. ⁸ 2.2 ASHRAE only, Specified fenestration meets or exceeds 2009 IECC commercial requirements. ⁶ 2.2 ASHRAE only, Specified celling ⁴ wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed STAR MF Reference Design requirements. ⁶ 3.1.1: Prescriptive: Specified celling ⁴ wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed STAR MF Reference Design requirements. ⁶ 3.1.2: ERI and ASHRAE only. Specified celling ⁴ , wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed wakes from the '0xoup FF column in the 2000 IECC Commercial chapter. ^{1,8,19} 22 Common space: ² 3.2: ERI and Prescriptive: Specified celling ⁴ , wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF. Reference Design requirements. ^{4,1,18} 3.2: Design and Prescriptive: Specified celling ⁴ , wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF. Reference Design requirements. ^{4,1,18} 3.2: Design and Prescriptive: Specified celling ⁴ , wall ⁷ , floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF. Reference Design requirements. ^{4,1,18} 3.2: Design and Prescriptive: Specified celling ⁴ , wall ⁴ , floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF. Calce Stat. 3: Design requirements designer, ^{4,18} Common space: ² 3.2: ASHRAE conly. Specified celling ⁴ , wall ⁴ , floor, and slab-on-grade insulation levels meet or exceed ENERGY STAR MF. Calce Stat. 3: Design requirements designer, ^{4,18} Common space: ^{4,1}	2.1.1 Prescriptive: Specified fenestration meets or exc	ceeds ENERGY STAR MF Reference Design requirements. 5		
2.2.1 ERI and Prescriptive: Specified fenestration meets or exceeds ENERGY STAR MF Reference Design requirements.* 2.2.ASHRAE only: Specified fenestration meets or exceeds 2009 IECC commercial requirements.* 1 1 Develing unit 3.1 Develing unit 3.1 Develing unit 3.1 Second Start	2.1.2 ERI and ASHRAE only: Specified fenestration m	eets or exceeds 2009 IECC residential requirements. ⁵	0	
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4a.3 Prescriptive Path: Dwelling Unit Mechanical Ventilation is <150% of ASHRAE 62.2-2013 requirements. ¹¹		w Checklist completed for applicable housing type, with all		
	4a.3 Prescriptive Path: Dwelling Unit Mechanical Ventilatio	n is <150% of ASHRAE 62.2-2013 requirements. 11		

6. Complete Sections 5a.1 through 5a.3 of the ENERGY STAR MFNC National Rater Field Checklist.

While any airflow, watt draw, and refrigerant grade is acceptable for an energy rating, these items specify minimum grades that must be achieved for ENERGY STAR certification.

Mational Rater Field Checklist ¹							
ENERGY STAR Multifamily New Construction, Version 1 / 1.1 / 1.2 (Rev. 02)							
 Air Sealing (Unless otherwise noted below, "sealed" indicates the use of caulk, foam, or equivalent material.) 	Must Correct	Builder Verified ³	Rater Verified ⁴	N/A ⁶			
The following items must be verified in dwelling units and common spaces to reduce air leakage to exterior, adjacent buildings, or unconditioned spaces.							
4.1 Ducts, flues, shafts, plumbing, piping, wiring, exhaust fans, & other penetrations to unconditioned space sealed, with blocking / flashing as needed.				-			
4.2 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to ≥ R-10 in CZ 4-8.							
4.3 Continuous top plate or blocking is at top of walls adjoining unconditioned space including at balloonframed parapets, and sealed.							
4.4 Drywall sealed to top plate at all unconditioned attic / wall interfaces using caulik, foam, drywall adhesive (but not other construction adhesives), or equivalent material. Either apply sealant directly between							
4.5 Rough opening around windows & exterior doors sealed. 33							
4.6 Assemblies that separate attached garages from occupiable space sealed and, also, an air barrier installed, sealed, and aligned with these assemblies. ³⁴							
4.7 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with doorsweep and weatherstripping or equivalent gasket.							
4.8 Attic access panels, roof halches and drop-down stairs are gasketed (i.e., not caulked) or equipped with durable covers that are gasketed. ¹⁰							
The following items must be additionally verified in dwelling units, to reduce air leakage between conditioned spaces.							
4.9 Doors serving as a unit entrance from a corridor/stainvell made substantially air-tight with doorsweep and weatherstripping or equivalent gasket.							
4.10 Rater-measured compartmentalization is no greater than 0.30 CFM50 per square feet of dwelling unit enclosure area, following procedures in ANSI / RESNET / ICC Std. 380. ³⁵		-					
4.10.1 For dwelling units with forced air distribution systems without ducted returns and located in a closet adjacent to unconditioned space, the Rater-measured pressure difference between the space containt the air handler and the conditioned space during the compartmentialization test is no greater than 5 Pa. ⁸							
HVAC System 37		Must Correct	Rater Verified	N/A			
5. Heating & Cooling Eqpt. Complete Track A - HVAC Grading by Rater OR Track B – HVAC Testing by F	T Agent 38		4				
5a.1 Blower fan volumetric airflow is Grade I or II per ANSI / RESNET / ACCA Std. 310							
Track A ³⁰ 5a.2 Blower fan watt draw is Grade I or II per ANSI / RESNET / ACCA Std. 310							
5a.3 Refrigerant charge is Grade I per ANSI / RESNET / ACCA Std. 310. See Footnote 40 for exempt							
5b 1 HVAC manufacturer & model number on installed equipment matches either of the following (che				-			

7. Optional: Rater complete Section 5 of the ENERGY STAR MFNC HVAC Functional Testing Checklist.

While not required for Track A, a Functional Testing Agent or a Rater must still complete Section 5 of the FT Checklist, which is the functional testing of the graded HVAC system. A Rater can complete this verification in concert with the HVAC grading tests and then a Functional Testing Agent is not needed for the systems that are undergoing HVAC grading.

Overview of Track A vs. Track B within ENERGY STAR

Below is a summary of how Track A and Track B compare in the Multifamily New Construction program. To reiterate, Track B is what has existed in the MFNC program to date.

Multifamily New Construction	Track A: HVAC Grading by Rater	Track B: HVAC Testing by FT Agent
HVAC designer completes	Std. 310 Design Report + ENERGY STAR Supplement(s)	ENERGY STAR HVAC Design Report
Rater reviews design report per	Std. 310 Data Tool + ENERGY STAR Design Review Checklist	ENERGY STAR Design Review Checklist
Rater verifies	Functional Testing Agent is credentialed, for any central / commercial equipment	Functional Testing Agent is credentialed
HVAC contractor installs	equipment	equipment & FT Agent completes Functional Testing Checklist
Rater verifies	Grade I total duct leakage, Grade I / II blower fan airflow, Grade I / II blower fan watt draw, Grade I refrigerant charge when the non-invasive method is able to be used Optional: Functional Testing	total duct leakage limits, static pressure, required to collect FT Checklist if FT Agent is not a credentialed contractor Optional: Functional Testing

Additional Resources

Use <u>ENERGY STAR's HVAC grading factsheets</u>: Educate your stakeholders using targeted factsheets. The following factsheets are available:

- MFNC HVAC Grading Factsheet: Builders
- MFNC HVAC Grading Factsheet: Raters
- MFNC HVAC Grading Factsheet: HVAC contractors
- MFNC HVAC Grading Factsheet: HVAC designers

Watch the "ENERGY STAR + HVAC Grading" webinar: Review this session held on 11/5/2020. Contact us at <u>energystarhomes@energystar.gov</u> to request a recording.

Review Standard 310: Find more information on ANSI / RESNET / ACCA / ICC Standard 310 on <u>RESNET's</u> <u>RESNET-ANSI American National Standards page</u>.

Complete Training: For Raters for whom RESNET is their HCO, complete the required training modules through the <u>RESNET Portal</u>.

View Instructional Videos: View optional instructional videos on measuring airflow, not prepared by EPA, on The

Energy Conservatory's HVAC Air Flow and Pressure Measurement Training page.

View past ENERGY STAR Residential New Construction technical bulletins.

Best regards, The ENERGY STAR Residential New Construction team <u>energystarhomes@energystar.gov</u>

ENERGY STAR® is the simple choice for energy efficiency. For 25 years, EPA's ENERGY STAR program has been America's resource for saving energy and protecting the environment. Join the millions making a difference at energystar.gov.

