

Guideline: Express Permits for A2L Refrigerant Systems			
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City of Los Angeles – Department of Building & Safety

Guideline: Express Permits for A2L Refrigerant Systems

This Guideline should not be used in lieu of the referenced Codes and Standards. This Guideline is provided as an aid and should not be construed as a complete list of requirements. For additional clarity or for all other requirements, please refer to the California Mechanical Code and ASHRAE Standards.

This worksheet establishes a guideline to streamline the system charge compliance process for applicable A2L refrigerant systems qualified for an express permit. The guideline contains instructions and forms for contractors to evaluate the acceptance of the A2L refrigerant system design and system charge. Before the scheduled inspection, the necessary documentation and appropriate forms should be completed to present to Inspection for review and approval.

The technical information provided in this guideline is in accordance with Chapter 11 of the California Mechanical Code, ASHRAE 15 (2022), ASHRAE 15.2 (2022), and ASHRAE 34 (2022).

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I. Definitions

For the purpose of this worksheet, the following terms are defined:

Air Circulation: A mitigation action in the event of a refrigerant leak by means of mechanically inducing airflow within a space or spaces connected by ductwork

Connected Spaces: Two or more spaces connected by natural ventilation, a ducted air distribution system, or mechanical ventilation.

Dispersal Area: The area of a space or connected spaces in which leaked refrigerant will disperse.

Dispersal Height: The height shall be the lowest point of any opening in the supply air duct, the return air duct, or the equipment providing conditioned air.

Effective Dispersal Volume Charge (EDVC) (ASHRAE 15 only): The maximum refrigerant charge permitted for a space or spaces.

Maximum Refrigerant Charge (m_{max}) (ASHRAE 15.2 only): The maximum refrigerant charge permitted for a space or spaces.

System Charge (m_s): The total mass of refrigerant in an independent circuit of a system, including both factory and field refrigerant charge.

System: A refrigeration system consisting of a combination of interconnected parts forming a closed circuit in which refrigerant is circulated for the purpose of extracting then rejecting heat. Some examples are packaged terminal air conditioner (PTAC) units, packaged rooftop units (RTUs), split systems, variable refrigerant flow (VRF) systems, and water source heat pumps (WSHPs).

II. Express Permit Qualifications

The information in this guideline applies to mechanical work in buildings that meet one of the following express permit qualifications:

- New buildings with an aggregate capacity of comfort heating or comfort cooling of less than 500,000 Btu/hr (approximately 41 tons).
- Existing buildings with additions of air conditioning equipment having a rating of 5 tons or less.
- Existing buildings with additions of air conditioning equipment in which the aggregate capacity of existing and new comfort heating or comfort cooling is less than 500,000 Btu/hr (approximately 41 tons).

For systems that exceed the rated capacities in the express permit qualifications, the mechanical plans should be submitted to Mechanical Plan Check for plan review and approval. Additionally, mechanical plans should be submitted to Mechanical Plan Check for systems that require calculations beyond the contents of this guideline. These calculations include but are not limited to: releasable charge due to safety shut-off valves, mechanical exhaust/extraction systems, combining spaces using permanent openings, shaft ventilation, and shaft alternatives.

III. System Charge Compliance Determinations and Considerations

Before the scheduled inspection, follow the instructions on the next page and fill out the corresponding forms. The instructions and forms are used to assess if the system charge is acceptable for the space(s) served.

Determination of system charge compliance indicates the total refrigerant charge does not exceed the maximum allowable refrigerant charge. System charge compliance is not a blanket approval for the complete installation of the system.

If the system charge exceeds the max allowable refrigerant charge, consider the following methods to reach system charge compliance:

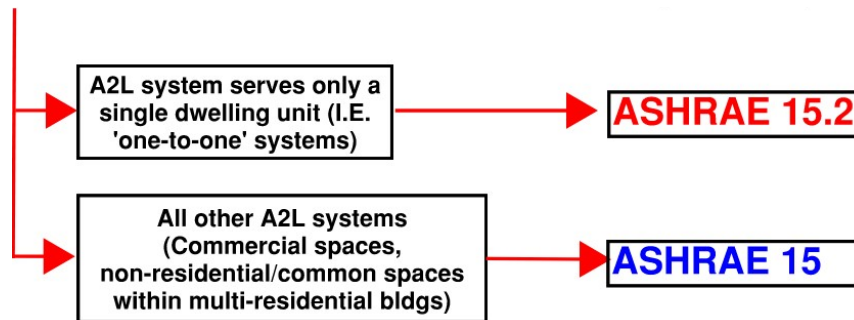
- Increase the dispersal area by combining connected spaces
- Reroute refrigerant piping to reduce the total system charge

- Select equipment with air circulation provisions to increase maximum allowable charge
- Install safety-shut off valves to reduce the system charge
- Install mechanical exhaust system intended to remove refrigerant in the event of a leak
- Select equipment with a refrigerant charge acceptable for the space served

IV. Instructions: Documents and Forms to Prepare for Inspection

1. Obtain manufacturer specification sheet and installation guide for the appropriate A2L system make/model.
 - a. Determine if R32 or R454B refrigerant is used.
 - b. Verify system is listed to UL 60335-2-40 / CSA C22.2 No. 60335-2-40 or UL 484.
 - c. Obtain specification sheet showing system charge data such as factory charge and trim charge.
Please retain a copy to provide to Inspection.

2. Determine applicable ASHRAE standard (15 or 15.2).



Note: A mixed occupancy building may consist of systems that require compliance with ASHRAE 15.2 (2022) and other systems that require compliance with ASHRAE 15 (2022)

3. Fill out and complete A2L System Charge Compliance Worksheet.

Depending on the quantity and type(s) of A2L units installed, more than 1 worksheet may be needed to provide to Inspection. For example, 1 worksheet for the system with the largest charge, 1 worksheet for the system serving the smallest room, and additional worksheets when required by Inspection.

- **Step 1:** Determine the system charge using the manufacturer's specification sheet and installation guide.
- **Step 2:** Use the system charge and the Compliance Method Flowchart to select the appropriate method for verifying compliance.
- **Step 3:** When required, provide additional information regarding the system and the space(s) served as stated in the worksheet. Use the additional information and the System Charge Compliance Charts for determination of system charge compliance.

Please provide a separate worksheet for each A2L system type (as needed) to Inspection.

4. Fill out and complete the A2L System Charge Compliance Summary Report.

Using the results from the A2L System Charge Compliance Worksheet(s), input the appropriate data in the Equipment Summary table. Each row in the Equipment Summary table should correspond to each



worksheet. For example, if 3 worksheets are completed, 3 rows should be filled out in the Equipment Summary table.

Please sign and complete the report to provide to Inspection.

V. A2L System Compliance Worksheet

Note: Information below is required to be complete prior to HVAC rough inspections.

A2L SYSTEM CHARGE COMPLIANCE WORKSHEET				
Fill out this worksheet to determine system charge and verify system charge compliance. Once worksheet is complete, input the system charge and compliance method on the A2L System Charge Compliance Summary Report. Make additional copies of this worksheet as needed.				
JOB ADDRESS				
PERMIT #				
SYSTEM TAG(s)				
SYSTEM OVERVIEW				
REFRIGERANT <i>(circle one item)</i>		R32		R454B
STANDARD <i>(circle one item)</i>		ASHRAE 15.2		ASHRAE 15
1. DETERMINE SYSTEM CHARGE <i>m</i>				
For packaged units (e.g. PTACS, RTUs), please input N/A for items B thru F				
Obtained from spec sheet	A.	PRE-CHARGED REFRIGERANT AMOUNT		LBS
	B.	MAX PRE-CHARGED PIPING LENGTH		FT
	C.	ADD'L CHARGE PER ADD'L PIPING LENGTH		☐ OZ/FT ☐ LBS/FT
	D.	TOTAL PIPING LENGTH INSTALLED		FT
Calculate	E.	ADD'L PIPING LENGTH	= ITEM D - ITEM B	FT
	F.	ADD'L CHARGE FROM ADD'L PIPING	= ITEM E x ITEM C (Note, 16 oz = 1 <i>lb</i>)	LBS
	G.	SYSTEM CHARGE (<i>m</i>)		LBS
- packaged units = ITEM 1A - other systems = ITEM 1A + ITEM 1F				
2. DETERMINE COMPLIANCE METHOD				
On the next page, go to step 2.1. Use the Compliance Method Flow Chart in Figure 1 to select the correct path.				
☐ System charge $\leq$ 4 lbs. NO calculations required. DO NOT PROCEED TO NEXT STEP.				
☐ Calculations required to verify compliance. Use system charge compliance charts. PROCEED TO STEP 3.				
☐ System charge is NOT in compliance. Revision and adjustment to system design required.				
3. VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS				
A.	DUCTED OR DUCTLESS? <i>(circle one item)</i>		DUCTED	DUCTLESS
B.	REFRIGERANT LEAK DETECTION SYSTEM (LDS)? <i>(circle one item)</i>		YES	NO
C.	SMALLEST ROOM SERVED		FT ²	
D.	DISPERSAL AREA <i>-Ductless HVAC systems: Use ITEM 3C</i> <i>-Ducted HVAC systems without ref. LDS: Use ITEM 3C</i> <i>-Ducted HVAC systems with ref. LDS: Use aggregate floor area of connected spaces served by the system</i>		FT ²	
E.	DISPERSAL HEIGHT		FT	
F.	AIR CIRCULATION PROVIDED? <i>(circle one item)</i> <i>continuous air circulation *OR* activated by detection system</i>		YES	NO
On the next page, go to step 3.1. Use the appropriate charts in Figure 2, 3, 4, or 5 to determine compliance.				
G.	DOES POINT FALL ON OR ABOVE LINE?		YES	NO
If YES, system charge complies. If NO, system charge is NOT in compliance.				

VI. Compliance Method Flow Chart and System Charge Compliance Charts

STEP 2.1: DETERMINE COMPLIANCE METHOD

See flow chart below to determine system charge compliance method for the A2L system(s):

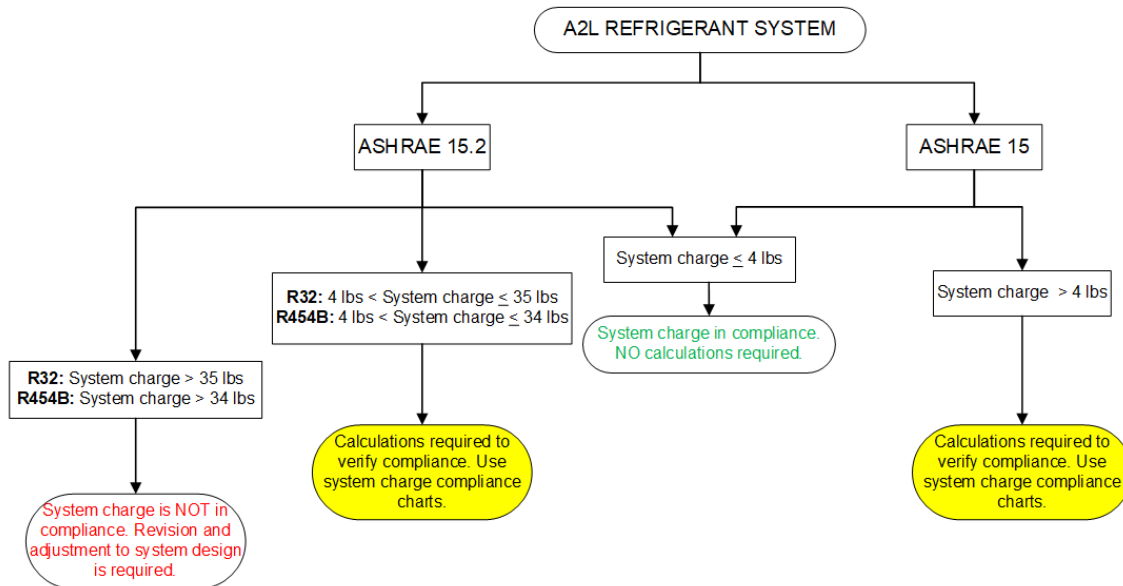


Figure 1. Flow chart to determine system charge compliance method.

STEP 3.1: VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS

To verify system charge compliance with the compliance charts, use the system charge (ITEM 1G) as the x-coordinate and the dispersal area (ITEM 3D) as the y-coordinate. Navigate to the appropriate graph based on the refrigerant type, air circulation provisions (ITEM 3F), and dispersal height (ITEM 3E).

- Figure 2: Refrigerant = R32, Air Circulation Provided – System Charge Compliance Chart
- Figure 3: Refrigerant = R32, Without Air Circulation – System Charge Compliance Chart
- Figure 4: Refrigerant = R454B, Air Circulation Provided – System Charge Compliance Chart
- Figure 5: Refrigerant = R454B, Without Air Circulation – System Charge Compliance Chart

If the point falls on or above the appropriate dispersal height line, the system charge complies. If the point falls below the appropriate dispersal height line, the system charge is not in compliance. See example below:

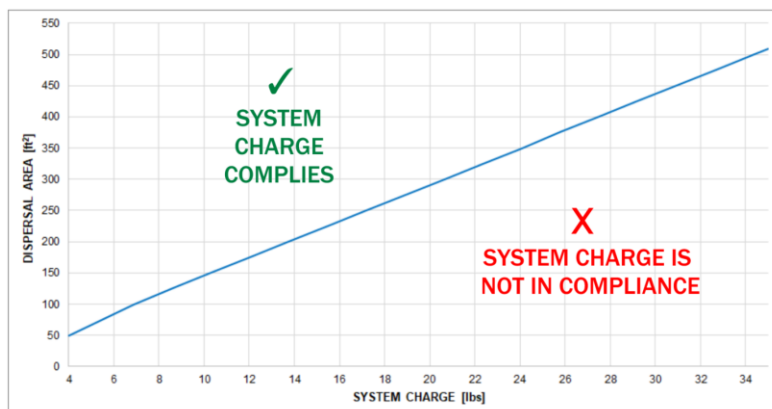


Figure 2. Refrigerant = R32, Air Circulation Provided – System Charge Compliance Chart

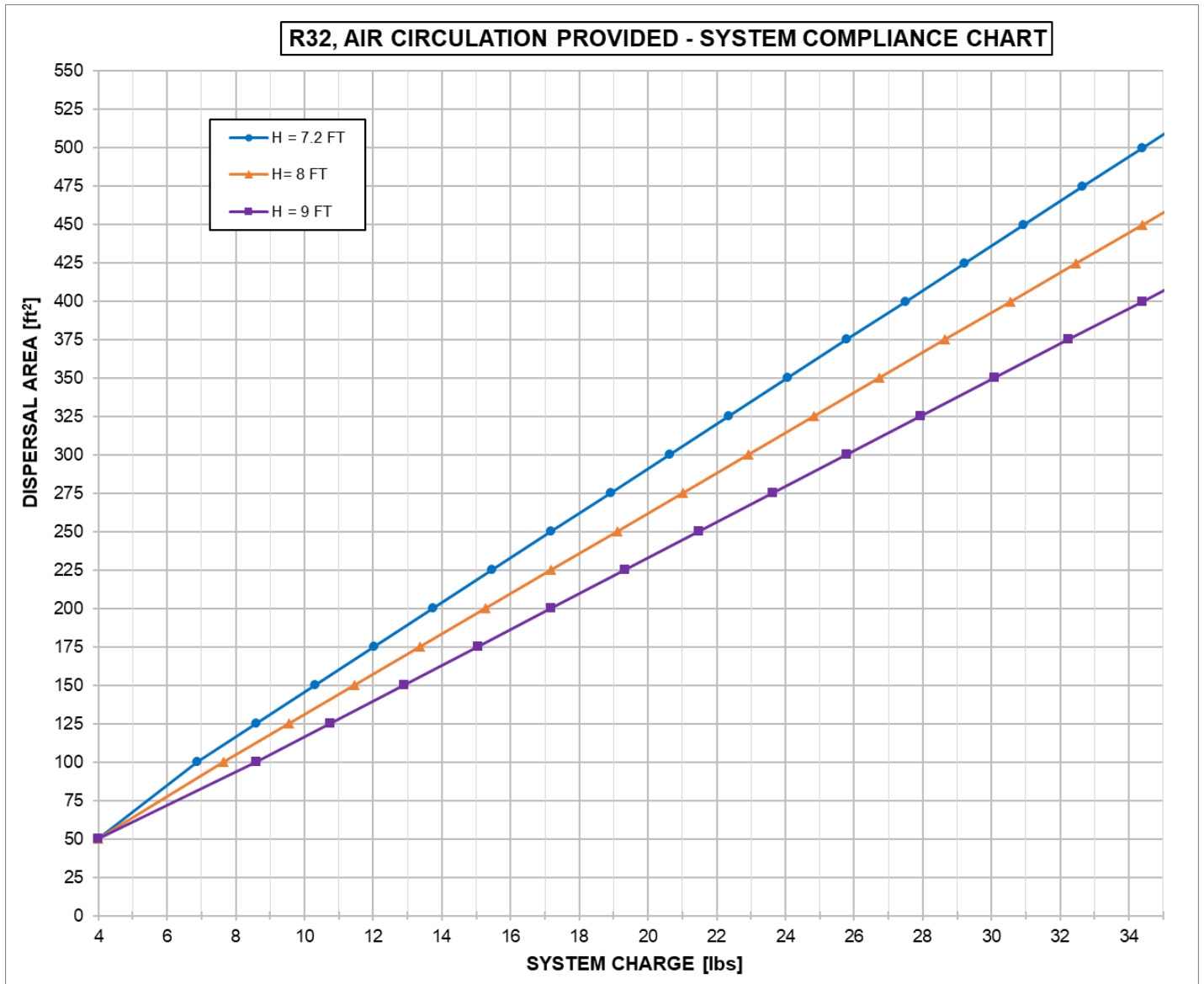


Figure 3. Refrigerant = R32, Without Air Circulation – System Charge Compliance Chart

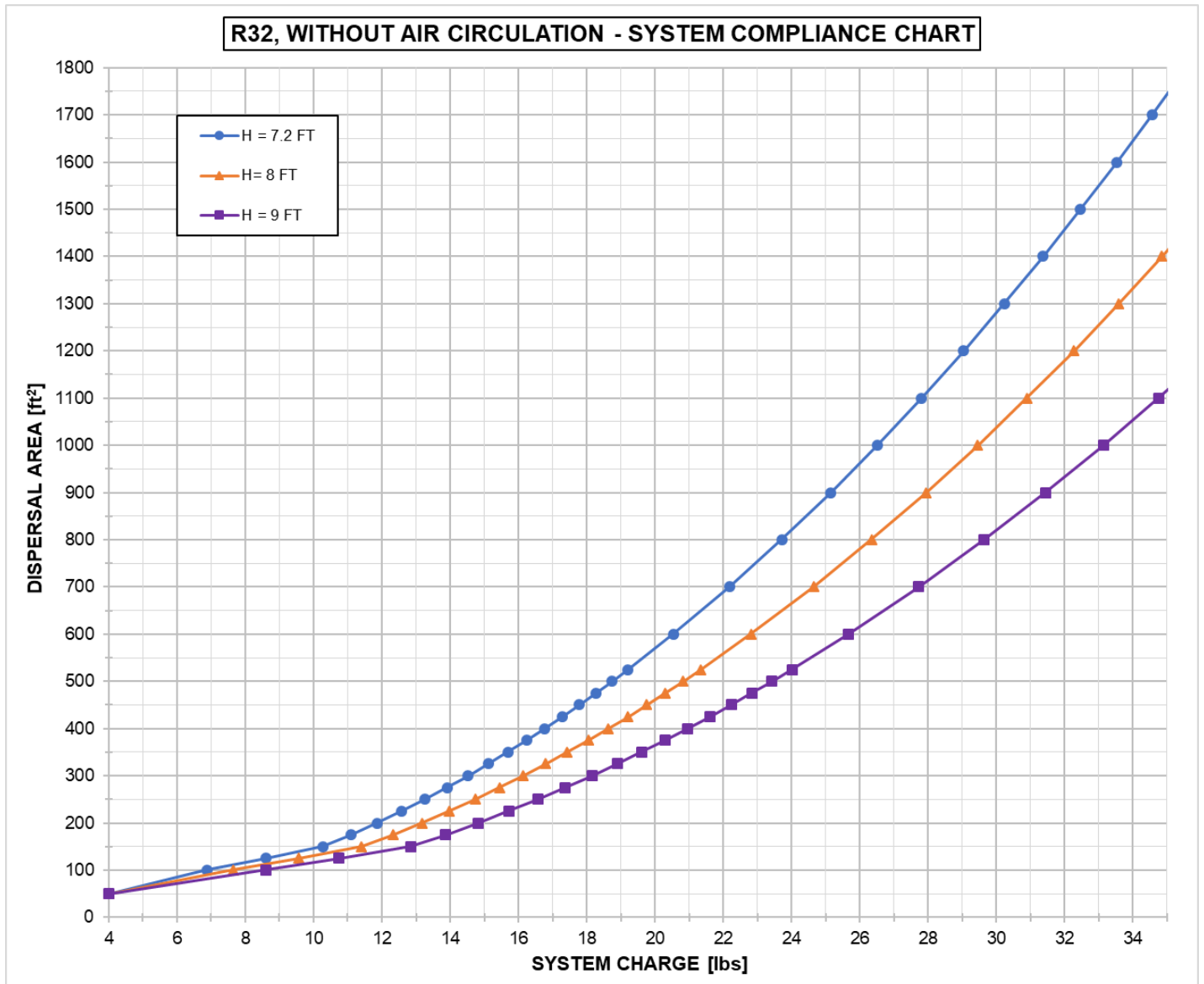


Figure 4. Refrigerant = R454B, Air Circulation Provided – System Charge Compliance Chart

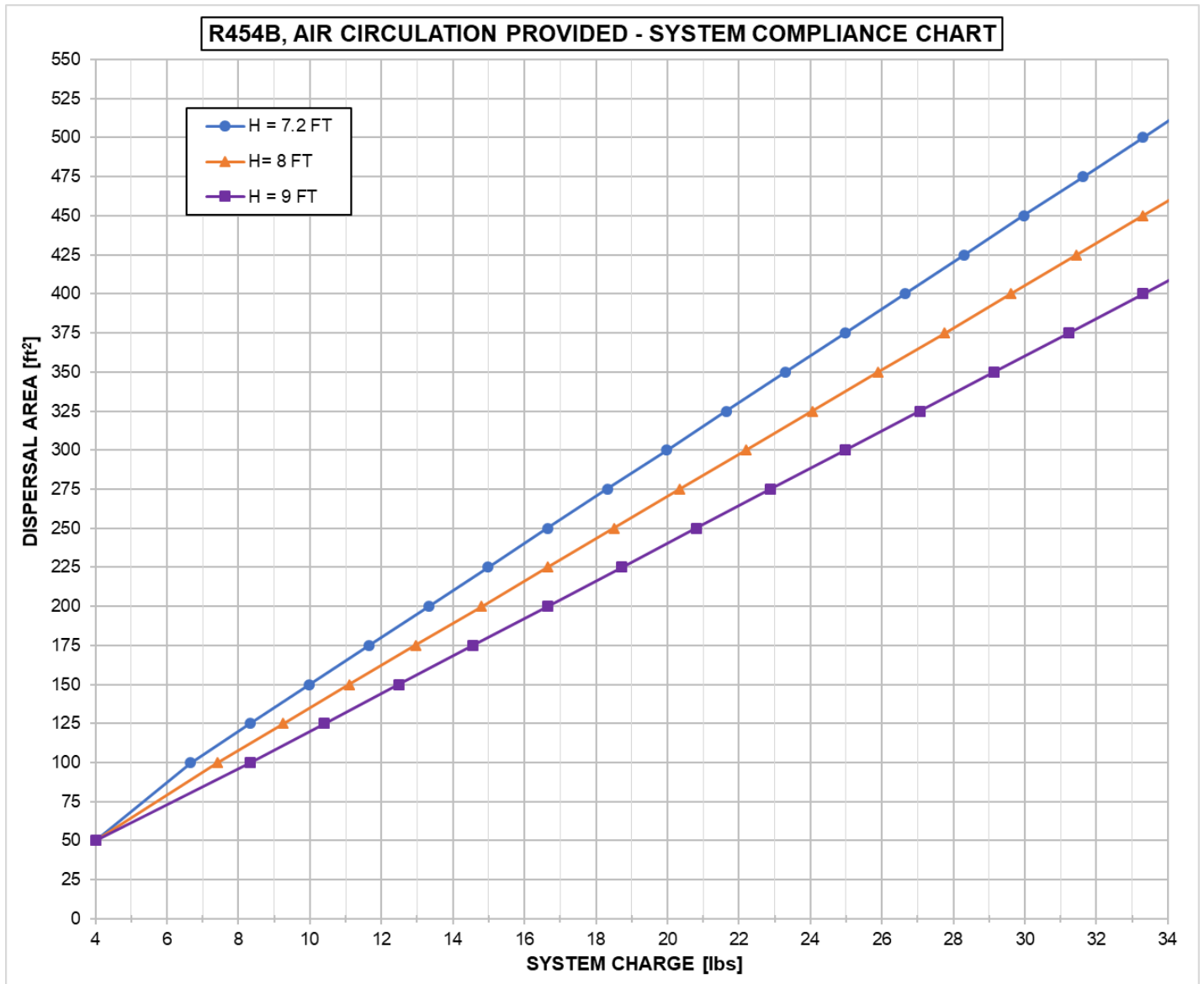
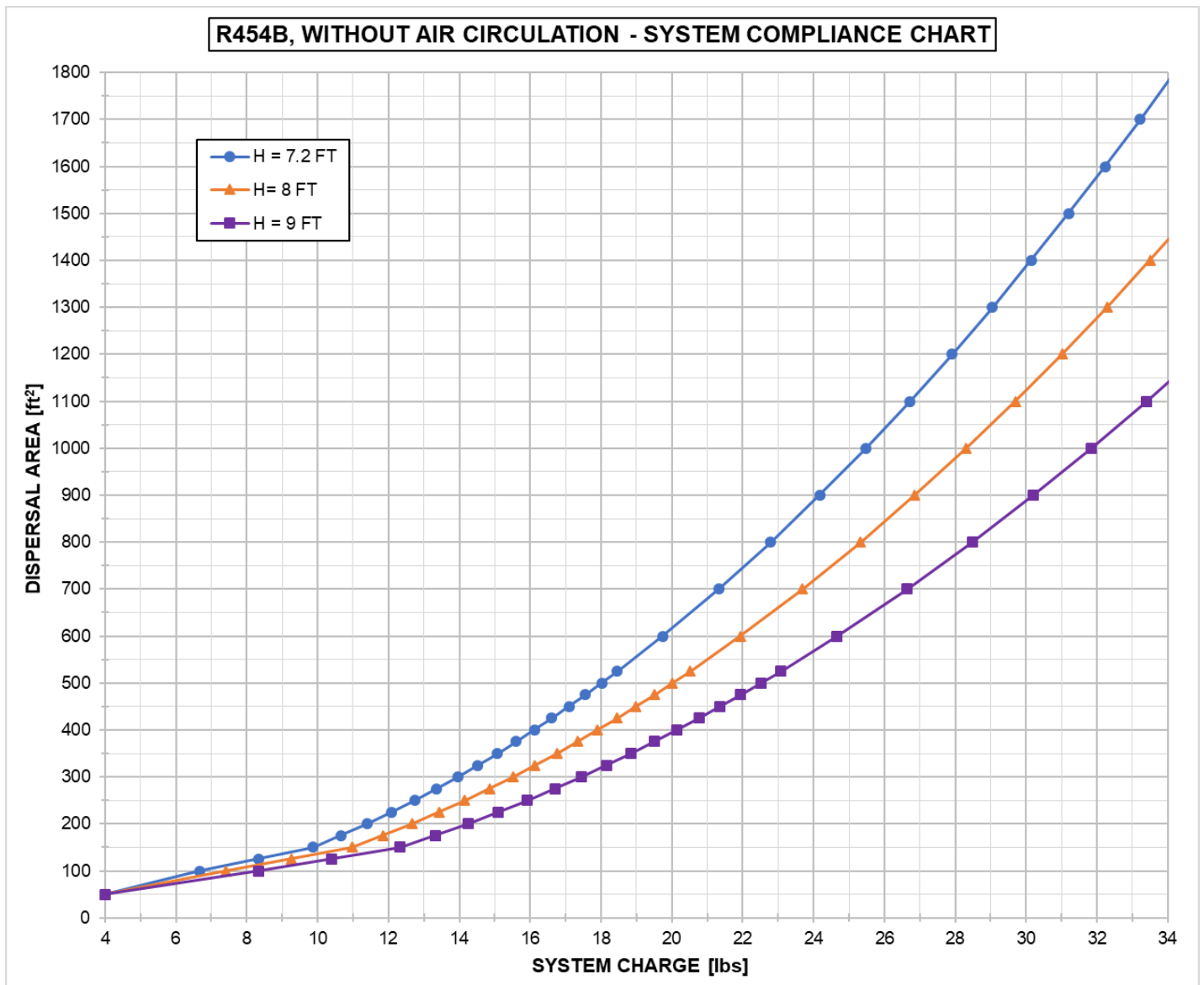


Figure 5. Refrigerant = R454B, Without Air Circulation – System Charge Compliance Chart



VII. A2L System Charge Compliance Summary Report

Note: Compliance summary report is required to be completed and signed by Installer/Contractor prior to HVAC rough inspections.

A2L SYSTEM CHARGE COMPLIANCE SUMMARY REPORT								
Please attach the corresponding A2L calculation worksheets to this report.								
JOB ADDRESS								
PERMIT #								
EQUIPMENT SUMMARY								
The table below shows the final results from the A2L System Charge Compliance Worksheet(s) verifying A2L system charge is in compliance. The information on the table below should be consistent with the A2L System Charge Compliance Worksheet(s).								
	ASHRAE		REFRIGERANT*		EQUIPMENT NAME/MARK/# (PER EQUIPMENT SCHEDULE)	SYSTEM CHARGE	SYSTEM COMPLIANCE METHOD (select one item)	SYSTEM CHARGE COMPLIES? (circle one item)
	15.2	15	R32	R454B				
SYSTEM 1							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 2							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 3							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 4							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 5							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 6							☐ ≤ 4 LBS ☐ CHART	Y N
* For all other A2L refrigerants, submit plans to Mechanical Plan Check for plan review and approval.								

Contractor/Installer Name (Print)

Signature

Date

Inspector Name (Print)

Signature

Date

VIII. Example

SYSTEM 1

- HP-A2 serves a dwelling unit in a mixed-use apartment building.

Refrigerant charge data obtained from the manufacturer

Refrigerant type	R454B	
Pre-charged Refrigerant Amount	2.4	lbs
Additional Refrigerant Charge Per Additional Piping Length	0.12	oz/ft
Maximum Pre-Charged Piping Length	14	ft
Maximum Piping Length	98	ft

SYSTEM 2

- HP-R1 serves two rec rooms in a mixed-use apartment building.
- Ductless, without air circulation, without refrigerant leak detection system
- Rec Room 1: Area = 350 sq. ft., Dispersal Height = 7.2 ft
- Rec Room 2: Area = 475 sq. ft., Dispersal Height = 7.2 ft

Refrigerant charge data obtained from the manufacturer:

Refrigerant type	R32	
Pre-charged Refrigerant Amount	6.3	lbs
Additional Refrigerant Charge Per Additional Piping Length	0.015	lbs/ft
Maximum Pre-Charged Piping Length	21	ft
Maximum Piping Length	95	ft

SYSTEM 3

- HP-R2 serves two rec rooms in a mixed-use apartment building.
- Ducted, air circulation provided, with refrigerant leak detection system
- Rec Room 3: Area = 100 sq. ft., Dispersal Height = 9 ft
- Rec Room 4: Area = 225 sq. ft., Dispersal Height = 9 ft

Refrigerant charge data obtained from the manufacturer:

Refrigerant type	R32	
Pre-charged Refrigerant Amount	6.3	lbs
Additional Refrigerant Charge Per Additional Piping Length	0.33	oz/ft
Maximum Pre-Charged Piping Length	26	ft
Maximum Piping Length	205	ft

SYSTEM 4

- HP-O1 serves two office spaces in a mixed-use apartment building.
- Ducted, without air circulation, without refrigerant leak detection system
- Office 1: Area = 100 sq. ft., Dispersal Height = 9 ft
- Office 2: Area = 225 sq. ft., Dispersal Height = 9 ft

Refrigerant charge data obtained from the manufacturer is SAME as System 3.

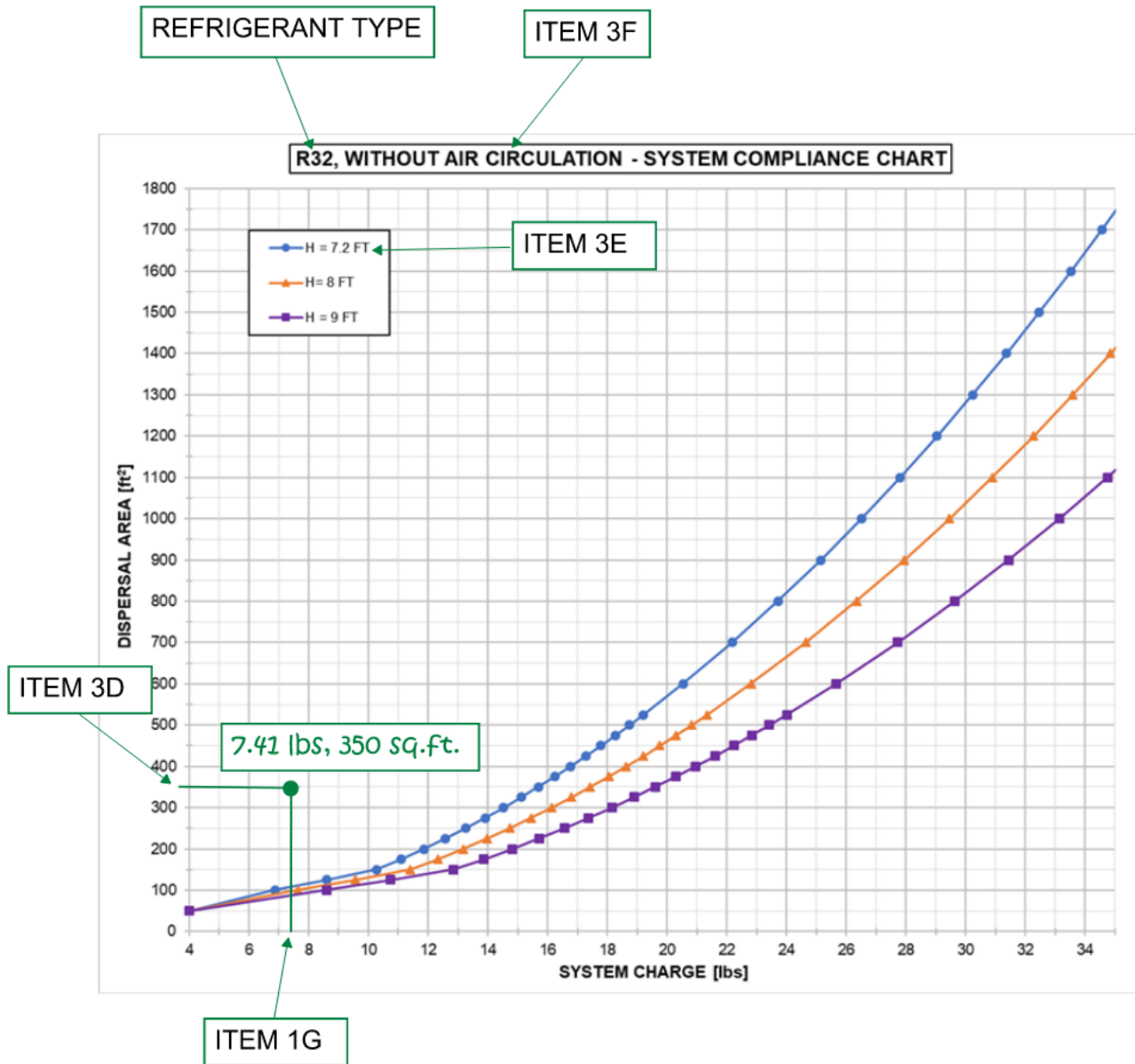
EXAMPLE – System 1 Compliance Worksheet

A2L SYSTEM CHARGE COMPLIANCE WORKSHEET					
Fill out this worksheet to determine system charge and verify system charge compliance. Once worksheet is complete, input the system charge and compliance method on the A2L System Charge Compliance Summary Report. Make additional copies of this worksheet as needed.					
JOB ADDRESS		12345 Address St.			
PERMIT #		12345-67890-12345			
SYSTEM TAG(s)		System 1			
SYSTEM OVERVIEW					
REFRIGERANT (circle one item)		R32		R454B	
STANDARD (circle one item)		ASHRAE 15.2		ASHRAE 15	
1. DETERMINE SYSTEM CHARGE m_s					
For packaged units (e.g. PTACS, RTUs), please input N/A for items B thru F					
Obtained from spec sheet	A.	PRE-CHARGED REFRIGERANT AMOUNT		2.4	LBS
	B.	MAX PRE-CHARGED PIPING LENGTH		14	FT
	C.	ADD'L CHARGE PER ADD'L PIPING LENGTH		0.12	☒ OZ/FT ☐ LBS/FT
	D.	TOTAL PIPING LENGTH INSTALLED		98	FT
Calculate	E.	ADD'L PIPING LENGTH	= ITEM D - ITEM B	84	FT
	F.	ADD'L CHARGE FROM ADD'L PIPING	= ITEM E x ITEM C (Note, 16 oz = 1 lb)	10.08 OZ = 0.63 LBS	
	G.	SYSTEM CHARGE (m_s)	- packaged units = ITEM 1A - other systems = ITEM 1A + ITEM 1F	3.03	LBS
2. DETERMINE COMPLIANCE METHOD					
On the next page, go to step 2.1. Use the Compliance Method Flow Chart in Figure 1 to select the correct path.					
☒ System charge ≤ 4 lbs. NO calculations required. DO NOT PROCEED TO NEXT STEP. ☐ Calculations required to verify compliance. Use system charge compliance charts. PROCEED TO STEP 3. ☐ System charge is NOT in compliance. Revision and adjustment to system design required.					
3. VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS					
A.	DUCTED OR DUCTLESS? (circle one item)		DUCTED	DUCTLESS	
B.	REFRIGERANT LEAK DETECTION SYSTEM (LDS)? (circle one item)		YES	NO	
C.	SMALLEST ROOM SERVED		FT ²		
D.	DISPERSAL AREA -Ductless HVAC systems: Use ITEM 3C -Ducted HVAC systems without ref. LDS: Use ITEM 3C -Ducted HVAC systems with ref. LDS: Use aggregate floor area of connected spaces served by the system		FT ²		
E.	DISPERSAL HEIGHT		FT		
F.	AIR CIRCULATION PROVIDED? (circle one item) continuous air circulation *OR* activated by detection system		YES	NO	
On the next page, go to step 3.1. Use the appropriate charts in Figure 2, 3, 4, or 5 to determine compliance.					
G.	DOES POINT FALL ON OR ABOVE LINE?		YES	NO	
If YES, system charge complies. If NO, system charge is NOT in compliance.					

EXAMPLE – System 2 Compliance Worksheet

A2L SYSTEM CHARGE COMPLIANCE WORKSHEET				
Fill out this worksheet to determine system charge and verify system charge compliance. Once worksheet is complete, input the system charge and compliance method on the A2L System Charge Compliance Summary Report. Make additional copies of this worksheet as needed.				
JOB ADDRESS		12345 Address St.		
PERMIT #		12345-67890-12345		
SYSTEM TAG(s)		System 2		
SYSTEM OVERVIEW				
REFRIGERANT (circle one item)		R32 R454B		
STANDARD (circle one item)		ASHRAE 15.2 ASHRAE 15		
1. DETERMINE SYSTEM CHARGE m _s				
For packaged units (e.g. PTACS, RTUs), please input N/A for items B thru F				
Obtained from spec sheet	A.	PRE-CHARGED REFRIGERANT AMOUNT	6.3	LBS
	B.	MAX PRE-CHARGED PIPING LENGTH	21	FT
	C.	ADD'L CHARGE PER ADD'L PIPING LENGTH	0.015	☐ OZ/FT ☒ LBS/FT
	D.	TOTAL PIPING LENGTH INSTALLED	95	FT
Calculate	E.	ADD'L PIPING LENGTH = ITEM D - ITEM B	74	FT
	F.	ADD'L CHARGE FROM ADD'L PIPING = ITEM E x ITEM C (Note, 16 oz = 1 lb)	1.11	LBS
	G.	SYSTEM CHARGE (m _s) • packaged units = ITEM 1A • other systems = ITEM 1A + ITEM 1F	7.41	LBS
2. DETERMINE COMPLIANCE METHOD				
On the next page, go to step 2.1. Use the Compliance Method Flow Chart in Figure 1 to select the correct path.				
☐ System charge ≤ 4 lbs. NO calculations required. DO NOT PROCEED TO NEXT STEP.				
☒ Calculations required to verify compliance. Use system charge compliance charts. PROCEED TO STEP 3.				
☐ System charge is NOT in compliance. Revision and adjustment to system design required.				
3. VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS				
A.	DUCTED OR DUCTLESS? (circle one item)		DUCTED	DUCTLESS
B.	REFRIGERANT LEAK DETECTION SYSTEM (LDS)? (circle one item)		YES	NO
C.	SMALLEST ROOM SERVED		350	FT ²
D.	DISPERSAL AREA -Ductless HVAC systems: Use ITEM 3C -Ducted HVAC systems without ref. LDS: Use ITEM 3C -Ducted HVAC systems with ref. LDS: Use aggregate floor area of connected spaces served by the system		350	FT ²
E.	DISPERSAL HEIGHT		7.2	FT
F.	AIR CIRCULATION PROVIDED? (circle one item) continuous air circulation *OR* activated by detection system		YES	NO
On the next page, go to step 3.1. Use the appropriate charts in Figure 2, 3, 4, or 5 to determine compliance.				
G.	DOES POINT FALL ON OR ABOVE LINE?		YES	NO
If YES, system charge complies. If NO, system charge is NOT in compliance.				

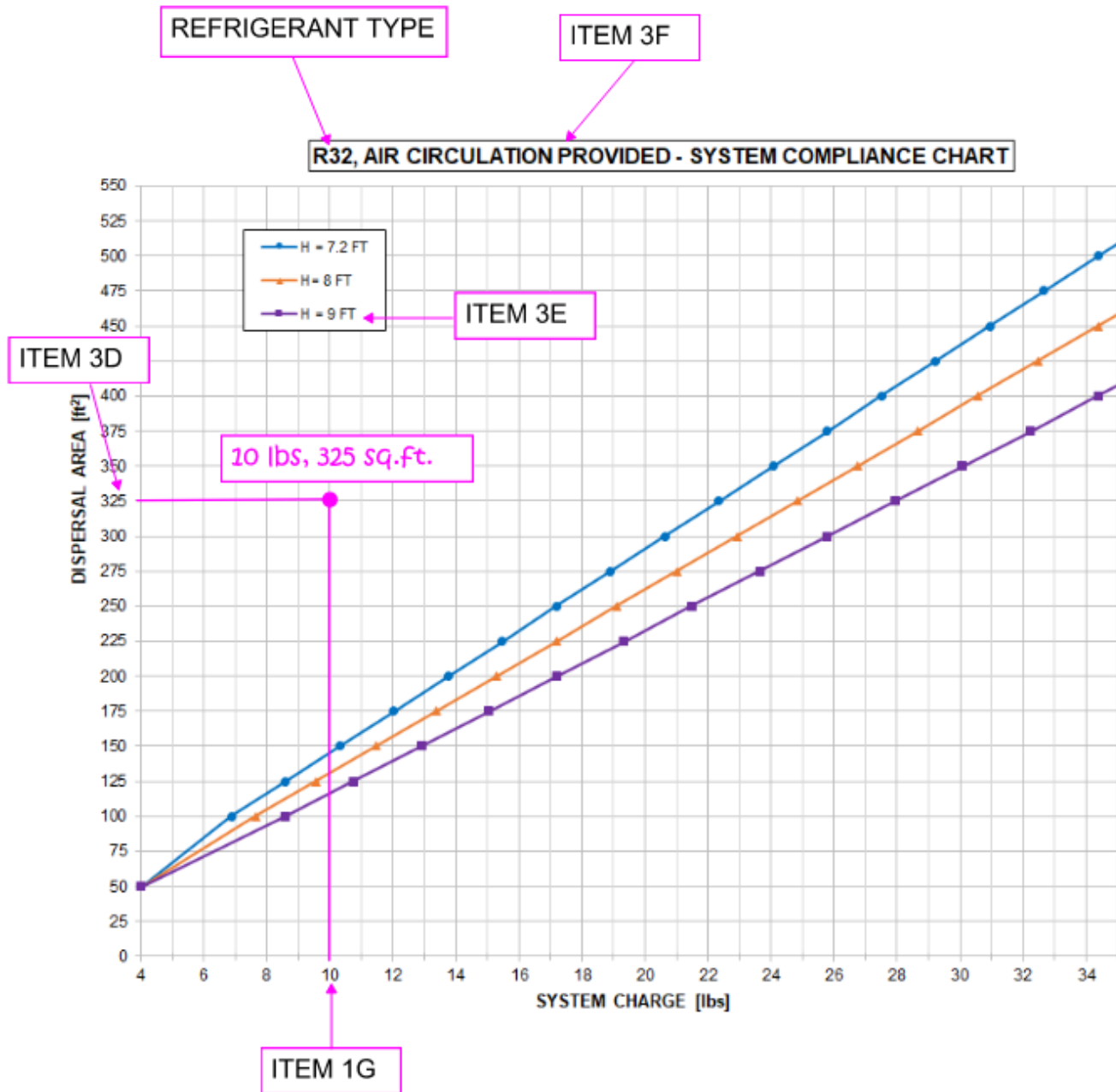
EXAMPLE – System 2 Compliance Chart



EXAMPLE – System 3 Compliance Worksheet

A2L SYSTEM CHARGE COMPLIANCE WORKSHEET				
Fill out this worksheet to determine system charge and verify system charge compliance. Once worksheet is complete, input the system charge and compliance method on the A2L System Charge Compliance Summary Report. Make additional copies of this worksheet as needed.				
JOB ADDRESS		12345 Address St.		
PERMIT #		12345-67890-12345		
SYSTEM TAG(s)		System 3		
SYSTEM OVERVIEW				
REFRIGERANT (circle one item)		R32 R454B		
STANDARD (circle one item)		ASHRAE 15.2 ASHRAE 15		
1. DETERMINE SYSTEM CHARGE m _s				
For packaged units (e.g. PTACS, RTUs), please input N/A for items B thru F				
Obtained from spec sheet	A.	PRE-CHARGED REFRIGERANT AMOUNT	6.3	LBS
	B.	MAX PRE-CHARGED PIPING LENGTH	26	FT
	C.	ADD'L CHARGE PER ADD'L PIPING LENGTH	0.33	☒ OZ/FT ☐ LBS/FT
	D.	TOTAL PIPING LENGTH INSTALLED	205	FT
Calculate	E.	ADD'L PIPING LENGTH = ITEM D - ITEM B	179	FT
	F.	ADD'L CHARGE FROM ADD'L PIPING = ITEM E x ITEM C (Note, 16 oz = 1 lb)	59.07 OZ = 3.69 LBS	
	G.	SYSTEM CHARGE (m _s) • packaged units = ITEM 1A • other systems = ITEM 1A + ITEM 1F	10	LBS
2. DETERMINE COMPLIANCE METHOD				
On the next page, go to step 2.1. Use the Compliance Method Flow Chart in Figure 1 to select the correct path.				
☐ System charge ≤ 4 lbs. NO calculations required. DO NOT PROCEED TO NEXT STEP. ☒ Calculations required to verify compliance. Use system charge compliance charts. PROCEED TO STEP 3. ☐ System charge is NOT in compliance. Revision and adjustment to system design required.				
3. VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS				
A.	DUCTED OR DUCTLESS? (circle one item)		DUCTED	DUCTLESS
B.	REFRIGERANT LEAK DETECTION SYSTEM (LDS)? (circle one item)		YES	NO
C.	SMALLEST ROOM SERVED		100	FT ²
D.	DISPERSAL AREA -Ductless HVAC systems: Use ITEM 3C -Ducted HVAC systems without ref. LDS: Use ITEM 3C -Ducted HVAC systems with ref. LDS: Use aggregate floor area of connected spaces served by the system		325	FT ²
E.	DISPERSAL HEIGHT		9	FT
F.	AIR CIRCULATION PROVIDED? (circle one item) continuous air circulation *OR* activated by detection system		YES	NO
On the next page, go to step 3.1. Use the appropriate charts in Figure 2, 3, 4, or 5 to determine compliance.				
G.	DOES POINT FALL ON OR ABOVE LINE?		YES	NO
If YES, system charge complies. If NO, system charge is NOT in compliance.				

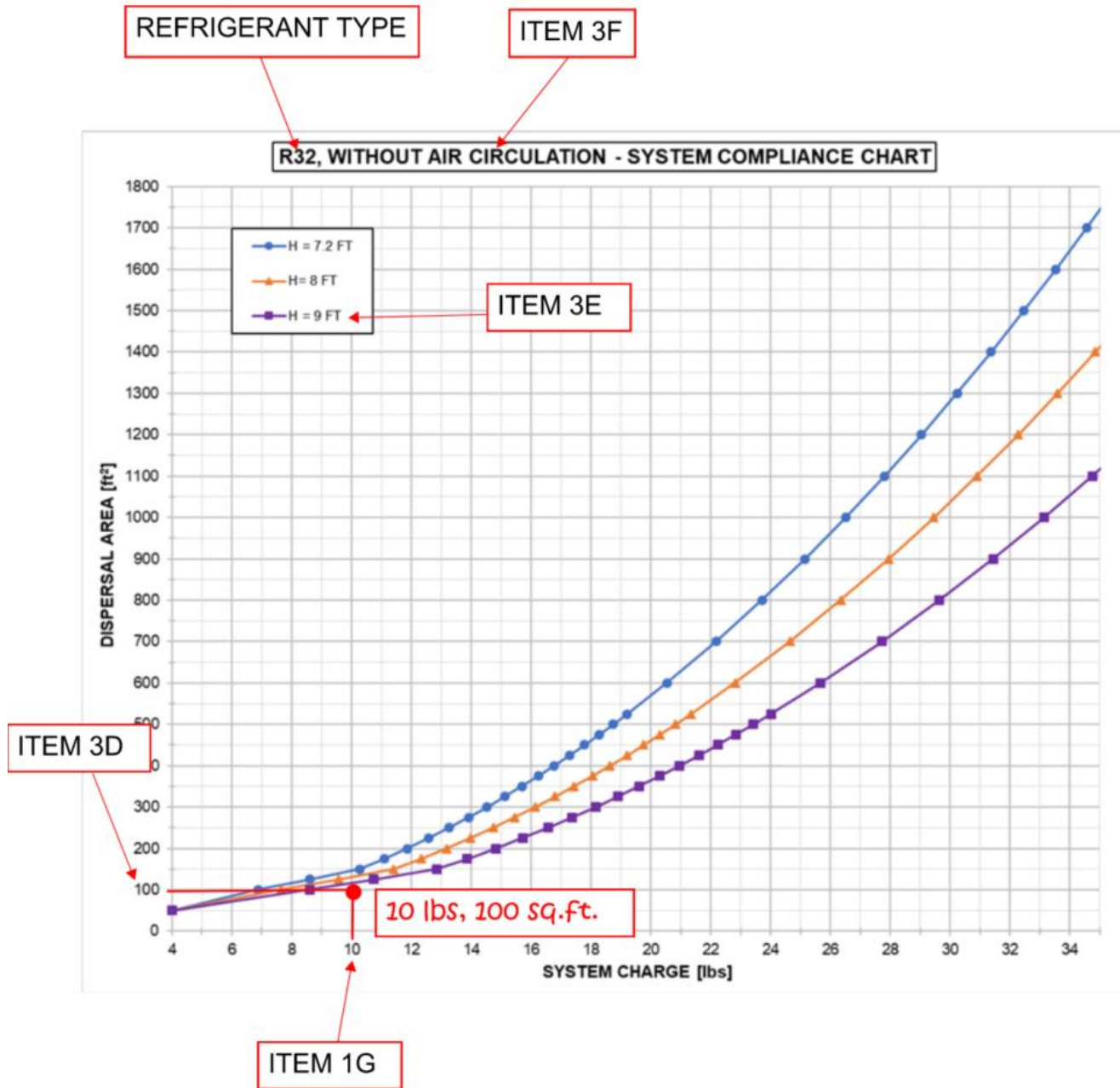
EXAMPLE – System 3 Compliance Chart



EXAMPLE – System 4 Compliance Worksheet

A2L SYSTEM CHARGE COMPLIANCE WORKSHEET				
Fill out this worksheet to determine system charge and verify system charge compliance. Once worksheet is complete, input the system charge and compliance method on the A2L System Charge Compliance Summary Report. Make additional copies of this worksheet as needed.				
JOB ADDRESS		12345 Address St.		
PERMIT #		12345-67890-12345		
SYSTEM TAG(s)		System 4		
SYSTEM OVERVIEW				
REFRIGERANT (circle one item)		R32		R454B
STANDARD (circle one item)		ASHRAE 15.2		ASHRAE 15
1. DETERMINE SYSTEM CHARGE m _s				
For packaged units (e.g. PTACS, RTUs), please input N/A for items B thru F				
Obtained from spec sheet	A.	PRE-CHARGED REFRIGERANT AMOUNT	6.3	LBS
	B.	MAX PRE-CHARGED PIPING LENGTH	26	FT
	C.	ADD'L CHARGE PER ADD'L PIPING LENGTH	0.33	☒ OZ/FT ☐ LBS/FT
	D.	TOTAL PIPING LENGTH INSTALLED	205	FT
Calculate	E.	ADD'L PIPING LENGTH = ITEM D - ITEM B	179	FT
	F.	ADD'L CHARGE FROM ADD'L PIPING = ITEM E x ITEM C (Note, 16 oz = 1 lb)	59.07 OZ = 3.69	LBS
	G.	SYSTEM CHARGE (m _s) • packaged units = ITEM 1A • other systems = ITEM 1A + ITEM 1F	10	LBS
2. DETERMINE COMPLIANCE METHOD				
On the next page, go to step 2.1. Use the Compliance Method Flow Chart in Figure 1 to select the correct path.				
☐ System charge ≤ 4 lbs. NO calculations required. DO NOT PROCEED TO NEXT STEP.				
☒ Calculations required to verify compliance. Use system charge compliance charts. PROCEED TO STEP 3.				
☐ System charge is NOT in compliance. Revision and adjustment to system design required.				
3. VERIFY SYSTEM CHARGE COMPLIANCE USING COMPLIANCE CHARTS				
A.	DUCTED OR DUCTLESS? (circle one item)		DUCTED	DUCTLESS
B.	REFRIGERANT LEAK DETECTION SYSTEM (LDS)? (circle one item)		YES	NO
C.	SMALLEST ROOM SERVED		100	FT ²
D.	DISPERSAL AREA -Ductless HVAC systems: Use ITEM 3C -Ducted HVAC systems without ref. LDS: Use ITEM 3C -Ducted HVAC systems with ref. LDS: Use aggregate floor area of connected spaces served by the system		100	FT ²
E.	DISPERSAL HEIGHT		9	FT
F.	AIR CIRCULATION PROVIDED? (circle one item) continuous air circulation *OR* activated by detection system		YES	NO
On the next page, go to step 3.1. Use the appropriate charts in Figure 2, 3, 4, or 5 to determine compliance.				
G.	DOES POINT FALL ON OR ABOVE LINE?		YES	NO
If YES, system charge complies. If NO, system charge is NOT in compliance.				

EXAMPLE – System 4 Compliance Chart



EXAMPLE – A2L System Charge Compliance Summary Report

A2L SYSTEM CHARGE COMPLIANCE SUMMARY REPORT Please attach the corresponding A2L calculation worksheets to this report.								
JOB ADDRESS	12345 Address St.							
PERMIT #	12345-67890-12345							
EQUIPMENT SUMMARY The table below shows the final results from the A2L System Charge Compliance Worksheet(s) verifying A2L system charge is in compliance. The information on the table below should be consistent with the A2L System Charge Compliance Worksheet(s).								
	ASHRAE		REFRIGERANT*		EQUIPMENT NAME/MARK/# (PER EQUIPMENT SCHEDULE)	SYSTEM CHARGE	SYSTEM COMPLIANCE METHOD (select one item)	SYSTEM CHARGE COMPLIES? (circle one item)
	15.2	15	R32	R454B				
SYSTEM 1	✓			✓	HP-A2	3.03 lbs	☒ ≤ 4 LBS ☐ CHART	(Y) N
SYSTEM 2		✓	✓		HP-R1	7.41 lbs	☐ ≤ 4 LBS ☒ CHART	(Y) N
SYSTEM 3		✓	✓		HP-R2	10 lbs	☐ ≤ 4 LBS ☒ CHART	(Y) N
SYSTEM 4		✓	✓		HP-O1	10 lbs	☐ ≤ 4 LBS ☒ CHART	Y (N)
SYSTEM 5							☐ ≤ 4 LBS ☐ CHART	Y N
SYSTEM 6							☐ ≤ 4 LBS ☐ CHART	Y N
* For all other A2L refrigerants, submit plans to Mechanical Plan Check for plan review and approval.								

John Smith
Contractor/Installer Name (Print)

John Smith
Signature

03/10/2026
Date

Inspector Name (Print)

Signature

Date