



Sub-Slab Depressurization (SSD) System Pilot Test Plan

655-671 Stanley Avenue, Brooklyn, NY

Purpose:

Provide field testing:

1. To determine if a Sub-slab Depressurization System (SSDS) is a feasible vapor mitigation option due to the high-water table present beneath the building slab.
2. Testing to determine effective operating parameters for an SSDS.

This test is being performed in response to the results of previously conducted indoor air and sub-slab soil gas sampling that indicated elevated levels of regulated compounds. Based on the New York State Department of Health (NYSDOH) Soil Vapor/Indoor Air Decision Matrix, these detected compounds trigger a “mitigate” recommendation.

Goals:

To determine what the required flow and vacuum specifications would be for a selected extraction fan(s), that would be connected to a network of extraction points associated with the proposed SSD system, if required. The fan(s) will be capable of producing an acceptable vacuum radius of influence beneath the entire floor slab of the existing structure. The results of the pilot study can be used to design and specify the equipment used in the implementation of a full-scale activate system.

Pilot Test Equipment

For the purpose of the pilot test, EnviroTrac’s portable test equipment will be utilized to conduct the test at representative locations within the building. The portable test equipment consists of vacuum blower, in-line filter, vacuum gauges, and sample ports. Major system components of the test equipment are described below. Based on the real-time results of the test as it proceeds, it may be determined that additional testing may be recommended utilizing a smaller vacuum fan. The alternate smaller test fan would be similar to the type used for radon mitigation type systems.

Test Equipment

- Extraction Blower – 3.0 HP Ametek Rotron Model #EN606, Regenerative Blower.
 - Max Flow – 200 SCFM

- Max Vac – 75 “H2O

Alternate Extraction Fan – RadonAway Inc. Model GX5a

- Max Flow – 178 SCFM
- Max Vac – 5.0 “H2O

Additional Test Equipment

- Digital Manometer – UEI Handheld Low Vacuum Meter
- Digital Air Flow Meter - TSI Handheld Air Velocity/Vacuum Meter – Model 8386A
- Photoionization Detector (PID)
- 50' of 3-inch diameter vacuum hose and related connections
- 10kW Portable Generator

Test Points

For the purpose of the pilot study, four (4) temporary 4-inch diameter shallow test points will be installed into the building concrete floor slab. Utilizing a 5-inch concrete core drill, a hole will be drilled through the floor slab at select locations. The soil immediately below the floor slab will be hand excavated to a depth of approximately 1 foot below the bottom of the floor slab, creating a small void. A 4-inch diameter PVC pipe will be inserted into the cored hole and sealed into place using a fast-setting epoxy putty in the annulus between the outside of the pipe and the inside wall of the cored floor slab. The bottom of the pipe will extend into the cored hole such that it is positioned approximately 1-inch below the bottom of the floor slab. During the testing process, the test blower will be connected to the top of the installed pipe. The selected locations of the four (4) temporary test points can be seen in **Figure 1**. It should be noted that each of the proposed test point locations may need to be adjusted to accommodate existing conditions within each building space.

Vacuum Monitoring Points (VMPs)

In order to monitor the sub-slab vacuum response of the test, several temporary vacuum monitoring points will be installed through the concrete floor slab, extending radially outward from each test point. Vacuum monitoring points are typically installed at distances of 5, 10, 15, 20, 25, and 30 feet measured from the test extraction point. The monitoring points shall be constructed using stainless steel Vapor Pin inserts that shall be drilled through the concrete floor slab and installed as per the manufacturer's recommended instructions. The Vapor Pin inserts shall be manufactured by Vapor Pin Enterprises, Inc. A handheld digital manometer shall be connected to each installed VMPs to periodically monitor the sub-slab vacuum response throughout the pilot test. The distance from the extraction well to each of the monitoring points should be recorded prior to the start of the pilot test. The selected locations of the temporary VMPs can be seen in **Figure 1**.

SSDS Testing Methodology

1. For the purpose of the pilot study, the portable test blower inlet will be connected to each test well using a flexible hose. The effluent of the test blower will be routed to the exterior of the building and out a short discharge stack. The blower will be powered utilizing a portable gasoline powered electrical generator that will be located outside the building for the duration of the test.
2. During the test, the vacuum blower will be configured to operate at least four different steps of increasing flow and vacuum. Throttling of the blower can be conducted by adjusting the test system control valve as well as bleeding excess flow through the system fresh air inlet valve.
3. During each step, operating parameters such as applied flow and vacuum, and sub-slab vacuum responses at each monitoring point will be recorded. The applied extraction well flow and vacuum will be measured from a monitoring port located at the inlet of the test blower.
4. During each step, vacuum influence will be recorded from all monitoring points utilizing a handheld digital manometer. For each step, the operating conditions will be allowed to sufficiently stabilize at a steady state condition prior to the recording of any readings. A minimum run time of 30 minutes for each step is typically sufficient to allow the vacuum to evenly propagate throughout the test portion of the subsurface soil. The handheld manometer will have a minimum resolution of 1 pascal (0.004 "H₂O).
5. At the conclusion of the test, the test equipment will be disconnected from the test well. All temporary extraction wells and monitoring points will be removed and their corresponding holes filled with hydraulic cement or grout.
6. All data collected during the duration of the proposed testing shall be recorded on the provided SSDS Pilot Test Field Data sheet. A copy of this data sheet can be found in **Attachment 4** of this plan.
7. If it is determined that sufficient vacuum response can be generated from each extraction point at a lower applied vacuum than the regenerative blower can be throttled down to, the test shall be repeated utilizing the smaller radon style vacuum fan and the results recorded.
8. The test shall be repeated at each of the four (4) proposed test locations.

Reporting

Once the test is completed, the collected data shall be compiled into a report which shall include extrapolated performance requirements and recommended configurations for a vapor mitigation strategy.

ATTACHMENTS

1. Figure: Site Plan with Proposed Test Locations
2. Figure: SSD Test Cart P&ID
3. SSDS Equipment Spec Sheets – Vacuum Blowers
4. SSDS Pilot Test Field Form - Blank

REFERENCES

1. ASTM E1465-08a “Standard Practice for Radon Control Options”
2. ASTM E2121-13 “Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings”
3. New York State Department of Environmental Conservation, (NYSDEC), DER-10 “Technical Guidance for Site Investigation and Remediation”
4. New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)

Certified By:
Dale C. Konas, PE
NYS Lic. No. 081035

December 2, 2025
Date:

ATTACHMENTS



LEGEND

- Site Boundary
- Drywells
- Monitoring Well Locations
- Temporary Extraction Test Point
- Temporary Vacuum Monitoring Point

NOTE

Base Map Provided by East Coast Geophysics, Inc.
Basement floor area depicted for each tenant space.

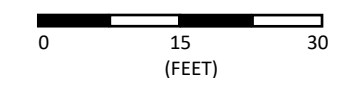


Figure 1 - SSDS Pilot Test Locations

655-671 STANLEY AVENUE
BROOKLYN, NEW YORK



EN/CP 606 Explosion-Proof Regenerative Blower

FEATURES

- Manufactured in the USA
- Maximum flow: 200 SCFM
- Maximum pressure: 75 IWG
- Maximum vacuum: 75 IWG
- Standard motor: 3.0 HP, explosion-proof
- Cast aluminum blower housing, cover, impeller & manifold; cast iron flanges (threaded); teflon lip seal
- UL & CSA approved motor with permanently sealed ball bearings for explosive gas atmospheres Class I Group D minimum
- Sealed blower assembly
- Quiet operation within OSHA standards

MOTOR OPTIONS

- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepower for application-specific needs

BLOWER OPTIONS

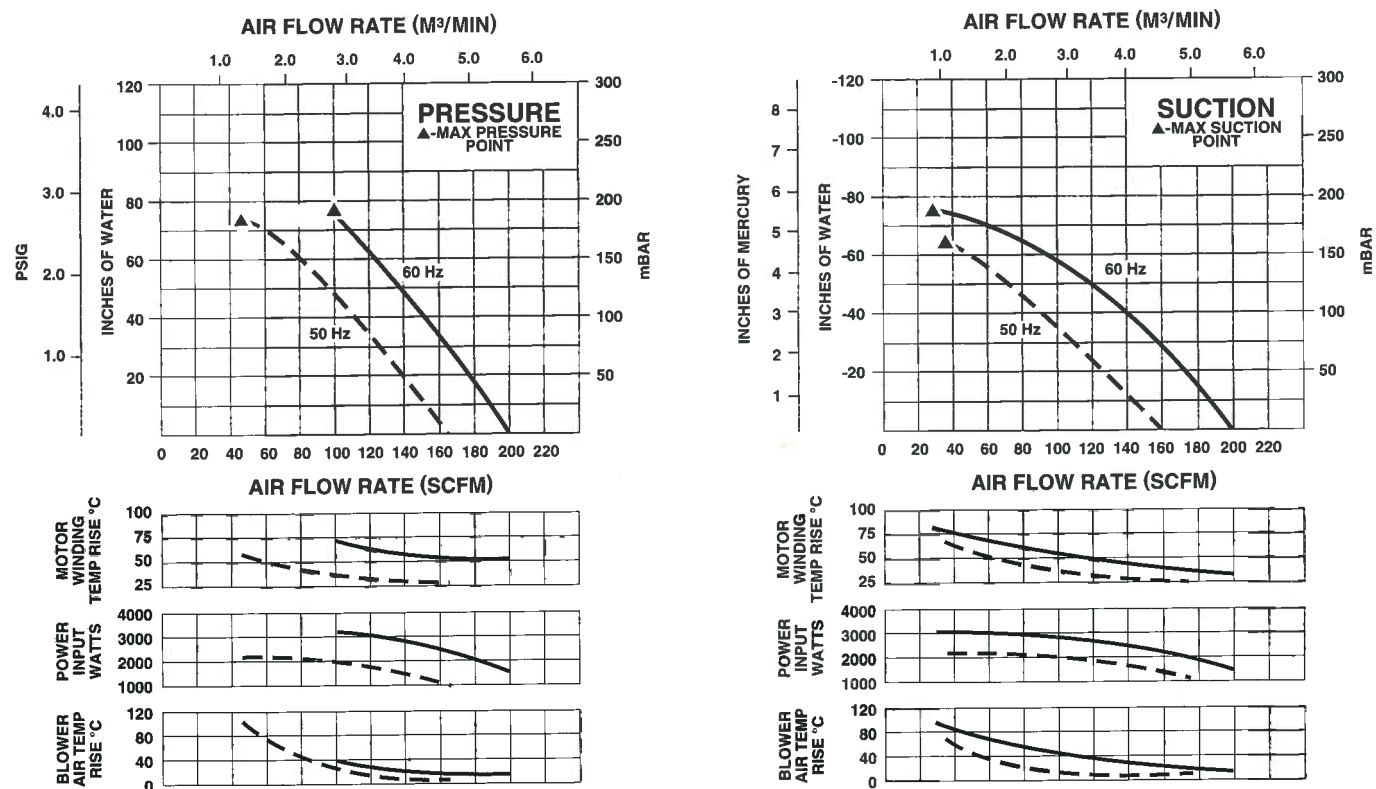
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs

ACCESSORIES (See Catalog Accessory Section)

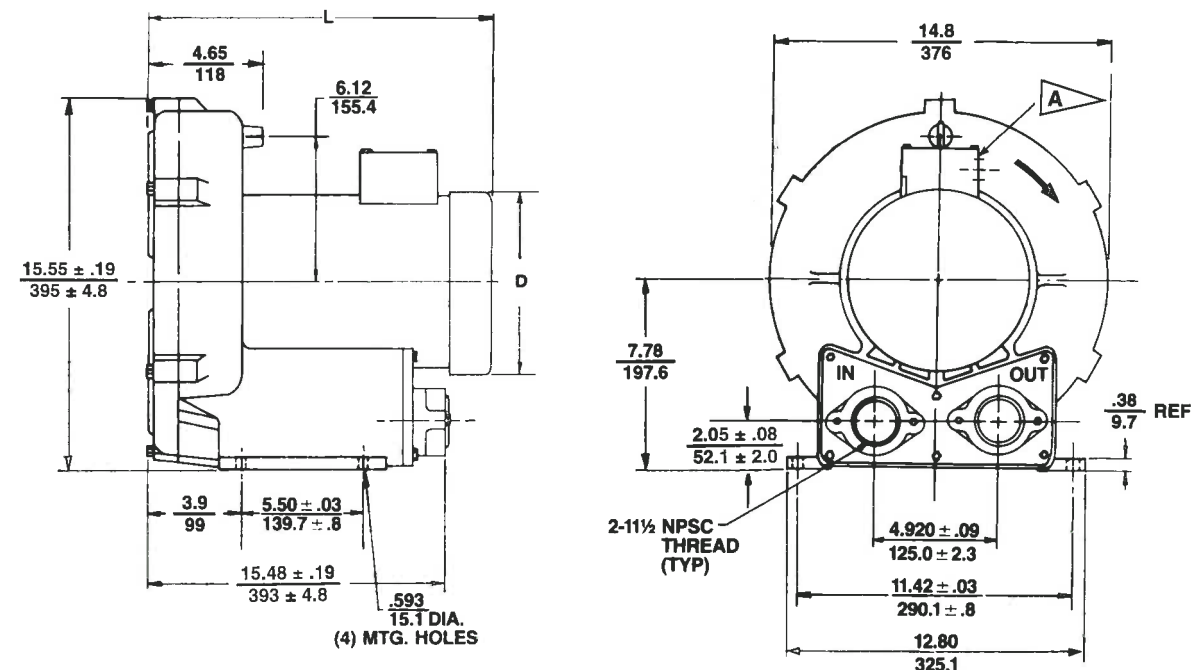
- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges & relief valves
- Switches – air flow, pressure, vacuum or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)



BLOWER PERFORMANCE AT STANDARD CONDITIONS



EN/CP 606 Explosion-Proof Regenerative Blower



DIMENSIONS: IN
MM
TOLERANCES: .XX ± .1
2.5
(UNLESS OTHERWISE NOTED)

MODEL	L (IN) ± .3	L (MM) ± 8	D (IN) ± .1	D (MM) ± 3
EN/CP606M72ML	17.89	454	7.2	182
EN/CP606M5ML	19.9	505	8.5	216

▲ 0.75" NPT CONDUIT CONNECTION

SPECIFICATIONS

MODEL	EN606M5ML	EN606M72ML	EN606M86ML	CP606FU5MLR	CP606FU72MLR
Part No.	038538	038536	038437	—	038972
Motor Enclosure – Shaft Material	Explosion-proof – CS	Explosion-proof – CS	Explosion-proof – CS	Chem XP – SS	Chem XP – SS
Horsepower	3.0	3.0	3.0	Same as EN606M5ML – 038538	Same as EN606M72ML – 038536
Phase – Frequency ¹	Single - 60 Hz	Three - 60 Hz	Three - 60 Hz	except add Chemical Processing (CP) features from catalog inside front cover	except add Chemical Processing (CP) features from catalog inside front cover
Voltage ¹	208-230	208-230	460	575	
Motor Nameplate Amps	15.5-14.5	7.8-7.4	3.7	3.0	
Max. Blower Amps ³	19	7.6	3.8	3.1	
Inrush Amps	94-88	60-54	27	26	
Starter Size	1	0	0	0	
Service Factor	1.0	1.0	1.0		
Thermal Protection ²	Class B - Pilot Duty	Class B - Pilot Duty	Class B - Pilot Duty		
XP Motor Class – Group	I-D, II-F&G	I-D, II-F&G	I-D, II-F&G		
Shipping Weight	130 lb (59 kg)	106 lb (48 kg)	106 lb (48 kg)		

¹ Rotron motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: 208-230/415-460 VAC-3 ph-60 Hz and 200-220/400-440 VAC-3 ph-50 Hz. Our dual voltage 1 phase motors are factory tested and certified to operate on both: 104-115/208-230 VAC-1 ph-60 Hz and 100-110/200-220 VAC-1 ph-50 Hz. All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

² Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

³ Maximum blower amps corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

Specifications subject to change without notice. Please contact factory for specification updates.

GX PRO SERIES



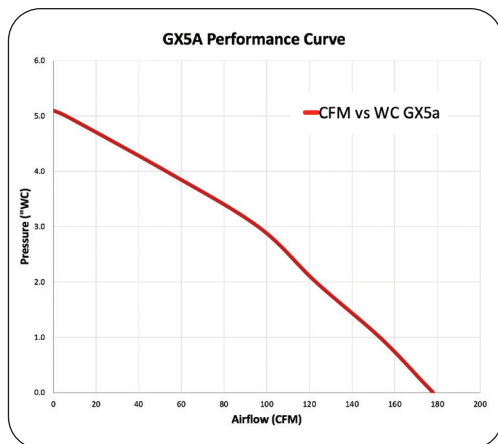
GX5A



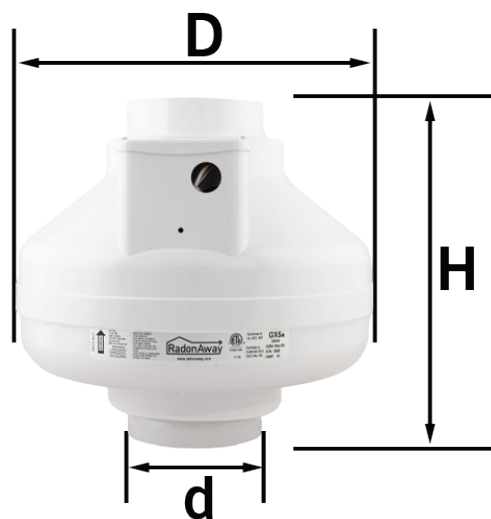
Features

- Eternalast™ polycarbonate plastic fan housing
- Revolutionary impeller
- Water-hardened thermally-protected motor
- Quiet operation
- 4" duct for use with 3" or 4" Pipe
- Sealed seams to inhibit radon leakage
- Electrical box for hard wire or plug in
- For indoor or outdoor use
- Rated for commercial or residential use

MODEL	P/N	FAN DUCT DIAMETER	WATTS	RECOM. MAX. OP. PRESSURE "WC	MAX PRESSURE	TYPICAL CFM vs. STATIC PRESSURE WC						
						0"	0.2"	1.0"	2.0"	3.0"	4.0"	5.0"
GX5A	28536	4"	80-180	5.0"	5.1"	178	173	153	123	96	53	6



MODEL	DUCT SIZE - OD (d)	DIAMETER (D)	HEIGHT (H)
GX5A	4.5"	11.9"	11.1"



with U.S. and imported parts.



ETL Listed



RadonAway® Pro Series inline radon fans are covered by a 5-year, limited warranty.

For more information
(800) 767-3703
radonaway.com



<div>Site Name:</div> <div>Test Date:</div> <div>Personnel:</div> <div>Weather:</div>							Sub-Slab Depressurization (SSD) Pilot Test Log								1 of	
							Extraction Well									
							Observation Well	Observation Well	Observation Well	Observation Well	Observation Well	Observation Well	Observation Well	Observation Well		
							Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	Distance (ft)	
Time	Well Head Vac	System Vac	Flow (acfm)	Flow (scfm)	Effluent PID (ppm)	Notes	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O	Vacuum"H ₂ O		
<div>Comment / Notes:</div>																