



GENERATOR HANDOUT

This information only outlines general code requirements related to installing a Stand-By Generator. For specific requirements, please contact manufacturer or the Trumbull Building Department at 203-452-5020.

Generators require multiple permits. A building permit application for the unit itself, electrical permit application for wiring it and plumbing permit application for installing the gas line. Each application has a permit fee, so provide an estimated cost on each application for that specific work.

To obtain a permit, the following items **MUST** be submitted:

REQUIREMENTS

- 1) A signed, completed building permit application form.
- 2) A copy of the Certificate of Survey or site plan drawn to scale, showing property lines, existing buildings and the proposed Generator location with distances to property lines.
- 3) Completed Elec. Load Calculation Worksheet and Line Diagram.
- 4) Department Signoffs from Tax Collector, Zoning Dept, and Engineering Dept.(Health Dept if on septic) Department Contact info on website www.trumbull-ct.gov
- 5) If contractor, copy of workers comp insurance and copy of HIC/E1 Registration card.

PERMIT PROCESS

Upon receiving items outlined above, your application will be reviewed for code compliance and setback requirements. Permit fees will be calculated and you will be notified when the permit is ready to be picked up. Permits are sent via email once approved and payment received.

REQUIRED INSPECTIONS

Please call 203-452-5020, between 730-4pm, a minimum of 24 hours in advance to schedule inspection, *when work is ready*. Inspections are scheduled to be performed by inspector between 1030-230, Monday to Friday.

UNDERGROUND ELEC/PLUM- If applicable, we need to inspect once gas line or conduit is placed in trench, have Caution Burial Tape/Tracer Wire, on site and before backfill.

GAS PRESSURE TEST- Gas line installed and pressurized 15lbs on 30lb gauge.

FINAL INSPECTION- Final building inspection once work is complete. (require access to electrical panel inside house, need Electrician present)

NOTE: **Prior** to requesting final inspection, **you will need** the same department signoffs that were acquired in the beginning of permit process. **Only after** we receive Department Final Signoffs, will we schedule a final inspection.

Any questions, please contact Trumbull Building Department 203-452-5020 or

buildinginfo@trumbull-ct.gov

BUILDING CODE REQUIREMENTS 2020 NEC & 2022 CT State Building Code

- All wiring must be according to the requirements of the 2020 NEC w/2022 CT Amendments
- Article 445 Generators-This article contains the electrical installation and other requirements for generators. These rules include such things as where generators can be installed, nameplate markings, conductor ampacity, transference of power, and disconnect requirements.
- Disconnecting Means-Generators, other than cord-and-plug connected portable generators, must have one or more disconnecting means and must be capable of being locked in the open position in accordance with 110.25. (445.18)
- Article 702 Optional Standby Systems-This article applies to the installation of optional standby generators in homes, farms, small businesses, and many other applications where standby power is not legally required. The systems covered by Article 702 consist of those permanently installed, including prime movers, and those arranged for connection to a premises wiring system from a portable alternate power supply.
- Automatic Transfer Equipment. An optional standby generator must be sized to the calculated load in accordance with Article 220 or by another approved method. (702.4)
- Transfer equipment (manual or automatic) is required for the connection of an optional power supply. (702.5)
- Signs Required-For one- and two-family dwelling units, a sign is required at the emergency disconnect switch mandated in 230.85 that indicates the location of each permanently installed on-site optional standby power source disconnect or means to shut down the prime mover as required in 445.18(D). (702.7)

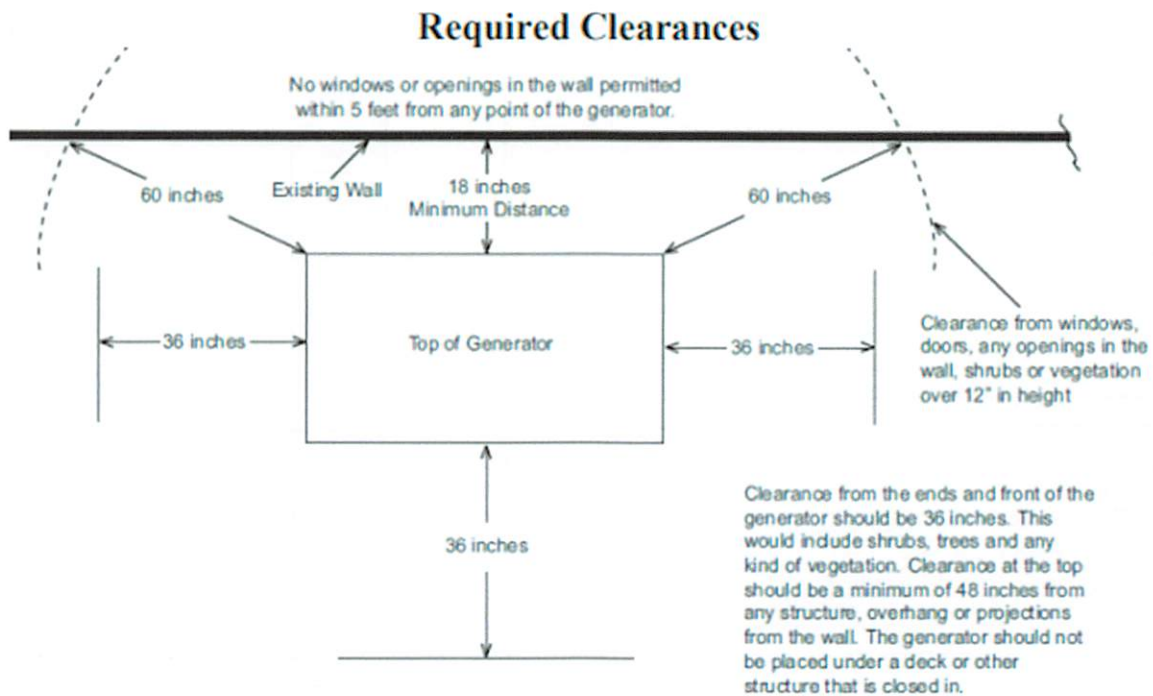
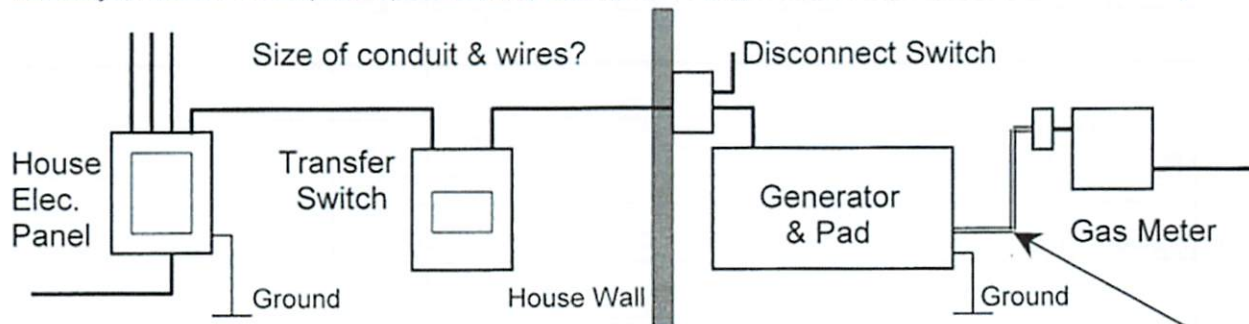
-RESIDENTIAL GENERATOR CONSTRUCTION REQUIREMENTS:

- 1) Generators must be installed in accordance with current applicable NFPA 37 and NFPA 70 standards; as well as any other federal, state and local codes for minimum distances from other structures.
- 2) Generators must be installed in accordance with manufacturer's specifications.
- 3) Most manufacturers require units to be located at least 5 feet from combustible walls, soffits and overhangs. Some generators are rated to be located closer to combustible walls, check with the manufacturer for allowable distances.
- 4) Generator exhaust end must be located at least five (5) feet away from any operable windows, doors and other such openings.
- 5) Generators must be installed on a level, non-combustible surface.
- 6) Most manufacturer state "DO NOT install under wooden decks or structures unless there is at least five (5) feet of clearance above the generator, three (3) feet of clearance on sides and front, and 18 inches of clearance at back of unit" (See sample illustration next page)
- 7) Install generator unit where services will not be affected or obstructed, including concealed, underground or covered services such as electrical, fuel, phone, air conditioning or irrigation.

-Provide Electrical Riser "One Line" Diagram (sample below)

Diagram to indicate grounding/bonding, wire size, conduit size, transfer switch, disconnects, and the method of connection to the Main Electrical Panel including size and location of the service panel and Meter location.

Electrical Riser "One-Line" Diagram – This diagram indicates all electric equipment, components, wiring, raceways, etc., for a complete operational system (basic sample sketch shown below for reference).



CHECK WITH MANUFACTURER INSTALLATION INSTRUCTIONS REGARDING SPECIFIC CLEARANCES

BACK-UP GENERATOR SAMPLE WORKSHEET- LOAD CALCULATION- 2020 NEC (ARTICLE 220)

JOB/PROJECT ADDRESS:		DATE:		CONTRACTOR INFORMATION:		
RESIDENT INFORMATION:		NAME:		PHONE:		
NAME:		PHONE:		E-MAIL:		
E-MAIL:		SPECIFY FUEL SOURCE:		NAT.GAS LP OTHER:		
SPECIFY/VERIFY ELECTRIC SERVICE VOLTAGE:		120/240- SINGLE PHASE		OTHER:		
SPECIFY ELECTRIC SERVICE AMPERAGE:		100AMP 200AMP		400 AMP 800 AMP OTHER:		
NET SQUARE FOOTAGE (OF RESIDENCE):		SQUARE FEET				
	GENERAL LOADS:	QUANTITY:	RATING (LOAD)	FACTOR:	LOADS (VA)	LOADS (kW) (VA/1,000)
1	GENERAL LIGHTING & GENERAL USE RECEPTACLES		3 VA/ft ²	100%		
2	BRANCH CIRCUITS (1500 VA/ft ²)					
2.1	SMALL APPLIANCE CIRCUITS (20 AMP)		1500	100%		
2.2	LAUNDRY CIRCUITS		1500	100%		
3	FIXED APPLIANCES		FULL CURRENT RATING			
3.1	WELL			100%		
3.2	SUMP PUMP			100%		
3.3	FREEZER			100%		
3.4	MICROWAVES (BUILT-IN, NOT COUNTERTOP MODELS)			100%		
3.5	DISPOSAL			100%		
3.6	DISHWASHER			100%		
3.7	RANGE (SEE TABLE 220.55 FOR MULTIPLE COOKING APPLIANCES)			100%		
3.8	WALL MOUNTED OVEN (BUILT-IN)			100%		
3.9	COUNTER MOUNTED COOKING SURFACE (BUILT-IN)			100%		
3.10	WATER HEATER			100%		
3.11	CLOTHES DRYER			100%		
3.12	GARAGE DOOR OPENER			100%		
3.13	SEPTIC SYSTEM PUMP/GRINDER			100%		
3.14	OTHER UNSPECIFIED LOADS (PLEASE SPECIFY / LIST BELOW)					
3.14.1				100%		
3.14.2				100%		
3.14.3				100%		
3.14.4				100%		
3.14.5				100%		
3.14.6				100%		
3.14.7				100%		
3.14.8				100%		
3.14.9				100%		
4	TOTAL GENERAL LOADS:				VA	kW
5	HEAT - AIR CONDITIONING (AC) LOAD:					
5.1	A/C COOLING EQUIPMENT:			100%		
5.2	HEAT PUMP					
5.2.1	COMPRESSOR (IF NOT INCLUDED AS AC)			100%		
5.2.2	SUPPLEMENTAL ELECTRIC HEAT			65%		
5.3	ELECTRICAL SPACE HEATING EQUIPMENT					
5.3.1	LESS THAN FOUR (4) SEPARATELY CONTROLLED UNITS			65%		
5.3.2	FOUR (4) OR MORE SEPARATELY CONTROLLED UNITS			40%		
5.4	SYSTEM WITH A CONTINUOUS NAMEPLATE LOAD			100%		
5.5	LARGEST HEAT / AC LOAD (VA) kW					
6	GENERAL LOADS					
6.1	1st 10 kW OF GENERAL LOADS@ 100% kW <small>Generator load Calc=120011-v5.1a-v6</small>			100%	kW	12
6.2	REMAINING GENERAL LOADS@ 40% kW			40%	kW	
6.3	CALCULATED GENERAL LOADS kW					kW
6.4	LARGEST HEAT / AC LOAD 100% kW					kW
7	TOTAL CALCULATED LOAD (NET GENERAL LOADS + HEAT/A/C LOAD)					kW