

NFPA 86 Training Requirements

NFPA 86 (2019 Edition) – Standard for Ovens and Furnaces

- 7.2.1* *Personnel who operate, maintain, or supervise the furnace shall be thoroughly instructed and trained in their respective job functions under the direction of a qualified person (s).
- 7.2.2 Personnel who operate, maintain, or supervise the furnace shall be required to demonstrate an understanding of the equipment, its operation, and practice of safe operating procedures in their respective job functions.
- 7.2.3 Personnel who operate, maintain, or supervise the furnace shall receive regularly scheduled refresher training and shall demonstrate understanding of the equipment, its operation, and practice of safe operating procedures in their respective job functions.
- 7.2.4 The training shall cover startup, shutdown, and lockout procedures in detail.
- 7.2.5 The training program shall be kept current with changes in equipment and operating procedures, and training materials shall be available for reference.
- 7.4.4 All safety interlocks shall be tested for function at least annually.
- 7.4.5* The set point of temperature, pressure, or flow devices used as safety interlocks shall be verified at least annually.
- 7.4.6 Safety device testing shall be documented at least annually.
- 7.4.9* Valve seat leakage testing of safety shutoff valves and valve proving systems shall be performed in accordance with the manufacturer's instructions.
- 7.4.9.1 Testing frequency shall be at least annually.
- 7.4.12* Lubricated manual shutoff valves shall be lubricated and subsequently leak tested for valve closure at least annually.
- 7.4.18 An inspection shall be completed at least annually to verify that all designed safety interlocks are present and have not been bypassed or rendered ineffective.



Interlocks and Safety Devices to Be Tested:

The table below is a list of the common interlocks that are referenced throughout NFPA 86 which would fall under the annual testing requirement for a single zone oven or furnace with a single burner.

Table A: Common Standard Interlocks to Test

Gas Train - Burner	Motor Starter Contact Relays	Oven Interlocks
1. Low Gas Pressure	21. Ventilating Fan Interlock	33. Purge Air Proving
2. High Gas Pressure	22. Combustion Air Fan	34. Minimum Combustion Air
3. Pilot Low Gas Pressure	23. Exhaust Fan	35. Low Fire Proving
4. Pilot High Gas Pressure	24. Recirculation Fan	36. High Fire Proving
5. Tightness Tests		37. Operating Steam Pressure
6. <i>Main Gas Shutoff Valve</i>	Burner Management Logic	38. Excess Steam Pressure
7. <i>Safety Shutoff Valve</i>	25. Purge Time	39. Instrument Air
8. <i>Vent Valve</i>	26. Pilot Trail for Ignition	40. Low Furnace Pressure
9. <i>Blocking Valve</i>	27. Main Trail for Ignition	41. High Furnace Pressure
10. <i>Downstream Manual Valve</i>	28. Pilot Spark Pick-up	42. Cooling Water Interlock
11. <i>Pilot Manual Gas Shutoff Valve</i>	29. Door Switches (Purge/Light-off)	
12. <i>Pilot Safety Shutoff Valve</i>	30. Post-Purge Time	
13. <i>Pilot Vent Valve</i>	31. Burner Stop	
14. <i>Pilot Blocking Valve</i>	32. Emergency Stop	
15. SSOV Slow Closure		
16. BV Slow Closure		
17. Proof of Closure–SSOV		
18. Proof of Closure – BV		
19. 1400° Bypass Interlock		
20. Flame Sensing		