

**CALIFORNIA CONFERENCE OF
DIRECTORS OF ENVIRONMENTAL HEALTH**

***GUIDELINES FOR THE INSTALLATION
AND USE OF TANDOOR OVENS***

revised January 2009

BACKGROUND

This guideline was originally created in March of 1999 and revised in July of 2007. This revision was completed by the Bay Area Food Technical Advisory Committee in response to the adoption of the California Retail Food Code (CRFC).

Tandoor ovens have been used in East Indian tandoori cooking for centuries. Traditionally used for baking bread, they are also used for cooking animal foods such as chicken, fish, and meat. Foods are cooked rapidly in these ovens due to very high interior temperatures of up to 900° F. The heat source is charcoal, wood, or gas. Three types of heat transfer (radiant, convective, and conductive) occur depending on what food is being cooked and how it is placed in the oven. The bread dough (naan) is applied directly to the interior concave surface of the clay oven, while chicken, fish, and meats are skewered on long iron rods and inserted through the top opening into the oven interior.

Tandoor clay ovens have historically been installed in retail food facilities as custom-built, permanent installations made of concrete blocks, bricks, and mortar, with sand insulation and tile exteriors. These ovens have been a source of many concerns, including;

- use of clay and other questionable materials in the manufacture of the ovens
- extreme heat and smoke production
- sparking
- disposal of ashes that may contain embers
- deterioration of exterior tile finishes
- cracking of the clay oven itself
- settling of clay ovens, creating a void between the clay oven and the exterior housing
- inferior workmanship
- inadequate storage of fuel (charcoal and wood).

More recently, NSF listed Tandoor ovens made of stainless steel have become available. However, many East Indian food facility operators feel that the desired culinary results, easily achieved with clay, cannot be obtained satisfactorily with steel. Other designs consist of insulated clay installed in moveable, stainless steel cabinets and floor-mounted or curb-mounted ovens with marble or metal exteriors.

As with any other food equipment, Tandoor ovens installed in retail food facilities must

be certified or classified for sanitation by an ANSI accredited certification program. As of December 2008, the applicable certification standard is NSF/ANSI Standard 4. Currently the following organizations provide certification programs:

- NSF International
- UL
- Intertek ETL
- CSA

The following guidelines were developed by the California Conference of Directors of Environmental Health (CCDEH) Bay Area Food Technical Advisory Committee, with input from the CCDEH Southern California, Northern California, and Central Valley Food Technical Advisory Committees.

SCOPE

These guidelines include basic structural and operational requirements that may be applied to both permanently installed and moveable ovens.

DEFINITIONS

1. **Tandoor oven** - A large, clay oven, generally urn-shaped, used in East Indian tandoori cooking to bake bread (naan), and roast chicken, lamb, and other meats.
2. **Approved** – means acceptable to the enforcement agency based on a determination of conformity with applicable laws, or, in the absence of applicable laws, current public health principles, practices, and generally recognized industry standards that protect public health.
3. **Approved source** - a producer, manufacturer, distributor, or food facility that is acceptable to the enforcement agency based on a determination of conformity with applicable laws, or, in the absence of applicable laws, with current public health principles and practices, and generally recognized industry standards that protect public health.

STRUCTURAL REQUIREMENTS

Oven

1. A durable, nontoxic patching compound, specified by the oven manufacturer and made of approved materials, must be used for repairing cracks. The patching compound must be labeled as to contents and use. Ovens that can no longer be adequately repaired must be replaced. Replacement ovens must meet the same requirements as new ovens.
2. All necessary approvals and permits from the local fire and building authorities must be obtained for all Tandoor ovens, including permanent and on-site ovens.

Exhaust Ventilation

- 1 All Tandoor ovens shall be installed under a Type I exhaust hood that complies with requirements set forth in the applicable edition of the Uniform Mechanical Code, the CCDEH Exhaust Ventilation Guidelines, and the local fire and building codes, except for the following:
 - All type 1 hoods are required to have a fire suppression system approved by the local fire authority.
 - A minimum of twelve-inch overhangs shall be provided on canopy hoods serving Tandoor ovens.
 - Both solid fuel and gas fired Tandoor ovens shall meet the airflow requirements for solid fuel burning equipment.
 - When a hood for a solid fuel Tandoor oven is installed next to another hood, stainless steel side partitions that extend from the hood to the top of the oven should be installed between the hoods. This will improve the exhaust flow of smoke and grease laden air.

Miscellaneous

1. Durable, fire-resistant floor and wall materials must be provided in the area of the oven, extending at least three feet above the oven in all directions. Acceptable floor materials include, but are not limited to, quarry and heavy duty ceramic tile, and stainless steel. Sheet vinyl, epoxy, and other floor materials that may be readily damaged by heat or sparks from the oven shall not be used. Acceptable wall materials include, but are not limited to, stainless steel and heavy-duty ceramic tile.
2. Adequate, designated storage space must be provided for storage of solid fuel.

OPERATIONAL REQUIREMENTS

1. Tandoor oven manufacturers must supply installation and operational instructions with each oven. These instructions shall include information on the proper cleaning and maintenance of the oven. All ovens shall be maintained in a clean and sanitary manner in accordance with the manufacturer's instructions.
2. Because Tandoor ovens often develop high amounts of smoke and grease-laden vapors, an extra effort must be made to keep exhaust hoods, filters, and ducts that serve Tandoor ovens clean.
3. Cast iron skewers may be used only if they are properly maintained to prevent corrosion (i.e., washed, sanitized and oiled with a food grade oil). Cast iron utensils are preferred by operators over stainless steel utensils because, unlike the smooth surface of stainless steel that allows meat to slide down to the bottom of the oven, cast iron has a textured surface that helps the food adhere to the skewer.
4. Because ANSI approved Tandoor ovens are now readily available, custom built on-site Tandoor ovens are no longer approved. Pre-existing on-site Tandoor ovens that have deteriorated beyond repair must be replaced with an ANSI approved Tandoor oven.
5. All permanent and on-site Tandoor ovens on casters must be installed away from walls with sufficient clearance to facilitate cleaning behind the unit(s).

6. Ash is an excellent insulator and can remain hot for several days if not properly disposed. Hot ashes should be stored in a separate fire proof receptacle and stirred periodically to release the heat. If water is used to cool ashes, a corrosion resistant container must be used. Once completely cooled, ashes may be disposed of with refuse.