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The parts that have been added or modified with respect to Version 1.0 of April 2013 of this document are highlighted in grey.

In accordance with the “Special Regulations Nos. 4, 5 and 7”, the “Design, Construction, Set-up and Dismantling Guide”, and the “Food and Beverage Guide” which is under preparation, this document provides design guidelines for catering services and commercial activities involving food and beverage sales and service.

Participants shall observe the following guidelines, which regulate the design of spaces used for the preparation, service, sales and consumption of food and beverages.

Regardless of type of design, places where food is handled must meet criteria ensuring that it is healthy and free of food-borne illnesses and other infectious diseases.

The guidelines present parameters for structures, sanitary facilities and the minimum required equipment to be provided in the design and furnishing of these spaces. These parameters and requisites apply both to users (visitors) and to personnel.

Specific needs will be addressed on a case-by-case basis in response to Participants requests.

Reference to the relevant legislation for each item is provided in this document. The most important Italian national and local legislation is listed below for the sake of completeness:

- REGOLAMENTO LOCALE D’IGIENE (R.L.I.) of the City of Milan (in particular Titles III and IV) approved by Consiglio Comunale n. 172/84 del 9 maggio 1994 - Atti N. 133296.400 PG. 94, including subsequent amendments and additions.
- Italian standard UNI 10339 “Aeraulic systems well-being/comfort/welfare”
- REGOLAMENTO EDILIZIO (R.E.) of the City of Milan approved by City Council decision no. 81 of 20 July 1999.
RESTAURANTS, SNACK BARS

Places where food and dishes are prepared, heated and served (e.g., self-service cafeteria, full service restaurant, buffet, counter service, etc.).

REQUISITES

Kitchen/Food-Prep Room

The following zones must be clearly identified and separated: Storage, Washing/Cleaning, Preconditioning (e.g., thawing/rehydrating), Preparation, Cooking, Serving.
In particular, the preparation and serving facilities must be physically separated: a glass barrier/partition may be used for this purpose. The final cooking phase may be carried out in contact with the serving zone if appropriate furnishings are provided for the passage of foods.
The layout of spaces, pathways and equipment must be designed and built so as to safeguard health, in keeping with the HACCP system and a "forward progression" paradigm ("marcia in avanti"). This must be applied from the loading docks all the way to the table. The organization of work starts at the point/zone where goods are received and extends all the way to the point/zone where they are served, avoiding contact between clean and unclean operations and pathways (including the movement of dirty dishes to the washing zone).

Particular attention must also be dedicated to how wastes, especially "perishable" wastes, are stored and transported off site.

- Average height of no less than 2.70 metres, and minimum height of 2.10 metres. Minimum area of 8 sqm (R.L.I. Art. 4.5.6) and in any case appropriate to the type of activity performed therein and the planned number of food & beverage service staff;
- Minimum volume of 24 cubic metres (R.L.I. Art. 4.5.6);
- Natural ventilation and natural, direct lighting (from windows on the external perimeter walls) equal to 10% of the surface area of the facility (C.E. Arts. 42 and 44);

As regards ventilation of work spaces, exceptions may be made to regulations regarding natural ventilation provided that adequate artificial ventilation systems are installed having effective mechanisms for fume
and odour evacuation. These ventilation/exhaust systems must be equipped with alarms to signal malfunctions.

As regards natural lighting of aboveground interior spaces, compliance with relevant regulations can be accomplished also by using indirect natural lighting.

- **Artificial ventilation**, the pertinent standard for Aeraulic Systems (Air-Handling Systems) designed to ensure environmental wellbeing is UNI 10339.
  - The UNI 10339 standard provides guidelines for the definition and classification of minimum requisites and functional parameters for air-handling systems.
  - The UNI 10339 standard applies to air-handling systems installed in enclosed environments to ensure the environmental comfort of the occupants. The air-handling system must achieve and maintain the following performance parameters: conditions of air quality, movement, temperature and humidity specific to the assigned functions (filtration, heating, cooling, humidifying, dehumidifying) in accordance with the UNI 10339 standard.

- **Cooking equipment**: all cooking equipment using any type of fuel requires a fume extractor hood connected to exhaust flues used exclusively by the cooking facility and extending one metre above the top of the roof (R.L.I. Arts. 3.4.27.2 and 3.4.28);

- **Solid fuel combustion systems**: these systems require certification per D.M. 37/2008 and associated specific regulations. The installer must be properly certified. The room must be outfitted with one or more appropriately dimensioned permanent ventilation ducts protected by grills.

- **Characteristics and minimum equipment**: (R.L.I. Art. 4.5.6, Annex II, Chapter 1 and 2, EC Regulation 852/2004);
  - the kitchen/food-prep room must not communicate directly with toilet facilities and in no cases may people or animals occupy the room for non-authorized reasons (R.I. Art. 4.2.2);
  - the walls must be plastered or panelled to a minimum height of 2 m with smooth materials that can be washed and sanitized;
  - ceilings and equipment that are not easily accessible because of the height or position must be made/designed so as to prevent the accumulation of dirt, the growth of moulds, and falling particulate matter;
  - flooring must be made in anti-slip materials that can easily be washed and sanitized;
  - doors must be smooth and impermeable;
  - windows must be outfitted with insect/mosquito netting;
surfaces and equipment that come into contact with foods must be appropriate for that purpose and easily cleaned and sanitized. They must be made using smooth, washable, non-toxic, corrosion-resistant materials;

- sinks for foods must be present in sufficient number for kitchen operations, with touchless (no hands or elbows) hot and cold water faucets, liquid soap dispensers and disposable towel dispensers;
- cupboards for crockery;
- there must be a sufficient number of properly positioned and marked hand basins for hand washing with hot and cold running water, non-reusable soap and hygienic hand drying system.
- Sinks for food washing must be separated from those for hand washing;
- the minimum width of and circulation paths, interior corridors, doors and passages is 80 cm, accounting for the frames and movements of doors; in no cases may the circulation paths conflict with work stations (R.I. Art 4.2.2);
- work stations must be organized so that they do not cause mutual interference and prevent contamination while handling foods (R.I. Art. 4.2.2 and Chapter II, Annex II of EC regulation 852/04).

Activated aeration, exhaust and ventilation

Odours, vapours or fumes produced by cooking equipment must be captured and evacuated by means of appropriate extractor hoods connected to exhaust flues (R.I. Art. 3.4.21).

Other technical solutions (self-filtering, etc.) that do not provide with external evacuation of these odours, vapours or fumes are prohibited (R.I. Chapter 4).

"Exhaust flues are defined as those used to evacuate odours, vapours or other airborne substances from enclosed rooms. In order to prevent possible improper use, a special marking (E) must be placed at the inlet to the flue". The flue must have exhaust points on the roof as follows:
- On a peaked roof, the exhaust point must be placed 1 m beyond the roof peak in compliance with legislation in force (R.I. Art. 3.4.28):
- On terraces and/or accessible roofs where people may be present, the flue outlet must be placed more than 3 metres above the walking surface. It is possible (via special authorization) to place the exhaust points on the façade, but in this case they must be outfitted with particulate and odour abatement systems.

Wood-burning ovens

As expressed in Article 33.1 of Special Regulations no. 4, "Flammable materials may only be used with the permission of the relevant authority or with special permission from the Organizer, and in compliance with
If wood-burning ovens are planned, given that this entails the existence of open flames, in addition to obtaining specific authorization from the Organizer and installing appropriate containment structures/systems, all smoke and fumes must be exhausted via the roof, as specified above. It is forbidden to install exhaust points with particulate and odour abatement systems on the facade. If a wood-burning oven is installed in the outdoor areas on ground level, appropriate exhaust-channelling structures/systems must be installed, such as those used at fairs/street markets.

**Toilet facilities**

An adequate number (minimum 1) of **bathrooms must be provided for exclusive use by kitchen staff**:

- The number of bathrooms for kitchen personnel is determined as follows (R.L.I. Article 3.11.6): "Whenever [an establishment] has more than 5 workers, including owners and/or partners, there must be at least two toilet chambers with associated antechamber. In workplaces having from 11 to 40 employees, there must be at least 3 toilet chambers with [associated] antechamber and at least one changing room of adequate size for each gender. Another toilet chamber must be added for each subsequent 30 employees. The total number of toilet chambers may be reduced to 2 or 3 if a sufficient number of urinals are installed. It is preferable to install squat toilets."

- Bathroom facilities must ensure mobility access for the disabled if the kitchen staff includes **employees with mobility disabilities**. If no persons with mobility disabilities are part of the kitchen staff, this must be declared and proven by the owner of the business.

An adequate number of **public restrooms**, as defined in R.L.I. Art. 4.5.6, must be provided for visitors to the food service area:

- "the following must be provided in restaurants, trattorie, snack bars, company canteens, school lunchrooms, prep rooms for preparing pastry or ice cream in cafés or ice cream shops, and ice cream shops and similar facilities:
  - At least one public toilet must be provided for each serving room measuring up to 60 sqm; additional public toilets shall be provided in keeping with the rule of at least one public toilet for each 60 sqm of serving room or fraction thereof.
  - If more than one public toilet is provided, they must be divided by gender; at least 1 toilet must meet the requirements of DPR 384/78 about barrier-free access."

The areas to be considered in the above calculations include interior spaces, outdoor food service areas and circulation and distribution spaces. Only emergency exit routes may be excluded.
• Regulations allow toilet facility units to be shared by different food service zones; it is nevertheless preferable to provide at least one bathroom (known as a “courtesy facility”) in an easily accessed location on every floor for exclusive use by visitors. Said courtesy facility must be accessible to persons with mobility disabilities and should be located within the food service area to ensure greatest utility.

With the exception handicap-access public toilets (addressed by specific standards and regulations), all toilet facilities in the food service zones shall have the following characteristics:

• there must be a door between the space immediately external to the bathroom and the access corridor, creating an antechamber for the bathroom and physically separating the food service area from the bathroom facilities (R.L.I. Arts. 3.4.35 and 3.11.5; R.E. Art. 34). Toilet antechamber with minimum area of 1.0 sqm and minimum height of 2.10 m (R.L.I. Art. 3.11.5; R.E. Art. 34). The antechamber door must open outwards or slide and must be equipped with an automatic closure system (R.L.I. Art. 4.2.10);

• toilet chamber, containing a toilet, with minimum area of 1.0 sqm, average height no less than 2.40 m, and minimum height of 2.10 m; provided with a window for direct natural ventilation equal to 10% of the floor area or a minimum of 0.50 sqm, whichever is greater. If no window is provided, the toilet chamber must be equipped with forced air ventilation per R.E. Art. 48.2;

• the floor and walls shall be finished up to a height of 2 m in impermeable material that can easily be washed and sanitized (R.I. Art 4.2.10);

• toilet paper must be placed in protective dispensers that prevent soiling (R.I. Art 4.2.10);

• the facility must have a sink with soap dispenser and hot-air hand dryers or disposable towels (DPR 327/80 Art. 28);

• touchless (no hands/elbows) water faucets and toilet flush (R.I. Art. 4.2.10);

• waste container, with pedal-activated sealing lid (R.I. Art. 4.2.10)

Changing rooms

Changing rooms adequate to the number of workers must be provided for exclusive use by food service personnel. The changing rooms must be close to the place of work and adhere to the following guidelines:

• appropriate area, no less than 1.50 sqm for each employee per shift with minimum total area of 5.00 sqm (R.I. Art. 3.11.6);

• average height of no less than 2.40 m and minimum height no less than 2.10 sqm (R.E. Art. 34);

• natural ventilation or else appropriate devices for air exchange per R.C. Art 48.2;

• heating as appropriate (R.I. Art. 3.11.6);
walls finished up to a height of 2.00 m with impermeable material that is easily washed (R.I. Art 3.11.6);
toilet antechambers meeting all the above requisites might be used as changing rooms;
individual, dual-compartment lockers shall be provided to keep work clothes separated from street clothes.
The above facilities must ensure mobility access for the disabled if the kitchen staff includes employees with mobility disabilities. If no persons with mobility disabilities are present on the staff, this must be declared and proven by the owner of the business.

**Food storage**
As stated in the “Goods storage” section in the “Design, Construction, Set-up and Dismantling Guide - 2013” states that “supply storage areas inside the lot must be designed to ensure at least two days of service autonomy”.
In addition to this rule, the following guidelines must also be followed:
- room of adequate dimensions, with appropriate layout and equipment, separated into raw materials and finished products; shelving and counters must be finished with a material that can be washed and sanitized;
- minimum height no less than 2.10 m (R.E. Art. 34);
- all exterior openings must be protected by means or devices that will prevent the entry of rodents or other pests (mosquito netting) - DPR 327/80 Art. 28;
- flooring must be made of suitable material, the walls and ceilings must be plastered. If the facility contains bulk foods and/or finished and ready for consumption, the walls must be finished to a minimum height of 2.00 m with smooth, washable and sanitizable materials (R.I. Art. 4.2.2).

**Food service area**
- **Average height** of no less than 2.70 m and minimum height no less than 2.10 sqm (R.E. Art. 34);
- **Natural direct ventilation** through openings with area equal to 10% of the net floor area of the food service area (R.E. Art. 40 and ff); If natural ventilation is insufficient it may be supplemented or replaced by a climate control system meeting the requisites specified in R.L.I. Art. 3.4.7, letters a and b;
- **Natural direct lighting** through openings with area equal to 10% of the net floor area of the food service area (R.E. Art. 43 and 44). Natural lighting may be supplemented or replaced by artificial lighting;
- **Foods**: displayed foods must be kept at a suitable temperature and protected from contamination by glass cases or similar means.
**Architectural barriers**

Accesses, bathroom facilities and safety measures (e.g., railings, fire alarm buttons, etc.) for users of the food service areas must be usable by persons with mobility disabilities. The bathroom facilities for users of the food service area having mobility disabilities must be located where they are easily accessible, preferably within the food service area.

**Waste disposal methods**

For clarity’s sake, the “Collection of waste” section in the “Design, Construction, Set-up and Dismantling Guide” is presented below: “... a collection room/intermediate storage area must be provided where waste packets/bags (with specific dimensional requirements and separated by type as indicated by the Organizer) can be collected before they are removed and transported off the Expo Site.

The waste collection facility must be designed to accept:

1. organic wastes separated into: gardening wastes; kitchen wastes; organic fraction of municipal wastes generated by staff and visitors;
2. miscellaneous wastes generated by exposition or commercial activities and personnel, partially separable into different categories following the establishment of source-separation waste collection systems (e.g., paper and cardboard, glass, wood, plastic, steel, aluminium, electrical/electronic devices, other wastes).”

In addition to these rules, the following guidelines must be applied in managing waste disposal:

- Food waste, non-edible by-products, and other discarded material must be removed as quickly as possible from the rooms where food is kept to prevent accumulation;
- The collection bins must conform to the guidelines for source-separated waste collection.

The waste collection room must have the following characteristics:

- waste storage areas must be built and dimensioned to ensure retaining of odours and liquids and a one-day storage period. (“Design, Construction, Set-up and Dismantling Guide”)
- minimum height of 2.00 m (R.E. Art. 61);
- airtight metal door of minimum dimensions 1.00 x 1.80 m;
- rounded seamless junction between flooring and wall finishing materials, which must be smooth, impermeable and easily washed;
- vent pipe placed at a distance of at least 10 m from the opening to the closest occupiable space, if the space is not part of the building structure. Otherwise, the vent pipe shall extend beyond the roof;
- availability of hook-up for water supply with wand outfitted with an appropriate anti-syphon device;
- drains for wash water outfitted with traps;
- systems to ensure adequate prevention of entry by rats or insects.
CAFÉS AND SNACK BARS
PRE-PACKAGED DELI PRODUCTS

DEFINITION
Places that serves cold dishes or where hot (re-heated) food is served (i.e., bar service, cafeteria, snack-bar).

REQUISITES
As regards: kitchen/food-prep room, activated aeration, exhaust and ventilation, toilet facilities, changing rooms, food storage, and waste disposal methods, the requisites are IDENTICAL to those described for Restaurant activities.

With the exception of the following characteristics:

Food service area
• bar outfitted with separate work areas and sinks for the various operations (café, food preparation and handling); displayed foods must be kept at a suitable temperature and protected from contamination by glass cases or similar means (R.I.I. Arts. 4.3.3 and 4.3.4, DPR 327/80 Art. 31);
• for the preparation of snack bar product and pre-packaged deli foods require participants to create a dedicated space in a minimum area of 4sqm (R.I. Art. 4.5.7, letter A) suitable in any case for the preparation of foods if the bar is used for this purpose. If a dedicated room is provided for food preparation, it must have dimensional characteristics identical to those for the kitchen described above but without equipment for cooking foods.
DEFINITION
Rooms and food-prep rooms for the production, preparation and packaging of foods that are sold in the rooms but not consumed there.

REQUISITES
As regards: kitchen/food-prep room, activated aeration, exhaust and ventilation, worker toilet facilities, changing rooms, food storage, and waste disposal methods, the requisites are IDENTICAL to those described for Restaurant activities.

With the exception of the following characteristics:

Public toilet facilities
Public toilet facilities are not required, only worker toilet facilities are required.

Sales room
- **Average height** of no less than 2.70 metres, minimum height of 2.10 metres;
- **Net floor area** no less than 8 sqm;
- **Natural direct ventilation** through openings with area equal to 10% of the net floor area of the food service area (R.E. Art. 40 and ff). If natural ventilation is insufficient it may be supplemented or replaced by a climate control system meeting the requisites specified in R.L.I. Art. 3.4.7, letters a and b;
- **Natural direct lighting** through openings with area equal to 10% of the net floor area of the food service area (R.E. Art. 43 and 44). Natural lighting may be supplemented or replaced by artificial lighting;
- **Free spaces** for customer circulation with usable width no less than 100 cm;
- **Foods**: displayed foods must be kept at a suitable temperature and protected from contamination by glass cases or similar means.
KIOSKS

DEFINITION
Kiosks are small outdoor structures, often freestanding, open on one or more sides or having an open serving window.

REQUISITES
With the exception of the following characteristics:

Structural specifications (R.I., Art. 4.3.16).
- Kiosks must be made of cement, masonry, wood or other materials that are certified as being suitable, and must be positioned far from health hazards and sources of dirt/contamination.
- Kiosks must have seamless, durable, waterproof and washable floors, washable walls, a drinking water supply system, a solid waste collection system, and a wastewater/liquid waste channelling and discharge system outfitted with a suitable trap.
- Kiosks must be hooked up to the electricity grid or be equipped with an autonomous energy renewable system.
- Kiosks must have a suitable dishwashing system.
- Kiosks must have a seamless, durable work surface made of an impermeable, washable and oxidation-resistant material.
- Kiosks must have food storage equipment that is appropriate for the types of food offered.
- Kiosks must be raised above the ground by at least 30 cm on three sides. An exception is made for kiosks selling fresh fruits and vegetables.

OUTDOOR FOOD DISPLAY
- Suitable conservation and protection systems are required to protect foods displayed outside of the kiosk from any possible sources of contaminants. Fresh, raw or cooked food products, whether packaged or unpackaged, must not be displayed in open containers but must be contained in closed showcases or other similarly protective display systems, and must be kept at legally required temperatures. (R.I., Art. 4.3.14).
- Cold-chain management must be guaranteed for all perishable foods.
- Fruit and vegetables must be kept in baskets/bins made of a suitable material and raised above the floor/ground level by at least 20 cm. (R.I., Art 4.3.15)
TOILET FACILITIES

- At least one toilet facility for exclusive use by food & beverage personnel must be available. Said facility may be located in the pavilion (R.I., Art.4.3.16)
- Public toilet facilities are not required

FOOD SERVICE IN ACCESSORY OR OUTDOOR AREAS

Accessory facilities or outdoor areas for food service must be appropriately protected from sources of contaminants (pollution/dirt) using easily cleaned systems (including awnings or canopies which may be retractable).