

Dubai Municipality

Technical Guidelines No 7.

Mandatory Waste Segregation

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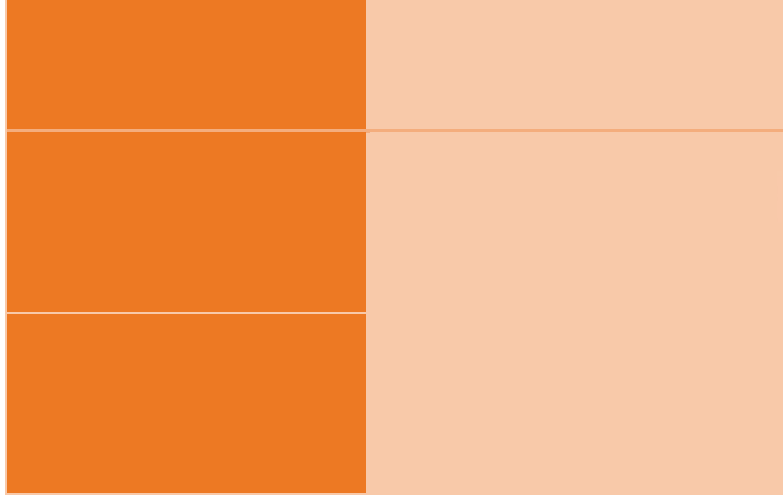
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1. Introduction

Source segregation– or separating waste at home, in the office, commercial centers, industrial facilities, on building sites and in public places, has proven to be effective in increasing recycling rates and increasing waste diversion from landfill. The main factor in efficient source segregation practices is reducing contamination, which in turn improves the quality of the recycled product.

The separation of materials at the point of collection results in a more homogenous and higher quality waste stream. Source segregated material streams, which are less contaminated by other materials, are easier and less costly for recycling facilities to process and recover. Therefore, source segregated materials represent a higher value to recycling markets. Moreover, source segregation significantly improves the environmental performance and economic efficiencies of waste management, including storage, transportation and treatment options.

Dubai Municipality, in its goal to provide the residents of the Emirate of Dubai a more sustainable environment to live in, has developed a 20 year Dubai Strategic Integrated Plan for Waste Management. One of the most important component and requirement in achieving the sustainable goals is the segregation of waste at source. The implementation of source separation programs will contribute significantly to the waste diversion and recycling goals of Dubai. Commercial, Residential, Industrial and Institutional sources contribute significant quantity of material in the waste stream. Therefore, segregation and diversion of recyclable materials from these sources will greatly contribute in the reduction of waste materials going for landfill disposal, which will ultimately increase the quantity recovery for productive use.

This document has been prepared to assist all sectors in understanding the standard and level of service that they are required to perform to comply with the regulation. Careful assessment of existing practices locally and best practices worldwide was considered in the preparation of this document.

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2. Legislations

- 2.1 Article 62 of Local Order No. 11 (2003) Concerning Public Health and Community Safety in the Emirate of Dubai states that:

Private Establishments, companies, commercial premises, residential complex and hotel establishments shall comply with the following:

Provision of containers for the safe storage of wastes generated from their activities in accordance to the terms, conditions and standards prescribed by the Competent Department.

- 2.2 Administrative order number (30)/2007 to initiate execution of Local order 11/2003 concerning Community Safety & Public Health in the Emirate of Dubai.

Article (186): Companies having licenses for "storage and collection" of waste must abide by the following:

1. Storing waste in proper and suitable containers.

- 2.3 Dubai Green Building Regulations (2016) Section 702.05 Recyclable Waste Management Facilities.

For all new buildings other than villas, a sorting and storage facility for recyclable materials must be provided. This facility must be easily accessible and comply with the requirements of the location, access and specifications of general waste areas in accordance with Dubai Municipality Building Regulations. The sorting and storage facility may be part of the general waste management facility or a separate facility.

In accordance with the above regulations, the Waste Management Department has established minimum requirements for the mandatory segregation (separation) of waste from all waste generators.

Dubai Green Building Regulations (2016) Section 407.01 Impact of Construction, Demolition and Operational Activities, paragraph 4.


Construction waste materials generated on site must be segregated and stored on site prior to collection. Segregation must, at a minimum, include labelled storage for inert aggregates, metals, timber, dry recyclables and hazard material.

2.4 Executive Council Resolution No. 58 (2017) on Approving the Fees and Fines for Waste Disposal in the Emirate of Dubai.

2.5 Article 11 of Federal Law 12 (2018) on Integrated Waste Management
“The Competent Authority shall take the necessary measures and procedures to reduce the generation of Municipal Solid Waste and separate them at source, through the provision of containers with different and uniform colours and the Establishment of Waste collection centres. The Implementing Regulation of this Law shall determine the details and colours of containers and their use.”

2.6 Waste Management Department Circular No. (2) 2020 Recyclable Waste Data Generated from Hotel Establishments, Shopping Malls/Centers, and Factory Plants in Emirate of Dubai.

Comprehensive data of generated waste on site, including general waste, recyclable waste, and recyclable waste sent to recycling facilities, must be sent on monthly basis as part of the waste generator’s “Waste Management Plan”.

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3. Objectives

1. To comply with the Dubai Strategic Integrated Plan for Solid Waste's provisions and strategic goals and targets.
2. To establish "On Source" segregation of waste standards and requirements.
3. To implement and enforce recycling related practices and procedures to all waste generators, waste management companies and processors.
4. To ensure sustainable waste management practices among Commercial, Residential, Industrial and Institutional Waste Generators in the Emirate of Dubai.
5. To increase the quantity of waste diverted from landfill.

4. Scope

This Technical Guideline shall be applicable to all waste generating establishments namely:

1. Commercial Sector.
2. Construction and Demolition sites.
3. Institutional Sector.
4. Industrial Sector.
5. Residential Sector.

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5. Definition of Terms

Collection Service - the collection, pick-up or removal of recyclable and solid waste originating from any location within the Emirate.

Construction and Demolition Waste – all non-Hazardous Waste resulting from the construction, renovation or demolition of buildings, including residential and non-residential buildings, roads, bridges and others.

Disposal Facility - a solid waste management facility to which solid waste is delivered for permanent disposal, e.g. Waste Landfill.

DM – Dubai Municipality

Hazardous waste - Waste of various activities and operations, devices and equipment used, medical Waste or other Waste retaining the characteristics of Hazardous Substances.

Industrial Waste - Hazardous or non-Hazardous Waste resulting from all industrial and transformational activities in industrial Establishments, determined according to the manufacturing process of laboratory tests.

Processing Facility - any person, firm, corporation or other entity in the business of receiving and processing Recyclables into marketable commodities for sale to end markets.

Recycling - Processes carried out on Waste in order to extract raw materials thereof to be reused in commercial and industrial processes.

Plastic refers to the materials defines below:

#1 Plastics: Polyethylene Terephthalate (PET or PETE)

Common uses: 2-liter soda bottles, single-use water bottles, cooking oil bottles, peanut butter jars, etc.

#2 Plastics: High Density Polyethylene (HDPE)

Common uses: detergent bottles, yoghurt tubs, milk jugs, bottle caps, backpack frames, hard hats, etc.

#3 Plastics: Polyvinyl Chloride (PVC)

Common uses: plastic pipes, Saran wraps, outdoor furniture, flooring, siding, etc.

#4 Plastics: Low Density Polyethylene (LDPE)

Common uses: plastic film, grocery bags, dry cleaning bags, produce bags, trash can liners, food storage containers.

#5 Plastics: Polypropylene (PP)

Common uses: bottle caps, food containers, drinking straws, etc.

#6 Plastic: Polystyrene (PS)

Common uses: packaging pellets or "Styrofoam® peanuts," cups, plastic tableware, meat trays, to-go "clam shell" containers.

#7 Plastic: Other

Common uses: LEXAN, certain kinds of food containers and Tupperware. This plastic category, as its name of "other" implies, is any plastic other than the named #1-#6 plastic types. These containers can be any of the several different types of plastic polymers.



Premise - means a house or building, together with its land and outbuildings, occupied by a business or any other occupant.

Recyclable Materials means those materials defined below:

Table 1. Description of Recyclable Materials

	Newspapers, Magazines, and Catalogues - Includes common machine finished paper made chiefly from wood pulp used for printing newspapers, magazines and catalogues, that may include glossy inserts. All must be free of contaminants.
	Office Paper - All paper documents, computer printout, stationery, photocopy and ledger paper of any color. This term excludes carbon paper, chemical transfer paper and tyvek or plastic coated envelopes.
	Paperboard - Includes paper packaging as found in cereal, cracker and tissue boxes, toilet tissue and paper towel tubes.

	<p>Mixed Paper - Includes discarded and bulk mail, computer paper, colored paper, envelopes, greeting cards, wrapping paper and carbonless multi-part forms. Excludes any paper coated with foil or plastic.</p>
<p>Metals</p>	<p>All ferrous and non-ferrous metals, including: steel, aluminum and composite cans and containers (cleaned of food wastes) and empty aerosol cans that did not contain hazardous material. Scrap metal, wire, pipes, tubing, motors, sheet metal, etc. are recyclable but must be recycled through scrap dealers.</p>
<p>Wood</p>	<p>All wooden products and byproducts such as wooden pallets, wood-related horticultural waste, and wooden furniture pieces.</p>

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Waste Generator - means any individual, firm, company, partnership or corporation or other business/industrial entity that generate solid waste requiring off-site disposal. Classifications of Waste Generator are as follows:

1. Commercial Sector – establishments that provide commercial services and activities, including hotels and commercial complexes, retail stores, entertainment facilities, and restaurants. Commercial sector also includes small-scale supermarkets and hypermarkets.
2. Construction and Demolition sites – means locations or properties where there is an ongoing building, construction or demolishing works. This includes fit-out and refurbishment works.
3. Institutional Sector – organization, establishment, foundation, entity, or the like, devoted to the promotion of a particular cause or program, especially one of a public, educational, health care or charity.
4. Industrial Sector – are premises that is involves in the manufacture, fabrication, preparation of different kind of products for utilization of the economy.
5. Residential Sector –all resident buildings and complexes, and mobile homes that does not include institutional or educational housing.

WMD – Waste Management Department

6. Guidelines

6.1 Containers

6.1.1 The minimum container requirement in this guideline shall be a “three bin” system. A green-colored bin for the mixed dry recyclables, gray-colored bin for organic waste, and black-colored bin for the general waste. The waste generator is given flexibility to utilize the number of bins found appropriate for the generator’s operations while following the color codes listed in the tables below.

Table 2. Three Bin system

1	Solid Waste	Jet Black	9005
2	Dry Mixed Recyclables	Yellow Green	6018
3	Organic Waste	Telegrey 2	7046

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Table 3. Bin Color Codes for 4 Bins or more

S.No	Type of Material	Color Name	RAL Color Code
1.	Paper	Sky Blue	5015
2.	Plastic	Luminous Red	3024
3.	Metal	Zinc Yellow	1018
4.	Glass	Pure Green	6037
5.	Rubber	Cyan	6027
6.	Leather		
7.	Textile	Pearl Ruby Red	3032
8.	Wood	Nut Brown	8011
9.	E-waste	Pastel Orange	2003
10.	Used batteries	Blue Lilac	4005

Table 4. Bin System and Color Codes for Construction and Demolishing Sites.

S.No	Type of Material	Color Name	RAL Color Code
1.	Inert Aggregates	Light Grey	7035
2.	Metal	Zinc Yellow	1018
3.	Timber/wood	Nut Brown	8011
4.	Dry Recyclables	Yellow Green	6018
5.	Hazardous Materials	Red Violet	4002



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Table 5. Bin System and Color Codes for Medical Waste

S.No	Type of Material	Color Name	RAL Color Code
1.	Radiotherapy Waste	Raspberry Red	3027
2.	Cytotoxic Waste	Traffic Purple	4006
3.	Waste for Autoclaving	Distant Blue	5023
4.	Other Medical Waste	Luminous Yellow	1026

6.1.2 All containers (recyclables, hazardous and solid waste) should be properly labeled with appropriate instructions of what kind of materials should be deposited therein. It is also recommended that the signage be written in these languages: Arabic, English and any other language found suitable. The bin and its signage should be designed to make the people consider recycling. A positive language that encourages involvement in the recycling initiative is recommended. The signage should be large and easy enough to read. It is also recommended to use signage above the bin with bright and catchy colors to make the bin stand out.

6.1.3 All containers, and compartments within the containers, should have separate liners distinguishing general waste and recyclable waste. This will ensure that the bags are well distinguished when collection and transportation of waste is done. It is recommended to use white-colored or transparent liners for recyclable waste, and a black-colored liner for general waste.

6.1.4 All commercial premises shall provide, or require all its tenants to provide, an adequate number and capacity of recycling containers in sufficient number and capacity to accommodate all recyclable materials and solid waste.



- 6.1.5 All construction and demolition waste sites shall provide appropriate containers for general waste and recycling waste. A sufficient number of containers shall be provided to accommodate all the recyclable materials and solid waste.
- 6.1.6 All residential building, developments and complexes shall provide common area for recycling containers in sufficient number and capacity to accommodate the aggregated quantity of materials to be generated by all occupants.
- 6.1.7 All industrial facilities shall provide sufficient number of internal and external recycling bins to accommodate both recyclable materials and solid waste generated. They should also provide sufficient number of hazardous bins if hazardous waste is being generated in their premises.
- 6.1.8 All institutional facilities shall provide sufficient number of internal and external recycling bins to accommodate both recyclable materials and solid waste generated.
- 6.1.9 All Recycling containers shall be placed in locations that are convenient to tenants, such as the locations of general waste bins.
- 6.1.10 All containers shall be well maintained to avoid any spillage or leakage of waste from the containers. Overflow of waste in containers should be avoided at all times; hence, it is recommended that the containers are suitably designed to accommodate the generated waste in the premises.
- 6.1.11 For containers that require liners, such as the two-bin system and three bin or more system, biodegradable liners are recommended when found suitable.

6.2 Waste Generators

- 6.2.1 Waste generators shall be responsible for the source segregation of solid waste and recyclables at the point of generation. All recyclable materials shall be placed into appropriately designed containers. Premises should ensure that recyclable materials

are collected and transported separately from the remaining municipal solid waste. Table 1 provides the recyclable materials and categories required to be segregated at source.

- 6.2.2 Properties or locations having Construction and Demolishing works shall segregate inert aggregates, metals, timber, dry recyclables and hazardous materials.
- 6.2.3 All waste generators shall be responsible for making necessary arrangement for the collection, transportation and treatment of the collected recyclable material to a DM authorized processing or export company.
- 6.2.4 All waste generators should keep a record of the quantity of the recyclable materials collected for processing as well as the solid waste generated for disposal, which include general waste and recyclable waste. The report should be submitted in a monthly basis to Dubai Municipality and should include the general waste generated, the recyclable waste generated, and the recyclable waste sent to recycling facilities. The record should also be available at all times for when Dubai Municipality conducts an unannounced audit.
- 6.2.5 All premises shall store all recyclable materials separately and safely, in such a manner that it is secured from contamination.
- 6.2.6 The premises management is required to provide a space for safe and sanitary storage of general waste and recyclable materials. The area needs to be kept clean and should meet appropriate health and safety standards and regulations. The effectiveness of the recycling program can be improved by setting aside distinct areas for segregating and temporarily storing solid waste and recyclables before collection. Cleaners, waste management companies and, where applicable, business owners need to have easy and safe access to these areas. The areas should be clearly identified with appropriate signage that is color-coded for general waste and recyclables. Paths can be color coded to guide individuals on where to place the general waste and recyclables. Space for cardboard compactors and skips may also be needed.

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6.2.7 All premises are required to assign or designate a waste management associate whose responsibility is to oversee the premises source segregation, recycling program, and other waste management related tasks.

6.3 Waste Management Companies

6.3.1 Waste management companies shall provide regular, reliable and separate collection of recyclables to any customer whom they provide solid waste and recyclables collection services.



6.3.2 Waste management companies shall transport any recyclables that they have collected or picked up to a DM approved processing and treatment facility.

6.3.3 Waste Management companies shall use different (separate) vehicles in the collection of solid waste and recyclable materials. A separate program for the collection of both materials should be in place.

6.3.4 Waste Management companies shall provide detailed report of the waste generator's collected waste periodically and as often as the waste generator requires. The report should include, but not limited to the following: weight per category (e.g. general waste, recyclable waste, hazardous waste), weight per day, the contracted disposal premises (waste processing or treatment facilities).

6.3.5 Waste Management companies shall be requested to provide the data of quantity of waste being exported to other emirates or other countries, along with the evidence of delivery/disposal at treatment and processing facility.

6.3.6 Waste Management companies shall obtain authorization from Dubai Municipality to collect and transport recycling material.

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6.3.7 Waste Management companies are responsible to schedule the collection in a suitable manner with the waste generators to avoid disruption of the daily operations and activities in waste generator premises.

6.4 Waste Processing Companies


6.4.1 Waste processing companies should consider using state of the art equipments and processes to obtain maximum material recovery and minimum residual.

6.4.2 Waste processing companies are required to send a report to the materials generating premises which includes the quantity of recyclable materials (all of each type) processed and the quantity rejected for treatment.

6.4.3 Waste processing companies should provide reports to Dubai Municipality periodically (and as often as WMD requests), and the reports should include the total waste quantities being sent to their facilities, the rejected quantities, and the quantities being treated at their facilities.

7. Fines

The Mandatory Waste Segregation Guideline is aimed at long term waste management sustainability in the Emirate of Dubai. In order to achieve the sustainability target, a collective effort from everybody is needed. DM believes that environmental stewardship shall drive all of the sectors to implement the program comprehensively. To enforce the implementation of the guideline on the relevant stakeholders, fines shall be imposed to those who continuously and deliberately ignore this order, which include but not limited to, waste generators and transporters.

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