

REQUEST FOR CITY COUNCIL CONSIDERATION

Meeting Date: June 29, 2022

Agenda Item: 2B	Prepared for: Mike Mahaney
Agenda Section: Business: Ordinance. First Reading	Date: June 23, 2022
Subject: To amend Chapter 12, Article VIII, Section 12-111 (d), Definitions.	Division: Legal

Background:

In Chapter 12, Article VIII, Section 12-111 (d), Definitions, a reusable bag is defined as:

“Reusable bag means a bag with handles that is specifically designed and manufactured for multiple reuse and made of durable material specifically designed for and provided to consumers with the intention of multiple, long-term use and does not include any film plastic bags.”

Research indicates that ...

1. Film plastic bags in excess of 2.25 mils thick are washable and may be reused up to 125 times.
2. Film plastic bags with a minimum thickness of 2.25 mils or 50+ microns are less expensive than paper or cloth alternatives and more readily available to merchants.
3. Film plastic bags with a thickness greater than 50 microns will not be mistaken as food by animals.
4. The worldwide standard since 2016 for film plastic bags calls for a minimum thickness of 50 microns.

Subsequently, the proposed amendment to the ordinance would allow film plastic bags with a thickness equal to or greater than 2.25 mils.

Recommended Action:

Approve the ordinance on first reading

Reviewed by Department Head	Reviewed by City Manager	Reviewed by City Attorney
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Council Action:
Motion By _____ 2nd By _____ To _____

ARTICLE VIII. SALE, USE OR DISTRIBUTION OF SINGLE-USE CARRYOUT PLASTIC BAGS BY RETAIL ESTABLISHMENTS WITHIN THE CITY¹

Sec. 12-111. Definitions.

- (a) *Customer* means any person purchasing goods from a retail establishment.
- (b) *Single-use carryout plastic bag* means a bag provided by a company or individual to a customer, typically at the point of sale, for the purpose of transporting purchases, which is made predominantly of plastic derived from petroleum or a biologically-based source. This definition includes bags provided to a customer to transport items provided free of charge, including but not limited to, samples and informational materials.
- (c) *Exempt bags* means any bag without handles provided to a customer (1) to protect food or merchandise from being damaged or contaminated by other food or merchandise, when items are placed together in a reusable bag or recyclable bag, including produce bags; (2) to hold prescription medications dispensed from a pharmacy or veterinary office; (3) designed to be placed over articles of clothing on a hanger, including dry cleaning bags; (4) door hanger bags, (5) newspaper bags, (6) garbage bags; (7) pet waste bags; (8) yard waste bags; (9) bags of any type that a customer previously owned and brings to a retail establishment for his or her own use in carrying away store goods.
- (d) *Reusable bag* means a bag with handles that is specifically designed and manufactured for multiple reuse and made of durable material specifically designed for and provided to consumers with the intention of multiple, long-term use ~~and does not include any film plastic bags.~~ If a reusable bag is plastic, it shall be 2.25 mils or more in thickness, measured according to the American Society of Testing and Materials (ASTM) Standard D6988-13.
- (e) *Retail establishment* means any entity or individual engaged in the retail sale of goods. Retail establishment includes any supermarket, grocery store, convenience store, shop, service station, restaurant, farmers' market vendor, and any other sales outlet where a customer can directly purchase goods, materials and products.

(Ord. No. 19-22, § 1, 4-15-19, eff. 1-1-21; Ord. No. 20-11, § 1, 5-4-20, eff. 1-1-22; Ord. No. 21-46, § 1, 12-6-21, eff. 7-1-22)

Sec. 12-112. Single-use carryout plastic bags prohibited; exceptions.

- (a) No retail establishment shall provide to any customer a single-use carryout plastic bag, unless noted in exceptions below.
- (b) *Exceptions:* Although the discontinuation of the use of single-use carryout plastic bags is strongly encouraged by the City of North Myrtle Beach this article shall not apply to exempt bags as defined in section 12-111(c).

¹Editor's note(s)—Ord. No. 21-46, § 1 adopted December 6, 2021, shall become effective July 1, 2022.

(Ord. No. 19-22, § 1, 4-15-19, eff. 1-1-21; Ord. No. 20-11, § 1, 5-4-20, eff. 1-1-22; Ord. No. 21-46, § 1, 12-6-21, eff. 7-1-22)

Sec. 12-113. Penalty.

A violation of this article shall be prosecuted in the same manner as misdemeanors and upon conviction the violator shall be punished according to the general penalty provisions of this Code in section 1-6.

(Ord. No. 19-22, § 1, 4-15-19, eff. 1-1-21; Ord. No. 20-11, § 1, 5-4-20, eff. 1-1-22; Ord. No. 21-46, § 1, 12-6-21, eff. 7-1-22)

Sec. 12-114. Effective date.

The article shall become effective January 1, 2022 to allow retail establishments to expend their current stock of single-use plastic bags and transition to acceptable, alternative products.

(Ord. No. 19-22, § 1, 4-15-19, eff. 1-1-21; Ord. No. 20-11, § 1, 5-4-20, eff. 1-1-22; Ord. No. 21-46, § 1, 12-6-21, eff. 7-1-22)

DONE, RATIFIED AND PASSED THIS _____ DAY OF _____, 2022.

ATTEST:

Mayor Marilyn Hatley

City Clerk

APPROVED AS TO FORM:

FIRST READING: 6.29.2022

City Attorney

SECOND READING:

REVIEWED:

ORDINANCE:

City Manager

California Ordinance

PUBLIC RESOURCES CODE - PRC

DIVISION 30. WASTE MANAGEMENT [40000 - 49654]

(Division 30 added by Stats. 1989, Ch. 1096, Sec. 2.)

PART 3. STATE PROGRAMS [42000 - 42999]

(Part 3 added by Stats. 1989, Ch. 1096, Sec. 2.)

CHAPTER 5.3. Single-Use Carryout Bags [42280 - 42288]

(Chapter 5.3 added by Stats. 2014, Ch. 850, Sec. 1.)

ARTICLE 2. Reusable Grocery Bags [42281 - 42282.1]

(Article 2 added by Stats. 2014, Ch. 850, Sec. 1.)

42281.

(a) On and after July 1, 2015, a store, as defined in paragraph (1) or (2) of subdivision (g) of Section 42280, may sell or distribute a reusable grocery bag to a customer at the point of sale only if the reusable bag is made by a producer certified pursuant to this article to meet all of the following requirements:

- (1) Has a handle and is designed for at least 125 uses, as provided in this article.
- (2) Has a volume capacity of at least 15 liters.
- (3) Is machine washable or made from a material that can be cleaned and disinfected.
- (4) Has printed on the bag, or on a tag attached to the bag that is not intended to be removed, and in a manner visible to the consumer, all of the following information:
 - (A) The name of the manufacturer.
 - (B) The country where the bag was manufactured.
 - (C) A statement that the bag is a reusable bag and designed for at least 125 uses.
 - (D) If the bag is eligible for recycling in the state, instructions to return the bag to the store for recycling or to another appropriate recycling location. If recyclable in the state, the bag shall include the chasing arrows recycling symbol or the term “recyclable,” consistent with the Federal Trade Commission guidelines use of that term, as updated.
- (5) Does not contain lead, cadmium, or any other toxic material that may pose a threat to public health. A reusable bag manufacturer may demonstrate compliance with this requirement by obtaining a no objection letter from the federal Food and Drug Administration. This requirement shall not affect any authority of the Department of Toxic Substances Control pursuant to Article 14 (commencing with Section 25251) of Chapter 6.5 of Division 20 of the Health and Safety Code and, notwithstanding subdivision (c) of Section 25257.1 of the Health and Safety Code, the reusable grocery bag shall not be considered as a product category already regulated or subject to regulation.
- (6) Complies with Section 260.12 of Part 260 of Title 16 of the Code of Federal Regulations related to recyclable claims if the reusable grocery bag producer makes a claim that the reusable grocery bag is recyclable.

(b) (1) In addition to the requirements in subdivision (a), a reusable grocery bag made from plastic film shall meet all of the following requirements:

(A) On and after January 1, 2016, it shall be made from a minimum of 20 percent postconsumer recycled material.

(B) On and after January 1, 2020, it shall be made from a minimum of 40 percent postconsumer recycled material.

(C) It shall be recyclable in this state, and accepted for return at stores subject to the at-store recycling program (Chapter 5.1 (commencing with Section 42250)) for recycling.

(D) It shall have, in addition to the information required to be printed on the bag or on a tag, pursuant to paragraph (4) of subdivision (a), a statement that the bag is made partly or wholly from postconsumer recycled material and stating the postconsumer recycled material content percentage, as applicable.

(E) It shall be capable of carrying 22 pounds over a distance of 175 feet for a minimum of 125 uses and be at least 2.25 mils thick, measured according to the American Society of Testing and Materials (ASTM) Standard D6988-13.

(2) A reusable grocery bag made from plastic film that meets the specifications of the American Society of Testing and Materials (ASTM) International Standard Specification for Compostable Plastics D6400, as updated, is not required to meet the requirements of subparagraph (A) or (B) of paragraph (1), but shall be labeled in accordance with the applicable state law regarding compostable plastics.

(c) In addition to the requirements of subdivision (a), a reusable grocery bag that is not made of plastic film and that is made from any other natural or synthetic fabric, including, but not limited to, woven or nonwoven nylon, polypropylene, polyethylene-terephthalate, or Tyvek, shall satisfy all of the following:

(1) It shall be sewn.

(2) It shall be capable of carrying 22 pounds over a distance of 175 feet for a minimum of 125 uses.

(3) It shall have a minimum fabric weight of at least 80 grams per square meter.

(d) On and after July 1, 2016, a store as defined in paragraph (3), (4), or (5) of subdivision (g) of Section 42280, shall comply with the requirements of this section.

(Added by Stats. 2014, Ch. 850, Sec. 1. (SB 270) Effective date postponed (until November 9, 2016) by referendum petition. Approved in referendum Proposition 67 at the November 8, 2016, election.)

Thickness of Plastic Carry Bags – An Overview

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Abstract - In the present article, the effects of plastic carry bags basing on its thickness and the measures taken by the government of India was discussed. Plastic carry bags are in general made from polythene and are often used for the purpose of carrying or supplying commodities. The option of plastic carry bags is attributed to its outstanding barrier properties and water-proof properties, safety in handling due to their non-breakability nature and also very light in weight. The main problem with carry bags lies with difficulty in degradation. In addition, it clogs drains and thus cause great problem to urban sewage systems. Choked carry bags in drains increases breeding areas for mosquitoes, besides causing floods during the monsoon. The use of plastic carry bags with less than 20 microns may be mistaken as food by animals and by the consumption of plastic carry bags by animals causes lot of health problems. The central Government of India has notified the Plastic Waste Management Rules, 2016 according to which the minimum thickness of plastic carry bags has been increased from 40 microns to 50 microns. This will help in achieving facilitate collection and recycle of plastic waste. Also an emphasis has been laid by the government to promote use of plastic waste in construction of roads in accordance with the Indian Road Congress guidelines, or it may be used in energy recovery, or to convert plastic waste to oil etc. that finally result in profitable utilization of waste.

Key words: *manufacture, properties, recycling, thickness of carry bag.*

I. INTRODUCTION

Plastic bags, also termed "poly bags," are considered as one of those modern inventions that have brought many comforts to human life. But this was not the situation 70 years ago. By then no one ever considered plastic bag. In those times, people also managed to get without carry bag. Plastic bags are made from polyethylene. Polyethylene was first prepared accidentally by Hans von Pechmann [1], a German chemist in 1898, while he was heating diazomethane. The structure of polyethylene is as shown in figure1.

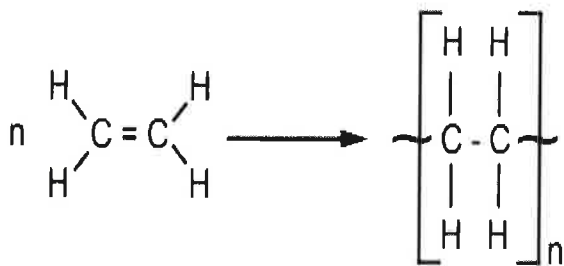


Figure 1: structure of polyethylene

Polyethylene [2] is produced from monomer ethylene (IUPAC name ethene). Its formula is C_2H_4 . Ethylene is mainly produced from petroleum or natural gas [3].

Polyethylene can be synthesized by a variety of methods like radical polymerization, cationic addition polymerization, or coordination polymerization etc. Each method gives different varieties of polyethylene.

Manufacturing process of polyethylene carry bag:

The polyethylene in the pellet form is used for plastic bag manufacturing. The machine that is used to manufacture the plastic bags constitutes of an extruder and die assembly.

Blown film extrusion is carried out vertically upwards. A schematic diagram for blown film extrusion moulding is represented in figure 2. The procedure is constituted of four important steps:

1. The polymeric material taken in the form of a pellet is compacted and then melted to form a continuous, viscous liquid. This molten plastic is then extruded through an annular die.
2. The injection of air is then made through a hole that is present at the centre of the die. And because of the pressure, the extruded melt expands in the form of a bubble. The air entering the bubble replaces the air leaving it, and hence an even and constant pressure is maintained that helps to maintain a constant thickness of the film.

- The bubble is pulled constantly upwards from the die and with the help of a cooling ring, air is blown onto the film. With the aid of internal bubble cooling, the film may also be cooled from the interior. This eventually decreases the temperature inside the bubble and the bubble diameter is still maintained.
- After the solidification process, the film is made to move into a set of nip rollers that results in the collapse of bubble and flattening it into two flat film layers. Finally, pulling of the film onto wind up rollers is done by puller rolls.

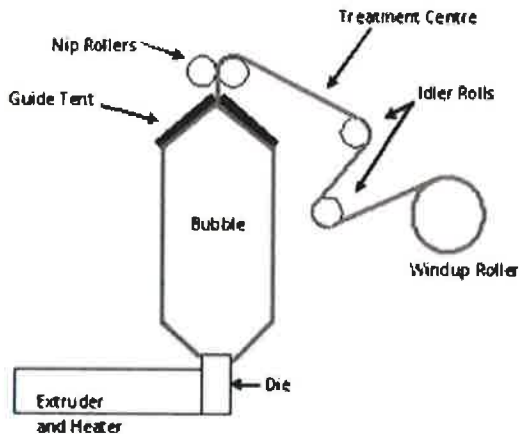


Figure 2: Blown film moulder

During processing, the polyethylene may be treated with additives, like Anti-block agents that help in prevention of the plastic layers from sticking together, Ultraviolet inhibitor that protects the plastic from ultraviolet radiation.

Properties of polyethylene:

The properties of polyethylene may be classified into mechanical, chemical, electrical, optical, and thermal properties.

Thermal properties

The melting point of polyethylene vary with the type of polyethylene. The medium and high-density polyethylene commercial grades possess the melting point in the range of 120 to 180 °C and in the case of average, low-density polyethylene, the melting point lies in the range of 105 to 115 °C.

Mechanical properties:

Polyethylene possesses very low strength, hardness and rigidity, and a high ductility and high impact strength. Polyethylene shows strong creep under constant force that can be decreased by adding of short fibers. Polyethylene is waxy to touch.

Chemical properties

Polyethylene is constituted of saturated, non polar, high molecular weight hydrocarbons and its chemical behaviour is analogous to paraffin. In highly crystalline polyethylene,

density, chemical stability and mechanical strength also increases.

LDPE, MDPE, and HDPE grades possess good chemical resistance. Crystalline samples are not soluble at room temperature. Polyethylene is soluble at high temperatures in non polar solvents like toluene or in xylene, or in chlorinated solvents. Polyethylene does not absorb water. The gas and water vapour permeability is very low when compared to other plastics. PE becomes brittle when exposed to sunlight.

Electrical properties

Polyethylene is a good electrical insulator.

Optical properties

Basing on film thickness and its thermal history, PE may be clear (transparent) or milky-opaque (translucent) or opaque.

Applications of carry bags

Polythene carry bags are generally used for the purpose of carrying or supplying commodities. The main features that evolved the use of plastics widespread in packaging materials, and especially in carry bags, are: Chemical resistance and inertness, superb barrier properties and water-proof characteristics, Safe in handling because of non-breakable property and very light in weight, Transparency for visibility of content being packed. If needed, it may also be made opaque for the protection of content from exposure to sunlight. It shows greater resistance to bacterial as well as to other kinds of microbial growth.

II. PLASTIC AND ENVIRONMENT

The Current Scenario of plastic products has developed into an integral part of our daily life, ranging its production to cross over 150 million tonnes per year globally. With its origin in 1957, the Indian plastics industry has also shown a prominent growth. Around 30,000 processing units are being operated that include small and medium enterprises. The use of plastics are in many ways like toys, aircrafts, hosepipes, soft drink bottles, refrigerators, television sets etc.

The very fabulous properties that have made plastic such a requisite for modern living also pose several problems when once its useful life is over. Plastic find application in paints, window frames and cable coverings to prevent rotting, but this makes degradation enormously difficult. Plastic food packaging enhances the shelf life of foods, and provides a hygienic, cheap and flexible range of wrappings. Even though it has got several benefits for the food firms, the vast increase in plastic packaging has very much amplified plastic waste and, as a result, serious environmental problem.

Effects of carry bags:

Plastic bags generally block drains and thus majorly disturb urban drainage systems. Choked drains create breeding



atmosphere for mosquitoes, also causing floods during the monsoon. Because of indiscriminate dumping of plastic bags on land, toxic metals such as lead and cadmium pigments could leach into underground water [4, 5]. The use of plastic carry bags may be mistaken as food by animals and by the consumption of plastic carry bags by animals causes lot of health problems [6, 7]. Garbage mixed with plastic bags disturbs the waste processing facilities and could lead to trouble in landfill operations. As plastic bags cannot be subjected to bacterial decomposition, land filling with plastic bags would mean retaining the poison forever. Buried plastics take hundreds of years for degradation. Incineration may result in the emission of harmful gases.

Measures taken by Government of India to reduce plastic waste:

For the restriction the sale of some products in plastic carry bags, a ruling under the provisions of the Environment Protection Act 1986 has been passed by the central government of India. A ban on the manufacture and use of plastic carry bags that are below 8 inches x 12 inches in size and 40 microns in width was imposed by the Ministry of Environment, Forests and Climate Change. The ministry has also ordered state governments to register all plastic manufacturing units, in order to regulate them. Rules/Notices based on Plastic Bag Usage and Ban Plastic (Management and Handling) Rules, 2011, Recycled Plastics Manufacture and Usage Rules were given by Government of India in the 1999 [8] and are amended in the year 2003 to manage the manufacture, sale and use of virgin and recycled plastic carry bags as well as recycled plastic containers. These rules prohibit the manufacture, stocking, distribution and selling of carry bags that are made of either virgin or recycled plastic having size lesser than 20 x 30 cm and lesser than 20 microns in thickness. This rule prohibits the use of recycled plastic bags and containers for carrying, storing, packaging or supplying of food items. Under these rules, prior to the commencement of production, industries manufacturing plastic bags should necessarily register with their respective State Pollution Control Boards or Pollution Control Committees.

For enhancing better management of plastic waste, the earlier Recycled Plastics Manufacture and Usage Rules, 2003 are replaced with the government had given the Plastic Waste (Management and Handling) Rules, 2011. As per the new rules, the minimum thickness of plastic bags has been increased to 40 microns and recycled carry bags made from compostable plastics need to comply with Bureau of Indian Standards (BIS) norms.

Recently, the Government has notified the Plastic Waste Management Rules, 2016 [9], in place of the earlier Plastic Waste (Management and Handling) Rules, 2011. According to these rules, the minimum thickness of plastic carry bags has been raised from 40 microns to 50 microns. Almost, of the 15000 tonnes of plastic waste generated every day, about 9000 tonnes is collected and

processed. The rules, which were admissible upto municipal areas, have now been extended to all villages.

The Plastic Waste Management Rules, 2016 intend at:

Increasing minimum thickness of plastic carry bags from 40 to 50 microns and specify minimum thickness of 50 micron for plastic sheets for facilitating collection and recycling of plastic waste. It also include:

1. Expansion of the jurisdiction of applicability from the municipal areas to rural areas, as plastic is prevalent in rural areas too.
2. To assign the responsibilities to producers and generators, both in plastic waste management system and to establish collect back system of plastic waste by the producers/brand owners, as per extended producer's responsibility.
3. To initiate collection of plastic waste management fee by pre-registration of the producers, importers of plastic carry bags and vendors selling the same for setting up the waste management system.
4. To encourage use of plastic waste in road construction as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for profitable utilization of waste and also address the waste disposal issue; to assign more responsibility on waste generators, like payment of user charge as given by local authority, collection and handing over of waste by the institutional generator, event organizers.

Apart from this, the supposed outcome from the new rules comprises:

(i) Increase in the thickness of carry bags and plastic sheets

By increasing the thickness of plastic carry bags from 40 to 50 micron and specification of 50 micron thickness for plastic sheets may raise the cost by about 20 %. This will cut down tendency to provide free carry bags. Also, collection by the waste-pickers increases.

(ii) Collect back system

The establishment of the collect back system of waste generated from different products by the producers or brand owners of those products will enhance the collection of plastic waste, its reuse or its recycle.

(iii) Decline of manufacture and use of non- recyclable multilayered plastic

Production and use of non-recyclable multilayered plastic if any must be phased out in two years' time.

(iv) Responsibility of waste generator

All institutional generators of plastic waste, should separate and store the waste generated by them as per the Solid Waste Management Rules, and the segregated wastes should be handed over to authorized waste processing or disposal facilities either on its own or through the authorized waste collection agency.

All waste generators should pay the prescribed user fee, or charge, as may be notified in the bye-laws of the local bodies for plastic waste management.

Every individual that hold responsibility for organising an event in open space involving service of food stuff in plastic, or multilayered packaging, has to segregate and manage the waste produced in such events, as per the Solid Waste Management Rules.

(v) Responsibility of local bodies and Gram Panchayat

The local bodies shall be responsible for setting up, operationalisation and co-ordination of the waste management system and for executing associated functions.

(vi) Responsibility of retailers and street vendors

Retailers or street vendors shall not sell, or provide commodities to consumers in carry bags, or plastic sheet, or multilayered packaging, that are not manufactured and labelled or marked, as given under these rules.

Every retailer, or street vendor, selling or providing commodities in, plastic carry bags or multilayered packaging or plastic sheets, or like, or covers, made of plastic sheets that are not manufactured, or labelled, or marked, in accordance with these rules shall be penalised, as given under the bye-laws of the local bodies.

III. CONCLUSION

Plastic sheets with 50 micron thickness only should be produced. Apart from government initiatives, alternatives to plastic bag can also be considered like reusable bags made of canvas, woven plastic fibre, cotton or leather can be reused many times for shopping. Biodegradable plastics derived from renewable organic sources, such as vegetable oil, corn starch and pea starch that are capable of getting decomposed by bacteria or other living organisms can be preferred.

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