

NON STANDARDISED RECEPTACLES FOR WASTE COLLECTION - BAGS AND SACKS

APPLICATION OBJECTIVE - Collection of municipal solid waste and small amounts of commercial waste for a one-way pick-up or non-systematic waste collection

OUTLINE ON APPLICATION FRAMEWORK

PARTICULARLY APPLICABLE FOR WASTE TYPES

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|-----------------------|---|---|---|---------------------------------|---|
| Glass | X | Light-weight packaging | X | Biowaste | X |
| Paper / paperboard | X | Mixed household waste | X | Bulky waste | |
| Lamps | | Textiles | X | Electrical and electronic waste | |
| Scrap metal | | Wood waste | | C&D waste | |
| Waste oil | | Old paint & lacquer | | Waste tyres | |
| Hazardous waste | | | | | |
| Branch specific waste | | | | | |
| Other waste materials | X | principally any type of solid waste that arises continuously or discontinuously at a specific place in rather small amounts | | | |

SPECIAL CHARACTERISTICS AND REQUIREMENTS OF THE APPLICATION

Pre-treatment of the input material:

not necessary, except of size reduction for oversized items to fit bag dimension

Options for the utilisation of the generated output:

unlimited, no dependencies from type of container used

Protective needs:

- Storage of filled bags must take place in places sheltered from strong wind and access of scavenging animals.
- there could be health dangers during collection and transport caused by the uncontrolled discharge of sharp pieces into these receptacle
- easy to destroy (e.g. by vandalism and animals), quick disposal advisable

Limitations in use:

the kind of receptacle is not suitable to capture liquid, hot, especially bulky or heavy wastes

RESTRICTIONS OR INFLUENCE OF EXTERNALITIES ON THE APPLICATION

Infrastructural conditions:

unlimited use, sometimes not suitable due to aesthetic reasons in certain environs and urban settings (e.g. tourism spots, historical areas)

Climatic conditions:

partly/not weatherproof

TECHNICAL DETAILS

GENERAL OVERVIEW

ABSTRACT

Non-standardised receptacles are still a common solution for the waste collection in many countries. In Europe, the collection of packaging is often done with 80 l-sacks. They can be used for the non-systematic collection, as a complement or to provide surplus amounts in a system using pick-up methods for standardised receptacles such as mobile waste containers (See fact sheet "[Mobile waste containers](#)"), but also form a collection system on their own. A distinct feature is that these receptacles are given away for disposal together with the waste they contain.

The following criteria were specified for the collection of lightweight packaging via the dual collection system „Green Dot“ in Germany:

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| | <ul style="list-style-type: none"> - material: LDPE foil - colour: yellow-transparent - thickness: 22 µm - strain: at least 15 Mpa - volume: 90 l |
| <p>BASIC REQUIREMENTS</p> | <ul style="list-style-type: none"> - No special truck technology is necessary. As a rule, a rear-end loader with internal press and low-lying slot is used. |
| <p>SPECIFIC ADVANTAGES</p> | <ul style="list-style-type: none"> - very low investment needs - very flexible in terms of deliverable waste amount - no specific requirements for collection vehicles - easy implementation of the pay-as-you-throw principle by the use and sale of specially marked sacks |
| <p>SPECIFIC DISADVANTAGES</p> | <ul style="list-style-type: none"> - prone to damages, burning or destruction by extern force or improper use - usually not weather proof and resistible to external forces - negative influence on the aesthetic appearance of the area, higher risk of injuries and adverse health effects when placed at the curb - very labour intensive during collection - additional expenses from the organisation of the sale or distribution - exact amounts of the forwarded waste hardly measurable |
| <p>APPLICATION DETAILS</p> | |
| <p>TECHNICAL SCHEME</p> | <p>Common types of sacks have a volume of 50 litres to 120 litres and consist of materials PE-LD, PE-HD and rather seldom kraft paper. In recent years, biological degradable bags are used for collecting biowaste by private households. The biodegradability of the bags allows a collection of these bags in the biowaste container.</p> <p>Figure 1: Supply of bags for separate collection of light-weight packaging (right), kraft paper bag for green waste (centre) and biological degradable bag (left) (picture source right: Intecus GmbH, picture sources centre, left: Harald Heinritz, www.abfallbild.de)</p> <div data-bbox="395 1256 1417 1671"> </div> |
| <p>QUANTITY ASPECTS</p> | <p>Depending on the dimension of the collection area, the to-be-collected material, the vehicle and the type, about 2,400 waste sacks can be picked up from one collection crew during an ordinary shift. Is the sack used as a complement for surplus amounts to the collection with the mobile waste container system, a number of less than 10 sacks picked up during a tour for container emptying is usual in Germany.</p> |
| <p>SCALE OF APPLICATION</p> | <p>All types of solid waste, which may be filled into the foreseen sacks/bags.</p> |
| <p>INTEROPERABILITY</p> | <p>not bound to any system</p> |

| OPERATIONAL BENCHMARKS: RESOURCE CONSUMPTION | |
|--|---|
| HUMAN RESOURCES | The pick-up is usually done from the crew of the collection vehicle which is usually composed of 1 driver and one or more additional haulers. |
| AIDS AND ADDITIVES NEEDED | none |
| SPATIAL NEEDS | The space requirements are very low. Receptacles of that kind should however be protected from weather and animals and placed safely on the curb or elsewhere. |
| OPERATIONAL BENCHMARKS: COST DIMENSIONS | |
| INVESTMENT COSTS | <p>The costs for waste sacks are very low, for other receptacles used they may even be zero. A sack costs between 0.16–0.50 Euro depending on the quality and number of pieces ordered. There are racks for these sacks available. The prices are very variable, a durable and high quality rack in Germany can cost up to 60 Euros.</p> <p>Compared to the collection with bins, extra costs for the sale/distribution of the sacks might occur. This relevant if levying of fees is foreseen.</p> |
| OPERATING COSTS | <ul style="list-style-type: none"> - no running costs for repair and maintenance - sale of waste sacks (in Germany): about 0.05 Euro per sack |
| MISCELLANEOUS | |
| MARKET INFORMATION | |
| REFERENCE FACILITIES | The use of non-standardised receptacles for waste collection is yet a common phenomenon throughout the world. In Europe, the collection of residual waste as well as for light-weight packaging waste is yet very often performed in that way. |
| RECOGNIZED PRODUCER AND PROVIDER FIRMS <i>(important note: the list of firms does not constitute a complete compilation of companies active in the specified fields)</i> | <p>Production and retail of waste sacks can be done from various, particularly small and medium-sized enterprises. In Germany, such are for example:</p> <ul style="list-style-type: none"> - TransPak AG, Solms www.transpak.de - WBV Eselgrimm GmbH und Co., Oelde www.wbv-worldwide.com |
| REMARKS AND REFERENCE DOCUMENTS | |
| <p><u>Reference for applicable norms/standards in Germany:</u></p> <ul style="list-style-type: none"> - DIN EN ISO 527 1-4: Plastics - Determination of tensile properties | |