



APPLICATION OBJECTIVE

To facilitate the collection, storage and transportation of various types of solid waste in a system with container exchange.

WASTE TYPES

Paper/paperboard	C&D Waste
Scrap metals	Waste tyres
Glass	Bulky waste incl. Electronic & household appliances
Wood waste	
Other waste materials	<i>Especially solid waste</i>

SPECIAL CHARACTERISTICS AND REQUIREMENTS OF THE APPLICATION

PRETREATMENT OF THE INPUT MATERIAL:

Not necessary, except of size reduction for oversized items to fit container dimension.

OPTIONS FOR THE UTILISATION OF THE OUTPUT:

Unlimited, no dependencies from type of container used

RESTRICTIONS OR INFLUENCE OF EXTERNALITIES ON THE APPLICATION

INFRASTRUCTURAL CONDITIONS:

The container system is especially useful in areas offering sufficient space and if set up at centralised locations with good access. They are perfectly suited to serve at bring stations/public amenity sites where bulky items, such as household devices, old furniture etc., and mass materials from households with a high density, like glass cullets or graphic waste paper are collected.

The site should have a paved, compacted or otherwise stabilized surface in order to prevent the containers from sinking into the ground once they are getting filled. To set a skip container out and pick it up, a maximum ground inclination of 5 % should not be exceeded.

CLIMATIC CONDITIONS:

In cold climates there is a danger that skip containers may get frozen on the ground.

TECHNICAL DETAILS

GENERAL OVERVIEW

Abstract

The skip container system is one of the most widely used standard containers for collection and transportation as regards the specific manner in which the container is picked up and fixed at the transportation vehicle.

Similar to the roll-off container system, this is a simple and very frequently used container version for the collection and transport of single large waste quantities in an exchange system (i.e. full container is exchanged against an empty one and then carried away). Beside vehicles with the appropriate chassis there trailers can also be used for the transportation. Loading and unloading is normally done by the trucks.

Basic requirements

- A plain and easily accessible space of appropriate size to set out the container and a suitable truck chassis with skip handler for pickup and transportation

Specific advantages

- Interchangeability of the container
- Wide spectrum of applications for various types of goods to be transported
- Can be used during different waste management stages (from collection to storage container for waste processing, but most particularly for transport)
- Many compatible versions
- Reasonable in price due to high degree of standardisation

Specific disadvantages

- No compression within the container possible, except for special (press container) versions
- There are more suitable solutions for long-distance transportation

APPLICATION DETAILS

Technical scheme



Figure 1 : Basic version of skip container and superstructure at



Figure 2 : Basic version of skip container and superstructure at



Figure 3: Skip container version with cover



Figure 4: Large-sized skip container version



Figure 5: Skip container version for the separation of wooden chips

Further information of the container system may include tipping and compressing installations for the mobile collection, stackable container version or versions with foldout side – or backwalls.



Skip Container System

SCS

Quantity aspects

Carrying capacity generally lower than that roll-off container. The carrying capacity is limited by the allowed total load of the vehicle and the container type (permitted container load).

Scale of application

- Volume of the different skip container versions: in a range of 1 – 20 m³
- Total length: varies between 1500 and 4800 mm with the width being normally 1520 mm.
- Container height: depends on the specific version, for the basic version it is about 1500 mm.
- Container weight: in the range of 300 kg – 1500 kg, depending in the specific version and use.

Inter-operability

In addition to a number of special containers versions with integrated functions (see pic.e) there can also be a compacting unit attached to this container system to increase the carrying mass over volume.

Further to a direct transportation on trucks there is also the possibility to put skip container on trailers. In this case, loading and unloading is normally done from the trucks.

OPERATIONAL BENCHMARKS

Aids and additives needed

Trucks need to have a skip handler to transport skip containers. For a skip container with integrated compressing unit a heavy current supply is needed.

**Human resources needed/
Spatial needs**

- **Human resources needed**
 - One truck driver (who executes also all necessary operations such as loading/unloading)
- **Spatial needs**
 - A skip container requires at least a space of 3000 x 1900 mm, depending on the specific version. Additional space is needed to give access to the truck and to the temporarily set out another container in exchange.

**Investment/
Operating costs**

The capital needs (investment) for a skip container system are as follows:

- 1 truck (3 axes, 13 Mg carrying capacity): 45,000 – 55,000 Euro
- Superstructure: basic version approx. 27,000 Euro
- Container: basic version approx. 1,500 – 3,000 Euro
- **Operating costs**
Running costs accrue for:
 - Repair and maintenance: per annum 11% of the initial investment
 - Personnel: 1 person (2 in maximum, depending on the operation mode)

Mass specific overall costs

0.1 – 15 EUR/Ton

REFERENCES

Fact sheet based and adapted from 'Best Practice Municipal Waste Management' edited by BMU