

# VANG

HOUSEHOLD WASTE

## *A guide to preventing contamination in the collection of used textile products*

Implementation Programme VANG HHA  
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# 1



## Introduction

# 1. introduction

<sup>1</sup> The action plan is entitled *Aanvalsplan GFT-afval en textiel naar meer en schonere deelstromen*.

In July 2019, an action plan to promote the separation and recycling of organic waste and used textiles<sup>1</sup> was published. The plan is part of the VANG Household Waste Implementation Programme. VANG stands for Van Afval Naar Grondstof (From Waste to Resource). More information about the action plan can be found at [vang-hha.nl/nieuws-achtergronden](http://vang-hha.nl/nieuws-achtergronden).

One element of the action plan is a series of pilot projects specifically designed to improve the quality of used textiles and textile waste. The aim of the projects is to generate information and data in the chain that can be used to learn more about the types of contamination found in waste textiles and how to address them. In this way, municipalities and waste collectors will know where the hotspots are and what causes the contamination and will be able to target measures at the necessary improvements. An important step is to reduce the contamination and the moisture in the waste textiles that are collected. The cleaner the used textiles are, the more marketable the products are for reuse or recycling.

## 1.1 A guide based on the pilot projects

It is crucial to learn more about the entire chain of separation and collection of used textiles, from the consumer to the processor. What is contamination, what causes it and what solutions are there? To analyse the chain, pilot projects were organised in six municipalities that organise the collection of textiles in containers.

Each municipality studied the information that is already available and its needs. The information was gathered and possible solutions were suggested from various perspectives. The detailed information that was collected provided a clear indication of the existing problems and possible solutions. The studies did not cover door to door collection of textiles or collection by recycling companies, thrift shops or charitable organisations.

### Guide

The findings from the six pilot projects have been distilled into practical examples for this guide, which clearly describes various steps that municipalities can take to analyse their own collection system in order to identify specific measures they can take or to choose an alternative collection system. The advice is backed up by findings relating to the causes of contamination of waste textiles, the types of contamination that occur and the steps a municipality can take to prevent the contamination.

### Contamination and the quality of textiles

The pilot projects focused mainly on contamination. That calls, first and foremost, for a consensus on the definition of 'contamination'. An item that a collection/sorting company regards as contamination does not necessarily contaminate an entire consignment of used textiles.

Obviously, non-textile materials do not belong in a textile container. During the sorting process, the sorting companies also remove textiles that are not fit for further reuse or recycling. These are textiles stained with paint or oil or which are damp, for example. Sorters also remove textiles that contain other materials (mainly duvets and cushions, but also floor coverings), as well as large, individual items that could get caught in the conveyor belt during the sorting process, such as curtains and sheets. The sorting company regards everything it removes from the consignment of textiles as contamination. This point is discussed in more depth in section 1.4. In addition to the contamination, the overall quality of a consignment (and the proceeds from it) also depends on the volume of high-quality textiles it contains. This aspect was not considered in the pilot projects. The effects of 'fast fashion' and alternative methods of reusing cloths that are in good condition (by selling it through charity shops or thrift shops, for example) on the quality of the textiles deposited in the container are also disregarded in this guide.

The guide starts with a description of the pilot projects and a further elaboration of the term 'contamination'. It then suggests various ways in which more can be learned about the problem of contamination and possible solutions for it. It is important to note that in a circular economy as much as possible of the textiles (clothing) that are collected should end up as second-hand clothing. This makes it particularly important to avoid contamination of used textiles.

## 1.2 Participants in the pilot projects

This table shows the most important features of each pilot project / municipality.

Municipality	A	B	C	D	E	F
Urban class	Very highly urbanised	Slightly urbanised	Very highly urbanised	Highly urbanised	Very highly urbanised	Slightly urbanised
Tariff differentiation	No	Yes, on disposal of residual waste	No	No	No	Yes, on disposal of residual waste
Collection of residual waste	Mainly containers. Also mini-containers, emptied every fortnight	Rate per bag, collected every four weeks	Mainly containers. Also mini-containers, emptied every fortnight	Combination of containers and mini-containers, emptied every fortnight	Mainly containers. Also mini-containers, emptied every fortnight	Containers
Collection of textiles	Mainly underground containers	Until Feb. 2020 above-ground, bottom-emptied containers, switched now to containers with manual emptying	Mix of above-ground and underground bottom-emptied containers and above-ground containers with manual emptying	Mainly above-ground containers with manual emptying	Mainly underground bottom-emptied containers	Underground bottom-emptied containers
Collector of textiles	Transporter on behalf of Sympany	Sympany	Transporter on behalf of Reshare and Salvation Army	Municipal service	Transporter on behalf of Reshare	Rova
Sorter of textiles	Sympany	Sympany	Reshare	Wolkat via Midwaste	Reshare	Reshare
Focus in pilot project	Research into the best collection method for specific areas	Problem of waste being deposited alongside the container	Variety of systems allows for comparison	Engaged in development and installation of new type of container with roll-out trolleys	Effect of opening up containers for mixed residual waste on contamination in textile containers	Problem of moisture in the containers

## 1.3 Activities in each pilot project / municipality

Activities were planned and carried out in each pilot project / municipality on the basis of the available information and identified needs.

Municipality	
A	Municipality A is carrying out various projects to investigate the quality of the used textiles. They have included analysis of the collected textiles to determine the composition and the extent of contamination. The proportion of textiles (broken down by type) in the residual waste has also been investigated. Residents have also been surveyed about the collection of textiles. Finally, the municipality is currently drafting a long-term plan for the collection of textiles.
B	In Municipality B, officials accompanied a vehicle on a collection route with above-ground containers. They spoke to a number of passers-by, learned about the driver's experiences, and examined the consignment and the contamination at the sorting centre.
C	In municipality C, three different routes were followed: one with underground containers, one with above-ground containers, and one with manual emptying. At the sorting centre, the consignments were examined and the composition of the contamination was analysed.
D	Municipality D recently developed a new type of textile container with roll-out trolleys in collaboration with a supplier. The first new containers were installed at the beginning of 2020. The results of this new system are not yet available.
E	In municipality E, a consignment from underground containers was studied and the contamination was analysed.
F	In municipality F, officials accompanied a driver on a collection route. The driver was interviewed at length and residents were asked about their experience.

## 1.4 What is the definition of contamination?

The definition of what constitutes contamination differs according to one's perspective. However, it is clear to everyone (consumers, the municipality, the collector and the sorter) that non-textile items such as organic waste, paper, DVDs, books, plastic, metal and drink packaging (PMD waste) and other residual waste should not be deposited in textile containers.

Sorting companies, which are the first to receive the collected textiles, need the used textiles to be clean and in good condition for distribution to the reuse and recycling chain. As they sort the textiles, they remove not only the non-textile items, but also textiles stained with paint or oil and items that are damp or moist, as well as textile products which contain other materials (primarily duvets and cushions, but also floor coverings) and large individual textile items that could get caught in the conveyor belt, such as curtains and sheets.

The total volume removed by the sorting company determines the percentage of contaminated materials that is passed on to the municipality. These contaminated materials consist of more than just items that people have wrongly deposited in the textile container. They are comprised of the following categories:

- Non-textile contamination: all the other waste that does not consist of textiles (PMD waste, residual waste, organic waste, cardboard, DVDs, books, etc.).
- Contaminated textile products: textiles with paint or oil stains and wet textiles.
- Textiles which contain other materials (duvets and cushions and floor coverings).
- Large individual pieces of fabric which the collection company regards as contamination because they could block the sorting centre's conveyor belt (loose curtains and sheets).

In a number of the pilot projects, the contaminated articles that were disposed of by the sorting companies were analysed. These analyses showed that contaminated textile products and duvets and cushions, plus a small portion of individual pieces of fabric that could jam the conveyor belt accounted for 70% to 90% of the contamination. The percentage of non-textile contamination was small, constituting a maximum of 30% of all the contamination reported by the sorting company.

## 1.5 Where in the chain do different types of contamination occur?

Contamination with non-textile products, contaminated textile products and textiles that contain other materials (mainly duvets and cushions) can be due to the behaviour of households. Textiles can become wet and dirty because containers fail to function properly or because the wrong collection method is used. Where do specific forms of contamination originate?

- Contaminated textile products, textiles that do not belong in the container (mainly cushions and duvets) and non-textile items such as cardboard, DVDs and books, bags of PMD waste, organic waste and loose residual waste are deposited in the textile container.
- Individual textile items deposited in the container become contaminated or wet more easily in the container or in the collection vehicle. In fact, separate textile products are not always deliberately deposited in the container. Sometimes the item is deposited separately because the regular 60-litre bag does not fit through the opening.
- In the case of underground containers, rain or groundwater gets into the container. If this happens a lot, even textiles in a sealed bag can get wet. Sorting companies automatically treat a bag that is wet (even on the outside) as contamination.
- During collection, contamination can occur if the textiles do not all fit inside the vehicle's trailer and the driver crushes the load with the gripper. As a result, bags can be torn and the textiles can come into contact with loose waste or dirt in the trailer and/or get wet.
- If it rains during collection the textiles can also get wet, especially if they are not in a sealed bag and the collection company is using an open trailer.
- During the sorting process, loose textile items such as curtains and bed linen can block the conveyor belt. As a precaution, the sorter removes these items and rejects them as contaminated. In other words, these textiles have not been deposited properly since they can be left in the textile container if they are in sealed bags.

How the sorting company defines contamination, or more specifically its acceptance criteria, determines the percentage of contamination returned to municipalities. That percentage is therefore the total quantity of non-textile products, contaminated textiles, textiles which contain other materials and large individual pieces of fabric.

It is therefore important to determine the proportions of non-textile products, contaminated textiles, textiles which contain other materials and large individual pieces of fabric. A pilot project could help in that. It must be clear to both the municipality and the collector what items will be accepted and how data about contamination will be communicated. It is only possible to formulate a specific approach to collecting and processing used textiles if both those aspects are clear.

The two following practical examples show that further analysis of the contamination can provide insight into the actual proportions of non-textile products, contaminated textiles and textiles which contain other materials.

#### **Example 1**

The proportion of a consignment that was contaminated was 11.1%. During the collection, it was raining and the trailer was not covered. The contamination consisted for 84% of mainly wet (heavy) textiles, but also contaminated textiles, and for 16% of non-textile items, including nappies, sanitary towels, baby wipes, cardboard drink containers, jars and bottles, empty paint cans, a basket, ceramic coasters, wooden toys, candle holders, 30 batteries, a kettle, adapters, telephones, plastic toys, a doll, cosmetics, foam rubber, DVDs and books. In other words, non-textile contamination accounted for 1.8% of the total consignment (16% of 11.1%).

#### **Example 2**

In another consignment, 16.5% of the contents were contaminated. The contaminated items were mainly duvets and (garden) cushions and there was scarcely any non-textile contamination. Under the current rules for separation, duvets and cushions should not be deposited in the textile container. The question therefore arises of whether the rules on separation are clear enough or are properly communicated.

# 2



## Step-by-step plan



A municipality can have different reasons for taking a closer look at the textile collection process. For example, it might be planning to put the service out to tender, it might have received warnings of contamination from processors, or it might want to scale up textile reuse. The list below contains steps for analysing contamination during the entire textile collection cycle. Each step is then explained in more detail later in this chapter.

1. Gather information.
2. Organise a pilot project.
3. Select a collector.
4. Select a collection method.
5. Review the locations of containers.
6. Select a communications strategy.
7. Lay down agreements in contracts.

A summary of the most important guidelines

- Evaluate existing problems with the collector or the municipality's own collection service. The findings can provide input for a pilot project.
- Organise a pilot project. A pilot project could generate a wealth of information about the current status of the textile collection system and identify possible improvements.
- Investigate which collection method is the most suitable, taking into account the contamination rates and the possibilities. It is also important to know precisely what type of contamination is involved. The measures required if the waste is not being deposited properly will be different than if the problem is that the textiles are wet.
- Provide uniform communication about the rules on waste separation. This is important for the residents who deposit textiles.

## 2.1 Gathering information

The most important thing is to consult all the relevant stakeholders. Where do the problems arise in the collection of used textiles? What choices need to be made? Does the collection method need to change? What information is already available with regard to the contamination? The following basic information is important:

- Who is the collector? Is the actual collection done by a sub-contractor?
- How many and what types of container are there (above-ground or underground and bottom emptying or manual emptying)?
- What is the location strategy: why are the containers located where they are?
- How are the rules for the collection of used textiles communicated?
- If the municipality has neighbourhood or waste coaches and/or special investigation officers, what is their role in this context?
- Are there statistics available about quantities and contamination?
- Are the municipality or collector aware of routes where there are particular problems?
- What are the criteria adopted by the sorting centre? Does it just look for contamination or does it further sort the textiles it accepts?

## 2.2 Organisation of pilot project

When sufficient information has been collected, a pilot project might be an option. The focus of the project should be jointly determined by the municipality and the collector. The emphasis should be on identifying not only the scale and nature of the contamination, but also where in the chain it occurs. This step should be taken if it is uncertain whether contamination relates to the type of collection container or the method of collection. Furthermore, the project would improve the organisation's own knowledge position and make it less dependent on information from other parties.

Select specific routes to investigate. There are various options depending on what is needed. For example, the focus could be on different types of neighbourhood or on different collection systems. Consider the following steps in the chain:

1. Discuss the strategy with the collector / sorter.
2. Follow all or part of a route.
3. Review the method of communication, also in relation to the rules on waste separation and the locations of the containers.
4. Question the driver about wet textiles, the contamination that occurs and troublesome locations.
5. Ask passers-by near textile containers about their experiences.
6. Visit the sorting centre.
7. Analyse the sorted materials and the contamination in an entire consignment.

#### **Example**

Municipality E wanted to know what type of container it should use. On the advice of the collector, municipality E chose municipality C for a case study because it uses every type of container. It studied three routes: one with above-ground, bottom-emptied containers, one with underground, bottom-emptied containers and one with manual emptying. The two municipalities shared the findings.

### **2.3 Choice of collector**

A municipality can empty the textile containers itself or outsource the service to a public or a private company. Municipalities without their own collection service have no choice and have to use a public company or outsource the collection and processing of used textiles to a commercial business. Municipalities with their own collection service do have a choice and have to decide between the convenience of using an external collector or the greater possibilities of controlling the operation if it collects the used textiles itself.

#### **Collection by the municipality itself**

By organising collection itself, the municipality knows more about the collection routes, the operations and the contamination. This enables the municipality to identify specific problems along collection routes and come up with improvements.

#### **Example**

After an internal investigation, municipality D took charge of the collection of waste textiles. After all, an external collector is often less familiar with the complexity of the system in a municipality. This move makes it easier for the municipality to plan the most efficient routes and provides it with more information about contamination. This has ultimately led to the development of a new type of container with manual emptying in association with a container supplier.

#### **External collector**

In municipalities that have outsourced collection, the contractor often hires a transport company for the actual collection. But a driver from an external transport company is unaware of the municipality's objectives for the textile collection system. As a result, the driver's actions or the planning by the transport company could unintentionally cause a deterioration in the quality of the textiles (they become wet or contaminated). That risk is illustrated in the two examples given below.

#### **Example 1**

In one pilot project, a route was surveyed and was found to be too long. The textiles were already spilling over the edge of the trailer when there were still 13 locations to go on the route. The textiles were crushed with the gripper, possibly causing the bags to tear open or further spreading of the contamination in the load. However, emptying the trailer before the route has been completed is not an ideal solution because the driver then has to complete that route the next day before starting a new route.

### **Example 2**

In a pilot project, a route was followed when it was raining. The driver drove the entire route with an open trailer. It takes time to close the trailer and the cover cannot be rotated at every location, for example because there is sometimes a lamppost in the way. In another municipality, the driver completed the route with a closed trailer and had no difficulty completing the collection.

### **Guidelines**

- A. Share knowledge about the collection routes and review the length of the routes with the collector. In that context, review the system of fees that has been agreed. Subcontractors are often paid per kilo of textiles collected. A transport company operating as a subcontractor therefore earns less from smaller loads.
- B. Conduct evaluations with the external collector and the subcontractor. The transport company / driver / collector will often know that a route is too long, while the municipality does not know.
- C. Municipalities with their own collection service could consider organising the collection of textiles themselves. In that context, it is important to consider capacity and cost. How much additional capacity will be required? With manual unloading, is there a location available for sorting or will it be done at the textile containers themselves? And where will the textiles end up? Manual emptying is discussed in more detail in the next section.

## **2.4 Choice of container**

There is considerable debate about the best type of container for the collection of used textiles. Should it be an above-ground or underground container? And what is the preferred method of emptying the containers? Is it mechanical unloading (bottom-emptying) or manual unloading combined with an initial selection of contaminated items. The most important finding from the pilot projects is that every collection method possesses aspects that could lead to contamination.

### **Above-ground with mechanical unloading (bottom emptying)**

Above-ground textile containers are often fitted with anti-theft devices. These are very effective in preventing theft, but can get jammed. See the example on this page.

Above-ground containers usually have a larger opening than underground containers and it is therefore easier to push cushions and duvets into them. The opening is also higher, which can make it more difficult for residents to put bags of household waste and other materials into the container.

Further analysis of the contaminated textiles in above-ground containers has shown that roughly 80% consists of textile products that are wet, unwanted (duvets and cushions) or contaminated (stained with paint or oil), while 20% comprises other types of waste.

### **Example**

In municipality B, the flaps on many of the above-ground containers were jammed. Cushions are stuffed into the container and then expand, blocking the opening. At many locations, textiles were found lying alongside the container. During a survey during collection, waste was found to have been dumped beside many containers even when they were not full.

### **Underground with mechanical unloading (bottom emptying)**

Underground containers and contamination is a controversial subject. To a certain extent, there is indeed more contamination in underground containers, but that conclusion can be qualified by looking at the type of contamination. Wet textiles seem to be a bigger problem in underground containers than in above-ground containers. That means that a lot of textiles that are properly deposited are still lost. Nevertheless, municipalities often opt for underground containers because they are better for the streetscape, some can hold a larger volume than an above-ground container, and there is little chance of clothing being stolen.

In the pilot projects, wet consignments were only found in municipality E, although it was also raining hard during the collection monitored in municipality C. The chance of textiles becoming wet (mainly through rain) is greater with underground containers than with above-ground containers. However, it would be premature to conclude that underground containers by definition lead to wet textiles, since information from Sympany shows that a container's technical specifications are an important factor. Sympany is positive about its experience with underground containers. Whereas originally a high percentage of wet textiles was found, that was no longer the case after a technical modification was made to the container (the connection of the pillar to the pedestrian platform). It is not known precisely what that modification was.

It was also found that sealed bags containing textiles often do not fit into underground containers because the opening is too small. The advantage of a small opening is that no cushions or duvets can fit through it. A larger opening, on the other hand, would make it easier for residents to throw in a bag containing residual waste.

Although the percentage of contaminated textiles in consignments from underground containers can differ, further analyses of the contamination show that the composition of the contamination is the same in percentage terms. Roughly 80% of the contamination consists of wet, unwanted or contaminated textiles, while 20% consists of other waste. In other words, the ratios are identical to those for aboveground containers.

#### **Example**

An opening that was too small was a problem in municipality A. A larger opening seemed a better option as it would be easier to push full bags through it. However, the collector warned that if the opening was too large, more bulky items of residual waste would be deposited in the container, which should actually be brought to the local recycling centre. The collector based that conclusion on an earlier project in which an extra-large opening had been used. The ideal size of an opening is not known and needs to be further investigated.

#### **Above-ground containers with manual emptying**

The concept of manual emptying sounds like a good solution to many municipalities. In contrast to mechanical emptying, some or all of the contamination is removed as the container is emptied. Only visible contamination (usually non-textile contamination) is removed during this preliminary sorting because the bags cannot be opened. The ultimate buyer of the textiles then knows that the sorter has not kept back any good textiles. However, if there is a suspicion that some items are contaminated, the bag is opened and those items are removed. The negative effect of opening bags is that more loose textile products find their way into the consignment. The impact of manual emptying on the workload is also not known and this project provided no clear answer.

The manual removal of contamination from the container is not a substitute for the actual inspection by the collector. Most of the work is still ultimately done at the collector's sorting centre since it is only there that the contaminated textiles are removed.

#### **Example**

Municipality D recently stopped emptying the containers manually. Having investigated the pros and cons of the various types of containers (jamming with cushions, wet textiles, etc.), it is working with a supplier on the development of a new container. The textiles are collected in roll-out trolleys. When a trolley is full, it is removed and replaced with an empty one. This saves time when the containers are being emptied and the preliminary sorting is carried out at the municipality's sorting centre.

### Guidelines

- A. Suspected differences in the level and type of contamination in underground and above-ground containers can be confirmed by conducting analyses of the textiles during sorting.
- B. If there is a high percentage of contamination in underground containers, ask the collector whether it is linked to wet textiles and/or to the presence of cushions and duvets. Analyse the items that the sorter regards as contamination to establish the proportions of non-textile contamination, contaminated textiles, textiles which include other materials and large separate textile items.
- C. If wet textiles are not the result of driving with an open trailer, consult the supplier of the textile container to determine how the textiles in the container become wet and what solution they can suggest.
- D. Decide on the size of the opening of underground containers. The opening should not be too small, but it should also not be larger than necessary to accommodate a 60-litre bag.
- E. Draw up a protocol for preliminary sorting when containers are emptied manually. In that context/collector, consider what in practice can and should be removed from the container, how the collector determines that, and what will be done with contaminated items.
- F. Investigate the workload involved with manual emptying.
- G. In choosing a type of container and the method of collection, consider other factors such as what is best suited for the public space, whether it is possible or desirable to deploy staff for the manual emptying of containers, and the financial implications.

## 2.5 Review the locations of containers

In many municipalities there are recycling centres with multiple containers for different waste streams. This makes it easy for residents to dispose of different types of waste in one place. The question is whether the presence of containers for other waste streams, particularly residual waste, leads to people also placing this other waste in the textile container, thereby causing additional contamination.

Two practical examples show that this question cannot be answered affirmatively. Yet they do not provide conclusive proof. Other factors that influence the use of textile containers are their appearance (are they clean and fresh) and how clearly it is indicated what should be put into which container.

### Example

In municipality B, there are no other containers near the textile containers. Beside some of them there is a trolley for incontinence products. Little non-textile contamination is found in the textile container. On that basis, it could be concluded that people only go to the textile container for textiles.

### Example

Municipality C has recycling centres with containers for different types of waste. Near the underground/containers, there are also containers for PMD, glass and paper. The above-ground containers stand alone or alongside a container for paper. Inspections failed to establish that there is, by definition, more non-textile contamination (PMD, glass and paper) in underground containers, as one might have expected.

## 2.6 Choice of communication strategy

The collection chain starts with the residents who deposit the textiles in the container. Given the large proportion of contaminated textiles in the form of cushions and duvets (which are regarded as contamination by the sorters), it is advisable to provide specific information about these items. It is important that the information provided is uniform. The rules on whether or not cushions and duvets can be deposited in containers are not the same everywhere. Collectors also employ different methods of communication. For example, some clearly state what may or may not be deposited in the container, while others only refer to how items should be left for collection. This is an aspect that needs to be addressed at the national level.

### Example

In municipality A, residents were surveyed about the collection of textiles. The most-frequently mentioned measure that would encourage residents to deposit textiles separately was to provide more information about what happens to the textiles. Respondents generally felt it was important that the clothing that was deposited should benefit people in their own municipality.

### Guidelines

- A. Clearly explain in notices on the containers, on the websites of the municipality and the collector and via other media that textiles must be deposited in a sealed bag. Also explain why, namely that loose textile products can become contaminated, get wet or get caught in a conveyor belt. Clear information like this will largely prevent contamination. Another important point to mention is that shoes should be tied together as a pair so that they remain together and can possibly be used again.
- B. Given the signals from residents and the fact that large cushions and duvets are often found in the textile container, municipalities should collaborate with the collector / sorter in providing extra information about what is and is not allowed in the textile container. In that context, it is important to stress why certain products that consumers regard as textiles that could be re-used or recycled are not in fact recyclable. Explain that (garden) cushions and duvets are made in part from materials other than textiles and that wet textiles cannot be reused or recycled. Residents can dispose of cushions and duvets at a recycling shop, at least insofar as they are reusable or sellable.
- C. Another option is to find a market for cushions and duvets and find an alternative method of collecting them.
- D. If all the stakeholders in the chain adopted a uniform national checklist, it could help to create more certainty for residents and so reduce the amount of contamination. The checklist should be based on the list compiled by Milieu Centraal, the public information organisation that provides advice for consumers about a sustainable lifestyle.
- E. Use the national pictograms designed by Rijkswaterstaat to harmonise the communication about waste streams.

## 2.7 Lay down agreements in contracts

The contamination rates that sorters report to municipalities represent the combined total of non-textile contamination, contaminated textiles, textiles containing other materials and individual large textile products. As a municipality, make clear agreements with the collector that the figures it provides for quantities and contamination should be as detailed as possible. In that context, the figures should at least show the proportions of non-textile contamination, contaminated textiles, textiles containing other materials and individual large textile products. In that way, the figures will give a clearer picture of the effectiveness of the collection system and of the locations where there are problems.

Apart from making agreements on contamination, the municipality (and possibly its residents) should also visit the sorting centre once. On the basis of experience, a sorter at a conveyor belt can often immediately tell whether a particular consignment is contaminated. Because there are no agreements on reporting the tell-tale signs, this information does not always reach the municipality.

## 2.8 Sorting

After it has been collected, a consignment is transported to a sorting centre where the sorter removes the contaminated items and disposes of them as waste. The municipality needs to know what then happens to these items, but often loses sight of them at this point. Where is the waste further sorted for reuse or recycling?

During the pilot projects, sorting facilities operated by Reshare and Sympany were visited where textiles and contaminated items (non-textile items, contaminated textiles and large textile products) are separated. Reshare has facilities in Oosterhout, Hattem, Barendrecht Sneek and Deventer. Sympany has locations in Assen, Eindhoven, Harderwijk and Utrecht.

At the sorting centre, the consignment is unloaded and placed on a conveyor belt on which contaminated items are manually removed. This is therefore also where the contamination rates are calculated. For the consignments from above-ground and underground containers that are emptied manually, the contamination rate does not include the items that were removed when the containers were being emptied. Logically, the consignments emptied manually therefore have a lower contamination rate. For a total overview, the results of the preliminary sorting have to be added to the outcome of the sorting of the consignment.

Sorters stand at the conveyor belt and use a Stanley knife to cut a small opening in the bags to feel whether the textiles are wet. Even textiles that are only slightly damp are thrown away to prevent the growth of fungus during transport. Some contamination is also found during the sorting process, but not all, because sorters are not allowed to open the bags completely because of fears among clients that the best clothing will be removed. The inspection is purely intended to identify items that constitute contamination as defined by the sorter. There is no inspection of the quality or usefulness of the textiles.

### **The next steps**

What happens to the textiles after the sorting was not investigated. In the case of the sorting centres that were visited during the pilot projects, the more refined sorting to recover the reusable clothing is performed mainly by the buyers of the used textiles. To reduce costs, this sorting is often done in other European countries and only to a small extent in the Netherlands (where it is usually organised regionally in social projects).

The textiles collected by Reshare are brought to its sorting centres. Reshare sorts some of the collected clothing itself. Clothing that can be worn again is sold in its own stores (Reshare Stores) or distributed free to people in need. Clothing that has not been sorted is sold to organisations that sell used clothing in less prosperous countries or to other sorting companies. The textiles that cannot be reused are sold to organisations that can find other uses for them. The textiles collected by Sympany are sent to its sorting centres, where they are sorted by quality and type. The clothing is sold in Europe and Africa.

# 3



## Appendix 1



## What can or cannot go into a textile container?

### Milieu Centraal's checklist ([www.milieucentraal.nl](http://www.milieucentraal.nl))

Allowed in a textile container:	Not allowed in a textile container:
Clothing (also swimwear and underwear)	Floor covering: mats, carpet (belong with the bulky waste)
Shoes (every pair tied together)	Mattresses, cushions and duvets (belong with the bulky waste)
Curtains, net curtains	Wet clothing, textiles and shoes (allow to dry first)
Bed linen: sheets, blankets, pillow cases, duvet covers	Clothes with paint or oil stains (belong with the residual waste)
Towels, tea towels, tablecloths, napkins, facecloths	Stuffing from cushions or toys; knitting yarns (belong with the residual waste)
Socks and stockings	
Accessories: belts, bags, ties, hats, caps, gloves	
Cuddly toys (clean)	
Cleaning rags and dusters	

In accordance with the Third National Waste Management Plan (NWMP 3), the following items of household waste (the list is not exhaustive) fall within the scope of sector plan 5 for separately collected / separately deposited textiles for reuse or recycling: clothing, bed linen, blankets, large pieces of fabric and curtains and all types of shoes.

For example, the minimum standard for highly contaminated textiles (with paint or oil stains), textiles containing non-textile materials (metal wire, etc.) and textiles treated with chemicals is recovery (mainly for use as a fuel).

'The guide to preventing contamination in the collection of used textile products' is a publication for the VANG Household Waste Implementation Programme.

For more information contact:

Helpdesk VANG-HHA

**+31 88 377 00 30**

**[www.vang-hha.nl](http://www.vang-hha.nl)**

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