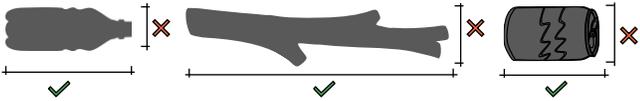


Introduction

By utilizing this reference sheet, all researchers in the SCIP Plastics project should be able to uniformly sort any type of waste. This reference sheet is an addition to the existing Waste Sorting Station Standard Operating Procedure. It provides a comprehensive classification of waste distinguishing 15 fractions (I – XV) by listing examples. The extensive list should make it easier to decide on the correct classification. If in doubt, the list should be supplemented with the relevant cases. During sorting, compound products, e.g. shoes or packaging, should not be physically cut or material mixes separated. Products, like electrical devices, are also not disassembled into their individual parts but assigned to the following categories as a whole. The aim of this reference sheet is to provide a uniform and reproducible methodology across all units of the project. Under no circumstances should waste that is hazardous to personal health, such as razor blades, medical waste, infectious waste, etc., be sorted. In this case stop sorting and discard the sample.

Particle-size definition

The particle size in waste sorting refers to the dimensions of individual pieces or particles of waste material. Divided into size fractions, the waste is classified on the sorting table using the size subdivisions >120mm, >40mm, >10mm, <10mm in accordance with the standard operating procedure "Sorting". The longest side of each element defines the corresponding size subdivision. This is especially relevant for longitudinal objects such as bottles, cans, branches or construction waste. The classification of particle size in the waste sorting process is as follows:

Rigid objects, not deformable	Deformed, compressed or compressable objects
	
<p>Solid, non-deformable items are sorted based on their longest edge. Items are not forced or passed through the sieve lengthwise. However, parts might unintentionally fall into a lower category. In such instances, this is considered a set condition, and there is no subsequent check or reassignment to other size categories.</p>	<p>Sheets, ropes, nets, fabrics, or flat but flexible waste items are categorized into the appropriate size class for nearly square compaction. Waste that is already deformed or compacted during sampling will be classified based on its compacted size, when sample was taken, not its original size.</p>

Reference

		notes
I	Large Impurities	<p>Oversized impurities in the waste stream that do not correspond in size to the collection of household waste and cannot be sorted manually at the waste sorting station, like:</p> <p><i>Bulky waste (sofas, mattresses, furniture), large appliances (refrigerators, microwaves, ovens, and air conditioners), bicycle/car parts, tires, large branches, tree trunks, oversize construction debris (pipes, frames, lumber), large plastics/metals/composite/glass/cardboard items.</i></p>
II	Plastics	<p>Pure plastic waste without composite impurities regardless of its origin, commercial or household, single or multi-use, nor recyclability, like:</p> <p><i>Beverage bottles (water, soda, juice, soft drinks), food containers (jam, curd, ghee), bags (single/multi use), packaging material (snack wrappers, plastic film, bubble wrap), food wrap (film, plastic wrap), bottles or jugs (detergent, cleaning products, liquids), lids and caps, plastic forks, spoons, knives, plates, cups, straws (single/multi use), toys, cosmetic containers (shampoo, lotion, personal care), construction waste (flooring, foams, pipes), fishing gear, ropes.</i></p> <p>🚫 synthetic fabric → XI Textiles, shoes, rubber</p>
III	Metals	<p>Ferrous or non-ferrous materials like, iron, steel, stainless steel, alloy steels and aluminium, copper, brass, bronze, zinc, nickel, and tin from products like:</p> <p><i>aluminium cans (beverages), aluminium foil (food wrapping), steel packaging (steel drums and containers), aerosol cans (deodorants, hairsprays), metal caps and lids, aluminium trays (ready-to-eat meals, catering or frozen food), metal tubes (toothpaste, cosmetic items), packaging components (closures, clips, and fasteners), aluminium bottles.</i></p> <p>🚫 copper cables → XIII Electronic waste</p> <p>🚫 blister/aluminium packaging → IV Composite plastic - packaging</p>
IV	Composite plastic - packaging	<p>Composite products originating from to the packaging industry, containing a non-separable mix of materials containing at least a proportion of plastics, like:</p> <p><i>packaging of beverages (milk, juice, and soup), food (boxes, containers, snacks, pet food), liquid food (canned goods), pharmaceuticals (blister packs for tablets or pills), packaging of electronics and consumer goods, Tetra Pak (paper, plastic, aluminium), flexible packaging (layers of various materials such as plastic, foil, and paper), blister packs (plastic and aluminium), sterile packaging (plastic, paper, and aluminium), plastic coated cartons/cardboard (paper, plastic coatings, metalized films), composite metal cans (aluminium or steel and plastic lining), composite lids (metal/plastic), paper/plastic laminates, insulated packaging (foam, foil, plastics).</i></p>

V	Composite plastic - others	<p>Composite products containing a non-separable mix of materials including plastics and others (metals, wood, textiles, fibres) like furniture, mattresses, wood products, consumer goods, toys, sport equipment, jewellery, accessory or tools.</p> <p><i>furniture composite (wood, fibres, binders, plastic coating), mattresses (foam springs, fabric) wood products (laminated flooring, particleboard, and medium-density fibreboard (MDF)), appliances (casings, metals, insulation), toys (plastics, coatings, metal, wood, fibre, textiles), sports equipment (composite gears), tools (handles, grips, metals).</i></p>
VI	Biowaste	<p>Organic and biodegradable waste material derived from plant or animal-based substances, originated from household kitchens or commercial cafeterias and restaurants, like:</p> <p><i>Food and kitchen scraps (fruit, vegetable peels, cores, scraps, eggshells, tea bags, nutshells), leftovers including paper napkins, animal waste.</i></p> <p>🚫 animal dung → XIV Others 🚫 bones → VIII Wood, Bones, Leather</p>
VII	Garden waste	<p>Organic and biodegradable waste material generated from gardening, yard, park, pond, and green space maintenance activities.</p> <p><i>Grass, leaves, trimmings, cuttings (trees, shrubs, plants), weeds, branches, twigs, flower, plants, roots, bark wood chips, soil (from roots and pots), straw, unprocessed coconut shells and bamboo.</i></p> <p>🚫 wood → VIII Wood, Bones, Leather</p>
VIII	Wood, Bones, Leather	<p>Wood, bones, and leather waste refers to discarded materials from various sources that are primarily composed of wood, bone, and leather, respectively, like:</p> <p><i>Processed wood waste (furniture, decor, packaging, kitchen utensils, tools, boards), unprocessed wood waste (thick branches, trunks, firewood). bones (recyclable bare and clean bones from food waste). pure natural real leather (parts of shoes, belts, wallets, bags, covers, clothing, accessories, offcuts, punching waste).</i></p> <p>🚫 coconut shells and bamboo → VII Garden waste</p>
IX	Glass	<p>Materials made of glass, independently of colour, use, and origin of the product, like:</p> <p><i>Bottles (water, soda), food containers (jam, sauces, pickles, oil), jugs (juice, milk), dispensers, cosmetics, perfume, personal care products, medicine bottles, dishware (plates, bowls, cups), decorative items (decorations, vases, ornaments), window glass.</i></p> <p>🚫 glass light bulbs → XIII Electronic waste</p>

X	Paper Cardboard	Materials primarily made of paper, cardboard or paper-based products, like: <i>Newspapers, magazines, catalogues, packaging (cardboard boxes for food, appliances, electronics), paper bags, wrappings, office paper, cardboard tubes, paper towels and napkins (unused), wrapping paper, unwanted or damaged paperback books.</i>
XI	Textiles, Shoes, Rubber	Household or commercial waste from discarded clothing, fabrics, textiles production or punching waste, footwear with multiple materials sewn or glued together, and rubber, like: <i>Shirts, jeans, fabrics, towels, curtains Synthetic (polyester, Nylon, Rayon, Spandex) or natural fibre (cotton, denim, wool, silk, linen, flannel), artificial leather (Rexine, polyurethane), worn out shoes and sandals with a mix of materials (leather, canvas, rubber, synthetic materials, mesh, Gore-Tex, neoprene, PVC), worn out bike tires, hoses, gloves, seals and mats (natural or synthetic rubber, vulcanized rubber, latex, neoprene, silicone).</i> 🚫 100% plastic sandals → II Plastics 🚫 100% real natural leather → VIII Wood, Bones, Leather
XII	Mineralised/ inert waste	Mineralized or inert waste refers to non-biodegradable, stable materials that do not undergo physical, chemical, or biological transformations, like: <i>Demolition waste (tiles, bricks, clay, cement, ceramics), tableware (ceramic plates, bowls, dishes), decorative ornaments (stone, concrete).</i> 🚫 glass waste → IX Glass
XIII	Electronic waste	Discarded electrical or electronic devices and their components that contain a mix of materials, possibly valuable or hazardous substances from products, like: <i>Electronic goods, cables, ports, batteries, installations, printed circuit boards, light bulbs, displays sensors, fans.</i>
XIV	Rest not assignable	Everything that cannot be assigned to one of the above listed categories, like: <i>Sanitary waste, medicaments, face masks, sanitary pads, nappies, debris contaminated with food waste or decomposed materials that cannot be identified or assigned to any category.</i>
XV	Dust/ Liquids	Fraction remaining on the sorting table tray <10mm where no sorting activity is applied, like: <i>Liquids, sawdust and street sweeping dust, small debris.</i>