**Mapping of footwear recycling**

A vast majority of collected footwear can be reused

1st SORTING

A small fraction of collected footwear cannot be reused and therefore must be recycled

**Manual AND/OR automatical sorting of non-reusable footwear**

Disassembly upper-sole + remanufacturing or sole recycling

Closed loop recycling (shredding-melting-injection)

Industrial composting

Biodegradable materials that degrade when composted

Single-material footwear

**Shredding/compressing**

**SRF*, Energy recovery or incineration/landfilling**

**SHREDDING CHALLENGES:**
- Limit intra-material pollution,
- Reduce and homogenize particle size

**Complete shredding of footwear**
- Coarse shredding (about 2 cm²).
- All types of footwear

**Delamination then densimetric separation of materials**

**Slicing of sports footwear:**
- Separation of the shoe upper from the sole

**Sorting then shredding into 3 types of granules:**
- RUBBER, FOAM AND FIBRES
  - Hard or bouncing floorings, thick mats, outsoles
  - Flooring surfaces, outsoles

**RUBBERS (NATURAL AND SYNTHETIC ELASTOMER), FOAM, PVC, PU, ETC. FROM SOLES**

**TEXTILES (NATURAL AND SYNTHETIC MATERIALS)**

**LEATHER / FAUX LEATHER**
- Shredded to be used as filler
- Mixed with PVC to be used as filler
- Mixed in with wood fibres to produce acoustic panels
- Integration into compressed wood panels
- Thermal recovery

**METALS**
- Existing metal recycling processes

**REJECTS AND DUST PARTICLES**
- SRF*, Energy recovery

**SHREDDING**

**CHALLENGES:**
- Limit intra-material pollution,
- Reduce and homogenize particle size

**Mapping of footwear recycling**

2,500 pairs of foam insoles allow one tennis court to be built

of rubber outsoles, 300m² of children’s playgrounds

---

*SRF: Solid Recovered Fuel*

---

Photos credits: ©Refashion - All rights reserved, ©Comake, ©Okabashi, ©Puma, ©Sessile

---

For a 100% circular textile industry