

## THE SYSTEM CONCEPT //

TOMRA's sorting systems can be seamlessly integrated into your own system and adapted to suit the material and particle size. The above flowchart shows the stage at which TOMRA Sorting's technology can be optimally deployed.

The input material, which has been crushed and separated from light parts, is then filtered using defined particle sizes. Magnets and eddy current separators separate the ferrous or non-ferrous metals.

The FINDER then separates the remaining metals including insulated copper wires. The FINDER [poly] gains a high purity mono-wire fraction from this metal concentrate. No metal particles are lost thanks to the two-stage sorting which results in the maximum recovery of wires and copper particles.



You are a Resource Revolutionary.



TOMRA  
SORTING SOLUTIONS | RECYCLING

[WWW.TOMRA.COM/RECYCLING](http://WWW.TOMRA.COM/RECYCLING)

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ISO 9001 certified.



We print on 100% recycled paper.  
TOMRA Sorting's innovations are helping  
to produce it.

TOMRA Sorting  
Recycling is  
established in more  
than 40 markets and  
offers over 25 sorting  
applications.



TOMRA  
SORTING SOLUTIONS | RECYCLING

English

# APPLICATION REPORT



## WIRE RECOVERY

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# RECOVERY OF WIRE WITH TOMRA SORTING'S TECHNOLOGY

## COPPER PRICE DEVELOPMENT

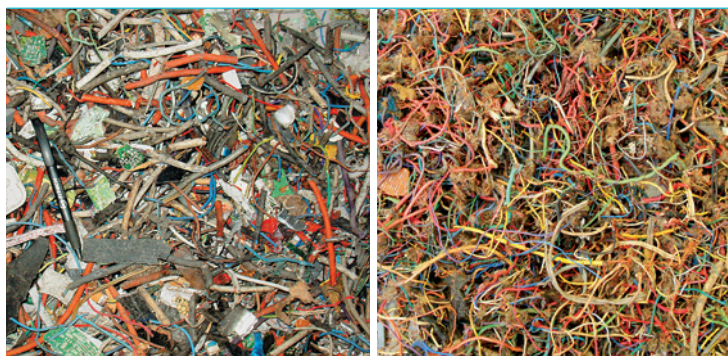


## THE CHALLENGE //

Copper wires and free copper particles are valuable components which are contained in lots of waste fractions such as:

- + Heavy fractions from automobile shredders (SSF)
- + Light fractions from automobile shredders (SLF)
- + Waste electrical and electronic equipment (WEEE)
- + Residual materials and metals from dense medium separation systems (DMS)

The safe identification of copper wire in these material flows with conventional sorting technology is not possible. Wire recyclers and secondary copper smelters demand high purity mono-fractions of copper concentrate and wires. These can only be efficiently gained by using the new sensor-supported sorting systems.



Stage 1:  
Output from FINDER

Stage 2:  
Output from FINDER [poly]

## THE SOLUTION //

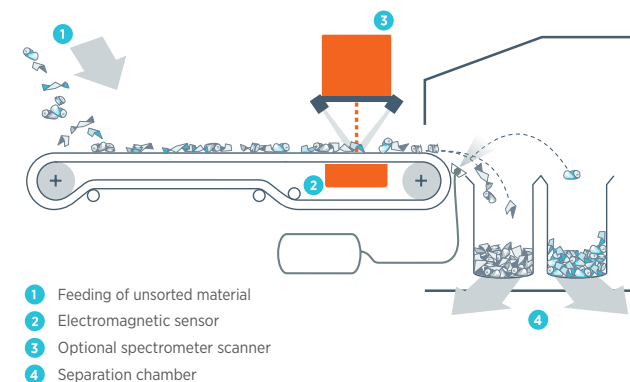
TOMRA Sorting has developed a sorting system which unifies two technologies:

The FINDER [poly] not only recognises fine metal particles with a highly-sensitive electromagnetic sensor (EM) but can also identify insulating polymer coatings made of PVC<sup>1</sup>, PP<sup>2</sup>, PE<sup>3</sup> or rubber with an additional high-resolution near-infrared sensor (NIR).

The signals from both sensors are analysed with the help of the newly developed SUPPIX<sup>®</sup> image processing technology which delivers high-precision results. This means that the insulated copper wires can be safely identified and separated with the highest degree of purity.

<sup>1</sup> Polyvinyl chloride <sup>2</sup> Polypropylene <sup>3</sup> Polyethylene

## SIMPLIFIED SORTING SCHEME



## THE ADVANTAGES //

- + Optimum value creation due to high recovery
- + High flow rate due to efficient sorting systems
- + Short amortisation period for TOMRA's sorters
- + Recovery of copper particles including undersized particles
- + Less amounts of residual waste and lower disposal costs
- + Modular configuration and simple integration in existing systems
- + No metal losses due to a two-stage concept
- + High quality products increase marketing opportunities

Wire Content in fraction 10-100mm	Recovery of insulated and bare wires by first FINDER	Recovery of detectable insulated wires by FINDER [poly]	Purity of (insulated) wire fraction
up to 9% Eddy Current Separator Drop	up to 98%	up to 95%	up to 90%