

## Technical Information Sheet

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| <b>1. Name of technology</b>                                                      | Mixed waste recycling system<br>(Construction mixed waste residue sorting system)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>2. Type of technology</b>                                                      | <p>This is a highly precise recycling system for construction mixed waste residues.</p> <p>This system greatly improves the recycling rates of construction waste.</p> <p>This is a future-oriented comprehensive recycling plant technology that combines separating equipment with shredders and granulators, as well as magnetic sorters and metal detectors, by using our expertise that has been developed through more than 50 years of experience.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>3. Description of technology</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Objective, application, characteristics, delivery record, and price of technology | <p><b>[Objective and application of the technology]</b></p> <p>The purpose of this system is to realize a technology with an overwhelmingly high recycling rate that performs the sorting of residue contained in mixed construction waste (incombustible rubble) according to grain size and specific gravity by using a magnetic sorting method, together with the highly precise sorting of fine-grained objects.</p> <p>This technology is used for the recycling treatment of construction mixed waste and other mixed waste produced at demolition sites and is used in the mechanical sorting plants that represent the core facilities for intermediate industrial waste treatment. It offers a means of improving recycling rates by facilitating the sorting of mixed waste residues (fine grains) for which mechanical and manual methods have been inadequate.</p> <p>This system has been used in several facilities for treating rubble produced by the Great East Japan Earthquake recently, and has gained an excellent reputation.</p> <p><b>[Characteristics of the technology]</b></p> <p>The diagram below shows an example of this plant.</p> <p>An outline of the treatment process is as follows:</p> <ol style="list-style-type: none"> <li>1. Manually sort large-grained objects by grain size.<br/>Shred the residues produced by manual treatment and add them to fine-grained materials.</li> <li>2. Conduct highly precise sorting of fine-grained objects by specific gravity.<br/>Separate the objects into heavyweight and lightweight materials, and then recover recyclable sand by grain-size sorting.</li> </ol> <p>The treatment produces the following recycled materials:</p> <ol style="list-style-type: none"> <li>1. Heavy materials: can be reused as sand</li> <li>2. Light-weight materials: converted to combustible materials</li> <li>3. Magnetic metals: can be reused as metals</li> </ol> <p>In particular, the unique capabilities of our fine-grain sorting technology should be noted. This technology has achieved the reliable treatment of large amounts of waste.</p> <div data-bbox="424 1653 1394 2089"> <div> Plant illustration Plant construction example </div> </div> |

Mixed waste recycling system  
(Construction mixed waste residue sorting system)

Full view of plant



Photograph of objects to be sorted



Close-up of the objects on the left



Sorted fine-grained sand



Sorted lightweight materials



Close-up of sorted fine-grained sand



Close-up of sorted lightweight materials



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|                                                              | <p><b>[Delivery record]</b><br/> This system is serving recycling businesses.</p> <p>This system is in use at locations throughout Japan, centering mainly in areas around Tokyo. In particular, a large-scale treatment plant utilizing this system has been built in a coastal district. This system is also used in several regions in Tohoku that were affected by the earthquake. The demand for this system is growing.</p> <p><b>[Price and other inquiries]</b><br/> Initial cost for plant implementation: around ¥200 million to ¥1,000 million</p> <p>Example 1: Mixed waste intermediate treatment facility for mixed construction waste:<br/> Material particle size: 30 mm or smaller; input volume: 40 m<sup>3</sup>/hour<br/> Cost: around ¥400 million<br/> Recycling rate: 85 to 90%</p> <p>Example 2: Incombustible rubble disposal facility in areas affected by the earthquake;<br/> Material particle size: 100 mm or smaller; input volume: 25 m<sup>3</sup>/hour<br/> Cost: around ¥220 million<br/> Recycling rate: 65 to 75%</p> <p>They have variations depending on sources of objects and facility construction environments.</p> |
| <b>4. Classification of technology</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (1) Applicable fields                                        | Industrial waste treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (2) Target waste                                             | Construction waste (residues, dismantling mixed residues, waste wood etc), Electric home appliances, Fluorescent tubes, Electronic products, Cellular phones, Automobiles, Dry cell/ lead batteries, Waste tires, Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (3) Services provided                                        | Plant construction, Sales of machinery and equipment, Technical cooperation/ licensing, Consulting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>5. Countries to which this technology can be provided</b> | All countries in Asia without import restrictions, Middle Eastern regions, Canada, Australia, and North America                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>6. Keywords</b>                                           | Sorting, recycling, waste materials, industrial waste, municipal waste, residue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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