



The Australian Council of Recyclers: C/- P O Box Q625, QVB NSW 1230

*In this
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*ACOR
Materials
Specifications*

For further information on material specifications for recycling in Australia, recycling statistics or ACOR members visit ACOR's website www.acor.org.au



Australian
Council of
Recyclers

www.acor.org.au

ACOR's Commercial and Industrial Recycling Specification Edition

This edition features the ACOR members' receival specifications for a range of materials. These materials include:

- Asphalt
- Computers
- Concrete
- Ferrous Metals
- Mobile Telephone Batteries
- Non-Ferrous Metals

A copy of this newsletter can be obtained in pdf format from the ACOR Secretariat Office on tel: (02) 9358 2773 or by e-mailing acor@acor.org.au with your request.

Ferrous and Non-ferrous Metals

Metalcorp Recyclers, a division of the Smorgon Steel Group of companies

Metalcorp Recyclers is one of the fastest growing metal recycling companies in Australia. It has 32 sites that will accept ferrous and non ferrous scrap metal. The sites are located in the following states:

- Queensland - 11 sites
- New South Wales - 9 sites
- Victoria - 6 sites
- South Australia - 2 sites
- West Australia - 2 sites
- Tasmania - 2 sites

Metalcorp deals with a range of metals that include:

- Steel, iron
- Aluminium, copper, zinc, brass, bronze, tin, stainless steel, nickel, lead.

Examples of the type of metallic products Metalcorp will accept include:

- Car bodies, whitegoods, sheet metal, rail, bar, plate, wire
- Industrial metal offcuts such as punchings and trimmings, castings, bushelling, electrodes, lead acid batteries
- Cans, tins, electrical wire, cable, extrusions, structural steel
- Demolition scrap metal, old plant & equipment.

Metalcorp sources material from:

- Industrial clients such as engineering workshops, mines, sugar mills, chemical plants, power stations,

- Domestic materials recovery facilities (MRF's), waste transfer stations and landfills
- Door trade delivery by the public and smaller scrap merchants.

Metallic materials Metalcorp will not accept include products containing:

- Pressure vessels, gas cylinders, flammable products, explosives, any hazardous materials,
- Drums or containers with chemical residues, poisons, asbestos, corrosives,
- Non metallic refuse including plastic, glass, masonry rubble, wood, dirt,
- Tyres other than those fitted to car bodies,
- Radioactive scrap.

Metalcorp operate a broad range of recycling machinery including

- 4 large metal shredders
- A large fleet of purpose built bulk transporter and self load bin trucks, mobile baling and car compacting equipment
- 4 static shears, 15 mobile shears and a range of balers and ancillary processing equipment.
- A new fleet of long reach hydraulic cranes.

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Foundry Grade



Heavy Melt Scrap

Metalcorp supplies quality finished product, produced to internationally recognized specifications, to:

- Steel mills, the foundry industry, domestic copper, brass, lead and aluminium industries,
- and is a significant exporter of ferrous and non ferrous metals to Asia.

SimsMetal – Delivering to the World

SimsMetal is an established leader in resource optimisation evolving from a small scrap metal merchant eight decades ago to one of the world's largest resource recyclers... one dedicated to intelligent use of the planet's finite resources and delivering ethical investment results for its shareholders.

SimsMetal has more than 100 operations in eight countries.

Retaining global leadership in the ferrous and non-ferrous metal business, SimsMetal is also a significant aluminium and plastics producer, provider of industrial and environmental services and of renewable energy, supported by specialised services in logistics, resource optimisation, materials processing and commodity broking.

Listed on the Australian Stock Exchange, SimsMetal's turnover exceeds \$1.4 billion a year, providing quality products to some of the world's

largest enterprises, consistently delivered across national and international barriers.

Each year, SimsMetal collects and recycles in excess of one million tonnes of scrap metal in Australia and 3.6 million car batteries. In 2000, the company completed the installation and commissioning of new shredding facilities in Australia.

SimsMetal will accept:

- Car bodies, whitegoods, sheet metal, rail, bar, plate, wire
- Industrial metal offcuts such as punchings and trimmings, castings, bushelling, electrodes, lead acid batteries
- Cans, tins, electrical wire, cable, extrusions, structural steel
- Demolition scrap metal.
- Metallic materials.

SimsMetal will not accept products containing:

- Pressure vessels, gas cylinders, flammable products, explosives, any hazardous materials,
- Drums or containers with chemical residues, poisons, asbestos, corrosives,



- Non metallic refuse including plastic, glass, masonry rubble, wood, dirt,
- Tyres other than those fitted to car bodies,
- Radioactive scrap.

Non-Ferrous Scrap (both companies)

The different types of non-ferrous scrap are given names by the traders of the commodities.

The materials listed are the most commonly traded internationally:

Commonly Traded Non-Ferrous Material

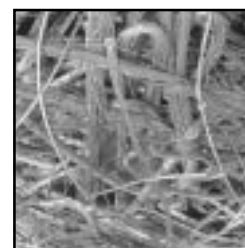
- Aluminium copper radiators
- Brass small arms and rifle shells
- Brass shell cases without primers
- Clean, aluminium lithographic sheets
- Coated scrap
- Cocks and Faucets
- Copper Wire
- Hard/Soft Scrap Lead
- Hot Dip Galvanizers slab zinc dross
- Lead Acid Batteries - Drained
- Manganese Bronze Solids
- Mixed aluminium borings and turnings
- Mixed, Aluminium Castings
- Mixed, Clean Alloy Sheet Aluminium
- Mixed Unsweated Auto Radiators
- New or Old pure aluminium wire and cable
- Red Brass Composition Turnings
- Segregated new aluminium alloy clippings
- Shredded mixed non-ferrous scrap
- Soft Scrap Lead
- Stainless Steel scrap
- Stainless steel turnings
- Used Beverage Can (UBC) Scrap in different forms ie baled, briquettes
- Yellow Brass Scrap
- Yellow brass rod turnings



Tread



Druid



Mill Berry

Concrete & Asphalt

Alex Fraser Group

The Alex Fraser Group has four specialist divisions: Concrete Recycling, Demolitions, Asphalt and Mobile Crushing Services.

The main categories of material sought by the Alex Fraser Group are:

- Clean concrete under 600mm in size
- Clean concrete over 600mm
- Clean brick rubble (less than 5% by volume of timber, plastic, plasterboard)
- Clean milled asphalt chips
- Clean deep lift asphalt pavement
- Mixed loads - may contain a mixture of the above and up to 5% of timber, plastic, plasterboard etc, by volume. A price adjustment will be made for any greater percentage of unsuitable material.

Note: reinforcing steel is not a contaminant nor does it render material, as unsuitable for processing.

In order to produce the highest quality finished products, it is necessary to start with as clean a raw material as possible. In most cases, it is cheaper to separate the materials on site (at the source) than to mix them and try to separate them at the recycling point. Mixed materials require considerable processing before they can be recycled. Additionally, smaller rubble material is cheaper to process.

Contaminants

The Alex Fraser Group does not accept any construction or demolition materials contaminated with:

- Asbestos or any material containing asbestos
- Hazardous chemicals or materials
- Flammable liquids
- Explosives
- Liquid waste



- Prescribed waste
- Putrescible waste
- Green waste.

Products Produced by the Alex Fraser Group

The products produced by the Alex Fraser Group include:

- A range of 40/20mm Class 2 Crushed Concrete aggregates
- A range of 20/20mm Class 3 Crushed Concrete aggregates
- 40/20mm Pavement Base materials
- Class 2 Stabilised Road Base materials
- Class 3 Stabilised Road Base materials
- 100mm Rubble material
- A range of Asphalt aggregate products
- 14mm/20mm/40mm/75mm Drainage products
- 5mm Dust Product.

Product Applications

The products produced are used in a variety of applications. These applications are:

- Class 2/Class 3 Crushed Concrete Aggregates – road base, specification hardstand areas
- 14mm/20mm/40mm/75mm Drainage Aggregates – pipe bedding, drainage and landscaping, back-filling concrete pipes and rock walls
- Class 2/3 Road base



- 100mm rubble – wheel wash, access tracks and gabion works
- 5mm dust – slab preparation, trenching, conduit and small pipe bedding
- Fine Recycled Asphalt products – cost effective, easy to lay virgin asphalt surface substitute.



Alex Fraser Group Clients

Clients using Alex Fraser Group products are:
 Major and minor road construction contractors
 Municipal councils
 Large and small civil construction companies
 Plumbing contractors
 Building contractors
 Landscaping contractors.



Computers & Mobile Telephone Batteries

MRI (Aust) Pty Ltd

MRI (Aust) Pty Ltd commenced business in 1980 and has operations in Victoria and NSW.

The company operates seven separate divisions including: Computer & Telecommunications Recycling, Computer, Refurbishment, Cathode Ray Tube recycling, Battery recycling, granulation of copper products, manufacture of stannous chloride and environmental management.

MRI has achieved Quality Accreditation in accordance with ISO 9002 and is in the process of accrediting its facilities in accordance with ISO 14000 series on environmental management.



Computers

MRI (Aust) Pty Ltd offers refurbishment of computer equipment and on-sale, or, the recycling and recovery of base and precious metals from computer, component parts.

IBM and COMPAQ are sending computers for recycling to MRI Aust. The company has a business base in Sydney and Melbourne. If your company or organisation has more than 10 computers for recycling, your representative can call MRI (Aust) Pty Ltd on the telephone numbers listed below to arrange for collection.

MRI will buy current technology systems for re-use and companies can call for a quote.

MRI also offers customers the opportunity to buy refurbished systems, backed by MRI's ISO 99002 Quality system.

For less than 10 computers you can arrange delivery direct to either:

	Melbourne	Sydney
Contact	Will Le Messurier 20 –24 Dennis St Campbellfield VIC 3061	Steve Friend 163 Chifley St Smithfield NSW 2164
Tel	(03) 9305 4611	(02) 9729 4999
Fax	(03) 9305 4491	(02) 9729 3999
Email	will@mri.com.au	steve@mri.com.au
Web	www.mri.com.au	www.mri.com.au

Recycled materials from computers include Copper, Aluminium and resaleable items such as cooling fans and power supplies. Low value processed scrap is exported for more effective processing.

Mobile Telephone Batteries



MRI Aust is working closely with the Australian Mobile Telecommunications Association (AMTA) who have established a Voluntary Take Back Service for mobile phones. There are more than 1,850 collection points across Australia in mobile phone shops. The shop managers call a 1800 number once the collection bin is full. MRI Aust is currently recovering 10 tonnes a month through the

retail collection bins.

AMTA charges a 42 cent levy in the retail price on each mobile handset – 30 cents is underwritten by the manufacturers of the handset and 12 cents by the carrier. Participating manufacturers and carriers include Alcatel, Ericsson, Mitsubishi, Motorola, NEC, Nokia, Panasonic, Philips, RF Industries, Samsung, AAPT, Cable & Wireless Optus, SAGEM, Orange, Telstra, Virgin Mobile and Vodafone. To date over \$1.5M has been spent promoting the take back scheme.

To become a participant in the program go to <http://www.amta.org.au/recycle/retail.htm> or call 1800 249 113

Other Batteries

MRI is able to arrange for collection and disposal of other rechargeable batteries including:

- Vented Nickel cadmium batteries
- Sealed Nickel cadmium batteries
- Nickel metal hydride
- Lithium Ion.

Copper Products

MRI Aust accepts copper products at their Sydney and Melbourne business sites. Please contact the relevant office to discuss the type and quantity of copper material you would like to recycle.

	Melbourne	Sydney
Contact	Will Le Messurier 20 –24 Dennis St Campbellfield VIC 3061	Steve Friend 163 Chifley St Smithfield NSW 2164
Tel	(03) 9305 4611	(02) 9729 4999
Fax	(03) 9305 4491	(02) 9729 3999
Email	will@mri.com.au	steve@mri.com.au
Web	www.mri.com.au	www.mri.com.au

Mobile Phone Industry Recycling Program (courtesy of AMTA)

The Recycling Process

- In Australia, more than 40 per cent, or over eight million people, own a mobile phone and exchange it on average every 18 – 24 months. This obviously represents a high proportion of waste, yet what is not widely known is those mobile handsets, including batteries and accessories, are recyclable through the Mobile Phone Industry Recycling Program.
- Melbourne-based MRI (specialists in waste management including office and telecommunications equipment) is engaged by AMTA to collect mobile phones, batteries and accessories and are currently collecting from more than 1,850 participating stores throughout Australia.
- Societe Nouvelle D’Affinage Des Métaux (SNAM) currently manages the specialist bath smelting procedure that is the basis of the recycling process for nickel cadmium and nickel metal hydride batteries and Pasminco processes lead acid batteries in Australia.
- The batteries are ground into small pieces and fed into a special furnace, which is able to process the material at rates of up to 170kg an hour.
- The batteries are then burned at 1200 degrees Celsius, which consumes the plastic and allows the various metals to be collected and cooled.
- Marketable products from the recycling process include:
 - Nickel - used in the production of stainless steel;
 - Cadmium - a component used in new batteries;
 - Plastics – used in furniture; and
 - Small amounts of gold and copper.
- This recycling process is highly efficient, has high productivity and provides a complete breakdown of chemical compounds. It is suitable for all phones and batteries, including the newer Lithium Ion and Nickel-Metal Hydride types.
- The recycling process is also successful in preventing the reformation of environmentally damaging compounds such as dioxins and furans in the exhaust gas stream.
- Mobile phone handsets and accessories are stored until the completion of a planned MRI processing facility that will ensure that close to 100 per cent of the components in these items are recycled.

Two ACOR members, ACI Glass Packaging and Alex Fraser Recycling Industries Pty Ltd have been involved in the development of the specification featured on pages 6 & 7.

Glass

A Sand Substitute in Concrete

Extensive field and laboratory testing by CSIRO now provides the opportunity for local council, recyclers, municipal engineers and private contractors to use glass as a substitute for sand in premix concrete. This is a summary of a detailed user guide prepared by CSIRO for EcoRecycle Victoria, ACI Glass Packaging & Alex Fraser Recycling Industries Pty Ltd.

CSIRO has shown that recovered glass that is crushed and screened is strong, safe and economical, and has the potential for use as a sand substitute in concrete.

Testing and field trials have shown that in many respects, glass that has been reduced to a fine aggregate size fraction exhibits properties similar to that of sand.

Specification Brief

The basic requirements to successfully incorporate glass into premix concrete are:

- Crushing and screening to -2.46 mm
- Replacement of sand up to 20% proven
- Inclusion of 25% Class F fly ash should be incorporated into the mix to ensure durability

Any glass colour or mix of colours are suitable.

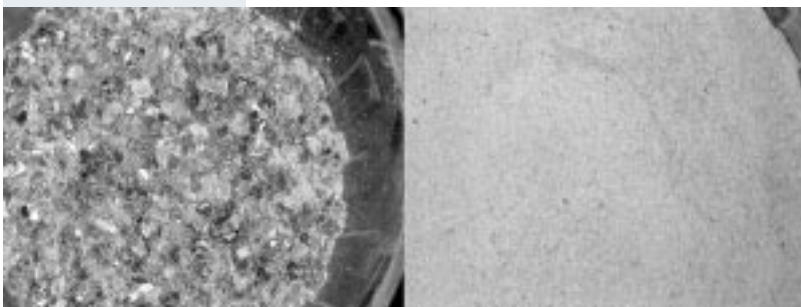
Suitable Applications

The project has demonstrated the technical feasibility of using crushed glass in premix concrete to construct:

- Cycleways
- Footpaths
- Curb and guttering
- Related concrete work
- Steel-reinforced concrete
- Unreinforced concrete up to and including 40 MPa

Engineering Performance

Glass aggregate and blends are strong, clean and safe. The blends are potentially as viable and economic an option as fine sand replacement in premix concrete production.



Finely crushed glass contains few shards, since crushing produces more rounded and less sharp material.



Glass concrete is strong, workable and safe.



Sustainable Materials Engineering

Compressive Strength

The compressive strength of concrete made with glass sand substitute is comparable to conventional premix concrete.

Shrinkage Test

The dimensional stability of concrete with glass substituted for sand was similar to that of the equivalent reference concrete.

Safety and Handling

Finely crushed glass contains few shards, since crushing produces more rounded and less sharp material.

It contains amorphous rather than crystalline silica.

Environmental Effects

There are no harmful contaminants or leachates associated with processed glass.

Benefits of Glass in Concrete

- Reduction of glass to landfill
- Lower unit cost of concrete possible
- Saving on freight costs in regional areas
- Environmental benefits of replacing natural aggregate resources with recycled material
- Secondary market for curbside collected glass



Any glass colour or mix of colour is suitable.



For more information contact:

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Sustainable Materials Engineering

ACOR WEBSITE LAUNCHED

For further information on material specifications for recycling in Australia, recycling statistics or ACOR member profiles visit ACOR's website

www.acor.org.au

View ACOR's National Packaging Covenant Action Plan, find out What's New and view past ACOR newsletters.

You can also register for e-bulletins from ACOR by filling in the form on the website.

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