ARDEX OPERATIONAL SUMMARY AND MANAGEMENT REPORT

Proposed Development Lot 12, 657 – 763 Mamre Road Kemps Creek

Contents

Contents

1 Introduction

This operational and management report supports SSD-17647189, setting out details of the manufacturing and warehousing operation that is proposed for the new Ardex industrial facility. Through this report, DPIE will be provided with a detailed description of the types of activities and processes that are proposed to be completed onsite, from the raw materials being delivered to site, the manufacturing process itself and the finished goods stored.

2 About Ardex

Ardex Australia (Ardex) is owned by Ardex Anlagen GmbH headquartered in Germany. Ardex Anlagen is a family-owned company based in Germany that has been operating for c70 years and currently employs c3,400 people in over 100 countries. Ardex owns 18 brands of specialist building materials including floor levelling and adhesives, tile and natural stone systems, sheet and liquid applied waterproofing membranes, general construction and decorative surfaces.

The company's Australian headquarters are currently located in Seven Hills and the proposed new facility at the JV site will be the new headquarters with c2,500 sqm of high-quality office accommodation and also comprise the consolidation of two other existing facilities in Sydney. Ardex has facilities in Victoria, Queensland, Western Australia and South Australia.

Ardex is a manufacturer and supplier of products which include renders, screeds, floor levelling and adhesive products, decorative surface finishes, mortars used in repair applications, tile adhesives, grouts, silicone products, waterproofing membranes, primers, bonding agents and additives, sealants, sealers, soundproofing systems, a range of "natural stone" products, and a range of tools used for flooring and wall applications. Ardex sells to wholesalers, tilers and other building trades as well as into the retail market, in particular under the Dunlop brand. Ardex's brands are often specified by architects because of their quality, innovation and particular attraction to interior designers and architects.

In recent years, Ardex recognised that the current manufacturing facilities, still rely on heavily outdated and labor-intensive manual processes, which lack the productivity, capacity and cost effectiveness to satisfy the growing demand for Ardex's products in the market. Due to these factors, the company has identified the need to rationalise and expand the manufacturing and distribution base in Sydney, with modern state of the art facilities.

The proposed site will include offices, R&D laboratory, warehouse storage of raw materials and packaging,distribution of packed products, and manufacturing of powder and liquid products.

3 Proposed Operation

The proposed new Ardex facility will be an integrated manufacturing and warehouse facility, consolidating from three sites into one, utalising the latest technology in production equipment from Europe to produce finished goods in Australia at the lowest and most efficient cost.

The operation has three main components, being powder product manufacturing, Liquid product manufacturing and storage of finished goods. Figure 1 below shows the location of each manufacturing component within the building, with the operational and manufacturing process flow provided within Figure 2. A full description of the manufacturing and operation is provided within the following sections of this report.

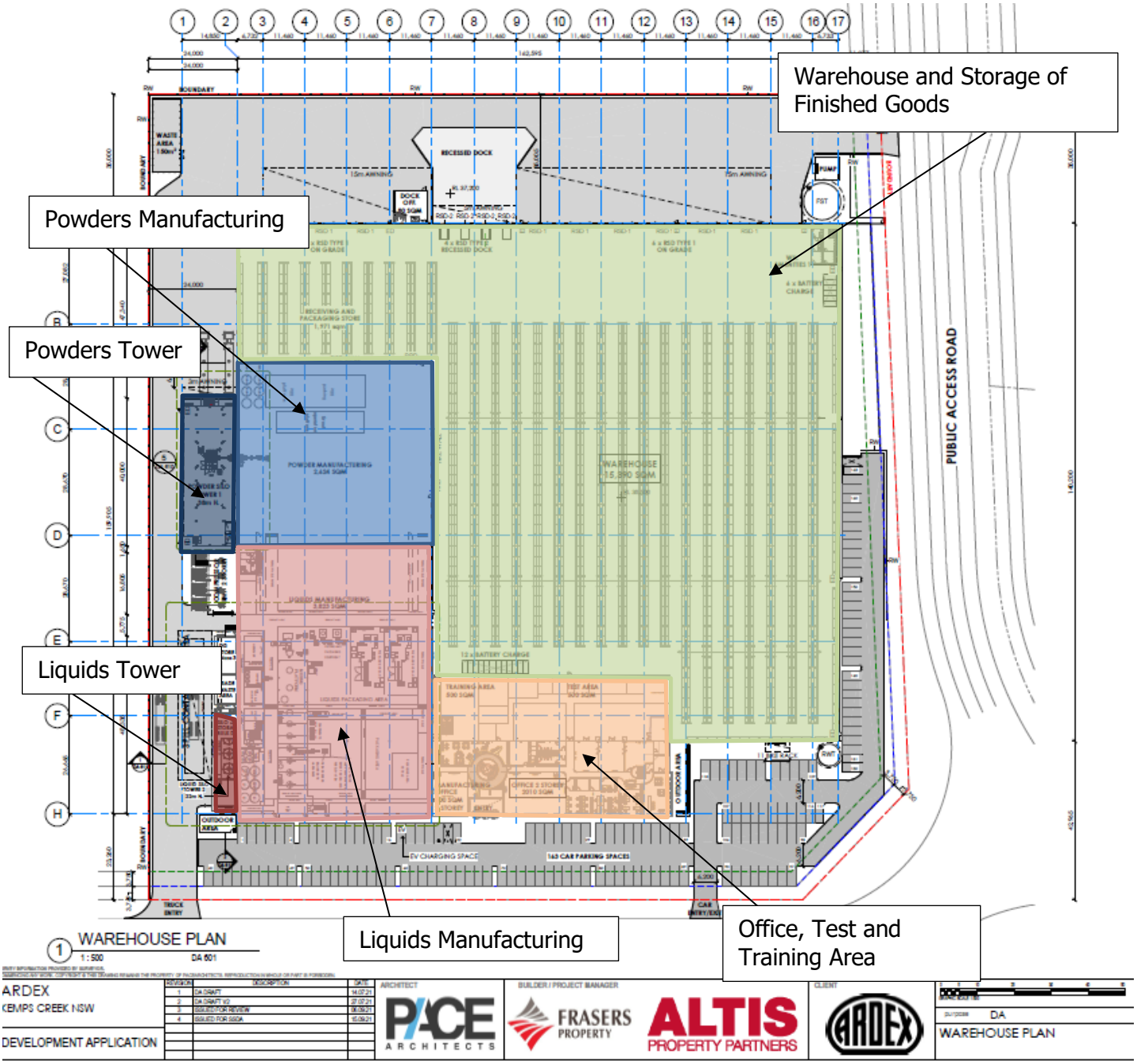


Figure 1 – Manufacturing Operation Layout

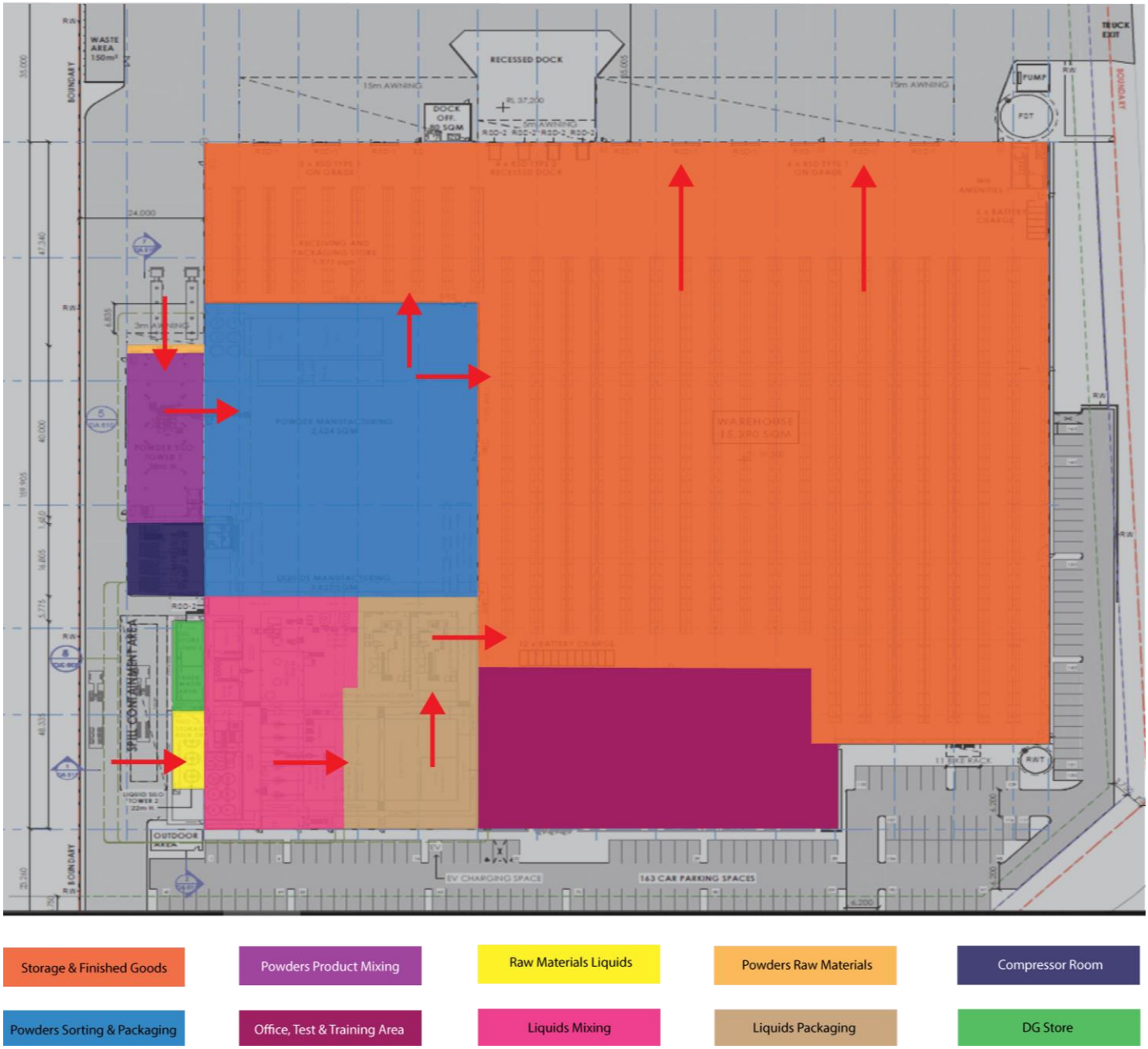


Figure 2 – Operational Process Flow

3.1.1 Powder Manufacturing

Powder manufacturing involves the use of dry powder batching, mixing and bagging processes where most batching is completed via an automated process with some manual dosing into industrial mixers, andthen followed by semi-automatic bagging and palletising. The activities will primarily consist of mixing non-flammable and non-combustible powdered chemicals (including cement, limestone and sand) to produce saleable products for the construction industry. The design of the new powder manufacturing facility will include a state-of-the-art production process based on a uniquely designed vertical tower plant layout, that utilises the force of gravity in the production cycle. The proposed process incorporates an

innovative design to improve quality, productivity, process reliability and energy efficiency. Maximumcapacity of the plant will be 48,000 tonnes of powder based products and 25,000 KL of liquids based products per annum based on a 24-hour, 7 day/week operation.

A tower height of 38m for the vertical powder plant has been proposed rather than the older, less efficienthorizontal powder plants or “Split-tower” plants, which are around 12m - 25m in height. Vertical Tower plants are now standard for Ardex’s facilities across the world. Ardex Australia’s recently built Brisbaneplant is a vertical tower plant.

There are significant advantages in using the vertical powder plant as opposed to the horizontalpowder plant, including:

- More energy efficient – the horizontal powder plant uses more than double the electricity for the same production output when compared to the vertical powder plant. This results in significant reductions in carbon emissions, and a significantly reduced load on local electrical transmission infrastructure.
- Reduced noise & dust emissions – the improved design of the vertical plant results in reduced noise& dust emissions from the powder plant line.
- The vertical powder plant also requires less cleaning and less maintenance than the horizontal powder plant, and overall is considered the superior plant option
- Reduced manufacturing footprint

Process flow diagram of Powder plant is shown in Diagram 1 and process description inTable 2:

Diagram 1: Powder Plant Process Flow

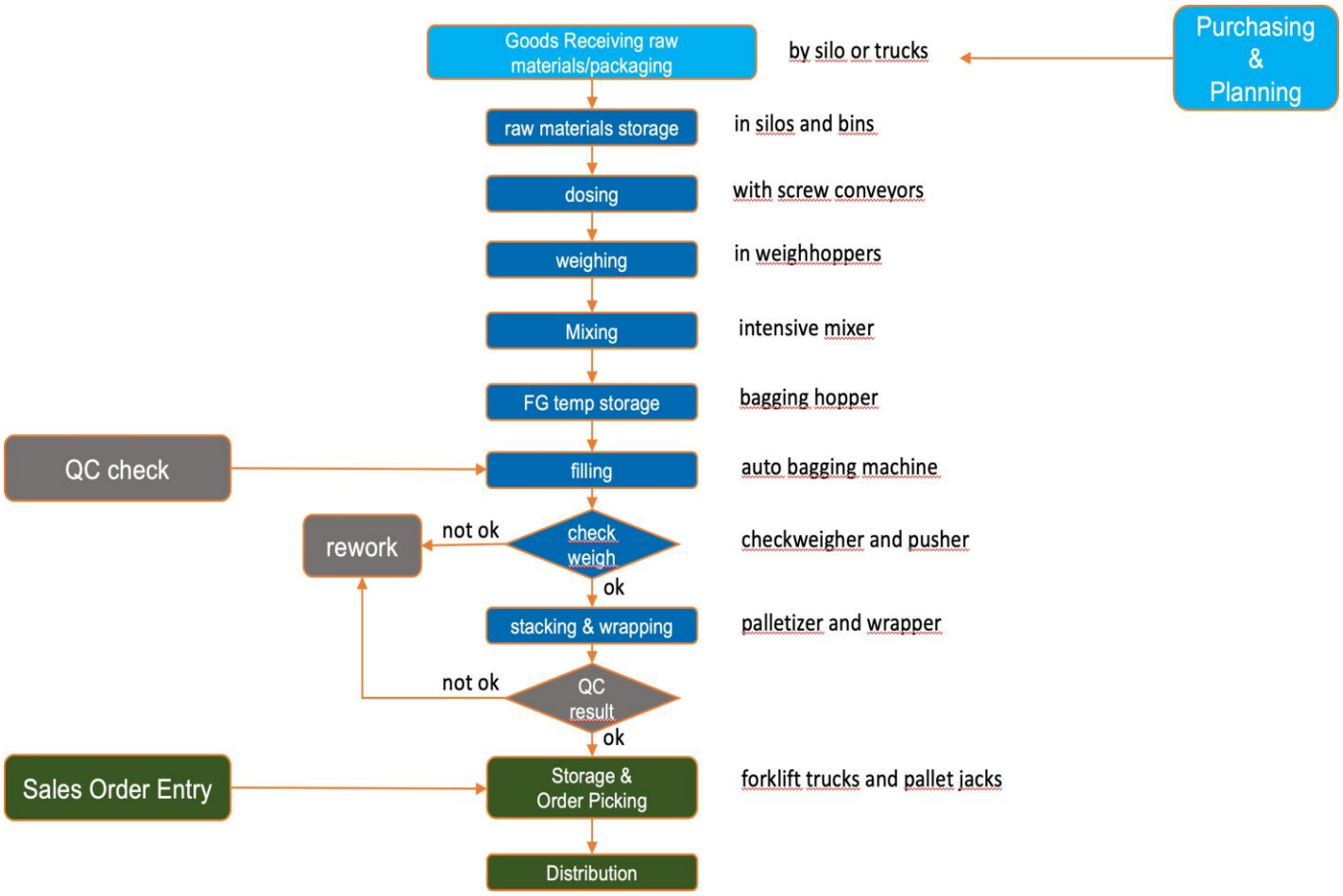


Table 2: Powder Plant Process Description

Aspect	Description		
Raw materials (refer raw material routes in Diagram 2)	**Sands & Inert Materials:** Silica sand & Calcium Carbonates	**Cements** - Portland & High Alumina cements	**Additives** Cellulosic thickeners Vinyl co-polymer ethylene acetate Retarders Pigments Hydrated lime
Raw material Receipt & Storage	**Sands & Inert Materials:** Pumped pneumatically into large silos from tankers or received in bulk bags (1000Kg) and decanted to Small silos	**Cements** Pumped pneumatically into large silos from tankers or received in bulk bags (1000Kg) and decanted to Small silos	**Additives** Received in bulk bags or 20Kg bags and decanted to small silos or received in 10Kg to 20Kg bags for manual addition (minor additives)
Material Dosing & Mixing	Screw conveyors transport raw materials and additives from the silos to the weighing hoppers. Computer controlled dosing occurs based on the formula recipe to a high level of accuracy. Materials are then transported by gravity into the mixer		
Product Packaging	Finished products are filled into 20Kg bags. Bags are then palletised and stored in the distribution warehouse for off-site distribution		
Finished products	Renders, screeds, floor levelling and adhesive products, mortars used in repair applications, tile adhesives, grouts.		

The powder production plants are automatically controlled by a PLC system through a central computer managed by the operator. Operator control panels are also located at several tower levels.

Figure 2 below provides a graphical section of the Powers Tower, outlining the manufacturing process whereby raw materials are filled into 8 silo's, the products are sorted, dosed and mixed, then measured into saleable quantities. Figure 3 is an image from the existing Brisbane facility showing how the raw materials are filled into the Powder Silo

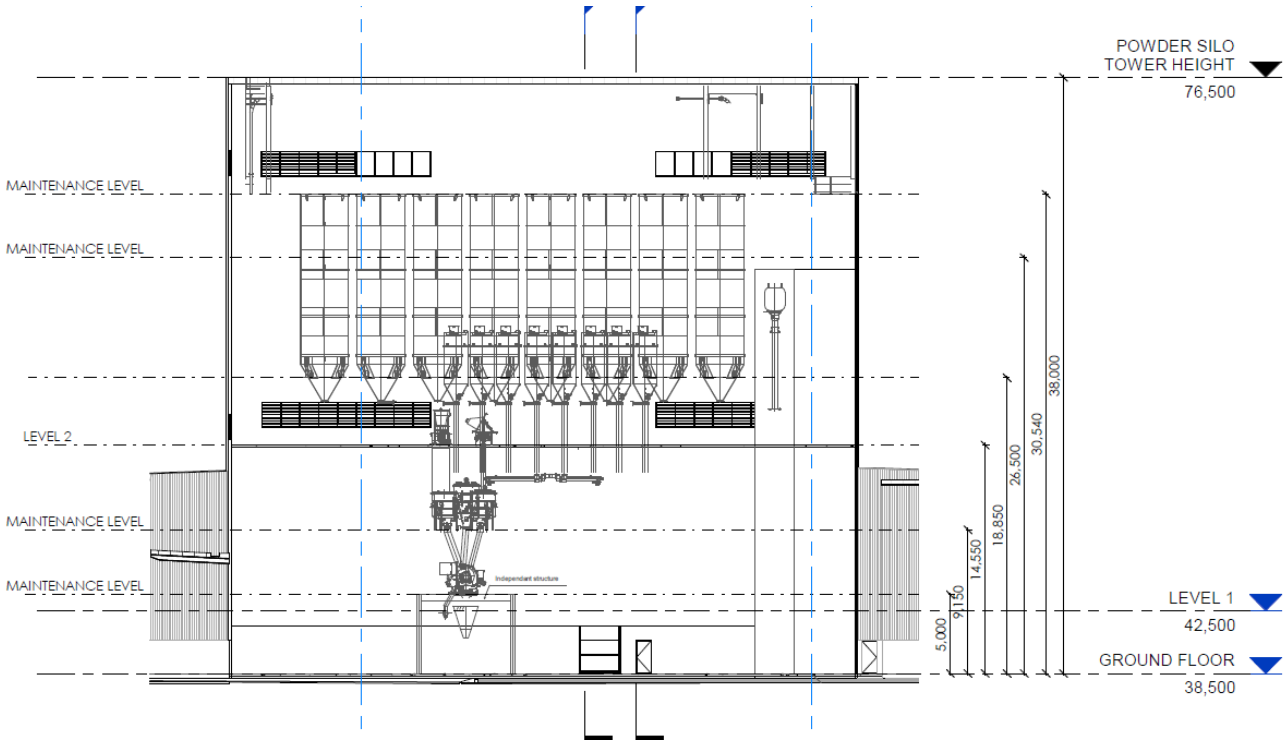


Figure 3 – Powders Tower

Figure 4 – Powers Tower Filling

3.1.2 Liquids Manufacturing

Liquid manufacturing will involve the use of liquid batching, mixing and filling processes, where most batching is completed via a semi-automated process with manual dosing into various industrial mixers. Theactivities will primarily consist of mixing and filling water dispersed polymers (emulsion/latex) with or without non-combustible fillers, silicon packing, as well as water dispersion of epoxy resins to produce saleable products for the construction industry. The new manufacturing facility is designed to achieve high efficiency, increased production volumes, high quality standards, and the ability to manufacture more complex product formulations.

Process flow diagram of Liquids plant is shown in Diagram 2 and process description in Table 3. The dosing according to the formula is semi-automatically controlled by PLC via a central computer and an operator panel

Diagram 2 -Liquids Process Flow

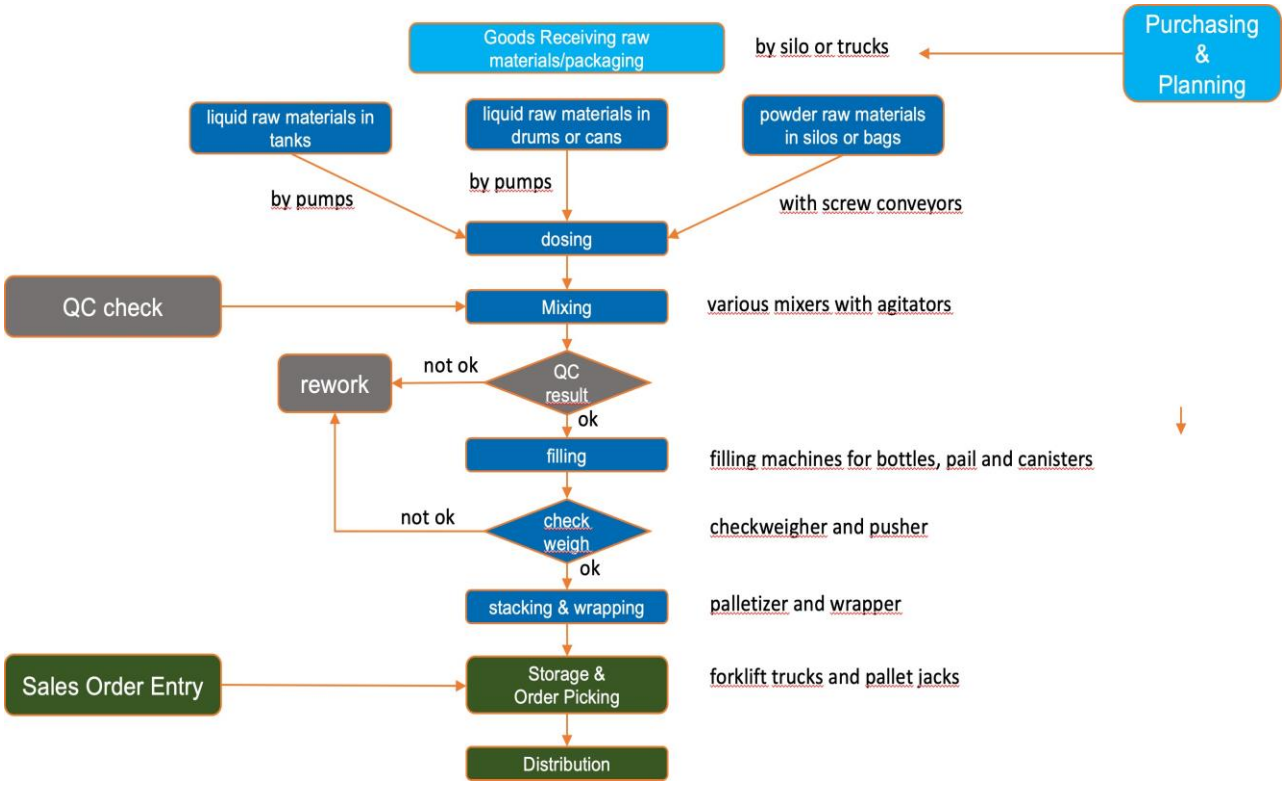


Table 3: Liquids Plant Process Description

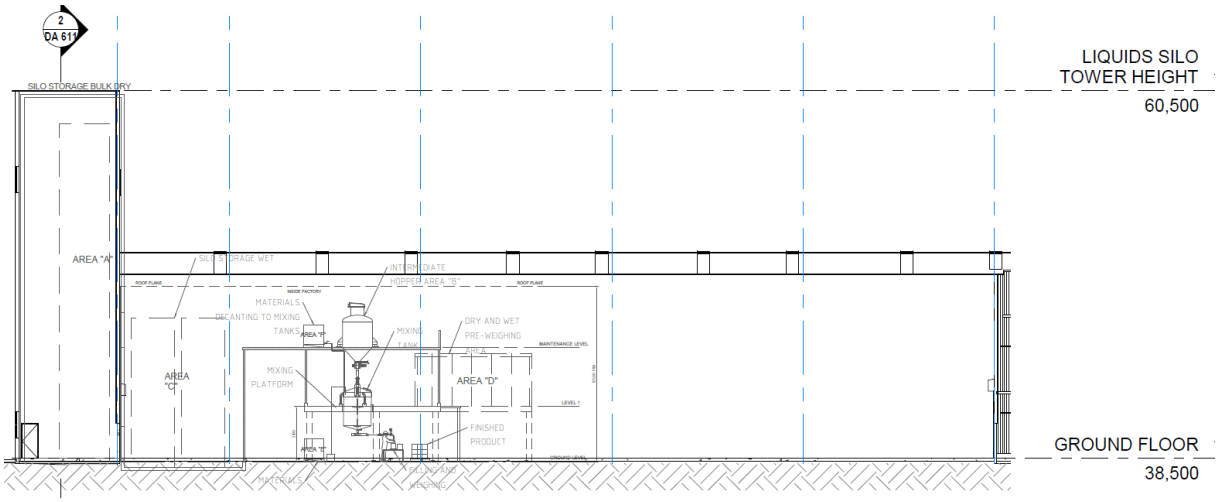
Aspect	Description		
Raw materials	**Water Dispersion Polymers** Acrylic and Vinyl acetate copolymers Modified Acrylics Polyurethane dispersion SBR dispersions	**Fillers** - Silica Sand - Calcium carbonate - Rubber crumb	**Additives** Surfactants - Pigments Epoxy resin Biocides Solvent Butyl DiGlycol Carbitol 200 Kg
Raw material Receipt & Storage	**Water Dispersion Polymers** Pumped pneumatically into silos from tankers or received in 1000Kg IBCs or 200L drums. Pumped into specific mixers	**Fillers** Bulk Silica sand and Calcium Carbonate transferred pneumatically into silos from tankers. Rubber crumb received in 1000 Kg bags. Other fillers received in 20 Kg bags	**Additives** Received in IBC, 200L drums or 20Kg bags. Stored in raw material/receiving store before transferring to Liquids manufacturing area. Dangerous goods (Class

			3, 8 & 9) stored in designated areas
Material Dosing & Mixing	Screw conveyors transport fillers (silica sand and calcium carbonate) from silos to weighing hoppers. Water dispersion polymers are pumped from silos tanks or drums to mixers. Most Liquid additives are pumped from drums to mixers. Some manual additions of raw materials are required. Computer controlled dosing occurs based on the formula recipe to a high level of accuracy. After mixing and QA testing, products are pumped or pressed to filling equipment at ground level.		
Product Packaging	Finished products are filled into bottles and pails ranging in size from 0.5Kg to 20Kg. Products are then palletised and stored in the distribution warehouse for off-site distribution		

Finished product	Liquid grouts, waterproofing membranes, roof pointing repair products, mastics for tiling applications, Silicone tubes for tiling and waterproofing applications

Figure 5 below shows a detail of the liquids manufacturing area and section of the process, detailing where raw materials are filled into the liquids tower into silo's then transferred into the mixing area.

Figure 6 provides images of the liquids mixers that form part of the current Brisbane facility.



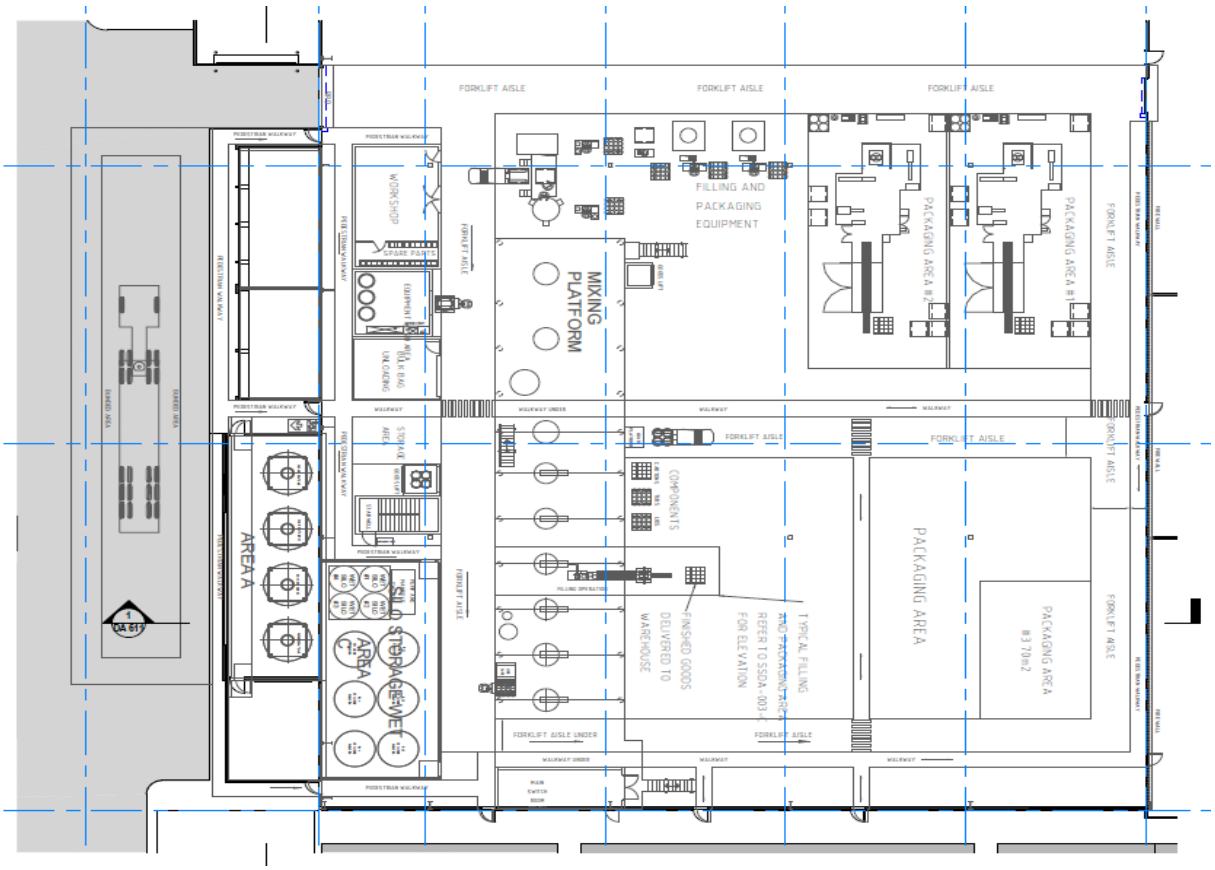


Figure 6 – Mixing Tanks

3.2 Storage of Products

The new Ardex site will store raw products within the silo's described above, or within the mixing tanks as part of the manufacturing process, with finished goods packaged up ready for distribution to ertail stores.

3.3 Staff

The maximum anticipated employee numbers on site at any one time is expected to be approximately 140staff spread across the manufacturing, warehousing, office and test/training areas.

3.4 Carparking and traffic

Employee, contractor, and visitor parking has been accommodated within the site, with 157 spaces allocated. The additional 17 (on top of max employee numbers) will cater for contractors and visitors

3.5 Hours of operation

The proposed development is expected to operate 24 hours a day, 7 days a week. This is required to ensure viability of the site.

3.6 Customer/visitors

The proposed facility includes a test and training area for contractors and visitors to view and test the Ardex products whilst supervised. Adequate car parking facilities and amenities have been provided to accommodate this use

Visitors to the site are limited to known auditors, suppliers of raw material, equipment providers and contractors, raw material and equipment providers and visitors are managed to normal business hours only, unless there is an emergency and works are required immediately. Equipment contractors are managed through our maintenance operating system and are expected to be on site as per agreed schedules.

3.7 Site Deliveries and truck movements

Vehicle movements throughout the site will be managed by an internal traffic management plan. Vehicles (including trucks and tankers) will visit site to deliver raw materials, provide maintenance to the manufacturing operation and to pick up finished goods.

There are on average 65 trucks that use the loading docks daily and 35 tankers that service the towers (raw products) during normal business hours of 6am – 11pm Monday to Friday, with reduced movements during the night time and on Sundays

3.8 Finished Products

Transfer of finished products to our end customer is achieved via a 3PL transport provider or retailer primary freight.

Finished goods are distributed via the retail or wholesale trade with the retail trade accounting for approximately 90% of all vehicle movements.

Figure 6 below shows the typical finished product types that will be manufactured at the proposed facility


DUNLOP
ACRYLIC RENDER
TIMBER FLOOR LEVELLER
UNIVERSAL TILE ADHESIVE
WET AREA WATERPROOFING
TILE POINTING
PC JOINTING COMPOUND
COLOURED RENDER TEXTURE COAT
ARDIT RAPIDSET
PREMIXED PLASTIC TILE ADHESIVE
WET AREA TAPE


ARDEX
ARDEX X56
Highly Flexible Tile Adhesive
ARDEX X68
ARDEX X7
Wall & Floor Tile Adhesive
ARDEX X77
Premium Micro-flex Flexible Wall and Floor Tile Adhesive
ARDEX X78
Premium Micro-flex Flexible Floor Tile Adhesive
ARDITEX NA
Self Levelling and Smoothing Compound
20kg
SUPER
SLEX WPM 002
ARDEX D2
ARDEX FS-DD
ARDEX FG 8
Highly Versatile Flexible Coloured Grout
Colour Component for use
Colour Pack
ARDEX EG 15
ARDEX WPM 155 Rapid
ARDEX STB 15-7S
WPM 1000 WELDTEC
WPM 1000 WELDTEC

3.9 Volumes of materials

Key raw material deliveries for Liquids and Powder manufacturing are shown in the tables below.

LIQUIDS RAW MATERIAL DELIVERIES BASED ON 25,000 T.P.A. PRODUCTION OUTPUT (EXCLUDES WATER)

raw material (usage > 100 tonne/annum)	Average Daily delivery [t]	Pack size	Storage
CALCIUM CARBONATE FILLER 1	14.8	Bulk	35 m3 silo storage area "A"
FILLER SAND 1	12.8	Bulk	35 m3 silo storage area "A"
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 1	10.7	Bulk	35 kL silo storage area "C"
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 2	4.6	Bulk	25 kL silo storage area "C"
FILLER BARIUM SULPHATE 1	3.6	25 Kg bag	Warehouse
FILLER SILICA 1	3.3	25 Kg bag	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 3	2.6	IBC	15 kL silo area "C" and/or warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 4	2.5	Bulk	25 kL silo storage area "C"
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 5	2.0	Bulk	25 kL silo storage area "C"
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 6	1.4	IBC	15 kL silo area "C" and/or warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 7	1.4	IBC	15 kL silo area "C" and/or warehouse
WATER BASED POLYURETHANE EMULSION	1.1	IBC	15 kL silo area "C" and/or warehouse
FILLER SILICA 2	0.9	25 Kg bag	Warehouse
CALCIUM CARBONATE FILLER 2	0.9	25 Kg bag	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 8	0.9	IBC	Warehouse
PIGMENT - WHITE	0.6	25 Kg bag	Warehouse
EPOXY RESIN	0.6	200L Drum	Warehouse
FILLER SAND 2	0.5	Bulk Bag	Warehouse
THICKENER - WATER BASED	0.5	IBC	Warehouse
WATER BASED MODIFIED STYRENE BUTADIENE EMULSION	0.5	IBC	Warehouse
FILLER RUBBER CRUMB	0.5	25 Kg bag	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 9	0.4	IBC	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 10	0.4	IBC	Warehouse
FILLER BARIUM SULPHATE 2	0.4	25 Kg bag	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 11	0.4	IBC	Warehouse
WATER BASED ACRYLIC/MODIFIED ACRYLIC EMULSION 12	0.3	IBC	Warehouse
TOTAL (excuding minor additives)	**69**		

Storage capacity: ***Approxiamtely 80% of deliveries will be stored in silo storage areas "A" and "C". Capacities: Silo Area "A": 100 tonne (scalable to 200 tonne); Silo storage area "C" : 120 tonne; Warehouse: more than 500 tonne***

POWDER PRODUCTION - RAW MATERIAL DELIVERIES BASED ON 48,000 T.P.A. OUTPUT

raw material (usage > 100 tonne/annum)	Average Daily usage [t]	Pack size	Storage
SAND 1	31	Bulk tanker delivery	50 m3 silo (Powder Tower)
SAND 2	24	Bulk tanker delivery	50 m3 silo (Powder Tower)
CALCIUM CARBONATE 1	24	Bulk tanker delivery	50 m3 silo (Powder Tower)
CEMENT 1	22	Bulk tanker delivery	50 m3 silo (Powder Tower)
CEMENT 2	16	Bulk tanker delivery	50 m3 silo (Powder Tower)
CEMENT 3	7.1	Bulk tanker delivery	50 m3 silo (Powder Tower)
CEMENT 4	4.3	Bulk tanker delivery	50 m3 silo (Powder Tower)
CALCIUM CARBONATE 2	3.8	Bulk tanker delivery	50 m3 silo (Powder Tower)
SAND 3	2.8	Bulk tanker delivery	50 m3 silo (Powder Tower)
FILLER RUBBER CRUMB	2.1	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
CEMENT 4	1.6	1000 KG Bulk bag	50 m3 silo (Powder Tower)
PLASTER 1	1.6	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
CEMENT 5	1.5	1000 KG Bulk bag	50 m3 silo (Powder Tower)
SLAG	1.1	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
LIME HYDRATE	1.1	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
POLYMER POWDER	1.3	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
PLASTER 2	1.1	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
CEMENT 6	1.0	Bulk tanker delivery	50 m3 silo (Powder Tower)
CALCIUM CARBONATE 3	0.7	1000 KG Bulk bag	6 m3 pencil silo (Powder Tower)
SAND 4	0.5	25 Kg bag	6 m3 pencil silo (Powder Tower)
FILLER - NON SILICA	0.5	25 Kg bag	Warehouse
SAND 5	0.5	1000 KG Bulk bag	Warehouse
CHEMICAL ADDITIVE	0.5	25 Kg bag	Warehouse
TOTAL (excuding minor additives)	**151**		

Storage capacity: ***Approximately 93% of deliveries will be stored in Tower silos. Capacities: Tower Silos 1,300 tonne; Warehouse: more than 200 tonne***

It is anticipated from this facility that 48,000t of Powders Products and 25,000KL of Liquids Products will be manufactured each year.

3.10 Waste management

ARDEX Australia - Kemps Creek Facility Waste Management Plan

Type of Waste Generated	Expected Volume (tonnes) p.a.	Proposed on Site Storage & Treatmant Facilities	Destination
Office - paper/cardboard	10	Stored in 15m3 cardboard recylce bin in defined waste storage area	sent to recycler
Office - food waste	5	Stored in 23m3 general waste bin in defined waste storage area	disposed of into landfill
Office - general waste	5	Stored in 23m3 general waste bin in defined waste storage area	disposed of into landfill
Process - packaging paper/cardboard	20	Stored in 15m3 cardboard recylce bin in defined waste storage area	sent to recycler
Process - packaging plastics	20	Baled and stored in defined waste storage area	sent to recycler
Process - wooden pallets	250	Bulk stored in defined area on hardstand	Recycled timber pallets, 40 kg/pallet (broken pallets sold to 3rd party which turns into mulch)
Process - timber	15	Stored in 23m3 general waste bin in defined waste storage area	disposed of into landfill
Process - Powder from dust collectors,	470	Stored in used bulk bags internally	Sent to third party for recycling - 800Kg/bag
Process - solids waste from Liquids treatment plant	150	Liquids waste material is processed on-site to separate solids and water. Liquids solids are stored on site in used IBC's or similar in defined waste storage area	disposed of into landfill
Process - 200L steel drums	50	Bulk stored in defined area on hardstand	sent to recycler
Process - packaging IBC's	100	Bulk stored in defined area on hardstand	sent to recycler
Process - general waste	280	Stored in 23m3 general waste bin in defined waste storage area	disposed of into landfill
Process - waste water	2,000	Liquids waste material is processed on-site to separate solids and water.	water is treated to prescribed standard then discharged to sewer under licence from Sydney Water.
Finished Goods - EOL powder products	150	Stored on pallets internally unless sending to landfill, the in 23m3 general waste bin	reblended on site or disposed of to landfill
Finished Goods - EOL liquids products	100	Stored on pallets internally unless sending to landfill, the in 23m3 general waste bin	reblended on site or disposed of to landfill
Finished Goods - EOL other products	50	Stored in 23m3 general waste bin in defined waste storage area	disposed of into landfill
Total treated waste water to sewer	**2,000**		
Total Dry & general waste	**1,675**		
Estimated Total - Recycle/Reuse	**1,170**		
% Recycle	**70%**		
Estimated Total Landfill	**505**		

Note: EOL refers to "End of Life" due to expiry, rejected and damaged stock

3.11 Mechanical and plant

Wastewater Treatment Plant. The Wastewater treatment plant is designed to allow for the recycling of waterthrough the manufacturing process and any water discharge to sewer to be cleaned to meet Sydney Water consent to discharge requirements.

Compressed Air Plant. The compressor room (extern al to the building) will contain 4 compressors and dust extractors that manage both the operation of the plant and any excess dust that come out of the manufacturing process. All by products of the process are re-used and note wasted.

Electrical Power Supply Electrical power will be supplied to the site by 1 x 22 kV incoming line to anEnergy Australia substation. The substation is connected to high voltage (HV) main distribution board inside the manufacturing area