



# SPIRAL & LINED TUBES

## PRODUCT DATA SHEET

### INTRODUCTION

EzyTube is the newest technology in producing off-form finished round concrete columns. EzyTube offers many advantages over alternative spiral tubes, some of these are as follows:

- Light weight, saves craneage as the tube can be safely manhandled in most cases.
- Weatherproof.
- Save labour due to the simple and quick set-up requirements, and even faster removal using the unique “Rip Cord Tape” feature
- Very safe to use. No grinders or electric tools required to trim, remove or cut to place in the waste bin.
- Flexible, strong multilayer wall structure. Ensures improved impact resistance compared to single seam spiral tubes.

EzyTube Spiral is a composite tube comprising multiple layers (6-11 layers depending on diameter and height requirements) of thin water resistant paper and high tensile strength plastic coated mesh. The concrete surface which is produced is a class 2-3 with a light spiral mark which can be painted or left as a natural concrete finish.

Ezytube Lined is a Spiral tube which has had a smooth and durable plastic liner inserted. The concrete surface which is produced is a class 1-2, and has 1-2 minor vertical seams (depending on the tube diameter) which extend the full length of the column.

### TRANSPORT & HANDLING

Due to EzyTube lightweight properties, tubes of up to 4.5 mtrs in length (diameters up to 600mm) are easily handled by one man.

EzyTube is extremely strong however has a flexible wall structure. When transporting the tubes, they may at times become out of round. This is not a problem as the tubes can normally be pushed back into shape prior to fitting, however the tube will attain a round form when filled with concrete even if the tube is slightly out of round prior to filling.

Ezytube can be transported in either a vertical or horizontal position.

EzyTube is quite resilient, however, care should be taken when handling and securing the load during transport, ensuring that the securing straps do not cut or damage the outside layer of the tube.

To aid in reducing freight costs, each of the different diameter tubes fit within the internal diameter of the next larger size. eg 400mm fits inside 450mm, which fits inside 500mm etc.

Longer and larger diameter tubes should always be stacked at the lowest levels on the trucks tray. High sided gates should be fitted to trucks to ensure best stacking arrangements, otherwise trucks without gates will require pyramid type stacks which will reduce carrying capacities.



## **STORAGE**

EzyTube can be stored in either a vertical or horizontal position. EzyTube can be stored in most outside conditions for short periods, as it is water resistant and will not be affected by normal weather conditions.

EzyTube is robust and offers a reduced risk of damage from normal handling whilst on the building site. It is advisable where possible to store unused tubes away from areas where they may incur more serious damage from impact or falling objects or longer term effects of weathering.

Always inspect the outside of the tube for any visual damage to ensure that the load bearing properties of the tube have not been adversely affected prior to filling. Any damage, impacts, cuts etc should be reinforced using the Ezytube Cross Filament tape which can be purchased from Ezytube or our approved distributors.

Due to EzyTube lightweight properties, it is advisable to secure the tubes to prevent being dislodged by strong winds. For longer-term storage, it is advisable to store EzyTube under cover.

## **PHYSICAL PROPERTIES**

### **Hazardous Elements**

All elements of EzyTube are inert/non hazardous in their manufactured form.

However, neither the composite tube or its components should be subjected to fire/burning as the resulting emissions may be harmful if inhaled.

### **Odourless**

The range of EzyTube products generally do not emit or absorb odour.

### **Dimensionally Stable**

EzyTube is dimensionally stable in length and diameter and will maintain the desired dimensional properties through a wide range of temperature, humidity and typical weather conditions.

### **Waterproof**

EzyTube will not be affected by water should rain occur prior, during or after fixing. However, please note that the lightweight, buoyant nature of EzyTube may cause product, which is not adequately contained, to be dislodged or moved in heavy rain or water flow.

### **Ezytube Physical Properties Table**

(see next page)



**Ezytube Physical Properties Table**

Dia. (mm)	Wall Thickness (mm)	Outside Tube Diameter (mm)	SPIRAL Tube Weight (kg)/mtr	Safe Filling Heights Unrestricted Pour Rate	Safe Filling Heights Controlled pour at 3.0 mtrs vertically per hour
150 (STD)	1.2	153	0.69	9.0 mtrs	
200 (STD)	1.2	203	0.91	9.0 mtrs	
254 (STD)	1.2	257	1.16	7.0 mtrs	9.0 mtrs
305 (STD)	2.0	308	1.52	5.6 mtrs	
305 (HVY)	2.4	309	1.85	7.0 mtrs	9.0 mtrs
353 (STD)	2.0	356	1.76	5.4 mtrs	
353 (HVY)	2.4	357	2.14	6.5 mtrs	9.0 mtrs
406 (STD)	2.0	410	2.03	5.2 mtrs	
406 (HVY)	2.4	411	2.46	6.5 mtrs	9.0 mtrs
454 (STD)	2.0	458	2.26	5.0 mtrs	
454 (HVY)	2.4	459	2.75	6.5 mtrs	9.0 mtrs
508 (STD)	2.0	512	2.54	4.8 mtrs	
508 (MED)	2.8	514	3.46	6.5 mtrs	
508 (HVY)	3.2	515	4.39	8.0 mtrs	9.0 mtrs
553 (STD)	2.0	557	2.76	4.7 mtrs	
553 (MED)	2.8	559	3.77	6.2 mtrs	
553 (HVY)	3.2	560	4.78	8.0 mtrs	9.0 mtrs
610 (STD)	2.0	614	3.05	4.6 mtrs	
610 (MED)	2.8	616	4.16	6.0 mtrs	
610 (HVY)	3.2	617	5.27	7.5 mtrs	9.0 mtrs
660 (STD)	2.0	664	3.30	4.4 mtrs	
660 (MED)	2.8	666	4.50	5.8 mtrs	
660 (HVY)	3.2	667	5.70	7.2 mtrs	9.0 mtrs
711 (STD)	2.5	716	4.85	5.0 mtrs	
711 (MED)	3.2	718	6.14	6.5 mtrs	
711 (HVY)	4.0	719	7.43	8.0 mtrs	9.0 mtrs
765 (STD)	2.5	770	5.25	4.5 mtrs	
765 (MED)	3.2	771	6.61	6.0 mtrs	
765 (HVY)	4.0	773	8.01	7.5 mtrs	9.0 mtrs
811 (STD)	2.5	816	5.53	4.0 mtrs	
811 (MED)	3.2	817	7.01	5.5 mtrs	
811 (HVY)	4.0	819	8.49	7.0 mtrs	9.0 mtrs
914 (STD)	2.5	919	6.23	3.8 mtrs	
914 (MED)	3.2	921	7.90	5.2 mtrs	
914 (HVY)	4.0	922	9.56	6.5 mtrs	8.0 mtrs
990 (STD)	2.5	995	6.75	3.6 mtrs	
990 (MED)	3.2	997	8.55	5.0 mtrs	
990 (HVY)	4.0	998	10.36	6.3 mtrs	8.0 mtrs



## **COLUMN SETUP - Top Fitting Technique**

### **Installation**

EzyTube is primarily designed for installation by the top fitting technique ie. The tube is placed over the reinforcing steel from the top and lowered into position. Care should be taken to avoid scraping the internal layer on the steel reo bars (plastic caps on the exposed ends are advised) as this may result in marks onto the surface of the concrete column.

### **Positioning**

Both the spiral and lined tubes are equally strong when the tube is positioned in either direction.

Where a tube incorporates a 'Ripcord tape' for easy removal, it is important to position the tube in the correct position. The tube should be placed with the long section of Ezytube tape running down from the top (will extend to a height that is easy to reach from ground level, with the short tape at the base.

The internal plastic liner of EzyTube has a small joint, which results in a fine horizontal line on the surface of the column. Should any areas of the column be concealed or be less visible, the joint should be located in this position.

The position of the internal joint is marked top and bottom on the outside of the column for easy identification.

### **Trim to Length**

Slide the tube through the hole cut in the slab formply, and over the steel cage taking care not to damage the inside of the tube by scrapping on any exposed tie wire or reo bars. Spacer wheels should be used on the reo to assist in protecting the inside face of the tube as well as to maintain clearances.

Using a Stanley knife (or similar), trim off any excess Ezytube in line with the top of the formply.

### **\*\*\* IMPORTANT\*\*\***

Where the Ripcord tape is used, pull the tape away from the tube to allow trimming the tube without cutting through the Ripcord tape.

Where lined tubes are trimmed, ensure that the top of the cut tube is retaped and sealed to prevent concrete flowing between the spiral tube and the liner.

### **Fixing**

The top and bottom of EzyTube must be fixed securely in place to prevent movement whilst filling with concrete. The base of the tube is held in place by fixing four equally spaced blocks of wood to the floor slab.

When fitted, the top edge of the tube is cut so that it is held neatly in place by the soffit formwork.



## **Bracing**

Cross bracing is not normally required on top fitted columns up to a height of 5.5 mtrs. For columns that are longer than 5.5 mtrs, cross bracing supports should be located approx  $\frac{1}{2}$  the overall height, or installed to reinforce either side of any joints where standard length tubes are extended / joined on site.

Should the EzyTube form not be fixed in place at the top as no soffit formwork is in place (column first – ‘Pour Up Technique’), vertical bracing should be applied as 4 equally spaced timbers around the form which extend the full height of the column. The vertical bracing is fixed in place to a timber support at the top of the column and props fixed to the vertical bracing running diagonally away from the column to a secure fixing. Under no circumstances should the props be positioned in direct contact with the EzyTube form.

## **Pouring Concrete**

When pumping the concrete into the tube, place the concrete pump hose within the centre of the steel cage and locate as low towards the base of the tube as possible. Do not rest the hose on the top of the tube and allow the concrete to drop from the top as this may result in damage to the top of the tube and concrete may enter between the tube and the plastic liner.

Place the vibrator with-in the concrete and withdraw both the hose and vibrator evenly. Do not over vibrate, or move the vibrator up and down repeatedly as this will increase the incidence of honeycomb on the concrete surface.

## **Stripping**

### **a) Using a Knife**

EzyTube ensures an ease in stripping which is unachievable by any other type of formwork tubing. After allowing sufficient time for the concrete to set (in accordance with ASI509-1974), simply remove the base supports and use a Stanley knife (or similar) to perform a straight vertical cut from the top of the tube to the base. Perform a cut around the full circumference of the tube approximately 100mm from the soffit or support beams. Pull the two sections apart and slide the EzyTube form off the concrete column. One person can perform this operation generally in a few minutes per column.

For best results with lined tubes, always try to cut the form in line with the marks on the outside of the tube, which indicate the location of the internal plastic join. This will result in the best possible finish on the surface of the column.

For columns that are higher than 3 mtrs, it may be easiest to cut laterally around the circumference at intervals of 2.5 to 3.0 mtrs to strip the form as smaller sections.

Due to the ease of removal, EzyTube is often left in place on the column until just prior to hand over. This protects the column from scratches, bumps or other damage by other building works on site.



## b) Using 'Ripcord Tape'

Remove bracing at base of tube, chip away any excess concrete that may have run out the base or top of tube which may restrict removal.

The 'Ripcord tape' is approx 18mm in width and is covered by a protective Ezytube tape. The ripcord tape is designed to be strong enough to cut through the Ezytube form without risking cuts to hands etc.

Simply, pull the Ripcord tape away from the tube all the way to the top. Set back approx 1-1.5mtrs to achieve approx 30 degree angle, and pull down evenly on the tape.

Avoid pulling excessively, or pulling down too close to the tube as this may cause the tape to break. In the event that the tape breaks, cut the tube directly beneath the tape with a knife approx 50mm in a downwards direction, pull down on the short tail of tape to continue with the removal process.

When the tape has cut down to approx. 1 mtr from the base of the tube, pull up on the short piece of tape located at the base of the tube to cut through the remaining tube in an upward direction.

Where lined tubes are used, the ripcord tape will remove the outer tube only. The liner is then simply removed by cutting a small section of the tape which joins the plastic and pulling away from the column.

## **COLUMN SETUP - Side Fitting Technique**

Where it is not possible to install the formwork tube by the "Top Fitting Technique", EzyTube may be installed by the following process. However, a high quality finish may not be achieved at the joining point.

- 1 Mark a straight line between the top and bottom marks, which correspond with the internal liner join.
- 2 Cut along this line with a Stanley knife (or similar) and a straight edge guide to ensure a straight, fine cut.
- 3 Wrap the cut Ezytube form around the steel cage (or I beam) by gently spreading the tube at the cut edges.
- 4 Pull the 2 edges together using small amounts of packaging tape for the full height of the tube.
- 5 Run a packaging tape over the full length of the cut surface to prevent water, fine cement and sand from running out.
- 6 Take a second Ezytube and cut the same way as indicated in steps 1 & 2 above. Place this second Ezytube form around the inner Ezytube, ensuring that the join in the inner and outer tubes are on opposing sides (180 degrees apart).
- 7 Using Ezytube approved reinforced tape, wrap the full circumference of the tube with 3 layers every 100mm up to the 1 meter high point, and continue with 2 layers every 200mm thereafter to the top of the tube.
- 8 Fill the tube with concrete and remove the EzyTube in reverse order upon adequate cure of the concrete.
- 9 Please refer to the Ezytube instructional cd or Ezytube Head Office staff for further detailed information



## **CUT OUTS & SPECIAL FORMS**

EzyTube is unique in that it can be easily cut to accommodate varied adjoining surfaces/structures (e.g. beams, steps, edges, conduits etc).

Most conventional formwork tubes will tend to spring out of shape when cut, but EzyTube will maintain its form.

Please contact Ezytube technical department for any specific recommendations regarding any special cut out requirements.

**EZYTUBE PTY. LTD.**

Patent Pending

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