

# TECTRON™ Roof and Floor ME Cells and Bare Electrodes



## PRODUCT DATA SHEET

TECTRON Roof and Floor Membrane Electrode (ME) Cells and Bare Electrodes are used to supplement the throwpower of Side ME Cells.

Because ED film is deposited according to how much current flows to each section of the ware, Roof and Floor Cells and Bare Electrodes can be used in multi-zone tanks to help coat complex or difficult to reach areas on the ware.

Their position and proper orientation are critical to achieving uniform ED film thickness. Roof and Floor ME Cells are placed on the top and bottom, respectively, of the E-coat tank.

### Benefits

- Improved coverage in recessed areas.
- Low electrical resistance.
- Easy installation and maintenance.
- Lower membrane current densities for longer life.
- Special purpose membranes to control paint chemistry and improve film quality.

### Features

- Cylindrical anode design has no exposed edges to wear rapidly, develop hot spots or pinch the membrane.
- Roof and Floor Cells/Electrodes can be installed anywhere in the tank.

- Reduced acid removal rates can be achieved by appropriate choice of membrane type, or by use of Bare Electrodes.
- Design assistance is available at no extra charge. Installation supervision is also available, usually at no extra cost.

### Placement of Cells/Bare Electrodes

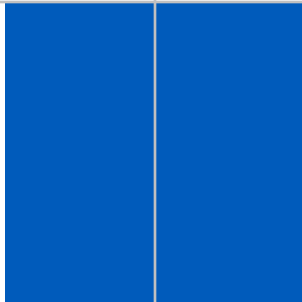
*Tank Entrance* — Allows more time to coat the recessed areas of the ware by coating the exterior of the ware faster.

*Tank Exit* — Increases the power available to drive E-coat paint into the recessed areas of the ware.

*Throughout the Tank* — Decreases the load of the Side ME Cells. Side anodes will not coat the top or bottom of the ware; therefore, more power will be available for the interior.

### Cells vs. Bare Electrodes

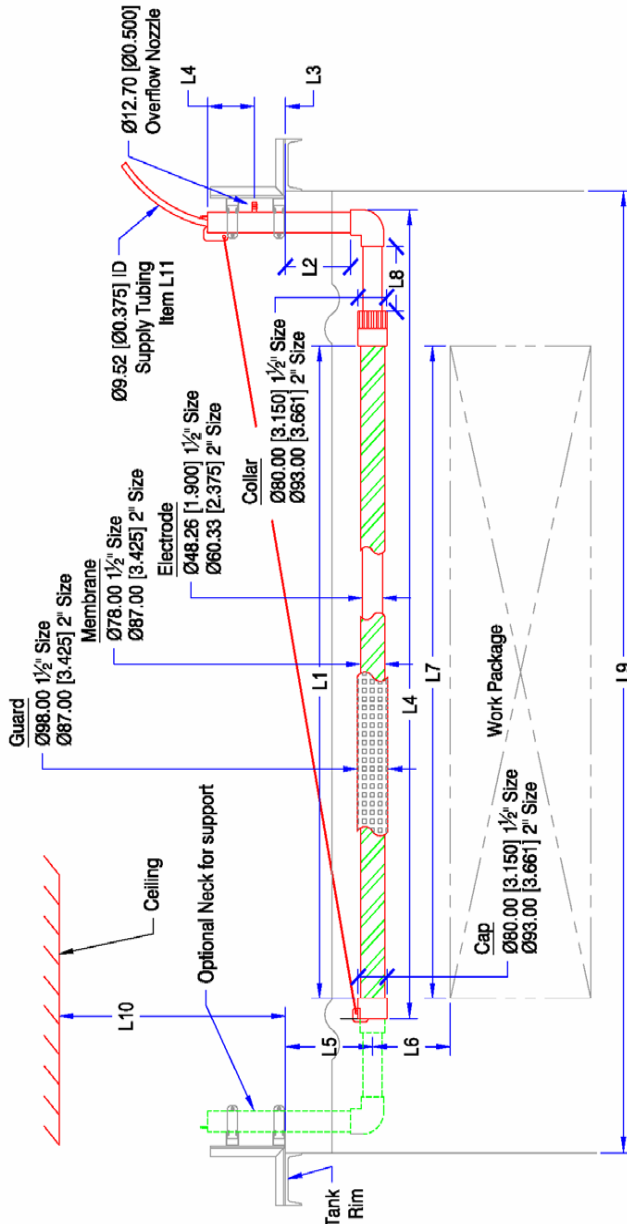
- Bare Electrodes are less complex than Flushable ME Cells.
- Best practice is to keep the total surface area of the Bare Electrodes less than 15% of total surface area in the tank.
- Flushable ME Cells do not put iron into the ED bath, because the dissolved iron is removed by anolyte flow. Tanks with flushable ME Cells tend to have less sludge than tanks with Bare Electrodes.



**UFS Corporation . 330 North 400 East . Valparaiso, Indiana 46383 USA  
+219-464-2027 . +219-464-8646 (Fax) . [www.ufsc.com](http://www.ufsc.com) . [info@ufsc.com](mailto:info@ufsc.com)**

# TECTRON Small Diameter ME Roof Cell Proposal

Date:   
 Quote #:   
 Ref #:



Section View

## ME Cell Options List

### Ion Exchange Membrane

- | Type                            | Form                                  |
|---------------------------------|---------------------------------------|
| <input type="checkbox"/> Anion  | <input type="checkbox"/> Roll (PTAR)  |
| <input type="checkbox"/> Cation | <input type="checkbox"/> Sheet (PTAN) |
|                                 | <input type="checkbox"/> Sheet (PTAC) |

### Electrode Size

- 1 1/2"     2"

### Electrode Type

- 316L Stainless Steel Schedule 10  
 316L Stainless Steel Schedule 40  
 316L Stainless Steel Schedule 80  
 Precious Metal (PM.)

### Membrane Guard

- None     Premium

### Effective Length (L1)

1900 mm

### 1 1/2" Size Surface Area/cell

0.288 SM

3.10 SF

### 2" Size Surface Area/cell

0.360 SM

3.88 SF

Dimensional Values	
L1	1900.00
L2	
L3	80.00
L4	150.00
L5	
L6	
L7	
L8	
L9	
L10	
L11	1500.00

- mm     inches

### Recommended Accessories

- Flow Meter     Splash Guard  
 Cable Lead     Clamps (2per Cell)  
 Connector Lug Set (1 per every 5 Cells)  
 PVC Return Tubing - 1.5 M (5 Ft) per Cell

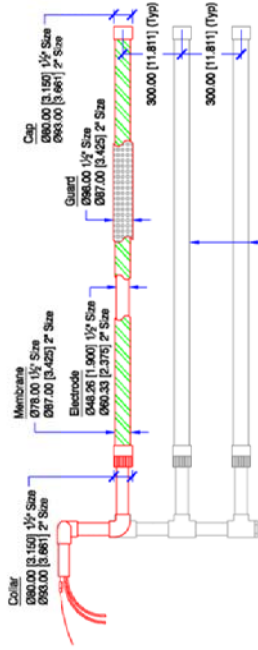
Effective Length Small Ø ME Electrodes					
Length		1-1/2"		2"	
mm	in	SM	SF	SM	SF
910	35.83	0.138	1.49	0.172	1.86
1400	55.12	0.212	2.28	0.265	2.86
1900	74.80	0.288	3.10	0.360	3.88
2300	90.55	0.349	3.75	0.436	4.69
2900	114.17	0.440	4.73	0.550	5.92



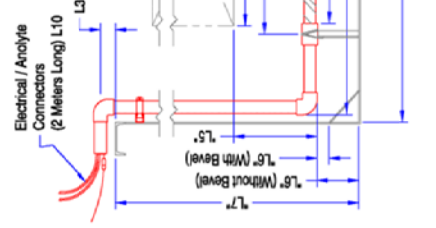
UFS Corporation  
 330 North 400 East  
 Valparaiso, Indiana 46383 USA

Tel: (219) 464-2027  
 Fax: (219) 464-8646  
 Web: www.ufsc.com

# TECTRON Small Diameter ME Floor Cell Proposal



Top View



Section View

Date:   
 Quote #:   
 Ref #

## ME Cell Options List

### Ion Exchange Membrane

- Type  Anion  Roll (PTAR)  Sheet (PTAN)  
 Cation  Sheet (PTAC)

### Electrode Size

- 1 1/2"  2"

### Electrode Type

- 316L Stainless Steel Schedule 10  
 316L Stainless Steel Schedule 40  
 316L Stainless Steel Schedule 80  
 Precious Metal (PM<sub>L</sub>)

### Membrane Guard

- None  Premium

### Recommended Accessories

- Flow Meter  Splash Guard  
 Cable Lead  Clamps (2 per Cell)  
 Connector Lug Set (1 per every 5 Cells)  
 PVC Return Tubing - 1.5 M (5 Ft) per Cell

### Effective Length (L1)

- 1900 mm**  
 1 1/2" Size Surface Area/cell  
 0.288 SM  
 3.10 SF  
 2" Size Surface Area/cell  
 0.360 SM  
 3.88 SF

Dimensional Values	
L1	1900.00
L2	
L3	76.20
L4	
L5	
L6	
L7	
L8	
L9	
L10	
L11	n/a

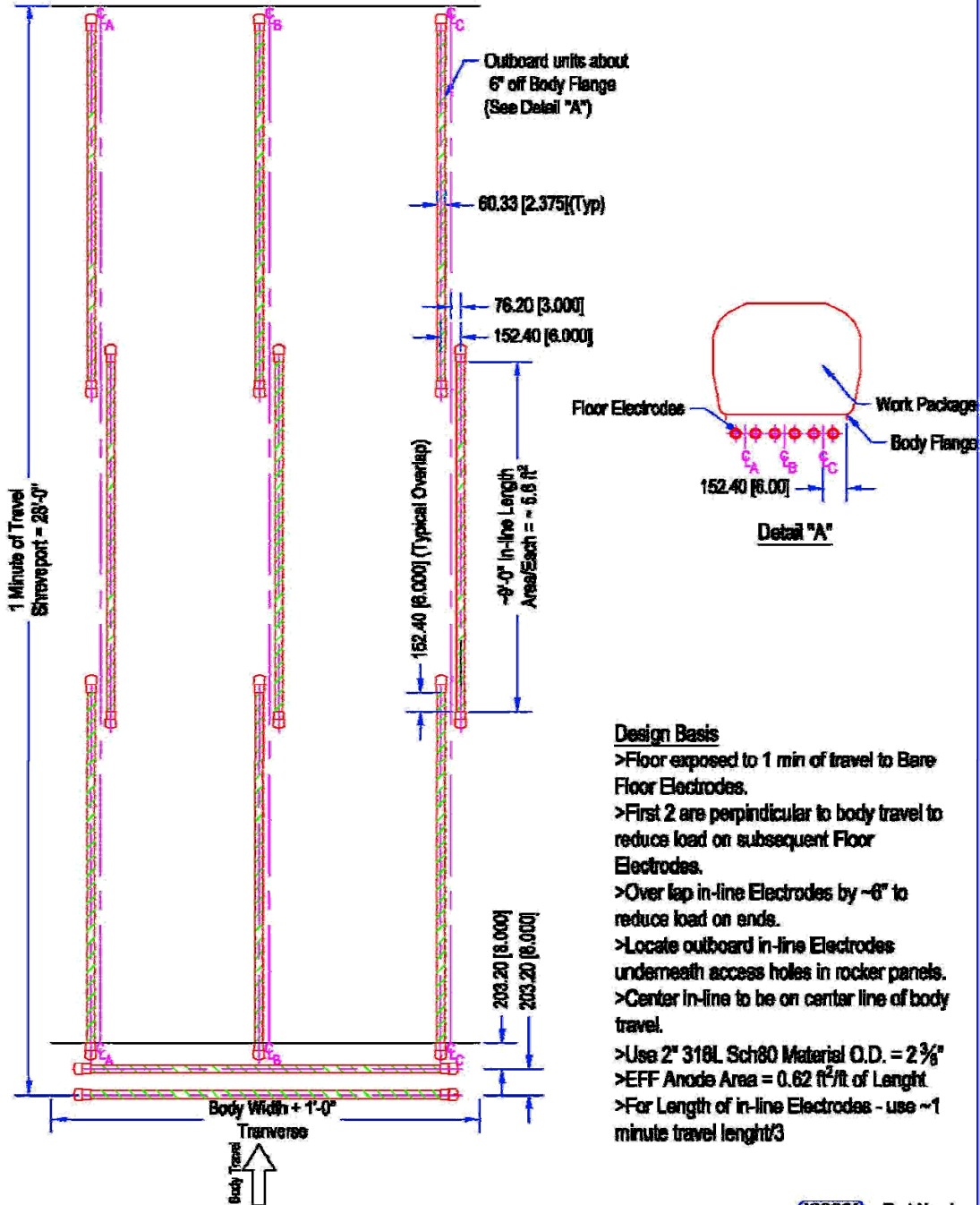
mm inches



UFS Corporation  
 330 North 400 East  
 Valparaiso, Indiana 46383 USA

Tel: (219) 464-2027  
 Fax: (219) 464-8646  
 Web: www.ufsc.com

RevNo	REVISION	Date	Signature	Checked
2	Added Perpendicular Bare Floor Electrodes	5Oct00		



**Design Basis**

- >Floor exposed to 1 min of travel to Bare Floor Electrodes.
- >First 2 are perpendicular to body travel to reduce load on subsequent Floor Electrodes.
- >Over lap in-line Electrodes by ~6" to reduce load on ends.
- >Locate outboard in-line Electrodes underneath access holes in rocker panels.
- >Center in-line to be on center line of body travel.
- >Use 2" 316L Sch80 Material O.D. = 2 3/8"
- >EFF Anode Area = 0.62 ft<sup>2</sup>/ft of Length
- >For Length of in-line Electrodes - use ~1 minute travel length/3

XXXXX = Part Number



Tel: +219-464-2027	Designed By:	JD
Fax: +219-464-8646	Date:	5Sep00
Visit us on the Web at www.ufsc.com	Approved By:	FH
	Date:	7Sep00

**Bare Floor Electrode Layout Template**

UFS Part No. **997179**

Sheet:	1/1
Revision:	2
Units:	mm[in]
Scale:	None

THIS MATERIAL IS THE CONFIDENTIAL PROPERTY OF UFS CORPORATION AND SHOULD NOT BE USED IN ANY WAY DETRIMENTAL TO THE CORPORATION'S INTEREST. MATERIAL SHOULD NOT BE COPIED OR REPRODUCED IN PART OR IN WHOLE, AND INFORMATION FROM IT SHALL NOT BE FURNISHED TO OTHERS WITHOUT WRITTEN PERMISSION. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED BY UFS CORPORATION. MATERIAL TO BE RETURNED UPON REQUEST.