

Anodes and Misc Equipment



Platinised Titanium Anodes

Application:

Platinised titanium anodes are recommended for use in the following electrolytic processes:-

- Precious metal electroplating - e.g. Au, Pt, Pd, Rh and Ru baths
- Non-ferrous metal electroplating - e.g. Ni, Cu, Sn, Zn and non-fluoride Cr baths.

Specification:

Platinised titanium anodes consist of a titanium base, in the form of either expanded metal, sheet, rod, wire or tube with a thin coating of platinum between 2 to 5 microns thick. They possess the electrochemical properties of platinum. The titanium used is 99.5% pure titanium as established by ASTM (American Society of Metal).

Platinum coatings in the range of 2 to 5 microns are not completely impervious, whatever the process by which they are applied. This is particularly the case with expanded metals where acute angles of the diamond mesh result in minimum coverage.

Schloetter recommend 2.5 micron coating as this gives longer life and minimises any porosity pinholes. We try to avoid 1 to 1.5 microns coating as this can cause problems with pinholes, etc. If you use 7 to 10 microns coating they are much more expensive but give a much greater life.

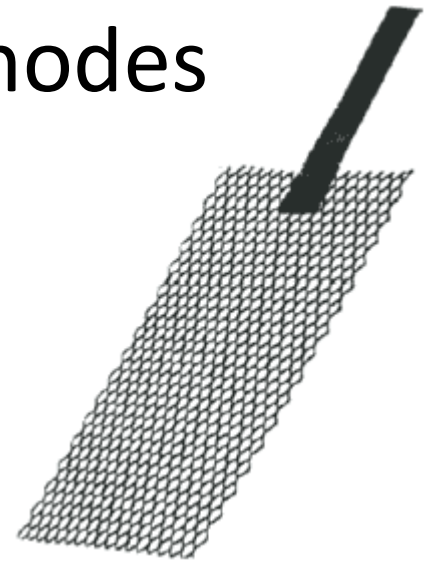
Platinised titanium anodes can only be used successfully in electrolytes which do not attack the titanium base. This excludes use at very low and very high pH values and also Chromium baths containing fluorides.

The service time of the platinised titanium anodes depends on the chemical resistivity of the base metal, the dissolution rate of the deposited platinum in the electrolyte, which in turn depends upon layer morphology, and adhesive qualities, pH, current density and current ripple.

For most applications the dissolution rate is low and the advantages of platinised titanium anodes are far greater than any metal loss. For fluoride-free chromium baths, the platinum consumption will be approximately 1 to 4 g of platinum per million Ah. No reliable values exist for other baths.

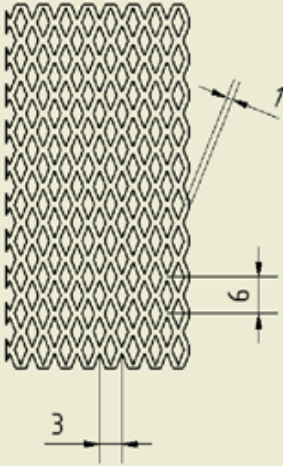
Advantages:

- Long operating life; maintenance-free.
- Economical due to low platinum requirements.
- High dimensional stability and load resistance.
- Good current distribution.
- High corrosion resistance.
- Low weight.

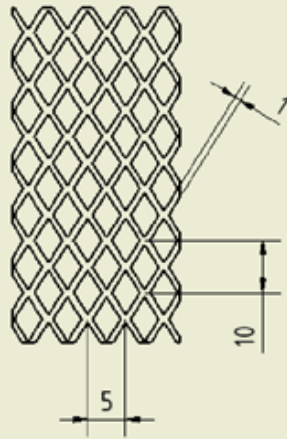


Product No.	Description
29043400	Platinised titanium anodes

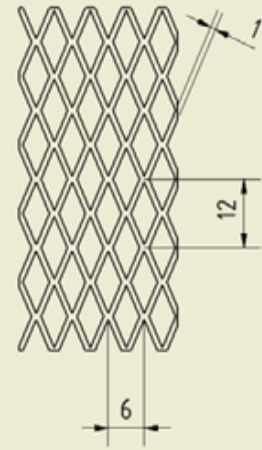
Type F
 $6 \times 3 \times 1 \times 1$ mm
 Surface Factor: 2.2



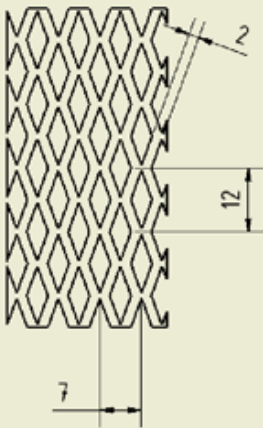
Type N
 $10 \times 5 \times 1 \times 1$ mm
 Surface Factor: 1.4



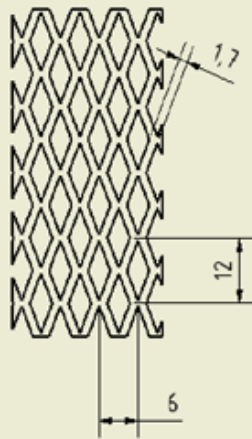
Type G
 $12 \times 6 \times 1 \times 1$ mm
 Surface Factor: 1.2



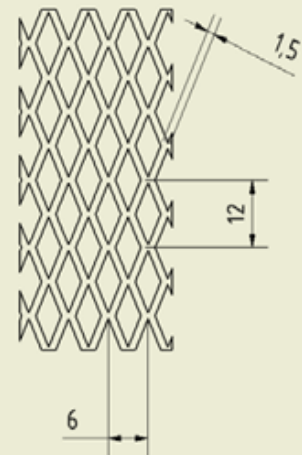
Type D
 $12.5 \times 7 \times 2 \times 2$ mm
 Surface Factor: 1.92



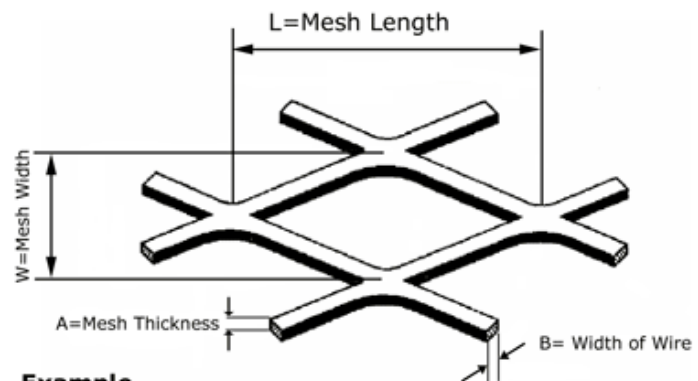
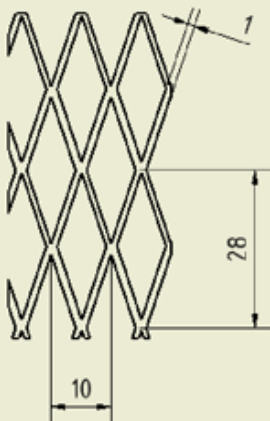
Type C
 $12 \times 6 \times 1.7 \times 1.5$ mm
 Surface Factor: 1.62



Type GS
 $12 \times 6 \times 1.5 \times 1.5$ mm
 Surface Factor: 1.75



Type S
 $28 \times 10 \times 1 \times 1$ mm
 Surface Factor: 0.72



Example
 $30 \times 12 \times 1.5 \times 1$ mm

L = Mesh Length = 30 mm
 W = Mesh Width = 12 mm
 B = Width of Wire = 1.5 mm
 A = Mesh Thickness = 1 mm

Polypropylene Plating Croffles

Application:

Plastic croffles are a well established product used for the surface heat insulation and spray suppression of plating baths and other hot solutions. Applied to the surface of the solution, the air trapped inside the balls maximizes heat insulation and forms an effective barrier to minimize spray.

Copper plated ballast balls are also available for mixing with small barrel loads to bulk up the mass and ensure electrical conductivity between the components.

Product No.	Description	Diameter (mm)	No. in Pack
2904141	Plastic croffles	10	5000
290431	Plastic croffles	20	2000
290415	Plastic croffles	25	1000
290416	Plastic croffles	38	1000
290430	Plastic croffles	45	1000
290417	Plastic croffles	50	1000
290418	Plastic croffles	70	500
290419	Plastic croffles	100	100
290420	Plastic croffles	150	50



Laboratory Testing Equipment

Product No.	Description	No. in Pack
290800	Culmo Test Kit Complete	1
290801	Anode Clamp Bar	1
290802	Cathode Clamp Bar	1
290803	Clamping Block	1
290804	Schloetter Cell (Glass)	1
290805	Schloetter Cell Copper Panels	100
290806	Schloetter Cell Steel Panels	100
290810	Hull Cell Anodes (Nickel)	1
290811	Hull Cell Anodes (Copper)	1
290812	Hull Cell Anodes (60/40 Tin Lead)	1
290814	Hull Cell Anodes (Zinc)	1
290840	Hull Cell Anodes (Cadmium)	1
290841	Hull Cell Anodes (Tin)	1
290813	Hull Cell Anodes (Platinised Titanium)	1
290819	Hull Cell (With Air agitation pipe)	1
290821	Hull Cell (Grey Novadur)	1
290824	Hull Cell Test Panels (Brass)	100
290825	Hull Cell Test Panels (Copper)	100

Product No.	Description	No. in Pack
290826	Angle Test Panels (Copper)	100
290831	Culmo Test Panels	100
290833	Wing Screw	10
290835	Culmo Test Set Anode (Tin)	1
290837	Culmo Test Set Anode (60/40 Tin Lead)	1
290842	Culmo Test Set Anode (65/35 Tin Lead)	1
290843	Culmo Test Set Anode (70/30 Tin Lead)	1
290844	Culmo Test Set Anode (Lead)	1
290845	Culmo Test Set Anode (Copper Phosphorous De-oxidised)	1
290846	Culmo Test Set Anode (Electrolytic Copper)	1
290847	Culmo Test Set Anode (Zinc)	1
290848	Culmo Test Set Anode (Cadmium)	1
290849	Culmo Test Set Anode (Nickel)	1
290850	Culmo Test Set Anode Bag	1
290851	Bath Control Test Set	1
211100	Polypropylene Cloth (per metre)	
211110	Polypropylene Ribbon (100 metres)	
211120	Polypropylene Cotton	10

Flight Bar & Rail Supports

Supports are available for both flight bars and anode rails. They are manufactured from durable polypropylene.

GP1 & GP2 Flight bar supports / current contacts are used for the direct current transfer from the contacts to the bus-bars etc and are designed for tank mounting. They are fitted with a robust polypropylene cover.

Flight Bar Supports

Product No.	Description
295400	Polypropylene Flight Bar Support 10 mm
295401	Polypropylene Flight Bar Support 15 mm
295402	Polypropylene Flight Bar Support 20 mm
295410	GP1 Flight Bar Support 400A 10-15 mm
295411	GP2 Flight Bar Support 1500A 10-20 mm
295412	GP3 Flight Bar Support 3000A 15-20 mm
295420	GP1 Flight Bar Support Cover
295421	GP2 Flight Bar Support Cover
295422	GP3 Flight Bar Support Cover
295430	GP1 Contact Jaw
295431	GP2 & GP3 Contact Jaw
295440	GP1, GP2 & GP3 Flexible Copper Link
295450	GP1, GP2 & GP3 Polypropylene Washer
295460	GP1 Stainless Steel Spring (12 mm diameter, 23 mm long)
295461	GP2 & GP3 Stainless Steel Spring (12.5 mm diameter, 24 mm long)
295462	M6 Insulator with studs



Rail Supports

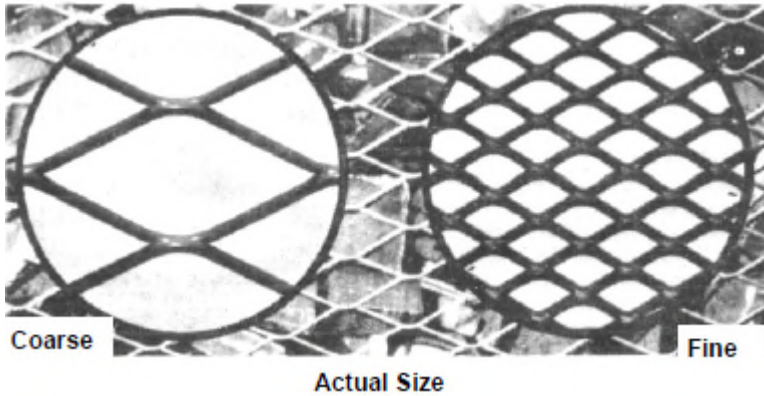
Product No.	Description
295470	Rail Support Poly Propylene for 30mm x 10mm Bars
295471	Rail Supports Polypropylene for 40-80mm x 10mm Bars
295472	Rail Supports Polypropylene for 60-80mm x 15mm Bars

Anode Baskets

Made from Grade 1 titanium - a commercially pure quality which gives good resistance to most plating solutions.

The sides and base are made from a solid sheet and the hooks are argon arc welded to ensure good electrical conductivity.

Mesh Size



F = Fine
C = Coarse

To order quote Product No. 210100 and A, B and C dimensions and whether fine or coarse mesh is required.

Basket Sizes

A Dimension: 6" (150mm), 8" (200mm), 10" (250mm) or 12" (300mm)

B Dimension: 1" (25 mm), 1.5" (38mm), 2" (50mm)

C Dimension: 12" (300mm), 18" (450mm), 24" (600mm), 30" (750mm), 36" (900mm), 42" (1050mm) or 48" (1200mm)

Hooks

5" is standard, although greater lengths can be supplied by special order.

The hooks are bent on the edge for greater strength and fabricated with $\frac{1}{2}$ x $\frac{1}{4}$ " section.

For baskets 36" and over, heavier hooks are used ($\frac{3}{4}$ x $\frac{1}{4}$ ").

Variations Available

Anode baskets can be made in all grades of titanium depending on the application.

For very corrosive situations, Grade 7 palladium stabilized alloy 260 is recommended.

Larger, non-standard sizes and round baskets are also available.



Anode Bags

Construction

Schloetter anode bags are manufactured from high quality polypropylene and designed to fit both titanium baskets and "pole" anodes.

When using anode baskets, the dimensions of the basket (not the bag) should be quoted e.g. a 30" x 12" x 2" bag is actually constructed to fit over a 30" x 12" x 2" basket and the dimensions of the bag will be slightly larger in all directions to ensure a proper fit.

For "pole" anode bags quote Product No. 211000 and for basket anodes quote Product No. 211090.

Pole Anode Bags

These are available in the following dimensions:-

- Width: 4, 5 or 6 inches
- Length: 12, 15, 18, 21, 24, 27, 30, 33, 36, 42, 48 or 52 inches

Basket Anode Bags

Available in a choice of the following measurements:-

- Width: 6, 8, 10 or 12 inches
- Depth: 1, 1.5 or 2 inches
- Height: 12, 15, 18, 21, 24, 30, 36, 42 or 48 inches

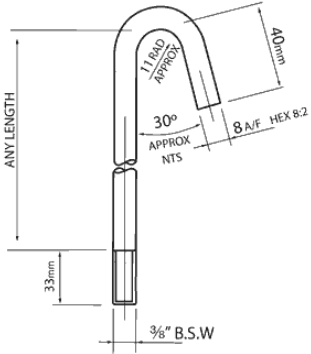


Anode Hooks

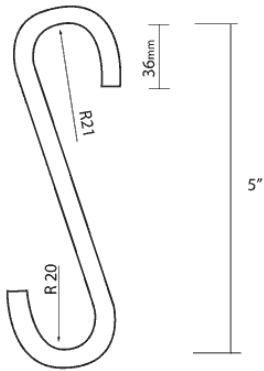
Construction

Schloetter supply anode hooks for most types of pole and plate anodes. They are supplied in copper (plain, tin dipped, or tin/lead dipped), 316 stainless steel, mild steel, titanium or nickel.

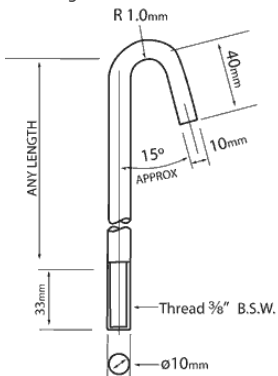
Drawing No.1



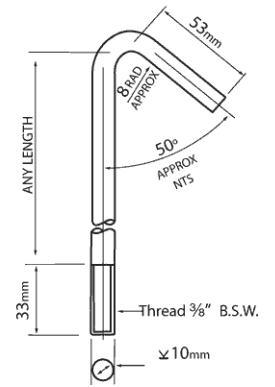
Drawing No.3



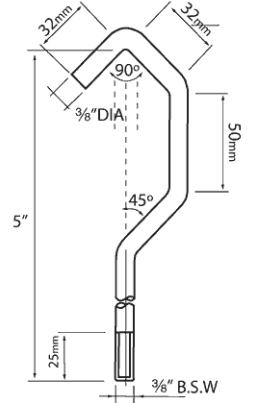
Drawing No.5



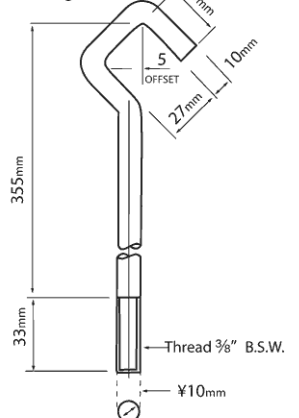
Drawing No.2



Drawing No.4



Drawing No.6



Product No.	Description	Drawing No.
210010	Anode Hook: "G" Shape, Copper & Rubber	1
210011	Anode Hook: Straight Copper & Rubber	2
210013	Anode: Hook: Straight 3" Copper & Rubber	2
210020	Anode Hook: Standard 316 Stainless Steel	2
210021	Anode Hook: 316 Stainless Steel "S" Shape	3
210030	Anode Hook: Standard Titanium	2
210031	Anode Hook: "G" Shape Titanium	4
210040	Anode Hook: Standard Mild Steel	5
210050	Anode Hook: Standard Nickel	1
210060	Anode Hook: 14" Copper Tin/Lead Dipped	6
210070	Anode Hook: 5" Copper Tin Dipped	2
210071	Anode Hook: 5" Copper Tin/Lead Dipped	2
210090	Anode Hook: Rubber Protector	-

In drawings 1, 3 & 5 the "Standard" length is 5"

Alternative lengths are available by special order.