

**FLUX**

**Note:** Due to their corrosive or other hazardous reactions, chemicals must be shipped via Truck. Neither UPS nor Canpar will accept Chemical shipments. In accordance with the Hazardous Chemicals Act, it is a serious offense to sell large size flux, etching cream and whiting on a retail level.

**Fluxes** are essential chemicals used to prepare metal joints for soldering - they promote the fusion of solder to the metal. Soldering without adequately preparing the joints by cleaning and fluxing will result in poor looking joints that do not have much strength. Joint preparation for lead, brass, copper, and zinc came normally requires brushing to remove scale, corrosion, or oxide layers. Flux removes oxides from the surface of metal which has formed there by exposure to the atmosphere.

To add flux, simply brush each joint sparingly and apply using a small wire brush such as our TL 45 (stainless steel) or TL TR030 (brass), then apply flux and solder. Never use too much flux. Excess flux becomes trapped inside the solder as it cools. Trapped flux will corrode your solder from the inside out, leaving a white powdery residue. Unless allowed to stand for a long time, copper foil joints will not normally require brushing - just flux and solder.

When soldering, do not breathe flux fumes. They are poisonous since they contain vaporized flux. In addition, if soldering lead or using regular tin/lead solder, the fumes will also contain minute lead particles. **Always work with adequate ventilation.**



**Glastar "Glasflux"**  
**CH 41110** 4 oz.  
**CH 41120** 1 US Gal.  
 All-purpose flux. Rinses off with water and is free of unpleasant fumes. Creates a uniform solder bead that stays put and does not corrode copper foil or discolour lead.

**Novacan**  
**"Old Masters" Flux**  
**CH 900** 1 Gal.  
**CH 910** 8 oz.  
 Developed for the stained glass industry, this water cleanup, scented liquid, all-purpose flux performs well.

**Classic "Gel 100" Flux**  
**CH 200** 8 oz.  
**CH 210** 1 Gal.  
 Classic 100 Gel Flux is odorless and non-smoking. No mess Gel stays where you put it. Use for copper foil, lead and zinc came, traditional and lead free solders. Cleans up well with water.

**Oleic Acid Flux**  
**CH LA10** 500ml  
**CH LA15** Bulk per Lb.  
 Used specifically and developed for use with lead came. Too gentle for copper. Contains no zinc chloride.

**Classique Liquid Flux**  
**CH 2050-3** 1 Gal.  
 This product was made by a Canadian manufacturer which has sadly closed down. Gallons are still available, and we have small empty bottles available as well.



**Solder-Magic Gel Flux**  
**CH 2100-3** 8 oz.  
 Great results with any solder alloy, including lead-free chloride. Contains no zinc chloride. Environmentally friendly. Non-hazardous.



**Blu-Glass Flux**  
**CH 2110-1** 8 oz.  
 This is an all purpose safe flux with low fumes. Ideal, especially for those with allergies to other fluxes.



**Glassworks Soldering Paste**  
**CH PF50** 2 oz.  
 A lead-free flux which cuts through most oxidation and eliminates the need for wire brushing lead work. Works well with foil, lead, zinc, brass and copper came as well as brass, zinc and steel re-bar.



**Solder-Magic Action Tin**  
**CH 0678** 1/2 lb.  
 "Tin" copper and brass filigree, vase caps, zinc came and other metals like magic! Just brush on this unique flux and solder paste mixture and heat with your iron. The result is a bright and smooth solder coating.

**Manufacturer's Safety Data Sheets (MSDS) are available for all chemicals upon request.**

Hollander Glass Canada Inc.

**F - CHEMICALS & METALS**

**PUTTY**



**Amchem Stained Glass Putty**

A fast setting lead coloured cement. Easy clean up.

- CH 490 1/2 US pint
- CH 485 1 US pint
- CH 480 1 US quart
- CH 475 1 US gallon

**Cements, also referred to as glazing compounds or putty,** are used to waterproof and strengthen stained glass panels made using brass, copper, zinc, or lead came. The “cement” is brushed or packed into the space between the glass and the came filling it completely.

**Cementing is important** to the look and long life of a panel - don't neglect it!



**Inland “Cement System”**

Special agents allow the cement to “breathe” with climactic changes. The result is a solid, stable window. Available in either black or natural as shown.

- CH 50031 Black, 1 Lb.
- CH 50035 Black, 4 Lb.
- CH 50033 Black, 15 Lb.
- CH 50036 Natural, 4 Lb.

**WHITING**



- CH 600 Whiting Powder, 50 lb Bag
- CH 620 Whiting Powder, 1.5 lb container
- CH 631 Whiting Powder, 3 lb container

**Whiting** is a form of chalk dust used to clean up excess cement. Whiting is used by sprinkling it liberally over the panel and then brushing. An added benefit of the brushing process when cementing a leaded panel is that the whiting creates numerous almost invisible scratches in the lead which oxidize and turn a lustrous black almost immediately.

When applying Whiting and brushing, please remember that minute particles of lead and solder will be abraded off the panel into the whiting/cement mixture. To use, sprinkle this white powder over your lead panel after you have picked off the excess putty. Swirl it around with a grout brush and sweep.

**Do not breathe the dust - use with a mask and adequate ventilation. See MSDS for details on safety.**

**ETCHING CREAM**

**Etching creams** are used to impart a frosted finish to glass. Apply a resist to the glass, cut out the desired pattern in the resist, and then apply the etching cream. After a short time, wash off the etching cream, remove the resist, and that's all there is to it!

Etching creams can also be silk screened onto glass to economically produce complicated designs in quantity. Etching creams contain hydrofluoric acid compounds which can cause severe burns to skin and eyes.

**Rubber gloves and eye protection should always be worn when using etching creams, and always work with adequate ventilation.**



**Velvet Etch Etching Cream**

- CH 500 1.5 lb.
- CH 550 50 lb. pail

A thick, creamy paste which imparts a frosted finish when applied to glass. Apply with brush then squeegee or object can be dipped into the paste.



**Armour Etch Glass Etching Cream**

CH 15-0150C 3oz. bottle  
 Armour Etch is a fast acting specially formulated glass etching compound that lets you create permanent etched designs on windows, mirrors and household glassware. This unique glass etching system enables anyone to personalize and decorate glass or mirrors in minutes with no previous experience. Will not etch plastics or some Pyrex. Not recommended for etching large areas of glass.



**Screen Etching Creams**

Used for etching designs on glass by the screen printing process.

**Screen Etch**

- CH 501 1.5 lb.

**“Super Blue” Screen Etch**

- CH EC11 1.5 lb.

**Manufacturer's Safety Data Sheets (MSDS) are available for all chemicals upon request.**

Hollander Glass Canada Inc.

**PATINA**

**Patinas** are used to impart a black or copper colour to solder, lead, and sometimes zinc. Patinas generally contain acids and other chemicals which are dangerous to your skin, eyes, and insides. Use rubber gloves and eye protection when working with any patina.

To get the best results, the surface to be given the patina must be clean - very clean. Don't allow projects to sit too long. As soon as possible after soldering, wash the project in soapy water. Next, treat it with a chemical cleaner or neutralizer such as Classic Neutra or C.J.'s Flux Remover immediately before applying the patina - follow the manufacturer's directions carefully. Then apply patina. Use with care and with adequate eye and skin protection. Finally, apply a cleaner such as Kwik-Clean to neutralize patina, then polish. We have found Clarity Finishing Compound to be very popular for this.



**Novacan Copper Patina**

*For lead and solder:*

**CH 300** 8 oz.

**CH 315** 1 Gal.

*For Zinc:*

**CH 340** 8 oz.

Gives you an even, antique copper finish. Can be buffed with finishing compound for a bright, shiny penny look ("superbright.")



**Copper Sulphate Crystals**

**CH CS05** 8 oz.

**CH CS50** 5 lb. bag

Mix your own patinas. The crystals are soluble in warm water. Mix 2 oz. crystals to 4 oz. heated water. Available in bags only.



**Classique Copper Patina**

**CH 1500-3** 1 Gal.

This product was made by a Canadian manufacturer which has sadly closed down. Gallons are still available, and we have small empty bottles available as well.



**Black Jack Toner**

*for zinc and lead*

**CH 50090** 8 oz.

Darken lead or came. Polishes metal to a professional, shiny, bright black finish. Leaves a waxy finish to protect against oxidation, and polishes glass at the same time.



**Novacan Black Patina**

*For lead and solder:*

**CH 360** 8 oz.

**CH 375** 1 Gal.

Leaves a deep, satin black finish on lead and solder. Buff with finishing compound for a glossy black finish.



**Novacan Black Patina**

*For zinc:*

**CH 380** 8 oz.

**CH 390** 1 Gal.

Apply with a soft toothbrush, allow to set and harden, then buff as with other patinas.

**CUTTER OIL**

**Glass Cutter Lubricants, or Cutter Oils,** are used to lengthen the life of cutting wheels and, more importantly, to ensure that the best possible score is obtained. Glass scored with a dry wheel will seldom break as cleanly as glass that has been scored with a well lubricated wheel. For that reason, it is highly recommended that a lubricant always be used. If you don't use a self lubricating oil cutter, dip the tip into a sponge wetted with lubricant.



**Novacan Cutter Oil**

**CH 710** 8 oz.

Novacan specifically developed this cutter oil for the stained glass industry. It is non-toxic, non-corrosive and non-flammable. Cleans up with dish detergent. Oil based.



**Inland Rinses Off Cutter Oil**

**CH 50057** 4 oz.

Water-soluble, formulated to rinse off hands, clothing and glass. Harmless to skin, chemically neutral. Prolongs cutter life. Easy to use flip top cap.



**Toyo Cutter Oil**

**CH CO4** 4 oz.

An odorless, synthetic, lubricant specifically formulated for self-oiling cutters. Non-corrosive and water-soluble for easy clean up. Child proof bottle.

**Manufacturer's Safety Data Sheets (MSDS) are available for all chemicals upon request.**

Hollander Glass Canada Inc.

**F - CHEMICALS & METALS**

**COOLANT**

**Grinder coolants** are used to prolong the life of the diamond grinder heads. When used regularly, they will add up to 50% to the life of diamond bits. The only downside to the use of router coolant is that it leaves a greasy feeling film on the glass. This film must be washed off in soapy water before application of copper foil.

**Novacan Grinder Coolant CH 800**

8 oz. A non-toxic concentrate that will increase the life of your diamond bits. Grind faster and better. A few capfuls in your water reservoir will do the trick.

**Inland Diamond Coolant CH 50011**

8 oz. Highly effective, water soluble solution. Easy to add to the water reservoir of your grinder, table saw or band saw. Increases bit life by reducing friction; can also increase grinding speed.

**Classique Grinder Coolant CH 4040**

8 oz. This product was made by a Canadian manufacturer which has sadly closed down. Only available until stock runs out.



CH 800



CH 50011



CH 4040

**CLEANER**



**Solder-Magic Flux Remover**

**CH 4900-3** 8 oz.  
Remove and neutralize any residue produced from zinc chloride, organic acids or inorganic acid-based fluxes. Rinse with warm clean water. Non-hazardous. Environmentally safe.



**C.J.'s Flux Remover CH 130-1** 8 oz. **NEW!**

**CH 130-3** 1 Gallon  
C.J.'s gets rid of the greasy mess and residues from all types of flux. Use it before you patina your work to allow patina to work properly. C.J.'s works by preventing the oxidation crust on lead and foil which forms as a result of improper cleaning. It can also help remove patina stains from glass.



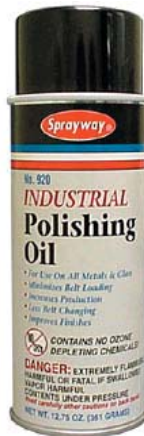
**Sprayway Glass Cleaner**

**CH S-50** 19 oz.  
Ammonia-free. Spray and wipe clean glass or mirrors. Fast drying and leaves no film on newly-installed mirrors, windows, windshields. No hazing or streaking.



**Kwik-Clean CH 701** 16 oz. (450 ml) **NEW!**

**CH 702** 1 US Gallon  
Just spray on and wipe off - No water required! For best results, do not rinse your foil or lead project in water. After soldering, spray on Kwik-Clean to remove the flux. After applying the patina, spray on Kwik-Clean to neutralize the Patina. Polish as normal. Eliminates White Mold.



**Sprayway Polishing Oil**

**CH S-920** 12.75 oz.  
Formulated for tradesmen who grind and polish glass. Minimizes belt loading and changing. Keeps belts soft and free-cutting. Extends working life of abrasive belts and wheels. Increases production and improves finishes.



**Clarity Finishing Compound (Previously known as Kem-O-Pro)**

**CH 101** 12 oz.  
**CH 102** 1 US Gallon  
This finishing compound ensures a bright, even, durable finish on solder seams treated with copper patina. It also polishes glass, restores shine, adds lustre and protects lead, brass, chrome, copper, raw solder and most patina finishes.



**Classic Neutra Clean**

**CH 230** 8 oz.  
**CH 240** 1 Gallon  
A thickened liquid designed for rapid wetting and shiny solder seams when hand-soldering copper foil or copper sheet metal. Oderless, non smoking and cleans easily with water! Strong enough to solder lead and zinc. Bottle has no-leak flip top lid.



**Clean-All® Soap**

Excellent for cleaning off lead residue that cannot be seen, but can linger on your skin after handling solder and lead.



**CH 400** 16 oz Hand Cleaner  
**CH 410** 1 gallon Hand Cleaner  
**CH 410P** Hand Pump to fit 1 Gallon bottle

**Handling Lead? Protect Yourself!**

Did you know that handling lead can be hazardous? Here are some valuable tips on how to protect yourself, and how to handle lead with care...

1. When finished handling lead, use a cleaner to clean off the lead residue that otherwise cannot be seen, but may be transferred to other surfaces. We recommend **Clean-All®** as a great soap that bonds to the metal on your skin, and removes it in a way that soap cannot.
2. Be extra careful when handling food, drinks, etc. after you have handled lead. It can be transferred to other surfaces, ingested, and over time, can become somewhat harmful.

Manufacturer's Safety Data Sheets (MSDS) are available for all chemicals upon request.

Hollander Glass Canada Inc.

GENERAL SUPPLIES



**Novacan Stain Remover**  
CH 6000 8 oz.



For use on glass that is sensitive to the ingredients in patinas that may have caused an iridized-like effect on the glass surface. Can also be used to remove the filmy effect caused by storing glass for long periods wrapped or separated by paper with a high acid content.



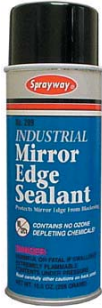
**Glue Chip Glue**  
CH GC 1 lb. bag

Mix with hot water, apply to sandblasted glass, and dry (Comes with directions). Voila - glue chip glass! Sold by the pound.



**Inland Motor Shaft Lubricant**  
CH 50022

Use this special grease whenever you change grinder heads to avoid bits baked onto the motor shaft.



**Sprayway Mirror Edge Sealant**  
CH S-209 10.5 oz. spray  
Reduces silver deterioration & protects mirror edge from "blackening." Not heat resistant.



**Glass Pro Silver Protector**  
CH 5065 4 oz.

Apply with a brush to coat exposed edge of mirror glass prior to foiling to protect silver surface from flux, patina, etc.

ADHESIVE



**Weldbond Adhesive**

With Weldbond it's easy! First, seal surface using a mixture of 1 part Weldbond 5 parts water. Let dry 1 hour. Apply a coat of concentrated Weldbond. Allow surfaces to become tacky before bringing together, apply 1 min. When bonding glass, use sparingly if you require crystal-clear bond. Lightly clamp or tape material in position until fully cured (min. 24 Hours or more depending on room temperature and humidity). Any whiteness indicates the curing process is not complete. A crystal clear dry can take up to 30 days.

- CH 80125 114 ml./4 oz.
- CH 80185 227 ml./8 oz.
- CH 80245 341 ml./12 oz.
- CH 81395 3.63 litre/128 oz.



**Tacky Wax**  
**Leponitt Tacky Wax**  
CH AW-1 1 lb.

Used anywhere to make glass stay put. 1 lb. block. Holds glass securely to lamp molds. Excellent for colour composing windows on glass easels (also see Lamp Section for Odyssey Tacky Wax).



**Sprayway 66 Adhesive**  
CH S-66 11 oz.

Permanent or temporary bond for cardboard, foam rubber, plastic film, glass, wood, cloth or metal. Quick tack and water resistant.



**Clear Museum Gel Adhesive**

CH 3111 4 oz.  
Museum Gel - A clear, removable adhesive to help secure glass and crystal from breakage and theft. Keep sentimental and priceless treasures safe for generations.



**Rubber Cement**  
CH 9120 115 ml., case of 12

CH 9001 1 litre  
Used for gluing paper patterns onto glass.

Apply to glass, then quickly put the paper down on top. It is easily removed from the glass by rolling your thumb over the glue.



**Kemxert #300 UV Adhesive**  
CH 300-30 30 cc.

Popular light curing adhesive that cures via long wavelength ultraviolet radiation (range 320-380 nanometers). This is a range considered safe to work with as compared to medium wavelength (UV-B) used in sun tanning or short wavelength used for germicide purposes. We do suggest the use of UV protected eyeglasses when using your ultraviolet curing lamp. See Tools Section pg G-16.

Manufacturer's Safety Data Sheets (MSDS) are available for all chemicals upon request.

Hollander Glass Canada Inc.

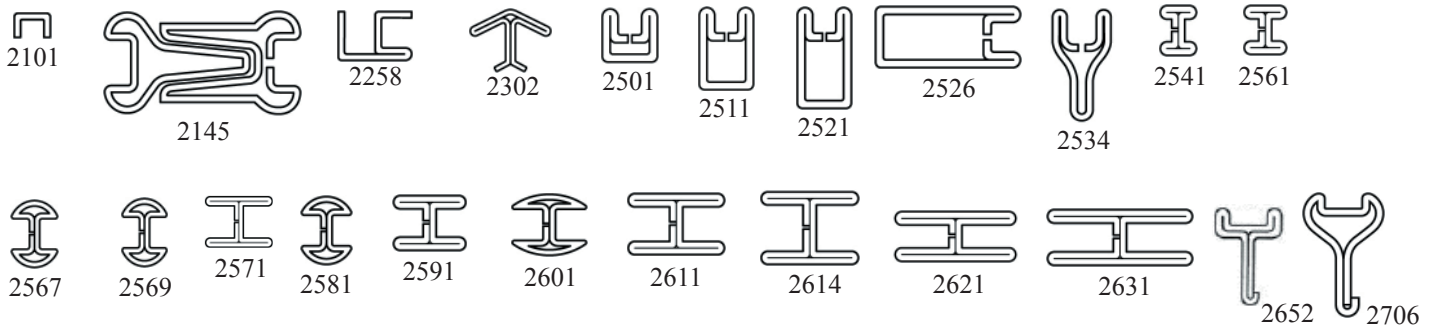
**F - CHEMICALS & METALS**

**ZINC, BRASS & COPPER CAME**



We carry the most popular Zinc, Brass, and Copper comes manufactured by **Chicago Metallic**. The company makes over 175 combinations of size and metal types. If you want a profile that we do not carry, we will be pleased to special order it for you (in full cartons only). The standard length is 6 feet, however, other lengths are available on special order.

Product Code	Description	Available From HGC Stock in:			Feet Per Lb <sup>(2)</sup>	Weight 6Ft Box	Approx. Length/Box (Zinc)	Price Code
		Zinc	Brass	Copper				
GB 2101	3/16" Channel	yes	yes	yes	47.9	40 lb.	319	B
GB 2145	Outer Bar Set	yes	no	no	3.1	30 lb.	15 sets	C
GB 2258	90 Deg. Channel	yes	no	no	17.9	40 lb.	119	B
GB 2302	60 deg Channel	yes	no	no	13.5	40 lb.	90	B
GB 2501	1/4" U	yes	yes	yes	19.0	40 lb.	126	C
GB 2511	3/8" U	yes	yes	yes	12.9	35 lb.	86	C
GB 2521	1/2" U	yes	yes	yes	10.3	35 lb.	60	C
GB 2526	3/4" U	yes	yes	no	7.5	30 lb.	37	C
GB 2534	"Y" Channel	yes	yes	no	11.7	40 lb.	78	C
GB 2541	3/16" Flat H	yes	yes	no	25.3	40 lb.	168	A
GB 2561	7/32" Flat H	yes	yes	no	23.3	40 lb.	155	A
GB 2567	1/4" Round H	yes	yes	no	15.8	40 lb.	105	A
GB 2569	7/32" Round H	yes	yes	yes	17.0	40 lb.	113	A
GB 2571	9/32" Flat H	yes	yes	yes	20.0	40 lb.	133	A
GB 2581	9/32" Round H	yes	yes	no	17.9	35 lb.	119	A
GB 2591	3/8" Flat H	yes	no	no	12.0	40 lb.	80	A
GB 2601	3/8" Round H	yes	no	no	10.6	40 lb.	70	A
GB 2611	1/2" Flat H	yes	yes	yes	9.2	40 lb.	61	A
GB 2614	1/2" Hi Heart H	yes	no	no	8.1	40 lb.	54	A
GB 2621	5/8" Flat H	yes	no	no	7.3	40 lb.	48	A
GB 2631	3/4" Flat H	yes	no	no	6.2	40 lb.	41	A
GB 2652	"Y" Channel	yes	no	no	14.6	40 lb.	97	A
GB 2706	Slider Sash	yes	no	no	10.1	40 lb.	67	A



**Special Notes:** (1) Chicago Metallic Brass, Zinc, and Copper comes are manufactured of the highest quality metals available. The metal used is considerably thicker than most comes manufactured by others. Chicago Metallic metal comes are therefore considerably stronger than most others. Why take a chance on expensive panels buckling at some point in the future because inferior, lighter, comes were used. Don't take chances - use Chicago Metallic !  
 (2) The "Feet Per LB." and "Approx Len/Box" figures given above are for Zinc Comes. Brass weighs more than zinc and the above figures must be multiplied by 0.81 to get the number of lengths of Brass Come per box. Similarly, the above figures must be multiplied by 0.75 to get the correct number of lengths of Copper Come per box.

**Illustrations Not Actual Size**

Hollander Glass Canada Inc.

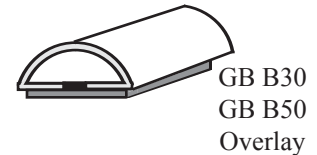
# ZINC & BRASS COVERED LEAD

ZINC & BRASS COVERED LEAD & LEAD OVERLAY

Brass and zinc covered lead comes manufactured by Prism Glassworks are better quality than similar European products and considerably better from a price standpoint. Prism manufactures brass covered lead and zinc covered lead, and many of their profiles are available with "Pro-Glaze"™ which is a black glazing tape attached to the heart of the profile. "Pro-Glaze"™ is used most often where cementing the finished panel is not done for economic or other reasons. The black colour of "Pro-Glaze" tends to eliminate reflections from the cut edges of the glass inserted into the came. "Pro-Glaze" also helps to eliminate rattles in uncemented panels.

A significant advantage of brass covered lead is that the brass cover is generally brighter and has relatively fewer surface marks than regular roll formed brass comes. Because of this, panels made with brass covered lead have a more "finished" appearance. Overlay profiles are available for use where tight curves are included in the panel design.

Product Code	Description	Zinc/ Brass	Length of Strip	Pro-Glaze	No./Box
<b>Brass Covered Lead</b>					
GB BFH4MM1 *	4mm Flat H	Brass	6 ft	No	loose only
GB BRH4+	7/32" Round H	Brass	6 ft	No	50
GB BRH4P+	7/32" Round H	Brass	6 ft	Yes	50
GB BRH4S	7/32" Round H "soft"	Brass	6 ft	No	50
GB BRH5	1/4" Round H	Brass	6 ft	No	40
GB BRH5P*	1/4" Round H	Brass	6 ft	Yes	40
GB BRH5S	1/4" Round H "soft"	Brass	6 ft	No	40
<b>Brass Covered Lead Overlay With Adhesive</b>					
GB B30	3/16"	Brass	6 ft	n/a	150
GB B50	1/4"	Brass	6 ft	n/a	100
GB B50S1 *	1/4" "soft" brass	Brass	6 ft	n/a	loose only
<b>Zinc Covered Lead</b>					
GB ZRH4	7/32" Round H	Zinc	6 ft	No	50
GB ZRH4P+	7/32" Round H	Zinc	6 ft	Yes	50



\* Remaining stock only.  
+ Special order only.

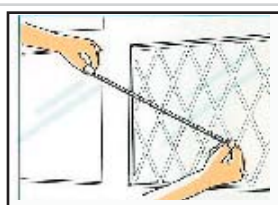
## REGALEAD

Using Rega Lead Self-adhesive Lead Strip is the easy way

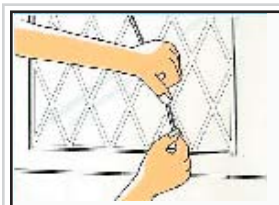
to create character, charm, warmth and value to a home. Rega Lead is available in a variety of widths for creating different designs. The effects are outstanding, and it is easy to use. See the brief overview of the 4 step process below (for full details, contact us at Hollander Glass for the detailed brochure and instructions) :

- GB RLDNK325
- GB RLDN4550
- GB RLDN0610
- GB RLDB0610
- GB RLDN0650
- GB RLDN0910
- GB RLDN0950
- GB RLDN1250
- TL RATM01
- TL RATM02

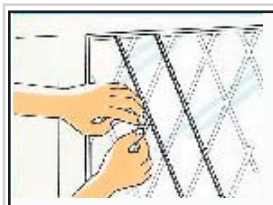
- 3mm x 20 metre natural
- 4.5mm x 50 metre natural
- 6mm x 10 metre natural
- 6mm x 10 metre brass effect
- 6mm x 50 metre natural
- 9mm x 10 metre natural
- 9mm x 50 metre natural
- 12mm x 45 metre natural
- 65mm lead roller
- 50mm lead roller



**1.** Remove a length of lead strip from the Rega Lead reel, and smooth to straighten between fingers.



**2.** Peel back paper with adhesive to the glass, and follow your design, carefully guiding the lead into place.



**3.** Secure lead to glass using the provided Boning Peg. This makes it air tight and water tight.



**4.** Place all strips in one direction first, then the others, boning down the joints first. Flat Lead strip is provided for covering cut ends and edges.

Hollander Glass Canada Inc.

# F - CHEMICALS & METALS

## LEAD CAME

## CASCADE Metals

### LEAD CAME SPECIFICATIONS

#### REGULAR ALLOY

Cascade Lead Came is made from a very closely controlled alloy that combines a fine grain structure with high strength. The came starts with 100% pure lead to which they add exacting quantities of tin, antimony, copper and bismuth. The came is still over 99% pure lead and still maintains a fine grain structure. This alloy also prevents oxidation, makes for easier soldering and allows a long shelf life without tarnishing. The chart summarizes all of the profiles we stock.

#### EXTRA STRENGTH ALLOY

For those people who prefer a harder lead came to work with, we offer a couple of alternatives. Shown in the second column in the chart are the styles that we stock. Other styles are available by special order. #2 is 2% Antimony - medium strength lead came (stocked in the most popular profiles only). #4 is 4% Antimony - hard came (premium price; special order only).

#### STANDARD SIZE CASE

Six foot long comes in 45 lb. cardboard case.

Add the prefix CGP when ordering your Cascade Metals.

### FLAT H



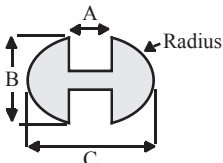
Flat H

#### NOTE REGARDING CGP FH-26R #4:

This came has 4% antimony and 1/2" face H. It is particularly good for framing.

Regular	Extra Strength	Face B	Channel A (Heart)	Face B	Width C	Radius	Approx. Ft. Per Lb.	Pcs Per 45 Lb. Box
----- detailed specifications in inches -----								
FH-12	FH-12#2	3/4"	0.156	0.750	0.226		3.6	27
FH-26	FH-26#2	1/2"	0.156	0.500	0.220		5.4	41
FH-26HH		1/2"	0.250	0.500	0.342		3.6	27
FH-26R	FH-26R#4	1/2"	0.156	0.500	0.312		4.0	30
FH-39	FH-39#2+	9/16"	0.187	0.562	0.282		3.4	26
FH-44		3/8"	0.250	0.375	0.337		5.0	38
FH-45	FH-45#2	3/8"	0.187	0.375	0.275		4.6	35
FH-46	FH-46#2	3/8"	0.156	0.375	0.220		7.3	55
FH-46HH		3/8"	0.250	0.375	0.250		6.3	47
FH-48	FH-48#2+	9/32"	0.156	0.280	0.220		8.4	63
FH-50	FH-50#2	1/4"	0.185	0.250	0.270		7.6	57
FH-50HH		1/4"	0.250	0.250	0.272		6.7	50
FH-60		3/16"	0.187	0.187	0.247		13.0	98

### ROUND H



Round H

Regular	Extra Strength	Face B	Channel A (Heart)	Face B	Width C	Radius	Approx. Ft. Per Lb.	Pcs Per 45 Lb. Box
----- detailed specifications in inches -----								
RH-1		11/64"	0.156	0.170	0.253	0.125	11.0	83
RH-3	RH-3#2+	1/8"	0.135	0.125	0.230	0.078	15.3	115
RH-4	RH-4#2	7/32"	0.156	0.218	0.260	0.156	9.3	70
RH-5	RH-5#2	3/16"	0.187	0.190	0.340	0.109	7.0	53
RH-5-N		3/16"	0.156	0.180	0.310	0.094	7.6	57
RH-6	RH-6#2	1/4"	0.155	0.243	0.258	0.188	8.1	61
RH-7	RH-7#2	1/4"	0.187	0.250	0.300	0.188	7.6	57
RH-8	RH-8#2	5/32"	0.156	0.156	0.240	0.109	12.6	95
RH-10	RH-10#2	7/32"	0.186	0.220	0.320	0.141	7.0	53
RH-18	RH-18#4+	11/32"	0.187	0.340	0.330	0.109	4.6	35
RH-36		5/16"	0.185	0.308	0.334	0.219	5.2	39
RH-64		7/32"	0.265	0.225	0.429	0.156	4.6	35
KSH-1	KSH-1#2+	9/32"	0.156	0.300	0.235	1.000	7.9	59
KT 316	KT316#2+	3/16"	0.078	0.093	0.125	0.109	11.2	84

#### KSH LEAD

This is a fine, softly rounded H lead, suitable for electroplating.

+ Special order only.

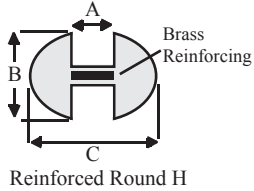
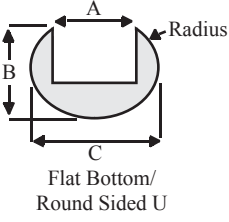
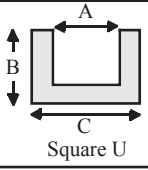
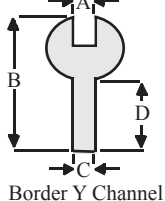
Hollander Glass Canada Inc.

**LEAD CAME**

**CASCADE**  
Metals

Add the prefix CGP when ordering your Cascade Metals.

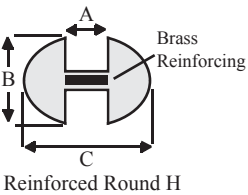
**LEAD CAME - REFORCE LEAD - HOBBY CAME**

Diagram (Where Available)	Regular	Extra Strength	Face B	Channel A (Heart)	Face B	Width C	Width D	Radius	Approx. Ft. Per Lb.	Pcs Per 45 Lb. Box
----- detailed specifications in inches -----										
 <p>Reinforced Round H</p>	<b>REINFORCED ROUND H</b>									
	<b>REFORCE LEAD</b>									
	Allows for glass wraparound, yet is very rigid, keeping glass panel in a flat plane. Eliminates the need for re-bar. This is a lead came that has been reinforced by putting a brass strip in the heart of the channel.									
	RF-5N		3/16"	0.156	0.187	0.345		0.109	5.3	40
	RF-6		1/4"	0.156	0.250	0.315		0.156	5.0	38
	RF-10		7/32"	0.185	0.218	0.320		0.140	5.7	43
RF-26		1/2"	0.156	0.500	0.260		Flat-H	3.9	29	
RF-45		3/8"	0.187	0.375	0.280		Flat-H	4.4	31	
<b>ROUND BOTTOM/FLAT SIDED U</b>										
	RU-80		13/64"	0.156	0.203	0.230			8.8	66
 <p>Flat Bottom/ Round Sided U</p>	<b>FLAT BOTTOM/ROUND SIDED U</b>									
	RU-100+	RU-100#2	5/64"	0.156	0.075	0.228		0.031	27.4	206
	RU-70	RU-70#2+	3/16"	0.154	0.185	0.249		0.140	10.1	76
	RU-71		1/4"	0.188	0.250	0.310		0.156	5.6	42
	RU-86		5/32"	0.156	0.198	0.250		0.109	8.9	67
	RU-90		1/8"	0.130	0.125	0.228		0.156	14.5	109
	RU-92	RU-92#2	5/32"	0.156	0.100	0.258		0.078	13.2	99
 <p>Square U</p>	<b>SQUARE U</b>									
	SU-55		1/5"	0.152	0.200	0.237			8.0	60
 <p>Border Y Channel</p>	<b>BORDER Y CHANNEL</b>									
	TU-500	TU-500#2	1/2"	0.156	0.500	0.125	0.250	0.125	2.6	20

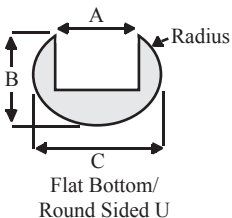
**HOBBY CAME**

+ Special order only.

Fine came, very popular for edging small pieces. Handy 3 ft. box or 15 lb. spool.



RU-01#2	"U" Hobby Came, 15 lb. spool
RU-01#2L	"U" Hobby Came, 33 lb., 3 foot length
RH-3#2L	"H" Hobby Came, 33 lb., 3 foot length (Works well with the RU01. Brilliant and Hard. Face width 1/8", channel width 1/8")



Hollander Glass Canada Inc.

**CAME/BRASS, COPPER & ZINC**



Profile	Face Width	Channel Width	Brass	Copper	Zinc
			(prefix for all codes is CGP)		
	3/16	5/32	BRH-316 BRH-316S+	CRH-316	ZRH-316
	7/32	9/64	BRH-732	CRH-732	ZRH-732
	1/4	5/32	BRH-250	CRH-250+	ZRH-250
	7/32	9/64	BH-732 BH-732S+	CH-732+	ZH-732
	9/32	9/64	BH-932	CH-932+	ZH-932
	3/8	9/64	BH-375+	CH-375	ZH-375
	1/2	9/64	BH-500+	N/A	ZH-500
	9/16	5/32	BY-916	N/A	ZY-916
	9/32	5/32	BB-932	CB-932	ZB-932
	3/8	5/32	BB-375	CB-375	ZB-375
	1/2	5/32	BB-500	CB-500	ZB-500
	3/4	5/32	BB-750	N/A	ZB-750

Brass, copper and zinc came is 6 feet in length and sold in 22 pound boxes.

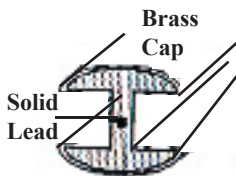
We also sell most profiles in less than full box quantities by the pound.

Minimum order is 5 pounds per alloy.

+ Special order only.

**BRASS CAPPED LEAD**

Gives an elegant finish to leaded panels, while adding strength. It cuts easily with a hack saw. Solder connections can be touched up with a brass marker. Six foot lengths. 45 lb per box.



CGP BCRH-4	7/32" round H
CGP BCRH-5	3/16" round H
CGP BCRH-6	1/4" round H

**ZINC COATED RE-BAR**

CGP ZRB-5/16+	Zinc Re-bar 22 lb. boxes, 5/16"
CGP ZRBS*	Zinc Re-bar loose, 3 lb. min. per lb., 5/16"

**SINGLE SIDED "U" CHANNELS**

BRASS - B    COPPER - C    ZINC - Z

CGP BU-090+	CGP CU-090+		for 2mm glass
CGP BU-130	CGP CU-130	CGP ZU-130	for 3mm glass
CGP BU-200+			for 5mm glass

\* Remaining stock only.

+ Special order only.

Hollander Glass Canada Inc.

## REINFORCING PRODUCTS

### GALVANIZED STEEL RE-BARS

Hollander Glass carries the best quality galvanized steel reinforcing bars available. They are far stronger than brass or zinc re-bars. Reinforcing bar (also known as rebar) adds strength and rigidity to your work. It protects from wind damage and sagging. May be soldered directly to the came, or a wire wrapped around the bar and soldered to the came. Re-bar can be bent in a vice to follow your lead lines.

The galvanizing (hot dipped in zinc), makes it easier to solder and protects against corrosion. All re-bars are six feet long, and are made from 1/8" thick steel stock. All re-bars have smoothed edges to make them easier to handle.

### COPPER, BRASS & STEEL "RE-STRIPS"

The copper "Reinforcing Strips" are 10 mil thick, are semi rigid, and are designed to be used as invisible structural reinforcement. The strips are inserted into lead came or soldered between copper foiled pieces to give extra strength and rigidity, adding stiffness to long, unsupported spans and fragile constructions subject to shock, vibration, gravity or wind. When used as intended copper re-strips cannot be seen since they disappear inside the heart of the lead or into the solder joint in copper foil projects. The width of the re-strip is just a little less than 3mm (slightly less than the thickness of most stained glass), and is available in both 25ft and 100 ft spools. Recommended for windows (especially those in doors), horizontal planes and lampshade edges.

These reinforcing strips, when used properly, can significantly raise the strength of copper foiled and leaded panels thereby reducing the need for external re-bars. When the highest strength is required, we suggest you use the Morton "Strong Line" which is 20 mil thick copper coated steel strip which is considerably thicker and stronger than the copper strips described above. Ideal for use where the absolute maximum strength is required without external reinforcing bars. Morton Strong Line is just under 3mm thick and is available in 25 ft packages only. The handy dispensing carton makes it easy to use.

Product Code	Length	Material
MOR SL25	25 ft	Steel
SUP RES100	100 ft	Copper
SUP RES25	25 ft	Copper

### REINFORCING RODS



Rods suitable for reinforcing panels or for decorative garden accent (plant stake). 36" rods sold by the pound.

MS 57-116	1/16"
MS 57-14	1/4"
MS 57-18	1/8"
MS 57-316	3/16"
MS 57-38	3/8"

### "FLEX BAR" FLEXIBLE RE-STRIPS

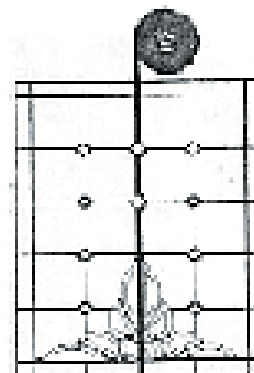
#### LFF BW18

This product that is amazing for reinforcing a curved line. It is a tinned copper braid which is highly flexible and easy to insert into complex joints in copper foil projects. The "Flex Bar" absorbs solder at the same time that the joint is soldered. Can also be used as desoldering wick! 10ft in a poly bag with header and diagram showing it's use. See Worden System Accessories, Section I, for full details.



Re-bar Width Diagram	Code	Size	Approx Wt/Length
	GB RB-1	3/8" wide	0.9 Lb.
	GB RB-2	1/2" wide	1.2 Lb.
	GB RB-3	1/4" wide	0.6 Lb.

All re-bar can be ordered by the length or pound. Pricing for re-bar is by the pound.



**METAL FOIL TAPE**



“Masterfoil Plus” is Venture Tape’s copper foil product line which encompasses superior adhesive technology. The foil’s “quick stick” factor is the highest in the industry, and the adhesives resistance to heat has been increased considerably. Venture Tape’s Copper Foils are absolutely the best available anywhere at any price. All Venture Tape rolls contain 36 yards of foil tape unless specified differently below. Each bag is marked for width.

Product Code	Width
<b>COPPER FOIL</b> 1.00 Mil Thick (purple cone)	
CF 1710-1	1/8”
CF 1710-2	5/32”
CF 1710-3	3/16”
CF 1710-4	7/32”
CF 1710-5	1/4”
CF 1710-6	5/16”
CF 1710-7	3/8”
CF 1710-8	1/2”
<b>1.25 Mil Thick (orange cone)</b>	
CF 1725-1	1/8”
CF 1725-2	5/32”
CF 1725-3	3/16”
CF 1725-4	7/32”
CF 1725-5	1/4”
CF 1725-6	5/16”
CF 1725-7	3/8”
CF 1725-8	1/2”
<b>1.50 Mil Thick (red cone)</b>	
CF 1750-3	3/16”
CF 1750-4	7/32”
CF 1750-5	1/4”

Product Code	Width
<b>SILVER BACKED</b> <b>COPPER FOIL</b> 1.50 Mil Thick	
CF 1665-2	5/32”
CF 1665-3	3/16”
CF 1665-4	7/32”
CF 1665-5	1/4”
CF 1665-6	5/16”
CF 1665-7	3/8”
CF 1665-8	1/2”
<b>BLACK BACKED</b> <b>COPPER FOIL</b> 1.25 Mil Thick	
CF 1765-1	1/8”
CF 1765-2	5/32”
CF 1765-3	3/16”
CF 1765-4	7/32”
CF 1765-5	1/4”
CF 1765-6	5/16”
CF 1765-7	3/8”
CF 1765-8	1/2”
<b>BRASS FOIL</b> 1.00 Mil Thick	
CF 1810-4	7/32”

Product Code	Width
<b>LEAD FOIL</b> A 5 mil thick pure lead foil tape which is coated with a specially designed weather resistant adhesive system. The foil is highly malleable and can be shaped to the most intricate patterns. It is used for simulated leaded glass windows and other surface decoration.	
CF 1450-1/4	1/4”
CF 1450-3/8	3/8”
CF 1450-1/2	1/2”

Product Code	Type
<b>“NEW WAVE” FOIL</b> Designed for putting special edges on special projects such as lamps, boxes, borders, etc. The nominal size is 5/16” and rolls are 36 yards long.	
CF 1766	Copper
CF 1772	Silver
CF 1773	Black



New Wave Foil

**BriteBak™ Reflective Tapes**

Colours and Textures are seen as if your glass were back-lit, adding a dramatic new dimension to cast stone (and other) projects! Venture BriteBak™ Tapes allow the use of colours and textures which would be all but invisible without the brilliant light provided by these highly reflective surfaces. Rolled brass and aluminum foils, with high tack adhesive, are highly resistant to the exothermic reaction of curing cement, and will retain brightness for the life of your cast stone project.

**CF 1820** Britebak, Silver, 2 mil foil tape, 2” x 10 yards

**CF 1821** Britebak, Gold, 1 mil foil tape, 2” x 5 yards



**Copper Foil Sheet**

**CF 1626**

Superior, high tensile, malleable copper alloy sheeting used for filigree work. Individually packaged in protective poly bag with header. 12”x12”, 1.25 mils thick. Adhesive backed.

Please note that Venture foil is available in 12” wide rolls by special order - please inquire.  
The accompanying brochure by the Venture Tape Corp. gives complete info on all of their metal foil tapes as well as their complete line of resists and other related supplies. For these other products, please see Section H in this catalogue.

**METAL FOIL TAPE**

**Edco Foil**



This copper foil is of high quality, made by Edco. Edco foil has a strong adhesive and long shelf life. Edco copper foil uses a “dead soft copper” that adheres closely to your glass. This saves you time and makes your finished work more attractive and stronger.

Edco copper foil is specially formulated to withstand every chemical normally used in stained glass work, so you will always be please with your results.

**Copper Foil**

CF CF09	3/16”
CF CF10	7/32”
CF CF11	1/4”
CF CF12	5/16”
CF CF13	3/8”
CF CF14	1/2”

**Black Foil**

CF CF42	3/16”
CF CF44	7/32”
CF CF45	1/4”
CF CF47	3/8”

**Silver Foil**

CF CF32	3/16”
CF CF34	7/32”
CF CF36	1/4”



**NON-ADHESIVE COPPER FOIL SHEETS**

Individually packaged copper sheets without adhesive backing. Excellent for decorative projects requiring irregular shapes to supplement art glass constructions. Decorative soldering on shaped and textured foil add detail to your work. Easy to apply patina to copper surface.

CF 1100	1mil, 12” x 48”
CF 1200	2mil, 6”X8”, 3 pcs
CF 1500	5mil, 6”X8”, 1 pc
TL 2505	Embossing Tools, 3pk

Also can be used in fused glass projects. Copper foil, when encased in glass and fired, turns a beautiful deep red or blue. Cut out design shapes with a knife or a paper craft punch (as used in scrapbooking - see Tools Section), and emboss if desired.

**SOLDER**

*Please note: Solder prices fluctuate due to changes in the worldwide tin market. Please check pricing when ordering.*



Fry Solder



AIM Solder

- 50/50 Solder** • 50% tin and 50% lead, it is the most economical. Can be used for copper foil seams and general purpose use. The higher lead content makes for a higher melting point and requires a higher temperature setting.
- 60/40 Solder** • 60% tin and 40% lead, this is the choice of those who want enhanced workability. The standard for copper foil seams and in lead came work. It is the most popular alloy, melts at a lower temperature than 50/50, making it melt quicker and making it easier to work faster. Has a shinier surface upon cooling. Solidifies slower than 50/50 solder.
- 63/37 Solder** • Known as eutectic solder, it melts and solidifies at the same temperature, giving you neat solder beads. The solder for those who want to work fast and for those who are doing decorative soldering. It has a low melting point (360° F) making it easy to work with.
- Lead Free Solder** • This alloy works well for bird houses, candy dishes or jewelry, or if you have concerns about working with lead. Contains tin, copper and/or silver.

**FRY “CLASSIC” SOLDER**

Part of the largest solder network in the world, Fry Metals “Classic” line of solders offers you unequalled purity and dependability. Their complete range of solders includes both regular and lead free solders.

FRY 5050-1	50/50 1 Lb
FRY 5050-2	50/50 5 Lb
FRY 6040-1	60/40 1 Lb
FRY 6040-2	60/40 5 Lb
FRY 6337-1	63/37 1 Lb
FRY ULTRA	Ultra Lead Free solder, 1 Lb

**AIM SOLDER**

Canadian made by AIM, who claims its success “is as a result of their understanding that their customers need more than just a quality product.” They are also world leaders in lead-free solder assembly materials. It is very “clean” solder that is gaining in popularity.

AIM 5050-1	50/50 ,1 Lb	AIM 6337-1	63/37, 1 Lb
AIM 5050-2	50/50, 5 Lb	AIM 6337-2	63/37, 5 Lb
AIM 5050-3	50/50, 25 Lb		
AIM 6040-1	60/40-1, 1Lb	AIM 97S-1	Lead Free, 1 Lb
AIM 6040-2	60/40, 5 Lb	AIM 97S-2	Lead Free, 5 Lb
AIM 6040-3	60/40, 25 Lb		