

## NEW!! Coated Brazing Rods

### BRAZING

Brazing is a metal joining process in which two or more metal pieces are joined together by melting and feeding a filler metal into the joint. The filler wire has a lower melting point than the base metals. Brazing differs from welding as it does not involve melting of work pieces. The filler metal flows into the gap between close-fitting parts by capillary action.

The filler metal is brought slightly above its melting temperature while protected by a suitable atmosphere, usually a flux. It then flows over a base metal (known as wetting) and is then cooled to join the work pieces together. It is similar to soldering, except that, the temperature used to melt the filler metal is higher for brazing. A major advantage of brazing is its ability to join the same or different metals with considerable strength.

### Flux

In the case of brazing operations which are not conducted in an inert or reducing atmospheric environment (i.e. a furnace), flux is required to prevent oxides from forming while the metal is heated. The flux also serves the purpose of cleaning any contamination left on the brazing surfaces and hence can be applied in various forms such as paste, liquid, powder or pre-made brazing pastes that combine flux with filler metal powder. Flux can also be applied using brazing rods with a coating of flux or a flux core. In either case, flux flows into the joint.

### Filler materials

A variety of alloys are used as filler metals for brazing depending on the intended use or application. In general, braze alloys are made up of 3 or more metals to form an alloy with the desired properties. The filler metal for a particular application is chosen based on its ability to wet the base metals, withstand the service conditions required and melt at a lower temperature than the base metal or at a very specific temperature.

Braze alloy is generally available in various forms such as rods, ribbons, powder, paste, cream, wires and also in pre-forms such as stamped washers. Depending on the application, filler material can be pre-placed at the desired location or applied during the heating cycle. For manual brazing, wire and rod forms are generally used as they are the easiest to apply while heating. In the case of furnace brazing, alloy is usually placed first since the process is usually highly automated.

### New Coated Brazing Wires from Ador Welding

Ador have recently launched three types of coated brazing wires. The major advantage of using coated wires is that there is no need to use a separate flux.

#### BRACC 3343

It is a flux coated brazing alloy with 43% Silver content, the lowest possible melting point, very good flow characteristic and high capillary properties. This wire offers excellent service in sea-water and is great on steel, stainless steel, malleable cast iron, copper and copper alloys and nickel alloys. Some typical applications are apparatus construction, precision mechanics, precision tools, joints on copper conductors, refrigeration plants, electrical industry, fittings, installation works etc.

#### BRACC 2211

This flexible flux coated special brass brazing alloy can be used directly on the job without separate application of flux making the operation quick and economical. Since the flux coating is flexible, it does not peel off even on bending the rod at 180° thus offering a very good shelf life and ease of use. It also offers excellent results for sheet metal assembly and repair. It is well suited for repairing of car bodies and car silencer assemblies and can be used even in overhead positions with ease.

#### BRACC 7700

This is a flexible flux coated wear resistant bronze alloy that can be used directly on the job without separate application of flux that makes the application quick and economical. This alloy offers an wear & corrosion resistant surface. This alloy works best on surfacing of steel, grey cast iron and bronze, for metal to metal wear resistant applications viz: gear teeth, bevel gear tracks, shafts, cams, slide bars, bearings, metal seals, valve seats, pistons etc.

### BRACC 3343

#### FLUX COATED HIGH SILVER ALLOY FOR MULTI PURPOSE BRAZING

**ALLOY BASIS :**  
Ag, Cu, Zn, Cd

**KEY FEATURES :**

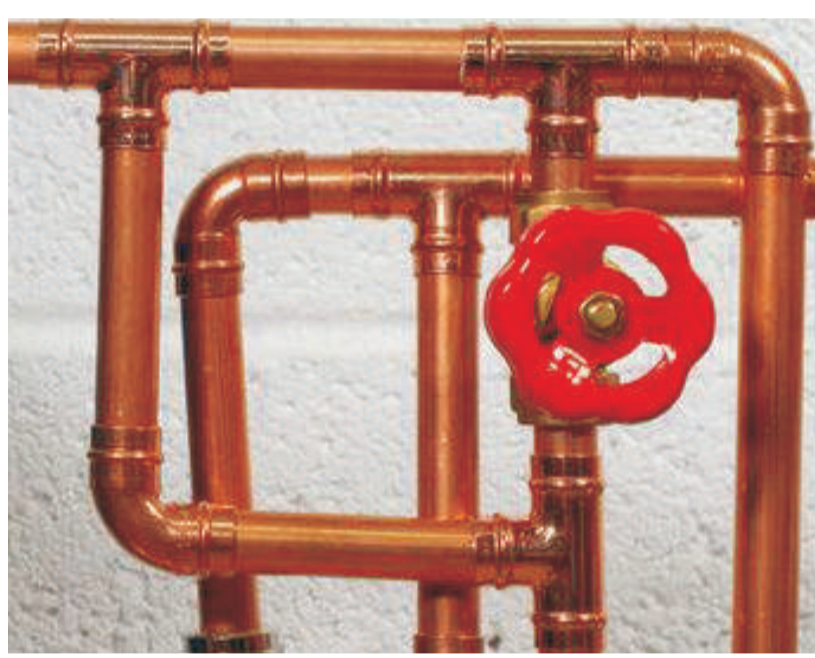
- Flux coated brazing rod
- High silver content
- Lowest melting point
- Excellent flowing characteristics
- Excellent capillary action
- Strong, clean and smooth joints

**TYPICAL APPLICATIONS :**

- Brazing of CuZn20Al, CuNi10Fe, CuNi30Fe.
- Capillary brazing on steel and stainless steel, malleable cast iron, copper and copper alloys, nickel, nickel alloys, hard metals and their dissimilar combinations.
- Construction of apparatus, shipbuilding, precision tools, copper conductor joints.
- Refrigeration plants, electrical industry, fittings, installation works, furniture, carbide tip brazing, drill bits brazing.

**HEAT SOURCE :**

Oxy-acetylene torch, Air - gas torch, Blow - lamp, Furnace, High frequency induction.



**PROCEDURE :**

Clean the joint thoroughly. Use neutral flame. Joint clearance approx. 0.1 mm. Preheat a broad area and then heat locally until flux melts. Melt filler metal and draw with flame along the joint. Do not overheat.

**CLEANING :**

Remove flux residues by rinsing in hot water.

#### TECHNICAL DATA

UTS of joint, MPa	Elongation, %	Melting range
345 - 390	25	890 - 900°C

#### PACKING DATA

Ø x L, mm	2.50 x 500	3.15 x 500
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### BRACC 2211

#### FLUX COATED SPECIAL BRASS BRAZING ALLOY

**ALLOY BASIS :**  
Cu, Zn, Additives

**KEY FEATURES :**

- Flux coated brazing rod
- Provides excellent wetting action
- No objectionable fuming
- Good machinability
- Very fast and economical operation
- Applied with high quality coating to speed up brazing time
- Flexible and thin flux coating does not peel off even after bending
- Flux coating has extended life span

**TYPICAL APPLICATIONS :**

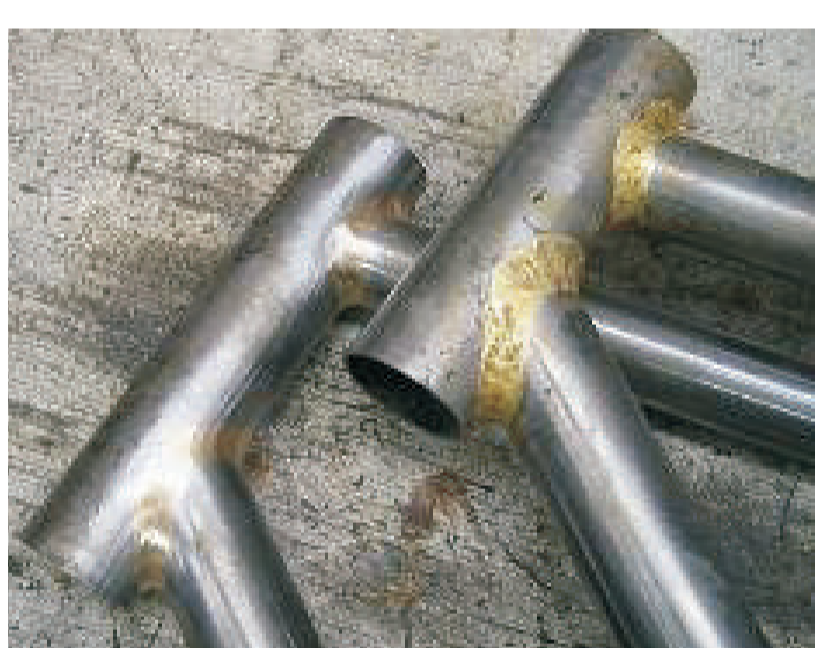
- Brazing of steel, cast iron, copper, brass.
- Galvanized iron.
- Joins dissimilar metals like steel to cast iron, steel to copper and copper alloys, cast iron to copper and copper alloys.
- Excellent for sheet metal assembly and repair.
- Repair of car bodies and car silencer assembly in overhead position without dismantling.

**HEAT SOURCE :**

Oxy - acetylene torch, Furnace, High frequency induction.

**PROCEDURE :**

Clean the joint thoroughly. Use neutral flame. Preheat a broad area and then heat locally until flux melts. Then apply filler rod and melt it into the joint. For braze - welding, melt the rod drop by drop along the joint. For capillary joints, melt the rod and draw with the flame along the joint. In case of cast iron, preheat the entire casting to 450°C and maintain this preheat until the operation is completed.



When using Bracc 2211, melt the flux from end of the rod on to the start of the weld area. Continue heating the weld area until the flux melts. Next melt a drop of filler metal by playing with the flame on the rod end until it flows and bonds easily. Continue adding more of the filler metal drop by drop into the joint.

**CLEANING :**

Remove flux residues mechanically or chemically using 10% hydrochloric acid for ferrous metals and 10% sulphuric acid for copper and its alloys followed by rinsing in running water.

#### TECHNICAL DATA

UTS of joint, MPa	Melting range
440 max	890 - 900°C

#### PACKING DATA

Ø x L, mm	2.50 x 500	3.15 x 500
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### BRACC 7700

#### FLUX COATED SPECIAL BRONZE ALLOY FOR WEAR RESISTANCE

**ALLOY BASIS :**  
Cu, Zn, Ni

**KEY FEATURES :**

- Flux coated rod
- Can be used directly on the job
- No external flux required
- Very fast and economical operation
- Tough and easily machinable alloy
- Deposit is free from porosity with resistance to corrosion and wear
- Flexible and thin flux coating does not peel off even after bending
- Flux coating has extended life span

**TYPICAL APPLICATIONS :**

- Surfacing of steel, grey cast iron, bronze.
- Especially suitable for wear resistant surfacing.
- Gear teeth, Bevel gear tracks, Shafts, Cams, Slide bars.

**HEAT SOURCE :**

Oxy-acetylene torch.



**PROCEDURE :**

Clean the joint area. Prepare the edges especially for heavy section and cracked area. Preheat the job and melt a drop of flux from the end of the rod onto the beginning of the joint area. Continue heating until flux liquefies and add the filler metal drop by drop making sure of a good bond.

#### TECHNICAL DATA

Working temperature	Hardness of pure deposit, HRC
900°C	10-15

#### PACKING DATA

Ø x L, mm	2.50 x 500	3.15 x 500
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