

Extrusion (J. Schumar, C. Swanson)

Extrusion of myraalloy rods and beryllium shapes was conducted at Revere Brass and Copper Co. on June 6, 1946. One pure beryllium $4\frac{1}{2}$ " billet was extruded into a $1\frac{1}{8}$ " rod and one pure beryllium $4\frac{1}{2}$ " billet was extruded into 1.530 " diam. rod. Results were good.

Two pure beryllium $6\frac{1}{4}$ " billets and one 30% U, 70% Be billet were extruded into flats $4\frac{1}{2}$ " wide x 1" thick. The results were good.

Two pure Be $6\frac{1}{4}$ " billets were extruded into $2\frac{1}{8}$ " squares. The first square rattlesnaked on the corners while the second was very good.

An attempt was made to extrude two myraalloy $6\frac{1}{4}$ " dia. billets into $1\frac{3}{4}$ " rod. The billet that was approximately 7" long extruded O.K. while the billet that was approximately 12" long extruded part of its length. The difficulty was due to the lack of facilities for putting the billet into the container. Consequently the billet temperature dropped. The successful billet was extruded at approximately 1650°F .

Some attempts to extrude small diameter beryllium tubes at Site B have been made. These tubes were made by using Be billets having a core of copper, thus being extruded as a composite rod. The copper core is then pickled out using HNO_3 . The smallest tube was $\frac{1}{4}$ " O.D. x $1/8$ " I.D.

Straightening (J. Schumar, C. Swanson)

The straightening of the Be-Be/U composite rods (see May Report) on a Medart straightener at the Joslyn Mfg. Co. was attempted. The

straightening was partially successful. Due to the brittleness of the rods many broke up in the straightening operation. Work is being carried on in trying to straighten the rods hot in a stretcher straightening device designed in our laboratory.

In centerless grinding the rods at Joslyn it was found that the surface could be cleaned up by removing 0.015"-0.020" on the diameter.

Six extruded mrynalloy rods 1.530" dia. were also straightened and centerless ground at Joslyn. All but one rod straightened 0.%. The rods were straightened hot at Site B by hammering while they rested in an angle made of wood and covered with asbestos. They were then annealed at 700°C for one hour. The straightening at Joslyn was done cold on a Medart straightener. After cold straightening the rods were centerless ground to clean up the surface. The diameter of the ground rods ranged from 1.375" to 1.425". Most of the rods had defects on the surface after being ground. Since these rods were for W slugs, the minimum ground diameter was held to 1.375".

Casting (G. O'Keeffe, J. Schumar)

Casting of pure beryllium $4\frac{1}{2}$ " and $6\frac{1}{2}$ " billets has been continued. Casting of $6\frac{1}{2}$ " billets of Be-3% Al alloy is underway.

The Transite tube for the construction of a large premelt furnace has been received.

One15# $1\frac{1}{2}$ " dia. casting of 1% Zr-2% Cb-97% U alloy has been cast. The casting was very good.

Metal Hydrides Inc. has been contacted with respect to making a 10% zirconium-90% uranium master alloy for use in casting the Zr-Cb-U alloy bricks.