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MONTHLY REPORT ON SECONDARY NON-FERROUS INGOT

DECEMBER - 1945.

Kind of Ingot	Stock 1st of period	Production during period	Sold during period	Stock end of period
		(pounds)		
A	305,789	122,805	153,011	275,583
B	505,847	603,413	505,685	603,575
C	209,592	449,479	399,370	259,701
D	93,734	225,341	200,646	118,429
E	143,088	445,971	381,513	207,546
F	16,827	-	6,340	10,487
Silicon bronze (x).....	n.a.p.	n.a.p.	n.a.p.	n.a.p.
Manganese bronze	107,074	61,626	76,210	92,490
Other alloys of brass & bronze	740,953	530,466	531,084	740,335
TOTAL	2,122,904	2,439,101	2,253,859	2,308,146

(x) n.a.p. - Not available for publication. Figures included in "Other Alloys of Brass and Bronze".

SPECIFICATIONS OF ALLOYS TO BE USED IN PRODUCING NON-FERROUS METAL CASTINGS CONTAINING TIN

Wartime Prices and Trade Board
Administrator's Order No. A-1779

"A" INGOT -

For castings for steam fittings to be used in installations having over 150 pounds per square inch pressure (in naval vessels over 125 pounds) and a maximum temperature of 500 degrees Fahrenheit, ingots of the following specifications:

Min.	Max.	Min.	Max.
5.00	6.0% Tin	4.00	5.00% Zinc
4.25	1.75% Lead	0.75	1.25% Nickel

and balance copper, with impurities not in excess of the following respective limits:

Iron	0.15%	Silicon	0.005%
Antimony	0.20%	Sulphur	0.05%
Aluminum	none#	Phosphorus	0.02%

"B" INGOT -

For castings for steam fittings to be used in installations having a pressure range from 75 to 150 pounds per square inch (in naval vessels, range to be 0-125 pounds per sq.in.) and a temperature not exceeding 370 degrees Fahrenheit, and for general high grade pressure castings and fittings, ingots of the following specifications:

Min.	Max.	Min.	Max.
4.5	5.5% Tin	4.5	5.5% Zinc
4.5	5.5% Lead		

and the balance copper with impurities not in excess of the following respective limits:

Iron	0.25%	Antimony	0.25%
Aluminum	none#	Sulphur	0.08%
Silicon	0.005%	Phosphorus	0.01%

"C" INGOT -
For castings for steam fittings (except naval vessels) to be used in installations having 75 pounds per square inch pressure or less, or for castings for industrial or domestic steam heating, ingots of the following specifications:

Min.	Max.	Min.	Max.
2.50	3.50% Tin	8.00	10.00% Zinc
6.50	7.50% Lead		

and the balance copper, with impurities not in excess of the following respective limits:

Iron	0.35%	Antimony	0.25%
Aluminum	none#	Sulphur	0.08%
Silicon	0.005%	Phosphorus	0.01%

"D" INGOT -
For castings for general use as bearings and bushings, ingots of the following specifications:

Min.	Max.	Min.	Max.
4.5	5.5% Tin	3.5	4.5% Zinc
8.00	10.00% Lead	0.75	1.25% Nickel

and balance copper, with impurities not in excess of the following respective limits:

Iron	0.25%	Silicon	0.005%
Aluminum	none#		

"E" INGOT -
For castings for all plumbing supplies, hot water heating, air and gas fittings and similar purposes, ingots of the following specifications:

Min.	Max.	Min.	Max.
0.75	1.25% Tin	12.00	15.00% Zinc
7.00	9.00% Lead		

and the balance copper, with impurities not in excess of the following respective limits:

Iron	0.35%	Silicon	0.005%
Aluminum	none#		

Note # — In determining the aluminum allowance in Paragraphs A, B, C, D and E, the requirement of "none" is complied with if the aluminum content does not exceed 0.005% when determined on a 10 gram sample.

"F" INGOT -
For castings for general hardware and general structural purposes, ingots of the following specifications:

Min.	Max.	Min.	Max.
Not more than..	1.50% Tin	28.00	32.00% Zinc
2.50	3.50% Lead		

and the balance copper, with impurities not in excess of the following respective limits:

Iron	0.50%	Silicon	0.05%
Aluminum	0.25%	Other elements	1.00%

MINIMUM PHYSICAL PROPERTIES EXPECTED FROM INGOTS A, B, C, D, E and F

"Yield Point" means the stress which produces an elongation of 0.5%, that is, 0.01 inches in a gauge length of 2 inches. Measurement to be made with specimen under tension.

"A" INGOT -	Yield Point	16,000 pounds per sq. in.
	Ultimate Tensile Strength	34,000 pounds per sq. in.
	Elongation	22.0% in 2 inches.
"B" INGOT -	Yield Point	14,000 pounds per sq. in.
	Ultimate Tensile Strength	30,000 pounds per sq. in.
	Elongation	20% in 2 inches.
"C" INGOT -	Yield Point	12,000 pounds per sq. in.
	Ultimate Tensile Strength	26,000 pounds per sq. in.
	Elongation	15% in 2 inches.
"D" INGOT -	Yield Point	12,000 pounds per sq. in.
	Ultimate Tensile Strength	25,000 pounds per sq. in.
	Elongation	10% in 2 inches.
"E" INGOT -	Yield Point	12,000 pounds per sq. in.
	Ultimate Tensile Strength	22,000 pounds per sq. in.
	Elongation	15% in 2 inches.
"F" INGOT -	Yield Point	11,000 pounds per sq. in.
	Ultimate Tensile Strength	27,000 pounds per sq. in.
	Elongation	15% in 2 inches.

The figures given in this bulletin have been compiled from reports received from the following firms:

Atlas Smelting & Refining Co. Ltd.	321 E. 1st Ave., Vancouver, B.C.
Canada Metal Co. Ltd.	721 Eastern Ave., Toronto, Ont.
Frankel Bros. Ltd.	Don Roadway and Eastern Ave., Toronto, Ont.
General Smelting Co. of Canada Ltd.	Wilcox St., Hamilton, Ont.
Great Western Smelting Co. Ltd.	310 Prior St., Vancouver, B.C.
McKay Smelters Ltd.	McKay St., Eastview, Ont.
Metals & Alloys Ltd.	Wickstead Ave., Leaside, Ont.
Rahn Metals Ltd.	Regina St., North Bay, Ont.
United Smelters & Metals Inc.	1011 Wellington St., Montreal, Que.
United Smelting & Refining Co.	363 Wellington St. N., Hamilton, Ont.
Z. Wagman & Sons Ltd.	190 Edwin Ave., Toronto, Ont.

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