U.S. WAR PRODUCTION BOARD.

CONTROLLED MATERIALS PLAN; GENERAL INSTRUCTIONS ON BILLS OF MATERIALS.

WAR PRODUCTION BOARD

WASHINGTON, D. C.

CONTROLLED MATERIALS PLAN;

GENERAL INSTRUCTIONS ON BILLS OF MATERIALS, Nov. 14, 1942.

This supersedes Exhibits 1 and 2, included in Controlled Materials Plan, published November 2, 1942

November 14, 1942

CONTROLLED MATERIALS PLAN

GENERAL DEFINITIONS

1. **Controlled Material:** carbon steel, alloy steel, copper, aluminum and such other materials as may be prescribed from time to time, in each case only in the forms and shapes indicated in the CMP Materials List attached hereto, or as otherwise ordered by the Vice Chairman on Program Determination.
2. **CMP Materials:** the materials on the list attached hereto in Exhibit 1. The list includes controlled materials and other materials for inclusion in bills of materials and inventory reports.
3. **Bill of Materials:** with respect to any item, a statement of the amounts of materials required for physical incorporation in the production of a given product, including the portion of such materials consumed or converted into scrap in the course of processing. Detailed rules as to the methods of preparing bills of materials are included in Exhibit 1.
4. **Vice Chairman:** the Vice Chairman on Program Determination of the War Production Board, who is the Chairman of the Requirements Committee.
5. **Controlled Materials Branch:** the Branch or Division of the War Production Board which is charged with supervision over the production and distribution of any controlled material. References to decisions or actions of a Controlled Materials Branch mean decisions or actions by the Chief of the Branch.
6. **Industry Branch:** the Branch, Division, Bureau, or other unit of the War Production Board which is charged with supervision of production by an industry and the distribution of its products. The term also includes any other government agency which, by arrangement with the War Production Board, may perform similar functions with respect to a particular industry.
7. **Claimant Agency:** the following Government agencies and such others as may from time to time be designated by order of the Vice Chairman: War Department, Navy Department, Maritime Commission, Aircraft Scheduling Unit (agent for Army Air Forces and Bureau of Aeronautics), Office of Lend Lease Administration, Board of Economic Warfare and Office of Civilian Supply.
8. **Office:** when used with respect to a Claimant Agency, any branch, bureau, supply arm, department, service or other unit which (a) is an integral part of the Agency's organization, (b) is subject to its direct control, or (c) is represented by it on the Requirements Committee.
9. **Requirements Committee:** the Requirements Committee of the War Production Board, which includes a representative of the State Department and a representative of each of the Claimant Agencies and passes upon the major divisions of materials for prosecution of the war. References to decisions or actions of the Committee mean decisions or actions by the Vice Chairman.
10. **Requirements:** a statement of the amount of all material called for by a program or group of programs, including the portion of such material consumed or converted into scrap in the course of processing.
11. **Allotment:** (a) a determination by the Requirements Committee of the amount of controlled materials which a Claimant Agency may receive during a specified period, or (b) a further determination pursuant thereto by a Claimant Agency, prime consumer or secondary consumer as to the portion of its allotment of controlled materials which may be received by one of its prime consumers or secondary consumers, as the case may be.
12. **Designated Allotment:** an allotment which is accompanied by specific directions as provided in section 17.
13. **Prime Consumer:** any person who receives an allotment of controlled material from a Claimant Agency either directly or through an Office of such Agency. (Usually referred to by the services as prime contractor.)

14. **Secondary Consumer:** any person who receives an allotment of controlled material from a prime consumer or another secondary consumer. (Usually known as a subcontractor.)
15. **Class A Product:** any product containing any controlled material fabricated beyond the forms and shapes specified in the CMP Materials List except a Class B product.
16. **Class B Product:** any product containing any controlled material fabricated beyond the forms and shapes specified in the CMP Materials List, which is contained in the Class B List, Exhibit 2, attached.
17. **Program:** a plan specifying the total amount of an item or class of items to be provided in a specified period of time.
18. **Authorized Program:** a program specifically approved by the Requirements Committee or by a Claimant Agency within the limits of its allotment.
19. **Schedule:** a plan specifying the total amount of an item or class of items to be produced or used by an individual consumer in a specified period of time.
20. **Authorized Schedule:** a schedule specifically approved within the limits of an authorized program by a Claimant Agency with respect to a prime consumer, or specifically approved by a prime or secondary consumer with respect to a secondary consumer producing for sale to it as required to meet an authorized schedule.
21. **Production Directive:** an order issued by a Controlled Materials Branch to a producer of controlled material specifying amounts of one or more forms, shapes, or products to be produced or shipped by him during a specified period.

GENERAL INTRODUCTION

1. Purposes of Controlled Materials Plan.

The fundamental purpose of the Plan is to assure a balance between supply and demand of controlled materials, to the end that such materials shall be available to the consumers of materials in the quantity and form and at the time and place required to meet authorized programs and schedules. The Controlled Materials Plan provides for the division of available supplies of controlled materials among the various Claimant Agencies in the interests of the most efficient use of these controlled materials in war production, and for the further division of the supplies of materials by the Claimant Agencies to their prime and secondary consumers.

The Plan contemplates centralized control by the War Production Board over the division of controlled materials among the Claimant Agencies and appropriate accounting so that no Agency can overdraw its allotment. Detailed responsibility for the distribution of controlled materials through specific allotments to programs and schedules is decentralized—first, in the Claimant Agency primarily responsible for each program, and secondly, in the consumers responsible for each schedule.

The Plan is designed to balance the over-all production program within the available supply of controlled materials. The Claimant Agencies will be required to adjust programs and schedules within the limits of controlled materials allotted to them. Other materials will continue to be distributed through the priority system. The Plan is sufficiently flexible to permit the inclusion of additional materials as controlled materials in the future, if necessary.

2. The Place of Bills of Materials in the Plan.

Each Claimant Agency is required to submit to the War Production Board its total requirements for controlled materials. These requirements must represent the materials needed to meet the scheduled programs of the Claimant Agencies, and will be the basis of allotments of controlled materials to the Claimant Agencies by the Requirements Committee. The basis for the preparation of these requirements will be Bills of Material for the various procurement items in the programs of the Claimant Agencies.

Claimant Agencies are responsible to the War Production Board for obtaining Bills of Material which will enable them to prepare their requirements for submission to the Requirements Committee. This information is also obtained to assist such Agencies in making allotments to Prime Consumers. The data so provided will also guide the Controlled Materials Branches in the formulation of production plans and the issuance of production directives to the producers of controlled materials.

Certain Claimant Agencies and Industry Branches in the case of highly repetitive items will find it necessary to obtain as rapidly as possible, Detail Bills of Material showing forms and sizes of materials

in greater particularity than provided in the instructions for the preparation of Summary Bills and also covering materials other than those in the CMP Materials List. Such requests for additional detail by Claimant Agencies are to be complied with, so long as not in conflict with this Plan. While consideration will be given to the particular needs and problems of each Claimant Agency and its Offices, uniformity to a substantial degree is essential.

Responsibility for the preparation of Bills of Material shall be upon the Claimant Agency, with reference to the War Production Board, and upon the Prime Consumers, with reference to the Claimant Agency. This shall not prevent a Claimant Agency from working with secondary consumers in cooperation with the Prime Consumers insofar as is necessary to direct the preparation of accurate Bills of Material for subcontracted items.

GENERAL INSTRUCTIONS TO INDUSTRY FOR PREPARING BILLS OF MATERIALS

At the request of the appropriate Claimant Agency, prime consumers shall prepare and submit to such agency Summary Bills of Materials and, if specifically requested, Detail Bills of Materials, for procurement items as specified, in the form hereinafter described. The responsibility for compiling a complete Bill of Materials for a procurement item including all sub-contracted parts, is vested in the prime consumer.

In the case of purchased parts or assemblies it will be necessary for the consumer to secure from his secondary consumer the necessary information to complete the Bill of Materials and to furnish him with a copy of these instructions, in order to preserve uniformity in the preparation of all Bills of Materials.

The following instructions have been written to assist consumers in preparing Bills of Materials in which the basic information shown will be sufficiently uniform for consolidation and practical use by Claimant Agencies.

Definitions Related to Bills of Materials.

1. *Detail Bill of Materials.*—A list of all component parts of a procurement item showing material requirements.

2. *Summary Bill of Materials.*—A list of the material requirements for a complete procurement item or a recapitulation of the Detail Bill of Materials. In some instances the Claimant Agency involved may request that this Summary Bill be subdivided into functional groups, for scheduling purposes. In each case spare parts sets must be shown separately and sub-totalled on the Bill of Materials.

3. *Prototype Bill of Materials.*—A Bill of Materials that is applicable to several styles or models of the same basic part or assembly, varying slightly in minor details which have little or no effect on the aggregate material content.

4. *Procurement Item.*—The complete assembly or product to be furnished by a Prime Consumer including extra parts, such as spare wheels and tires on trucks, and auxiliary or accessory equipment, such as picks, shovels, fire extinguishers, tool kits, etc., on tanks, which are normally attached to or shipped as a constituent part of the procurement item; and spare parts sets specified to be shipped concurrently with the basic procurement item.

5. *CMP Materials List.*—This is a classification list of materials, designed for the preparation of Summary Bills of Materials under the Controlled Materials Plan. These materials have been assigned code numbers for convenience in accumulating the data requested herein, and a conversion table showing the translation from "Red Book" codes to C. M. P. codes is included.

6. *CMP Materials Code Number.*—The number taken from the CMP Materials List, used for convenience in accumulating the data requested herein.

7. *Drawing or Part Number.*—The number normally used to identify the individual part or assembly, and for use in connection with the preparation of Detail Bills of Materials. If the official government part numbers are available, these should be used.

8. *Part Name.*—The name of an individual part or an individual assembly, such as rope, buckle, piston, firing pin, etc., to be shown only on Detail Bills of Materials.

9. *Specification or Chemical Analysis of Material.*—This refers to standard specifications such as "S. A. E.", "Army", "Navy", "Federal", "A. S. T. M.". In the absence of such recognized specifications, a manufacturer's specifications may be used, but only if an analysis showing chemical composition is furnished.

10. *Net Weight.*—The weight of a material actually contained in a finished part (in the case of a Detail Bill of Materials) or in a completed procurement item (in the case of a Summary Bill of Materials).

11. Gross Weight (including rejections, etc.).—The weight of the material in the form shipped by the material producer and required for the manufacture of the procurement item or one of its parts. This should include reasonable allowances based on experience for processing losses, rejections, culls, testing, and spoilage, in such manner as may be prescribed by the Vice Chairman. For special definitions covering individual materials consult the CMP materials list.

12. *Number of Parts (shown on Detail Bill of Materials only).*—Number of finished parts (of the particular part being reported) to be incorporated in the functional group or its sub-division of the procurement item being reported. Taking, for example, a piston ring as the part being reported for a six cylinder motor having two rings for each piston,—the *Number of Parts* would be 12 if the motor were the functional group under consideration.

13. Total Net Weight.

a. *Detail Bill of Materials.*—On the Detail Bill of Materials, Total Net Weight is the Net Weight Per Part multiplied by the Number of Parts. It is the aggregate Net Weight of all parts identical with the one being reported which will be incorporated in the particular sub-division of the procurement item as listed. In the case of the piston rings mentioned above, it is the total net weight of the 12 piston rings.

b. *Summary Bill of Materials.*—On the Summary Bill of Materials the Total Net Weight is the total net weight of a particular material contained in the complete procurement item, unless the Summary Bill is subdivided by functional or other groups, at the specific request of the Claimant Agency involved; then it will be the total weight contained in the sub-division of the procurement item as listed.

14. Total Gross Weight (Including Rejections, Etc.).

a. *Detail Bill of Materials.*—On the Detail Bill of Materials, Total Gross Weight is the Gross Weight Per Part multiplied by the Number of Parts. In the case of the piston rings referred to above, it would be the total weight of the particular material needed to produce the 12 rings including allowances as indicated in the definition of "Gross Weight."

b. *Summary Bill of Materials.*—On the Summary Bill of Materials, the total gross weight (as defined) is the total of a particular material required to make all parts of the procurement item, except class B products. However, if the Summary Bill of Materials is sub-divided by functional or other groups, at the specific request of the Claimant Agency involved, it will be the total weight of the material needed to make all the parts in such a sub-division.

15. *Lead Time* (Manufacturing or flow time).—Lead time is the time interval expressed in months between the required delivery of materials from the plant of the supplier of the listed materials and final acceptance or delivery of the procurement item, or in the case of Class B products as defined, upon completion of their manufacture. **This lead time shall be based on the assumption that required materials will be available for delivery when needed.**

For example, the lead time for steel plate would be the total elapsed time from the delivery of the steel plate from the steel mill to the time of acceptance by the agencies of the item of procurement in which the plate is incorporated.

As a special example, the lead time for bar stock from which a steel forging is made would be the total elapsed time from the delivery of the bar stock from the steel mill to the time of acceptance by the agencies of the item of procurement in which the finished forging is incorporated. This time will include all intermediate transportation and processing time such as time for forging, heat treating, machining, assembly into the final product and testing.

NOTE.—It is recommended that in those cases where questions arise as to the foregoing definitions or with respect to the procedure outlined below, the prime consumer immediately refer the matter for decision to the appropriate Claimant Agency requesting the information in order that no delay or unnecessary effort be involved in this work.

General Instructions.

1. All Bills of Materials should include materials required for those parts manufactured by the Prime Consumer and for those items purchased from Secondary Consumers, with the exception of Government Furnished Equipment (GFE) produced by other Prime Consumers and products on the complete Class B list. The Class B list is divided into two parts: those products which must be *listed* on Bills of Materials (Group I) and those products which do *not* have to be listed on any Bills of Materials (Group II). Further details regarding the Class B products are contained in the description appearing at the head of the list.

In the case of those products which are to be listed (Class B—Group I and GFE), the Bill of Materials is to show by name and part number (if available) the quantity (in the terms specified on the B list) of each of these items required in the complete procurement item, and is to show the time interval required between the

receipt of listed products (including GFE items) as such and final acceptance or delivery of the procurement item.

2. It is imperative that a Summary Bill of Materials covering the materials on the CMP Materials List be submitted by the Consumer, and Detail Bills of Materials may also be required by the Claimant Agency involved. Regardless of whether or not the Detail Bill of Materials is requested, the Consumer will find the Detail Bill of Materials form useful as a work sheet in accumulating the data to be furnished in the Summary Bill of Materials.

3. The presentation of a Summary Bill of Materials to the Claimant Agency involved should not be delayed awaiting the preparation of the Detail Bill of Materials in its final form. The submission of the Detail Bill of Materials may be deferred until a later date if such delay is anticipated. The presentation of a summary bill of materials covering all the materials or the CMP list must not delay the submission of information covering the controlled materials.

4. All Bills of Materials should indicate the gross weight, and, unless specifically exempted by the Claimant Agency, the net weight of each of the materials listed which are required for and contained in the complete procurement item. The presentation of Summary Bills of Materials should not be delayed awaiting the accumulation of net weight information. The submission of such net weight data may be deferred until a later date.

5. All materials in Summary Bills of Materials are to be reported in terms of the unit of measure indicated on the attached CMP Materials List. Particular care should be taken to indicate clearly the decimal position in reporting these weights.

6. The Bill of Materials is to include only direct material requirements; that is, materials incorporated in the finished product (for quantities, see definitions of net and gross weight), including for example, material deposited in plating and material in packaging when specified as an integral part of an item of procurement. Materials indirectly used in the manufacturing process should be omitted, such as grinding wheels, lubricants, coolants, and operating and testing supplies.

7. In covering small purchased assemblies, which in the aggregate consume small quantities of the listed materials, it will be satisfactory to accept from the secondary consumer supplying such assemblies, a prototype Bill of Materials. This must be noted on the Bill of Materials.

8. At the request of the Claimant Agency, the Prime Consumer will indicate for the materials listed in his Summary Bill of Materials, approximate lead times as defined. If the manufacturing period is relatively short, a single lead time may be sufficient. Where the manufacturing time is relatively long and where deliveries of materials are required at varying time intervals, this should be indicated. In such cases, the quantity required at each time interval should be listed separately on the Summary Bill of Materials and the lead time listed in the appropriate column.

9. It will be necessary for the consumers to determine the metal content of those materials marked with an asterisk (*) on the CMP Materials List in certain alloys. To do this, the specification or chemical analysis of the material in its commercial form must be

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ascertained. This will indicate the percentage of the total weight of the CMP Material represented in the alloy. Such percentages, multiplied by the gross and net weight, as defined, of the alloy will develop the gross and net weight of the alloying metal required. For example, if 100 pounds of Nickel Silver Castings are required for the production of a given item, and its specification contains 22 per cent Nickel and 26 per cent Zinc, the Nickel and Zinc gross weight requirements will be reported as 22 pounds and 26 pounds, respectively, for that item, in addition to other materials.

It will be also required to determine the Cadmium, Nickel, and Zinc content of plated products. Where possible, determine the weight by dividing the weight of anodes and metallic salts consumed by the number of pieces produced. Where this information is not available, estimates can be made by the surface area method.

10. In order to eliminate, so far as practicable, all unnecessary work, those consumers who have already furnished Bills of Materials of one type or another, should consult the Claimant Agency involved, to ascertain whether such data are in sufficient detail to meet the requirements of these instructions. In all cases where a Prime Consumer wishes to submit his Bill of Materials on a form other than that included with these instructions, permission must be obtained from the Agency requesting the Bill of Materials to use such a form.

11. In order to obtain complete and accurate information, it is desirable to have a definite group assigned to prepare Bills of Materials information. This group should contain individuals familiar with engineering specifications and with production materials and methods. However, the exact method used by a Prime Consumer to produce Bills of Materials is his own responsibility, providing the information compiled is as requested.

12. The Prime Consumer must maintain Bills of Materials on all procurement items on a current basis at all times by submitting revisions indicating the effect of all engineering or specification changes which substantially alter the total quantity of any material required during a month.

Detail Bill of Materials.

a. The Detail Bill of Materials (illustrative form attached) should be prepared from the engineering parts list and should show an analysis by materials of each component part (excluding GFE and Class B products) of the procurement item under the following headings:

(1) Drawing or part number.
(2) Part Name.
(3) Name of material.
(4) Material Code number (only to be furnished when specifically requested).
(5) Specification or chemical analysis of the material (only to be furnished when specifically requested).
(6) Size of material (only to be furnished when specifically requested).
(7) Net weight of finished part.
(8) Gross weight (including rejections, etc.).
(9) Number of parts.
(10) Total net weight.
(11) Total gross weight (including rejections, etc.).

b. Parts in the Detail Bill of Materials should be arranged in functional groups. In general these groupings should be determined by the Prime Consumer in accordance with his own company or industry practice and should be modified only to the degree necessary for adequate scheduling by the Claimant Agencies. It is required that extra parts, spare part sets, and accessory equipment shipped concurrently be separated from the basic unit of procurement.

c. When reporting small purchased assemblies excluding Class B products, which are not generally separated into individual parts by the purchaser, the analysis, unless specified by the Claimant Agency involved, may be made for the entire assembly without detail as to each individual part, except for individual pieces or subassemblies which may be furnished in spare part sets. Components of such purchased assemblies should be listed in a group immediately following the name and part number of the assembly in order that they may be identified readily as parts of such assembly.

d. It may be necessary in some cases to make an engineering estimate of material requirements for small items which require negligible amounts of material by grouping them and omitting detail. In each instance where this procedure is used, a notation on the Bill of Materials should indicate the manner in which such material estimates were calculated.

e. The Detail Bill of Materials shall contain separate lists of Class B items and GFE items incorporated in the procurement item, as explained in General Instructions number one.

Summary Bill of Materials.

a. The Summary Bill of Materials (illustrative form attached) shall show total amounts of each material shown on the CMP Materials List required for a procurement item excluding class B products and GFE as follows:

(1) CMP Materials List name.
(2) CMP Material Code number.
(3) Total net weight.
(4) Total gross weight (including rejections, etc.).
(5) Lead Time or Lead Times.

b. Any further analysis by functional or other grouping need be made only at the specific request of the Claimant Agency requesting the Bill of Materials, and should be considered as a limited and nonrecurring special study.

c. The Summary Bill of Materials shall contain a separate list of Class B items incorporated in the procurement item being reported, as explained in General Instructions number one.

(Illustrative Sample)

DETAIL BILL OF MATERIALS FOR CONTROLLED MATERIALS PLAN

CMP-2
11-14-42

Form Approved
Budget Bureau No. 12-R468-42

PROCUREMENT ITEM (Gun) — REPORTING CONSUMER (Victory Corp.)
TYPE (3 inch) — ADDRESS Detroit, Mich.
MODEL (M6)
Material for (100) procurement items

Line	Drawing or Part No.	Part Name	Material Name	Material Code No.	Specification or Chem. Anal. of Material	Size of Material	Weight (lbs.) Net	Weight (lbs.) Gross	No. of Parts	Total Weight (lbs.) Net	Total Weight (lbs.) Gross
1	D1700	Tube	Alloy Steel centrifugal casting		3% Chromium, 0.15% molybdenum, 1.5% manganese, Remainder C. P. S. & Fe.		825.0	2500.00	100	82,500	250,000
2	D1792	Breech block	Alloy Steel, bar, hot rolled		SAE 3000	6" x 6½"	125.00	150.00	100	12,500	15,000
3etc.	C3765	Fixed ring	Bronze casting		QQ-B-700 (Fed. Spec.)		48	60	100	4,800	6,000
Spares											
1	D1700	Tube	Alloy Steel, etc. (see above)		3% Chromium, etc. (see above)		825.0	2500.00	10	8,250	25,000
2	D1792	Breech block	Alloy Steel, bar, hot rolled		SAE 3000	6" x 6½"	125.00	150.00	10	1,250	1,500
3	C3765	Fixed ring	Bronze casting		QQ-B-700 (Fed. Spec.)		48	60	20	960	1,200

Signature of authorized official (John Doe) Date (11/9/42)

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Illustrative Sample

SUMMARY BILL OF MATERIALS FOR CONTROLLED MATERIALS PLAN

CMP-1
11-14-42

Form Approved
Budget Bureau No. 12-R-467-42

PROCUREMENT ITEM (Tank) — REPORTING CONSUMER (Victory Corp.)
TYPE (Light) — ADDRESS (Detroit, Michigan)
MODEL (M 4)
Material for (1) procurement item

Line No.	MATERIAL (See CMP Materials List)	CMP Material Code No.	Total Weight (lbs.) Net	Total Weight (lbs.) Gross Incl. Rejections, Etc.	Lead Time (No. of mos.)
1	Aluminum Extruded Shape, 28 Alloy	4301	110.0	121.2	4
2	Magnesium Die Casting	5301	18.0	22.0	2
3	Steel, Bar, Hot Rolled	2005	35.0	50.0	4
4	do	2005	20.0	30.0	3
5	Beryllium	5615	1.1	1.5	3
etc.					
Spare parts					
41	Steel, Bar, Hot Rolled	2005	5.0	7.0	3
46	Cadmium	5715	0.8	1.0	3
etc.					

Signature of authorized official (John Doe) Date (11/9/42)

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CLASS B PRODUCTS LIST

This list is intended to include certain specified types of intermediate products or component parts which may be included in either Class A or other Class B products and, in addition, certain specified classes of civilian-type end products. Manufacturers of any Class A or Class B product will *exclude* from their calculations of bills of materials the amounts of material contained in *any of the items* appearing on the Class B product list.

Manufacturers of Class A or Class B products requiring items which appear on the "Class B—Group I List" shall report their requirements for such products in units, dollars, etc., as is specified in the list. Secondary consumers shall report their requirements to prime consumers and prime consumers shall accumulate their own requirements and the requirements of their secondary consumers and forward a summary of such total requirements to the Claimant Agency. The Claimant Agencies shall report their total requirements for each of the Class B—Group I product categories to the War Production Board.

Manufacturers of Class A or Class B products requiring items which appear on the "Class B—Group II List" shall *not* report their requirements for such items. Requirements of manufacturers of Class A and Class B products for items appearing on the "Class B—Group II List" will be estimated by the War Production Board in cooperation with the Claimant Agencies.

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CLASS B—GROUP I LIST

CLASSIFICATION	*Unit of reporting*
Batteries	Dollars
Dry-cell Batteries	
Storage Batteries	
Bearings, Ball and Roller	Units
Ball Bearings (Aircraft)	
Rod End	
Bell Crank	
Rocker Arm	
Ball Bearings (Annular, Thrust, Self-Aligning)	
Below 30 MM O. D.	
31 MM O. D. thru 52 MM O. D.	
53 MM O. D. thru 100 MM O. D.	
101 MM O. D. thru 240 MM O. D.	
Above 240 MM O. D.	
Cylindrical Roller Bearings (including Thrust Type)	
Below 2″ O. D.	
2″ O. D. to 4″ O. D.	
4″ O. D. to 6″ O. D.	
6″ O. D. to 8″ O. D.	
8″ O. D. to 10″ O. D.	
Above 10″ O. D.	
Cylindrical Needle Roller Bearings	
Below 2″ O. D.	
2″ O. D. to 4″ O. D.	
4″ O. D. to 6″ O. D.	
6″ O. D. to 8″ O. D.	
Above 8″ O. D.	
Self-Aligning Annular Contact Roller Bearings	
Below 2″ O. D.	
2″ O. D. to 4″ O. D.	
4″ O. D. to 6″ O. D.	
Above 6″ O. D.	
Tapered Roller Bearings (including Thrust Type)	
Below 2″ O. D.	
2″ O. D. to 4″ O. D.	
6″ O. D. to 8″ O. D.	
8″ O. D. to 10″ O. D.	
10″ O. D. to 30″ O. D.	
Above 30″ O. D.	
Steel Balls	
Below ¼″ O. D.	
¼″ O. D. to ½″ O. D.	
½″ O. D. to ¾″ O. D.	
¾″ O. D. to 1″ O. D.	
1″ O. D. to 1½″ O. D.	
1½″ O. D. to 2″ O. D.	
Above 2″ O. D.	

(O. D.—Outside Diameter)

Classification	*Unit of reporting*
Blowers and Fans: Blast, Blower Type, Exhaust Drying, Forced Draft, and Industrial (excluding Turbo-blowers)	Dollars and units
Shipboard Ventilating	
Axial	
Centrifugal	
Propeller	
Exhaust	
Circulating	
Shipboard Mechanical Draft	
Axial	
Centrifugal	
Induced Draft	
Forced Draft	
Land Process and Ventilating	
Axial	
Propeller	
Exhaust	
Circulating	
Centrifugal	
Standard Duty	
High Temperature	
Heavy Duty	
Land Mechanical Draft	
Axial	
Centrifugal	
Induced Draft	
Forced Draft	
Boilers	
Land Boilers	Units and Total Lbs. of Steam per hr.
Water tube boilers	
Up to 500 lbs. psi.	
Over 500 lbs. psi.	
Fire tube boilers	
Self contained boilers	
Brick set boilers	
Navy Boilers	Units and Total Lbs. of Steam per hr.
Water Tube Boilers	
Up to 350 lbs. psi.	
Over 350 lbs. psi.	
Maritime Boilers	Units and Total Lbs. of Steam per hr.
Water tube Boilers	
Up to 350 lbs. psi.	
Over 350 lbs. psi.	
Low Pressure Heating Boilers	Units

Classification	*Unit of reporting*
Burners, Gas and Oil	Units
Gas Burners	
80,000–199,000 B. t. u. Input per hour	
200,000–350,000 B. t. u. Input per hour	
Over 350,000 B. t. u. Input per hour	
Oil Burners	
0–3 gallons per hour	
3.01–18.0 gallons per hour	
18.01–150 gallons per hour	
Combination Oil & Gas Burners	
Capacitors, Power	Dollars
Pole Type	
250 Volts and Below	
251 Volts to 600 Volts	
601 Volts and above	
Station Type	
250 Volts and Below	
251 Volts to 600 Volts	
601 Volts and above	
Compressors and Vacuum Pumps; Reciprocating and Rotary Units	Dollars and Total Horsepower
Reciprocating compressors and vacuum pumps consist of one or more reciprocating compressing elements in which compression takes place	
Under 300 HP	
300 HP and over	
Portable and semi-portable single acting compressors consist of one or more reciprocating compressing elements in which compression takes place on only one stroke of each revolution in each compressing element, and the entire unit including driver, air receiver, and fuel tank is mounted on a sub-base to which wheeled carriage may or may not be attached	Dollars and Units
Rotary compressors consist of one or more compressing elements in which air or gas is compressed by centrifugal force or by positive action of rotating elements to a discharge pressure more than 50 pounds per square inch above intake pressure	Dollars and Units
A—Rotary Lobe Type	
B—Rotary Sliding Vane Type	
C—Rotary Liquid Piston Type (Nash)	

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Classification	*Unit of reporting*
Conveying Equipment, Industrial	Dollars
Conveyors	
Belt Conveyors (Including belt) (except underground mine conveyors)	
Bulk material	
Package	
Bucket elevators (centrifugal, continuous, gravity, discharge, pivoted bucket)	
Screw or spiral conveyors	
Chain conveyors (apron, flight, scraper, drag)	
Gravity conveyors (roller, skate wheel)	
Portable conveyors (belt and scraper)	
Capacity Flow (Bulk-flo, Mass-Flo, Redler, Uni-flo)	
Skip hoists	
Overhead Trolley	
Bins, bunkers, tanks (when used as a part of a conveying system)	
Car handling equipment (dumps, pullers, loaders, spotters)	
Sewage sludge collectors (circular, straight line)	
Material Processing Equipment	
Screens	
Rotary	
Vibrating	
Dryers and Ovens	
Rotary	
Conveyor type	
Magnetic separators	
Electric Motor Controls (Except Fire Control)	Dollars
Circuit Breakers	
Knife and Safety Switches	
Motor Controls and Accessories (except Gunfire Control)	
Panelboards	
Switchboards	
Toggle switches, circuit breakers, relays and contactors for aircraft	
Gas Cylinders	Dollars
High Pressure—over 8¾''	
High Pressure—6⅝''–8¾''	
High Pressure—3⅜''—6⅝''	
High Pressure—under 3⅜''	
Low Pressure—over 12''	
Low Pressure—8''–12''	
Low Pressure—4''–7¾''	

Classification	*Unit of reporting*
Heat Exchangers	Dollars
Atmospheric Sections	
Condensers (exclude steam surface and jet condensers)	
Coolers (exclude compressor inter and after coolers, mechanical refrigeration and air conditioning coolers, radiator type coolers, unit coolers and ventilators, blast coil coolers)	
Contactors	
Distillers	
Evaporators (exclude mechanical refrigeration and air conditioning evaporator)	
Exchangers (exclude mechanical refrigeration and air conditioning exchangers)	
Heaters (exclude domestic hot water heaters, service water heaters, indirect water heaters)	
Heat Reclaimers	
Open Sections	
Reactors	
Reboilers	
Reflux (condensers)	
Steam Generators	
Converters	
Instruments for Indicating, Regulating, and Recording Temperature, Pressure Flow, Liquid Level, Humidity, Movement, Time and Electrical Quantities	
Combat Type	Units
Aircraft	
Electrical	
Mechanical	
Electrical	
Mechanical	
Other than Aircraft	
Electrical	
Mechanical	
Electrical	
Mechanical	
Industrial	Dollars
Temperature	
Thermo-electric	
Expansion	
Pressure and Vacuum	
Rate of Flow	
Other (spec.)	
Control Valves	
Regulators	
Balance	

Classification	*Unit of reporting*
Mercury Arc Power Rectifiers	Dollars
Motors and Generators, Electric	Dollars
1 HP and ¾ KW and above	
Navy Shipboard	
Induction Motors	
Direct Current Motors and Generators	
Synchronous Motors and Generators	
Maritime Shipboard and ABS	
Induction Motors	
Direct Current Motors and Generators	
Synchronous Motors and Generators	
All Other	
Induction	
Direct Current Motors and Generators	
Synchronous Motors and Generators	
Below 1 HP and ¾ KW	
Aircraft	
All Others	
Pressure Vessels (Exclude gas cylinders, boilers surface heat exchangers, and industrial food processing equipment)	
Pumps, Industrial	Dollars
Centrifugal	
Centrifugal	
Propeller (sometimes called Axial Flow)	
Mixed Flow	
Peripheral or Horizontal Turbine Type	
Vertical Turbine	
Rotary	
Cam or Lobe	
Screw	
Gear	
Vane	
Reciprocating	
Piston	
Plunger	
Simplex	
Duplex	
Crank and Flywheel	
Power Driven	
one or more cylinders	
Others	
Radial piston type, variable stroke pump, for transmission of hydraulic power	
Speed Reducers (Worm, helical, spur, variable speed transmission)	Dollars
Stokers	Units and Total Square Feet
Side Dump Stokers	
Multiple Retort Stokers	
Chain or Traveling Grate Stokers	
Spreader Stokers	
Stokers for Low Pressure Heating Boilers	

Classification	*Unit of reporting*
Switchgear	Dollars
Transformers	Dollars
Single Phase	
Under—1½ KVA	
1½ to 10 KVA	
11 to 50 KVA	
51 to 500 KVA	
501 to 2500 KVA	
2501 and larger	
Polyphase	
Under—1½ KVA	
1½ to 10 KVA	
11 to 50 KVA	
51 to 500 KVA	
501 to 2500 KVA	
2501 and larger	
Specialty Transformers	
Under—7½ KVA	
7½ to 100 KVA	
101 KVA and larger	
Tubes, Electronic	Dollars
Turbines, Steam, Hydro and Gas	Total Horsepower
Steam Turbines	
Navy Shipboard	
For generator drives	
For mechanical drives	
For propulsion	
Maritime Shipboard	
For generator drives	
For mechanical drives	
For propulsion	
Land	
For generator drives	
For mechanical drives	
Gas Turbines	
For generator drives	
For mechanical drives	
Hydraulic Turbines	
Vertical shaft	
Horizontal shaft	
Turbo-Blowers and Exhausters	Units and Dollars
(Any mechanically operated centrifugal or rotary type machine for compressing air or gas from an initial inlet pressure to a higher discharge pressure, such that the compression ratio or net differential pressure is not less than 1½ lb. gauge nor more than 50 lb. gauge. Does not include those used as compressing units of refrigeration or air conditioning equipment.)	
Centrifugal	
Single stage	
Multistage	
Blast furnace	

Axial Flow Multistage
Rotary Lobe Type
Rotary Sliding Vane Type
Rotary Liquid Piston Type (Nash)

CLASS B—GROUP II LIST

Abrasive Wheels, Stone, Paper, Cloth and Related Products
Asbestos End Products
Atmosphere Converters, Glue Pots, Ovens, Heat Treating Devices
Automotive Accessories and Replacement Parts

Bags
Bolts, Nuts, Nails, Screws, Rivets, Washers, Tacks, Cotter Pins, Eyelets, and Pins
Borers, Earth
Bulldozers, Tractor Mounted
Bus Supports & Fittings

Canning and Dehydration Machinery and Equipment
Carbon Brushes and Industrial Carbon Products
Central Office and Switchboard Equipment
Ceramic Manufacturing Machinery and Equipment
Chains
Chemical Producing Machinery
Commercial Cooking and Food and Plate Warming Equipment
Commercial Laundry and Dry Cleaning and Tailors' Pressing Machinery
Consumers Durable Goods
Containers and Closures (excluding Blitz Cans)
Cork Products
Cranes, Hoists and Monorail Systems
Cranes and Shovels, Crawler Mounted
Cranes and Shovels, Motor Truck Mounted
Cultivators and Weeders

Dairy Farm Machines and Equipment
Discs, Road
Distributors, Bituminous
Distributors, Water Pump
Ditches
Domestic Cooking Appliances and Heating Stoves
Domestic Laundry Machinery
Domestic Water Systems
Draglines
Dredges
Drill Bits and Drill Rods
Drills, Core and Portable Well
Drug, Pharmaceutical and Cosmetics Machinery and Equipment
Dust Collecting Equipment

Edible Oils Machinery and Equipment
Electrical Conduit and Metal Raceways
Electroplating and Anodizing Equipment
Elevators
Engineering and Drafting Tools and Equipment

Fabricated Metal Building Products (such as moveable partitions, window frames, wire mesh, etc.)
Farm Elevators and Blowers
Farm Poultry Equipment
Farm Wagons and Trucks (Not Automotive)
Fibrous Glass Products
Finishers, Paving and Floor
Fire Extinguishing, Alarm, and Protective Systems, Devices and Equipment
Fittings, Pipe
Floodlights and Searchlights under 12″
Floor Finishing, Floor Maintenance and Industrial Vacuum Cleaner Machinery and Equipment
Food and Beverage Machinery
Foundry Machinery, Equipment and Supplies (except Furnaces)

Gages and Machinists' Precision Measuring Instruments and Testing Machines
Graders
Grain Handling and Processing Machinery and Equipment

Hammers, Jack
Hammers, Pile Driving
Hardware
Harrows, Rollers, Pulverizers and Stalk Cutters
Haying Machinery
Hoists
Hose, Metallic

Industrial Explosives and Accessories
Industrial Safety Equipment
Insulators and Pole Line Hardware

Laboratory Equipment
Lambs and Bulbs
Lightning Arrestors
Liquified Petroleum Gas Equipment
Lubricating Equipment and Fittings

Machine Tool Attachments and Accessories
Machine Tools
Maintainers
Maintenance and Repair Parts (exclusive of combat items)
Mechanical Power Transmission Equipment Other than Speed Reducers
Medical and Dental Equipment
Metal Closures
Metal Cutting Tools
Metal Forming Machines
Metal Strapping
Metallic Packing
Mining Machinery and Equipment
Miscellaneous Farm Equipment
Mixers

Office Machinery
Oil Well Equipment and Accessories
Outside Plant Equipment (Communication)

Packaging and Labeling Machinery and Equipment
Pavers, Concrete
Planting, Seeding and Fertilizing Machinery and Attachments
Plants, Asphalt, Batching, Crushing, Screening, Washing
Plows and Listers
Plows, Snow
Plumbing Fittings and Supplies and Plumbers' Specialties such as Fixture Fittings and Trim
Plumbing Fixtures
Plumbing and Heating Tanks
Portable Electric and Pneumatic Tools
Power Control Units, Tractor Mounted
Power Transmission, Electrical, Not Covered in Group I List
Presses, Baling
Printing and Publishing Equipment
Pulp, Paper and Paper Products Machinery

Radiators
Railroad and Transit Maintenance of Way Work Equipment
Railroad and Transit Signal Equipment
Railroad and Transit Track Equipment
Refrigeration and Air Conditioning Machinery and Equipment, Industrial and Commercial
Rollers
Rooters
Rubber Producing Machinery
Rubber Working Machinery

Scales and Balances
Scrapers
Small Tools
Sprayers, Bituminous
Sprayers, Dusters and Orchard Heaters
Spreaders, Concrete Paving
Subgraders and Finegraders
Subscriber Station Equipment (Communication)
Surgical Furniture
Surgical Instruments and Equipment, except direct purchases of the Army or Navy
Sweepers, Pickup

Telegraph Equipment
Textile, Clothing, Shoe and Leather Machinery
Tire Retreading, Recapping and Repairing Equipment and Machinery
Tires and Tubes
Tobacco, Machinery and Equipment
Tractors, Track-Laying
Trucks, Hand Industrial
Trucks, Power Industrial (exclusive of Highway Type)
Tube Cleaners
Tube Expanders

Unit Heaters

Valves
Vises

Warm Air Furnaces
Water Conditioning Equipment and Apparatus, except Water Purification Plants Purchased by the Army or Navy
Welding Equipment
Welding Rods and Electrodes
Winches and Hoists, Tractor Mounted
Wire Drawing Machinery
Wire Working Machinery
Wiring Devices and Supplies: including Electric Fuses
Woodworking Machinery

X-Ray and Physiotherapy Equipment

CMP MATERIALS LIST

Units: pounds except for wood

Controlled Materials.

- Aluminum
- Copper and Copper Base Alloys
- Steel

Other Materials.

- *Beryllium
- *Cadmium
- *Cobalt—other than in steel
- Cordage Fibers
  - a. Manila
  - b. Sisal
  - c. Jute
  - d. Istle
- Magnesium
- Mercury
- Mica—other than ground mica
- Monel—natural
- *Nickel—other than in steel.
- Nylon
- Rayon—high tenacity
- Rubber
  - a. Crude and Buna "S."
  - b. Liquid Latex
  - c. Reclaimed
  - d. Synthetic
- *Tin—other than on tin plate
- *Tungsten—other than in steel
- Wood
- *Zinc

*Metallic content of alloys must be computed.

ALUMINUM PRODUCT CLASSIFICATION

CMP Materials Code Number	Material	Code in Official Classification List of Raw and Basic Industrial Materials
	Bar and rod (excluding requirements for stock for wire, forgings, rolled structural shapes, and electrical cable)	201–02
	By sizes:	
4021	⅜″–¾″ inclusive (Maximum diameter (for rounds & ovals))	
4031	Over ¾″–1⅝″ inclusive (Maximum diameter (for rounds & ovals))	
4041	Over 1⅝″–3″ inclusive (Maximum distance between faces (for squares, hexagonals, octagonals & rectangles))	
4051	Over 3″ (Maximum distance between faces (for squares, hexagonals, octagonals & rectangles))	
4121	Wire.—Wire covers maximum diameters under ⅜″ in rounds, ovals, squares, hexes, octagonals, and rectangles	201–05
4151	Cable (electrical transmission only)	201–06
4171	Forgings and pressings (before machining)	201–09
	Castings (before machining)	201–11
		201–12
4201	From high grade ingot*	201–13
4211	From other than high grade ingot*	201–14
		201–15
4251	Rolled structural shapes (angles, channels, zees, tees, etc.)	201–22
	Extruded shapes	
4301	2S, 3S, 53S, and 61S alloys	201–27
4311	All alloys except, 2S, 3S, 53S, and 61S	201–28
	Sheet, strip and plate—excluding stock for foil, impact extrusions, and forgings	
4351	2S and 3S alloys	201–37
4361	Alloys other than 2S and 3S	201–38
	Tubing	
4401	2S and 3S alloys	201–46
4411	Alloys other than 2S and 3S	201–47
4501	Powder	201–51
		201–52
		201–53
		201–54
4601	Foil (.005″ and thinner)	201–55
4701	Impact extrusions	201–71
	Ingot—excluding ingot for aluminum castings, sheet, plate, strip, rod, bar, extrusions, and powder	201–73
4801	High grade*	201–19
4811	Low grade*	

*Low grade ingot means any aluminum which contains copper in excess of 4% by weight, and either iron or zinc in excess of 1% by weight.

THIS IS A REVISION OF PAGE 22, GENERAL INSTRUCTIONS ON BILLS OF MATERIALS DATED NOVEMBER 14, 1942

ADDENDUM NUMBER ONE TO "GENERAL INSTRUCTIONS ON BILLS OF MATERIALS"

The "Aluminum Product Classification" on page 22 of the "General Instructions on Bills of Materials," dated November 14, 1942, is altered and, with the exception of any procurement item for which the Aircraft Scheduling Unit is the Claimant Agency, this revised classification should be used as the basis for preparing bills of materials. The revised "Aluminum Product Classification" is:

(*Note: Revisions from original classification are italicized*).

CMP Materials Code Number	*Material*	*Code in Official Classification List of Raw and Basic Industrial Materials*
	Bar and rod (excluding requirements for stock for wire, forgings, rolled structural shapes, and electrical cable)	201–02
4021	⅜″–¾″ inclusive (Maximum diameter (for rounds and ovals).)	
4031	Over ¾″–1⅝″ inclusive (Maximum diameter (for rounds and ovals).)	
4041	Over 1⅝″–3″ inclusive (Maximum distance between parallel faces (for squares, hexagonals, octagonals, and rectangles).)	
4051	Over 3″ (Maximum distance between parallel faces (for squares, hexagonals, octagonals, and rectangles).)	
4121	Wire, *excluding rivet wire.*—(Wire covers maximum diameters under ⅜″ in rounds, ovals, squares, hexes, octagonals, and rectangles)	201–05
4122	*Rivets*	201–75
4151	Cable (electrical transmission only)	201–06
4171	Forgings and pressings (before machining)	201–09
	Castings made from high-grade ingot* (before machining):	
4202	*Cylinder heads for air-cooled radial engines*	201–11
4203	*Other heat treated sand castings*	201–11
4204	*Non-heat treated sand castings*	201–12
4205	*Heat treated permanent mold castings*	201–13
4206	*Non-heat treated permanent mold castings*	201–14
4207	*Cold-chamber die castings*	201–15
4208	*Gooseneck die castings*	201–15
	Castings made from low-grade ingot* (before machining):	
4213	*Heat treated sand castings*	201–11
4214	*Non-heat treated sand castings*	201–12
4215	*Heat treated permanent mold castings*	201–13
4216	*Non-heat treated permanent mold castings*	201–14

See footnote on p. 2.

CMP Materials Code Number	Material	Code in Official Classification List of Raw and Basic Industrial Materials
	Castings made from low-grade ingot* (before machining)—Continued.	
4217	*Cold-chamber die castings*	201–15
4218	*Gooseneck die castings*	
4251	Rolled structural shapes (angles, channels, zees, tees, etc.)	201–22
	Extruded Shapes:	
4301	2S, 3S, 53S, and 61S alloys	201–27
4311	All alloys except 2S, 3S, 53S, and 61S	201–28
	Sheet, strip and plate—(excluding stock for foil, impact extrusions, and forgings):	
4351	2S and 3S alloys	201–37
4361	Alloys other than 2S and 3S	201–38
	Tubing:	
4401	2S and 3S Alloys	201–46
4411	Alloys other than 2S and 3S	201–47
4501	Powder	201–51 201–52 201–53 201–54 201–55
4601	Foil (0.005″ and thinner)	201–71
4701	Impact Extrusions	201–73
	Ingot—(Excluding ingot for aluminum castings, sheet, plate, strip, rod, bar, extrusions, and powder)	201–19
4801	High-grade ingot*	
4811	Low-grade ingot*	

* Low-grade ingot means any aluminum which contains copper in excess of 4% by weight, and either iron or zinc in excess of 1% by weight.

MAGNESIUM PRODUCT CLASSIFICATION

CMP Materials Code Number	Material	*Code in Official Classification List of Raw and Basic Industrial Materials
5001	Extrusions: excluding extruded stick and forging stock	217–02 217–23
5051	Forging, before machining	217–45
5101	Sand Castings, heat treated, before machining	217–09
5111	Sand Castings, not heat treated, before machining	217–11
5201	Permanent and semi-permanent mold castings, heat treated, before machining	217–12
5211	Permanent and semi-permanent mold castings, not heat treated, before machining	217–13
5301	Die Castings, before machining	217–14
5401	Ingot and extruded stick, excluding requirements for ingot for magnesium; castings; extrusions; sheet, strips, and plate; and powder	217–15 217–19 217–75
5501	Sheet, strip, plate	217–30
5601	Powder	217–81 217–82 217–83 217–84 217–85 217–86 217–87 217–91 217–92 217–98 217–99

* Summarizations on basis of these codes should avoid duplication.

COPPER PRODUCT CLASSIFICATION

CMP Materials Code Number	Material	*Code in Official Classification List of Raw and Basic Industrial Materials
	Brass Mill Products	
	(A) Copper Base Alloys	
3001	Ammunition Cups, discs and slugs	no number
3011	Sheet and strip (other than cups and discs)	206–32
		207–32
		222–32
3021	Rods, bars, and wire (including extruded shapes, not including slugs)	206–04
		206–08
		206–23
		207–04
		207–08
		207–23
		222–02
		222–05
		222–23
3041	Tubing or pipe	206–41
		206–42
		206–43
		207–41
		207–42
		207–43
		222–40
		241–00 (1)
	(B) Copper	
3051	Plate, sheets and strip	212–32
3061	Rods and bars, including extruded shapes (not including wire bars and ingot bars)	212–19
3071	Tube and pipe	212–41
		212–42
		212–43
	Wire Mill Products	
	Copper	
3101	Wire and cable (including copper content of insulated wire and cable)	212–08
	Foundry Products	
	Copper and Copper Base Alloys	
3201	Castings	206–10
		207–10
		212–10
		222–10

*Summarizations on basis of these codes should avoid duplication. Cupro-nickel (code 241-00 in Official Classification List of Raw and Basic Industrial Materials) should be divided into appropriate shapes under Brass Mill Products—Copper Base Alloys.

COPPER DEFINITIONS

A brass mill product means sheet, wire (other than electrical), rod or tube made from copper or copper base alloy.

A wire mill product means bare or insulated wire or cable for electrical conduction made from copper.

A foundry product means cast copper or copper base alloy shapes or forms suitable for ultimate use without rolling, drawing, extruding. The process of casting includes the removal of gates, risers and sprues, and sand blasting, tumbling or dipping, but does not include any further machining or processing.

Copper base alloy means any alloy in the composition of which the percentage of copper metal by weight equals or exceeds 40% of the total weight of the alloy.

Gross weight of copper or copper base alloy product is defined as the weight of the product delivered from a brass mill, wire mill or foundry.

Net weight of copper or copper base alloy product is defined as the weight of the material in the finished item.

ZINC PRODUCT CLASSIFICATION

CMP Materials Code Number	Material	* Code in Official Classification List of Raw and Basic Industrial Materials
	Zinc	234–05
		234–10
		234–19
		234–33
		234–59
		234–91
		234–92
		234–93
		234–94
	By grades:	
7115	Special high grade, high grade and intermediate—zinc content of 99.5% or higher	No Number
7117	Brass special, selected, and prime Western	No Number

*Summarizations on basis of these codes should avoid duplication.

STEEL PRODUCT CLASSIFICATION

CMP Materials Code Number	Material	Code in Official Classification List of Raw and Basic Industrial Materials
	Carbon Steel (Grades 00, 10, 11 and 13)	
2001	Bars, cold finished	103–85
		103–86
		103–87
2005	Bars, hot rolled	103–81
		103–82
		103–83
		103–84
		125–81
2011	Ingot, billets, blooms, slabs, tube rounds, skelp and sheet and tin bar	119–00
		161–00
		139–00
2016	Pipe	145–86
		145–87
		145–88
2021	Plates	135–81
		135–82
		135–83
		135–84
		135–85
		135–86
		135–87
2026	Rails and track accessories	162–81
		162–89
		164–00
2031	Sheets and strip	131–80
		131–81
		131–82
		131–83
		131–84
		131–85
		131–86
		131–87
		131–88
		131–89
		131–90

CMP Materials Code Number	Material	Code in Official Classification List of Raw and Basic Industrial Materials
2036	Steel Castings	110–81
		110–82
		110–83
		110–89
2041	Structural shapes and piling	125–82
		125–83
		163–81
		163–82
2046	Tin plate, terne plate, and tin mill black plate	165–00
2051	Tubing	145–80
		145–81
		145–82
		145–83
		145–84
		145–85
2056	Wheels and axles	167–00
2061	Wire rods, wire, and wire products	105–81
		105–82
		105–83
		105–84
		105–85
		105–86
		105–89
	Alloy Steel—Including Stainless	
	(all other grade codes)	
2501	Bars, cold finished	103–85
		103–86
		103–87
2505	Bars, hot rolled	103–82
		103–83
		103–84
2511	Ingots, billets, blooms, slabs, tube rounds, sheet bar	119–00
		139–00
		161–00
2516	Pipe	145–86
		145–87
		145–88

CMP Materials Code Number	Material	Code in Official Classification List of Raw and Basic Industrial Materials
2521	Plates	135–81
		135–82
		135–83
		135–84
		135–85
		135–86
		135–87
2531	Sheets and strip	131–80
		131–81
		131–82
		131–83
		131–84
		131–85
		131–86
		131–87
		131–88
		131–89
2536	Steel castings	110–81
		110–82
		110–83
		110–89
2551	Tubing	145–80
		145–81
		145–82
		145–83
		145–84
		145–85
2556	Wheels and axles	167–00
2561	Wire rods, wire, and wire products	105–81
		105–86

DEFINITIONS

Carbon Steel:

All Steel other than alloy steel.

Alloy Steel:

Steel is classified alloy when the maximum of the American Iron and Steel Institute standard ranges given for alloying elements exceeds one or more of the following limits:

Manganese in excess of 1.65% maximum;
Silicon in excess of 0.60% maximum;
Copper in excess of 0.60% maximum;
Aluminum, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium, or any other alloying element in any amount specified or known to have been added to obtain a desired alloying effect.

Bars, Hot Rolled:

Concrete Reinforcing Bars.—These are hot rolled from billet steel, rail steel, or steel axles, and are further described as plain or deformed bars, used to resist tension, compression, or shear forces in concrete.

All Other.—These include rounds, half rounds, ovals, half ovals, squares, flats, hexagons, octagons, special sections and angles, channels, tees, and zees, under 3″ maximum cross-sectional dimension but excluding angles, tees, zees, channels and beams 3″ and larger in maximum cross-sectional dimensions (see Structural Shapes below). Hot rolled bars are produced from billets or blooms to specified dimensions within standard tolerances without subsequent processing of the bars for accuracy or surface polish. They are commonly cut into straight lengths but in small sizes may be produced in coils.

For complete details as to description of hot rolled carbon steel bars and alloy steels see Steel Products Manuals covering these products, issued by the American Iron and Steel Institute.

Bars, Cold Finished.—Cold finished steel bars are produced from hot rolled material by several cold finishing processes, for the purpose of removing decarburization, improving surface finish, dimensional accuracy, alignment, or machinability; also in the case of cold drawn and cold rolled material, to increase the yield strength and tensile strength. Cold reduction processes and surface improvement processes used singly or in combination include cold drawing, cold rolling, turning, grinding, polishing, and straightening.

Semi-Finished Steel:

Ingots.—Ingots are steel castings of different shapes and sizes in an unworked condition and of suitable form for subsequent working by rolling or forging.

Blooms, Billets, and Slabs.—are hot-rolled or forged from ingots to approximate cross-sectional dimensions with rounded corners.

Forging Quality Blooms, Billets, and Slabs; Squares not less than 4 x 4″ cross section dimension. Rectangles other than squares minimum cross sectional area 16 square inches; minimum thickness 2″.

For complete details as to description of semi-finished products see Steel Products Manuals covering Carbon Steel Semi-finished Products and Alloy Steels, issued by the American Iron and Steel Institute.

Tube Rounds.—Rounds used for manufacturing seamless pipe and tubing.

Skelp.—Flat rolled steel used for the manufacture of welded pipe.

Sheet and Tin Bar.—Slabs used for re-rolling into sheets and tin plate.

Pipe:

Standard.—Standard pipe is used for conveying air, gas, steam, water, oil, and other fluids for miscellaneous purposes at relatively low pressures.

Line.—Line pipe is used for distance transportation of water, gas or oil.

Oil Country Goods.—Oil Country Goods is a collective term applied in the oil and gas industries for three kinds of pipe used in wells; namely, casing, tubing, and drill pipe.

Plates:

Comprise that group of flat, hot rolled, finished steel products which includes:

3/16″ (0.1875 in.) or thicker, over 48″ wide, for carbon steel.
3/16″ (0.1875 in.) or thicker, over 10″ wide, for stainless steel.
¼″ (0.250 in.) or thicker, over 6″ wide, for carbon steel.
¼″ (0.250 in.) or thicker, over 12″ wide, for alloy steel (except stainless).
7.65 lb. per square foot or heavier, over 48″ wide, for carbon and alloy steel.
10.2 lb. per square foot or heavier, over 6″ wide, for carbon steel.
10.2 lb. per square foot or heavier, over 12″ wide, for alloy steel.

Plates are produced either from slabs or direct from ingots by hot-rolling. They are termed sheared plates or sheared mill plates when rolled between horizontal parallel rolls only, and trimmed on all edges. They are termed universal plates or universal mill plates (abbreviated U. M. plates) when rolled between horizontal and vertical parallel rolls, and trimmed on the ends only.

Rails and Track Accessories:

Includes rails, angle bars, fish bars, fish plates, rail joints, splice bars, clip bolts, cut track spikes, frogs and switches, gage rods, guard rail clamps, guard rails, nut locks, rail anchors, rail clips, screw spikes, switch stands, tie plates, track bolts, S-irons and rail braces.

Sheets and Strip:

This group comprises:

Flat rolled carbon products which include .2499″ to and including .2030″ thick, over 6″ to and including 48″ wide; .2029″ to and including .1875″ (3/16″) thick to and including 48″ wide; under .1875″ thick, any width mill can produce;

Stainless flat rolled products up to but not including .1875″ (3/16″) thick, any width;

Alloy flat rolled (except stainless) products up to but not including ¼″ thick, any width.

Steel Castings:

Cast steel is steel that is poured into and allowed to solidify in metal or refractory moulds. Steel castings are any cast steel objects that do not require further mechanical working.

Structural Shapes and Piling:

Structural Shapes.—General term applied to flanged sections (3″ and over cross-sectional dimension), including Channel, I, L, Z, or T shapes, for construction of buildings, bridges, ships, transmission towers, railroad cars and many other structural purposes.

(1) American Standard Sections is the designation applied to the series of I-beams, channels, and large angles originally established in 1896 by the Association of American Steel Manufacturers.

(2) Wide Flange Sections are those I- and H-shaped beams and columns that are rolled on mills having both vertical and horizontal rolls, by which method it is possible to produce flanges much wider than those of the standard beams, with inside and outside faces of the flanges parallel or with a very slight taper on the inside face.

Piling.—Steel sheet piling consists of rolled steel shapes having interlocks along two opposite edges rolled integrally, for the purpose of interlocking the edges of each unit to the edge of adjacent similar unit in order to create a continuous steel wall.

Tin Plate, Terne Plate, and Tin Mill Black Plate:

Includes hot rolled, cold rolled, hot dip and electrolytic tin and terne plate. Tin mill black plate is a flat rolled product .0141″ and thinner in thickness, over 12″ to 32″ inclusive wide.

Tubing:

Mechanical.—Welded or seamless in standard or special shapes and sizes to standard or special tolerances, hot finished or cold drawn, used for a variety of mechanical purposes without being hydrostatically tested.

Pressure.—Includes boiler tubing and other tubing subject to heat and pressure; tubing of various types subject to water and steam, internal and external pressure at elevated temperatures. Sizes refer to actual outside diameter and minimum wall thickness.

Wheels and Axles:

Wheels.—Wrought steel wheels are steel wheels for railroad and transit service, formed by heating steel blocks to a malleable condition and subsequently forming to size by a series of forging and rolling operations.

Axles.—A steel axle is a special shaft or spindle on which a wheel is mounted, that is made from a bloom or billet heated to a malleable condition and subsequently forged to desired shape.

Wire Rods, Wire, and Wire Products:

Includes wire rods, drawn wire, barbed and twisted wire, woven wire fence, wire nails and staples, wire bale ties, wire rope and strand, welded fabric, and all other wire products.

Examples for Use in Determining Gross Weight

Forgings.—Weight of billet, bloom, or bar used to produce forging, including allowance for bar ends, etc.

Castings.—Rough casting weight before machining, less sprues, risers, etc.

Parts made from Sheet or Plates.—Weight of sheet or plate required to make the specified part. Where more than one piece is obtained from a sheet or plate, the weight should be distributed according to the amount of material used to produce each piece.

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WOOD PRODUCT CLASSIFICATION

Lumber (Unit: Board feet).

Aircraft, Boats, Ships, Barges, Lighters, Ponton Bridges — Show thickness, length and species.

Vehicles: Show thickness only.

All other lumber: Omit thickness, length and species.

A four digit code will be used as follows:

In the case of lumber, the first two digits from the left will indicate the species in accordance with the table for lumber below.

The third digit from the left of the number will indicate length, in the case of lumber, in accordance with the table below.

The fourth digit from the left (last digit) will indicate thickness, in the case of lumber, in accordance with the table.

FOR LUMBER

Species Table (First and second digits from the left):

00. Softwood (Species not necessary).
00. Hardwood (Species not necessary).

Softwood:

01. Douglas Fir.
02. Sitka Spruce and Alternates.
03. Ponderosa Pine.
04. Southern Yellow Pine.
05. Other Softwood.

Hardwood:

06. Birch.
07. White Oak.
08. White Ash.
09. Gum.
10. Black Walnut.
11. Yellow Poplar.
12. Mahogany.
14. Other Hardwood.

Length Table (Third digit from left):

0. Length not shown (in case of vehicles, etc., as above).
1. 16′ or less.
2. Over 16′ but not over 24′.
3. Over 24′ but not over 32′.
4. Over 32′ but not over 40′.
5. Over 40′.

Thickness Table (Fourth digit from left):

0. No thickness indicated.
1. 2″ or less.
2. Over 2″ but not over 4″.
3. Over 4″.

Plywood—Interior Grade (*Non-waterproof*) (Unit: Square Feet).

A four digit code will be used as follows:

In the case of interior grade plywood the first two digits from the left will indicate the species in accordance with the species table below.

In the case of plywood the third digit from the left will indicate the number of plies in accordance with the ply table below. For softwood plywood the code "9" is to be used since the number of plies need not be specified for softwoods.

The fourth digit from the left is to indicate thickness in accordance with the thickness table below. For softwood plywood the code "4" is to be used since softwood plywood is to be reported on a ⅜ inch basis.

Plywood—Exterior Grade (*Waterproof*) (Unit: Square Feet).

A four digit code will be used as follows:

In the case of exterior grade plywood the first two digits from the left will indicate the species in accordance with the species table below.

In the case of plywood the third digit from the left will indicate the number of plies in accordance with the ply table below. For softwood plywood the code "9" is to be used since the number of plies need not be specified for softwoods.

The fourth digit from the left is to indicate thickness in accordance with the thickness table below. For softwood plywood the code "4" is to be used since softwood plywood is to be reported on a ⅜ inch basis.

FOR PLYWOOD

Species Table (First and second digits from the left):

Softwood:

01. Douglas Fir.
05. Other Softwood.

Hardwood:

06. Birch.
07. White Oak.
09. Gum.
10. Black Walnut.
11. Yellow Poplar.
12. Mahogany.
13. Hard Maple.
14. Other Hardwood.

Ply Table (Third digit from the left):

6. Three ply.
7. Five ply.
8. Seven ply and over.
9. Ply unspecified.

Thickness Table (Fourth digit from the left):

1. 1/16 inch or less.
2. 3/32 inch–⅛ inch.
3. 5/16 inch–¼ inch.
4. ⅜ inch.
5. ½ inch–⅝ inch.
6. ¾ inch and over.

Note: Express wood products only on a gross basis.

CMP Materials Code Number	Material	*Code in Official Classification List of Raw and Basic Industrial Materials
5615	Beryllium	204–00
		204–91
		204–92
		204–93
5715	Cadmium	208–19
		208–91
		208–92
		208–93
5815	Cobalt other than in steel	210–00
		210–91
		210–92
		210–93
	Cordage Fibers	
1400	Manila	482–81
		482–82
1402	Sisal	487–00
1404	Jute	480–00
1406	Istle	479–01
		479–02
		479–03
		479–04
6515	Mercury	218–00
		218–91
		218–92
8800	Mica	354–80
		354–81
		354–82
		354–83
		354–84
		354–85
		354–86
		354–87
		354–88
		354–89
		355–80
		355–81
		355–82
		355–83
		355–84
		355–85
		355–86
		355–87
		355–88
		355–89

*Summarizations on basis of these codes should avoid duplication.

CMP Materials Code Number	Material	*Code in Official Classification List of Raw and Basic Industrial Materials
6615	Monel—Natural	220–02
		220–05
		220–10
		220–20
		220–33
6715	Nickel—other than in steel	220–40
		221–02
		221–05
		221–10
		221–20
		221–33
		221–40
		221–91
		221–92
		221–93
		221–98
1620	Nylon	483–00
1650	Rayon—High Tenacity	484–81
		484–82
		484–83
1850	Rubber—Crude and Buna S	485–81
		745–01
1855	Rubber—Latex	485–82
1860	Rubber—Reclaimed	485–83
1865	Rubber—Synthetic	744–00
		745–00
		745–02
		745–03
		745–04
		745–05
		745–09
6915	Tin—other than on tin plate	229–20
		229–71
		229–91
		229–92
		229–98
7015	Tungsten—other than in steel	231–00
		231–50
		231–91
		231–92
		231–93

*Summarization on basis of these codes should avoid duplication.

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