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1. Commanding Officer of Ship
 2. Commanding Officer of Base
 3. Commanding Officer of Base
 4. Supply Officers Ashore
 5. Supply Officers Afloat
 6. Contractors for Packing, Loading

1. The following data relative to contracts for furnishing packings for the naval service during the fiscal year ending 30 June 1930 is published for the information of all concerned.

25. The contractor is to be allowed for transportation charges paid in any quantities (not exceeding 10 percent of the estimated quantity) to be used in the packing house and on the grounds of any of the following military bases and stations within 1 day after receipt of goods from the military center or office in charge thereof:

East coast yards: PORTSMOUTH, N.H., (Kittery, Me.), and Boston, (Charlestown, Mass.); Submarine Bases, NEW LONDON, CONN.; Naval Training Station, NEWPORT, R.I.; Naval Torpedo Station, NEWPORT, R.I.; Navy Yard, BROOKLYN, N.Y.; Naval Supply Depot, BROOKLYN, N.Y.; Navy Yards, PHILADELPHIA, PA., and WASHINGTON, D.C.; Naval Proving Grounds, DAHLGREN, VA.; Naval Powder Factory, INDIAN LAND, N.C.; Naval Operating Base, HAMPTON ROADS, (Sewall's Point), VA.; Navy Yards, NORFOLK, (Portsmouth), VA., and CHARLESTON, S.C.; Naval Station, KEY WEST, Fla.; the Naval Training Station, GREAT LAKES, ILL.; and Naval Academy, ANNAPOLIS, MD.

Pacific coast Navy Yards: Mare Island, Calif., PUGET SOUND, (Bremerton),
WASHINGTON, and Naval Supply Depot, SAN DIEGO, CALIF.

CONTRACT NO. 1271. The Republic Rubber Co., Albert St., Youngstown, O.

CONTRACT NO. 12715 - The B. F. Goodrich Rubber Co., Akron, Ohio.

CONTRACT NO-12714 - JAMES McNeill Corp., Madison Ave. and 41st St.,

CONTRACT NOs-12716 - The Asterton Textile Co., 475 Fifth Ave.,

... New York: N.Y. (For items 61 to 80 Inc)
 CONTRACT NO. 15716 - U.S. Rubber Company, 11790 Broadway, New York,
 (For items 29 to 46 115 to 150 Inc)

NY 100-27810-210
2-1-58

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(a) Total cost of packing required to complete the test (original installation plus additional ring required during the test)

(b) Total effective service in hours

(c) Average friction due to packing in horsepower

S4874

14/JJ-33(3)-SPG

The cost per hour of service will be determined by the following formula:

$$W = \frac{(b \times c) \times (A \times d \times e)}{100} \text{ in which}$$

W equals work value, or cost, per hour of service

A equals effective service, in hours

b equals total weight of packing required for endurance test in pounds

c equals cost of packing per pound

d equals average friction, in horsepower

e equals 2.01 per horsepower per hour arbitrary cost of friction

Items 29 to 46 inclusive, East and Pacific Coasts.

Contract Nos. 12715 U.S. HUBBER CO.

3650 pounds (about) packing, low pressure spiral, gland, for use in conjunction with metallic packing in ice machines stirring boxes, for valve and piston rods of compressor and expander cylinders, with pressures of 250 and 75 pounds per square inch, in sizes from 1/4 to 1 inch square of rectangular in section, as follows: 1/4, 5/16, 3/8, 1/2, 9/16, 5/8, 3/4, 7/8 and 1 inch.

Price per pound at all points East Coast \$3.51 for all sizes.

" " " " " West Coast \$3.52 for all sizes.

Average weight per linear yard (pounds): 1/4 inch, .150; 5/16 inch, .183; 3/8 inch, .259; 1/2 inch, .444; 9/16 inch, .556; 5/8 inch, .541; 3/4 inch, .966; 7/8 inch, 1.25; 1 inch, 1.61.

Trade name, HAYTAP, for packing, as specified in the Navy Department specifications for Items 29 to 46 inclusive.

Specifications for Items 29 to 46 inclusive.

Low pressure spiral rod packing shall be in strict accordance with Specification 12715, issued by the Navy Department January 2, 1926.

Items 29 to 46, inclusive, East Coast Yards.

Contract Nos. 12718 Keasbey & Mattison Co.

5150 pounds (about) packing, asbestos, for valve stems, braided, in sizes from 1/8 to 1/2 inch, as follows: 1/8, 3/16, 1/4, 5/16, 3/8, 7/16 and 1/2 inch.

Price per pound at East Coast Yards: \$2.90, 1/8 inch; \$1.30, 3/16 inch; \$1.15, 1/4 inch; \$1.05, 5/16 inch; \$1.00, 3/8 inch; \$.95, 7/16 inch; \$.85, 1/2 inch.

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Trade name, "33 Braided Vulcanized Graph & Spiraled"

Average weight per linear yard (pounds); 1/8 inch, .006; 3/16 inch, .016; 1/4 inch, .033; 5/16 inch, .051; 3/8 inch, .064; 7/16 inch, .090; 1/2 inch, .116

Items 54 to 60 inclusive, Pacific Coast Yards. Contract Nos-12714, Johns-Manville Corporation.

46900 pounds (about) packings, asbestos, for valve stems, braided, in sizes from 1/8 to 1/2 inch, as follows: 1/8, 3/16, 1/4, 5/16, 3/8, 7/16 and 1/2 inch. Price per pound at East Coast Yards: 1/8 inch, \$.515; 3/16 inch, \$.515; 1/4 inch, \$.505; 5/16 inch, \$.475; 3/8 inch, \$.475; 7/16 inch, \$.475; 1/2 inch, \$.475

Trade name, "Mogul" asbestos valve stem packings. Average weight per linear yard, braided (pounds); 1/8 inch, .02; 3/16 inch, .04; 1/4 inch, .065; 5/16 inch, .10; 3/8 inch, .12; 7/16 inch, .20; 1/2 inch, .25. Average weight per linear yard twisted (pounds); 1/8 inch, .03; 3/16 inch, .06; 1/4 inch, .085; 5/16 inch, .135; 3/8 inch, .18; 7/16 inch, .225; 1/2 inch, .275

Specifications for Items 47 to 60 inclusive.

Asbestos valve stem packing shall be in accordance with "Specifications 33-P-14", issued by the Navy Department February 1, 1926, and practical test.

When ordered, the twisted type will be supplied.

Items 61 to 72 inclusive, East and West Coast Yards.

Contract Nos-12715, Asbestos Textile Co.

46900 square yards (about) packing, compressed, asbestos sheet, suitable for superheated steam at 300 pounds pressure and 625 degrees F. temperature, and for high pressure joints of internal combustion engines, in commercial widths and thicknesses, from 1/32 inch up as follows:

Price per square yard at East Coast Yards: 1/32 inch thick; \$1.18; 1/16 inch thick; \$1.781; 3/32 inch thick; \$2.375; 1/8 inch; \$3.562; 5/16 inch; \$4.75; 1/4 inch thick.

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Price per square yard at Pacific Coast Yards \$3.618, 1/32 inch thick;
\$1.237, 1/16 inch thick; \$1.856, 3/32 inch thick; \$2.475, 1/8 inch thick;
\$3.712, 5/16 inch thick; \$4.95, 1/4 inch thick.

Trade name, Asbestos 75.

Size of sheets to be furnished 50 x 50.

Specifications for Items 61 to 72 inclusive.

Compressed asbestos sheet. - Must comply with Specifications 53-P-13a, issued by the Navy Department, January 2, 1926, except as amended below, and practical test. (See note foot of page 5)

Change paragraph 5(b) to read as follows:

5(b). The fiber shall be chrysotile asbestos of not less than 12 per cent water of composition.

Items 73 to 80 inclusive, East Coast and Pacific Coast Yards.

Contract No. 12715, Asbestos Textile Co.

7850 square yards (about) packing, woven asbestos metallic cloth sheet, as required.

Price per square yard at East Coast Yards: \$1.79, 1/16 inch thick;
\$3.12, 1/8 inch thick; \$3.80, 3/16 inch thick; \$6.99, 1/4 inch thick.

at Pacific Coast Yards: \$1.84, 1/16 inch thick; \$3.83, 1/8 inch thick;
\$5.36, 3/16 inch thick; \$7.50, 1/4 inch thick.

Asbestos metallic cloth sheet (woven). - Shall be in accordance with Specifications 33P2a, issued by the Navy Department, September 1, 1927. Practical test not required.

NOTE. - Since sheet packings are purchased on a per square yard basis, the requirement of the individual leaflet specifications that the weight of the finished packing shall be stated in the bid and that it shall weigh within 5 per cent plus or minus of the stated weight may be disregarded, providing the packing delivered conforms to the table of weights per square yard of packing as shown in the leaflet specifications applying. Where packing is asked for on a per square yard basis, no bids will be considered on a per pound basis.

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ITEMS 81 to 114 Inclusive, East Coast and Pacific Coast Yards.

Contract NOS-12721, Belmont Packing & Rubber Co.

238310 linear yards (about) packing, flax, square, in sizes 1/8 to 7/8 inches.

Price per linear yard at East Coast Yards: \$.0124, 1/8 inch; \$.0245, 3/16 inch; \$.0421, 1/4 inch; \$.0604, 5/16 inch; \$.085, 3/8 inch; \$.104, 7/16 inch; \$.127, 1/2 inch; \$.155, 9/16 inch; \$.1965, 5/8 inch; \$.2775, 3/4 inch; \$.416, 7/8 inch; \$.845, 1 inch; \$.6706, 1-1/8 inches; \$.835, 1-1/4 inches; \$1.11, 1-1/2 inches; \$1.3876, 1-3/4 inches; \$1.8057, 2 inches.

At Pacific Coast Yards, \$.0124, 1/8 inch; \$.0255, 3/16 inch; \$.044, 1/4 inch; \$.0652, 5/16 inch; \$.0914, 3/8 inch; \$.1096, 7/16 inch; \$.134, 1/2 inch; \$.1645, 9/16 inch; \$.2071, 5/8 inch; \$.2525, 3/4 inch; \$.3387, 7/8 inch; \$.5, 1 inch; \$.7068, 1-1/8 inches; \$.834, 1-1/4 inches; \$1.172, 1-1/2 inches; \$1.452, 1-3/4 inches; \$1.981, 2 inches.

Flax - rod - Must comply with "Specifications 33-P-1a", issued by the Navy Department, October 1, 1928.

ITEMS 115 to 128 Inclusive, East Coast and Pacific Coast Yards.

Contract NOS-12715, United States Rubber Company.

18070 pounds (about) packing, hydraulic plunger, Tuck's, square, in sizes 1/4 to 2 inches, as follows: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1, 1-1/8, and 1-1/4 inches.

Price per pound at all points (East Coast) for all sizes. .45 West Coast)

Average weight per linear yard (pounds): 1/4 inch, .084, 5/16, .132; 3/8 inch, .189; 7/16 inch, .265; 1/2 inch, .337; 9/16 inch, .450; 5/8 inch, .526; 3/4 inch, .797; 7/8 inch, 1.03; 1 inch, 1.28; 1-1/8 inches, 1.62; 1-1/4 inches, 2.00.

ITEMS 129 to 156 Inclusive, East Coast and Pacific Coast Yards.

Contract NOS-12715, United States Rubber Company.

1755 pounds (about) packing, hydraulic stuffing box, Tuck's round, with rubber core, in sizes 1/4 to 1-1/4 inches, as follows: 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/8, and 1-1/4 inches.

Price per pound at all points \$.75 East Coast) for all sizes. .76 West Coast)

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Average weight per linear yard (pounds); 1/4 inch, .092, 3/8 inch, .175, 1/2 inch, .260, 5/8 inch, .440, 3/4 inch, .625, 7/8 inch, .900, 1 inch, 1.20; 1-1/8 inches, 1.55; 1-1/4 inches, 1.95.

ITEMS 157 and 158, East Coast and Pacific Coast Yards.

Contract NOs. 12715, United States Rubber Company.

1775 pounds (about) packing, hydraulic ring, (Tuck's rock hard), in coils or rings to sizes (in solid ring or formed ring) as ordered.

Price per pound at East Coast Yards, \$.45; at Pacific Coast Yards, \$.50.

Trade name "Navy".

Specifications for Items 115 to 158 Inclusive.

Tuck's packing shall be in accordance with "Specifications 53-P-7d" issued by the Navy Department January 2, 1926.

ITEMS 159 to 168, Inclusive, East Coast and Pacific Coast Yards.

Contract NOs. 12717, Murray Rubber Company.

36900 square yards (about) packing, sheet, rubber, Grade No. 1, with cloth insertion for cold water use and for electrical purposes, in commercial widths and thicknesses as follows:

Price per square yard at East Coast Yards: \$.97 for 1/16 inch thick; \$1.41 for 3/32 inch thick; \$2.75 for 1/8 inch thick; and \$3.79 for 1/4 inch thick.

Price per square yard at East Coast Yards: \$1.00 for 1/16 inch thick; \$1.41 for 3/32 inch thick; \$1.88 for 1/8 inch thick; \$2.82 for 3/16 inch thick; and \$3.79 for 1/4 inch thick.

ITEMS 169 to 178 Inclusive, East Coast and Pacific Coast Yards.

Contract NOs. 12717, the Murray Rubber Company.

2560 square yards (about) packing sheet, rubber, grade No. 2, with cloth insertion for cold-water use, in commercial widths and thicknesses as follows:

Price per square yard at East Coast Yards: \$.87, 1/16 inch thick; \$1.18, 3/32 inch thick; \$1.62, 1/8 inch thick; \$2.40, 3/16 inch thick; \$3.14, 1/4 inch thick.

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Prices per square yard at West Coast Yards: \$0.90 for 1/16 inch thick; \$1.22 for 3/32 inch thick; \$1.67 for 1/8 inch thick; \$2.47 for 3/16 inch thick; \$3.23 for 1/4 inch thick.

Specifications for Items 189 to 178 inclusive.

Sheet rubber packing, wire insertion, grades 1 and 2, shall be in accordance with "Specifications 33-P-8d", issued by the Navy Department January 2, 1926.

(See foot note page 5.)

Items 179 to 188 inclusive, East Coast Yards.
" 184 to 188 " West Coast Yards.

Contract No. 12753, Goodrich Rubber Company. - East Coast.

Contract No. 12754, Goodrich Rubber Company. - West Coast.

11025 square yards (about) packing, sheet, rubber, with brass-wire insertion suitable for cold and hot water use and for all steam pressures up to 150 pounds per square inch, in commercial widths and thicknesses as follows:

Prices per square yard at East Coast Yards: \$2.34, 1/16 inch thick; \$2.84, 3/32 inch thick; \$4.57, 1/8 inch thick; \$6.87, 3/16 inch thick; \$9.16, 1/4 inch thick.

Prices per square yard at West Coast Yards: \$2.47, 1/16 inch thick; \$2.97, 3/32 inch thick; \$4.68, 1/8 inch thick; \$6.98, 3/16 inch thick; \$9.16, 1/4 inch thick.

Sheet rubber packing, wire insertion shall be in accordance with "Specifications 33-P-10b", issued by the Navy Department January 2, 1926.

(See foot note page 5.)

Items 189 to 194 inclusive, East Coast and Pacific Coast Yards.

Contract No. 12758, Anchor Packing Co.

10000 square yards (about) packing, sheet, plant, fiber, for joints of oil and gasoline lines, as required.

Prices per square yard at East Coast Yards: \$.171, 1/64 inch thick; \$.342, 1/32 inch thick; \$.595, 1/16 inch thick; \$1.39, 1/8 inch thick.

At West Coast Yards \$.184, 1/64 inch thick; \$.368, 1/32 inch thick; \$.748, 1/16 inch thick; \$1.49, 1/8 inch thick.

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Trade name "Hydroil Fibro Shoot".

Average weight per square yard; 1/64 inch, .556 pounds; 1/32 inch, 1.312 pounds; 1/16 inch, 2.672 pounds; 1/8 inch, 5.312 pounds.

Fiber packing shoot (for lubrication and fuel oil). - Must comply with following specifications and practical tests:

Detail requirements. - (a) This packing shall be made of plant fiber mixed with glue or other suitable binder and rolled or compressed into the form of sheet material.

(b) It shall be soft and pliable and capable of standing in storage for three years without deterioration.

(c) It shall contain no rubber, asbestos, or any material affected by oil or water.

(d) It shall not contain more than 15 percent moisture.

(e) The tensile strength in either direction shall be not less than 3,000 pounds per square inch.

(f) The packing shall be capable of bending around a rod equal to twice the thickness of the sheet without cracking or bending.

Each lot of packing shall be identified in such a manner that at least one lot of packing can be identified by its trade name and the name of the manufacturer at the end of three years in stock.

Items 196a to 225, inclusive, East Coast and Pacific Coast Yards.

Contract NC-12719-R. S. Fitz-Gibbon & Co. Inc.

12750 pounds (about) packing, rod, spiral, semi-metallic, high pressure, in sizes from 5/16 to 1-1/8 inches, as required.

Price per pound at East Coast Yards: \$1.10 for sizes 5/16 to 9/16 inch; \$1.00 for sizes 5/8 to 1-1/8 inches.

At West Coast Yards: \$1.12 for sizes 5/16 to 9/16 inch; \$1.02 for sizes 5/8 to 1-1/8 inches.

The right is reserved to order semi-metallic packing in molded ring form at an additional cost of \$1.50 per pound at all yards.

All orders for semi-metallic packing in ring form to be sent to the Bureau of Engineering for approval prior to purchase.

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Trade name: "Victor Semi-Metallic Packing"
Average weight per linear yard (round): 5/16 inch, .671; 3/8 inch, .750;
7/16 inch, .937; 1/2 inch, 1.625; 9/16 inch, 1.796; 5/8 inch, 2.39; 11/16
inch, 2.466; 3/4 inch, 3.437; 13/16 inch, 3.687; 7/8 inch, 4.062; 15/16 inch,
4.250; 1 inch, 5.250; 1-1/8 inches, 6.687; 1-1/4 inches, 8.25; 1-3/8 inches,
9.281; 1-1/2 inches, 10.687.

Sizes offered are as follows: 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2;
x 5/8; 9/16 x 5/8; 5/8 x 23/32; 11/16 x 23/32; 3/4 x 29/32; 13/16 x 29/32;
7/8 x 1; 15/16 x 1; 1-1/8 x 1-1/4; 1-1/4 x 1-3/8; 1-3/8 x 1-1/2;
1-1/2 x 1-17/32.

Semi-metallic (high-pressure rod packing): Except as amended below, the
packing must comply with "Specifications 33-P-19", issued by the Navy Depart-
ment, April 1, 1927, and "Practical Test."

Change Paragraphs 5(a) and 5(b) to read as follows:

5 (a) The asbestos cloth shall contain 48 strands per inch in the warp
and 9 strands per inch in the filler.

5 (b) The asbestos yarn shall contain not less than 85 per cent of
long fiber asbestos of not less than 12 per cent water of

"Composition."

Add paragraph 5 (d) to read as follows:

5 (d) The packing shall contain not less than 50 per cent of metal, by
weight. This content is based on metal weighing 0.40 pounds per
cubic inch. When metal weighing more or less than 0.40 pounds per
cubic inch is used, the metal content percentage by weight shall
be proportionally more or less respectively.

The specifications for semi-metallic packing (high pressure rod packing
Classes 855-A, 33P19) have been further amended by the addition of Paragraph

5 (e) to read as follows:

"Award will be made on semi-metallic packings on the basis of the
lowest cost per hour of service computed by the formula:

$$\frac{a}{b \times c}$$

in which
a = the total quantity of packing necessary for the test
b = cost of packing per pound
c = total number hours of service for the test."

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ITEMS 227 to 261, Inclusive, East Coast and Pacific Coast Yards.

Contract No. 12720, Garlock Packing Co.

21775 pounds (about) packing, rod, spiral, flexible, metallic, high pressure, in sizes from 3/16 to 1-1/2 inches, as required.

Price per pound at East Coast Yards \$.48; at West Coast Yards \$.50 for all sizes.

The right is reserved to order flexible metallic packing in molded ring form at an additional cost of \$.15 per pound for rods up to 1-1/2 inch diameter and \$.10 per pound for rods over 1-1/2 inches diameter at all yards.

Trade Name: Garlock 9820

Average weight per linear yard (pounds): 3/16 inch, .597; 1/4 inch, .707; 5/16 inch, .864; 3/8 inch, 1.166; 7/16 inch, 1.573; 1/2 inch, 2.023; 9/16 inch, 2.564; 5/8 inch, 3.278; 11/16 inch, 3.961; 3/4 inch, 4.706; 13/16 inch, 5.421; 7/8 inch, 6.235; 15/16 inch, 7.023; 1 inch, 7.962; 1-1/8 inches, 9.562; 1-1/4 inches, 11.011; 1-1/2 inches, 12.513.

Flexible Metallic Rod Packing. - Shall be in strict accordance with "Specifications 33-17", issued by the Navy Department February 1, 1926 and practical test.

Flexible Metallic Rod Packing. - Shall be furnished in molded rings.

ITEMS 262 to 266, Inclusive, East Coast and Pacific Coast Yards.

Contract No. 12720 - Anchor Packing Company.

11825 pounds (about) packing rod, plastic, high pressure, in bulk packed in 5 pound metal container.

Price per pound at East Coast Yards \$.74
Price per pound at Pacific Coast Yards \$.78

The right is reserved to order plastic metallic packing in molded ring form at an additional cost of \$.15 per pound for rods up to 1-1/2 inches in diameter, \$.10 per pound for rods over 1-1/2 inches in diameter, at all yards.

Trade Name: Carbonite

Plastic Metallic Rod Packing. - Must comply with the following specifications and practical test.

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(a) The packing shall be suitable for use with superheated steam at pressures up to 300 pounds gauge and temperatures up to 700 degrees F. when used on rods having reciprocating, oscillating, helical or rotary motion. It shall be capable of preventing leakage without the use of undue gland pressure or causing excessive friction.

(b) It shall be composed of mineral matter in small particles, strands, or shreds, in combination with graphite and a suitable binder. The packing shall not abrade the rods or break up the work back into the system.

(c) The packing shall retain its plasticity indefinitely while in storage.

(d) Not less than 75 per cent, by weight, of the finished packing shall be lubricant. For these determinations graphite will not be regarded as a lubricant.

(e) The packing shall be plastic in bulk form.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Contract 12734, Anchor Packing Company.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Prices \$290 to \$295 inclusive, East Coast and Pacific Coast Yards.

Tube : (O.D.) : Inch	Stuffing box is tapped : Inch	Depth of Stuffing box : Inch	Weight of packing : required for one box : Pound
5/8	7/8 inch by 18 thread	3/4	.043
3/4	1 1/8 inch by 14 thread	3/4	.045
7/8	1 1/8 inch by 14 thread	3/4	.051

The Anchor Packing Company in accepting this contract warrants that the packing which it agrees to furnish does not in any manner infringe the patent No. 1,545,963 or any other patent under which it does not hold a license and assumes full responsibility to protect the Government against any and all claims which may arise for patent infringement on account of the use of such packings.

3. Discounts will be allowed for payment within calendar days as follows:

Contract	10 days	20 days
12712	2%	2%
12715	2%	2%
12716	2%	2%
12717	2%	2%
12718	2%	2%
12719	2%	2%
12720	2%	2%
12721	2%	2%

Attention is invited to the conditions under which discounts are allowed as follows:

Time will be computed from date of the delivery at destination as provided in the contract, or from date correct bill or voucher properly certified by the contractor is received if the latter date is later than the date of delivery. Date of mailing check will be considered as date of payment.

4. GENERAL CONDITIONS GOVERNING ALL THE FOREGOING CONTRACTS.

The contractors agree that each delivery of packings will be satisfactory in every respect and entirely suitable for the special requirements of the naval service.

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Purchase on Account.

In case packings are rejected as not satisfactory, or in case packings are shown without doubt to be unsatisfactory, or not suitable in every respect for the special purposes required, the Government shall have the right, at its option, either to require the contractor to replace free of charge, an equal quantity of satisfactory packing or to require him to refund the purchase price of the unsatisfactory delivery. In case the contractor fails to replace, in a satisfactory manner, the conditions of the contract in every respect, the right is further reserved to purchase in the open market for the contractor's account such packings which may still be required to be delivered during the contract period.

Cancellation of Contract.

The right is reserved to cancel any contracts, at the option of the Government, for any or all items or for any or all packings included therein, and at any time during the existence of the contract, upon 30 days notice to the contractor, if in the interests of the Government to do so.

Failure to make deliveries as specified, or to answer inquiries with regard to orders placed under a contract, will be considered sufficient cause for cancellation of a contract. It will be clearly understood that on actual use in service of packings delivered shows that the contractor is supplying unsatisfactory packings, or that deliveries have been made of materials inferior to those specified or inferior to samples previously submitted and found acceptable, all such unsatisfactory packings as remain on hand unused may be returned to the contractor at his expense.

Estimate of Quantities - Duration of Contract.

It shall be distinctly understood and agreed that it is the intention of the contract that the contractor shall furnish and deliver any quantity of the packing covered by the contract which may be ordered for the naval service at the places named during the period ending 30 June 1929, irrespective of the estimated quantity for each item except such packing as the Department may find it necessary to purchase from other firms during the same period, the Government not being obligated to order any specific quantity of packing contracted for.

THE PRICES QUOTED ARE FOR DELIVERY AT THE PLACES NAMED.

Delivery.

Unless otherwise specified, deliveries will be made in standard packages or containers which will prevent deterioration and damage due to ordinary handling, transportation and storage. Each container and package will be labeled with the maker's name, full trade name of packing, and date. All packages and containers will be stenciled or otherwise clearly labeled, in large type, "Avoid heat or moisture until used." Unless otherwise stated,

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sheet packings will be delivered in rolls not exceeding about 100 pounds net, except when specially authorized, and all packages of spiral gland packings must show the length and net weight of packing contained.

Weight.

All deliveries of each kind and size of packing will be subject to inspection, as regards weight, in comparison with the weight stated in the contract. A tolerance in weights of 5 per cent above the stated weights will be allowed and will be paid for. Shipment of packing weighing in excess of 5 per cent above the stated weights will be authorized providing the contractor accepts the 5 per cent excess allowed as the basis for payment and makes payment for the weight in excess of the 5 per cent tolerance. The weight per linear yard or square yard stated in the bidder's proposal adjusted by the 5 per cent plus tolerance shall be the basis for payment. To assure uniformity, weights per square yard or linear yard shall be expressed in pounds to three decimals, if necessary, and cost per square or linear yard shall be expressed in dollars to four decimals, if necessary.

Inspection will be made at place of manufacture as directed by the Bureau of Engineering. Chemical analysis will be made at a Government laboratory on samples selected by the inspector. All physical tests will be made at the works of the manufacturer on samples selected by the inspector. The manufacturer will supply the necessary facilities and labor to make all physical tests.

5. The process of manufacture shall be subject to Government inspection at all times.

Contract	Place of Manufacture	Inspected by
NOs-12712	Youngstown, Ohio.	Inspector of Naval Material, Pittsburgh, Pa.
NOs-12713	Acron, Ohio.	Inspector of Naval Material, Pittsburgh, Pa.
NOs-12714	Marville, N. J.	Inspector of Naval Material, New York, N.Y.
NOs-12715	North Brookfield, Mass.	Inspector of Naval Material, Boston, Mass.
NOs-12716	Passaic, N. J.	Inspector of Naval Material, New York, N. Y.
NOs-12717	Trenton, N. J.	Inspector of Naval Material, Philadelphia, Pa.
NOs-12718	Ambler, Pa.	Inspector of Naval Material, Philadelphia, Pa.
NOs-12719	New York, N. Y.	Inspector of Naval Material, New York, N.Y.
NOs-12720	Palmyra, N.Y.	Inspector of Naval Material, New York, N.Y.
NOs-12721	Philadelphia, Pa.	Inspector of Naval Material, Philadelphia, Pa.

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NOs-12738 (Elkhart, Ind. Items 189 Inspector of Chicago, Ill.
to 196). Naval Material,
(Manheim, Pa. Philadelphia, Pa.

Monthly report of material ordered and delivery to be made to each
of the Bureau of Engineering, and Supplies and Accounts.

Unsuitable Packings.

If the packings under any contract are not considered by the commandant
of officer in charge suitable for the purposes of the Torpedo Station,
Newport, R. I., New York, Washington, D. C., and the Naval Powder Factory,
Indian Head, Md., the Commandant reserves the right to purchase such other
packings as may be desired and will be suitable for such special purposes.

Under no circumstances should packings be ordered by officers on
board ships from the contractor, but they should be obtained in the
usual manner by requisition on the supply officers, and the requisition
should be attached to the contract. The requisition should be made to the
supply officer at the station where the packings are to be used.

Purchase orders after advertisement, award was made to the lowest
satisfactory bidder, and so reported to the General Accounting Office on
Form 100 attached to the contract.

BUREAU ENGINEERING NOTES ON CONTRACT PACKINGS.
Vessels may obtain any contract packings by means of "not-in-excess"
Engineering requisitions, provided the materials are for use under the
Bureau of Engineering and not under Construction and Repair or Ordnance.
(See instructions on page 112, Engineering Allowance Book, 1917 and 1918
editions.)

Spiral-rod packings in such unusual sizes as 9/16 inch, 11/16 inch, etc.,
are seldom necessary. Orders for such odd sizes should be avoided, if
possible.

High pressure Spiral-rod packings in sizes 1/8, 3/16 inch have been
omitted from the contract, as asbestos valve stem packings are more suit-
able for the purpose and should be used on these small sizes.

Packings containing rubber deteriorate slowly in store, and nearly all
packings will be injured when stored where there is high heat or ex-
tensive moisture.

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Do not use a very expensive packing when a cheaper one will answer as well or better.

Gaskets cut from wire-insertion rubber sheet, grade No. 1 rubber, and woven asbestos cloth are very expensive. Use other packings when possible.

Compressed asbestos sheet packing should be substituted for rubber sheet packings whenever possible as it is cheaper than any of the rubber packings except grade 2, which is only used for temporary joints.

Due to compression in stuffing boxes, more of the soft than of the hard packing is required for the same purpose.

Semi-metallic rod or plastic rod packings should be used for steam service on reciprocating rods. For rotary rods and for liquid, such as water, oil, etc. on reciprocating rods, use flexible-metallic rod or plastic rod packing.

Unsatisfactory contract packings. - In all cases where packings are considered unsatisfactory there should be forwarded to the Bureau of Engineering sample of the used and unused packing, with full data. Give trade name, state when and from whom received, where and how long packing was in use, and how it failed. The sample of compressed asbestos sheet packing should have the date of manufacture stamped on it if possible.

Care should be taken to ascertain that the proper packing is used for a particular service. See Chapter 12, Manual of Engineering Instructions.

It should not be expected that rubber will stand high heat or exposure to oil or gasoline. Valve-stem packings are loosely woven and will not generally answer for piston-rod stuffing boxes or slip joints.

Any high-pressure spiral-gland packing will have a short life if a rough piston-rod travels through it or if there is considerable sidewise motion to the rod.

J J CHEATHAM

Department Distribution: I, II, IV, V, (except (c)), VI (a) to (d), (h), (i),
VIII except (a), IX & X, (a) (b) & (C-2&3),
*(N) (k), (l).

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