

REQUEST FOR QUOTATION
(THIS IS NOT AN ORDER)

THIS RFO IS IS NOT A S

BUSINESS SET-ASIDE

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1. REQUEST NO. N65540-04-Q-0410		2. DATE ISSUED 04 AUG 10		3. REQUISITION/PURCHASE REQUEST NO. 93320 41701773		4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. 1		RATING	
5a. ISSUED BY CONTRACTING OFFICER NSWC CARDEROCK DIVISION						6. DELIVER BY (Date) 04 SEP 30			
5b. FOR INFORMATION CALL (NO COLLECT CALLS)						7. DELIVERY <input checked="" type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)			
NAME 5001 S. BROAD STREET, CODE 335 PHILADELPHIA, PA 19112-1403 STACEY THOMPSON				TELEPHONE NUMBER AREA CODE NUMBER 215 897-7160 FAX: 215 897-7059		9. DESTINATION N65540			
8. TO:						a. NAME OF CONSIGNEE NAVAL BUSINESS CENTER RECEIVING OFFICER, FISC, NSWC CARDEROCK DIVISION			
a. NAME			b. COMPANY			b. STREET ADDRESS 1601 LANGLEY AVENUE BLDG 542 E			
c. STREET ADDRESS						c. CITY PHILA.			
d. CITY			e. STATE		f. ZIP CODE		d. STATE PA		e. ZIP CODE 19112-5051
10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5A ON OR BEFORE CLOSE OF BUSINESS (Date) 04 AUG 31				IMPORTANT: This is a request for information and quotations furnished are not offers. If you are unable to quote, please so indicate on this form and return it to the address in Block 5A. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or services. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotations must be completed by the quoter.					

11. SCHEDULE (Include applicable Federal, State and local taxes)

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)
0001	REQN. NO. 93320 /41701773 ITEM NAME: 8" HOSE ASSEMBLY TO BE FABRICATED, HYDRO TESTED, TAGGED AND CERTIFIED IN ACCORDANCE WITH TECHNICAL DIRECTIVE (S6430-AE-TED-010) SECTION 7 AND 8. SPECS ARE PROVIDED ON ATTACHED DRAWING SK-007.	1	EA		
0002	REQN. NO. 93320 /41701792 ITEM NAME: 6" HOSE ASSEMBLY TO BE FABRICATED, HYDRO TESTED, TAGGED AND CERTIFIED IN ACCORDANCE WITH TECHNICAL DIRECTIVE (S6430-AE-TED-010) SECTION 7 AND 8. SPECS ARE PROVIDED ON ATTACHED DRAWING# SK-007.	1	EA		
0003	REQN. NO. 93320 /41701804 ITEM NAME: 6" HOSE ASSEMBLY TO BE FABRICATED, HYDRO TESTED, TAGGED AND CERTIFIED IN ACCORDANCE WITH TECHNICAL DIRECTIVE (S6430-AE-TED-010) SECTION 7 AND 8. SPECS ARE PROVIDED ON ATTACHED DRAWING# SK-007.	1	EA		
0004	REQN. NO. 93320 /41701807 ITEM NAME: 6" HOSE ASSEMBLY TO	1	EA		

12. DISCOUNT FOR PROMPT PAYMENT	a. 10 CALENDAR DAYS (%)	b. 20 CALENDAR DAYS (%)	c. 30 CALENDAR DAYS (%)	d. CALENDAR DAYS	
				NUMBER	PERCENTAGE

NOTE: Additional provisions and representations are are are not attached

13. NAME AND ADDRESS OF QUOTER			14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION		15. DATE OF QUOTATION	
a. NAME OF QUOTER			16. SIGNER		b. TELEPHONE	
b. STREET ADDRESS						
c. COUNTY			a. NAME (Type or print)		AREA CODE	
d. CITY			c. TITLE (Type or print)		NUMBER	
e. STATE			f. ZIP CODE			

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SECTION B SUPPLIES/SERVICES

ITEM	SUPPLIES/SERVICES	QUANTITY UI	U-PRICE	AMOUNT
	BE FABRICATED, HYDRO TESTED, TAGGED AND CERTIFIED IN ACCORDANCE WITH TECHNICAL DIRECTIVE (S6430-AE-TED-010) SECTION 7 AND 8. SPECS ARE PROVIDED ON ATTACHED DRAWING# SK-007.			

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SECTION F TIME OF DELIVERY

DELIVERIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS

ITEM	QUANTITY	DELIVERY REQUIRED
0001	1 EA	04-SEP-30
0002	1 EA	04-SEP-30
0003	1 EA	04-SEP-30
0004	1 EA	04-SEP-30

52.213-4 Terms and Conditions--Simplified Acquisitions (Other Than Commercial Items) (MAY 2004)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) clauses that are incorporated by reference:

- (1) The clauses listed below implement provisions of law or Executive order:
 - (i) 52.222-3, Convict Labor (June 2003) (E.O. 11755).
 - (ii) 52.222-21, Prohibition of Segregated Facilities (Feb 1999) (E.O. 11246).
 - (iii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).
 - (iv) 52.225-13, Restrictions on Certain Foreign Purchases (Dec 2003) (E.o.s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).
 - (v) 52.233-3, Protest After Award (Aug 1996) (31 U.S.C. 3553).
- (2) Listed below are additional clauses that apply:
 - (i) 252.204-7003, Control of Government Personnel Work Product (Apr 1992)
 - (ii) 52.232-1, Payments (Apr 1984).
 - (iii) 52.232-11, Extras (Apr 1984).
 - (iv) 52.233-1, Disputes (Jul 2002).
 - (v) 252.243-7001 Pricing of Contract Modifications (Dec 1991)
 - (vi) 52.244-6, Subcontracts for Commercial Items (May 2004).
 - (vii) 52.253-1, Computer Generated Forms (Jan 1991).

(b) The Contractor shall comply with the following FAR and DFARS clauses, incorporated by reference, unless the circumstances do not apply:

- (1) The clauses listed below implement provisions of law or Executive order:
 - (i) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (Jan 2004) (E.O. 13126). (Applies to contracts for supplies exceeding the micro-purchase threshold.)
 - (ii) 52.222-20, Walsh-Healey Public Contracts Act (Dec 1996) (41 U.S.C. 35-45) (Applies to supply contracts over \$10,000 in the United States, Puerto Rico, or the U.S. Virgin Islands).
 - (iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible

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Veterans (Dec 2001) (38 U.S.C. 4212) (Applies to contracts of \$25,000 or more).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793). (Applies to contracts over \$10,000, unless the work is to be performed outside the United States by employees recruited outside the United States.) (For purposes of this clause, United States includes the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.)

(v) 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212) (Applies to contracts of \$25,000 or more).

(vi) 52.222-41, Service Contract Act of 1965, As Amended (May 1989) (41 U.S.C. 351, et seq.) (Applies to service contracts over \$2,500 that are subject to the Service Contract Act and will be performed in the United States, District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, Johnston Island, Wake Island, or the outer continental shelf lands).

(vii) 52.223-5, Pollution Prevention and Right-to-Know Information (Aug 2003) (E.O. 13148) (Applies to services performed on Federal facilities).

(viii) 252.225-7001, Buy American Act and Balance of Payments Program (Apr 2003) (Applies to all contracts for supplies unless an exception is authorized by DFARS 25.1101(2) (i) through (iv)).

(ix) 252.225-7013, Duty-Free Entry (Apr 2003) (Applies to all contracts for supplies except for those supplies that will not enter the customs territory of the United States).

(x) 52.232-33, Payment by Electronic Funds Transfer-- Central Contractor Registration (Oct 2003). (Applies when the payment will be made by electronic funds transfer (EFT) and the payment office uses the Central Contractor Registration (CCR) database as its source of EFT information.)

(xi) 52.232-34, Payment by Electronic Funds Transfer-- Other than Central Contractor Registration (May 1999). (Applies when the payment will be made by EFT and the payment office does not use the CCR database as its source of EFT information.)

(xii) 252.247-7023, Transportation of Supplies by Sea (May 2002) Alternate III (May 2002) (Applies when transporting any supplies by sea under this contract.)

(2) Listed below are additional clauses that may apply:

(i) 52.204-7, Central Contractor Registration (Oct 2003) (Applies to all contracts unless an exception is authorized by FAR 4.1102(a).)

(ii) 252.204-7004, Alternate A (Nov 2003) (Applies if FAR 52.204-7 is applicable.)

(iii) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (July 1995) (Applies to contracts over \$25,000).

(iv) 52.211-5 Material Requirements (Aug 2000) (Applies to contracts for supplies that are not commercial items).

(v) 52.211-17, Delivery of Excess Quantities (Sept 1989) (Applies to fixed-price supplies).

(vi) 252.225-7002, Qualifying Country Sources as Subcontractors (Apr 2003) (Applies if the contract is subject to the DFARS clause 252.225-7001, Buy American Act and Balance of Payments Program (see (b) (1) (viii) above)).

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- (vii) 52.243-1, Changes--Fixed Price (Aug 1987) (Applies to fixed-price contracts for supplies).
- (viii) 52.243-1, Changes--Fixed Price (Aug 1987) Alternate I (Apr 1984) (Applies to fixed price contracts for services, other than architect-engineer or other professional services, and no supplies are to be furnished).
- (ix) 52.243-1, Changes--Fixed Price (Aug 1987) Alternate II (Apr 1984) (Applies to fixed price contracts for services (other than architect-engineer services, transportation, or research and development) and supplies are to be furnished).
- (x) 52.243-1, Changes--Fixed Price (Aug 1987) Alternate V (Apr 1984) (Applies to fixed price contracts for research and development).
- (xi) 52.247-29, F.o.b. Origin (Jun 1988) (Applies to supplies if delivery is f.o.b. origin).
- (xii) 52.247-34, F.o.b. Destination (Nov 1991) (Applies to supplies if delivery is f.o.b. destination).
- (xiii) 52.222-42, Statement of Equivalent Rates for Federal Hires (May 1989) (Applies if the contract amount is expected to be over \$2,500 and the contract is subject to the clause 52.222-41, "Service Contract Act of 1965, As Amended" (see (b) (1) (vi) above)).

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

This Statement is for Information Only:

It is not a Wage Determination

Employee Class	Monetary Wage--Fringe Benefits
_____	_____
_____	_____
_____	_____

(xiv) 52.246-11 Higher-Level Contract Quality Requirement (Feb 1999) (Applies to contracts when the contracting officer finds it is in the Governments interest to require that higher-level quality standards be maintained and such standards are selected and identified in the clause).

The Contractor shall comply with the higher-level quality standard selected below. [If more than one standard is listed, the offeror shall indicate its selection by checking the appropriate block.]

	Title	Number	Date	Tailoring
*	_____	_____	_____	_____
*	_____	_____	_____	_____
*	_____	_____	_____	_____
*	_____	_____	_____	_____

[Contracting Officer insert the title, number (if any), date, and tailoring (if any) of the higher-level quality standards.]

(c) FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998). This contract incorporates one or more clauses by

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reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

FAR clauses - <http://www.arnet.gov/far/>
DFARS clauses - <http://www.acq.osd.mil/dp/dars/dfars.html>

(d) Inspection/Acceptance. The Contractor shall tender for acceptance only those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its postacceptance rights--

(1) Within a reasonable period of time after the defect was discovered or should have been discovered; and

(2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(e) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence, such as acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(f) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges that the Contractor can demonstrate to the satisfaction of the Government, using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided.

(g) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(h) Warranty. The Contractor warrants and implies that the

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items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(End of clause)

52.232-36 Payment by Third Party (May 1999)

(a) General. The Contractor agrees to accept payments due under this contract, through payment by a third party in lieu of payment directly from the Government, in accordance with the terms of this clause. The third party and, if applicable, the particular Governmentwide commercial purchase card to be used are identified elsewhere in this contract.

(b) Contractor payment request. In accordance with those clauses of this contract that authorize the Contractor to submit invoices, contract financing requests, other payment requests, or as provided in other clauses providing for payment to the Contractor, the Contractor shall make such payment requests through a charge to the Government account with the third party, at the time and for the amount due in accordance with the terms of this contract.

(c) Payment. The Contractor and the third party shall agree that payments due under this contract shall be made upon submittal of payment requests to the third party in accordance with the terms and conditions of an agreement between the Contractor, the Contractor's financial agent (if any), and the third party and its agents (if any). No payment shall be due the Contractor until such agreement is made. Payments made or due by the third party under this clause are not payments made by the Government and are not subject to the Prompt Payment Act or any implementation thereof in this contract.

(d) Documentation. Documentation of each charge against the Government's account shall be provided to the Contracting Officer upon request.

(e) Assignment of claims. Notwithstanding any other provision of this contract, if any payment is made under this clause, then no payment under this contract shall be assigned under the provisions of the assignment of claims terms of this contract or the Assignment of Claims Act of 1940, as amended, 31 U.S.C. 3727, 41 U.S.C. 15.

(f) Other payment terms. The other payment terms of this contract shall govern the content and submission of payment requests. If any clause requires information or documents in or with the payment request, that is not provided in the third party agreement referenced in paragraph (c) of this clause, the Contractor shall obtain instructions from the Contracting Officer before submitting such a payment request.

(End of clause)

Your quotation must include the following information:

Price list number and date

or

Cost breakdown by direct labor (list categories, hours and pay rates). In addition to the direct rates, provide the applicable indirect information (G&A), overhead,

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facilities capital cost of money (FCCM) and profit.

or

Applicable General Services Administration (GSA) contract number.

If unable to quote FOB, Destination, please complete the following:

FOB Point _____

Estimated Shipping Charge _____

Business size:

Large _____ Small _____ Nonprofit _____

Cage Code _____

Tax Identification Number (TIN) _____

DUNNS _____

ELIGIBILITY REQUIREMENTS

All contractors and individuals doing business with the Federal Government must be registered at the Contractor Central Registration Database located at: <http://ccr.dlsc.dla.mil/>.

ELECTRONIC DISTRIBUTION OF CONTRACT DOCUMENTS

All contract award and contract modification documents will be distributed electronically using the Navy Air Force Interface (NAFI) system. The contractor's copy will be provided in portable document format (pdf) as an attachment to an e-mail that will be sent to the contractor by the NAFI system. A pdf file may be accessed using Adobe Acrobat Reader software. This is a free software that may be downloaded at:

<http://www.adobe.com/products/acrobat/readstep.html>

Provide the following information that will be used to make electronic distribution for any resultant contract:

Name of Point of Contact to Receive Distribution _____

Phone Number for Point of Contact _____

E-Mail Address for Receipt of Distribution _____

USE OF THE GOVERNMENTWIDE COMMERCIAL PURCHASE CARD

Will you accept the Governmentwide Commercial Purchase Card

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as a method of purchasing supplies and/or services.

Yes

No

Will you accept the Governmentwide Commercial Purchase Card as a method of payment for your invoice.

Yes

No

DUTY FREE ENTRY

Will any materials being shipped to the Government require a duty-free entry certificate for foreign supplies.

Yes

No

If yes, please include dollar amount \$ _____

SECTION 7

7. Fabricating flexible hose assemblies. After the examination of the hose and fitting components in accordance with section 6, the components shall be assembled into flexible hose assemblies for shipboard use.

7.1 Manufacturer's assembly instructions. Maximum use shall be made of the hose fitting manufacturers' instructions, either supplied with the fittings or included in manufacturers' catalogs.

7.2 Navy training film. The Navy training film 02527DN, entitled "The Assembly and Installation of Flexible Hose Configurations" should be viewed by all personnel whose duties include working on flexible hose assemblies.

7.3 General hose assembly, guidance and precautions. The following general guidance and precautions are intended to supplement the guidance provided by the manufacturers' assembly instructions and the Navy training film.

7.3.1 Measurement of hose length. The best way to determine the actual hose length for new hose installations is to template the actual shipboard conditions. From the template, measure the overall dimension of the hose assembly. For a dogleg configuration, this involves two measurements from the intersecting centerlines of the elbow to the end of the hose assembly or template. Subtract the appropriate take out dimensions supplied by the manufacturer. This will give the actual length of the hose required. See figure 7-1 for examples showing free hose length and takeout dimension locations and an example of a template. Ship drawings and selected record drawings should be checked to determine if the hose assembly lengths are given on the drawings. If they are, they should be used.

7.3.1.1 Replacement hose assembly. A replacement hose assembly may be disassembled and hose measurements taken from the removed hose. It should be ascertained that the hose assembly is being replaced because of age or physical damage and not because of a length problem. If the replacement is because of a length problem, use the template method in 7.3.1 above.

7.3.2 Cutting the hose. Mark off the required length of hose along a new section of hose. Cut the hose with a high speed tool steel abrasive cut-off wheel designed for cutting hose. Make sure there is adequate ventilation to rapidly remove the fumes generated by the cutting process. Water mist should be applied to the wheel during the cutting operation to prevent distortion of the cutting wheel. Hose shall be cut square, and care shall be taken regarding the manner and speed with which the hose is fed to the cutting edge of the wheel. To prevent binding, the hose shall be bent slightly so that the outside of the bend contacts the wheel. Excessive feed of the hose to the cutting edge may loosen inner liner or cause partial unravelling of the wire reinforcement. After cutting, clean all residue from the inside and outside of the hose. If cutting the hose has caused the end to neck down slightly, it shall be flared to allow proper insertion of the nipple. A tapered plug should be used to round out the hose I.D. **NOTE:** A wetted sharp knife may be used to cut synthetic fiber reinforced rubber hose.

NOTE: When cutting hose from a length of hose that has been in storage for more than 3 months, cut off 1 to 1-1/2 inches from the end before measuring for the desired length. This will remove any hose that may have been damaged in storage.

7.3.2.1 Hose cut-off wheels. There are several types of rotary knife wheels, or blades, and abrasive wheels used to cut hose. Any of the following types may be used subject to the limitations noted.

- a. **Rotary knife.** A good versatile blade for all types of hoses. Produces fewer contaminants than abrasive blades. Must be frequently resharpened.
- b. **Scalloped blade.** Especially good for spiral hoses. However, must be returned to manufacturer for resharpening. Higher initial cost with attendant sharpening costs.
- c. **Carbide blade.** Very good for cutting spiral hoses and not so good on braided hoses. Creates excessive smoke because of nature of cutting. Cannot be reconditioned when carbide has worn off.
- d. **Diamond blade.** Similar to carbide, but lasts twice as long. Much more expensive than carbide and must have continual supply of coolant.
- e. **Aluminum oxide blade** Least expensive blade. Suitable for rubber and PTFE hose. Should be used only on a hose cutoff machine; not in hand held circular saw. Provide suitable ventilation and/or approved breathing apparatus to avoid breathing smoke and particulate matter.
- f. **Shear blade.** An inexpensive guillotine-like device for cutting non-metallic reinforced hose. Not too effective for hoses with exposed fiber braid cover.

CAUTION: When cutting hoses with high speed cut-off wheels, it is urged that operators wear protective clothing and approved breathing apparatus since the procedure will produce smoke and particulate matter.

7.3.3 Skiving. Skive off the rubber cover of the hoses if skiving is required by the manufacturers' instructions. Skiving is generally required for multiple layer wire reinforced hoses. Take care not to cut or otherwise damage the reinforcing wires when skiving. End fittings for hoses that must be skived contain a notch which is used to measure the length of hose to be skived.

7.3.4 End sealant for wire reinforced hoses. Apply end sealant to cut ends of hoses and over any reinforcing wires exposed by skiving. Allow to set for approximately one-half hour then apply a second coat of sealant and immediately attach the end fitting or dogleg fitting to the hose. An approved end sealant is Dynatron/Bondo 902 (AQ P/N 222006A) or equal. This end sealant shall be used full strength for all applications.

CAUTION: Do not put sealant on I. D. of hose. Sealant is highly flammable. Ensure sufficient ventilation and no open flames or smoking in area. Use chemical goggles or face shields and solvent resistant gloves, such as nitrile rubber.

7.4 Special assembly guidance

7.4.1 Internal support devices. Flexible hose assemblies that can be subjected to vacuum conditions frequently require an internal support device to prevent liner separation or hose collapse. When required by table 5-1 internal support devices shall be installed. For hose sizes smaller than -64 (4 inches) the internal support device is a coil made of a flat strip of beryllium copper. For hoses -64 and larger the internal support device is a molded rubber insert.

- a. When the internal coil device is used it shall be installed with a gap at one end so that it will not contact both end fittings at the same time. The coil shall not be shorter than 1/2 inch less than the internal length of the hose. Follow the manufacturers' instructions carefully when installing the coil device.
- b. The support cylinders shall be installed in accordance with the manufacturers' instructions. NSNs for the support cylinders are shown in Table 7-1.

Table 7-1, Support cylinder NSNs

SIZE (DASH No.)	NSN
-64	4720-01-223-3692
-80	4730-01-144-7579
-96	4720-00-929-1105
-128	4720-00-204-9569
-160	4720-01-206-3605
-192	4720-01-386-6115

NOTE: PTFE hose assemblies using non-reusable end fittings in steam drain applications utilize a flat ribbon internal coil to prevent collapse of the hose. These coils are welded in place on both ends and are non-removable. Internal support coils used with PTFE hose assemblies utilizing reusable end fittings have collars on the ends of the coil.

7.4.2 Free length of hose

7.4.2.1 Minimum free hose length. The minimum free hose length for any hose assembly shall be such that the hose will not be bent to less than its minimum bend radius under maximum shock excursions. Subject to the above, the absolute minimum free hose length for new hose assembly installations shall be nine inches for sizes -4 through -64, and 24 inches for hoses larger than -64 size.

NOTE: Some older ships may not exhibit a full 9 inches of free length because the original criteria for free length measurement included a portion of the segmented hose fitting. Direct replacements are authorized for such installations.

NOTE: For new ship design, the minimum free hose length for each hose assembly shall be determined by the Design Yard to meet deflection and/or acoustic requirements.

SECTION 88. Examination and test of complete hose assembly

8.1 Examination. Upon completion of the fabrication of a hose assembly, the entire hose assembly configuration shall be visually examined as follows:

- a. Ensure that the tube and cover are intact and contain no cuts, cracks or abrasions beyond that permitted in 6.1.e.
- b. Where segmented socket fittings are used, ensure that the hose butts against the nipple shoulder.
- c. Ensure that the retaining ring and band, when used, are properly set and tight.
- d. Ensure that bolts and nuts, where used, are tight and that segments are evenly spaced. Ensure torque requirements of the manufacturer have been followed.
- e. Ensure that hose has not been twisted during fabrication of hose assembly.
- f. Ensure that a bead of end sealant has been applied where the hose comes out of the fitting when solid socket fittings are used. (See 7.3.5.4 for sealant restrictions).
- g. If the application requires the use of an internal support device, make sure that the support device is a flat ribbon strip coil for hose sizes smaller than -64, and a bonded ring support cylinder insert for sizes equal to and larger than -64. Where a coil device is used, it shall not touch both end fittings at the same time and shall not be shorter than 1/2 inch less than the internal length of hose.
- h. Ensure that hose has not bunched or blistered on I.D. at nipple edge.
- i. Ensure that hose fitting threads have not been damaged during hose assembly fabrication.

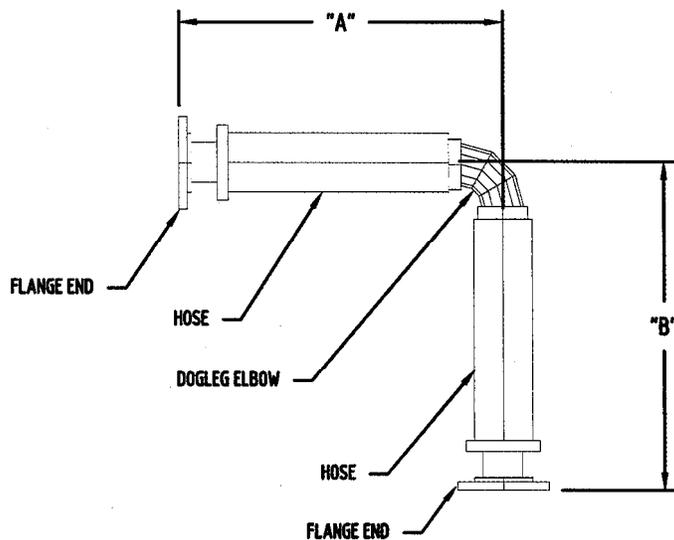
8.2 Hydrostatic test. After completion of the visual examination, the hose assembly shall be hydrostatically tested as follows:

- a. Draw a circumferential chalk line around the hose next to each fitting attachment. Measure distance from the lines to fitting edges at four places 90° apart.
- b. Attach test fitting or adapter. Flanged hose fittings should have strong backs installed to prevent distortion of the flange when the hose assembly is subjected to proof pressure if the hose design pressure exceeds the fitting rated pressure.
- c. Using fresh water or other appropriate liquid (hose assembled for water systems shall be tested with only fresh water), apply a hydrostatic proof pressure equivalent to twice the rated hose working pressure (see Table 5-1). Hold this pressure for 1 to 5 minutes. Hose shall not burst, leak or show signs of fitting separation.

DDG-51 LUBE OIL SYSTEM
FLEXIBLE HOSE ASSEMBLIES

0001
0002
0003
0004

HOSE NUMBER	SIZE	TYPE	HOSE	FLANGE ASSEMBLY	ELBOW ASSEMBLY	"A" DIM.	"B" DIM.	REMARKS
LOHA003	8"	DOGLEG	AEROQUIP 2580-128	AEROQUIP FC7781-0808-189	AEROQUIP FC7754-0808-188	33.5"	53"	ATTACHED PUMP DISCH
LOHA005	6"	DOGLEG	AEROQUIP 2580-96	AEROQUIP FC7781-9696-189	AEROQUIP FC7754-9696-188	46"	49"	PMP 2B DISCH
LOHA006	6"	DOGLEG	AEROQUIP 2580-96	AEROQUIP FC7781-9696-189	AEROQUIP FC7754-9696-188	46"	46"	PMP 2A DISCH
LOHA007	6"	DOGLEG	AEROQUIP 2580-96	AEROQUIP FC7781-9696-189	AEROQUIP FC7754-9696-188	40.5"	44"	SPLY HDR



HOSE ASSEMBLY DETAIL