

**SPECIFICATION  
FOR  
FILTERS, OIL, AUTOMOTIVE**

(This specification is released for procurement purposes until revised or rescinded.)

**SCOPE**

This specification covers the requirements for lube oil filters and elements of both the bypass and full flow designs for installation on internal combustion engines to remove contaminants from the lubricating oil.

**I. CLASSIFICATION**

The oil filters and elements covered by this specification shall be classified according to size and function as follows:

Type I - Oil Filters (W/Elements) - Spin-On Type - Bypass Design

<u>Class</u>	<u>Filter Volume</u>
1	Up to and including 65 cu.in. (1065 Cc)

Type II - Oil Filter Elements-Bypass Design

<u>Class</u>	<u>Element Volume</u>
1	Up to and including 75 cu.in. (1229 CC)
2	Greater than 75 cu.in. (1229 CC) up to and including 120 Cu.In. (1966 CC)
3	Greater than 120 cu.in. (1966 CC)

Type III - Oil Filters (W/Elements) - Spin-On Type - Full-Flow Design

<u>Class</u>	<u>Filter Volume</u>
1	Up to and including 55 cu.in. (901 CC)
2	Greater than 55 cu.in.(901 CC)

Type IV - Oil Filter Elements - Full Flow Design

<u>Class</u>	<u>Element Volume</u>
1	Up to 50 cu.in. (819 CC)
2	Greater than 50 cu.in. (819 CC) up to and including 140 cu.in. (2294 CC)
3	Greater than 140 cu.in.(2294 CC) up to and including 300 cu.in. (4916 cc)
4	Greater than 300 cu.in. (4916 CC) up to and including 800 cu.in. (13110 CC)

## II. APPLICABLE STANDARDS

The following documents of issue in effect on the date of the request for bids shall form a part of this specification to the extent described herein.

ISO 4548-12 Methods of Test for Full-Flow Lubricating Oil Filters for Internal Combustion Engines - Part 12: Filtration Efficiency Using Particle Counting, and Contaminant Retention Capacity

SAE-HS J806 (1995 or latest revision) - Lube Oil Filter Performance Test

International Organization for Standards documents may be obtained from: <http://www.iso.org/>  
Or

American National Standards Institute, Inc.  
Attn.: Customer Service Department  
25 W. 43rd Street, 4th Floor  
New York, NY 10036 or online at <http://www.ansi.org/>

Society of Automotive Engineers (SAE) documents may be obtained from:  
SAE World Headquarters  
400 Commonwealth Drive  
Warrendale, PA 15096-0001 or online at [www.sae.org](http://www.sae.org)

## III. REQUIREMENTS

### A. MATERIALS

1. Materials are to be uniform in quality and free from imperfections or defects which would affect the performance of the oil filters and elements.
2. The filter element shall not contain abrasives of any type and shall be so secured that it cannot be discharged into the lubricating system of the engine.
3. Neither the filters nor the elements shall contain any materials that disintegrate or dissolve in engine oil lubricating systems, mixtures, nor be detrimental to engine wear or operation.
4. The filter element shall be compatible with engine lubricating oil additives.
5. Coatings, such as paint on housings or shell, shall adhere satisfactorily and shall not be brittle, chip or flake off when in transit or when handled in installation.

### B. PERFORMANCE

TEST	FILTER TYPE			
	I	II	III	IV
AS SPECIFIED IN THE INVITATION FOR BIDS				
CAPACITY (GRAMS)				
HYD. PRESS. RESIST. (PSI) (MIN)	200	N/A	200	N/A
COLLAPSE PRESS. (PSI) (MIN)	N/A	N/A	75	75
ANTI-DRAIN BACK (ML/HR) (MAX)	36	N/A	36	N/A
IMPULSE, 0-100psi (CYCLES) (MIN)	N/A	N/A	25,000	N/A
OVERALL EFFICIENCY @ 20µm (MIN)	85	85	80	85

### C. ANTI-DRAINBACK DEVICE

When Type I and Type III filters (spin-on type) incorporate an anti-drainback valve to prevent oil leakage back through inlet ports or holes, they shall be tested in accordance with SAE-HS J806, and the leakage shall not exceed 36 ml/hr.

#### **D. Workmanship**

Materials are to be uniform in quality and free from imperfections or defects which would affect the performance of the oil filters and elements. The filter element shall not contain abrasives of any type and shall be so secured that it cannot be discharged into the lubricating system of the engine. Neither the filters nor the elements shall contain materials that disintegrate or dissolve in engine oil lubricating systems, mixtures, or are detrimental to engine wear or operation. The filter element shall be compatible with engine lubricating oil additives.

Coatings, such as paint on housings or shell, shall adhere satisfactorily and shall not be brittle, chip or flake off when in transit or when handled in installation. The inside surfaces and passages of all filters and elements shall be free from foreign matter such as dirt, scale, sand, metal chips, etc.

Gasketing shall be adequate to insure proper sealing of the filter and elements in application.

#### **IV. Warranty**

The contractor warrants to the owner that all filters and filter elements furnished under this specification will be new, of good material and workmanship, and agrees to replace promptly any filter or filter element which by reason of defective material or workmanship shall fail when installed properly and changed in accordance with the engine or equipment manufacturer's service instructions.

In addition, the contractor will repair any engine or equipment damage resulting from the malfunction of the filter or filter element, if it is installed and changed in accordance with the engine or equipment manufacturer's service instruction.

#### **V. SERVICE, PARTS, AND MANUALS**

This specification does not require any service, parts, or manuals to be supplied.

#### **VI. ACCEPTANCE EVALUATION AND QUALITY CONTROL**

##### **A. TEST CONDITIONS AND PROCEDURES**

All tests are to be in accordance with the procedures described in SAE-HS J806 or ISO 4548-12 test parameters.

##### **B. TEST RESULTS**

If required in the Invitation For Bids, test results for each filter listed in the Invitation For Bids shall be submitted with the bid.

The reported data shall include the following:

1. The manufacturer's filter or element numbers
2. Type and class according to this specification
3. Filter volume or element volume, as appropriate for the type
4. Retained capacity in grams
5. Results of mechanical and hydraulic strength tests
6. Results of the anti-drainback valve test
7. Impulse (cycles)
8. Overall efficiency @ 20µm

**C. RESPONSIBILITY FOR INSPECTION**

the supplier is responsible for the performance of all tests and inspection requirement as specified herein. the supplier may utilize his own facilities or any commercial laboratory acceptable to the state. the state reserves the right to perform any of the specifications and tests deemed necessary to assure that supplies and services conform to prescribed requirements.

**D. FAILURE**

Failure of a test sample to pass any specified examination or test may be cause for the state to refuse to accept subsequent lots until it has been proved to the satisfaction of the state that the faults revealed by the tests have been corrected.

**VII. DELIVERY AND PAYMENT**

Delivery of and payment for filters and filter elements purchased under this specification shall be in accordance with the terms and conditions of the invitation for bids. The contractor shall be responsible for any packing, packaging, or protection required to insure safe delivery in an undamaged condition. Packaging shall be as required in the Invitation For Bids.

**VIII. ORDERING DATA**

Purchasers should exercise any desired option offered herein and should specify the following in the requisition and request for bids:

1. Title, number and date of this specification
3. Types and classes of filters and filter elements desired
4. Filter capacity in grams.
5. If test results for each filter offered are to be submitted with the bid.
6. Packaging required (number of filters in package, package material, and how gaskets are to be packaged).