VERIFICATION PROGRAM POLICY

OPERATIONAL PROCEDURES

FEES & SCHEDULE

REQUIREMENTS FOR SHOP STANDARD VERIFICATION

SHOP STANDARD FORMS

VERIFICATION APPLICATION

VERIFICATION PROGRAM POLICY

OCTOBER 2022

A. SCOPE AND AUTHORITY

The Board of Directors of SMACNA Testing & Research Institute (Institute) assumes broad authority to carry out its functions including:

1. Approval of applications and contracts with participants and with testing laboratories and

2. Maintenance of the quality of programs

To carry out these functions, the Board of Directors assumes the following scope:

The Board of Directors approves all Verification Programs, recommends the development of Verification Programs, continually reviews current Verification Programs and suggests such changes and improvements in the administration procedure as will increase the value of the Programs to the industry and to the public.

B. POSITION ON DEVELOPMENT OF VERIFICATION PROGRAMS

It is the belief of the Board of Directors of the Institute that buyers of sheet metal components or products are entitled to components or products designed and built in compliance with proper industry standards.

The Board of Directors is fully aware that verification programs place an immediate and additional expense on the participants, but it feels very strongly, where there is a demonstrated need:

First - That, with care and forethought, a Verification Program can be developed and administered at a justifiable cost.

Second - That resulting increased public acceptance of industry products, recognition and improvement of our industry status and consequent improvement in quality would be a great and possible total offset to such added costs.

The dual purposes of the Institute Verification Program are to assure buyers that sheet metal products or systems meet identified and credible standards and, therefore, enhance buyer confidence in the performance of participating firms and to encourage fair competition in the market.

An important operation objective is to make each verification program sufficiently effective and credible that buyers will request Institute verification when making purchasing decisions.

The Board of Directors emphasizes that it considers Verification Programs only as a means of increasing industry use and public recognition of industry standards, and not as an end in themselves.

Moreover, the Board of Directors believes that, in order to accomplish this objective, any Verification Program must be of sufficient strength to enlist maximum participation and public confidence.

The Board of Directors believes that Verification Programs should primarily be directed at enduser satisfaction and should be developed whenever cost/benefit is justified. The customer is the person making the buying decision.

The Board of Directors will operate on the basis of Institute Policy which is detailed in the next section.

C. INSTITUTE POLICY ON VERIFICATION PROGRAMS

1. Recognizing its responsibility for leadership in the sheet metal and HVAC industry, the Institute will establish and maintain Verification Programs to promote the use of and compliance with SMACNA and other nationally recognized standards, including codes.

2. Programs shall be based on reasonable standards, published by nationally recognized bodies.

3. Programs shall require conformance to specific requirements of the referenced standard.

4. Standards shall not impose restrictions on design, and the terms of the program shall not contain any implication of restraint of trade. There shall also be no reference to prices.

5. Participation shall be open to all who can demonstrate that they can and will conform to the requirements of a verification program.

6. It is and shall be the basic policy of all Institute Verification Programs that testing shall be done in facilities of independent testing laboratories. This policy shall be the goal to be achieved in all verification programs. Any deviation shall only occur after the approval by the Institutes Board of Directors.

7. All Institute administered verification programs shall be administered by the Institute staff, under the overall supervision of the Board of Directors.

8. Staff administration shall be by the Executive Director with the advice of legal counsel as required.

9. Costs shall be borne entirely and equitably by the participant(s) in the Verification Program.

10. The income for support of each Verification Program shall be obtained from fees devised to cover all costs of operation except where the Institute Board of Directors acts otherwise

11. It shall be Institute policy to avoid when possible the inclusion of facility amortization expenses and obligations in testing contracts for verification programs. Testing organizations will be asked to submit bids or quote fees which do not include amortization charges, unless there is reason to believe that such a request will be disadvantageous to Institute.

Should a new or revised verification program require capital expenditures which a testing laboratory could not reasonably be expected to finance at its own risk, a proposal by the testing laboratory for Institute assistance in funding facility and equipment expenses may be considered. The following rules and guidelines will apply in such cases:

a. A fixed contractual liability which is due and payable in the event of contract termination by Institute should be avoided.

b. The Institute should accept an obligation for no more than 50% of the cost of one-time capital expenses related to initiation, revision or expansion of a testing program.

c. An amortization fee payable for each test will be established and identified as such, payable by each participant for each test conducted in the verification program.

d. Amortization fees will be structured to provide a reasonable expectation at the full amortization obligation will be retired within no more than five years.

e. The Institute Board of Directors will be required to approve all testing contracts which involve amortization charges, regardless of the termination provisions.

f. Programs will only be established for a firm actually manufacturing or constructing the product or system being verified.

OPERATIONAL PROCEDURES

A. Program Objective

An applying firm must define in detail the objective of a request and submit a written application with a processing fee.

B. Program Scope

1. The requesting firm must develop a detailed outline of the Verification scope or request that the Institute develop a verification scope. The applying firm, after agreement to an estimate for such a service, must assume responsibility for funding the program.

2. If the program involves testing or engineering analysis, the requesting firm must:

   - Identify the standards, if any, which are included;
   - Specify the objectives of the proposed test or analysis;
   - Specify in detail a proposed test methodology; including a list of fixed and variable factors, additional references and the results of prior tests (if the same or similar).

C. Estimate of Program Costs and Completion Dates

The Institute will develop an estimate of program costs and the timeframe necessary to complete a program. A program's cost estimate will include:

1. Institute Fees (One Time and/or Annual)
2. Meeting Costs (Travel and Related Costs)
3. Institute Direct and Indirect Staff Costs
4. Institute Markup

The participating firm(s) will be apprised of program cost estimates and approve same.

D. Program Approach and Authorization

All proposed programs, or significant revision to a program which exceed authorized dollars or involve a significant schedule delay, will be subject to the approval of the Board of Directors or their authorized representative.

E. Program Execution

Each program will be executed as follows:

1. Once a program is approved by the Board of Directors, a "Contract" may be executed with an outside independent contractor and/or certified test laboratory.
2. Contract administration and day-to-day contacts with outside contractors, test laboratories and Institute clients will be the primary responsibility of staff.

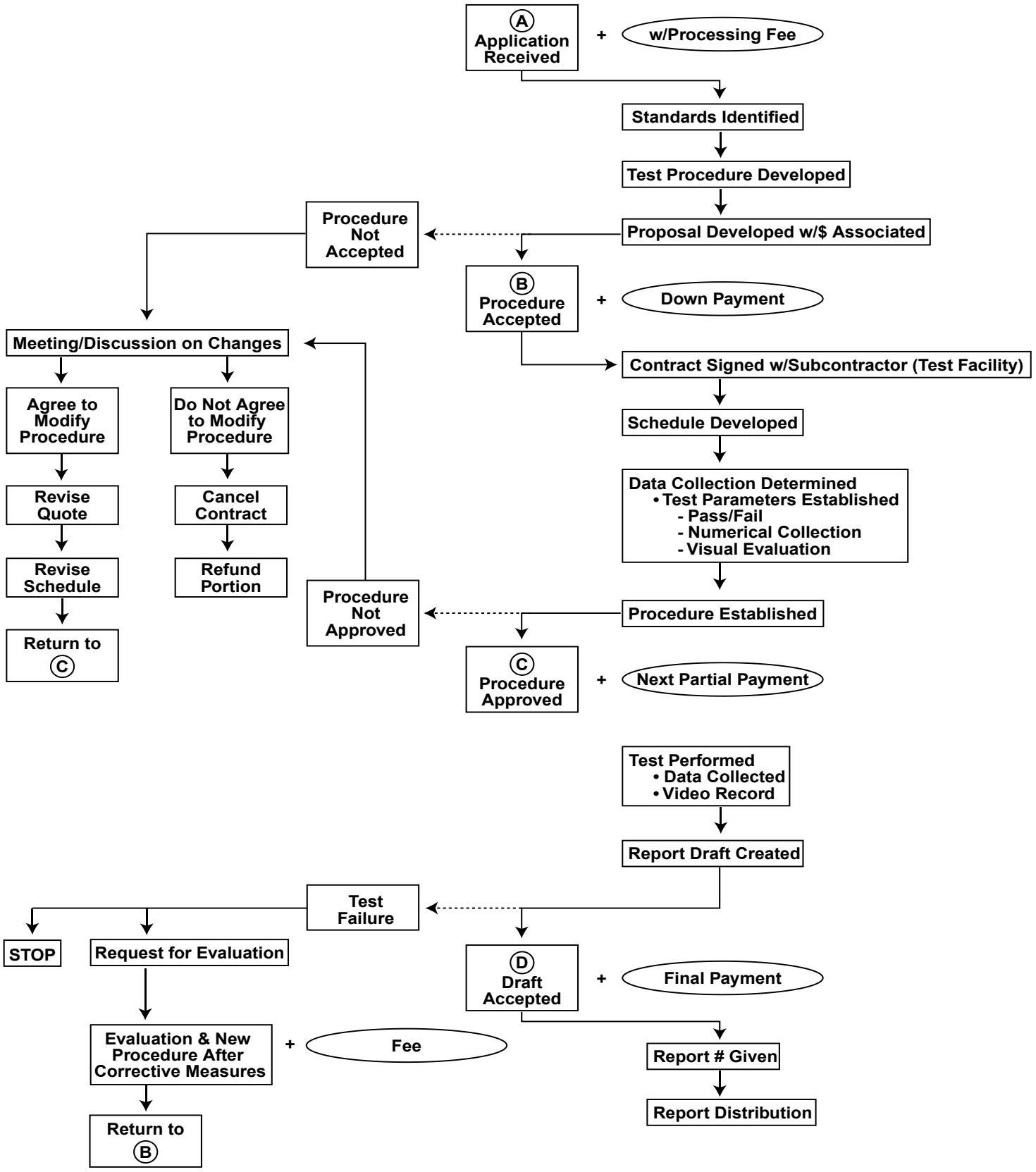
F. Program Completion

The outside contractor and independent laboratory will be required to identify a specific date for completion of the Program when the contract is executed. The contractor or laboratory must be appraised that failure to meet the date could result in cancellation of the agreement, removal from the Institute resource list and/or forfeiture of payment of fees due, should the Program's delay be due to contractor's or laboratory's failure to perform.

G. Operational Procedures

The attached flow chart represents the operational procedures which will be followed during the verification program.

Operational Procedures



SMACNA TESTING & RESEARCH INSTITUTE
FEES AND SCHEDULE

Coil Line or Flat Sheet Stock (ex. 4, 5 or 6')

• ½"–2" Pressure Class, consists of three pressure tables	$1,500
• 3"–4" Pressure Class, consists of two pressures tables	$1,000
• 6"–10" Pressure Class, consists of two pressure tables	$1,000

Rectangular, Round, and Flat Oval Duct Construction

2"–10" Pressure Class (Rectangular)	$500.00
2"–10" Pressure Class (Round)	$500.00
2"–10" Pressure Class (Flat Oval)	$500.00

The above pricing covers review of up to the total number of tables normally associated with each pressure class, regardless of the number of tables submitted for review.

Note that our pricing is on a per pressure class basis, which includes review of up to the maximum number of tables normally associated with that pressure class. Therefore, consider submitting for review the maximum number of tables in a pressure class at the same time, otherwise additional charges may be incurred.

-

Re-Verification shall be required upon issuance of a new HVAC Duct Construction Standard and/or modification to an existing verified shop standard. The Re-Verification fee shall be $2,000.

REQUIREMENTS FOR SHOP STANDARDS VERIFICATION

A. General Requirements

1. Shop standards must be in accordance with the 2020 Fourth Edition of the SMACNA HVAC Duct Construction Standards (4th edition HVAC-DCS).
2. Submittal forms must be completed to indicate all required elements of duct construction. (See prototype Form VFC-1). One form is required for each pressure class of construction to be verified. (Note: When tie rods are used as a joint or panel stiffener, separate forms may be required for positive and negative pressures due to the different requirements for tie rod size.)
3. Construction details submitted must be taken from the 2020 HVAC-DCS. Details on other methods of construction or those based upon proprietary products (i.e., slip on flange joints) will not be evaluated. (See Table 2-32 and Fig. 2-1.)
4. Nothing in the verification by the Institute shall be deemed to be an authorization by the Institute for deviation from local code requirements or project specifications.
5. By implication, a submittal for verification constitutes a declaration of intent to comply with all of the assembly details in the HVAC-DCS (e.g., the sealing requirements of Paragraph S1.9, the joint specification notes for Fig. 2-1 and the fitting reinforcements of S1.16).

B. Specific Requirements for Rectangular and Flat Oval Duct Construction

1. Duct construction shall be based on G-60 minimum thickness galvanized coating.
2. Duct panels shall be cross-broken or beaded where required in accordance with Figure 2-9.
3. Intermediate reinforcements shall have methods of attachment in accordance with Figure 2-12.
4. The rods and attachment shall be in accordance with Figure 2-5 and Figure 2-6.
5. Reinforcements on duct pressure classes of (+) 4" w.g. and over shall have end ties as indicated in Figures 2-10 and 2-12.

C. Notes

1. Shop standards are reviewed for structural requirements only.
2. Other required elements such as crossbreaking/beading, sealing, etc. are the responsibility of the fabricating contractor for compliance.

CONTRACTOR NAME
CITY, STATE

CONTRACTOR LOGO

	WG STATIC POS OR NEG	SHOP STANDARDS RECTANGULAR DUCT CONSTRUCTION								
DUCT DIMENSION	PANEL GA	JOINTS				TIE RODS			LONG. SEAM TYPE	REMARKS
		TYPE	SIZE	GA	SPACE	TYPE	+ SIZE	- SIZE		
		①	②		③	④	⑤	⑥	⑦	⑧
8 " dn										
9, 10"										
11, 12"										
13, 14"										
15, 16"										
17, 18"										
19, 20"										
21, 22"										
23, 24"										
25, 26"										
27, 28"										
29, 30"										
31-36"										
37-42"										
43-48"										
49-54"										
55-60"										
61-72"										
73-84"										
85-96"										
97-108"										
109-120"										

Notes:

① Indicates joint type from Figure 2-1 (i.e., T-1, T-10., etc.) (TDC/TDF may be used).

② Indicates joint size.

③ Indicates spacing between joints.

④ Indicates type of tie rod used.

⑤ Indicates the size of tie rod for positive pressure.

⑥ Indicates size of tie rod for negative pressure.

⑦ Indicates longitudinal seam from Figure 2-2 (i.e., L-1, L-3, etc.)

⑧ Bolded line indicates application range limit for midpanel tie rods (MPT) in the 2020 HVAC-DCS.

CONTRACTOR NAME
CITY, STATE

CONTRACTOR LOGO

	WG STATIC POS OR NEG	SHOP STANDARDS RECTANGULAR DUCT CONSTRUCTION				
DUCT DIMENSION	PANEL GA	INTERMEDIATE REINFORCEMENTS				REMARKS
		TYPE	+ SIZE	- SIZE	SPACING	
		①	②	③	④	⑤
8 " dn						
9, 10"						
11, 12"						
13, 14"						
15, 16"						
17, 18"						
19, 20"						
21, 22"						
23, 24"						
25, 26"						
27, 28"						
29, 30"						
31-36"						
37-42"						
43-48"						
49-54"						
55-60"						
61-72"						
73-84"						
85-96"						
97-108"						
109-120"						

Notes:

① Indicates intermediate reinforcement type (A-Angle C Channel) Z-Zee H-Hat Section TR - Tie Rod in stiffener MPT Midpanel Tie Rod.

② Indicates size of intermediate stiffener for positive pressure.

③ Indicates size of intermediate stiffener for negative pressure.

④ Indicates location of intermediate stiffener.

⑤ Bolded line indicates application range limit for midpanel tie rods (MPT) in the 2020 HVAC-DCS.

SMACNA Testing & Research INSTITUTE	**Company Name & Address**	**Company Logo**

	WG STATIC POSITIVE	**SHOP STANDARDS** **ROUND DUCT CONSTRUCTION**

DUCT DIAMETER	SPIRAL SEAM					LONG. SEAM				
	SEAM		REINFORCEMENT			SEAM		REINFORCEMENT		
	TYPE ①	GA.	JOINT TYPE ②	REIN. SIZE ③	REIN. SPACING ④	TYPE ①	GA.	JOINT TYPE ②	REIN. SIZE ③	REIN. SPACING ④
3" - 6"										
7" - 8”										
9” -10”										
11” - 12”										
13” - 14”										
15” - 16”										
17” - 18”										
19” - 26”										
27” - 36”										
37” - 50”										
51” - 60”										
61” - 84”										

Notes:

① Indicates type of seam used (RL-1, RL-2, RL-6A, RL-8, etc.)

② Indicates reinforcement angle sizes for standard reinforcement not as companion flange connection angles.

③ Indicates reinforcement angles used for companion flange joints as well as reinforcement.

④ Indicates reinforcement angle flange spacing interval in feet.

Companion flange angle sizes:

A = 1”x1” x 1/8”; B = 1 ¼” x 1 ¼” x 3/16” ; C = 1 ½” x 1 ½” x 3/16” ; D = 1 ½” x 1 ½” x ¼” ; E = 2” x 2” x 3/16” ;
F = 2” x 2” x ¼” ; G = 2 ½” x 2 ½” x 3/16” ; H = 3” x 3” x ¼”

SMACNA Testing & Research INSTITUTE	**Company Name & Address**	**Company Logo**

	WG STATIC NEGATIVE	**SHOP STANDARDS** **ROUND DUCT CONSTRUCTION**

DUCT DIAMETER	SPIRAL SEAM					LONG. SEAM				
	SEAM		REINFORCEMENT			SEAM		REINFORCEMENT		
	TYPE ①	GA.	JOINT TYPE ②	REIN. SIZE ③	REIN SPACING ④	TYPE ①	GA.	JOINT TYPE ②	REIN. SIZE ③	REIN. SPACING ④
3" - 6"										
7"										
8"										
9"										
10"										
11"										
12"										
13"										
14"										
15"										
16"										
17"										
18"										
19"										
20"										
21"										
22"										
23"										
24"										
25" - 26"										
27" - 29"										
30"										
31" - 33"										
34"										
35" - 36"										
37" - 42"										
43" - 48"										
49" - 60"										
61" - 72"										

Notes:

① Indicates type of seam used (RL-1, RL-2, RL-6A, RL-8, etc.)

② Indicates reinforcement angle sizes for standard reinforcement not as companion flange connection angles.

③ Indicates reinforcement angles used for companion flange joints as well as reinforcement.

④ Indicates reinforcement angle flange spacing interval in feet.

Companion flange angle sizes:

A = 1”x1” x 1/8”; B = 1 ¼” x 1 ¼” x 3/16” ; C = 1 ½” x 1 ½” x 3/16”; D = 1 ½” x 1 ½” x ¼” ; E = 2” x 2” x 3/16”

F = 2” x 2” x ¼” ; G = 2 ½” x 2 ½” x 3/16” ; H = 3” x 3” x ¼”

CONTRACTOR NAME
CITY, STATE

CONTRACTOR LOGO

SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION

1/2 in. w.g. +/–

Flat-Span (in.)	Unreinforced	12 ft. reinforcement spacing		6 ft. reinforcement spacing			3 ft. reinforcement spacing		
	Minimum Gage	External Reinforcement Class	Minimum Gage	External Reinforcement Class	Minimum Gage	Optional Tie rod(s)	External Reinforcement Class	Minimum Gage	Optional Tie rod(s)
1	2	3	4	5	6	7	8	9	10
1 – 10									
11 – 12									
13 – 14									
15 – 16									
17 – 18									
19 – 20									
21 – 22									
23 – 24									
25 – 26									
27 – 28									
29 – 30									
31 – 32									
33 – 34									
35 – 36									
37 – 38									
39 – 40									
41 – 42									
43 – 44									
45 – 46									
47 – 48									
49 – 50									
51 – 52									
53 – 54									
55 – 56									
57 – 58									
59 – 60									
61 – 62									
63 – 64									
65 – 66									
67 – 68									
69 – 70									
71 – 72									

Notes:

Tables are limited to minor dimensions up to 30 inches

= No Solution Provided

Negative pressure applications are limited to the following options:

Use the unreinforced option
Use the internal (tie rod) option
Use a male flange or ring that meets the reinforcement class at the required spacing
Use external reinforcement meeting the reinforcement class in conjunction with an internal support (tie rod) type 1 per Figure 3-7
A combination of the above options can be used.

SMACNA TESTING & RESEARCH INSTITUTE

P.O. BOX 221230 ● CHANTILLY, VIRGINIA 20153-1230 ● (703) 803-2980 FAX (703) 803-3732

VERIFICATION OR RESEARCH APPLICATION

Name of Applicant (Firm): _____

Test and/or Research Subject: _____

Mailing Address: _____
(Address should be exactly as it should appear on the report/verification certificate.)

City, State, Zip: _____ Country: _____

Principal Contact: _____

Phone: _____ Fax Number: _____

E-Mail Address: _____

Check whether application is for:
- ☐ Initial request
- ☐ Re-examination of previous request with change
- ☐ Re-examination of previous request without change or with editorial change
- ☐ Supplementary request

1. Describe in detail the purpose of the verification Test or Research (use additional pages as necessary):

_____

_____

_____

_____

_____

2. Identify Standard(s) and/or Code(s) associated with purpose of verification. If none, please so state:

_____

_____

_____

_____

3. Has the same or similar test or research been conducted before? ☐ Yes* ☐ No *If yes, please attach results.

4. Specify in detail verification procedure to be used (use additional pages as necessary):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. Request that the Institute review the procedure or develop a procedure. ☐ Yes ☐ No

6. Have you identified a specific laboratory to conduct the test? ☐ Yes ☐ No

   Name and address of laboratory: _____

   _____

   _____

The Institute's procedures, policies and licensing arrangement have been reviewed and are understood and accepted.

_____ _____

Signature Date