



NEU: AN ACI CENTER OF EXCELLENCE FOR CARBON NEUTRAL CONCRETE™ PROCEDURES FOR VALIDATION/VERIFICATION PROGRAM

1.0 INTRODUCTION

NEU's Validation/Verification Program is developed to assess the technological/environmental information claims of existing or innovative products/technologies associated with low-carbon cement and concrete, and to issue third-party validation/verification statements as an outcome of the assessments. NEU's Validation/Verification Program assesses the technological/environmental information claims for verification or validation purposes and does not provide endorsement, recommendation, or consultation.

2.0 DEFINITIONS

- 2.1 Validation/Verification Program:** The Validation/Verification program, a conformity assessment process, which follows general requirements of the ISO/IEC 17029:2019 as a reference document, provides a decision on the confirmation of the technological/environmental information claim declared by a client. The decision on the veracity of the technological/environmental information claim is then issued as either a validation statement (validation of a future outcome), or a verification statement (verification of an historical claim), depending on the assessment scope and evidence submitted. The Validation/Verification Program provides conformity assessment as validation or verification; however, it does not result in product characterization, or product certification for building code compliance, nor requires continuous surveillance examinations.
- 2.2 Claim:** The technological/environmental information statement declared by the client and is the object of the Validation/Verification Program. Note: A single technology may have more than one claim.
- 2.3 Validation:** Assessing the reasonableness of the claims, assumptions, limitations, and methods that support a technological/environmental claim and applies to the outcome of future activities.
- 2.4 Verification:** Assessing a technological/environmental information claim based on historical data/information to determine whether the statement is materially correct and conforms to the verification criteria.
- 2.5 Levels of Assurance:** Assurance is provided in the verification statements to give confidence to stakeholders and parties interested in the claim. The levels of assurance in a statement shall be either a reasonable level of assurance or a limited level of assurance. The requirements for each level of assurance are defined in each NEU Assessment Scheme corresponding to the type of claim assessment (see Section 5.3 of this document).
- 2.5 Validation/Verification Time Period:** The claim defined in Section 2.2 of this document can represent a situation at a single point in time or over a period of time. The validation/verification assessment activities covers this time period, and it is reported in the final NEU statement.
- 2.6 Assessment Scheme:** Rules, procedures and management for carrying out validation or verification assessment activities. Also see Section 5.3 of this document.

2.7 Subject Matter Expert (SME): An individual with extensive and specialized knowledge in a particular field, who demonstrated compliance with the NEU Quality Management System (QMS) in terms of impartiality, confidentiality and competency requirements for the scope of the task they are involved in.

3.0 VALIDATION/VERIFICATION CLAIMS

NEU will accept technological/environmental information statements (claims) that are within one or more of the categories provided in Section 4.0 of this document. The claim(s) presented by the client shall be in writing and shall be specific and measurable. At the sole discretion of the NEU Executive Director, NEU may also consider accepting technological/environmental claims that are not within the categories listed in Section 4.0 of this document. See Section 2.2 for the definition of a claim.

4.0 VALIDATION AND VERIFICATION ENVIRONMENTAL CLAIM CATEGORIES

The product/technology categories for NEU Validation/Verification Program include:

- Cement or cementitious materials
- Concrete and concrete products
- Concrete aggregates
- Admixtures
- Technologies that utilize carbon into concrete or concrete making materials
- Concrete reinforcement
- Technologies for mixing and proportioning of concrete
- Others, subject to the approval of NEU Executive Director

5.0 PRE-ENGAGEMENT ACTIVITIES

5.1 Applications:

Applications shall be submitted by the clients using the form available on the NEU website (www.neuconcrete.org). Applications shall include all requested information, including the technological/environmental claim(s) to be assessed, supporting documents and technical evidence (test reports), environmental product declarations (EPD) or life cycle assessment (LCA) reports, and all other applicable documents in support of their claim(s). Test reports (technical evidence) submitted for NEU's review shall comply with the provisions in Section 5.4 of this document. All information provided shall be treated as confidential by NEU. Applications shall be signed by the person(s) having authority in the company/entity requesting the Validation/Verification statement (VVS) from NEU. Eligible applications shall be reviewed by the NEU Validation/Verification Team (VVT), and a written notice of acceptance shall be e-mailed to the client. Multiple claims requested under one application shall be considered in one VVS when supported by the same set of evidence under the same category per Section 4.0 of the NEU procedures. In all other cases, a separate VVS shall be issued for each separate claim. In the case of multiple claims requiring a separate VVS, a separate application will be required for each claim.

5.2 Description of the technological/environmental claims to be validated/verified:

Refer to Section 3.0 of this document for the requirements of a technological/environmental claim.

5.3 Identification of the technical criteria to be validated/verified against:

A Validation/Verification Assessment Scheme following the general requirements of the ISO/IEC 17029:2019 shall be developed by NEU defining the technical criteria for validating or verifying a claim. A

Validation/Verification Assessment Scheme shall establish the set of rules and procedures to carry out validation/verification activities and shall contain the following items: scope of validation/verification activity, specific competence criteria for the Validation/Verification Team, which may include subject-matter-experts (SMEs), process for validation or verification, evidence gathering activities, and reporting of the VVS after completion of the validation or verification process. The client shall also agree by signing the application that, where needed, NEU may subcontract a portion of the criteria development to subject matter experts (SMEs).

5.4 Description of the supporting data and identification of the source:

Where validation or verification activity requires review of testing data, the following sections shall apply:

- a) Testing laboratories producing test reports containing test results shall be accredited by either an accreditation body which is signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA), or by AASHTO Materials Reference Laboratory (AMRL) in accordance with ISO/IEC 17025-2017 *General Requirements for the Competence of Testing and Calibration Laboratories*. The type of testing under consideration shall be supported by the scope of the testing laboratory's accreditation certificate.
- b) In cases that test reports contain test results obtained at a testing laboratory that is not accredited as described in 5.4(a), NEU may accept the test reports from the testing laboratory if:
 - i. The testing laboratory provides quality control procedures for review by the NEU Validation/Verification Team (VVT) for comparison to ISO/IEC 17025-2017 standard provisions for equal or more stringent requirements,
 - ii. The quality control procedures in item "i" are accepted by the VVT.
 - iii. Additional review fee per footnote 6 of Table 1 of this document applies.
- c) When technical evidence includes structural design calculations or other structural design documents such as technical plans, these documents shall be signed and sealed by a licensed design professional (also known as registered design professional).
- d) In cases when the client does not have full ownership of the evidence (i.e. technical data), evidence shall be considered for review by NEU only if a "transfer of data" form is completed between the NEU client and the owner of the data. This form can be obtained from NEU via info@neuconcrete.org.
- e) All test reports/documentation submitted for NEU review are preferred to be in the English language. If there is a test report/document submitted for NEU to review in a language other than English, NEU may require them to be translated into English. Additional fees may apply if NEU provides the translation services according to footnote 6 of Table 1 of this document.
- f) If technological/environmental claim is in regard to a proprietary product, evidence of compliance with a specification or standard (i.e. test report, listing report, code-compliance report) must be submitted along with the application. If the proprietary product is an innovative product which does not have a specification, standard or building code requirements yet, the issued NEU statement will include a disclaimer that NEU's assessment of product is only limited to the scope of the technological/environmental claim submitted, and other performance aspects such as, but not limited to mechanical, structural, durability and fire are outside the scope of the NEU assessment.

6.0 ENGAGEMENT ACTIVITIES

Each application shall be accompanied by the appropriate application fee as given in Table 1 of this document for project to be assigned and initiated by NEU.

Each client seeking a VVS from NEU shall acknowledge their review of the NEU Procedures presented herein and express their acceptance by signing the application. The client shall also agree by signing the application that, where needed, NEU may consider subcontracting a portion of the project undertaken by NEU to subject matter experts (SMEs).

After reviewing and accepting the application, NEU shall prepare a Statement of Work (SOW) form and then transmit the SOW form to the client electronically for approval. The SOW form shall outline the company information, requested technological/environmental claim(s), applicable technical criteria, acknowledgement of evidence received, and an estimated total fee. The SOW form shall specify if a validation or verification assessment will be conducted. Some validation or verification claims may require site visits to enable needed evidence gathering activities, or higher assurance. In cases when a site visit is required, this requirement shall be discussed with the client, and SOW shall provide site visit details and estimated costs. The final invoice shall include actual travel costs, which may exceed estimated travel costs.

Table 1- V/V Process Publication Fees^{1,2,3}

Application fee	Fee for each additional company name mentioned in the VVS⁴	Fee for review of each claim⁵	High complexity review fee⁶	Reissue fee on NEU web site for each year after initial year⁷
\$7,500	\$2,000	\$5,000	\$5,000	\$5,000

¹ If review in accordance with Section 5.4(b) of this document is required, an additional fee may be required, which is to be determined by the NEU Executive Director.

² When a validation/verification activity requires site visits, additional fee requirements for traveling will be discussed with the client.

³ Application fee covers the initiation of the project. Application fee is nonrefundable.

⁴ Additional company name applies to cases when a company is selling another company's product. An example is, Company A produces Product X in Europe, and Company B sells the same Product X in the USA.

⁵ The \$5,000 fee is the review fee for each claim to be verified or validated.

⁶ High-complexity review fee applies for each workday if review of evidence, and administrative work for preparation of the VVS exceeds 8-hour workday.

⁷ Initial publication fee covers the cost of issuing the statement on NEU web site for the first year. After the first year, reissue fees will be charged yearly to maintain the VVS on NEU web site. Applicant will be informed 3 months in advance of the completion of the first year that the renewal date is approaching.

7.0 REVIEW OF THE CLAIMS AND EVIDENCE

NEU shall perform the review of evidence submitted after the SOW is finalized and approved by the client in writing (i.e., an e-mail). NEU shall consider all evidence and information received from the client as proprietary and will enter into a Non-Disclosure Agreement (NDA) if requested by the client. During the review process, NEU may request additional evidence as needed and shall inform the client if the material submitted does not provide sufficient evidence for issuance of the VVS. The flowchart as shown in Figure 1 of this document summarizes the Validation/Verification Program process. NEU reserves the right to cancel the V/V Program application if:

(1) There has been no activity from the client (e.g., no communication) for over 24 months. After 24 months of inactivity from the client, NEU shall send a notice of cancellation to the client within 3 months (60 days) due to inactivity.

(2) Client is unable to provide sufficient evidence to support the claim, as required by the claim-specific NEU Assessment Scheme or technical criteria.

In either case 1 or 2 above, the application fee is nonrefundable. Other paid fees may be refunded when requested by the client at the discretion of the NEU Executive Director.

8.0 DECISION & ISSUE OF THE VALIDATION/VERIFICATION STATEMENTS (VVS)

Upon successful completion of the assessment, NEU will issue a draft Validation/Verification Statement (VVS) and share it with the main contact identified by the client, with an issue date, and the time period associated with the claim that was assessed (i.e., validation or verification time period). The client shall have a maximum of fifteen (15) days to review the draft VVS and request any clarifications or additional assessment. Depending on the scope of the additional assessment requested, additional fees may apply. If no clarifications or additional assessment are requested within fifteen (15) days of completion of the draft statement, NEU will issue a final statement and post it on the NEU web site.

If the client requests additional assessment of the same claim after the VVS is issued and posted on the NEU web site, a new application shall be submitted by the client, and it will be processed in accordance with Section 6 of this document. The basic application fee shall be waived and the cost for the additional assessment will be provided to the client for this specific situation. Upon receipt of the client's written approval, an additional assessment will be carried out and an addendum to the draft VVS will be issued. The client shall have fifteen (15) days to review the draft VVS addendum and request clarifications. If no clarifications are requested within fifteen (15) days of completion of the draft statement, NEU will issue a final statement and post it on NEU web site. Project will be cancelled without publication if client does not accept the final draft statement, or refuse to pay the final dues.

9.0 EDITORIAL REVISIONS TO THE EXISTING VALIDATION/VERIFICATION STATEMENTS (VVS)

Clients who have received a VVS from NEU may seek editorial amendments to their VVS any time after the original publication date and posting on the NEU web site, such as new company name, new address, new contact information, etc. To request editorial revision, the client must submit a new application explaining the requested editorial amendments and the application fee as listed in Table 2. Amendments must be editorial in nature with no technical assessment need.

Table 2 - Amendment Fee Schedule

Editorial revision fee^{1,2}
\$7,500

¹ Fee is nonrefundable.

² Editorial revision is simple corrections to VVS, such as address change, contact name change, or any other editorial change that does not require new data or data review or technical consideration.

10.0 CONSIDERATION OF FACTS AFTER ISSUE OF VALIDATION/VERIFICATION STATEMENTS

NEU reserves the right to act if any new information or new data indicating a fact not covered in the published statement, or any material discrepancy in the evidence upon which the VVS was based is

obtained by NEU after the issuance of the final VVS. Possible actions may include suspension or cancellation of the VVS.

11.0 USE OF NEU NAME AND LOGO

Use of the NEU name, logo and unique VVS identification number are only assigned to the client. Misuse of NEU name, logo or NEU unique assessment identification number and misrepresentation of validated/verified claims are prohibited. Violation may cause cancellation of the VVS, and/or further actions. If suspension or cancellation of the VVS shall occur as described in section 10 of this document, or for any other reason, the client shall immediately cease and desist from using the NEU name, logo and unique VVS identification number in any public communications or documents.

12.0 HANDLING OF COMPLAINTS OR APPEALS

A complaint or an appeal concerning a published VVS can be filed with the NEU Executive Director in writing (i.e., e-mail). NEU will inform the client that a complaint or an appeal has been received, when applicable. By signing the application and entering into the validation/verification process, the client agrees that NEU has a right to investigate all complaints. Copies of NEU's Handling of Complaints and Appeals procedures are available upon request.

13.0 VALIDATION/VERIFICATION STATEMENT REVOKATION AND MODIFICATION BY NEU

With cause, NEU may revoke or modify a VVS at any time after the issuance. NEU shall provide written notice to the client before revoking or modifying a VVS, including the type of action being taken and the reason for the action. Written notification shall be provided to the client (i.e., by e-mail). The revocation or modification of the VVS shall take effect immediately after NEU provides written notification to the client unless a subsequent time specified by NEU is specified in the written notification. Appeals to NEU decisions can be in accordance with Section 12 of this document.

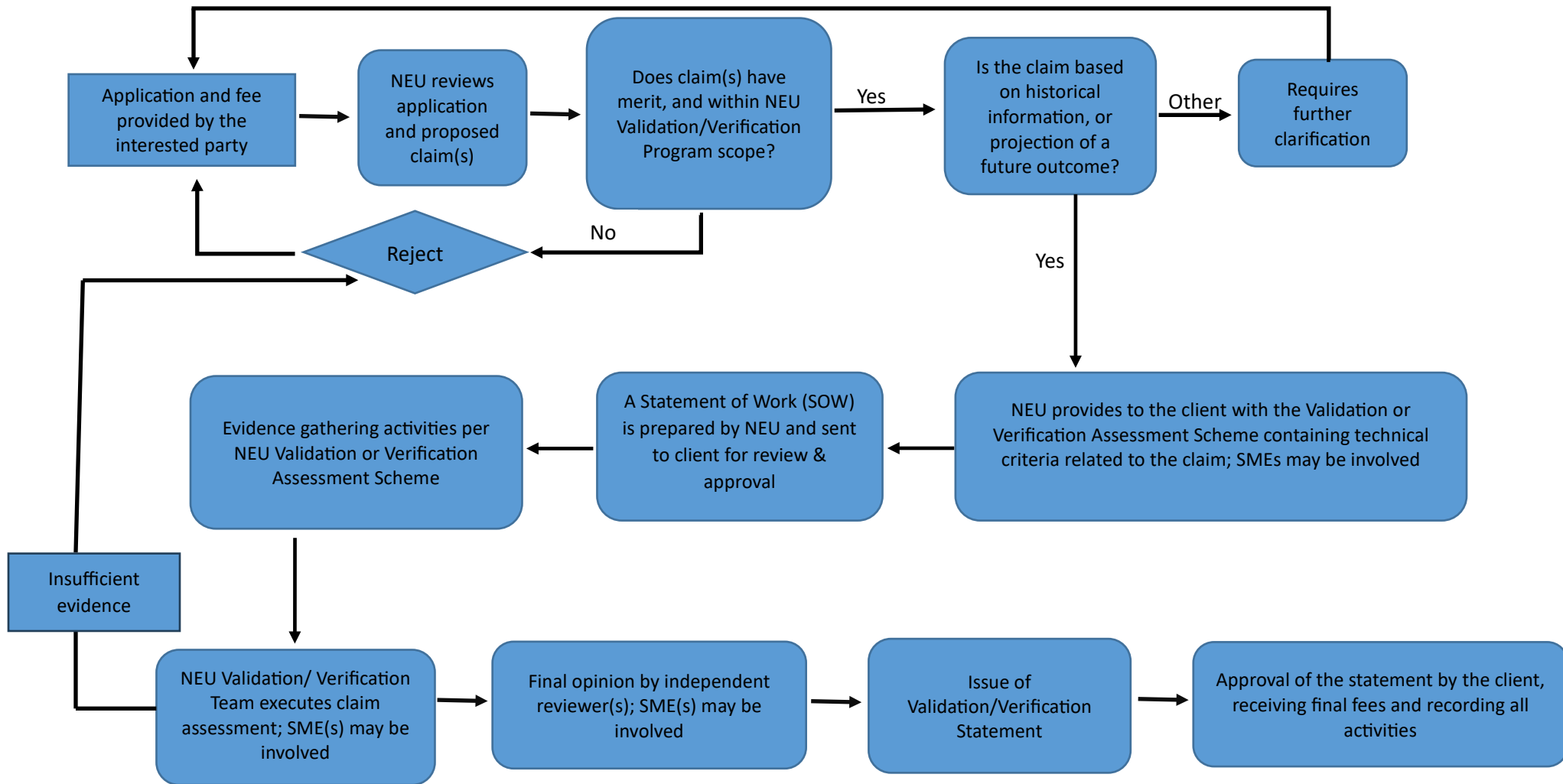


FIGURE 1- Overview of the NEU Validation/Verification Program Process.