

NEU Validation/Verification Program



Dean Frank, P.E.

Executive Director at NEU: An
ACI Center of Excellence for
Carbon Neutral Concrete

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An ACI Center of Excellence
for Carbon Neutral Concrete

What's a professional to do?

- Overwhelming amount of information.
- Concrete is a multi-faceted industry.
- Various professional knowledge levels from both the supply and demand side of the industry.
- End users may know very little.
- Need for accelerated adoption of new materials and technologies.





Vision

The Center envisions a concrete industry where all stakeholders have access to technologies and the knowledge needed to effectively and safely produce and place carbon-neutral concrete and concrete products in the built environment.

Mission

To drive education, awareness, and adoption of the use of carbon-neutral concrete materials and technologies.



Vision

The Center envisions a concrete industry where all stakeholders have access to technologies and the knowledge needed to effectively and safely produce and place carbon-neutral concrete and concrete products in the built environment.

Mission

To drive education, awareness, and **APPROPRIATE** adoption of the use of carbon-neutral concrete materials and technologies.

ACI Center of Excellence for Carbon-Neutral Concrete

Core Functions

- Material and Technology Validation/Verification Program
- Technology Transfer and Professional Development
- Advocacy and Technical Support
- ACI Committee Assistance
- Technology Acceleration
- Development of Research Projects
- International and Student Outreach



NEU Material and Technology Validation / Verification Program

- With increasing focus on climate change, there are many companies making claims in the marketplace to position themselves and their products as possible solutions to reducing carbon emissions.
- As a result, this environmental information is increasingly being used for decision-making by individuals and organizations.

NEU Material and Technology Validation / Verification Program

- However, individuals and organizations using this information want to know if the environmental information being claimed is accurate and reliable.
- In other words, they are looking for assurance based on historical information, known as verification, and validation of these statements based on reasonable assumptions and methods.

NEU Material and Technology Validation / Verification Program

What is Validation?

- Validation: Process for evaluating reasonableness of the assumptions, limitations and methods that support an environmental statement about the outcome of future activities
- Verification: Process for evaluating an environmental information statement based on historical data and information to determine whether the statement is materially correct and conforms to relevant criteria
- In short...we are looking to increase assurance in environmental statements from material and technology manufacturers



NEU Material and Technology Validation / Verification Program



What is Validation/Verification?

- The NEU Validation/Verification Program provides an independent peer review of carbon reduction technologies.
- The Validation/Verification process is conducted by Subject Matter Experts (SMEs) to evaluate the accuracy of relevant technical claims related to reduction of carbon in concrete.
- NEU's advantage is its proximity to a pool of concrete experts who participate in ACI committees, etc.

NEU Material and Technology Validation / Verification Program

Governing Standards:

- The requirements for the Validation/Verification process are provided in the following international standards:
 - **ISO/IEC 17029:2019**, Conformity Assessment – General principles and requirements for validation and verification bodies
 - **CSA/ISO 14064-3:2020**, Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

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Governing Standards:

- The requirements for the Validation/Verification process are provided in the following international standards:
 - **ISO 14065:2021**, General principles and requirements for bodies validating and verifying environmental information
 - **ISO 14066:2011**, Greenhouse gasses – Competence requirements for greenhouse gas validation teams and verification teams

NEU Material and Technology Validation / Verification Program

What is Validation / Verification?

- **ISO/IEC 17029:2019**, Conformity Assessment – General principles and requirements for validation and verification bodies
 - ISO 17000-series conformity assessment standard
 - Similar to other 17000-series standards (ISO/IEC 17020, 17021, 17024, 17025, 17065, etc.)

FINAL DRAFT INTERNATIONAL STANDARD ISO/IEC FDIS 17029

ISO/CASCO
Secretariat: ISO
Voting begins on:
2019-07-10
Voting terminates on:
2019-09-04

Conformity assessment — General principles and requirements for validation and verification bodies

Évaluation de la conformité — Exigences et principes généraux pour les organismes de validation et de vérification

This draft is submitted to a parallel vote in ISO and in IEC.

ISO/CEN PARALLEL PROCESSING

MEMBERS OF THIS DRAFT ARE INVITED TO COMMENT WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PRESENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

Reference number
ISO/IEC FDIS 17029:2019(E)

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Common ISO 17000-Series Requirements:

- Impartiality and Confidentiality
- Risk management
- Minimum Personnel competency requirements
- Openness and fairness
- Responsiveness to complaints and appeals
- Internal audits, Management Reviews
- Corrective Action Process
- Documented Management System

FINAL DRAFT	INTERNATIONAL STANDARD	ISO/IEC FDIS 17029
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NEU Material and Technology Validation / Verification Program



Validation / Verification Process:

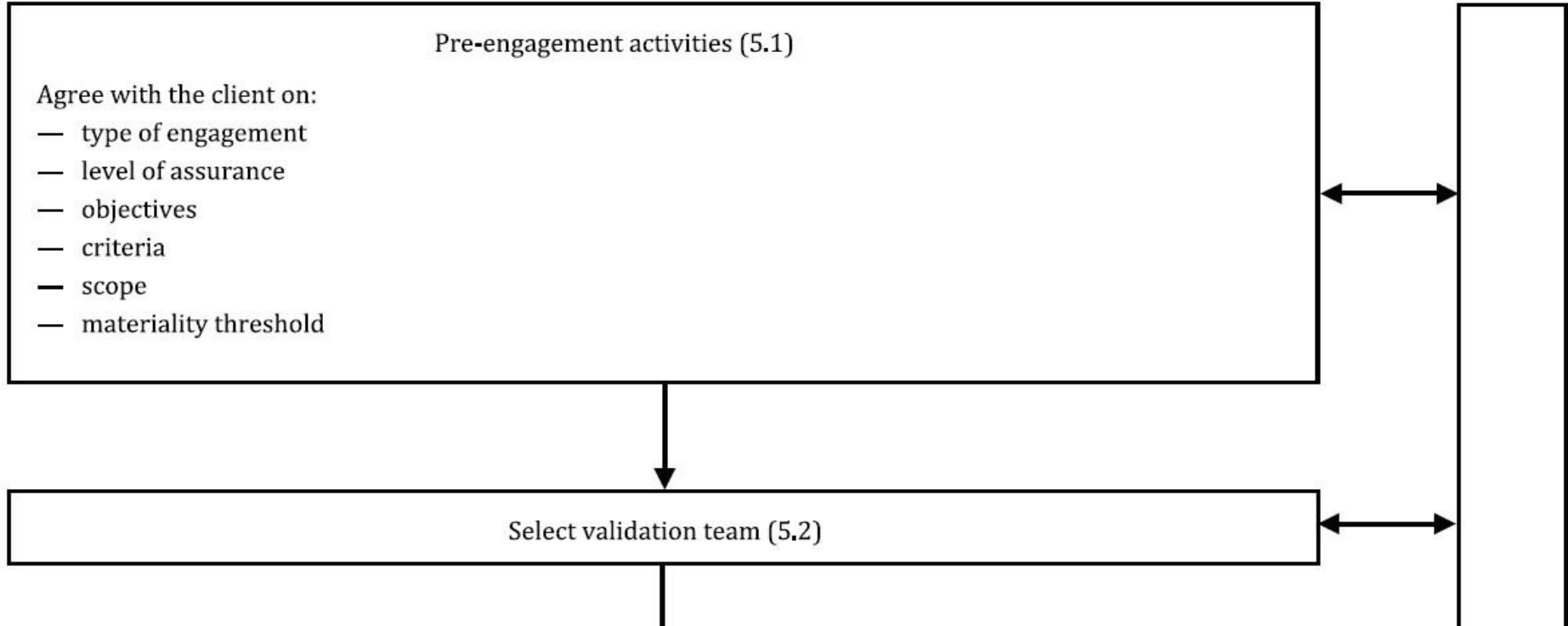
- Organizations may submit applications to the validation process to verify specific environmental claims of their products.
 - Taking initial Applications now
- Validation / Verification Team members will be assigned to review the application (will typically be 2 or 3 SMEs + a reviewer)
- Upon application acceptance, a formal agreement will be established between NEU and the client, specifying the scope of the validation/verification process, criteria to be evaluated, fees, etc.

NEU Material and Technology Validation / Verification Program

Validation / Verification Process:

- Validation / Verification Team will conduct the validation /verification
- Issue a report indicating the degree of assurance the team has in the environmental statement
 - Qualitative statement or no statement at all
 - Not an approval or certification
- Report will be reviewed by independent reviewer
 - Revisions may be requested of the Validation/Verification Team
- Final report issued to the client
 - Generally, the contents of the report are confidential

Application/Agreement Phase



Planning Phase



Validation planning (7.1)

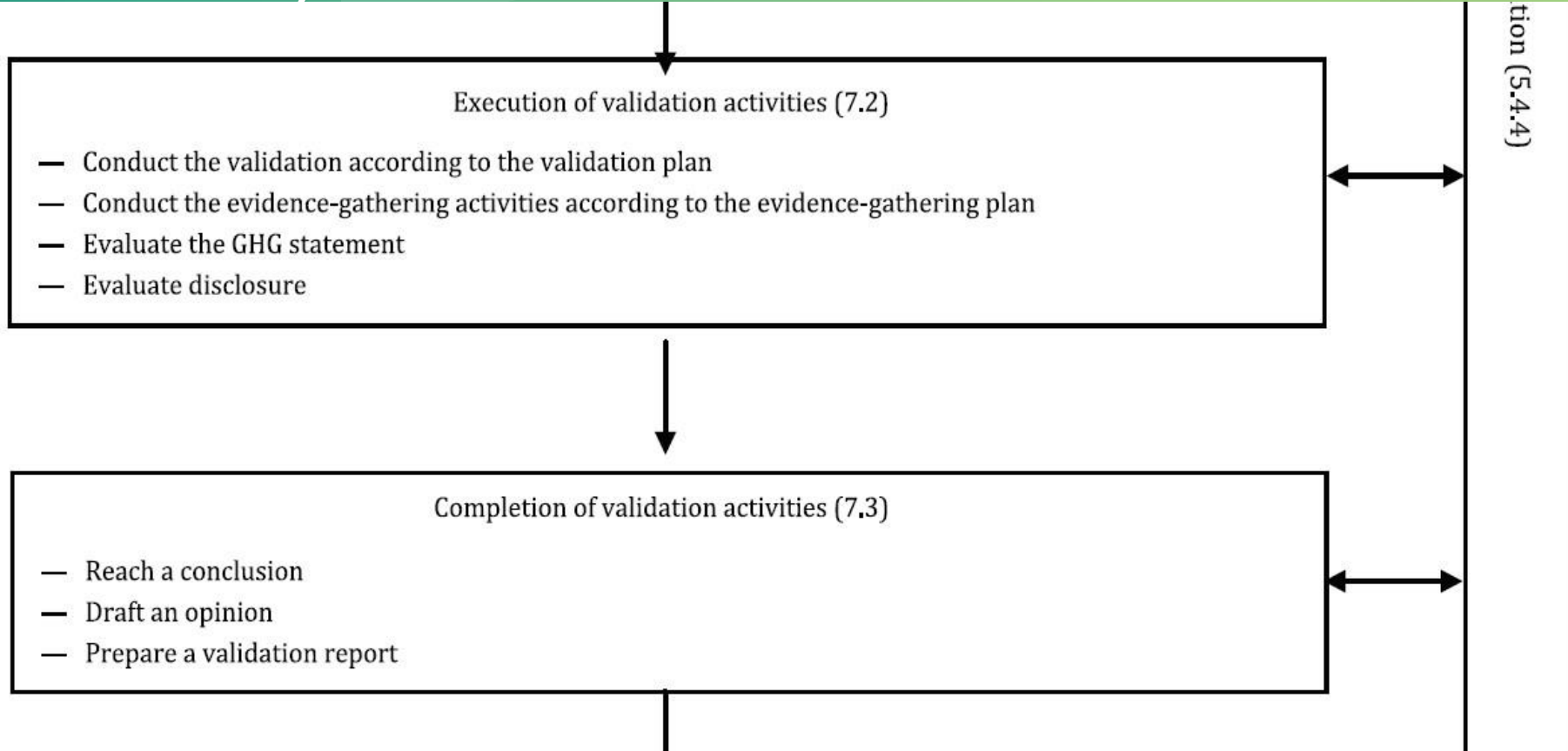
- Perform strategic analysis
- Identify materiality thresholds
- Test estimates
- Assess GHG-related activity characteristics
- Develop validation plan
- Develop evidence-gathering plan
- Approve the validation and evidence-gathering plans
- Amend the validation and evidence-gathering plan, if required



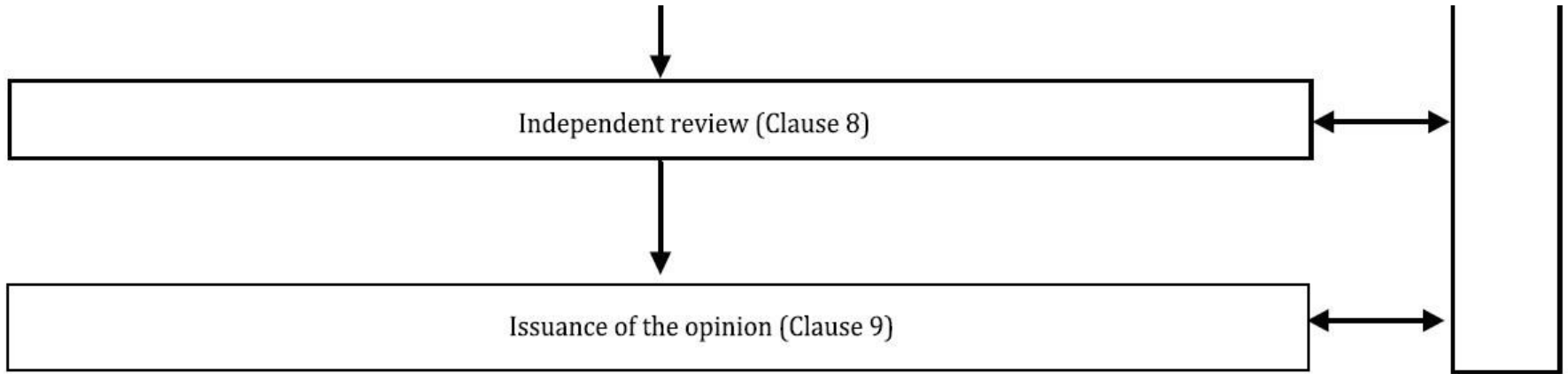
Verification documentation



Validation/Verification Phase



Independent Review and Issue of Opinion Phase



NEU Material and Technology Validation / Verification Program



Validation / Verification Process:

- Technology Categories include, but no limited to:
 - Cementitious products, alternative cements, SCMs
 - Manufactured/synthetic/recycled aggregates
 - CCUS technologies
 - Admixtures, nanoparticles, AI/machine learning, etc.
- No minimum Technology Readiness Level (TRL) is required
 - Validation Statement will include transparent, qualifying statements regarding the amount, manufacturing facility, material quantity, etc. (lab scale, pilot production facility details, date(s), etc.)

NEU Material and Technology Validation / Verification Program

Key points to the NEU Validation / Verification Process:

- NEU will be compliant with internationally recognized Conformity Assessment standards
- Impartiality, confidentiality, and fairness are top priority
 - NEU membership is not required
 - No discounts will be given
 - All Validation/Verification Clients will be treated equally
- NEU will not be conducting research
 - Identify research needs – YES
 - Conduct publication research - YES
 - Conduct laboratory material or physical testing - NO

NEU Material and Technology Validation / Verification Program

Key points to the NEU Validation / Verification Process:

- Intent of NEU is to quickly identify materials and technologies that can best assist with lowering the carbon emissions associated with concrete construction
- NEU is not an academic organization, but is instead charged with assisting with getting these materials / technologies to market and implemented
- NEU is currently seeking Subject Matter Experts to serve on the Validation/Verification Teams
 - Send email to info@neuconcrete.org

NEU Material and Technology Validation / Verification Program

Remaining Steps NEU Validation / Verification Process:

- Identify SME competency needs associated with Applications received
- Assemble group of SMEs to fill pool of potential Validation Team members
- Train potential Validation Team members to the ISO standards
- Run 2 or 3 pilot validations through the process to calibrate process
- Make necessary adjustments
- Full operation of the Validation/Verification Program

Thank you!

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info@neuconcrete.org

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