

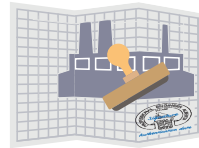
WHAT ARE AUTHENTICATION AND VALIDATION?

AUTHENTICATION

Performed by licensed professionals



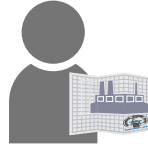
who are legally obligated to authenticate all professional work products (PWP) they accept professional responsibility for, including PWP they:



prepare



supervise

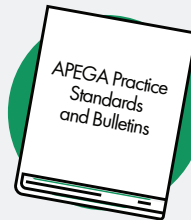


thoroughly review

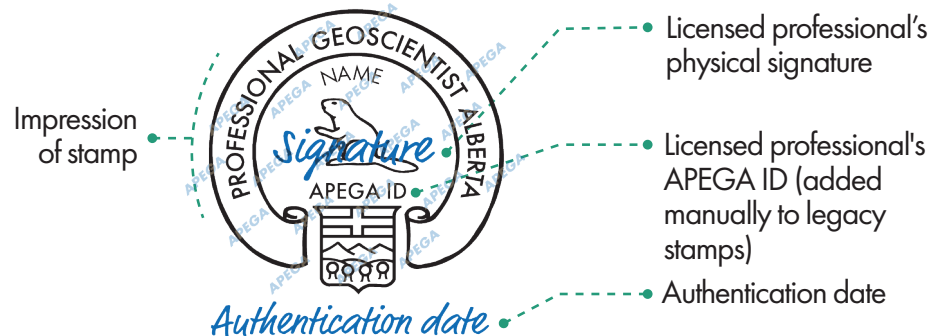
Authentication demonstrates that licensed professionals:



in accordance with:



Authentication includes the following visible components:



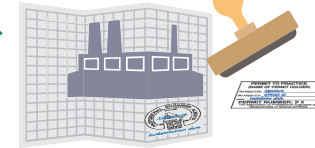
When using digital authentication and validation, in addition to the visible components, the licensed professional must also apply their APEGA digital signature.

VALIDATION*

Performed by Responsible Members (RMs)



who validate PWP by applying the Permit to Practice stamp



*Validation does not indicate technical responsibility.

in accordance with their Professional Practice Management Plan (PPMP)



to assure quality control.



Validation ensures PWP are consistent with:

AREA OF PRACTICE



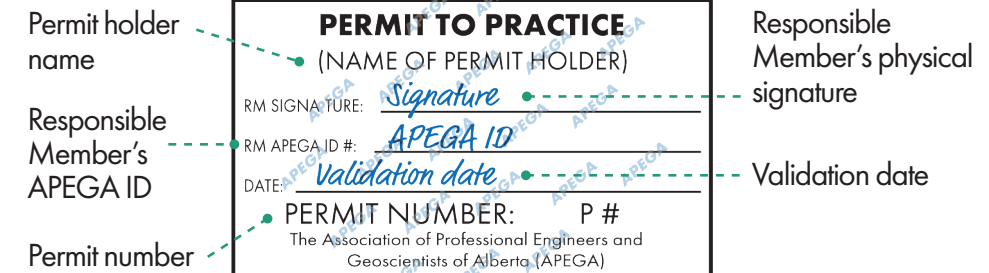
QUALITY



ETHICS

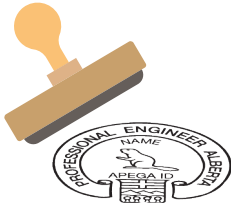


Validation includes the following visible components:



AUTHENTICATION AND VALIDATION METHODS

PHYSICAL AUTHENTICATION

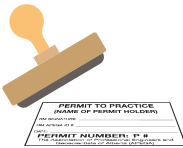


Either applied as an ink impression or printed as part of the PWP

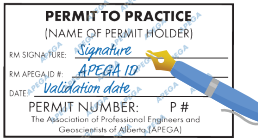


Licensed professional's APEGA ID and physical signature, authentication date

PHYSICAL VALIDATION

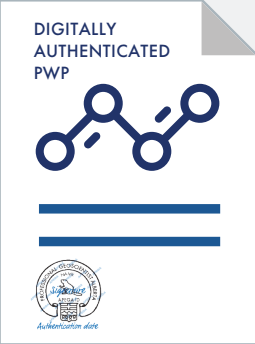


Either applied as an ink impression or printed as part of the PWP (alternatively, this information may be included without a Permit to Practice stamp)

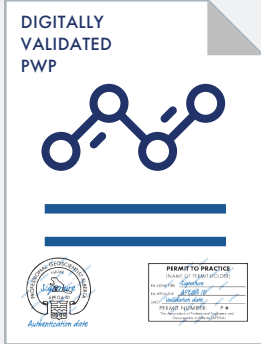


Permit holder name, permit number, Responsible Member's APEGA ID and physical signature, validation date

DIGITAL AUTHENTICATION



- Electronic images of the:
 - licensed professional's stamp
 - licensed professional's APEGA ID
 - licensed professional's physical signature
 - authentication date
- Licensed professional's APEGA digital signature



- Electronic images of the:
 - Permit to Practice stamp*
 - Responsible Member's APEGA ID
 - Responsible Member's physical signature
 - validation date
 - Responsible Member's APEGA digital signature
- *If not using a Permit to Practice stamp, the permit holder name and permit number must also be included.

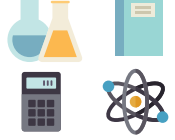
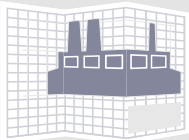

An APEGA digital signature guarantees the authenticity of the content of the PWP and verifies it has not been modified since being digitally signed.



An APEGA digital signature is metadata (i.e., information about the document) that can be viewed, but not altered, by accessing the properties of an electronic document. An APEGA digital signature is not the visible components of authentication or validation (i.e., electronic images of the stamp or permit holder information, APEGA ID, physical signature, and date of authentication or validation).

WHAT TO AUTHENTICATE AND VALIDATE

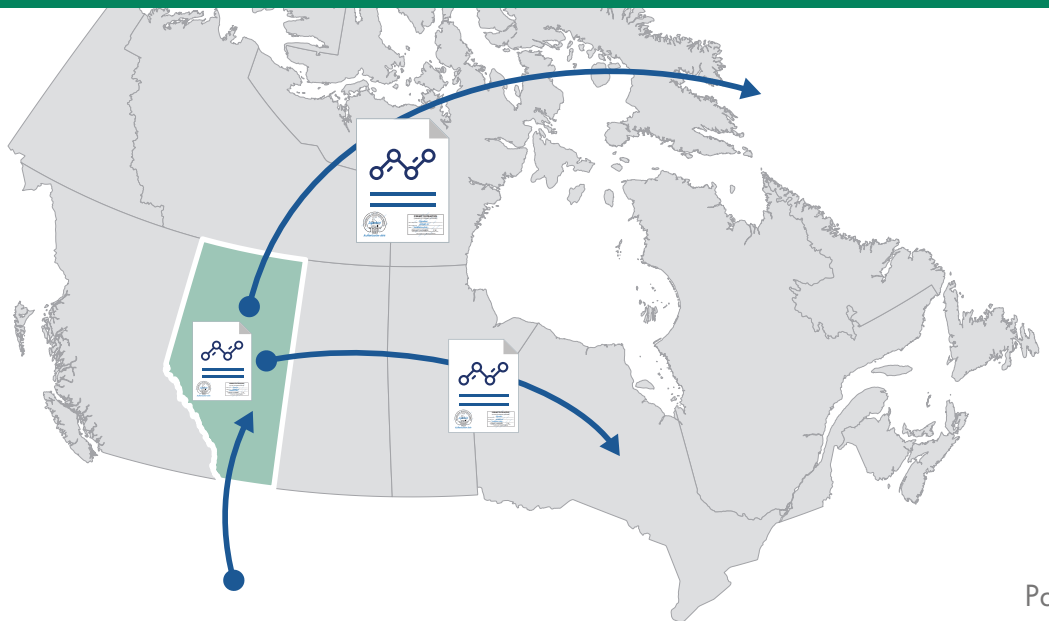
THE AUTHENTICATION TEST

- 1** Does the output contain technical information?
 YES NO
- 2** Is the technical information complete and final for the intended purpose of the output?
 YES NO
- 3** Will others rely on the technical information related to the output's intended purpose?
 YES NO

If the answers to these three questions are **YES**, the output is a PWP and must be authenticated. Validation is also required for those who hold a Permit to Practice.



IMPORTED AND EXPORTED PWP's



All PWP's imported for use in Alberta or PWP's related to a product imported into Alberta must be authenticated by an APEGA licensed professional.

All PWP's exported from Alberta require authentication by an APEGA licensed professional if the destination jurisdiction does not meet the requirements included in Section 3.4 of the *Authenticating Professional Work Products* practice standard.

WHAT TO AUTHENTICATE AND VALIDATE

COMMERCIALLY ENGINEERED GOODS

Commercially engineered goods are any commercial off-the-shelf goods designed, used, or produced using professional services. They are repeatable, mass produced, and sold in quantity.



They are designed and manufactured in compliance with recognized Canadian or international regulations, codes, or standards, and they are certified by a recognized technical, regulatory, or legal body.

WHEN ARE AUTHENTICATION AND VALIDATION REQUIRED?

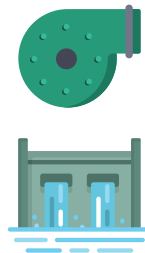
The commercially engineered good is part of a larger engineered system. The design of the larger system must be authenticated.



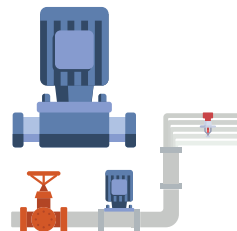
The user of a commercially engineered good plans to use the good in a way that deviates from the designer's or manufacturer's published specifications.

EXAMPLES OF LARGER ENGINEERED SYSTEMS

A turbine in a mechanical system



A pump in a fire-suppression system



A prefabricated beam or truss in a structure



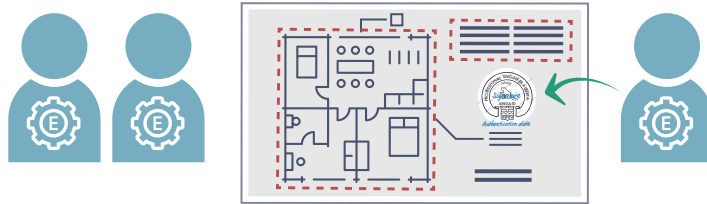
A commercial software application for a building control system



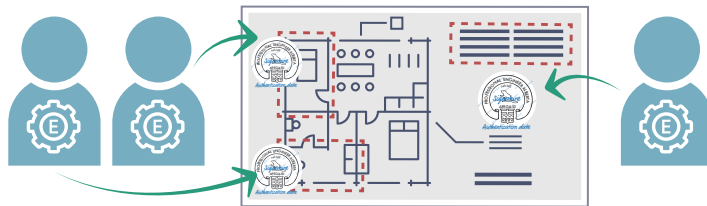
PROCEDURES FOR MULTIPLE CONTRIBUTORS

MULTIPLE LICENSED PROFESSIONALS FROM A SINGLE DISCIPLINE

One authentication applied by the licensed professional taking professional responsibility for the entire PWP.

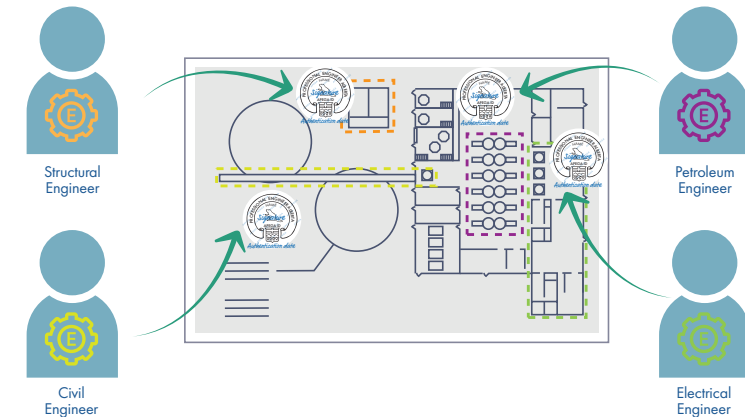


If the responsibility is shared, boundaries and limitations must be clearly shown.



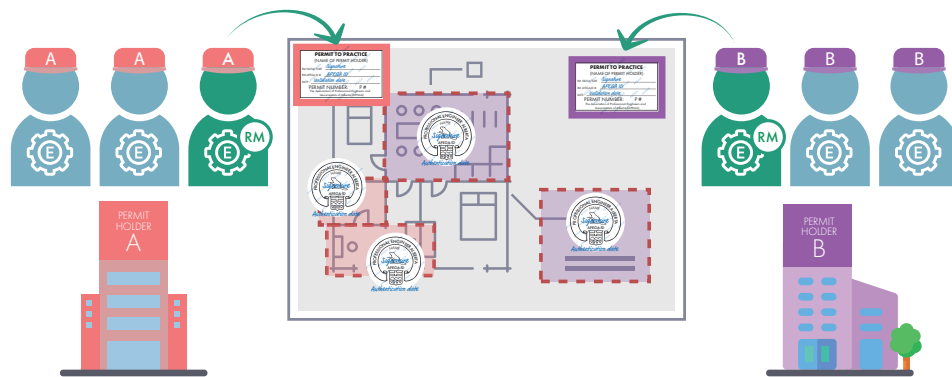
MULTIPLE CONTRIBUTORS FROM MULTIPLE DISCIPLINES

PWPs that include several disciplines must have the work of each discipline authenticated by at least one licensed professional from the discipline taking responsibility for the work within that discipline, and the boundaries of their work must be clearly indicated. They then forward the PWP to the Responsible Member for validation.



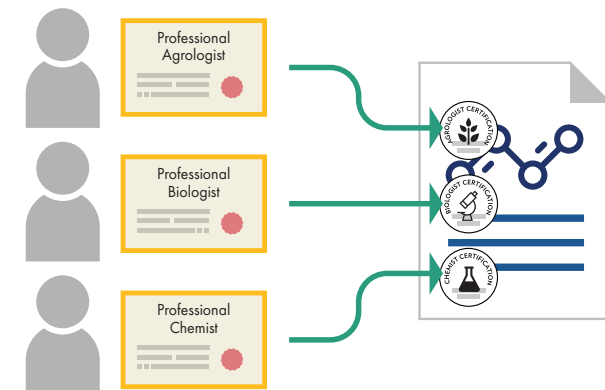
MULTIPLE CONTRIBUTORS FROM MULTIPLE PERMIT HOLDERS

When licensed professionals working under different permit holders produce a PWP, a Responsible Member from each permit holder must validate the appropriate portion of the PWP already authenticated by their respective licensed professionals.



NON-APEGA PROFESSIONAL CONTRIBUTORS

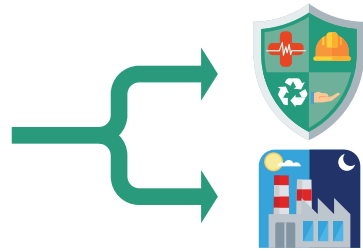
An APEGA licensed professional using work that was created by non-engineer or non-geoscience professionals who have certification privileges from other professional associations, must request that the work be certified in accordance with their respective professions' regulatory standards.



AUTHENTICATION AND VALIDATION FOR CONTINUOUS OPERATIONS AND FIELD REVISIONS

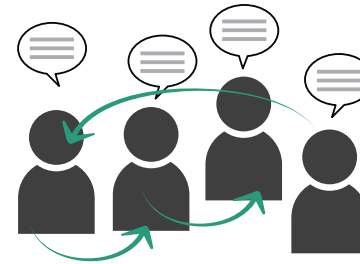
IMPORTANCE OF AUTHENTICATION

APEGA recognizes that engineering and geoscience solutions during continuous operations may be needed.

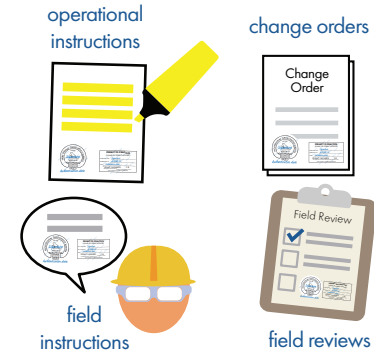


Licensed professionals and Responsible Members are obligated to preserve the health, safety, and welfare of the public, and to maintain high regard for the environment when considering options to preserve continuous operations.

FIELD CHANGES OR REVISIONS



All revisions or changes, regardless of how many or how they are communicated, must be authenticated and validated.



TIMING OF AUTHENTICATION



Is there time to authenticate before revisions or changes must be made?



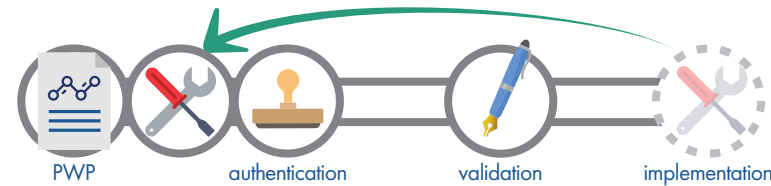
SITUATIONAL FACTORS TO CONSIDER



Safety of people, preservation of the environment or infrastructure,

or integrity of continuous operations.

WHEN AUTHENTICATION BEFORE IMPLEMENTATION IS NOT FEASIBLE



The Responsible Member or licensed professional must immediately document the circumstances and details surrounding the change or revision, and a summary of the key factors in the professional evaluation or assessment used to determine that an immediate change or revision needed to happen before authentication. The change or revision must then be authenticated and validated as soon as possible.

