



A P E G S

*Association of Professional Engineers
& Geoscientists of Saskatchewan*

Authentication of Documents

Use of Professional Seals



Table of Contents

Introduction	1
Definitions	2
1 Concepts and Principles of Authentication	4
1.1 Principles	4
1.2 Purpose of the Seal	4
1.3 Obtaining a Seal	5
1.4 Electronic Version of the Seal	5
1.5 Digital Signature	6
1.6 Requirements of the Act and Bylaws	6
1.7 Custody and Control of Seals	7
2 Authentication of Documents	7
2.1 Authenticating Single Discipline Documents	7
2.2 Authenticating Multi-Discipline Documents	8
2.3 Authenticating Other Types of Documents	8
3 Other Recommended Policies	8
3.1 Modifications to Documents	8
3.2 Retention Policies and Procedures	9
3.3 Transmission of Documents	10
3.4 Withdrawal of Seal	11
4 Certificate of Authorization Seal	11
4.1 Obtaining a Certificate of Authorization Seal	11
4.2 Electronic Version of the Certificate of Authorization Seal	11
4.3 Use of the Certificate of Authorization Seal	12
4.4 Custody and Control of the Certificate of Authorization Seal	12
Appendix 1, Forms of Seals	13

Introduction

This publication was prepared by The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS).

The Bylaws passed in accordance with the Act introduced a seal for engineer-in-training and geoscientist-in-training. At the “in-training” level, persons do not have professional status and they cannot take professional responsibility. However, the Association encourages the use of seals by persons at the in-training level to identify their work.

The emphasis in this publication is on the use of seals to indicate professional responsibility, and/or professional in training responsibility when applicable, for documents which deal with technical or professional matters. It is intended that formal confirmation of responsibility be a key step in the quality control procedures employed by an individual or an organization authorized to practice engineering/geoscience.

The basic purpose of professional designations and professional seals (sometimes referred to as ‘stamps’) is to identify documents which involve work that has been performed by, or under the supervision of, a professional. As instruments for quality control, they are as applicable to documents produced for use ‘in house’ by a professional’s employer as they are to documents produced for an outside client.

If a consulting service is involved, the term “approving engineer/geoscientist” shall refer to the professional who declared their intention to provide consulting services and has obtained permission to consult by this Association. If the consulting service is provided through a partnership, association of persons, or corporation, that entity must have a certificate of authorization and must apply the certificate of authorization seal (also referred to as a seal for corporate practice) to documents in accordance with this publication. The appropriate approving engineer/geoscientist must date and sign the certificate of authorization seal.

Definitions

“Act” means *The Engineering and Geoscience Professions Act*.

“Association” means The Association of Professional Engineers and Geoscientists of Saskatchewan.

“Authentication” means the application of the professional’s signature, professional title and registration number, OR the professional’s seal and signature, including the date in all cases carried out in accordance with the requirements of *The Engineering and Geoscience Professions Act* and Bylaws.

“Bylaws” means *The Engineering and Geoscience Professions Regulatory Bylaws, 1997* and *The Engineering and Geoscience Professions Administrative Bylaws, 1997*.

“Coordinating professional”, means the professional responsible for integrating the expertise and work output of other professionals and who takes overall and total responsibility for the work including authentication of the documents.

“Contributing professional” means the professional who has responsibility for a portion of the work, and who takes responsibility for that portion of the work that can be relied upon by the coordinating professional.

“Digital signature” means information in a digital form that consists of one or more letters, characters, numbers or other symbols in digital form incorporated into, attached to, or associated with an electronic document that a person uses to permanently associate them self with the document. A digital signature must guarantee the identity of the signatory, as well as the integrity, confidentiality and non-repudiation of the document.

“Direct supervision,” means the responsibility for the control and conduct of the work of a subordinate.

“Document” means a single coherent body of information recorded on any medium in the form of words, symbols, sounds or images or any another system of symbols. The information is defined and structured, according to the medium used, by tangible or logical features and may be rendered using any type of writing.

“Document integrity” means that information in a document has not been altered since it has been authenticated and has been maintained in its entirety in a medium that provides stability and required longevity to the information maintained throughout its life cycle including authentication, consultation, examination, verification, fragmentation, reproduction, transfer, transmission, storage, archiving, destruction, recovery, reconstitution or manipulation of any kind.

"Electronic document" means data that is recorded or stored on any medium in or by a computer system or other similar device and that can be read or perceived by a person or a computer system or other similar device. It includes a display, printout or other output of that data.

"Impression" means a facsimile of a seal on a document, regardless of the medium used.

"Original" means a document that emanates directly from the author and is the only authentic source for copies or reproductions. In the case of technology-based documents, the integrity of the original must be ensured and the original must be capable of being linked to a person, whether or not the document is released. It is the master copy of the document used to create additional copies for distribution or other use.

"Professional" and **"Professionals"** when used as a noun refer to Professional Engineers or to Professional Geoscientists who are licensed to practice in accordance with *The Engineering and Geoscience Professions Act* proclaimed on March 7, 1997.

"Retention" means to store authenticated documents so that they can be found later, on request, without having been altered.

"Seal" or **"stamp"** are equivalent terms for the official mark issued to a licensee by the Association authorizing them to produce an impression, including procedures that use information technologies.

"Signature" means the name or personal mark that a person affixes to a document and routinely uses to express consent or acknowledge responsibility with respect to the document.

"Software" means all information, commands, instructions, programs or procedures required to use and operate a computer system, one of its components or any other digital data processing device. Software is independent of the medium in which it is recorded.

"Technology-based document" means a document using media based on information technology, whether electronic, magnetic, optical, wireless or other or based on a combination of technologies.

"Transmission" means to send a document from one person to another using information technology.

1 Concepts and Principles of Authentication

1.1 Principles

Sealing, signing and dating (collectively referred to as “authentication”) of documents related to the practice of professional engineering or professional geoscience, is a requirement under *The Engineering and Geoscience Professions Act* and Bylaws. The principles involved in authenticating a document are independent of the methods employed for producing the document.

The seal constitutes the distinctive mark of the professional. It certifies that its holder is a member of the Association, and is licensed to practice professional engineering or professional geoscience within Saskatchewan.

Traditionally, plans and specifications and other documents have been drawn up in written or graphic form on paper or film media. The seal, which is either inking or embossing, is issued by the Association and intended for manual application on such media. The advent of computer technologies, specifically office automation systems, computer-aided design software and electronic networks, allows new methods for creating, authenticating, using, transmitting and storing documents. A document can now be created, transmitted and stored on media that are based on information technologies, such as a computer file. It raises questions about the traditional use of the seal and signature.

It is possible to obtain reproductions from computer files that are in no way distinguishable from the original. If such files are not adequately protected, unauthorized transmission or modifications can be difficult to detect. Where technology-based documents are used without adequate protection, the notion of the integrity of the original document is challenged, because the preservation of the document’s integrity cannot be guaranteed.

For reasons of legal and professional security, the integrity of authenticated documents can be essential. The authentication of documents should be the last professional act performed with respect to the technical content of the documents, notwithstanding the fact that modifications may be made in the future.

1.2 Purpose of the Seal

The seal constitutes the distinctive mark of the professional. It identifies work performed by, or under the direct supervision of a licensed professional. It assures the document’s recipient that the work meets the standards expected of experienced professionals who take personal responsibility for their judgments and decisions. The seal is important because it is a visible commitment to the standards of the profession

and signifies to the public that a particular professional has accepted responsibility for the document.

It should be considered a “mark of reliance”, an indication that others can rely on the fact that the opinions, judgments, or designs in the sealed documents were provided by a professional held to high standards of knowledge, skill and ethical conduct. The seal represents the professional’s commitment to standards of care and excellence.

By affixing the seal, professionals assume responsibility and are answerable for the quality of the work presented therein. It is a statement by the professional to others that they can, with a high degree of confidence, depend upon the contents of the document for the furtherance of their projects. The seal is not, and should not be considered, a certification mark or warranty of correctness.

It is important to emphasize to professionals that they are still responsible for work in which they are involved, but choose not to seal.

Use of the seal should not be subject to specification by contract or work arrangements.

1.3 Obtaining a Seal

The traditional seal used on a document is the impression of the rubber stamp issued by the Association to its licence holders. Section 21 of the Act specifies that all seals must be ordered through the Association office. All seals issued are to be of the design exhibited in Appendix 1, Forms of Seals.

1.4 Electronic Version of a Seal

The holder of the original seal may reproduce it by any means to generate an impression, including procedures that use information technologies. The impression must correspond in all respects to the original seal to preserve its characteristics except that of size. The size must be large enough that the elements of the seal are legible.

Similarly the professional’s signature may be reproduced electronically and be used in a size that ensures it is legible. The professional should ensure that access to the electronic version of the seal and signature remains under their control to prevent unauthorized use.

1.5 Digital Signature

The traditional seal and signature differs with the form of security known as a "digital signature", which is an encrypted alphanumeric data set, used as personal electronic identification information, that people attach to a document to permanently associate themselves with the document. It is not an identical electronic copy of a handwritten signature obtained by scanning or electronic pen. A digital signature is intended to have the same legal force and distinguishing effect as the use of a signature affixed by hand. For this reason, the digital signature must be:

- unique to the person using it;
- capable of verification;
- under the sole control of the person using it; and
- attached to, or associated with, data in such a manner that it authenticates its own attachment to the particular data using it and the integrity of the data transmitted.

The specific type of digital signature used should enable verification that:

- the document came from the professional whose authentication appears on it (identification);
- the information on the document has not changed since it was signed (integrity).

It is recommended the professional incorporate the use of asymmetric key encryption systems with a certificate of authenticity and the calculation of a unique code for the document.

The professional should ensure that access to the digital signature remains under their control. Access codes must be kept confidential and access to computers should be controlled when these codes are activated.

1.6 Requirements of the Act and Bylaws

Section 21 of the Act deals with the use of a seal as follows:

- (1) Every licensee is entitled, in accordance with the bylaws, to sign and seal all final drawings, specifications, plans, reports and other documents prepared or approved by him or her.
- (2) All seals must be acquired from the association and be designed in the manner set out in the bylaws.
- (3) A member who is expelled or suspended or a licensee whose licence is revoked shall return his or her seal to the association for the period of the suspension, expulsion or revocation.

- (4) Every licensee shall sign and seal, in accordance with the bylaws, all final drawings, specifications, plans, reports, and other documents relating to the practice of professional engineering or the practice of professional geoscience that he or she issues.

The Regulatory Bylaws contain the following references to seals:

Section 24 – Design

Seals must be designed in the forms set out in Appendix 2 (which is Appendix 1 in this publication).

Section 25 – Manner of Use

The member under whose direct technical supervision documents are prepared shall affix his or her seal in a prominent location on the document and shall sign and date it.

1.7 Custody and Control of Seals

A seal issued to a member or licensee shall at all times remain under the direct control of that member or licensee.

All professional seals are the property of the APEGS notwithstanding their issuance to members or licensees for use as defined in the Act and Bylaws, and shall be returned upon request.

2 Authentication of Documents

2.1 Authenticating Single Discipline Documents

Each document covering a single discipline or specific area of expertise should be authenticated by the professional at the lowest level of full responsibility. For documents covering work within a single discipline but developed by several professionals, the coordinating professional responsible for adherence to concept or corporate standards and coordinating the work of the team should authenticate the document. That professional should be intimately connected to the work. Administrative supervision over a group would not entitle the supervisor to authenticate the work of the group.

In cases when several professionals are authenticating a single discipline document, each shall apply their seal and qualify their responsibility to specific portions of the document.

Professionals should be encouraged to authenticate all their documents, regardless of whether there is a coordinating professional.

2.2 Authenticating Multi-Discipline Documents

For a project covering work within several disciplines, all documents within a particular discipline must be signed and sealed by the professional taking overall responsibility for work within that discipline.

The coordinating professional (if there is one) should also sign and apply their seal to indicate that the work of the various disciplines has been coordinated. If only one signature and seal is used, it should be that of the professional taking responsibility for the work, generally the coordinating professional. Each professional applying their signature and seal should qualify their level of responsibility, i.e.: what discipline they are taking responsibility for.

In multi-discipline projects and teams, all professionals should be encouraged to authenticate their portion of the work, whether or not there is a coordinating professional.

2.3 Authenticating Other Types of Documents

Manuals prepared for direction and guidance of others in technical and/or public safety matters should be authenticated. Preliminary documents that are incomplete should not be authenticated. A document should not be signed and sealed unless it is complete for the purposes intended. For example, a drawing submitted for a permit may not be complete for construction. However, it must be complete for the purpose of obtaining a permit and it should be authenticated for that purpose. Preliminary plans, reports and specifications that have been authenticated should be clearly marked **PRELIMINARY** or **NOT FOR CONSTRUCTION**.

3 Other Recommended Policies

3.1 Modifications to Documents

All sealed documents are considered to be final documents. However, occasionally such documents need to be edited, altered or amended either during the course of the project or as part of a new project. In order to ensure that professionals are not unknowingly accepting responsibility for work they did not do, it is important that documents, once sealed, are not altered without undergoing an appropriate revision documentation process.

Modifying an authenticated document constitutes a professional act that should be identified as such. Authors of the modifications are professionally responsible for the work segment directly or indirectly affected by their modifications, particularly if these modifications affect the original concept.

The author of the modifications should authenticate the documents they have modified. The purpose and precise subject of all modifications should be indicated.

In cases where altering of documents signed and sealed by another professional is required for an ongoing project the following procedure should be followed:

- original authentication to remain on documents unaffected by the alterations;
- professional(s) altering documents authenticates their work;
- professional(s) clearly identifies alterations and who is responsible for them.

The author(s) should authenticate modifications, including all elements of the original document affected by the modification, and clearly document and define the professional responsibility of the original author(s) and the author(s) of the modifications.

The procedure used to modify a document should be appropriate to the medium used for the document. Wherever possible, it should be the same as that used for the original document.

The same principles and procedures for authentication should apply to the modification, review or revision of documents. In the case of a review, the review report, or any documented opinion or advice should also be authenticated using the same policies and procedures.

3.2 Retention of Documents

Documents should be retained for as long as any liability for the work exists. Once a document is authenticated, it should be stored in a manner that preserves the integrity of the document and the seal.

Professionals responsible for sealing documents should ensure that their organization implements a document management process that prevents the possibility of:

- others altering sealed documents without the knowledge of the author;
- removal, or duplication and unauthorized use, of the seal; and
- unauthorized use of documents.

To provide this protection, the document management process should incorporate the following, non-exclusive, features:

- procedures that assure all documents have been prepared by or under the direct supervision and control of a professional;
- procedures that assure the design, report, or other output of technical work complies with all applicable regulations, codes, standards, practices;
- an authenticating procedure to ensure that all documents are signed and sealed by the professional taking responsibility for the work;
- procedures that assure data integrity by prohibiting unauthorized and/or undocumented changes;
- procedures to identify unauthorized copies of final documents;
- records retention procedures such that the records to be retained are selected by the professional responsible for sealing the documents;
- procedures for validating records before storage;
- established document retention periods; and
- protection of records against loss or inadvertent destruction.

Because electronic documents can easily be changed and copied with no obvious indication, organizations must have well documented processes to support the authenticity and integrity of documents with electronic signatures and seals. Professionals responsible for sealing technology-based documents should ensure that their organizations adopt a method of creating, archiving and distributing electronic format documents that will:

- control and protect the electronic facsimile of the seal and signature;
- ensure document integrity, i.e. documents are not altered once signed, without undergoing the revision process; and
- allow verification of the identity of the professional originating the document.

3.3 Transmission of Documents

When transmitting documents electronically, steps must be taken to protect the copyright of the work, and ensure the integrity of the documents and authenticating marks (seals, signatures). The document should contain a digital signature, which is unique to the user, under the sole control of the user and able to be verified.

It is recommended that a technology-based signing procedure be used which guarantees the integrity of the documents and authenticating marks transmitted and received.

If such a procedure cannot be used, any seals or signatures should be removed and notice to this effect be included. Thus a technology-based document that is not authenticated can be transmitted without a technology-based signature or specific security; but it should not contain any authenticating mark. The name of the author should always be indicated on any non-authenticated document. Such a document should include a notice that it is transmitted for information or coordination purposes only.

3.4 Withdrawal of Seal

There are circumstances under which a professional may decide they no longer take professional responsibility for the work they have prepared and sealed. This amounts to a revocation of the approval that existed at the time the seal was applied. This is appropriate when the professional becomes aware of a deficiency in the work or when some parameters have changed which negate the work.

However, it is not appropriate or ethical to revoke an approval as a means to enforce the position of the professional in contractual disputes with the client once the work has been released and in the hands of a third party.

4 Certificate of Authorization Seal

4.1 Obtaining a Certificate of Authorization Seal

Section 21 of the Act specifies that all seals must be ordered through the Association office. The approved design of the seal to be used by the holder of a Certificate of Authorization issued in accordance with the Act and Bylaws is exhibited in Appendix I of this publication.

4.2 Electronic Version of the Certificate of Authorization Seal

Entities may reproduce their certificate of authorization seal by any means to generate an impression, including procedures that use information technologies. The impression must correspond in all respects to the original seal to preserve its characteristics except that of size. The size must be large enough that the elements of the seal are legible.

Similarly, each professional signature may be reproduced electronically and be used in a size that ensures it is legible. The entity should ensure that access to the electronic version of the seal and signatures remains under their control to prevent unauthorized use.

4.3 Use of the Certificate of Authorization Seal

Regulatory Bylaw section 18(2) provides that every holder of a Certificate of Authorization shall place its seal or equivalent on all documents that have been prepared by a licensee on its behalf.

Regulatory Bylaw section 17(6) provides that every holder of a permission to consult shall place his or her signature and registration number on all documents that have been prepared under his or her supervision within the certificate of authorization seal appearing on the document.

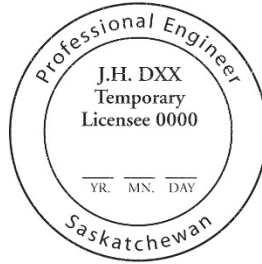
The professional(s) who make the required entries on the Certificate of Authorization seal need not be the same person or persons who seal a document. Currently, APEGS allows more than one discipline such as mechanical and electrical on a drawing. Space is provided for up to three “disciplines” on the Certificate of Authorization seal.

A properly completed seal is required whenever an employee of a holder of a Certificate of Authorization is required to use a professional seal to meet the requirements set out in Part I of this document.

4.4 Custody and Control of the Certificate of Authorization Seal

A seal issued to a partnership, association of persons, or corporation shall at all times remain under its direct control. Seals issued by the APEGS for use as defined in the Act and Bylaws are the property of the APEGS and shall be returned upon request.

Appendix 1, Forms of Seals



Association of Professional Engineers & Geoscientists of Saskatchewan		
CERTIFICATE OF AUTHORIZATION John DXX Inc. Number C000		
Permission to Consult held by:		
Discipline	Sk. Reg. No.	Signature
_____	_____	_____
_____	_____	_____



Revised February 2009
Revised September 2011

Approved by Council February 6, 2009

www.apegs.ca



A P E G S

*Association of Professional Engineers
& Geoscientists of Saskatchewan*