

ARTICLE 8: FLOODPLAIN MANAGEMENT

A) Purpose & Definitions

- 1) Certain areas of the Town of Bowdoinham, ME, are subject to periodic flooding, causing serious damage to properties within these areas. Relief is available in the form of flood insurance as authorized by the National Flood Insurance Act of 1968. Therefore, the Town of Bowdoinham, ME, has chosen to become a participating community in the National Flood Insurance Program and agrees to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended) as delineated in this Ordinance.
- 2) It is the intent of the Town of Bowdoinham, ~~Maine~~ ME, to require the recognition and evaluation of flood hazards in all official actions relating to land use in the floodplain areas having special flood hazards.
- 3) The National Flood Insurance Program, established in the aforesaid Act, provides that areas of the Town of Bowdoinham having a special flood hazard be identified by the Federal Emergency Management Agency and that floodplain management measures be applied in such flood hazard areas. This Ordinance establishes a Flood Hazard Development Permit system and review procedure for development activities in the designated flood hazard areas of the Town of Bowdoinham, ME.
- 4) Referenced flood zones in this Section are defined by FEMA and are available on FEMA's website. Specifically, the following terms are used: Zone A: A Special Flood Hazard Area which has a 1% annual chance of flooding. Zone AE: The base floodplain where base flood elevations are provided.

B) Floodplain Application & Review Procedures

- 1) Permit Required
 - a) Before any construction or other development (as defined in Article 2), including the placement of manufactured homes, begins within any areas of special flood hazard, a Flood Hazard Development Permit shall be obtained from the Code Enforcement Officer. This permit shall be in addition to any other permits which may be required pursuant to this Ordinance.
- 2) Fees
 - a) Application Fee

An application must be accompanied by an application fee, plus all mailing and advertising costs for the processing of the application. The fee shall be non-refundable. This application fee shall be paid to the ~~municipality~~ Town. The application fees shall be as follows:

 - (i) Minor Development: \$25.00
 - (ii) New Construction & Substantial Improvements: \$50.00

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- b) An additional fee may be charged if the Code Enforcement Officer and/or the Board of Appeals wants the assistance of a professional engineer or other expert. The expert's fee shall be paid in full by the applicant within 10 days after the Town submits a bill to the applicant. Failure to pay the bill shall constitute a violation of the ordinance and be grounds for the issuance of a stop work order. An expert shall not be hired by the ~~municipality~~ Town at the expense of an applicant until the applicant has been given an opportunity to be heard on the subject.
- 3) Application Review Procedures
- a) The applicant shall submit a complete application including all submission requirements to the Code Enforcement Officer.
- b) Once the Code Enforcement Officer receives a complete application, notice shall be sent by first class mail to all abutting property owners.
- c) The Code Enforcement Officer shall review the application within ten (10) days of the receipt of the application to determine whether or not the submission is complete.
- (i) If the application is determined to be incomplete, the applicant shall be notified in writing of this finding, which shall specify the additional materials required to make the application complete and shall advise the applicant that the application will not be reviewed until the additional information is submitted.
- (ii) Failure to submit the additional information within six months shall be deemed an abandonment of the application.
- d) The Code Enforcement Officer shall take final action on said application within ten (10) days of finding the application complete.
- (i) The Code Enforcement Officer shall act to deny, to approve, or to approve the application with conditions as are deemed advisable to assure compliance with the standards of approval and performance standards of this ordinance.
- (ii) If the application satisfies the requirements of this Ordinance, approve the issuance of one of the following Flood Hazard Development Permits based on the type of development:
- (A) A two-part Flood Hazard Development Permit for elevated structures. Part I shall authorize the applicant to build a structure to and including the first horizontal floor only above the base flood level. At that time the applicant shall provide the Code Enforcement Officer with an Elevation Certificate completed by a Professional Land Surveyor, licensed professional engineer or architect based on the Part I permit construction, "under construction", for verifying compliance with the elevation requirements of Article 8.C, paragraphs 5, 6, or 7. Following review of the Elevation Certificate data, which shall take place within 72 hours of receipt of the application, the Code Enforcement Officer shall issue Part II of the Flood Hazard Development Permit. Part II shall authorize the applicant to complete the construction project; or,
- (B) A Flood Hazard Development Permit for Floodproofing of Non-Residential Structures that are new construction or substantially improved non-residential structures that are not being elevated but that meet the floodproofing standards of

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Article 8.C.6. The application for this permit shall include a Floodproofing Certificate signed by a licensed professional engineer or architect; or,

(C) A Flood Hazard Development Permit for Minor Development for all development that is not new construction or a substantial improvement, such as repairs, maintenance, renovations, or additions, whose value is less than 50% of the market value of the structure. Minor development also includes, but is not limited to: accessory structures as provided for in Article 8.C.9, mining, dredging, filling, grading, paving, excavation, drilling operations, storage of equipment or materials, deposition or extraction of materials, public or private sewage disposal systems or water supply facilities that do not involve structures; and non-structural projects such as bridges, dams, towers, fencing, pipelines, wharves and piers.

(iii) In issuing its decision, the Code Enforcement Officer shall make written findings of fact.

4) Review of Standards

a) The Code Enforcement Officer shall:

(i) Review all applications for the Flood Hazard Development Permit to assure that proposed developments are reasonably safe from flooding and to determine that all pertinent requirements of Article 8.C (Development Standards) have been, or will be met;

(ii) Utilize, in the review of all Flood Hazard Development Permit applications:

(A) The base flood and floodway data contained in the "Flood Insurance Study – Sagadahoc County, Maine," as described in Article 1;

(B) In special flood hazard areas where base flood elevation and floodway data are not provided, the Code Enforcement Officer shall obtain, review and reasonably utilize any base flood elevation and floodway data from federal, state, or other technical sources, including information obtained pursuant to Article 8.B.5.m.i.B, Article 8.C.10, and Article 8.D.4, and in order to administer Article 8.C of this Ordinance; and,

(C) When the community establishes a base flood elevation in a Zone A by methods outlined in Article 8.B.5.m.i.B, the community shall submit that data to the Maine Floodplain Management Program.

(iii) Make interpretations of the location of boundaries of special flood hazard areas shown on the maps described in Article 1 of this Ordinance;

(iv) In the review of Flood Hazard Development Permit applications, determine that all necessary permits have been obtained from those federal, state, and local government agencies from which prior approval is required by federal or state law, including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1344;

(v) Notify adjacent municipalities, the Department of Environmental Protection, and the Maine Floodplain Management Program prior to any alteration or relocation of a water course and submit copies of such notifications to the Federal Emergency Management Agency.

5) Application Submission Requirements.

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~~The application~~ All applications for a Flood Hazard Development Permit shall include:

- a) the name, address and phone number of the applicant, owner, and contractor;
- b) an address and a map indicating the location of the construction site;
- c) a copy of the Bowdoinham Tax Sheet showing the property;
- d) documentation showing right, title or interest in the property;
- e) photographs of the site;
- f) a site plan showing location of existing and/or proposed development, including but not limited to structures, sewage disposal facilities, water supply facilities, areas to be cut and filled, and lot dimensions;
- g) a statement of the intended use of the structure and/or development;
- h) a statement of the cost of the development including all materials and labor;
- i) a copy of the Subsurface Wastewater Disposal System application for system to be installed on the property or existing on the property;
- j) specification of dimensions of the proposed structure and/or development;
- k) a description of the extent to which any water course will be altered or relocated as a result of the proposed development; and
- l) a statement of construction plans describing in detail how each applicable development standard in Article 8.C will be met.
- m) ~~[Items n-q apply only to new construction and substantial improvements.]~~

In addition to the required documents set forth above, applications for a Flood Hazard Development Permit for new construction or substantial improvement shall include:

- m) The elevation in relation to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or to a locally established datum in Zone A only, of the:
 - (i) base flood at the proposed site of all new or substantially improved structures, which is determined:
 - (A) In Zones AE, from data contained in "Flood Insurance Study – Sagadahoc County, Maine," as described in Article 1; or,
 - (B) In Zone A:
 - (1) From any base flood elevation data from federal, state, or other technical sources (such as FEMA's Quick-2 model, FEMA 265), including information obtained pursuant to Article 8.C.10 and Article 8.D.4;
 - (2) In the absence of all data described in subsection 1 above, information to demonstrate that the structure shall meet the elevation requirements in Article 8.C.
 - (ii) highest and lowest grades at the site adjacent to the walls of the proposed building;
 - (iii) lowest floor, including basement; and whether or not such structures contain a basement; and

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- (iv) level, in the case of non-residential structures only, to which the structure will be floodproofed.
- n) a description of an elevation reference point established on the site of all developments for which elevation standards apply as required in Article 8.C;
- o) a written certification by a Professional Land Surveyor, licensed professional engineer or architect, that the base flood elevation and grade elevations shown on the application are accurate; and
- p) the following certifications as required in Article 8.C by a licensed professional engineer or architect:
 - (i) A Floodproofing Certificate (FEMA Form 81-65), to verify that the floodproofing methods for any non-residential structures will meet the floodproofing criteria of Article 8.B.5.n.iv; Article 8.C.6; and other applicable standards in Article 8.C;
 - (ii) A Hydraulic Openings Certificate to verify that engineered hydraulic openings in foundation walls will meet the standards of Article 8.C.11.b.i;
 - (iii) A certified statement that bridges will meet the standards of Article 8.C.12;
 - (iv) A certified statement that containment walls will meet the standards of Article 8.C.13.

C) Development Standards

All developments in areas of special flood hazard shall meet the following applicable standards:

1) Construction Standards

- a) Be designed or modified and adequately anchored to prevent flotation (excluding piers and docks), collapse or lateral movement of the development resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
- b) Use construction materials that are resistant to flood damage.
- c) Use construction methods and practices that will minimize flood damage.
- d) Use electrical, heating, ventilation, plumbing, and air conditioning equipment, and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during flooding conditions.

2) Water Supply

All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems.

3) On Site Waste Disposal Systems/Sanitary Sewage Systems

On site waste disposal systems shall be located and constructed to avoid impairment of them or contamination from them during floods. All new and replacement sanitary sewage systems shall be designed and located to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

4) Watercourse Carrying Capacity

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All development associated with altered or relocated portions of a watercourse shall be constructed and maintained in such a manner that no reduction occurs in the flood carrying capacity of the watercourse.

5) Residential

New construction or substantial improvement of any residential structure located within:

- a) Zones AE shall have the lowest floor (including basement) elevated to at least three (3) ft. above the base flood elevation.
- b) Zone A shall have the lowest floor (including basement) elevated to at least one (1) foot above the base flood elevation utilizing information obtained pursuant to Article 8.B.5.m.i.B, Article 8.B.4.ii and Article 8.D.4, or in the absence of this data, at least three (3) ft. above the highest adjacent grade to the structure.

6) Non-Residential

New construction or substantial improvement of any non-residential structure located within:

- a) Zones AE shall have the lowest floor (including basement) elevated to at least three (3) ft. above the base flood elevation, or together with attendant utility and sanitary facilities shall:
 - (i) be floodproofed to at least one foot above the base flood elevation so that below that elevation the structure is watertight with walls substantially impermeable to the passage of water;
 - (ii) have structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy; and,
 - (iii) be certified by a licensed professional engineer or architect that the floodproofing design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this section. Such certification shall be provided with the application for a Flood Hazard Development Permit, as required by Article 8.B.5.p and shall include a record of the elevation above mean sea level to which the structure is floodproofed.
- b) Zone A shall have the lowest floor (including basement) elevated to at least one (1) foot above the base flood elevation utilizing information obtained pursuant to Article 8.B.5.m.i.B, Article 8.B.4.ii and Article 8.D.4; or
 - (i) In the absence of the data (listed above in subsection b), at least three (3) ft. above the highest adjacent grade to the structure
 - (ii) Together with attendant utility and sanitary facilities meet the floodproofing standards of subsection 6.a above.

~~7) Manufactured Homes—New or substantially improved manufactured homes located within:~~

- ~~a) Zones AE shall:
 - ~~(i) be elevated such that the lowest floor (including basement) of the manufactured home is at least three feet above the base flood elevation;~~
 - ~~(ii) be on a permanent foundation, which may be poured masonry slab or foundation walls, with hydraulic openings, or may be reinforced piers or block supports, any of~~~~

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~~which support the manufactured home so that no weight is supported by its wheels and axles; and,~~

~~(iii) be securely anchored to an adequately anchored foundation system to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to:~~

~~(A) over the top ties anchored to the ground at the four corners of the manufactured home, plus two additional ties per side at intermediate points (manufactured homes less than 50 feet long require one additional tie per side); or by,~~

~~(B) frame ties at each corner of the home, plus five additional ties along each side at intermediate points (manufactured homes less than 50 feet long require four additional ties per side).~~

~~(C) all components of the anchoring system described in subsections A and B above shall be capable of carrying a force of 4800 pounds.~~

~~b) Zone A shall:~~

~~(i) be elevated on a permanent foundation, as described in subsection a.ii above, such that the lowest floor (including basement) of the manufactured home is at least three feet above the base flood elevation utilizing information obtained pursuant to Article 8.B.5.n.i.B, Article 8.B.4.a.ii and 8.D.4; or,~~

~~(ii) in the absence of all the data described above in subsection i, at least three feet above the highest adjacent grade to the structure; and~~

~~(iii) meet the anchoring requirements of a.iii above.~~

7) Manufactured Homes

a) New or substantially improved manufactured homes located within Zones AE shall:

(i) be elevated such that the lowest floor (including basement) of the manufactured home is at least three (3) ft. above the base flood elevation;

(ii) be on a permanent foundation, which may be poured masonry slab or foundation walls, with hydraulic openings, or may be reinforced piers or block supports, any of which support the manufactured home so that no weight is supported by its wheels and axles; and

(iii) be securely anchored to an adequately anchored foundation system to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to:

(A) Over-the-top ties anchored to the ground at the four corners of the manufactured home, plus two additional ties per side at intermediate points (manufactured homes less than 50 ft. long require one additional tie per side); or by,

(B) Frame ties at each corner of the home, plus five additional ties along each side at intermediate points (manufactured homes less than 50 ft. long require four additional ties per side).

(C) All components of the anchoring system described in subsections A and B above shall be capable of carrying a force of 4800 pounds.

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- b) New or substantially improved manufactured homes located within Zone A shall:
- (i) be elevated on a permanent foundation, as described in subsection a.ii above, such that the lowest floor (including basement) of the manufactured home is at least three (3) ft. above the base flood elevation utilizing information obtained pursuant to Article 8.B.5.m.i.B, Article 8.B.4.a.ii and 8.D.4; or
 - (ii) in the absence of all the data described above in subsection i, at least three (3) ft. above the highest adjacent grade to the structure; and
 - (iii) meet the anchoring requirements of a.iii above.

8) Recreational Vehicles

Recreational Vehicles located within Zones AE shall either:

- a) be on the site for fewer than 180 consecutive days;
- b) be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or,
- c) be permitted in accordance with the elevation and anchoring requirements for "manufactured homes" in Article 8.C.7.a.

9) Accessory Structures

Accessory Structures, as defined in Article 2, located within Zones AE, and A, shall be exempt from the elevation criteria required in Article 8.C. 5 and 6 above, if all other requirements of Article 8.C and all the following requirements are met.

Accessory Structures shall:

- a) have unfinished interiors and not be used for human habitation;
- b) have hydraulic openings, as specified in Article 8.C.11.b, in at least two different walls of the accessory structure;
- c) be located outside the floodway;
- d) when possible be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters and be placed further from the source of flooding than is the primary structure; and
- e) have only ground fault interrupt electrical outlets. The electric service disconnect shall be located above the base flood elevation and when possible outside the Special Flood Hazard Area.

10) Floodways

- a) In Zones AE riverine areas, encroachments, including fill, new construction, substantial improvement, and other development shall not be permitted within a regulatory floodway which is designated on the community's "Flood Insurance Rate Map" unless a technical evaluation certified by a licensed professional engineer is provided demonstrating that such encroachments will not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

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- b) In Zones AE, and A riverine areas for which no regulatory floodway is designated, encroachments, including fill, new construction, substantial improvement, and other development shall not be permitted in the floodway as determined in subsection c below, unless a technical evaluation certified by a licensed professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing development and anticipated development:
 - (i) will not increase the water surface elevation of the base flood more than one foot at any point within the community; and
 - (ii) is consistent with the technical criteria contained in FEMA's guidelines and standards for flood risk analysis and mapping.
- c) In Zones AE, and A riverine areas for which no regulatory floodway is designated, the regulatory floodway is determined to be the channel of the river or other water course and the adjacent land areas to a distance of one-half the width of the floodplain as measured from the normal high-water mark to the upland limit of the floodplain.

11) Enclosed Areas Below the Lowest Floor

New construction or substantial improvement of any structure in Zones AE, and A that meets the development standards of Article 8.C, including the elevation requirements of subsections 5, 6, or 7 and is elevated on posts, columns, piers, piles, "stilts," or crawlspaces may be enclosed below the base flood elevation requirements provided all the following criteria are met or exceeded:

- a) Enclosed areas are not "basements" as defined in Article 2.
- b) Enclosed areas shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood water. Designs to meet this requirement must either:
 - (i) be engineered and certified by a licensed professional engineer or architect; or
 - (ii) meet or exceed the following minimum criteria:
 - (A) A minimum of two openings having a total net area of not less than one square inch for every square foot of the enclosed area;
 - (B) The bottom of all openings shall be below the base flood elevation and no higher than one foot above the lowest grade; and,
 - (C) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the entry and exit of flood waters automatically without any external influence or control such as human intervention, including the use of electrical and other non-automatic mechanical means;
- c) The enclosed area shall not be used for human habitation.
- d) The enclosed areas are usable solely for building access, parking of vehicles, or storage.

12) Bridges

New construction or substantial improvement of any bridge in Zones AE, and A shall be designed such that:

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- a) when possible, the lowest horizontal member (excluding the pilings, or columns) is elevated to at least three (3) ft. above the base flood elevation.
- b) A licensed professional engineer shall certify that:
 - (i) the structural design and methods of construction shall meet the elevation requirements of this section and the floodway standards of Article 8.C.10, and,
 - (ii) the foundation and superstructure attached thereto are designed to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all structural components. Water loading values used shall be those associated with the base flood.

13) Containment Walls

New construction or substantial improvement of any containment wall located in Zones AE₇ and A shall:

- a) Have the containment wall elevated to at least one foot above the base flood elevation;
- b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy; and,
- c) Be certified by a licensed professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this section. Such certification shall be provided with the application for a Flood Hazard Development Permit, as required by Article 8.B.5.p.

14) Wharves, Piers and Docks

New construction or substantial improvement of wharves, piers, and docks are permitted in Zones AE₇ and A, in and over water and seaward of the mean high tide if the following requirements are met:

- a) wharves, piers, and docks shall comply with all applicable local, state, and federal regulations; and
- b) for commercial wharves, piers, and docks, a licensed professional engineer shall develop or review the structural design, specifications, and plans for the construction.

D) Review of Subdivision and Development Proposals

The Planning Board shall, when reviewing subdivisions and other proposed developments that require review under other federal law, state law or local ordinances or regulations and all projects on 5 or more disturbed acres, or in the case of manufactured home parks divided into two or more lots, assure that:

- 1) All such proposals are consistent with the need to minimize flood damage.
- 2) All public utilities and facilities, such as sewer, gas, electrical and water systems are located and constructed to minimize or eliminate flood damages.
- 3) Adequate drainage is provided so as to reduce exposure to flood hazards.

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- 4) All proposals include base flood elevations, flood boundaries, and, in a riverine floodplain, floodway data. These determinations shall be based on engineering practices recognized by the Federal Emergency Management Agency.
- 5) Any proposed development plan must include a condition of plan approval requiring that structures on any lot in the development having any portion of its land within a Special Flood Hazard Area are to be constructed in accordance with Article 8.C. Such requirement will be included in any deed, lease, purchase and sale agreement, or document transferring or expressing an intent to transfer any interest in real estate or structure, including but not limited to a time-share interest. The condition shall clearly articulate that the municipality may enforce any violation of the construction requirement, and that fact shall also be included in the deed or any other document previously described. The construction requirement shall also be clearly stated on any map, plat, or plan to be signed by the Planning Board or local reviewing authority as part of the approval process.

E) Certificate of Compliance

No land in a special flood hazard area shall be occupied or used and no structure which is constructed or substantially improved shall be occupied until a Certificate of Compliance is issued by the Code Enforcement Officer subject to the following provisions:

- 1) For New Construction or Substantial Improvement of any elevated structure the applicant shall submit to the Code Enforcement Officer, an Elevation Certificate completed by a Professional Land Surveyor, licensed professional engineer, or architect, for compliance with Article 8.C subsections 5, 6, and 7.
- 2) The applicant shall submit written notification to the Code Enforcement Officer that the development is complete and complies with the provisions of this ordinance.
- 3) Within 10 working days, the Code Enforcement Officer shall:
 - a) review the Elevation Certificate and the applicant's written notification; and
 - b) upon determination that the development conforms with the provisions of this ordinance, issue a Certificate of Compliance.

F) General Provisions

- 1) The start of construction must take place within 180 days of the permit date.
 - a) The start of construction means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

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- b) For a substantial improvement, the start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, or modification of any construction element, whether or not that alteration affects the external dimensions of the building.
- 2) Construction must be completed within one year of the permit date.
- 3) The Town shall maintain, as a permanent record, copies of all Flood Hazard Development Permit Applications, corresponding Permits issued, and data relevant thereto, including reports of the Board of Appeals on variances granted under the provisions of Article 11 of this Ordinance, and copies of Elevation Certificates, Floodproofing Certificates, Certificates of Compliance and certifications of design standards required under the provisions of Article 8.