

BY-LAW NO. 1

**A by-law relating generally to
the conduct of the affairs of**

AVALON ADVANCED MATERIALS INC.

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BE IT ENACTED AND IT IS HEREBY ENACTED as a by-law of **Avalon Advanced Materials Inc.** (the "Company") as follows:

PART ONE
INTERPRETATION

1.01 Definitions

In this by-law and all other by-laws of the Company, unless the context otherwise specifies or requires:

"Act" means the Canada Business Corporations Act, R.S.C., 1985, c. C-44 and the regulations made under the Act, as from time to time amended, and every statute that may be substituted therefor and, in the case of such amendment or substitution, any reference in the by-laws of the Company shall be read as referring to the amended or substituted provisions therefor;

"appoint" includes "elect" and vice versa;

"articles" means the articles of the Company as from time to time amended or restated;

"board" means the board of directors of the Company;

"by-laws" means this by-law and any other by-law of the Company from time to time in force and effect;

"meeting of shareholders" includes an annual meeting of shareholders and a special meeting of shareholders;

"non-business day" means Saturday, Sunday and any other day that is a holiday as defined in the Interpretation Act (Canada);

"recorded address" means in the case of a shareholder, their address as recorded in the securities register; and in the case of joint shareholders, the address appearing in the securities register in respect of such joint holding, or the first address so appearing if there are more than one; and in the case of a director, officer, auditor or member of a committee of the board, their latest address as recorded in the records of the Company;

"signing officer" means, in relation to any instrument, any person authorized to sign the same on behalf of the Company by section 2.04 or by a resolution passed pursuant to section 2.04; and

"special meeting of shareholders" includes a meeting of any class or classes of shareholders, and means a special meeting of all shareholders entitled to vote at an annual meeting of shareholders.

All terms contained in the by-laws that are not otherwise defined in the by-laws and which are defined in the Act, such as "resident Canadian", shall have the meanings given to such terms in the Act.

Words importing the singular shall include the plural and vice-versa; and the word "persons" shall include individuals, bodies corporate, partnerships, associations, personal representatives and any number or aggregate of persons.

The headings used in the by-laws are inserted for reference purposes only, and are not to be considered or taken into account in construing the terms or provisions thereof, or to be deemed in any way to clarify, modify or explain the effect of any such terms or provisions.

1.02 Conflicts with Laws

In the event of any inconsistencies between the by-laws and mandatory provisions of the Act, the provisions of the Act shall prevail.

PART TWO **BUSINESS OF THE COMPANY**

2.01 Registered Office

Unless changed in accordance with the Act, the registered office of the Company shall be in the province in Canada from time to time specified in the articles and at such address within such province as the directors may from time to time determine.

2.02 Corporate Seal

The Company may, but need not, adopt a corporate seal and if one is adopted it shall be in such form as the directors may by resolution adopt from time to time.

2.03 Financial Year

The first financial period of the Company and thereafter the fiscal year of the Company shall terminate on such date as the directors may by resolution determine.

2.04 Execution of Instruments

Subject to section 2.06, contracts, documents or instruments in writing requiring the signature of the Company may be signed on behalf of the Company by any one officer or director. The directors are authorized from time to time by resolution to appoint any officer or officers or any other person or persons on behalf of the Company either to sign contracts, documents or instruments in writing generally or to sign specific contracts, documents or instruments in writing. In addition, any director or officer who may execute contracts, documents or instruments in writing, on behalf of the Company, may direct the manner in which

and the person or persons by whom any particular contract, document or instrument in writing, or class thereof, may or shall be executed and delivered on behalf of the Company.

The signature or signatures of any officer or director of the Company and of any officer or officers, person or persons appointed as set out above by resolution of the directors may, if specifically authorized by resolution of the directors, be printed, engraved, lithographed or otherwise mechanically or electronically reproduced upon all contracts, documents or instruments in writing or bonds, debentures or other securities of the Company executed or issued by or on behalf of the Company, and all contracts, documents or instruments in writing or securities of the Company on which the signature or signatures of any of the foregoing officers, directors or persons shall be so reproduced, as authorized by resolution of the directors, shall be deemed to have been manually signed by such officers, directors or persons whose signature or signatures is or are so reproduced, and shall be as valid to all intents and purposes as if they had been signed manually, and notwithstanding that the officers, directors or persons whose signature or signatures is or are so reproduced may have ceased to hold office at the date of the delivery or issue of such contracts, documents or instruments in writing or securities of the Company.

The corporate seal of the Company may, when required, be affixed to contracts, documents or instruments in writing signed as set out above or by an officer or officers, person or persons appointed as set out above by resolution of the board of directors, although a document is not invalid merely because a corporate seal is not affixed to it.

The term "contracts, documents or instruments in writing" as used in this by-law shall include deeds, mortgages, hypothecs, charges, conveyances, transfers and assignments of property, real or personal, immovable or movable, agreements, releases, receipts and discharges for the payment of money or other obligations, conveyances, transfers and assignments of securities and all paper writings.

2.05 Banking Arrangements

The banking business of the Company including, without limitation, the borrowing of money and the giving of security therefor, shall be transacted with such banks, trust companies or other bodies corporate or organizations as may from time to time be designated by or under the authority of the directors. Such banking business or any part thereof shall be transacted under such agreements, instructions and delegations of powers as the directors may from time to time by resolution prescribe or authorize.

2.06 Cheques, Drafts, Notes, Etc.

All cheques, drafts or orders for the payment of money, and all notes, acceptances and bills of exchange shall be signed by such officer or officers or other person or persons, whether or not an officer or officers of the Company, and in such manner as the directors may from time to time designate by resolution.

2.07 Custody of Securities

All securities (including shares, debentures, bonds, notes, warrants or other obligations or securities) owned by the Company shall be lodged in the name of the Company with a chartered bank or a trust company or in a safety deposit box or, if so authorized by resolution of the directors, with such other depositaries or in such other manner as may be determined from time to time by the directors. All securities (including shares, debentures, bonds, notes, warrants or other obligations or securities) belonging to the Company may be issued and held in the name of a nominee or nominees of the Company (and if issued or held in the names of more than one nominee shall be held in the names of the nominees jointly with right of survivorship), and shall be endorsed in blank with endorsement guaranteed in order to enable transfer thereof to be completed and registration thereof to be effected.

2.08 Voting Securities in Other Bodies Corporate

The signing officers of the Company may execute and deliver proxies and arrange for the issuance of voting certificates or other evidence of the right to exercise the voting rights attaching to any securities

held by the Company. Such instruments shall be in favour of such persons as may be determined by the said signing officers executing or arranging for the same. In addition, the directors may from time to time direct the manner in which and the persons by whom any particular voting rights or class of voting rights may or shall be exercised.

PART THREE **DIRECTORS**

3.01 Number of Directors

Until changed in accordance with the Act, the board shall consist of not fewer than the minimum number and not more than the maximum number of directors provided in the articles.

3.02 Qualification

Every director shall be an individual 18 or more years of age, and no one who is of unsound mind and has been so found by a court in Canada or elsewhere, or who has the status of a bankrupt shall be a director. Unless the articles otherwise provide, a director need not be a shareholder. Subject to the Act, at least 25% of the directors of the Company must be resident Canadians. If at any time the Company has less than four directors, at least one director must be a resident Canadian.

3.03 Term of Office

A director's term of office (subject to the provisions, if any, of the Company's articles, and subject to their election for an expressly stated term) shall be from the date of the meeting at which they are elected or appointed until the close of the annual meeting next following, or until their successor is elected or appointed.

3.04 Election and Removal

Directors shall be elected by the shareholders in a meeting on a show of hands unless a poll is demanded, and if a poll is demanded, such election shall be by ballot. The number of directors to be elected at any such meeting shall be the number of directors then in office, unless the directors or the shareholders otherwise determine. Except for those directors elected for an expressly stated term, all the directors then in office shall cease to hold office at the close of a meeting of shareholders at which directors are elected but, if qualified, are eligible for re-election. If a meeting of the shareholders of the Company fails to elect the number or the minimum number of directors required by the articles by reason of the disqualification, incapacity or the death of any candidates, the directors elected at that meeting may exercise all the powers of the directors if the number of directors so elected constitutes a quorum. Subject to subsection 2 of section 109 of the Act, the shareholders of the Company may, by ordinary resolution at a special meeting, remove any director before the expiration of their term of office, in which case the director so removed shall vacate office forthwith upon the passing of the resolution for their removal, and may, by a majority of the votes cast at the meeting, elect any person in their stead for the remainder of their term.

3.05 Vacation of Office

The office of a director shall ipso facto be vacated if:

- (a) They die;
- (b) They are removed from office by the shareholders;
- (c) They become bankrupt;
- (d) They are found by a court in Canada or elsewhere to be of unsound mind; or

- (e) their written resignation is received by the Company, or if a time is specified in such resignation, at the time so specified, whichever is later.

3.06 Vacancies

Subject to the Act, where a vacancy occurs in the board, except a vacancy resulting from an increase in the number or minimum number of directors or from failure to elect the number or minimum number of directors required by the articles, and a quorum of directors remains in office, the directors then in office (even though 25% of such directors are not resident Canadians) may appoint a person to fill the vacancy for the remainder of the term. If there is not then a quorum of directors or if there has been a failure to elect the number or minimum number of directors required by the articles, the directors then in office shall without delay call a special meeting of shareholders to fill the vacancy and, if they fail to do so or if there are no directors then in office, the meeting may be called by any shareholder.

3.07 Action by Directors

The directors shall manage, or supervise the management of, the business and affairs of the Company, and may exercise all such powers and do all such acts and things as may be exercised or done by the Company and are not by the Act, the articles, the by-laws, any special resolution of the Company, or by statute expressly directed or required to be done in some other manner.

3.08 Canadian Directors Present at Meetings

The directors shall not transact business at a meeting unless at least twenty-five per cent of the directors present are resident Canadians or, if the Company has less than four directors, at least one of the directors present is a resident Canadian, except where:

- (a) a resident Canadian director who is unable to be present approves in writing or by telephonic, electronic or other communication facility, the business transacted at the meeting; and
- (b) the required number of resident Canadian directors would have been present had that director been present at the meeting.

3.09 Duties

Every director and officer of the Company in exercising their powers and discharging their duties shall:

- (a) act honestly and in good faith with a view to the best interests of the Company; and
- (b) exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

3.10 Validity of Acts

An act by a director or officer is valid notwithstanding an irregularity in their election or appointment or a defect in their qualification.

3.11 Remuneration and Expenses

The remuneration to be paid to the directors shall be such as the directors shall from time to time determine. The directors may also by resolution award special remuneration to any director in undertaking any special services on the Company's behalf other than the routine work ordinarily required of a director of a Company. The confirmation of any such resolution or resolutions by the shareholders shall not be

required. The directors shall also be entitled to be paid their travelling and other expenses properly incurred by them in connection with the affairs of the Company.

PART FOUR **MEETINGS OF DIRECTORS**

4.01 Calling of Meetings

Meetings of the directors shall be held from time to time at such place as the chair of the board (if any), the president or vice-president who is a director or any two directors may determine and the corporate secretary shall, upon direction of any of the foregoing, convene a meeting of directors.

4.02 Place of Meeting

Meetings of directors and of any committee of directors may be held at any place in or outside Canada.

4.03 Notice

Notice of the time and place for the holding of any such meeting shall be delivered personally, by mail or by facsimile, or otherwise communicated by electronic means upon written consent in accordance with the requirements of the Act ("Electronic Communications") to each director not less than two business days (exclusive of the day on which the notice is delivered, mailed, or sent by Electronic Communications but inclusive of the day for which notice is given) before the date of the meeting; provided that meetings of the directors or of any committee of directors may be held at any time without formal notice if all the directors are present (except where a director attends a meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully called) or if all absent directors have waived notice. Notice of any meeting of directors or of any committee of directors or any irregularity in any meeting or the notice thereof may be waived by any director in writing or by Electronic Communication addressed to the Company or in any other manner, and such waiver may be validly given either before or after the meeting to which such waiver relates. A notice of meeting of directors or of any committee of directors need not specify the purpose of or the business to be transacted at the meeting except where the Act requires such purpose or business to be specified.

4.04 Quorum

Subject to section 3.08, the quorum for the transaction of business at any meeting of the directors shall consist of a majority of the directors then in office and, notwithstanding any vacancy among the directors, a quorum of directors may exercise all the powers of the directors.

4.05 First Meeting of the New Board

For the first meeting of directors to be held following the election of directors at an annual or special meeting of the shareholders, or for a meeting of directors at which a director is appointed to fill a vacancy in the board, no notice of such meeting need be given to the newly elected or appointed director or directors in order for the meeting to be duly constituted, provided a quorum of the directors is present.

4.06 Adjournment

Any meeting of directors or of any committee of directors may be adjourned from time to time by the chair of the meeting, with the consent of the meeting, to a fixed time and place, and no notice of the time and place for the holding of the adjourned meeting need be given to any director if the time and place of the adjourned meeting are announced at the original meeting. Any adjourned meeting shall be duly constituted if held in accordance with the terms of the adjournment and a quorum is present thereat. The directors who formed a quorum at the original meeting are not required to form the quorum at the adjourned meeting. If

there is no quorum present at the adjourned meeting, the original meeting shall be deemed to have terminated forthwith after its adjournment.

4.07 Electronic Participation

Subject to the Act, if all of the directors consent, a director may participate in a meeting of the directors or a committee of directors by means of such telephonic, electronic or other communications facilities as permit all persons participating in the meeting to communicate adequately with each other, and a director participating in a meeting by such means shall be deemed to be present at that meeting. A consent is effective whether given before or after the meeting and may be given with respect to all meetings of the directors and committees of the directors.

4.08 Regular Meetings

The directors may appoint a day or days in any month or months for regular meetings of the directors at a place and hour to be named. A copy of any resolution of the board fixing the place and time of such regular meetings shall be sent to each director forthwith after being passed, but no other notice shall be required for any such regular meeting except where the Act requires the purpose thereof or the business to be transacted thereat to be specified.

4.09 Chair

The chair of any meeting of the directors shall be the first mentioned of such of the following officers as have been appointed and who is a director and is present at the meeting: chair of the board, chief executive officer, president, lead director or a vice-president. If no such officer is present, the directors present shall choose one of their number to be chair.

4.10 Votes to Govern

All questions arising at any meeting of directors shall be decided by a majority of votes. In case of an equality of votes, the chair of the meeting in addition to their original vote shall not have a second or casting vote.

4.11 Resolution in Lieu of Meeting

A resolution in writing signed by all the directors entitled to vote on that resolution at a meeting of directors or committee of directors is as valid as if it had been passed at a meeting of directors or committee of directors. A copy of every such resolution shall be kept with the minutes of the proceedings of the directors or committee of directors.

PART FIVE **COMMITTEES**

5.01 Committees of Directors

The directors may appoint one or more committees of the board, however designated, and delegate to any such committee any of the powers of the board except those which pertain to items which, under the Act, a committee of the board has no authority to exercise.

5.02 Transaction of Business

Subject to the provisions of section 4.07, the powers of such committee or committees of directors may be exercised by a meeting at which a quorum is present or by resolution in writing signed by all the members of such committee who would have been entitled to vote on that resolution at a meeting of the committee. Meetings of such committee may be held at any place in or outside Canada.

5.03 Audit Committee

The directors shall appoint annually from among its number an audit committee to be composed of not fewer than three directors. At least such number of directors as may be specified by the Act, other applicable law or stock exchange requirements shall not be officers or employees of the Company or its affiliates. The audit committee shall have the powers provided in the Act and in other applicable law and in, addition, such other powers and duties as the directors may determine.

5.04 Advisory Bodies

The directors may from time to time appoint advisory bodies as they may deem advisable.

5.05 Procedure

Unless otherwise determined by the directors, each committee shall have the power to fix its quorum at not less than a majority of its members, to elect its chair and to regulate its procedure.

PART SIX **OFFICERS**

6.01 Appointment of Officers

The directors shall annually or as often as may be required appoint a chief executive officer, president, chief financial officer and a corporate secretary, and if deemed advisable, may annually or as often as may be required appoint one or more vice-presidents (to which title may be words added indicating seniority or function), a treasurer, a controller and such other officers as the directors may determine, including one or more assistants to any one of the officers so appointed. Subject to sections 6.02 and 6.03, an officer may but need not be a director, and one person may hold more than one office. In case and whenever the same person holds the offices of corporate secretary and treasurer, they may but need not be known as the secretary-treasurer. The directors may from time to time appoint such other officers, employees and agents as they shall deem necessary who shall have such authority and shall perform such functions and duties as may from time to time be prescribed by resolution of the directors.

6.02 Chair of the Board

The board may from time to time appoint a chair of the board who shall be a director. If appointed, the directors may assign to them any of the powers and duties that are by any provisions of this by-law assigned to the lead director or to the president; and they shall, subject to the provisions of the Act, have such other powers and duties as the directors may specify. During the absence or disability of the chair of the board, their duties shall be performed and their powers exercised by the lead director, if any, or by the president.

6.03 Lead Director

The board of directors may appoint from their number a lead director who, unless otherwise permitted by the Act, shall be a resident Canadian. Subject to the Act, a lead director shall possess and exercise such authority and powers and shall perform such duties as may be determined by the by-laws and the board of directors. A lead director shall not be an officer of the Company.

6.04 Chief Executive Officer

The chief executive officer shall have, under the control of the board of directors, general supervision and direction of the business and affairs of the Company. The chief executive officer shall possess and exercise such authority and powers and perform such other duties as may be determined by the by-laws, the board of directors and the chair of the board. In the absence of the chair of the board and lead director, if any, and if the executive officer is also a director of the Company, the executive officer shall,

when present, preside at all meetings of the directors, any committee of the directors and shareholders; they shall sign such contracts, documents or instruments in writing as require their signature, and shall have such other powers and shall perform such other duties as may from time to time be assigned to them by resolution of the directors or as are incident to their office.

6.05 President

Unless the board of directors determines otherwise, the president shall be the chief operating officer of the Company and shall have, under the control of the board of directors and the chief executive officer, general supervision of the business of the Company. The president shall possess and exercise such authority and powers and perform such other duties as may be determined by the by-laws, the board of directors, the chair of the board and the chief executive officer. In the absence of the chair of the board and the lead director, if any, and the chief executive officer, and if the president is also a director of the Company, the president shall, when present, preside at all meetings of the directors, any committee of the directors and shareholders; they shall sign such contracts, documents or instruments in writing as require their signature, and shall have such other powers and shall perform such other duties as may from time to time be assigned to them by resolution of the directors or as are incident to their office.

6.06 Vice-President

The vice-president or, if more than one, the vice-presidents in order of seniority, shall be vested with all the powers and shall perform all the duties of the president in the absence or inability or refusal to act of the chief executive officer, provided, however, that a vice-president who is not a director shall not preside as chair at any meeting of directors or shareholders. The vice-president or, if more than one, the vice-presidents in order of seniority, shall sign such contracts, documents or instruments in writing as require their signatures and shall also have such other powers and duties as may from time to time be assigned them by resolution of the directors.

6.07 Corporate Secretary

The corporate secretary shall possess and exercise such authority and powers and perform such duties as may be determined by the by-laws, the board of directors, the chair of the board, the chief executive officer and the president.

The corporate secretary shall give or cause to be given, as and when instructed, notices to the board of directors, the shareholders, officers, auditors and members of committees and advisory bodies of the board of directors. Unless otherwise determined by the board of directors, the corporate secretary shall attend and record minutes of all meetings of the board of directors, committees of the board of directors, shareholders and advisory bodies. The corporate secretary shall have charge of the corporate seal or seals and of the corporate records, subject to section 8.03 hereof, required by law to be kept, except accounting records.

6.08 Treasurer or Assistant Treasurer

The Treasurer or Assistant Treasurer shall keep proper accounting records in compliance with the Act and shall be responsible for the deposit of money, the safekeeping of securities and the disbursement of the funds of the Company; they shall render to the board whenever required an account of all their transactions as Treasurer or Assistant Treasurer and of the financial position of the Company; and they shall have such other powers and duties as the directors may specify. Unless and until the directors designate any other officer of the Company to be the Chief Financial Officer of the Company, the Treasurer or Assistant Treasurer shall be the Chief Financial Officer of the Company.

6.09 Powers and Duties of Other Officers

The powers and duties of all other officers shall be such as the terms of their engagement call for or as the directors or the chief executive officer may specify. Any of the powers and duties of an officer to

whom an assistant has been appointed may be exercised and performed by such assistant, unless the board or the chief executive officer otherwise directs.

6.10 Term of Office

All officers, employees and agents, in the absence of agreement to the contrary, shall be subject to removal by resolution of the directors at any time, with or without cause. Otherwise, each officer appointed by the directors shall hold office until their successor is appointed or until the earlier of their resignation or death.

6.11 Variation of Powers and Duties

The directors may from time to time and subject to the provisions of the Act, vary, add to or limit the powers and duties of any officer.

6.12 Terms of Employment and Remuneration

The terms of employment and remuneration of all officers appointed by the board, including the chair of the board, if any, and the president shall be determined from time to time by resolution of the board. The fact that any officer or employee is a director or shareholder shall not disqualify them from receiving such remuneration as may be determined.

6.13 Conflict of Interest

An officer shall disclose their interest in any material contract or proposed material contract with the Company in accordance with section 7.04.

6.14 Vacancies

If the office of chair, lead director, president, vice-president, corporate secretary, controller, treasurer, or any other office created by the directors pursuant to section 6.10 hereof shall be or become vacant by reason of death, resignation or in any other manner whatsoever, the directors shall in the case of the president or the corporate secretary and may in the case of any other officer appoint an officer to fill such vacancy.

6.15 Other Officers

The duties of all other officers of the Company shall be such as the terms of their engagement call for or the board requires of them. Any of the powers and duties of an officer to whom an assistant has been appointed may be exercised and performed by such assistant, unless the board otherwise directs.

PART SEVEN **PROTECTION OF DIRECTORS AND OFFICERS**

7.01 Limitation of Liability

Except as otherwise provided in the Act, no director or officer for the time being of the Company shall be liable for the acts, receipts, neglects or defaults of any other director or officer or employee or for joining in any receipt or act for conformity, or for any loss, damage or expense happening to the Company through the insufficiency or deficiency of title to any property acquired by the Company or for or on behalf of the Company, or for the insufficiency or deficiency of any security in or upon which any of the moneys of or belonging to the Company shall be placed out or invested, or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any person, including any person with whom or which any moneys, securities or effects shall be lodged or deposited, or for any loss, conversion, misapplication or misappropriation of or any damage resulting from any dealings with any moneys, securities or other assets belonging to the Company or for any other loss, damage or misfortune whatever which may happen in the

execution of the duties of their office or in relation thereto, unless the same shall happen by or through their failure to exercise their powers and to discharge their duties honestly, in good faith with a view to the best interests of the Company, and in connection therewith to exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances, provided that nothing in these by-laws shall relieve a director or officer from the duty to act in accordance with the Act and regulations made thereunder, or relieve them from liability for a breach thereof. The directors for the time being of the Company shall not be under any duty or responsibility in respect of any contract, act or transaction whether or not made, done or entered into in the name or on behalf of the Company, except such as shall have been submitted to and authorized or approved by the board of directors.

7.02 Indemnity

- (a) Subject to the provisions of paragraph (b) below, the Company shall, to the maximum extent permitted by law, indemnify a director or officer of the Company, a former director or officer of the Company, or another individual who acts or acted at the Company's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including any amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the Company or other entity.
- (b) The indemnity provided under paragraph (a) above will only be applicable if the individual:
 - (i) acted honestly and in good faith with a view to the best interests of the Company or other entity for which the individual acted as director or officer or in a similar capacity at the Company's request, as the case may be;
 - (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, had reasonable grounds for believing that the individual's conduct was lawful; and
 - (iii) was not judged by a court or other competent authority to have committed any fault or omitted to do anything that the individual ought to have done.
- (c) The Company shall advance moneys to a director, officer or other individual for the costs, charges and expenses of a proceeding referred to in paragraph (a), provided that such individual shall repay the moneys so advanced if the individual does not fulfill the conditions of paragraph (b).
- (d) The provisions for indemnification contained in this by-law shall not be deemed exclusive of any other rights to which any person seeking indemnification may be entitled under any agreement, vote of shareholders or directors or otherwise, both as to action in the individual's official capacity and as to action in another capacity, and shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs and legal representatives of such a person.

7.03 Insurance

Subject to the Act, the Company may purchase and maintain insurance for the benefit of any person referred to in section 7.02 against any liability incurred by them in their capacity as a director or officer, or an individual acting in a similar capacity, of the Company or of another body corporate at the Company's request.

7.04 Conflict of Interest

A director or officer who is a party to, or who is a director or officer (or acting in a similar capacity) of or has a material interest in a party to, any material contract or transaction, whether made or proposed, with the Company shall disclose the nature and extent of their interest at the time and in the manner provided by the Act. Any such contract or transaction shall be referred to the directors or shareholders for approval even if such contract is one that in the ordinary course of the Company's business would not require approval by the directors or shareholders, and a director interested in a contract so referred to the permitted board shall not vote on any resolution to approve the same, except as permitted by the Act.

7.05 Submission of Contracts or Transactions to Shareholders for Approval

The directors in their discretion may submit any contract, act or transaction for approval, ratification or confirmation at any annual meeting of the shareholders or at any special meeting of the shareholders called for the purpose of considering the same and any contract, act or transaction that shall be approved, ratified or confirmed by resolution passed by a majority of the votes cast at any such meeting (unless any different or additional requirement is imposed by the Act or by the Company's articles or any other by-law) shall be as valid and as binding upon the Company and upon all the shareholders as though it had been approved, ratified and/or confirmed by every shareholder of the Company.

PART EIGHT **SHARES**

8.01 Issuance

Subject to the Act and the articles of the Company, the directors may from time to time issue, or grant options to purchase, the whole or any part of the authorized and unissued shares of the Company at such times and to such persons and for such consideration as the directors may determine, provided that no share shall be issued until it is fully paid as provided by the Act.

8.02 Commissions

The directors may from time to time authorize the Company to pay a reasonable commission to any person in consideration of such person purchasing or agreeing to purchase shares of the Company, whether from the Company or from any other person, or procuring or agreeing to procure purchasers for any such shares.

8.03 Transfer Agents and Registrars

The directors may from time to time appoint a registrar to maintain the securities register and a transfer agent to maintain the register of transfers and may also appoint one or more branch registrars to maintain branch securities registers and one or more branch transfer agents to maintain branch registers of transfers, but one person may be appointed both registrar and transfer agent. The directors may at any time terminate any such appointment.

8.04 Share Certificates

Every holder of one or more shares of the Company shall be entitled, at their option, to a share certificate, or to a non-transferable written acknowledgement of their right to obtain a share certificate, stating the number and class or series of shares held by them as shown on the securities register. Share certificates and acknowledgements of a shareholder's right to a share certificate shall be in such form as the directors shall from time to time approve. Any share certificate shall be signed in accordance with section 2.04; it need not be under the corporate seal. The signature of one of the signing officers may be printed or mechanically reproduced upon share certificates. Every printed or mechanically reproduced signature shall for all purposes be deemed to be a signature binding upon the Company. Unless the directors otherwise determine, certificates representing shares in respect of which a transfer agent or

registrar, as the case may be, has been appointed shall not be valid unless countersigned by or on behalf of such transfer agent or registrar. In the case of share certificates which are not valid unless countersigned by or on behalf of a transfer agent or registrar, the signature of any signing officer may be printed or mechanically reproduced upon share certificates and every such printed or mechanically reproduced signature shall for all purposes be deemed to be a signature binding upon the Company. Notwithstanding any change in the persons holding office between the time of signing and the issuance of any certificate, and notwithstanding that a person may not have held office at the date of issuance of such certificate, any such certificate so signed shall be valid and binding upon the Company.

8.05 Joint Shareholders

If two or more persons are registered as joint holders of any share, the Company shall not be bound to issue more than one certificate in respect thereof, and delivery of such certificate to one of such persons shall be sufficient delivery to all of them. Any one of such persons may give effectual receipts for the certificate issued in respect thereof or for any dividend, bonus, return of capital or other money payable or warrant issuable in respect of such share.

8.06 Deceased Shareholders

In the event of the death of a holder, or of one of the joint holders, of any share, the Company shall not be required to make any entry in the securities register in respect thereof or to make dividends or other payments in respect thereon except upon production of all such documents as may be required by law and upon compliance with the reasonable requirements of the Company and its transfer agents.

8.07 Replacement of Share Certificates

The directors or any officer or agent designated by the directors may in their discretion direct the issue of a new share certificate in lieu of and upon cancellation of a share certificate that has been mutilated or in substitution for a share certificate claimed to have been lost, destroyed or wrongfully taken on payment of such reasonable fee, and on such terms as to indemnity, reimbursement of expenses and evidence of loss and of title as the directors, or any officer or agent designated by the directors, may from time to time prescribe, whether generally or in any particular case.

8.08 Lien for Indebtedness

If the articles provide that the Company shall have a lien on shares registered in the name of a shareholder indebted to the Company, such lien may be enforced, subject to the articles, by the sale of the shares thereby affected or by any other action, suit, remedy or proceeding authorized or permitted by law or by equity and, pending such enforcement, may refuse to register a transfer of the whole or any part of such shares.

PART NINE **DIVIDENDS AND RIGHTS**

9.01 Dividends

Subject to the Act, the directors may from time to time declare dividends payable to the shareholders according to their respective rights and interests in the Company. Dividends may be paid in money or property or by issuing fully paid shares of the Company.

9.02 Dividend Cheques

A dividend payable in money shall be paid by either electronically by direct deposit or by cheque drawn on the Company's bankers or one of them to the order of each registered holder of shares of the class or series in respect of which it has been declared and, if paid by cheque, mailed by prepaid ordinary mail to such registered holder at their recorded address, unless such holder otherwise directs. In the case

of joint holders any cheque issued shall, unless such joint holders otherwise direct, be made payable to the order of all of such joint holders and mailed to them at their recorded address. The mailing of such cheque as set out in this section, unless the same is not paid on due presentation, shall satisfy and discharge the liability for the dividend to the extent of the sum represented thereby plus the amount of any tax which the Company is required to and does withhold.

9.03 Non-Receipt of Cheques

In the event of non-receipt of any dividend cheque by the person to whom it is sent as set out in section 9.02, the Company shall issue to such person a replacement cheque for a like amount on such terms as to indemnity, reimbursement of expenses and evidence of non-receipt and of title as the directors may from time to time prescribe, whether generally or in any particular case.

9.04 Record Date for Dividends and Rights

The directors may fix in advance a date, preceding by not more than 50 days the date for the payment of any dividend or the date for the issue of any warrant or other evidence of right to subscribe for securities of the Company, as a record date for the determination of the persons entitled to receive payment for such dividend or to exercise the right to subscribe for such securities, and notice of any such record date shall be given not less than 7 days before such record date in the manner provided in the Act. If no record date is so fixed, the record date for the determination of the persons entitled to receive payment of any dividend or to exercise the right to subscribe for securities of the Company shall be at the close of business on the day on which the resolution relating to such dividend or right to subscribe is passed by the directors.

9.05 Unclaimed Dividends

Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to the Company.

PART TEN
MEETINGS OF SHAREHOLDERS

10.01 Annual Meetings

The annual meeting of shareholders shall be held on such day and at such time in each year and, subject to section 10.03, at such place as the directors, the chair of the board or the chief executive officer may from time to time determine, in any event no later than the earlier of (i) six months after the end of each financial year of the Company and (ii) 15 months after the Company's last annual meeting of shareholders, for the purpose of considering the financial statements and reports required by the Act to be placed before the annual meeting, electing directors, appointing auditors and for the transaction of such other business as may properly be brought before the meeting.

An annual meeting of shareholders may also be constituted as an annual and special meeting of shareholders to consider and transact any special business, which may be considered and transacted at a special meeting of shareholders.

10.02 Special Meetings

The directors shall have power to call a special meeting of shareholders at any time.

10.03 Place of Meetings

Subject to the Act, meetings of shareholders shall be held at the place within Canada that the directors determine. If the Company makes available a telephonic, electronic or other communication facility that permits all participants of a shareholders meeting to communicate adequately with each other during the meeting and otherwise complies with the Act, any person entitled to attend such meeting may participate

by means of such communication facility in the manner prescribed by the Act, and any person participating in the meeting by such means is deemed to be present at the meeting.

10.04 Notice of Meetings

Notice of the time and place of each meeting of shareholders shall be given in the manner provided in Part Eleven not less than 21 nor more than 60 days before the date of the meeting to each director, to the auditors and to each shareholder who at the close of business on the record date is entered in the securities register as the holder of one or more shares carrying the right to vote at the meeting. Notice of a meeting of shareholders called for any purpose other than consideration of the financial statements and the auditors' report, election of directors and reappointment of incumbent auditors shall state the nature of such business in sufficient detail to permit the shareholder to form a reasoned judgment thereon and shall state the text of any special resolution to be submitted to the meeting.

10.05 List of Shareholders Entitled to Notice

For every meeting of shareholders, the Company shall prepare a list of shareholders entitled to receive notice of the meeting, arranged in alphabetical order and showing the number of shares held by each shareholder entitled to vote at the meeting. If a record date for the meeting is fixed pursuant to section 10.06, the shareholders listed shall be those registered at the close of business on such record date. If no record date is fixed, the shareholders listed shall be those registered at the close of business on the day immediately preceding the day on which notice of the meeting is given, or where no such notice is given, the day on which the meeting is held. The list shall be available for examination by any shareholder during usual business hours at the registered office of the Company or at the place where the central securities register is kept and at the meeting for which the list was prepared.

10.06 Record Date for Notice

The directors may fix in advance a record date, preceding the date of any meeting of shareholders by not more than 60 days and not less than 21 days, for the determination of the shareholders entitled to notice of the meeting, provided that notice of any such record date is given not less than seven days before such record date, in the manner provided in the Act. If no record date is so fixed, the record date for the determination of the shareholders entitled to notice of the meeting shall be the close of business on the day immediately preceding the day on which the notice is given, or, if no notice is given, the day on which the meeting is held.

10.07 Meetings Held by Electronic Means

If the directors or shareholders of the Company call a meeting of shareholders pursuant to the Act, the directors may determine that the meeting shall be held, in accordance with the Act, entirely by means of a telephonic, electronic or other communications facility that permits all participants to communicate adequately with each other during the meeting.

10.08 Meetings without Notice

A meeting of shareholders may be held without notice at any time and place permitted by the Act (a) if all the shareholders entitled to vote thereat are present in person or represented by proxy or if those not present or represented by proxy waive notice of or otherwise consent to such meeting being held, and (b) if the auditors and the directors are present or waive notice of or otherwise consent to such meeting being held, provided that such shareholders, auditors or directors present are not attending for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully called. At such a meeting, any business may be transacted which the Company at a meeting of shareholders may transact.

10.09 Chair, Corporate Secretary and Scrutineers

The chair of any meeting of shareholders shall be the first mentioned of such of the following officers as have been appointed and who is present at the meeting: chair of the board, chief executive officer, president, lead director or a vice-president who is a shareholder. If no such officer is present within 15 minutes from the time fixed for holding the meeting, the persons present and entitled to vote shall choose one of their number to be chair. If the corporate secretary of the Company is absent, the chair shall appoint some person, who need not be a shareholder, to act as corporate secretary of the meeting. If desired, one or more scrutineers, who need not be shareholders, may be appointed by a resolution or by the chair with the consent of the meeting.

10.10 Persons Entitled to be Present

The only persons entitled to be present at a meeting of shareholders shall be those entitled to vote thereat, the directors and auditors of the Company and others who, although not entitled to vote, are entitled or required under any provision of the Act or the articles or by-laws to be present at the meeting. Any other person may be admitted only on the invitation of the chair of the meeting or with the consent of the meeting.

10.11 Quorum

Subject to the Act, a quorum for the transaction of business at any meeting of shareholders shall be two persons present in person, each being a shareholder entitled to vote thereat or a duly appointed proxy or proxyholder for an absent shareholder so entitled, holding or representing in the aggregate not less than 20% of the issued and outstanding shares of the Company carrying voting rights at the meeting of shareholders.

10.12 Right to Vote

Subject to the provisions of the Act as to authorized representatives of any other body corporate or association, at any meeting of shareholders for which the Company has prepared the list referred to in paragraph 10.05, a shareholder whose name appears on such list is entitled to vote the shares shown opposite their name at the meeting to which the list relates. At any meeting of shareholders for which the Company has not prepared the list referred to in paragraph 10.05, every person shall be entitled to vote at the meeting who at the time is entered in the securities register as the holder of one or more shares carrying the right to vote at such meeting. The persons entitled to vote at any meeting of shareholders shall be the persons entitled to vote in accordance with the Act.

10.13 Proxyholders and Representatives

Every shareholder entitled to vote at a meeting of shareholders may appoint a proxyholder, or one or more alternate proxyholders, to attend and act as their representative at the meeting in the manner and to the extent authorized and with the authority conferred by the proxy. A proxy shall be in writing executed by the shareholder or their attorney and shall conform with the requirements of the Act. Alternatively, every such shareholder which is a body corporate or association may authorize by resolution of its directors or governing body an individual to represent it at a meeting of shareholders and such individual may exercise on the shareholder's behalf all the powers it could exercise if it were an individual shareholder. The authority of such an individual shall be established by depositing with the Company a certified copy of such resolution, or in such other manner as may be satisfactory to the corporate secretary of the Company or the chair of the meeting. Any such proxyholder or representative need not be a shareholder.

10.14 Time for Deposit of Proxies

The directors may specify in a notice calling a meeting of shareholders a time, preceding the time of such meeting by not more than 48 hours exclusive of non-business days, before which time proxies to be used at such meeting must be deposited. A proxy shall be acted upon only if, prior to the time so specified, it shall have been deposited with the Company or an agent thereof specified in such notice or, if

no such time is specified in such notice, it has been received by the corporate secretary of the Company or by the chair of the meeting or any adjournment thereof prior to the time of voting.

10.15 Joint Shareholders

If two or more persons hold shares jointly, any of them present in person or represented by proxy at a meeting of shareholders may, in the absence of the other or others, vote the shares; but if two or more of those persons are present in person or represented by proxy, they shall vote together as one on the shares jointly held by them.

10.16 Votes to Govern

At any meeting of shareholders every question shall, unless otherwise required by the articles or by-laws or by law, be determined by the majority of the votes cast on the question. In case of an equality of votes either upon a show of hand or upon a poll, the chair of the meeting shall not be entitled to a second or casting vote.

10.17 Show of Hands

Subject to the Act, any question at a meeting of shareholders shall be decided by a show of hands, which may include such other indication of a vote made by means of the telephonic, electronic or other communication facility, if any, made available by the Company for that purpose, unless a ballot thereon is required or demanded as provided in section 10.18. Upon a show of hands, every person who is present, in person or by means of the telephonic, electronic or other communications facility, if any that the Company has made available for such purpose, and entitled to vote shall have one vote. Whenever a vote by show of hands shall have been taken upon a question, unless a ballot thereon is so required or demanded, a declaration by the chair of the meeting that the vote upon the question has been carried or carried by a particular majority or not carried and an entry to that effect in the minutes of the meeting shall be prima facie evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against any resolution or other proceeding in respect of the said question, and the result of the vote so taken shall be the decision of the shareholders upon the said question. For the purpose of this section, if at any meeting the Company has made available to shareholders the means to vote electronically, any vote made electronically shall be included in tallying any votes by show of hands.

10.18 Ballots

On any question proposed for consideration at a meeting of shareholders, and whether or not a show of hands has been taken thereon, the chair may require a ballot or any person who is present and entitled to vote at the meeting may require or demand a ballot. A ballot so required or demanded shall be taken in such manner as the chair shall direct. A requirement or demand for a ballot may be withdrawn at any time prior to the taking of the ballot. If a ballot is taken each person present shall be entitled, in respect of the shares which they are entitled to vote at the meeting upon the question, to that number of votes provided by the Act or the articles, and the result of the ballot so taken shall be the decision of the shareholders upon the said question.

10.19 Adjournment

The chair at a meeting of shareholders may, with the consent of the meeting and subject to such conditions as the meeting may decide, adjourn the meeting from time to time and from place to place. If a meeting of shareholders is adjourned for less than 30 days, it shall not be necessary to give notice of the adjourned meeting, other than by announcement at the earliest meeting that is adjourned. Subject to the Act, if a meeting of shareholders is adjourned by one or more adjournments for an aggregate of 30 days or more, notice of the adjourned meeting shall be given as for an original meeting.

10.20 Resolution in Writing

A resolution in writing signed by all the shareholders entitled to vote on that resolution at a meeting of shareholders is as valid as if it had been passed at a meeting of the shareholders unless a written statement with respect to the subject matter of the resolution is submitted by a director or the auditors in accordance with the Act.

PART ELEVEN NOTICES

11.01 Method of Giving Notices

Any notice (which term includes any communication or document) to be given (which term includes sent, delivered or served) pursuant to the Act, the regulations thereunder, the articles, the by-laws or otherwise to a shareholder, director, officer, auditor or member of a committee of the directors shall be sufficiently given if delivered personally to the person to whom it is to be given; delivered to the recorded address of the person; mailed to the person's recorded address by prepaid or ordinary or air mail; sent to the person's recorded address by any means of prepaid transmitted or recorded communication; or an electronic document is provided in accordance with Part Twelve of this by-law.

A notice delivered as set out in this section is deemed to have been given when it is delivered personally or to the recorded address; a notice mailed as set out in this section shall be deemed to have been given when deposited in a post office or public letter box; and a notice sent by means of transmitted or recorded communication as set out in this section is deemed to have been dispatched or delivered to the appropriate communication company or agency or its representative for dispatch; and a notice sent by electronic means as set out in this section and Part Twelve shall be deemed to have been given upon receipt of reasonable confirmation of transmission to the designated information system indicated by the person entitled to receive such notice. The corporate secretary may change or cause to be changed the recorded address of any shareholder, director, officer, auditor or member of a committee of the directors in accordance with any information believed by them to be reliable.

11.02 Signature to Notices

The signature of any director or officer of the Company to any notice or document to be given by the Company may be written, stamped, mechanically reproduced or electronically reproduced in whole or in part.

11.03 Proof of Service

With respect to every notice sent by post it is sufficient to prove that the envelope or wrapper containing the notice or other document was properly addressed as provided in this by-law and put into a post office or into a letter box. With respect to every notice or other document sent as an electronic document it is sufficient to prove that the electronic document was properly addressed to the designated information system as provided in this by-law and sent by electronic means. A certificate of the chair of the board, the chief executive officer, the president, a vice-president, the corporate secretary, the treasurer or the controller or of any other officer of the Company in office at the time of the making of the certificate or of a transfer officer of any transfer agent or branch transfer agent of shares of any class of the Company as to the facts in relation to the mailing or delivery of any notice or other document to any shareholder, director, officer or auditor or publication of any notice or other document shall be conclusive evidence thereof and shall be binding on every shareholder, director, officer or auditor of the Company as the case may be.

11.04 Notice to Joint Shareholders

If two or more persons are registered as joint holders of any share, any notice may be addressed to all of such joint holders but notice to one of such persons shall be sufficient notice to all of them.

11.05 Computation of Time

In computing the date when notice must be given under any provision requiring a specified number of days notice of any meeting or other event, the date of giving the notice shall be excluded and the date of the meeting or other event shall be included.

11.06 Undelivered Notices

If any notice given to a shareholder pursuant to section 11.01 is returned on three consecutive occasions because they cannot be found, the Company shall not be required to give any further notices to such shareholder until they inform the Company in writing of their new address.

11.07 Omissions and Errors

The accidental omission to give any notice to any shareholder, director, officer, auditor or member of a committee of the board or the non-receipt of any notice by any such person or any error in any notice not affecting the substance thereof shall not invalidate any action taken at any meeting held pursuant to such notice or otherwise founded thereon.

11.08 Persons Entitled by Death or Operation of Law

Every person who, by operation of law, transfer, death of shareholder or any other means whatsoever, shall become entitled to any share, shall be bound by every notice in respect of such share which shall have been duly given to the shareholder through whom they derive their title to such share prior to their name and address being entered on the securities register (whether such notice was given before or after the happening of the event upon which they became so entitled) and prior to their furnishing to the Company the proof of authority or evidence of their entitlement prescribed by the Act.

11.09 Waiver of Notice

Any shareholder, proxyholder, representative, director, officer, auditor, member of a committee of the board or other person entitled to attend a meeting of shareholders may at any time waive any notice, or waive or abridge the time for any notice, required to be given to them or to the shareholder whom the proxyholder or representative represents under any provision of the Act, the regulations thereunder, the articles, the by-laws or otherwise and such waiver or abridgement, whether given before or after the meeting or other event for which notice is required to be given shall cure any default in the giving or in the time of such notice, as the case may be. Any such waiver or abridgement shall be in writing except a waiver of notice of a meeting of shareholders or of the board which may be given in any manner.

PART TWELVE
ELECTRONIC DOCUMENTS

12.01 Creation and Provision of Information

Unless the Company's articles provide otherwise, and subject to and in accordance with the Act, the Company may satisfy any requirement of the Act to create or provide a notice, document or other information to any person by the creation or provision of an electronic document. Except as provided in the Act, "electronic document" means any form of representation of information or of concepts fixed in any medium in or by electronic, optical or other similar means that can be read or perceived by a person by any means.

PART THIRTEEN
EFFECTIVE DATE

13.01 Effective Date

This by-law shall come into force upon being passed by the directors in accordance with the Act.

MADE by the board the 10th day of January, 2023.

(signed) *"Donald S. Bubar"*

Donald S. Bubar
President and Chief Executive Officer

(signed) *"R. James Andersen"*

R. James Andersen
Vice-President, Finance and Chief Financial Officer