

Section 15 Construction

15.1 General

- 15.1.1 All signs shall be designed and constructed to resist wind, seismic, and dead loads according to the Building By-law.
- 15.1.2 All bracing systems shall be designed and constructed to transfer lateral forces to the foundations.
- 15.1.3 For signs on buildings, the loads shall be transmitted through the structural frame of the building to the ground in such manner as not to overstress any of the elements of the structural frame.
- 15.1.4 When required by the Chief Building Official, the owner or agent of the building or site upon which a sign is to be erected should provide complete drawings and specifications covering the construction of the sign and its supporting framework and other information with respect to the building upon which it is proposed to locate the sign as to determine whether the structure of such building will carry the additional loads and stresses imposed thereon by the erection of the sign without exceeding the stress requirements.

15.2 Material

15.2.1 Approved Combustible Plastic

- (a) All approved combustible plastic material and the fastenings shall be of adequate strength and durability to withstand design loads prescribed in the Building By-law.
- (b) The Chief Building Official may require that sufficient and substantial technical data be submitted by the manufacturer of the combustible plastic material or by an acceptable testing agency to establish working stresses, maximum unsupported spans, and such other information as may be required for the various thicknesses and forms used.
- (c) Allowance shall be made for expansion and contraction of plastic material according to accepted data on co-efficient of expansion of the combustible plastic material and any material with which it is employed.
- (d) The Chief Building Official may require the submission of the results of fire tests of the combustible plastic material from an approved testing agency, to determine ignitability, surface-burning characteristics or degree of combustibility.
- (e) Where electrical signs are installed within buildings, the requirements of the Building By-law shall apply to the type of sign face material, distribution and area of the sign face.

15.2.2 Approved Pliable Combustible Plastic Material

All pliable plastic sign face materials shall comply with conditions specified in Section 15.2.1 above, and when back lighted shall have:

- (a) waterproof seams and joints;
- (b) tension-adjusting sign-face connections;
- (c) tear-resisting reinforcement with a tensile strength of 22.5 kg per 25 mm of width capable of withstanding puncture from impact of a 0.45 kg, 25 mm steel ball, dropped from a height of 3.0 m or equivalent;
- (d) proof of conformance with ULC-S109-1979, “Standard for Flame Test of Flame-Resistant Fabrics and Films”;
- (e) a minimum clearance of 3.0 m from a building with combustible framing or cladding; and

- (f) a minimum clearance of 3.0 m horizontally or 10.0 m below any unprotected opening in an exterior wall of a building.

15.2.3 Other Combustible Material

Wood, leather or other similar combustible materials, not including approved combustible plastic, may be used as part of a projecting sign provided that:

- (a) the area of one face of the sign shall not exceed 0.75 m²; and
- (b) it is attached to a metal frame capable of sustaining all loads borne by the sign.

15.2.4 Anchorage

- (a) Signs shall be attached to masonry, concrete or steel by means of metal anchors, bolts, or approved expansion screws of sufficient size and anchorage to support safely the loads applied.
- (b) Signs shall not be fastened by nails, staples or screws to wooden blocks, plugs or nailing strips built into masonry or concrete.
- (c) Bolts or lag screws shall not be fastened to window frames or sills. Lag bolts in solid woodworks shall not be less than 12.7 mm in diameter, and shall penetrate the woodwork a minimum of 76 mm.
- (d) All cables 12.7 mm in diameter and over shall be provided with suitable sleeves, and two cable clips shall be provided, securely clamped to the sleeves, for each cable.
- (e)
 - (i) Turnbuckles shall be provided for all supporting cables;
 - (ii) Side-guys may have a turnbuckle for one side of any sign; and
 - (iii) Turnbuckles shall have a breaking strength equivalent to that of the cable to which they are attached.
- (f) The anchor or support of any sign shall not be connected to, or supported by, an unbraced parapet wall, unless the structural stability of the parapet wall is adequate as confirmed by a professional structural engineer registered in the Province of British Columbia.

15.2.5 Corrosion

All cables, turnbuckles, links, bolts and screws, and all devices which are used to support or which form a part of any sign shall be non-corrosive or be otherwise protected by galvanizing or in another manner acceptable to the Chief Building Official.

15.2.6 Various Sign Types

- (a) **Canopy Signs**
A non-illuminated canopy sign built onto or fastened directly to each canopy face or affixed on the canopy shall be constructed of non-combustible material, approved combustible plastic or other combustible material as defined in Section 15.2.1, 15.2.2, and 15.2.3.
- (b) **Facia Signs**
 - (i) Non-illuminated facia signs shall be of metal or other non-combustible material or of approved combustible plastic as defined in Section 15.2.1.
 - (ii) Wood may be permitted for a facia sign provided it is not less than 19 mm thick if it is plywood, and 30 mm nominal thickness if it is of solid wood.
 - (iii) The maximum sign area of a wood facia sign shall not exceed 9.29 m².
- (c) **Free-Standing Signs**
 - (i) A free-standing sign shall be constructed of non-combustible material throughout except that:
 - (A) a sign not exceeding 4.9 m above grade and not encroaching over a street at any point may have the display area including backing of approved combustible materials as defined in Sections 15.2.1 and 15.2.3.

- (B) a sign exceeding 4.9 m above grade at any point may have the display area of approved combustible plastic as defined in Section 15.2.1.
- (ii) The foundation of all free-standing signs shall be of concrete, or an alternative method designed by a professional structural engineer, registered in the Province of British Columbia.
- (iii) The foundation of all free-standing signs exceeding 7.5 m in height shall be designed by a professional structural engineer, registered in the Province of British Columbia.
- (d) Projecting Signs
 - (i) All projecting signs shall be of metal or other non-combustible material or of approved combustible plastic and other combustible material as defined in Section 15.2.1 and 15.2.3.
 - (ii) Projecting signs exceeding 100 kg shall comply with Section 15.1.4.

15.3 Inspection

- 15.3.1 Immediately upon completion of the installation of any sign for which a permit has been issued, the person to whom the permit has been granted shall notify the Director that the installation of such sign has been completed, and shall include the permit number in the notification.

