

Meeting the Requirements of Boston's Façade Ordinance

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Facade ordinances were established to evaluate buildings in an effort to protect pedestrians from facade components falling from buildings and causing injury or death. The Inspectional Services Department (ISD) of Boston implemented Ordinance 9.9-12 (Inspection of Exterior Walls and Appurtenances of Buildings Requiring Periodic Inspection) in 1995. The ordinance compels owners of buildings that are over 70 feet in height to inspect the exterior facades every five years if they are occupied and every year if they are unoccupied.

The American Society of Testing and Materials (ASTM) developed Standard E2270 to provide general guidelines for facade inspections. The standard divides the types of inspections into two categories:

- *General Inspection* – A general visual inspection is required for all buildings between 70 and 125 feet. A general visual inspection means that a licensed engineer can observe the building using binoculars from the ground or roof levels to determine current conditions.
- *Detailed Inspection* – Buildings higher than 125 feet require a detailed or close visual inspection by a licensed engineer using full height mechanical access (i.e. rope access, swing staging, etc.). A minimum of one full height drop per building elevation is required for these buildings. A detailed inspection may also include test probes or cuts through the exterior components of the facade to determine underlying substrates and their conditions.

When conducting a facade ordinance inspection at a building, using the following three steps will help to make the process smooth and thorough:

Step 1: Review The Building's Service History

Understanding how the building has been servicing its occupants is very important. Occupant interviews regarding active leaks, where drafts are detected, etc. is helpful information for the engineer to have prior to performing a visual evaluation. Maintenance reports will provide useful information regarding where the building has been repaired and where the problem areas still exist. Whenever possible, it is recommended that the original building elevations and detail drawings be provided to the engineer to locate building defects and determine potential sources of defects. If original drawings are not available, the engineer should generate field sketches and/or photographs of the building elevations as part of the final report so that defects can be easily located in the future.

Step 2: Perform Visual Inspection

The four methods of inspection include:

- Visual inspection (general) from the ground or adjacent roofs (always use binoculars)
- Aerial lift (detailed)
- Swing staging (detailed)
- Rope access (detailed)
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During a hands-on (detailed) inspection, the licensed engineer will go up in any of the previously-listed lifts to physically touch the building components to check the condition/stability of the wall component. Using a hammer to lightly sound the stone is helpful to see if it is a potential fall hazard. A hollow sound indicates that the masonry or stone could delaminate, while a resonant sound indicates that it is well-secured. If a visual or detailed inspection is inconclusive or one wishes to examine/determine the interior components of the wall system, test probes may be necessary. It is recommended that the owner allow the licensed engineer to team up with a quality contractor when performing the evaluation to pre-determine potential repair costs so that temporary stabilization of life-threatening defects can be performed at the same time.

Step 3: Analyze Findings and Prepare Report

After Step 1 and 2 are complete, the engineer will gather and analyze all the findings to prepare the report. The building owner will receive the report before it is submitted to the ISD. If the building receives a positive evaluation, the owner will receive a certificate that renews the building for five years. If temporary repairs are performed in conjunction with the evaluation, the final report issued to the ISD will include statements that defect repairs have been performed, as well as recommendations for more permanent repairs.

Addressing the Problems

If deterioration conditions are encountered, temporary or permanent repairs will be required. Temporary stabilization methods are basically “band aids.” They will reduce the rate of further damage and attempt to provide time for the owner to determine the extent of repairs to be performed. Temporary stabilization methods can involve installing protective staging or netting. If, for example, bricks or stone are spalling from the building, placing netting around the building will reduce the potential of components falling and harming a pedestrian. Removing deteriorated building components, such as ornamental stone work that is not structurally integral to the building, may also be an option. Applying sealant is another means of keeping loose

components in place, but it can result in expediting deterioration by trapping moisture in the wall.

Permanent repairs are designed to prevent further deterioration to the building. They provide solutions to the problems and are specific to addressing the deterioration or defects. These can be anything from addressing or repairing isolated defects to full-scale renovations, and depend on the owner's needs, time, availability, and budget.