



AMERICAN SOCIETY OF PLUMBING ENGINEERS

NON-PROFIT ORGANIZATION

BOSTON CHAPTER

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"Substantial" - Quantified

One of the challenges of our profession when undertaking a rehab project is to "scope" a Project. This is the process whereby the Design Team determines the "Scope of Work" related to each discipline, thereby responding to the Owner's needs as well as the requirements of the Approving Authorities. A very significant challenge posed to the Design Team contained in the sixth edition of the Basic Mass Building Code has been somewhat simplified in the Seventh Edition of the Code.

Chapters 1 to 33 of the Code apply to new construction only. A renovation Project is governed strictly by chapter 34. Under 3404.12.3 existing buildings being renovated are required to have Fire Protection Systems described in Chapter 9 (this chapter includes Fire Alarm, Smoke Exhaust as well as Sprinklers and Standpipes) if a new building of the same size and use, required such a system but only if the size of the Renovation qualifies as a *Substantial Alteration*.

The sixth edition simply defined the term "*Substantial Alteration*" or "*Substantial Renovation*" as "work which is major in scope and expenditure when compared to the work and expenditure required for the installation of a fire protection system". The language then goes on to say that the "Building Official" shall make the determination as to what is substantial. This was always a controversial situation to deal with as no guidelines existed to quantify what "substantial" means. That was left to the Building Inspector.

The seventh edition has solved that dilemma by adding the following... "*Work shall not be a substantial alteration if the cost of installing the fire protection system exceeds 15 % of the total renovation cost.*" Now we have a hard and fast number to deal with as it applies to the code.

Keep in mind however, that you also have to take into account the provisions of chapter 148 or the so called Fire Marshal Regulations. There is a note at the end of 3404.12 telling you exactly that. Depending on your specific project use, you may not need to provide a sprinkler system by Building Code but if you meet a threshold governed by Ch 148 it may be required as well. You need to balance the requirement of the Building Inspector with that of the local Fire Official. Also keep in mind that this *Substantial Alteration* language applies only in Massachusetts and only to Fire Sprinklers, Fire Alarm and Smoke systems (that is those systems discussed in chapter 9). It does not apply to Plumbing Systems or to MAAB requirements.

Manuel B. Garcia, PE, CPD 12/10/08