



INFORMATION SHEET

NO. S-07

DATE : February 13, 2014

CATEGORY : **Structural**

SUBJECT : **Interpretation of SFBC Section 3402B, Exception 1**

PURPOSE : The purpose of this Information Sheet is to clarify the interpretation of SFBC Section 3402B, Exception 1

REFERENCE : 2013 San Francisco Building Code

DISCUSSION :

The interpretations also involve the application of Section 1604.11, which Exception 1 uses to check eligibility. Incidentally, since Section 1604.11 is also cited by AB-094, the interpretations proposed here could have a useful impact on voluntary seismic work as well.

SFBC Section 3402B Exception 1 reads as follows:

A building that has been seismically strengthened to meet or exceed the standards of Section 1604.11 of this Code or its predecessor provisions within 15 years prior to the operative date of this Chapter is exempt from this Chapter upon the submittal of documentation showing that such work was properly permitted, completed, and maintained as required by this Code, and that the Department has approved such documentation.

1. What is the general intent of Section 3402B Exception 1?

The exception exempts certain buildings based on recent permit and construction records, following the 15-year rule from Ordinance 54-10 (which created AB-094). The intent is to relieve owners of the expense of hiring an engineer to produce new calculations or over-stamp old ones.

In general, a building should be exempt under Section 3402B Exception 1 if its target stories were structurally retrofitted within the past 15 years using criteria that matched or exceeded conventional practices and code-based procedures in place at the time of the retrofit.

2. Section 1604.11 is for triggered retrofits. Does Section 3402B Exception 1 also apply to past voluntary retrofits?

Yes. The context of Section 3402B and the text of Section 1604.11.1 make clear that Exception 1 applies to voluntary retrofits as well as triggered retrofits.

Section 1604.11 is the City's traditional standard for triggered retrofit (that is, retrofit triggered by an addition, alteration, etc.). Any triggered retrofit completed within the past 15 years will be eligible for Exception 1 by definition. In addition, Section 1604.11.1 reads, "This section may be used as a standard for voluntary upgrades." However, Section 1604.11 does not specify which of its referenced provisions are to apply to past voluntary work. That is the subject of this Information Sheet.

3. Section 1604.11 references Section 1613, which references ASCE 7. Which provisions cited by Sections 1604.11, 1613, etc. apply in the context of Section 3402B Exception 1?

When applied to *triggered* retrofit, Section 1604.11 can involve wind design, nonstructural bracing, and retrofit of whole buildings. When applied to past voluntary retrofits through Exception 1, however, it is not the intent that those past retrofits need to have been of the same full scope. Retrofit scope otherwise outside the intent of Chapter 34B is not required to qualify for Exception 1. Exception 1 requires only seismic retrofit of the lateral structural system in the building's target stories.

Specifically, when used to comply with Section 3402B Exception 1:

- Section 1604.11.2, regarding wind forces, is waived.
- Section 1613 requirements for nonstructural bracing and anchorage are waived.
- Section 1613 requirements are waived for stories above the highest target story.

4. Section 1604.11.3 allows reduced seismic loads for retrofits triggered by Section 3401.10. Does this allowance also apply when Section 1604.11 is applied in the context of Exception 1?

In general, yes. The "75 percent" reduction factor may be applied to the earthquake loads that would otherwise have applied to the design of a similar new building at the time of the retrofit. This allowance is appropriate because the intent of Exception 1 is to acknowledge relatively recent work that was done to standards current at the time.

Similarly, when checking the design base shear of the past retrofit, submitted documentation should use earthquake loads and earthquake design parameters (*R*-values, for example) from a single code edition, generally either the current code or the code in effect at the time of the retrofit design. Following 2012 IEBC Appendix Chapter A4 Section A403.3, as modified by AB-107, the *R*-value of the retrofit system may be used if applicable irregularities are eliminated.

5. Section 1604.11.3 waives the building separation limit for retrofits triggered by Section 3401.10. Does this waiver also apply when Section 1604.11 is applied in the context of Exception 1?

Yes. Since the purpose of the waiver is to acknowledge constraints typical to the San Francisco building stock, this waiver applies to past voluntary retrofits as well, as long as the voluntary retrofit in question did not involve an intentional softening of any story.

6. What is meant by “predecessor provisions” in the wording of Exception 1? How does this relate to the 15-year limit or to the May 21, 1973 date given in Section 1604.11?

“Predecessor provisions” refers only to the fact that Section 1604.11 covers topics previously covered in Section 104(f). It is unrelated to the 15-year limit.

Section 1604.11.1 reads in part, “An existing building or structure which has been brought into compliance with the lateral force resistance requirements of the San Francisco Building Code in effect on or after May 21, 1973, shall be deemed to comply with this section” This allowance applies only to *triggered* retrofits. It does not apply to retrofits seeking to qualify for Exception 1.

For voluntary retrofits, the intent of Exception 1 is to acknowledge work done to contemporary standards only. That is, to qualify for Exception 1, a retrofit should have been designed to the criteria given in Section 1604.11 at the time of the retrofit, without the 1973 allowance. Exception 1 considers retrofits back to 1998, but the criteria for such retrofits should have been the criteria that were current at the time (or equivalent, subject to approval by the Department).

7. What is required to document that a past retrofit “was properly permitted, completed, and maintained as required by this Code, and that the Department has approved such documentation”?

For purposes of applying Exception 1, “properly permitted” means only that the retrofit work in question was done with permits and was subject to the review processes normally performed by the Department at the time of the retrofit. It is not necessary that the retrofit permit application or design or construction documents cited Section 1604.11.

For purposes of applying Exception 1, “completed” means only that the work as built must match or exceed in scope the work shown on plans and calculations submitted to qualify for Exception 1. In most cases, a certificate of final completion, or other documentation showing that the Department completed its normal construction reviews, will be sufficient.

For purposes of applying Exception 1, “maintained” means only that the permitted and completed retrofit work has not been altered since its completion, either with or without a permit. This provision is not intended to require a new condition assessment or compliance review relative to other building code provisions.

8. What are the submittal requirements to qualify for Section 3402B Exception 1?

As shown in Sections 2, 3, and 4 of the Optional Evaluation Form (OEF), a previous retrofit can qualify for Exception 1 either with documentation of the previous work or with new evaluation calculations. In either case, the intent of Exception 1 is to allow reliance on records from the previous retrofit work.

Where documentation of the previous work is submitted (OEF Section 3), it should be supplemented with an explanation showing that the requirements of Exception 1 have been met.

Where new calculations are submitted (OEF Section 4), submittal requirements should generally match those required to document a new retrofit design. Construction records (such as

photographs or as-built plans) may be substituted for certain investigation or condition assessment requirements.

Approved by the Structural Subcommittee on February 11, 2014.

Tom C. Hui

2/13/14

Tom C. Hui, S.E., C.B.O.
Director
Department of Building Inspection

Date

This Information Sheet is subject to modification at any time. For the most current version, visit our website at <http://www.sfdbi.org>