COMMERCIAL

2016 ASTM Seismic Standards Update

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A revised ASTM *Standard Practice for Seismic Risk and Earthquake Due Diligence* was released in June 2016 by the E2026/E2557 ASTM Task Group after a rigorous 32-month review that included balloting, input, collaboration, and more than 350 revisions to the standard.

The 2016 ASTM Seismic Standard update affects commercial real estate transactions through changes to the ASTM Standard Guide and Practice E2026 and E2557 for Seismic Risk Assessment of Buildings and Probable Maximum Loss (PML) Evaluations for Earthquake Due Diligence Assessments, respectively.

The new standards governing seismic risk evaluations of buildings have been revised as E2026-16a and E2557-16a. While the new standards replace the old, many lending institutions and investors may have Scopes of Work that reference the old standards. Adoption of the new standards will likely occur over the next several months.

As mentioned, the revised standard includes

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THINGS TO CONSIDER ON CURRENT TRANSACTIONS

With all of the changes to the ASTM Standard Guide and Practice E2026 and E2557, the big question is, "What about the transaction I'm working on right now?"

Below are a few things to consider as you move forward with a current transaction.

Is a lender involved in the transaction?

If so, does the current Scope of Work reference a particular ASTM standard? Does it say "most current standard" or does it specify -07 or -16

Do scope costs reflect the "most current standard?"

If the scope requirement references "most current," recognize that the pricing will be different from what you have submitted previously. Lenders: Ensure your consultant's proposal references the current scope.

Are you including structural plans?

Structural plans will help meet the new ASTM requirements.

Can I still use the old standard?

In the interim, lenders may consider utilization of the old standards until the institution has evaluated and updated their risk policy for seismic risk assessments.

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more than 350 revisions and this article will address some of the major changes related to assessor qualifications, levels of investigation, Scenario Expected Loss and Scenario Upper Loss assessments, and newly required documentation.

The main change to the standard involves assessor minimum qualifications. The old standard recommended qualifications for assessors whereas the new standard dictates specific requirements for Senior Assessor and Field Assessor qualifications and how they apply to the overall responsibility of the assessment.

E2026-16a specifies that a Senior Assessor be a Civil or Structural Engineer with experience that includes structural engineering of buildings (10 years), seismic design and analysis (five years), and seismic risk assessment of buildings (three years). The standard also prescribes the requirements of a field assessor as a Civil or Structural Engineer with five years of experience related to structural engineering of buildings, three years of seismic design and analysis, and two years of seismic risk assessment experience of buildings.

If needed, E2026-16a provides two provisions for the Senior Assessor to designate a lesser qualified Field Assessor to perform the site visit. The Senior Assessor is allowed discretion for the qualifications of the Field Assessor in both of these cases. Under the first provision, relevant structural drawings must be available for review by the Senior Assessor. The second provision addresses the year of construction — the building must be constructed during or after the ASCE 41-13 benchmark year with no structural modifications. A guide for consideration on building benchmarking is if the structure was built after the implementation of the 1997 Uniform Building Code (UBC), or as a rule-of-thumb, 1998 or later. If either of these provisions cannot be met, then the minimum qualifications must be followed.

If a lesser qualified Field Assessor is chosen, they should at least be a licensed architect or engineer with a minimum of five years of experience in building design and evaluation. The

Senior Assessor must also have direct communication with Field Assessor as engineer in responsible charge.

Another important change to ASTM E2026-16a involves levels of investigation. It is the responsibility of the user to set the Level of Investigation based on risk tolerance and reliance. The standard provides four levels of investigation (Levels 0-3). Level 0 is considered a screen or desktop assessment and provides the greatest level of uncertainty. For this reason, Level 0 is not recommended for property transactions. Levels 2 and 3 are considered to be more detailed in the evaluation of seismic risk and are not typically utilized for property transactions.

ASTM does recommend a Level 1 assessment for property transactions that includes site observations by a qualified PE, review of available construction documents, and a review of the site specific conditions, with a reasonable amount of uncertainty.

On the subject of seismic Scenario Expected Loss (SEL) and Scenario Upper Loss (SUL) Assessments, ASTM recommends that users request both SEL and SUL, but this is left to the discretion of the user. Utilization of both the SEL and the SUL provides the end-user with useful information regarding the expected damage to the majority of buildings of a certain classification based on site specific criteria related to historic performance. The SUL provides insight to the potential damage at the upper end of the distribution curve, where a smaller quantity of buildings of similar classification may be damaged.

The new standard also requires additional report documentation that includes an ASTM Summary Findings Form and an Appendix X5 Informational Document (Seismic Assessment Report Summary).

The Summary Findings Form includes property location and assessor information, documents reviewed, PML definition, analysis methods and procedures, level of investigation, and any deviations.

The Seismic Assessment Report Summary includes information related to salient property data, seismic hazard and site class, site stability, Probable Maximum Loss, and consultant recommendations.

With growing concern surrounding human induced seismic events (e.g., fracking) the principles may be applied using available local historic data. The United States Geological Survey is currently working on data in this regard.

The purpose of the updates to the ASTM E2026 and E2557 reflects the growing demand for uniformity in the process of preparing SRA reports, providing guidance and allowing for transparency in the calculation of SEL and SUL percentages.