



Designation: C 1394 – 98

Standard Guide for In-Situ Structural Silicone Glazing Evaluation¹

This standard is issued under the fixed designation C 1394; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

SSG is popular because of its unique method of retaining glass or other panels in smooth exterior walls, interrupted only by narrow sealant joints. The first four-sided SSG in commercial construction is on the former corporate headquarters building of SHG Incorporated (formerly known as Smith, Hinchman & Grylls) in Detroit, MI, built in 1971. Since then, buildings containing two- or four-sided (or, occasionally, other numbers of sides of nonrectangular-shaped panels) SSG walls have been constructed within most cities, some as tall as 80 stories.

While SSG popularity increases, the sealant industry remains concerned over potential failures due to the increasing number of buildings containing structural glazing that are aging; unknown structural sealant durability; and the level of understanding of the principles of SSG by glazers. This guide addresses these concerns by providing suggestions for in situ evaluations of completed installations of any age.

1. Scope

1.1 It is recommended to periodically evaluate the existing condition of structural sealant glazing (hereinafter called SSG) installations in situ to detect problems before they become severe or pervasive. Evaluation of existing SSG installations are required by certain building codes and local ordinances. This guide provides a program to evaluate the existing conditions, lists typical conditions which might be found, and suggests times when such evaluations are appropriate. The committee with jurisdiction over this standard is not aware of any comparable standards published by any other organizations.

2. Referenced Documents

2.1 ASTM Standards:

C 717 Terminology for Building Seals and Sealants²

C 1392 Guide for Evaluating Failure of Structural Sealant Glazing²

C 1401 Guide for Structural Sealant Glazing²

E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process³

3. Terminology

3.1 *Definitions:* The definitions of the following terms used in this guide are found in Terminology C 717: structural sealant; structural sealant glazing; two-sided structural sealant glazing; four-sided structural sealant glazing; fluid migration.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *qualified person*—one with a recognized degree or professional registration and extensive knowledge and experience in the field of structural sealant glazing, and who is capable of design, analysis, evaluation, and specifications in the subject.

4. Significance and Use

4.1 Guidelines are provided for the procedures to evaluate existing SSG installations, including two- and four-sided installations. Due to the unlimited range of materials that may be used in a particular building, the information contained in this guide is general in nature. For a discussion of new SSG installations, refer to Guide C 1401.

4.2 Typical conditions are listed that might be discovered during, or suggest the need for, such evaluations. Guidelines are also suggested for times to perform evaluations. These guidelines are also necessarily general. Professional judgement should be used in determining the appropriate time to perform an evaluation on a particular building.

4.3 This guide should not be the only reference consulted when determining the scope of a proposed evaluation. For example, the local building code and the manufacturers'

¹ This guide is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.10 on Specifications, Guides and Practices.

Current edition approved May 10, 1998. Published August 1998.

² *Annual Book of ASTM Standards*, Vol 04.07.

³ *Annual Book of ASTM Standards*, Vol 14.02.