



Glass Baluster Strength Testing
Custom Test: Point Load Test to Failure

4" x 8 mm x 32" Glass Baluster Section

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ABSTRACT

A 32 in. section of glass baluster identified as "4 in x 8mm x 32in" was submitted by DecKorators. The test specimen was subjected to a point load centrally located along the flat section of glass and loaded in increments until failure occurred. Based on the test results, the baluster section described in this report sustained loads up to 395 lb over a 26" span at which point the specimen shattered.

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INTRODUCTION

This report includes the information on sample preparation, test specimen, test procedures, and the results of a test conducted on a glass baluster used in construction of handrail and guardrails.

At the request of the client, this test was performed by applying a point load to the specimen until failure occurred.

TEST PROCEDURE

A hydraulic jack was connected to a 1000 lb. capacity, high accuracy tension and compression "S" beam load cell, as the means of measuring and recording the specified loading on the handrail systems.

The test section was subjected to point load. Testing details are described below:

Point Load: This test consisted of applying a point load to the baluster section. First, the baluster was placed on wood surfaces such that the span was 26". Then, a pointed rod weighing 9.8 lb was placed centrally along the 26" span and the 4" width. A load cell was then placed on top of the rod at which point the 10.4 lb hydraulic jack was placed on top of the load cell. Pressure was then applied to the steel rod by extending the hydraulic jack against a horizontal load member. During the test, the load was applied at a rate of approximately 100 lb per minute. The load was increased until the specimen broke or shattered.

No provisions were made for loads that would involve unusual vibration and high impact forces. Also, for this series of testing, no provisions were made for testing after accelerated aging, or any other effects which would involve altering the overall condition of the test specimen other than newly constructed test samples.

TEST SPECIMEN

The test specimen submitted consisted of 8 mm thick section of glass measuring 32" x 4". The specimen was identified by the client as 4" x 8mm x 32" Glass Baluster Section.

TEST RESULTS AND OBSERVATIONS

The results of the Test are presented in the following table:

Material	Load Type	Ultimate Load (lb.)	Load Direction	Load Rate (lb/min)
8 mm Glass	Point	395	Vertical	100

CONCLUSIONS

The glass baluster section described in this report resisted centrally placed point loads up to 395 lb. Before breaking