SCOPE OF WORK
ASTM C1629 HARD BODY IMPACT RESISTANCE TESTING ON PYROBEL 120 2-1/8" THICK GLASS

REPORT NUMBER
H4184.01-106-31 R1

TEST DATE(S)
08/22/17 - 08/23/17

ISSUE DATE       REVISED DATE
09/01/17          10/05/17

RECORD RETENTION END DATE
08/23/21

PAGES
7

DOCUMENT CONTROL NUMBER
ATI 00231 (07/25/17)
RT-R-AMER-Test-2827
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TEST REPORT FOR GGI GLASS DISTRIBUTORS
Report No.: H4184.01-106-31 R1
Date: 09/01/17

REPORT ISSUED TO
GGI GLASS DISTRIBUTORS CORP.
101 Venture Way
Secaucus, New Jersey 07094-1808

SECTION 1
SCOPE

Product: Pyrobel 120 2-1/8" Thick Glass

Intertek Building & Construction (B&C) was contracted by GGI Glass Distributors Corp., to evaluate their Pyrobel 120 2-1/8" thick glass in general accordance with the Hard Body Impact Resistance test in ASTM C1629, Annex A1. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

<table>
<thead>
<tr>
<th>COMPLETED BY:</th>
<th>REVIEWED BY:</th>
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<tr>
<td>Andrew D. Cook</td>
<td>Joseph M. Brickner</td>
</tr>
<tr>
<td>Technician II</td>
<td>Laboratory Supervisor</td>
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<tr>
<td>Laboratory Supervisor</td>
<td>Digitally signed by: Joseph M. Brickner</td>
<td>10/05/17</td>
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ADC:jmb/kf
SECTION 2
TEST METHOD

The specimens were evaluated in general accordance with the following:


SECTION 3
MATERIAL SOURCE

The glass was provided by GGI Glass Distributors Corp., and was received on August 8, 2017. The material was tested as received.

SECTION 4
LIST OF OFFICIAL OBSERVERS

<table>
<thead>
<tr>
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<th>COMPANY</th>
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<tr>
<td>Andrew D. Cook</td>
<td>Intertek B&amp;C</td>
</tr>
<tr>
<td>Joseph M. Brickner</td>
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SECTION 5
TEST PROCEDURE

All conditioning of test specimens and test conditions were at standard laboratory conditions unless otherwise reported. Refer to the test related photos in Section 9.

ASTM C1629 - Annex 1 - Hard Body Impact

The nominally 2 ft. square glass panels were clamped to a metal frame, and impacted using a 150 lb. pendulum, swinging from a drop height of 1 ft, to achieve an impact energy of 150 ft-lbf. Failure was defined as any impact resulting in a penetration into the glass or an indent greater than the nominal thickness of the glass. Three specimens were tested on both sides of the glass.

Test Procedure - Deviation: The test was only run at the maximum impact energy prescribed by ASTM C1629. The test was not performed incrementally with increasing impact energy.
SECTION 6
TEST SPECIMEN DESCRIPTIONS

<table>
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<th>TEST PROCEDURE</th>
<th>NUMBER OF SPECIMENS</th>
<th>NOMINAL SPECIMEN DIMENSIONS</th>
<th>VISUAL CHARACTERISTICS</th>
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<tr>
<td>ASTM C1629</td>
<td>3</td>
<td>24&quot; x 24&quot; x 2-1/8&quot; thick</td>
<td>Clear-Blue Glass</td>
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SECTION 7
TEST RESULTS

ASTM C1629 Hard Body Impact Resistance

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>OBSERVATIONS</th>
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<tbody>
<tr>
<td>1 - Side 1</td>
<td>No damage occurred to the glass</td>
</tr>
<tr>
<td>1 - Side 2</td>
<td>No damage occurred to the glass</td>
</tr>
<tr>
<td>2 - Side 1</td>
<td>Some cracking of glass, but no penetration or measurable indent</td>
</tr>
<tr>
<td>2 - Side 2</td>
<td>Significant glass cracking, but no penetration or measurable indent</td>
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<tr>
<td>3 - Side 1</td>
<td>Some cracking of glass, but no penetration or measurable indent</td>
</tr>
<tr>
<td>3 - Side 2</td>
<td>Significant glass cracking, but no penetration or measurable indent</td>
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SECTION 8
CONCLUSION

The glass panels met the maximum performance requirements of ASTM C1629 Hard Body Impact testing. No impact penetrated through the glass or resulted in an indent greater than the thickness of the panel when impacted with 150 ft-lb.
SECTION 9
PHOTOGRAPHS

Photo No. 1
Glass Panel As Received

Photo No. 2
Specimen #1 After First Impact
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Photo No. 3
Specimen #2 After First Impact

Photo No. 4
Specimen #2 After Second Impact
## SECTION 10
### REVISION LOG

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