General Details
The SurePin® Fasteners are manufactured by independent companies. Any company manufacturing product for Aerosmith, that is intended to be evaluated by this PER, has an agreement in place and has been previously inspected by Pei and approved by Pei ES.

Listing Details
SurePin® Fasteners are pneumatically driven steel pins used to attach fiber-cement siding and sheathing materials direct to concrete block. The smooth portion of the shank must be embedded into the concrete per requirements of Table 1 of this evaluation report for approved depth penetration into the concrete masonry units.

Product Description
The SurePin® Fasteners are manufactured from AISI 1060 steel, heat treated to a Rockwell C hardness between 52 - 55 for the core and a R45N surface hardness between 39 - 50 for the surface, have a minimum tensile strength of 65,000 psi. The pins are electro-zinc plated with a chromate rinse or are mechanically zinc plated or use a nickel alloy electro-plate.

The SurePin® Fasteners are designed with a smooth shank or smooth step shank profile and a ballistic end point. The pins are manufactured per the nominal dimensions shown in Table 2 and Table 3 of this evaluation report. The pins are identified by the Aerosmith logo head stamp shown in Figure 1 and Figure 2 of this evaluation report. The pins are collated for powered nail gun application.

General Product Usage and Limitations
1. The SurePin® Fasteners are limited to use in resisting negative wind forces evaluated in this PER.
2. Fire Rated assemblies are outside of the scope of this PER.

Code Compliance
2009 International Residential Code
2009 International Building Code
2010 National Building Code of Canada
2012 International Residential Code
2012 International Building Code
2015 International Residential Code
2015 International Building Code
2018 International Residential Code
2018 International Building Code

2012 / 2015 IBC
Section 1404.10 - Fiber cement Siding to meet ASTM C1186, Type A or ISO 8336 Category A (min. 1/4" thick per table 1405.2) and must be identified on label listing an approved quality control agency.
Section 1405.16 - Fiber cement siding shall be installed in accordance with the approved manufacturer's instructions.
Section 1405.17 - Shall be securely fastened using zinc coated or other approved corrosion resistance fasteners in accordance with the manufacturer's instructions.

2018 IBC
Section 1403.10 - Fiber cement Siding to meet ASTM C1186, Type A or ISO 8336 Category A (min. 1/4" thick per table 1404.2) and must be identified on label listing an approved quality control agency.
Section 1404.16 - Fiber cement siding shall be installed in accordance with the approved manufacturer's instructions.
Section 1404.17 - Shall be securely fastened using zinc coated or other approved corrosion resistance fasteners in accordance with the manufacturer's instructions.
**2012 IRC**
Masonry Walls MUST conform to IRC Sections R606 - R609.
Exterior wall coverings must conform to IRC Section R703.
R703.4 / R703.3.2 - Wall covering attachment with approved corrosion resistant fasteners.
R703.10 - Fiber cement siding to meet ASTM C1186, Type A, minimum Grade II or ISO 8336, Category A, minimum Class 2 with installation per approved manufacturers instructions and Section R703.1.

*Note:* Designers, Engineers, and installers shall install the fasteners at a spacing that meets the wind pressure requirements of the applicable code.

**2015 / 2018 IRC**
Masonry Walls MUST conform to IRC Sections R606.
R703 - Wall covering attachment per approved corrosion resistant fasteners.

**2010 NBC**
Section 9.27.5.4 - Attachment of Cladding - Sheet Type Cladding - 2" Minimum fastener length for Cladding that exceeds 7mm thickness, Max Spacing is 12". (≥ 7mm thick cladding minimum fastener length is 1.5")
Section 9.27.5.5 - Nails or staples for the attachment of cladding and wood trim shall be corrosion-resistant and shall be compatible with cladding material.
Section 9.27.5.7 - Fasteners for cladding other than that described in Sentence (1) shall penetrate through the nail-holding base or not less than 25mm into the framing.

**Tested to**
ASTM E488-96 Section 5.2 - Standard Test Method for Strength of Anchors in Concrete and Masonry Elements.

<table>
<thead>
<tr>
<th>Approved Fastener†,‡</th>
<th>Minimum Penetration Depth</th>
<th>Ultimate Load³ (lbf)</th>
<th>Design Load⁴ (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerosmith 5323HP - 1-1/4&quot; Smooth Galvanized Pin</td>
<td>3/4&quot; -- 1&quot;</td>
<td>1165.51</td>
<td>233.10</td>
</tr>
<tr>
<td>Aerosmith 5503HP - 2&quot; Smooth Galvanized Pin</td>
<td>1-1/8&quot; -- 1-3/16&quot;</td>
<td>1168.83</td>
<td>233.77</td>
</tr>
</tbody>
</table>

**Notes:**
1. 5323HP Pin installed using the MAX HN-120A Pneumatic Nail Gun.
2. 5503HP Pin installed using the MAX HN-120A -- 3-1/4" Round Head Framing Nail Gun.
3. Ultimate load is based on installation of the fastener embedded into concrete block at web center.
4. Design load is based on installation of the fastener embedded into concrete block at web center calculated with a 5.0 factor of safety.

**Figure 1 - Profile of Approved Smooth Pins per Table 2**

**Table 2 - Aerosmith SurePin® Smooth Pin Nominal Dimensions†**

<table>
<thead>
<tr>
<th>Approved Pin</th>
<th>Head Diameter</th>
<th>Head Thickness</th>
<th>Length</th>
<th>Shank Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>5193Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>0.750&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5253Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.000&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5323Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.250&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5383Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.500&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5453Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.750&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5503Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>2.000&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5573Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>2.250&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>5633Z Smooth Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>2.500&quot;</td>
<td>0.145&quot;</td>
</tr>
<tr>
<td>2253Z Smooth Galvanized Pin</td>
<td>0.250&quot;</td>
<td>0.060&quot;</td>
<td>1.000&quot;</td>
<td>0.102&quot;</td>
</tr>
</tbody>
</table>

**Note:**
1. Z - Zinc Coated Smooth Pin
Product Labeling
Each Box of fasteners shipped, that are covered by this PER, must have a label attached with at least the following information:
1. Aerosmith Fastening Systems name, address or website.
2. Fastener designation
3. This PER number & Pei ES Logo
4. The catalog number
5. A lot number & Manufacturing Plant Identification / Traceability
6. A Trademark head stamp by Aerosmith as shown above in Figure 1 and Figure 2

Product Documentation
A Product Evaluation Service Agreement between Pei Evaluation Service® and Aerosmith Fastening Systems
A Follow-up Inspection Service Agreement between Progressive Engineering Inc. and Aerosmith Fastening Systems
A Quality Control Manual - Dated: 4/1/2020
A SurePin® Fastening Guidelines for Cement Fiber Board - Dated: August, 2006
A SurePin® Concrete Connection Technical Bulletin
A SurePin® Plywood Subfloor Installation Bulletin
A Technical Data Sheet for Aerosmith Fasteners for Hardie Siding Applications

Table 3 - Aerosmith SurePin® Smooth Step Pin Nominal Dimensions

<table>
<thead>
<tr>
<th>Approved Pin</th>
<th>Head Diameter</th>
<th>Head Thickness</th>
<th>Length</th>
<th>Step Length</th>
<th>Shank Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>5323ZST Smooth Step Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.250&quot;</td>
<td>0.795&quot;</td>
<td>0.145&quot; / 0.128&quot;</td>
</tr>
<tr>
<td>5383ZST Smooth Step Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>1.500&quot;</td>
<td>1.045&quot;</td>
<td>0.145&quot; / 0.128&quot;</td>
</tr>
<tr>
<td>5503ZST Smooth Step Galvanized Pin</td>
<td>0.300&quot;</td>
<td>0.070&quot;</td>
<td>2.000&quot;</td>
<td>1.545&quot;</td>
<td>0.145&quot; / 0.128&quot;</td>
</tr>
</tbody>
</table>

Note:
1. ZST - Zinc Coated Smooth Step Pin

Figure 2 - Profile of Approved Smooth Step Pins per Table 3

Figure 3 - SurePin® plastic collated form

Figure 4 - SurePin® in collated form