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ET&F PANELFAST® PNEUMATIC FASTENERS

CSI Sections:

- 05 05 23—Metal Fastenings
- 06 05 23—Wood, Plastic and Composite Fastenings

1.0 RECOGNITION

ET&F Panelfast® Knurled AGS-100 Series pneumatically driven pins recognized in this report have been evaluated for use as fasteners connecting gypsum-based sheathing to cold formed steel frame construction. The structural properties of the fasteners were evaluated for compliance with the following codes:

- 2024, 2021, and 2018 International Building Code® (IBC)
- 2024, 2021, and 2018 International Residential Code® (IRC)

2.0 LIMITATIONS

Use of the ET&F pneumatically driven pins described in this report is subject to the following limitations:

2.1 Fasteners shall be manufactured, installed, and identified in accordance with this report and the manufacturer’s published installation guidelines. Where conflicts occur, the more restrictive shall govern.

2.2 Plans and structural calculations shall be submitted to the building official demonstrating compliance with the provisions of this report and applicable code requirements. Construction documents shall be prepared by a registered design professional when required by the statutes of the jurisdiction where the project will be constructed.

2.3 The design transverse loads, positive and negative, to be resisted by the wall assemblies described in this report shall not exceed the allowable transverse values noted in Table 1 of this report. Calculations showing the applied loads are less than the allowable loads in Table 1 of this report shall be submitted to the building official for approval in accordance with Section 2.2 of this report.

2.4 The Panelfast® Knurled AGS-100 series fasteners are limited to installation in dry locations. Sheathing shall be covered with an approved water-resistive barrier and exterior wall covering when used in exterior wall construction.

2.5 The ET&F pneumatically driven pins are manufactured in Solon, Ohio.

3.0 PRODUCT USE

3.1 General: ET&F pneumatically driven pins are high carbon, heat-treated, ballistic point knurled fasteners recognized for use for attachment of gypsum-based sheathing to cold-formed steel framing to resist uniform transverse loads.

3.2 Use under the IRC is permitted where an engineering design is submitted in accordance with IRC Section R301.1.3 and Section 2.2 of this report.

3.3 Framing: Steel framing members shall have the uncoated minimum base-metal thickness and maximum spacing as detailed in Table 1 of this report.

Stud framing members shall have a minimum 1½ inch (38.1 mm) flange width. Framing shall meet the requirements of Section 2204 of the 2024 IBC or Section 2210 of the 2021 and 2018 IBC, as applicable, and have a minimum thickness of 36 mils (0.91 mm), minimum yield strength of 33 ksi (228 MPa), and a minimum tensile strength of 45 ksi (310 MPa). Framing shall have a protective coating, minimum G60 coating, complying with ASTM A653/A653M SS Grade 33 or ASTM A1003/A1003M ST33H, or an equivalent grade complying with the requirements of AISI S100 and having an elongation greater than or equal to 10 percent.

3.4 Gypsum-Based Sheathing:

ET&F Panelfast® Knurled AGS-100 Series has been evaluated for use in two types of sheathing; Dens-Glass® Gold, manufactured by the G-P Gypsum Corporation, and FIBERROCK®, manufactured by the USG Corporation. Justification of the panels’ performance and compliance to ASTM C1177 and ASTM C1278, respectively, shall be provided to the building official.

3.5 Installation: Panelfast® Knurled AGS-100 pneumatically driven pins shall be installed using the pneumatic tools specified by ET&F. The heads of the fasteners shall be flush with the gypsum-based sheathing without overdriving and shall penetrate the cold-form steel framing members with a minimum of 5/16-inch (7.9 mm) of the fastener showing through framing.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with Section 104.2.3 of the 2024 IBC and Section 104.11 of previous editions. This document shall only be reproduced in its entirety.

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The minimum distance of the fasteners from the edge of the sheathing is 3/8 inch (9.5 mm). Fasteners shall be staggered when installation requires two adjacent sheathing panels to be installed on one framing member. The framing member shall be a minimum of 1 1/2 inches (38 mm) wide in this condition.

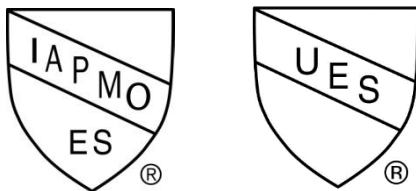
Maximum spacing of fasteners and framing requirements for each sheathing product is detailed in Table 1 of this report.

4.0 PRODUCT DESCRIPTION

ET&F Panelfast® Knurled AGS-100 are manufactured using a standard cold-forming process from steel wire with carbon content ranging from 0.39 percent to 0.66 percent in compliance with the chemistry requirements in the manufacturer’s quality control documentation. The fasteners are heat-treated to a through hardness of RC 52 to 54, as determined in accordance with ASTM E140 and ASTM E384. The fasteners have a ballistic point, knurled shank, and are either zinc-plated or coated with a proprietary Aerico® 1000 coating. Panelfast® Knurled AGS-100 series pins have a basic shank diameter of 0.100 inch (2.54 mm) and a nominal head diameter of 5/16 inch (7.9 mm). The minimum length of the fastener is 1 1/2-inches (38 mm).

5.0 IDENTIFICATION

The pins are identified by printing or labels on their containers or cartons bearing the ET&F Fastening Systems, Inc. name, address and logo, fastener part number, size and description, quantity, manufacturing lot number, and the Evaluation Report number (ER-848). Each fastener head is stamped with the “E” head logo shown in Figure 1 of this report. Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER -848

6.0 SUBSTANTIATING DATA

6.1 Test reports are from laboratories in compliance with ISO/IEC 17025.

6.2 Data in accordance with the AC259, Acceptance Criteria for Power-driven Pins for Attaching Gypsum Board Materials to Cold-formed Steel Wall Framing, dated June 2010, editorially revised April 2024.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on ET&F Panelfast® Knurled AGS-00 Series pneumatically driven pins to assess conformance to the codes and standards shown in Section 1.0 of this report and serves as documentation of the product certification. The products are manufactured at the location noted in Section 2.5 of this report under a quality control program with periodic inspections under the supervision of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org



TABLE 1
ALLOWABLE POSITIVE AND NEGATIVE TRANSVERSE LOAD FOR WALL ASSEMBLIES USING ET&F PANELFAST®
AGS-100 SERIES PNEUMATIC FASTENERS ^{1, 2, 3, 4}

SHEATHING MATERIAL	MINIMUM NOMINAL SHEATHING THICKNESS (in)	FRAMING REQUIREMENTS		FASTENER SPACING (in)	ALLOWABLE LOAD (psf)
		Minimum Steel Uncoated Thickness (mils)	Maximum Stud Spacing (in)		
Dens-Glass® Gold	5/8	36	24	6	24
		45	24	8	20
FIBERROCK®	5/8	36	24	6	27
		36	24	8	22

SI Units 1 inch=25.4 mm, 1 psf= 47.88 Pa and 1ksi = 6.89 MPa, 1 mil = 0.001 inch

¹ Sheathing to be in accordance with Section 3.4 of this report.

² Thicker Panels may be used for Nominal Panel thickness with no extrapolation of allowable loads.

³ Framing shall be in accordance with Section 3.3 of this report.

⁴ Thicker Framing may be used with no increase of allowable loads.

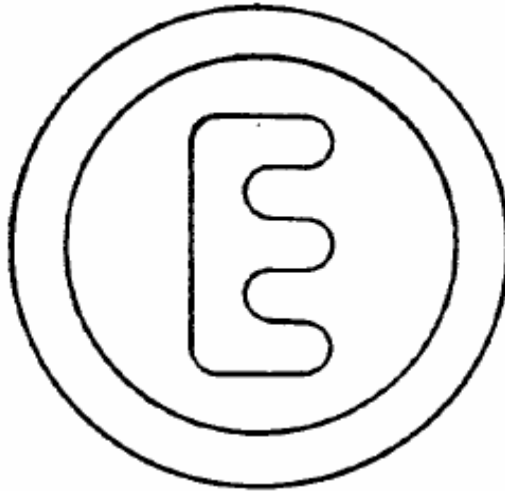


FIGURE 1 - Top of Fastener with "E" Logo