



Certificate of Compliance

This certificate is issued for the following:

¼-20 x LENGTH BLAZER DP5, HWH TRI-SEAL
COATED FASTENER (C1022 CARBON STEEL)

Prepared for:

Triangle Fastener Corp
1925 Preble Ave
Pittsburgh, PA 15233
United States

FM Approvals Class: 4471

Approval Identification: PR462800 Approval Granted: 1/23/2023

To verify the availability of the Approved product, please refer to www.approvalguide.com or www.roofnav.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in RoofNav, an online resource of FM Approvals.

A handwritten signature in black ink that reads 'Phillip J. Smith'.

Phillip J. Smith
VP - Manager of Materials
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group

Not to be distributed outside of FM Approvals and its affiliates except by Customer

APPROVAL REPORT

Project No: PR462800
Class: 4471
Product Name: ¼-20 x LENGTH BLAZER DP5, HWH TRI-SEAL COATED FASTENER (C1022 CARBON STEEL)
Name of Listing Company: Triangle Fastener Corp
Address of Listing Company: 1925 Preble Ave
Pittsburgh PA 15233
United States
Customer ID: 1000007998-1
Customer website: <http://www.trianglefastener.com/>

Prepared by



Alfonsina Simo
Engineer

Reviewed by



Joanna Blaney
Technical Team Manager, Materials



Phillip J. Smith
VP, Manager of Materials

1/23/2023

Date of Approval

1 INTRODUCTION

1.1 Triangle Fastener Corp requested Approval of their ¼-20 x length Blazer DP5, HWH Tri-Seal Coated Fastener (C1022 Carbon Steel) listed in Section 1.4 to determine if it meets the Approval requirements of the standard listed in Section 1.3.

1.2 This report may be freely reproduced only in its entirety and without modification.

1.3 Standard

Title	Number	Issue Date
Approval Standard for Class I Panel Roofs	4471	3/2010

1.4 Listing

The product will appear in RoofNav, an on-line resource of FM Approvals.

2 DESCRIPTION

The ¼-20 x length Blazer DP5, HWH Tri-Seal Coated Fastener (C1022 Carbon Steel) is described as follows:

2.1 ¼-20 x length Blazer DP5, HWH Tri-Seal Coated Fastener (C1022 Carbon Steel)

Material:	Carbon Steel (C1022)
Fastener Diameter (Major):	0.243 – 0.250 in. (6.17 -6.35 mm)
Fastener Diameter (Minor):	0.195 in. (4.953 mm)
Min Length:	1.560 in. (39.625 mm)
Max Length:	8.060 in. (204.724 mm)
Fastener Type:	Screw, self-drilling
Fastener Coating:	Zinc with Tri-Seal Fluoropolymer Topcoat
Drive Head:	3/8 in. (9.53 mm) Hex Washer Head
Point:	Type 5

2.2 All other products are as described in RoofNav. Formulations and specifications are on file at FM Approvals.

3 EXAMINATIONS AND TESTS

3.1 No testing was conducted in this program.

3.2 All performance requirements and tests required by the Standard have been waived due to previous successful testing. See Table 1 below for details.

Table 1: FM Standard 4471 Performance Requirements

Standard	Section	Test Name	Justification/Comments
4471	4.1	Combustibility From Below the Roof Deck	Waived ¹
4471	4.2	Combustibility From Above the Roof Deck	Waived ¹
4471	4.3	Wind Uplift Resistance	Waived, see PR454838 ²
4471	4.4	Foot Traffic Resistance Test	Waived, see PR454838 ²
4471	4.5	Hail Damage Resistance Test	Waived ¹

1. The roof panels are Approved for the OEM. These performance criteria are not affected by the subject products (alternate fasteners).
2. Data released to Triangle Fastener Corp by the original test sponsor.

4 MARKING

4.1 Marking on the product or, if not possible due to size, on its packaging or label accompanying the product, shall include the following information:

- name and address of the manufacturer or marking traceable to the manufacturer;
- date of manufacture or code traceable to date of manufacture or lot identification;
- model number, model type and/or product trade name as appropriate.

When hazard warnings are needed, the markings shall be universally recognizable.

4.2 The product trade name, model number or model type identification shall correspond with RoofNav, the manufacturer's catalog designation and shall uniquely identify the product as FM Approved. The manufacturer shall not place this trade name or model number identification on any other product unless covered by a separate agreement with FM Approvals.

4.3 The Approval Mark shall be displayed visibly and permanently on the product and/or packaging as appropriate. The manufacturer shall not use this Mark on any other product unless such product is covered by a separate FM Approvals Approval Report.

4.4 Markings denoting Approval by FM Approvals shall be applied by the manufacturer only within and on the premises of manufacturing locations that are under the FM Approvals Surveillance Audit program.

4.5 The manufacturer agrees that use of the FM Approvals name or Approval Mark is subject to the conditions and limitations of the Approval by FM Approvals. Such conditions and limitations must be included in all references to Approval by FM Approvals.

5 REMARKS

Continued Approval is based upon fabrication and construction of ¼-20 x length Blazer DP5, HWH Tri-Seal Coated Fastener (C1022 Carbon Steel) in accordance with this Approval Report, satisfactory field experience and continued use of acceptable quality control procedures as determined by Surveillance Audits.

6 SURVEILLANCE AUDIT

The manufacturing facilities at the following location(s) shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture products identical to that tested and Approved. An FM Approved Products/Specification Tested Revision Request Form shall be submitted to FM Approvals for requesting to manufacture products at any additional or alternate manufacturing facilities which are not listed below.

Audit Location(s)

No. 135 Kang Hou Vill.,
A Lien Hsiang
Kaohsiung Hsien 82246
Taiwan

7 MANUFACTURER’S RESPONSIBILITIES

7.1 Documentation that is applicable to this approval is on file at FM Approvals and listed in the Documentation File, Section 8, of this report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Products/Specification Tested Revision Request Form shall be forwarded to FM Approvals as notice of proposed changes. The manufacturer shall notify FM Approvals of any planned change in the Approved products, prior to general sale or distribution, using the FM Approved Products/Specification Tested Revision Request Form. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals.

7.2 To ensure compliance with his procedures in the field, the manufacturer shall supply to the installer such necessary instruction or assistance required to produce the desired performance achieved in the tests.

7.3 In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

8 DOCUMENTATION

The following document describes the product used in this test program and is on file at FM Approvals.

Document Title	Revised Date
Surveillance Audit Manual	November 2022

9 CONCLUSION

9.1 Test from previous test programs indicate that the submitted products as evaluated, meet the requirements of the FM Approvals Standard listed in section 1.3 when installed in all assemblies Approved under PR454838 as an alternate to AWIP DB Fastener #14-

FM APPROVALS PROJECT NO: PR462800

14 X_" HWH SELF DRILL #3PT SCREW *LONGLIFE* and AWIP DB Fastener #14-20
X_" HWH SELF DRILL #5PT SCREW *LONGLIFE*.

PROJECT DATA RECORD: PR462800

ORIGINAL TEST DATA See Table 1