



**DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
WASHINGTON NAVY YARD DC 20376-0001**

IN REPLY REFER TO
9505
Ser 05Z/181
April 14, 2022

Mr. Jesus Herrero
Marine Program Manager
Viega, LLC
585 Interlocken Blvd.
Broomfield, CO 80021

Dear Mr. Herrero:

SUBJECT: VIEGA MEGA-PRESS® PIPE FITTING APPROVAL FOR LIMITED USE ON
SURFACE SHIPS

This letter cancels and supersedes Naval Sea Systems Command (NAVSEA) letter 9505, Ser 05Z/177 of 3 May 2021.

NAVSEA is in receipt of General Dynamics Bath Iron Works (GDBIW) report of 12 March 2021, titled "ASTM F1387 Testing for Mechanically Attached Fittings" and Southwest Research Institute (SwRI) Project 18057.21.007 of 27 April 2021, titled "Testing of Mechanically Attached Fittings According to ASTM F1387-19 - Stress Corrosion Cracking (S4)". These documents provide discussion and consolidated test results performed in conjunction with a National Shipbuilding Research Program (NSRP) on the Viega Mega-Press® pipe couplings, ½" to 2", 90/10 CUNI, Class 250 PSIG, for use with MIL-T-16420 tubing, Class 200, Alloy 706, Type I.

Viega Mega-Press® couplings are press-connect fittings, Grade D (CuNi), Class 2 (200 PSIG), Type 3 (Fluoro-Elastomer or Synthetic Fluorinated Rubber (FKM) o-ring) as described in ASTM Specification F3226, titled "Metallic Press-Connect Fittings for Piping and Tubing Systems". There are very limited approved uses for ASTM F3226 fittings on U.S. Navy Surface Combatant piping systems, primarily due to press-connect fitting liabilities with respect to shock resistance, fire resistance, vibrations, flexure fatigue and axial pull-out resistance. In comparison, Mechanically Attached Fittings (MAF), described in ASTM Specification F1387 and titled "Performance of Piping and Tubing Mechanically Attached Fittings" do not have such liabilities and are approved for a much broader use on U.S. Navy Surface Combatants.

The purpose of the NSRP with respect to the Viega Mega-Press® pipe couplings was to determine whether these couplings would pass all required and supplemental testing identified in ASTM F1387, with the goal of classifying them as equivalent to ASTM F1387 compliant MAFs. NAVSEA has reviewed the submitted test results and finds that the Viega Mega-Press® pipe couplings did not pass all testing identified in ASTM F1387, specifically, failing to pass Tensile Testing (Test A7

of ASTM F1387) and Fire Testing (Test S7 of ASTM F1387). The Viega Mega-Press® pipe couplings did pass the other tests, notably Shock Testing and Vibration Testing and, as such, demonstrate superior performance to the "typical" ASTM F3226 press-connect fitting. Further, NAVSEA and partner activities have analyzed the design of Viega Mega-Press® elbows, straight tees, reducing tees, and reducing couplings and have concluded that all testing, including shock testing, can be extended to accept these forms based on coupling testing results.

Based on the above, NAVSEA considers the Viega Mega-Press® pipe fittings, as identified below, acceptable for use on Non-Nuclear U.S. Navy Surface Combatants with the following restrictions:

a. The approved Viega Mega-Press® pipe fittings are limited to ½" to 2", 90/10 CUNI, Class 250 PSIG fittings, for use with MIL-T-16420 tubing, Class 200, Alloy 706, Type I, as identified below:

(1) Couplings, Model 515 (P/Ns 88380, 88385, 88390, 88395, 88400, 88405)

(2) 90°Elbows, Model 516 (P/Ns 88000, 88005, 88010, 88015, 88020, 88025)

(3) Straight Tees, Model 518 (P/Ns 88180, 88185, 88190, 88195, 88200, 88205)

(4) 45° Elbows, Model 526 (P/Ns 88090, 88095, 88100, 88105, 88110, 88115)

(5) Reducing Tees, Model 518 (P/N 88225, 88230, 88235, 88240, 88245)

(6) Reducer Coupling, Model 515.2 (P/Ns 88470, 88475, 88480, 88485, 88490, 88495, 88500, 88505, 88510)

NOTE: Model Numbers and Part Numbers apply to 2020 Viega Product Catalog, Tab 2.7, Mega-Press® CuNi, available at www.viega.us.

b. The approved Viega Mega-Press® pipe fittings are acceptable for use in the following Non-Nuclear U.S. Navy Surface Combatant MIL-T-16420 tubing, Class 200, Alloy 706, Type I, piping systems designed for a normal operating pressure of 200 PSIG (or less) and design temperature of 28°F to 250°F:

(1) Chilled Water;

(2) Potable Water Service, Distribution and Disinfection;

(3) Gas Turbine Freshwater Washdown;

- (4) Freshwater Window Washing;
- (5) Electronic Fresh Water Cooling;
- (6) Diesel Engine Fresh Water Cooling;
- (7) Sea Water Cooling (excluding Firemain);
- (8) Main and Secondary Drainage;
- (9) Seawater (Clean) Ballasting;
- (10) Seawater - Washdown Countermeasures;
- (11) Condensate (Non-Oily) Vents and Drains;
- (12) Weather Deck Drains;
- (13) Interior Spaces Deck Drains;
- (14) Plumbing Vents and Drains (with Ethylene Propylene Diene Monomer (EPDM) vice FKM o-rings);
- (15) Sewage Collection, Holding, and Transfer (CHT) (with EPDM vice FKM o-rings);
- (16) Sewage Vacuum Collection, Holding, and Transfer (VCHT) (with EPDM vice FKM o-rings);
- (17) Freshwater Tank Sounding Tubes, Vents, Escapes and Overflows;
- (18) Clean Ballast Tank Vents, Escapes and Overflows; and
- (19) Void Vents, Escapes and Overflows.

NOTE: The Viega Mega-Press® pipe fittings are not approved for use on submarine piping systems, aircraft carrier (CVN) propulsion plant piping systems or on any other piping systems and platforms where MAFs or press-connect fittings are prohibited by other direction, unless explicitly approved by NAVSEA 05.

The approved Figure 19 forms for the family of fittings identified above are available to Navy personnel and Navy contractors who have access to eShock, under items 2021-T-00230, 2021-T-00232, 2021-E-00250, and 2022-E-00073.

NAVSEA does not specify the requirements for Military Sealift Command (MSC) and U.S. Coast Guard platforms. It is suggested that Viega, LLC seek reciprocity if Viega, LLC intends to market these

9505
Ser 05Z/181
April 14, 2022

fittings to MSC and Coast Guard platforms. Points-of-Contact can be provided upon request.

Any questions concerning the technical aspects of this letter may be referred to Ms. Erin Babik at erin.l.babik.civ@us.navy.mil, (202) 781-0439.

Sincerely,

W. R. CALVERT
Technical Warrant Holder
Fluids - Machinery - Ships

Copy to:
NAVSURFWARCENDIV PHILADELPHIA PA (Code 412/J. Hungerbuhler, Code 413/S. Wilrigs)