



Marine & Offshore
Division

Certificate number: 04498/F1 BV

File number: ACM 135/2208/004

Product code: 2105H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Victaulic Company

Easton - UNITED STATES OF AMERICA

for the type of product

SLIP JOINTS / MECHANICAL JOINTS

VICTAULIC Couplings Style 07 Zero Flex and Grooved End Fittings N° 10, 11, 20, 50

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 02 Jul 2020

For BUREAU VERITAS,

At BV PORT EVERGLADES CENTRE, on 10 May 2016,

Flavio Rosas



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=qbvssidaf0p>

BV Mod. Ad.E 530 October 2014

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

VICTAULIC Coupling Style 07 Zero-Flex

VICTAULIC Grooved End Fittings N° 10 (90° Elbow), N° 11 (45° Elbow), N° 20 (Tee), N° 50 (Reducer)

1.1 Rating

Nominal Size -Inches (mm)	Style 07 - 1 (25) to 12 (300) Grooved End Fittings - 3/4 (20) to 12 (300)
Max. Working Pressure - psi (bar)	232 (16)
Max. Working Temperature (°C)	-34/110 (EPDM) and -29/82 (Nitrile)

1.2 Material specification

Coupling Housing	Ductile iron
Grooved end fittings	Ductile iron
Gasket	EPDM or Nitrile

- The Style 07 Couplings may also be used with FireLock fittings No.001, No. 002, No.003 and No.006. (TAC 41955/AO BV)
When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Specification Sheet N° 06.02 Rev. M dated 07/2014
- Specification Sheet N° 07.01 Rev. Y dated 03/2015
- Drawing for Coupling Style 07 Zero-Flex: D-C-010-007-000 Rev.U dated 25/07/2012
- Drawing for Elbow 90° N° 10: D-F-006-010-001 Rev.AE dated 20/01/2014
- Drawing for Elbow 45° N° 11: D-F-006-011-002 Rev.AE dated 08/02/2008
- Drawings for Tee N° 20: D-F-006-020-001 Rev.Z dated 20/06/2008 & D-F-006-020-002 Rev.O dated 11/04/2005
- Drawings for Reducer N° 50:

N°	Rev	Date
3 1/2 X 3-50-P	F	26/10/2005
5 X 2-50-M	C	12/01/1983
5 X 4-50-P	I	05/12/2007
C-F-020-050-002	F	30/10/2014
C-F-030-050-015	L	26/10/2005
C-F-889-050-007	H	18/03/2008
D-F-060-050-006	C	08/11/2004
D-F-080-050-011	D	14/01/2003
D-F-108-050-001	C	05/08/2002
D-F-159-050-001	E	09/02/2006
D-F-165-050-001	C	19/03/2008
F-024-050-002	E	26/10/2005
F-050-050-006	B	09/03/2009
F-114-050-001	C	28/10/2002
C-F-024-050-001	E	11/07/2003

N°	Rev	Date
4 X 1-50-M	I	01/05/2008
5 X 3-50-MA	C	12/01/1983
10 X 4-50-M	E	03/04/1984
C-F-020-050-013	D	26/10/2005
C-F-165-050-004	E	28/02/2006
D-F-060-050-003	D	23/07/2004
D-F-060-050-008	B	12/06/2000
D-F-080-050-012	C	05/08/2002
D-F-108-050-002	C	05/08/2002
D-F-159-050-003	C	05/08/2002
D-F-165-050-006	C	09/02/2006
F-030-050-002	A	16/12/2008
F-080-050-014	F	09/11/2007
F-133-050-001	B	21/03/2003

N°	Rev	Date
4 X 3 1/2-50-P	F	03/10/2007
5 X 4-50-M	C	12/01/1983
C-F-014-050-002	E	05/11/2004
C-F-020-050-022	D	29/11/2005
C-F-761-050-006	H	18/03/2008
D-F-060-050-005	C	05/03/1998
D-F-060-050-014	D	09/07/2001
D-F-080-050-013	C	09/02/2006
D-F-139-050-001	B	28/08/2002
D-F-159-050-004	D	05/02/2009
F-024-050-001	A	17/12/2008
F-050-050-005	E	05/10/2007
F-108-050-004	A	22/10/2012
F-159-050-006	B	03/02/2009

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 Type test reports N° Ex 1820 dated February 23, 1984; N° Ex 1820 dated June 21, 1984 and N° Ex 1820 dated October 25, 1983 issued by Underwriters Laboratories Inc.

3.2 Fire endurance test of Style 07 Max. pressure rating 500 psi, all gasket material tested is grade EPDM according to ROI N° 1192/BVN/06 dated 15/01/2008.

4. APPLICATION / LIMITATION

4.1 May be used on board for services of class I, class II and class III piping systems:

- **Flammable fluids (flash point $\leq 60^{\circ}\text{C}$)** : cargo oil 5, crude oil washing 5, vent lines 3
- **Inert gas** : water seal, scrubber effluent, main 2+5, distributions lines 5
- **Flammable fluids (flash point $> 60^{\circ}\text{C}$)** : cargo oil 5, fuel oil 2+3, lubricating oil 2+3, hydraulic oil 2+3, thermal oil lines 2+3
- **Sea water** : bilge/ballast/cooling water 1, fire main/water spray/foam/sprinkler systems 3, tank cleaning, non-essential systems
- **Fresh water** : cooling water 1, condensate return 1, non-essential systems
- **Deck drains (internal) 4, sanitary drains**
- **Sounding and venting** : water tanks, dry spaces, oil tanks (flash point $>60^{\circ}\text{C}$) 2+3
- **Miscellaneous** : service air (non-essential), brine, steam 6

Footnotes:

- 1- Inside machinery spaces of category A - only approved fire resistant type acc. to 3.2 above
 - 2- Not inside machinery spaces of category A or accommodation spaces. May be accepted in other machinery spaces provided the joints are located in easily visible and accessible positions
 - 3- Approved fire resistant type acc. to 3.2 above
 - 4- Above free board deck only
 - 5- In pump rooms and open decks - only approved fire resistant type acc. to 3.2 above
 - 6- On open deck with a design pressure of 10 bar or less
- 4.2 The gasket material must be compatible with the fluid to be conveyed, and the maximum working temperature according to the manufacturer's recommendation.
- 4.3 Assembly instructions given by the manufacturer are to be complied with the manufacturer's recommendation.
- 4.4 In all cases, the associated pipes are to be suitably supported and anchored. The joints are to be at any time accessible, excepting inside tanks where permitted by the Bureau Veritas rules.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The products are to be supplied by **Victaulic Company** in compliance with the type described in this certificate.
- 5.2 This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 **Victaulic Company** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

Victaulic Company has declared to Bureau Veritas the following production sites:

Design & Casting: Victaulic Easton Facility: 4901 Kesslersville Road, Easton PA 18040 USA

Casting: Victaulic Alburdis Facility: 8023 Quarry Road, Alburdis, PA 18011 USA

Assembly: Cast Pac Inc: 200 Cascade Drive # E, Allentown PA 18109 USA

Facilities:

- **Victaulic Polska Facility: STR Niepodleglosci 8, 66-530 Drezdenko, Prov-Gorzow, Poland**
- **Dalian Bingshan Metals Technology Co. Ltd.: N° 9 Northeast 7th Street, Dalian Economy & Development Zone, Dalian, 116600 China**
- **Victaulic Piping Products (Dalian) Co. Ltd.: N° 13 Tieshan East 2nd Road, Dongjiagou Town, Dalian Development Zone, Dalian, 116630 China**

6. MARKING OF PRODUCT

Each coupling shall be clearly marked with at least:

- Manufacturer's name or logo
- Type designation
- Size

7. OTHERS

It is **Victaulic Company** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 04498/F0 BV issued on 02/07/2015 by the Society.

*** END OF CERTIFICATE ***