

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pipe Couplings with Bolts Not Covered by a National Standard**with type designation(s)
Style /W77 AGS

Issued to

Victaulic Company
Easton, PA, USA

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.****Temperature range: 0°C to +110°C**
Max. working press.: 16 bar
Sizes: 14", 16", 18", 20", 22", 24"Issued at **Høvik** on **2018-12-20**for **DNV GL**This Certificate is valid until **2023-06-29**.DNV GL local station: **New York**Approval Engineer: **Iselinn Vindstad****Marianne Spæren Marveng**
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-009291-18**
 Certificate No: **TAP000007Z**
 Revision No: **2**

Product description

Victaulic Style /W77 AGS flexible coupling.

Design:

Machine grooved type fittings are joined by the coupling, which is comprised of a two piece cast housings. The sealing is provided by a rubber gasket, internal to the coupling.

Materials:

Coupling housings: Ductile iron ASTM A-536 Grade 65-45-12
 Bolts and nuts: Carbon steel ASTM A-183
 Gasket: EPDM

Manufacturing locations:

Quality Castings
 1200 North Main Street
 Orrville, OH 44667 USA

Application/Limitation

The Victaulic coupling Style /W77 AGS may be used in the following systems:

Systems			Systems		
Flammable fluids (Flash point ≤ 60 °C)			Fresh water		
1	Cargo oil lines	+ 2)	21	Cooling water system	+
2	Crude oil washing lines	+ 2)	22	Condensate return	+
3	Vent lines	+	23	Non-essential system	+
Inert gas			Sanitary/Drains/Scuppers		
4	Water seal effluent lines	+	24	Deck drains (internal)	+ 3)
5	Scrubber effluent lines	+	25	Sanitary drains	+
6	Main lines	+ 1) 2)	26	Scuppers and discharge (overboard)	-
7	Distribution lines	+ 2)	Sounding/ vent		
Flammable fluids (Flash point > 60°C)			27	Water tanks/Dry spaces	+
8	Cargo oil lines	+ 2)	28	Oil tanks (flash point > 60°C)	+ 1)
9	Fuel oil lines	+ 1)	Miscellaneous		
10	Lubrication oil lines	+ 1)			
11	Hydraulic oil	+ 1)			
12	Thermal oil	+ 1)			
Sea Water			29	Starting/control air	-
13	Bilge lines	+	30	Service air (non-essential)	+
14	Sprinkel system	+	31	Brine	+
15	Foam systems	+	32	CO ₂ system	-
16	Fire main	+	33	Steam	+
17	Ballast system	+			
18	Cooling water system	+			
19	Tank cleaning services	+			
20	Non-essential system	+			

The couplings are permitted for use in systems marked '+', not permitted for systems marked '-'. '.

Limitations/remarks:

- 1) 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.
- 2) Only in pump rooms and open decks
- 3) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

The couplings covered by this certificate are of fire resistant types, and may be used in systems where fire safe application is required.

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When used in systems where vacuum may occur, precautions shall be taken to prevent the internal gasket from being drawn into the gap of the two pipe ends.

Materials chosen for the specific system shall be suitable for the intended medium and environmental conditions.

EPDM may not be used for hydrocarbon services.

The couplings are approved to be used in piping systems of class II and III.

The couplings are not to be used in piping systems subject to impulse loadings, e.g. hydraulic systems.

Type Approval documentation

- manufacturer's product catalogue no. 20.03 "Victaulic® AGS Flexible Coupling Style W77", rev. S
- Renewal burst pressure tests witnessed by DNV GL
- Test plan 24" s/w77 AGS Coupling (5 pages), dated March 2016
- Test Plan - 14" Style W77 AGS Coupling on Steel Pipe (7 pages), dated 26th of January 2016
- Test Plan - 24" Style W77 AGS Coupling on Steel Pipe (7 pages), dated 26th of January 2016
- Test Plan - 20" Style W77 AGS Coupling on Steel Pipe (4 pages), dated 26th of January 2016

Tests carried out

Repeat assembly, tightness, vacuum, burst, pull-out, vibration and fire endurance.

Certification

The couplings are to be delivered with material certificates as per DNVGL-RU-SHIP Pt. 4 Ch. 6 Sec. 2 Table 3.

Marking of product

For traceability to this type approval, the couplings are at least to be marked with:

- manufacturer's name or trade mark
- type designation
- size

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.