



Certificate of Compliance

This certificate is issued for the following:

Dry Barrel Fire Hydrants

Series 27.00 Modern
Series 27.80 Nostalgic
(Modification)

Prepared for:

AVK International A/S
Bizonvej 3, Skovby
DK 8464 Galten
Denmark

Manufactured at:

AVK Mittelmann Armaturen GmbH
Schillerstrasse 50
D-42489 Wuelfrath
Germany

American AVK
2155 Meridian Blvd.
Minden, NV 89423

AVK Saudi Valve Manufacturing Co., Ltd
Phase 4, Street No. LO 404
Jeddah, Kingdom of Saudi Arabia 21443

FM Approvals Class: 1510 – “Fire Hydrants (Dry Barrel Type) for Private Fire Services”

Approval Identification: 3041112 Approval Granted: March 9, 2011

Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.



Member of the FM Global Group

A handwritten signature in dark ink, appearing to read "Richard B. Dunne".

Richard B. Dunne
Group Manager -Hydraulics
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

March 9, 2011
Date



Member of the FM Global Group

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APPROVAL REPORT

DRY BARREL FIRE HYDRANT

**SERIES 27.00 MODERN
SERIES 27.80 NOSTALGIC**

Prepared for:

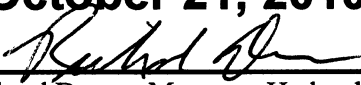
**AVK Holding A/S
Bizonvej 1, Skovby
DK-8464 Galten
Denmark**

Project ID: 3040138

Class: 1510

Date of Approval: October 21, 2010

Authorized by:


Richard Dunne, Manager, Hydraulics Group

FM Approvals
1151 Boston-Providence Turnpike
P.O. Box 9102
Norwood, MA 02062

DRY BARREL FIRE HYDRANT

**SERIES 27.00 MODERN
SERIES 27.80 NOSTALGIC**

October 21, 2010

from

**AVK Holding A/S
Bizonvej 1, Skovby
DK-8464 Galten
Denmark**

I INTRODUCTION

- 1.1 AVK Holding A/S requested an examination of their Series 27.00 Modern and Series 27.80 Nostalgic Dry Barrel Fire Hydrants as manufactured at an additional manufacturing location. The new manufacturing facility is located in Wuelfrath, Germany at AVK Mittelmann Armaturen. These hydrants are identical to those currently Approved when manufactured in Saudi Arabia for AVK Saudi Valves Manufacturing Co., Ltd; and in Minden, NV for American AVK. AVK Saudi Valves Manufacturing Co., Ltd and American AVK are sister companies of AVK Holding A/S. The currently Approved Series 27 Dry Barrel Fire Hydrants are discussed in the Approval Reports for project identification numbers 1B6A6.AH, dated December 17, 1996; 0D0A4.AH, dated February 21, 1997; 3000426, dated February 3, 2005; 3015584, dated December 9, 200 and 3030732, dated October 9, 2008.
- 1.2 This Report may be freely reproduced only in its entirety and without modification.
- 1.3 The Dry Barrel Fire Hydrants was examined in accordance with the requirements of the FM Approval Standard listed below:

Title	Class Number	Date
Fire Hydrants (Dry Barrel Type) for Private Fire Services	1510	November, 1990

1.4 **Listing:**

- 1.4.1 The listing for the Series 27.00 Modern Dry Barrel Fire Hydrant will continue to be listed in Chapter Two of the Fire Protection section of the FM Approval Guide, an online resource of FM Approvals, under the heading "Dry Barrel Hydrants."

Series 27.00 Modern, Traffic Type				
Size, inch (mm)	Hose Outlets, inch (mm)	Pumper Connection, inch (mm)	Rated working pressure, psi (kPa)	Remarks
5-1/4 (133)	(3) - 2 ½ (64)	N/A	250 (1725)	c, d, e
5-1/4 (133)	Two - 2 ½ (64)	N/A	250 (1725)	c, d, e
5-1/4 (133)	Two - 2 ½ (64)	4 (102)	250 (1725)	a, c, d, e
5-1/4 (133)	Two - 2 ½ (64)	4-1/2 (114)	250 (1725)	c, d, e

FM APPROVALS
Project ID: 3040138

5-1/4 (133)	Two - 2 ½ (64)	5 (127)	250 (1725)	b, c, d, e
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Remarks:

- a.) Available with a 4 inch Storz Pumper Nozzle
- b.) Available with a 5 inch Storz Pumper Nozzle
- c.) Available with flanged, push-on base or mechanical joint end connections
- d.) Available with a 3 or 4 inch monitor nozzle outlet
- e.) Non-Traffic Type Available

- 1.4.2 The listing for the Series 27.80 Nostalgic Dry Barrel Fire Hydrant will continue to be listed in Chapter Two of the Fire Protection section of the FM Approval Guide, an online resource of FM Approvals, under the heading “Dry Barrel Hydrants.”

Series 27.80 Nostalgic, Traffic Type				
Size, inch (mm)	Hose Outlets, inch (mm)	Pumper Connection, inch (mm)	Rated working pressure, psi (kPa)	Remarks
5-1/4 (133)	(3) - 2 ½ (64)	N/A	250 (1725)	c, d, e
5-1/4 (133)	Two - 2 ½ (64)	N/A	250 (1725)	c, d, e
5-1/4 (133)	Two - 2 ½ (64)	4 (102)	250 (1725)	a, c, d, e
5-1/4 (133)	Two - 2 ½ (64)	4-1/2 (114)	250 (1725)	c, d, e
5-1/4 (133)	Two - 2 ½ (64)	5 (127)	250 (1725)	b, c, d, e

Remarks:

- a.) Available with a 4 inch Storz Pumper Nozzle
- b.) Available with a 5 inch Storz Pumper Nozzle
- c.) Available with flanged, push-on base or mechanical joint end connections
- d.) Available with a 3 or 4 inch monitor nozzle outlet
- e.) Non-Traffic Type Available

II DESCRIPTION

2.1 Design

The design features for the Series 27.00 Modern and 27.80 Nostalgic Dry Barrel Fire Hydrants discussed in this Report are listed in the Approval Reports for the project identification numbers detailed in Section 1.1 of this Report.

2.2 Rated Working Pressure

The Series 27.00 Modern and 27.80 Nostalgic Dry Barrel Fire Hydrants discussed in this Report have a rated working pressure of 250 psi (1725 kPa).

III EXAMINATIONS AND TESTS

3.1 Examination

The manufacturer provided a fully assembled Series 27.00 Modern Dry Barrel Fire Hydrant as detailed below for examination and testing. The sample was considered to be representative of the product line and was examined, tested, and compared to the manufacturer's drawings. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

3.2 Body Hydrostatic Strength

The Series 27.00 Modern Dry Barrel Fire Hydrant with two – 2 1/2 inch NPS hose outlets and a 4 1/2 inch NPS pumper connection, considered representative of all configurations used on all hydrants discussed in this Report, was subjected to hydrostatic strength testing. With all ends capped and the main valve open, the assembly was subjected to a hydrostatic pressure of 1000 psi (6895 kPa), four times the rated working pressure, for 5 minutes. There were no signs of cracking or permanent distortion of the hydrant assembly as a result of this test. This result is considered satisfactory.

3.3 Stem Strength

A torque of 200 lb-ft (271 N-m) was applied directly to the operating nut of a sample 5-1/4 inch NPS Series 27.00 Modern Dry Barrel Fire Hydrant. The torque was first applied with the hydrant in the closed position, and then with the hydrant in the open position. The hydrant was then operated through its full range of travel after the torque was applied. This result is considered satisfactory.

3.4 Hose Outlet Strength

A torque of 300 lb-ft (407 N-m) was applied directly to a 2-1/2 inch NPS hose outlet of a sample 5-1/4 inch NPS Series 27.00 Modern Dry Barrel Fire Hydrant. The torque was applied in a direction to close the cap. There was no apparent damage to the nozzle or cap as a result of this test. This result is considered satisfactory.

3.5 Due to the similarity in design to hydrants produced at other locations and tested under previously stated projects, no additional tests were deemed necessary.

IV MARKING

4.1 The following information is cast in raised characters on the hydrants that are discussed in this Report and meets Standard requirements:

- Manufacturer's Name or Trademark
- Model or Type Designation
- Maximum Rated Working Pressure
- The year of Manufacture
- Size of main valve opening
- The FM Approval mark

4.2 The hydrant top (bonnet) shall have the word "OPEN" and an arrow, showing the counterclockwise direction for opening.

V REMARKS

Installations shall comply with the latest edition of the manufacturer's installation instructions and be in accordance with applicable FM Global Property Loss Prevention Data Sheets.

VI FACILITIES AND PROCEDURES AUDIT

- 6.1 The Series 27.00 Modern and 27.80 Nostalgic Dry Barrel Fire Hydrants, discussed in this Report, are considered Approved when manufactured at the following facilities:

AVK Mittelmann Armaturen GmbH
Schillerstrasse 50
D-42489 Wuelfrath
Germany

American AVK
2155 Meridian Blvd.
Minden, NV 89423

AVK Saudi Valve Manufacturing Co., Ltd
Phase 4, Street No. LO 404
Jeddah, Kingdom of Saudi Arabia 21443

The manufacturing sites listed above are currently part of FM Approvals follow-up audit service. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this Report.

- 6.2 Document Control is located at:

AVK Holding A/S
Bizonvej 1, Skovby
DK-8464 Galten
Denmark

This site is subject to follow-up audit inspections.

VII MANUFACTURERS RESPONSIBILITIES

- 7.1 Documentation considered critical to this Approval is on file at FM Approvals and listed in the Documentation File, Section VIII of this Report. No changes of any nature shall be implemented unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The Approved Product Revision Report, Form 797, shall be forwarded to FM Approvals as notice of proposed changes.

- 7.2 Test Requirement No. 1 – Leakage – Hydrant Inlet

The manufacturer shall perform leakage testing on a sampling of the production of each hydrant inlet discussed in this Approval Report. The frequency of the leakage testing shall be outlined in the manufacturer's quality manual in addition to the test pressure and test time. Data records shall be maintained.

- 7.3 Test Requirement No. 2 – Leakage – Hydrant Body

The manufacturer shall perform leakage testing on a sampling of the production of each hydrant body discussed in this Approval Report. The frequency of the leakage testing shall be outlined in the manufacturer's quality manual in addition to the test pressure and test time. Data records shall be maintained.

- 7.4 Test Requirement No. 3 – Operational

The manufacturer shall perform an operational test on a sampling of the production of each hydrant discussed in this Approval Report. Each hydrant shall be opened and closed at least once.

VIII DOCUMENTATION

The drawings on file under the original Project Identification numbers, listed in Section 1.1 of this Report, were not changed. They are filed under Project Identification Number 0D6A6.AH in the FM Approvals Digital Asset Manager System.

IX CONCLUSION

The Series 27.00 Modern and 27.80 Nostalgic Dry Barrel Fire Hydrants, as manufactured at the AVK Mittelmann facility in Wuelfrath, Germany, meets FM Approval requirements. Since a duly signed Master Agreement is on file for AVK Holding A/S, Approval is effective the date of this Report.

EXAMINATION BY:

Robert J. Masinda

EXTERNAL TESTING BY:

AVK Mittelmann Personnel

EXTERNAL TESTING WITNESSED BY:

Witalij Engelhardt

**FIRST FACILITIES AND PROCEDURES
AUDIT BY:**

Witalij Engelhardt

PROJECT DATA RECORD:

Filed as P.I. 3040138, dated October 7, 2010

REPORT BY:

REPORT REVIEWED BY:



Robert J. Masinda, E.I.T.
Associate Engineer
Hydraulics Group



Stanley M. Ziobro
Technical Team Manager
Hydraulics Group



the standard in safety

Underwriters
Laboratories

File EX4326

Vol 1

Issued: 1991-06-13

Revised: 2009-09-23

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

HYDRANTS
(HBOR)

Manufacturer: SEE ADDENDUM FOR MANUFACTURING LOCATIONS

Applicant: AVK INTERNATIONAL A/S
(385357-001) SMEDESKOVVEJ 40
8464 GALTEN DENMARK

Listee: AMERICAN AVK CO (EX15258)
(100035-311) 2155 MERIDIAN BLVD
MINDEN NV 89423

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc. (UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc. (UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

File EX4326 Vol 1 ADDENDUM TO PAGE 1 ISSUED: 1991-06-13
AUTHORIZATION PAGE REVISED: 2009-09-23

LOCATION

(100035-311) AMERICAN AVK CO
2155 MERIDIAN BLVD
MINDEN NV 89423

(100528-179) AVK MITTELMANN ARMATUREN GMBH
SCHILLERSTRASSE 50
POSTFACH 1440
42489 WULFRATH GERMANY

(385357-001) AVK INTERNATIONAL A/S
SMEDESKOVVEJ 40
8464 GALTEN DENMARK

(787252-001) SAUDI VALVE MFG CO LTD
INDUSTRIAL AREA PHASE 4
ROAD 404
PO BOX 10830
JEDDAH 21443 SAUDI ARABIA



JEDNOSTKA CERTYFIKUJĄCA

The Certification Body



CENTRUM NAUKOWO-BADAWCZE OCHRONY PRZECIWOŻAROWEJ

im. Józefa Tuliszkowskiego

SCIENTIFIC AND RESEARCH CENTRE FOR FIRE PROTECTION

POLSKA

05-420 Józefów k/Otwocka, ul. Nadwiślańska 213

CERTYFIKAT ZGODNOŚCI EC

EC-CERTIFICATE OF CONFORMITY

1438 / CPD / 0182

Zgodnie z dyrektywą 89/106/EEC z dnia 21.12.1988r. w sprawie zbliżenia ustaw i aktów wykonawczych Państw Członkowskich dotyczących wyrobów budowlanych, zmienioną przez dyrektywę 93/68/EEC z dnia 22.06.1993r., potwierdza się, że wyrób budowlany

In compliance with the Directive 89/106/EEC of the Council of European Communities of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to the construction products (Construction Products Directive - CPD), amended by the Directive 93/68/EEC of the Council of European Communities of 22 June 1993, it has been stated that the construction product

Hydrant nadziemny DN100
typ C wg EN 14384:2005
Oznaczenie producenta 27/00

Pillar fire hydrant DN 100
type C according to EN 14384:2005
Catalogue No. 27/00

wprowadzony na rynek przez:

placed on market by:

AVK Mittelmann Armaturen GmbH
Schillerstrasse 50
D-42489 Wülfrath, Niemcy

produkowany w:

and produced in the factory:

AVK Mittelmann Armaturen GmbH
Schillerstrasse 50
D-42489 Wülfrath, Niemcy

podlega zakładowej kontroli produkcji oraz dalszym badaniom próbek w zakładzie zgodnie z ustalonym programem badań. Centrum Naukowo-Badawcze Ochrony Przeciwpożarowej przeprowadziło wstępne badanie typu, wizytę wstępną w zakładzie produkującym oraz weryfikację zakładowej kontroli produkcji, a także prowadzi stały nadzór nad zakładową kontrolą produkcji.

is submitted by the manufacturer to a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the Centrum Naukowo-Badawcze Ochrony Przeciwpożarowej has performed the initial type-testing for the relevant characteristics of the product, the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

Certyfikat potwierdza, że wszystkie warunki dotyczące potwierdzenia zgodności oraz wytyczne zawarte w Załączniku ZA do normy:

This certificate attests that all provisions concerning the attestation of conformity and the performances described in Annex ZA of the standard:

EN 14384:2005 Pillar fire hydrants

zostały zastosowane, a wyrób spełnia postawione w normie wymagania.

were applied and that the product fulfils all the prescribed requirements.

Certyfikat został wydany po raz pierwszy: 29.03.2010r. i pozostaje w mocy pod warunkiem, że dokumenty odniesienia, warunki produkcji oraz zakładowej kontroli produkcji nie ulegną znaczącym zmianom, a także będą przestrzegane przez producenta/upoważnionego dostawcę wymagania zawarte w umowie Nr 15/DC/2010 z dnia 29.03.2010r.

This certificate was first issued on: 29 March, 2010 and remains valid as long as the conditions laid down in the harmonized technical specification in reference or the manufacturing conditions in the factory or the factory control production itself are not modified significantly and obligations written down in the agreement No.: 15/DC/2010 of 29 March, 2010 are met by producer or its authorized representative.

DYREKTOR
CENTRUM NAUKOWO-BADAWCZEGO OCHRONY PRZECIWOŻAROWEJ
HEAD DIRECTOR
of SCIENTIFIC AND RESEARCH CENTRE FOR FIRE PROTECTION



ml. brg. dr inż. Dariusz Wróblewski

Zastępuje certyfikat zgodności EC nr 1438/CPD/0182 wydany dnia 22 lutego 2011 r.
Replaces the EC - Certificate of Conformity No. 1438/CPD/0182 issued on 22 February 2011